



Quality Changes the World



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B06S2ENAM-SY205C/SY215C



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**SANY HYDRAULIC EXCAVATOR  
SY205C/SY215C**

## ENERGY SAVING STAR LEADING THE INDUSTRY



**P1**

High Efficiency And Low  
Consumption Cummins Engine

**P3**

High Reliability

**P5**

Safe And Comfortable Cab  
Environment

**P7**

Scientific Structure And Configuration  
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# High Efficiency and Low Consumption Engine Customized for SANY



With a dual-pump, dual-circuit constant power control system, the engine can fully develop its power to provide a strong operating force. Optimized operation performance of the engine reduces the loss of power. The engine is designed to work in four modes according to different working conditions.

- ◆ Working efficiency up by

**8%**

Innovative controller with faster computation and more accuracy reduces the response time of hydraulic elements, lowers the internal power loss of the system and increases the operating output power.

- ◆ Digging force up by

**9.5%**

Enhanced work equipment can bear high pressure of quality hydraulic elements and circuits, and strengthen the digging force.

- ◆ Fuel consumption down by

**10%**

The positive flow controlled hydraulic system considerably reduces fuel consumption. Advanced computer dynamic control technology provides real-time match between engine power and main pump power. Four power modes maximize the fuel economy.



- ◆ The electric control module to achieve the best engine efficiency

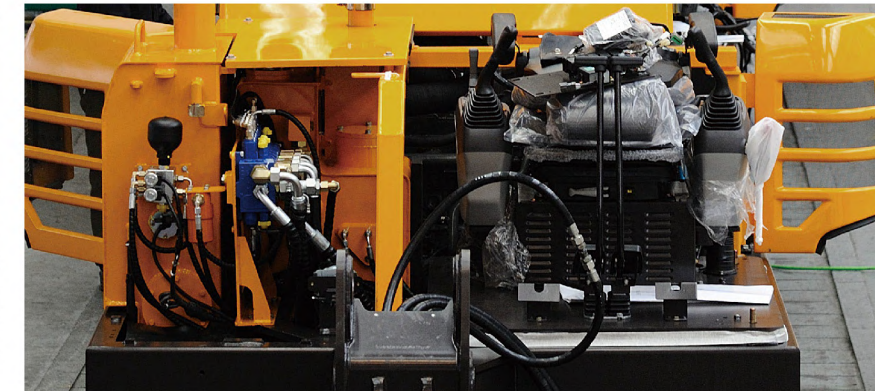
It is fully integrated with sensors of fuel, engine oil, air intake, coolant and exhaust system to conduct the real-time monitoring and auto-adjustment on the system conditions, which can ensure the engine won't overload when the excavator works with full load.

- ◆ World-leading positive flow controlled hydraulic system

Advantage of positive flow controlled hydraulic system is that the main pump's displacement is directly proportional to the signal pressure from the pilot joystick. The controller determines the flow demand and variation trend of the actuator, and regulates the displacement. A real-time match of flow is achieved in the system, i.e. "What you get is what you need."

- ◆ 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.



- ◆ Operating Priority and Fuel-saving Priority Working Modes

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.

Break mode: 90% of the rated power reduces fuel consumption

- ◆ 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.





## High reliability

High-power engine: 114KW/2050rpm. The Mitsubishi engine customized for SANY with high efficiency, reliability and weather resistance, saves the energy and meets customer expectation on engine stability.



### ◆ 6Cylinder diesel engine

Water-cooling turbo diesel engine, with six-cylinder, four-stroke direct-injection turbocharger and air-air intercooler. The overheat protection function limits travel speed when coolant reaches certain temperature. This ensures high reliability and stability of the machine as a whole.

### ◆ Excellent cooling effect

Serially arranged coolers: water radiator, oil radiator, intercooler and condenser are serially side by side; the aluminum radiator gives better cooling effect.

### ◆ Displacement 5.86L

Using a high power engine, SY205C/SY215C has a displacement up to 5.86L, which reduces the engine heat load and gives a longer service life.



## Strong structure with higher reliability

### ◆ High-strength machine

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

### ◆ High reinforced swing platform

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 optimized design, the boom and the arm can provide considerable working range and depth on the occasion of ditching, excavating and common construction while maintaining powerful digging force.

### Boom

With a large-box structure, the boom is reinforced in key positions to form a compact, strong and durable integrity.



### Arm

The rear support of arm is specially reinforced, with welded baffle plates offering excellent torsion resistance.



