



SANY

Quality Changes the World



SANY HYDRAULIC EXCAVATOR SY235C

ENERGY SAVING STAR ,
LEADING THE INDUSTRY



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High Efficiency and Low
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HIGH EFFICIENCY AND LOW CONSUMPTION ISUZU ENGINE CUSTOMIZED FOR SANY



With a dual-pump, dual-circuit constant power control system, the Isuzu 6BG1 engine power can be used more efficiently. This perfect combination produces higher operating efficiency with lower fuel consumption by selecting heavy duty mode under high workload, or standard or light duty mode with automatic engine speed regulation.

◆ Optimized Power Control

With closed-loop control, the controller automatically regulates the power absorbed by hydraulic pump according to the changes of engine load during the operation, keeping the power of hydraulic pump matching up to the power of engine at all times. Namely, the controller sets the power of engine according to specific conditions to reduce the working intensity of engine and ensure a stable and economic engine application.

◆ Faster Working Speed

Swing speed 11rpm

◆ High-power Engine

128.5kw/2100rpm

◆ Larger Workload

Bucket Capacity 1.2m³

◆ Larger Digging Force

Digging force of bucket 175kw
Digging force of arm 122kw



◆ World-leading Positive Flow Control Technique

With hydraulic elements provided by world famous companies and world advanced and mature hydraulic system of electronic positive flow control, Sany excavators are capable of maintaining high operating efficiency on the basis of high system stability and better operability.

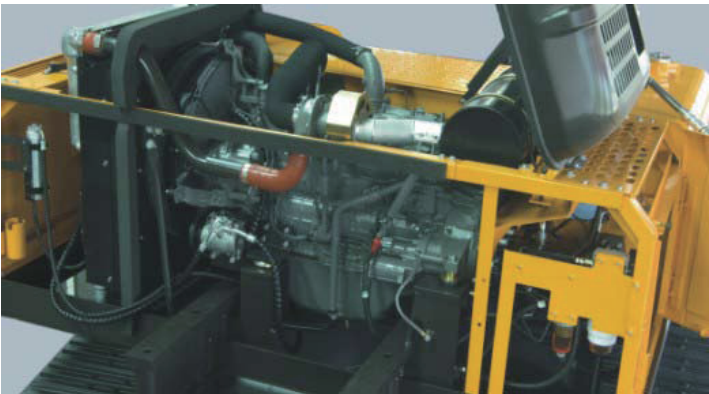
◆ Faster Arm Speed

A quick circuit is added to the arm oil cylinder circuit. When the arm oil cylinder is extended, the oil return circuit is cut off and hydraulic oil flows from the return circuit into the cylinder via a check valve. The hydraulic oil in arm cylinder rod end does not return the tank but goes directly to the cylinder head end. The arm speed is increased as a result. The fuel consumption is low under this condition.

◆ Pressure Loss Reduced with The Use of Efficient Hydraulic Components

Improved pump efficiency: A variety of improvements, including the improvement of clearances between internal pump parts, minimizes the leakage.

The engine, main pump, main valve and other core components, tailored by the world famous suppliers for Sany, are designed in consideration of the overall performance of Sany excavator. The positive flow hydraulic system and the advanced computer dynamic control technology are used to provide real-time match between engine power and main pump power while effectively maximizing the machine performance and significantly reducing the fuel consumption.



◆ The Electric Control Module to Achieve the Best Engine Efficiency

The electric control module has the capability of making quick response to the change of operating variables in order to achieve optimum engine performance. It is fully integrated with sensors of fuel, engine oil, air intake, coolant and exhaust system to conduct the real-time monitoring and auto-adjustment on the system conditions, which can ensure the engine won't overload when the excavator works with full load.

◆ Innovative Features of Controller

- 1. Precise controller customized for SANY.
- 2. Faster computing speed, 66% higher than last generation.
- 3. Automatic self-diagnosis and recovery system.
- 4. Remote Diagnosis: according to the real-time applications, shown on the centralized diagnostic monitor, determine the location of the faults that may occur remotely.

Advanced computer dynamic control technology provides real-time match between engine power and main pump power.

◆ Operating Priority and Fuel-saving Priority Working Modes

The working mode can easily be changed on the monitor.

Heavy duty mode: Full power output provides efficient operation. Standard mode: 90% of the rated power reduces fuel consumption and noise. Light duty mode: 80% of the rated power ensures fuel economy.

HIGH RELIABILITY

The engine customized for SANY gives high efficiency, low fuel consumption and high reliability while fully guaranteeing the excavator's stability in continuous operation under severe weather conditions and satisfying customers for requirement of engine stability.



◆ Excellent Cooling Effect

Fan Guard: The radiator fan is enclosed with a protective net cover that prevents objects from falling into the fan to damage its blades.
Serially Arranged Coolers: water radiator, oil radiator, intercooler and condenser are arranged side by side; the aluminum radiator gives better cooling effect.

◆ Six Cylinder Diesel Engine

Six-cylinder engine ensures high reliability and stability of the machine as a whole.
◆ Displacement 6.494L
With the engine power of 128.5kw, SY235C has a displacement up to 6.494L, which reduces the engine heat load and gives a longer service life.



Strong structure with higher reliability

◆ High-strength machine ◆ Highreinforced swingplatform

Reinforced X- frame modeled with digital tools, through finite element analysis on loading capacity realizes high-strength structure.

Reinforced plates, welded on the two main beam of swing platform,considerably improve the bending resistance performance.

◆ Track rollers, carrier rollers

Track rollers, carrier rollers and idlers use seal-in lubrication that gives a longer service life. The tri-grouser track shoe rolled with high-strength alloy provides favorable contact, stability and durability. The track links have additional reinforced ribs to increase their strength, which can absorb the shock when the machine travels on rough surface.



Boom, Arm and Bucket Meeting Customer Requirement

With strengthened boom, arm and bucket, SY235C can better meet the customers' requirement for heavy duty operation over a long period of time.

Boom

Important parts of the boom have been fully reinforced. With stronger front and rear supporting plates, the lateral stress is down by 10% during the boom swing.



Arm

The rear support of arm is specially reinforced, offering excellent torsion resistance under the complex applications.



Bucket

Standard reinforced bucket with highly rigid steel sheet, tips and side cutters can serve a longer period.



COMFORTABLE AND SAFE CAB ENVIRONMENT



- ◆ **Innovative Large Cab**

The innovative large cab is equipped with an adjustable seat with suspension. The rigidity of seat can also be adjusted according to the operator's weight.
- ◆ **Pressure Sealed Cab**

The sealed design ensures that the air pressure inside the cab is higher than outside, thus preventing the dust invasion.
- ◆ **Automatic Air Conditioner**

The standard large-capacity air conditioner keeps in-cab air fresh by purifying fresh air and recirculating air. The quick temperature control ensures a comfortable temperature in cab all the year round.
- ◆ **Silicone Rubber Shock Absorber**

The operator station is supported with innovative silicone rubber shock absorber, which has minimized the shock brought by rough road and engine or hydraulic impact, considerably increased the stability of cab, and improved the comfort of operator.
- ◆ **Low Noise Cab**

With a high-rigid structure, the new cab uses damping materials that give a better noise-absorbing effect. The adoption of properly sealed windows, noise reduction design and low-noise engine enables the machine to produce a noise as low as a passenger car.
- ◆ **Longer Control Levers**

The control levers and joysticks designed and arranged according to ergonomic, can be operated easily.

Falling Object Protection Structure

- ◆ The top plate of cab is punch-formed with thick high-strength steel sheet integrated with reinforced ribs, which maximizes the safety of operator.



Hydraulic Lockout Control

When the hydraulic lockout control is placed in LOCK position, all controls are inoperable, which prevents accidents caused by unintentional operation.



Heat Insulation/ Fan Guard

The engine is housed in excellent heat insulation to prevent accidental burns. The radiator fan is enclosed with a protective net cover that can prevent objects from falling into the fan to damage its blades.