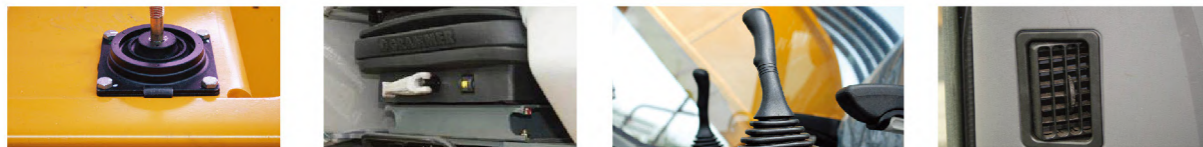
### Bucket

Standard equipped 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 recirculation 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.



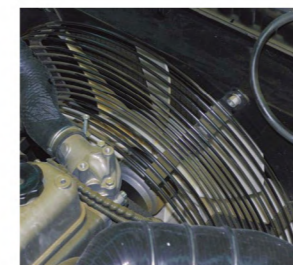
## ◆ Hydraulic Lockout Control

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.





## Scientific Structure and Configuration Design Ensures 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.

### ◆ Standard Engine Oil Drain Valve

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



### ◆ 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.

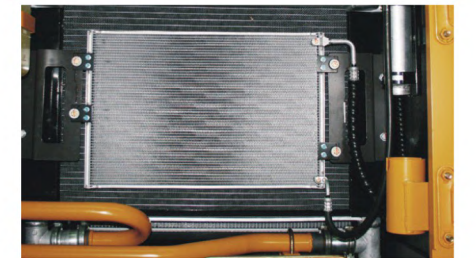


### ◆ Incline Track Frame

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

### ◆ Easy Cleaning of Radiator

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



### ◆ 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.



# EQUIPMENT SPECIFICATION

## SPECIFICATION

### ENGINE

Model	Mitsubishi 6D34-TL
Displacement	5.86L
Engine power	
At rated engine speed	114kw/2050rpm

### HYDRAULIC SYSTEM

Type	Positive control system	
Number of selectable working modes	4	
Main pump		
Type	Variable-capacity piston pumps	
Maximum flow	2*220ltr/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	2-120mm*1285mm	
Arm	1-135mm*1490mm	
Bucket	1-115mm*1120mm	

### OPERATING WEIGHT

Operating weight with standard bucket, fully serviced, +75 kg operator (ISO)	
Operating weight	20900/21900kg

### UNDERCARRIAGE

Track width	600mm
Number of track shoes	46/47
Carrier roller (per side)	2
Track roller(per side)	7/8

### TRANSMISSION

Travel Speed (Highest/Lowest)	5.4/3.3km/h
Swing Speed	11rpm
Gradeability	70%35°
Ground Pressure	46.3/47.4kpa

### SERVICE CAPACITIES

Fuel tank	340L
Hydraulic tank	239L
Engine oil	22L
Radiator	8.9L
Final drive	2*5.5L
Swing drive	4L

### DIGGING FORCE

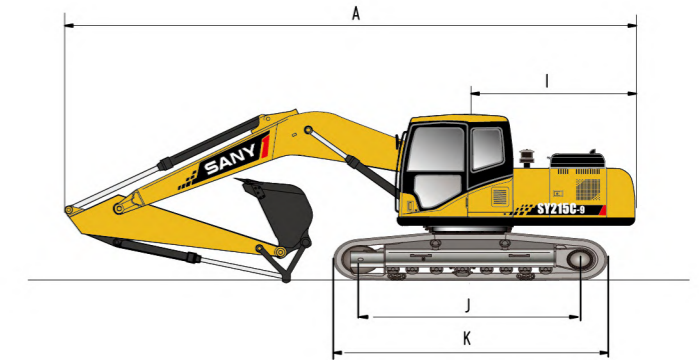
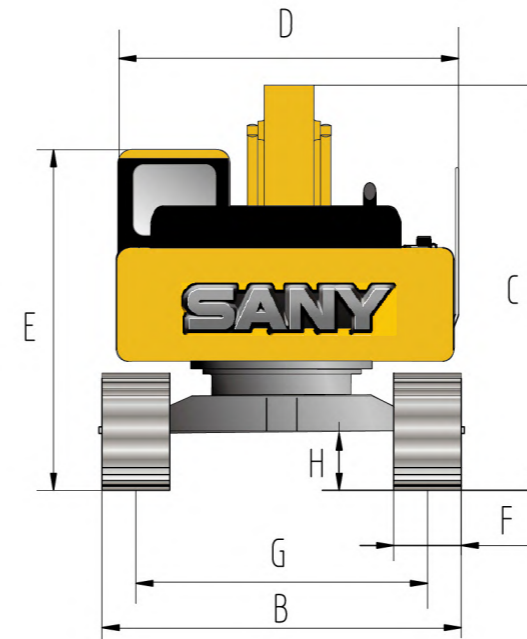
Bucket Digging Force	138kN
Arm Digging Force	103kN