Large Rear View Mirror and Alternate Exit

Rear view mirror is mounted on both sides of the cab, which can observe the situation behind the excavator without looking back.



Pump/Engine Screen

The pump chamber and engine chamber are separated with a screen, which can prevent leaked hydraulic oil from splashing onto the hot engine.



Anti-skid Plates

Anti-skid plates are provided on the machine body to protect people from slipping during maintenance.



ENVIRONMENT -FRIENDLY ENGINE



◆ High Economy

Mitsubishi engine customized for Sany is able to precisely control the engine fuel injection in order to ensure full combustion of fuel. Advanced computer dynamic control technology (CDCS) provides real-time match between engine power and main pump power, realizing the perfect combination of power and economy.

◆ Auto Deceleration System

The function of auto deceleration or acceleration reduces fuel consumption by 5-10%. When an operation has been stopped for 3 seconds, the engine speed drops automatically to idle level and maintains the idling state, thus reducing the void flows in the hydraulic system, wear of diesel engine, energy consumption and noise.

◆ Three Stage Air Filtering

Equipped with air pre-cleaner and dual air filtering elements, the three-stage air cleaner ensures supply of sufficient clean air that can reduce the wear of cylinders. It is useful for harsh working environment that is windy or dusty.

◆ Low Emission Engine

Environment-friendly engine customized for SANY is in line with EPA Tier II and EU Tier II Emission Standards.

◆ Four Working Modes: H, S, L and B

Heavy duty mode: Full power output providing efficient operation.

Standard mode: 90% of the rated power reducing fuel consumption and working noise.

Light duty mode: 80% of the rated power ensuring fuel economy.

Breaker Mode (B Mode): Corresponding flow can be regulated according to breaker model



H, S and L modes meet the user's requirement for maximizing efficiency with low fuel consumption under various operating conditions.

Multi-functional LCD Monitor Ensures Easier Monitoring and Maintenance

◆ Large Color LCD Monitor

Large LCD monitor can ensure safe, precise and stable operation. This LCD can be easily read from various angles under different light conditions.

◆ Indicator

- | | |
|-----------------------------|---------------------------------------|
| 1 Working mode | 5 Working hours, function ON/OFF menu |
| 2 Throttle gear | 6 Failure code |
| 3 Engine coolant temp gauge | 7 System clock |
| 4 Fuel level gauge | 8 Function menu |

◆ Indicator

- | | |
|---------------------|----------------|
| 1 Function keys | 3 ENCODER knob |
| 2 Operation buttons | |



◆ Equipment Managing and Monitoring System

Monitoring Function:

In case any abnormality of oil amount, water temperature, hydraulic pressure, etc. should occur, failure information will be displayed on the monitor timely.

Maintenance Function:

You will be prompted on the monitor screen the maintenance items and replacement intervals when the maintenance schedule is due.

Failure Memory Function:

Failure history is saved in the monitor for effective troubleshooting diagnosis.

SCIENTIFIC STRUCTURE AND CONFIGURATION DESIGN ENSURE EASIER AND FASTER MAINTENANCE



◆ Serially-arranged Cooling Units

Coolant radiator, oil radiator, intercooler and condenser are placed side by side for easy cleaning and maintenance.

◆ Bottom Drain Plug

The radiator, fuel tank, hydraulic oil tank and oil pan are equipped with screw plugs at the bottom, which is convenient for discharging foreign substances and waste liquid out in the change of oil or cleaning.

◆ Easy Replacement of Filter Element

The primary and secondary fuel filters and water separator reduce the early wear of injection pump and nozzle and extend the service life of engine. Opening the access door, you can replace them quickly on the ground.

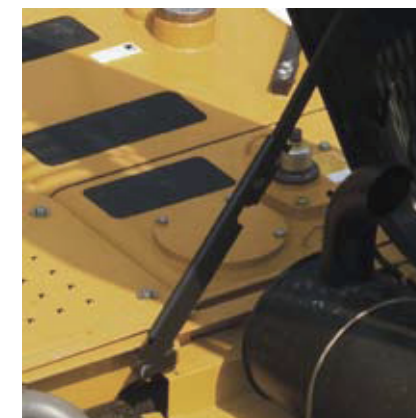
◆ Easy-to-use Reliable Engine Hood Spring and Securing Bar

The engine hood is installed with a spring that can help you open the engine hood easily for engine service. The hood can be secured with the bar during maintenance or service of the machine in order to prevent injury caused by wind.



◆ Incline Track Frame

The incline track frame makes the soil to fall easily and is easy to clean.



◆ Large-capacity Fuel Tank with Anti-rust Treatment

Interior of the fuel tank has been treated well against rusting. No rusting will occur even if the tank is soaked in oil containing water and phosphoric acid and other chemicals for a long period of time.

◆ Easy Cleaning of Radiator

Opening the left rear access door allows you to access the engine radiator.



◆ Standard Engine Oil Drain Valve

The use of this valve can prevent contamination of your clothes and the floor when engine oil is changed.



EQUIPMENT SPECIFICATION

SPECIFICATION

ENGINE

Model.....	Isuzu CC-6BG1-XABEC
Displacement.....	6.494L
Engine power	
At rated engine speed.....	128.5kw/2100rpm

HYDRAULIC SYSTEM

Type	Positive control system
Number of selectable working modes.....	4
Main pump	
Type.....	Variable-capacity piston pumps
Maximum flow.....	2*252ltr/min
Hydraulic motors	
Travel.....	2* axial piston motor with parking brake
Swing.....	1* axial piston motor with swing holding brake
Relief valve setting	
Implement circuits.....	34.3mpa 336kg/cm2 4,974psi
Travel circuit.....	34.3mpa 336kg/cm2 4,974psi
Swing circuit	27.5mpa 270kg/cm2 3,988psi
Heavy lift circuit	34.3mpa 336kg/cm2 4,974psi
Pilot circuit	3.9mpa 38kg/cm2 565psi
Hydraulic cylinders	
Boom.....	2-130mm*1295mm
Arm.....	1-140mm*1675mm
Bucket.....	1-130mm*1045mm

OPERATING WEIGHT

Operating weight with standard bucket, fully serviced, +75 kg operator (ISO)	
Operating weight.....	23075kg

UNDERCARRIAGE

Track width.....	600mm
Number of track shoes.....	49
Carrier roller (per side).....	2
Track roller(per side).....	9

TRANSMISSION

Travel Speed (Highest/Lowest).....	5.5/3.5km/h
Swing Speed.....	11rpm
Gradeability.....	70%/35°
Ground Pressure.....	47.6kpa

SERVICE CAPACITIES

Fuel tank.....	340L
Hydraulic tank.....	239L
Engine oil.....	24.55L
Radiator.....	8L
Final drive.....	2*5.5L
Swing drive.....	4L

Digging Force

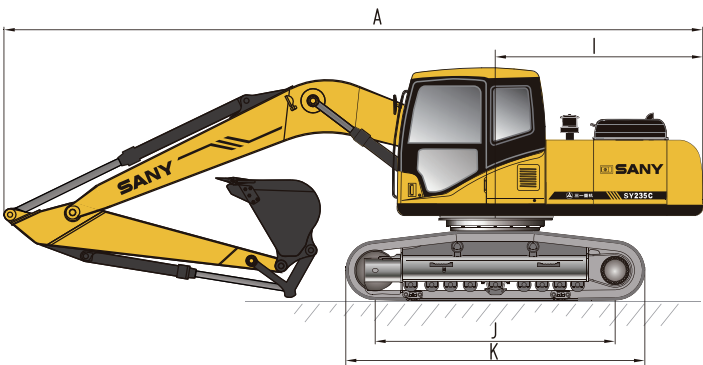
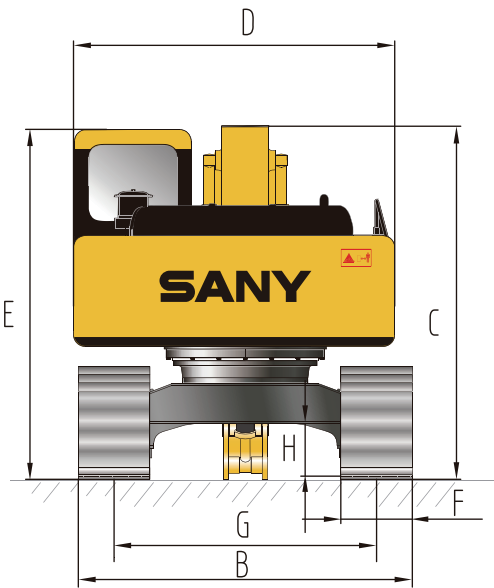
Bucket Digging Force.....	175kN
Arm Digging Force.....	122kN

BUCKET CAPACITY OPTIONAL

Bucket Type	Capacity	Outer Diameter (Mm)	Weight (Kg)	Standard Arm (2.9m)	Short Arm (2.4m)	Short Arm (1.8m)
Earthwork	0.8	1084	680	○	○	○
	0.9	1137	710.1	○	○	○
	1.0	1240	777.9	✕	✕	✕
Rockwork	0.9	1154	846.1	◇	◇	◇

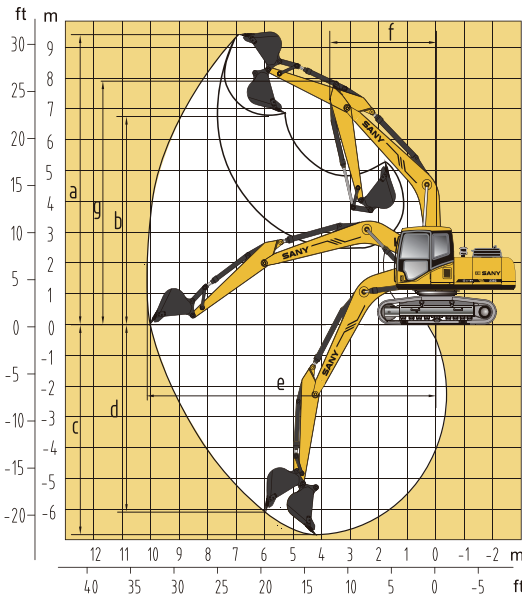
- ✕ Used to load materials with a specific gravity not more than 1.2t/ m3
- △ Used to load materials with a specific gravity not more than 1.2t/ m3
- 1.5t/ m3 Used to load materials with a specific gravity not more than 1.5t/ m3
- ◇ 1.8t/ m3 Used to load materials with a specific gravity not more than 1.8t/ m3
- ✕ Not applicable

DIMENSION



Item (Unit: mm)	SY235C
A Length (During Transportation)	9910
B Width	2980
C Height (During Transportation)	3180
D Upper Body Width	2710
E Cab Height	2990
F Std. Track Width	600
G Track Gauge	2380
H Min. Ground Clearance	440
I Tail Swing Radius	2860
J Roller Gauge	3640
K Track Length	4445

OPERATION RANGE



Item (Unit: mm)	SY235C
a Max. Digging Height	9630
b Max. Dumping Height	6725
c Max. Digging Depth	6785
d Max. Vertical Digging Depth	5845
e Max. Excavating Distance	10150
f Min. Swing Radius	3800
g Height at Min. Swing Radius	7940

Materials and specifications are subject to change without further notice in accordance with our continuous technical innovations.Photos and illustrations may not include additional equipments.

SY235C LIFTING CAPACITY

	A B	3.0m		4.5m		6.0m		7.5m		9.0m		Maximum		
														mm
Arm	7.5m					5103.7	5103.7					5181.5	5065.4	6150
	6.0m					5231.3	5221.8	5477.9	3569.7			5444	3546.7	7525
2919mm	4.5m					7088	4990.7	5398.1	3497.9			4739.7	3064.5	8100
Boom	3.0m			8996.4	7079.33	7088	4679	5237.7	3353.5			4739.7	2799	8400
	1.5m			11177.6	6455.1	7099.7	4384	5069.7	3202.2			4372.4	2661.5	8500
5700mm	0			10842.1	6183.4	6865.4	4180.4	4944.7	3089.7			4198.5	2707.9	8260
Balance weight	-1.5m	11090.6	11090	10738.9	6099.8	6765.3	4093.3	4900.3	3049.7			4730.9	2991.7	7750
	-3.0m	17169.8	11810	10823.7	6168.5	6804.9	4127.8					5613.7	2532.7	6910
3900kg	-4.5m	14747.7	12219	10544.9	6403.4							8000.2	4845.1	5510

Remarks:

1.Rated figure meets the criterion of GB/T 13331-2005/ISO 10576

2.Rated rollover loading is 75% of static rollover loading, rated limiting hydraulic weight is 87% of limiting hydraulic weight.

3. Loading radius is the distance from the loading point to the swing center.

4. The figure with * stands for the rated figure of the limiting hydraulic weight.

STANDARD EQUIPMENT

Engine

- Mode control (H, S, L and B)
- Start motor 24V/4.5KW
- Alternator 50A
- Air pre-cleaner
- Dry double-filtering air cleaner
- Cylindrical engine oil filter
- Engine oil cooler
- Radiator with protective screen
- Auxiliary water tank for radiator
- Fan cover
- Separately installed engine
- Automatic idle speed system
- Accelerating system

Undercarriage

- Travel brake
- Travel motor guard
- H-track guiding mechanism
- Hydraulic track tensioner
- Bolted sprocket
- Carrier roller and track roller
- Reinforced track link with pin and seal
- 600 mm track shoe
- Reinforced side pedal
- Bottom coverplate

Front Work Equipment

- Flange pin
- Bucket clearance adjustment
- Welded lever
- Central lubrication system
- Dust ring-seal of bucket pin
- 5.9 m fully-welded box boom
- 2.95 m fully-welded box arm
- Guard
- 1.2m3 standard bucket（SY235C）

STAND AND OPTIONAL

Operator Station

- Noiseproof steel-structured cab
- Toughened light-color window
- 6 silicone rubber damping support
- Openable roof hatch, upper front
- Window and left window
- Rear window,alternate exit
- Silent window wiper with washer
- Adjustable inclined seat with adjustable armrest
- AM-FM radio with digital clock
- Foot rest and floor mat
- Loudspeaker,rear view mirror
- Seat belt and fire extinguisher
- Cub holder and cab light
- Ashtray
- Storage box, literature bag
- Hydraulic lockout control
- Fully automatic air-conditoner
- Cab visor

Hydraulic System

- Working mode selection switch
- Control valve with main relief valve
- Spare oil port for control valve
- Oil suction filter
- Oil return filter
- Pilot filter

Swing Platform

- Fuel level float
- Hydraulic oil level gauge
- Toolbox
- Rear view mirror (R)
- Swing brake

Others

- Standard battery
- Lockup engine hood
- Lockup fuel filler cap
- Anti-skid film, handhold and Passage
- Travel direction mark
- Hand grease gun

OPTIONAL EQUIPMENT

S/N	Model for Contract	Common Name in The Company	Standard Parts							Optional Spare Parts(Free)			Optional Spare Parts(Charge)		
			Engine			Track Width (mm)	Arm Length (mm)	Bucket Form/Capacity (m ³)		Arm Length (mm)	Bucket Form /Capacity (m ³)		Pipeline of The Hammer	Hammer	Concentrated Grease System
			Brand	Emission Standard	Control System			Soil	Rock		Soil	Rock			
	SY235C	SY235C9I2K	Isuzu	Tier2	Positive Flow	600	2950	—	1.2	2500 2100	—	—	Optional	Optional	—

Selecting Marked Optional Spare Parts Will Extend The Delivery Cycle （At Least One Month）.



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For our consistent improvement in technology, specifications may change without notice.
The machines illustrated may show optional equipment which can be supplied at additional cost.