## BUCKET OPTIONAL

Capacity		Width		Weight	Number of Teeth	Arm length			
SAE	CECE	Without Side Cutters	With Side Cutters			2900mm	2400mm	1800mm	mm
0.9(earth)	1.177	1252	1316.8	781	5	■	■	■	
0.8(rock)	1.046	1090	1129	844	4	■	■	■	
0.9(earth)	1.177	1128.6	1176.6	869	4	■	■	■	
0.8(rock)	1.570	1370.5	1444.8	833	5	△	●	■	

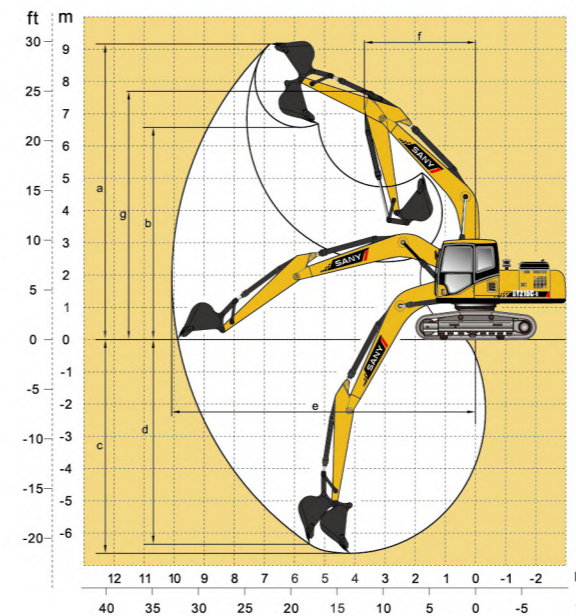
- Suitable for materials with density of 1 800 kg/m3 (3 030 lb/yd3) or less ■
- Suitable for materials with density of 1 600 kg/m3 (2 700 lb/yd3) or less ●
- Suitable for materials with density of 1 100 kg/m3 (1 850 lb/yd3) or less △

## DIMENSION



Item (Unit: mm)	SY205C/SY215C
A Length (During Transportation)	9680/9680
B Width	2800/2980
C Height (During Transportation)	3440/3440
D Upper Body Width	2875/2875
E Cab Height	3075/3075
F Std. Track Width	600/600
G Track Gauge	2200/2380
H Min. Ground Clearance	440/440
I Tail Swing Radius	2900/2900
J Roller Gauge	3355/3445
K Track Length	4160/4250

## OPERATION RANGE



Item (Unit: mm)	SY205C/SY215C
a Max. Digging Height	9600
b Max. Dumping Height	6730
c Max. Digging Depth	6600
d Max. Vertical Digging Depth	6255
e Max. Excavating Distance	10280
f Min. Swing Radius	3730
g Height at Min. Swing Radius	7680

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## SY205C/215C LIFTING CAPACITY

SY205C	A B	3.0m		4.5m		6.0m		7.5m		9.0m		Maximum		
														mm
Arm 2919mm	7.5m					4439.18	4439.18					3142.465	3142.465	6275
	6.0m					5210.522	4537.41					3143.332	3143.332	7360
	4.5m					5905.03	4373.15	4459.19	3062.399			3099.063	2717.326	8025
Boom 5700mm	3.0m			8686.556	6253.302	6142.459	4131.461	4346.969	2959.456			3182.79	2477.712	8370
	1.5m			9139.953	5758.752	5873.968	3892.034	4220.105	2843.081			3381.353	2388.325	8435
Balance weight 3900kg	0	6663.301	6663.301	8764.721	5442.325	5684.032	3722.658	4119.501	2750.794			3620.599	2430.011	8230
	-1.5m	10708.57	10108.33	8721.146	5405.579	5602.733	3650.16	4098.764	2731.772			3940.595	2634.005	7730
	-3.0m	16360.77	10294.27	8791.51	5464.916	5644.236	3687.17					4797.9	3216.179	6870
	-4.5m	14691.74	10667.45	9051.28	5683.976							6688.864	4372.786	5485

SY215C	A B	3.0m		4.5m		6.0m		7.5m		9.0m		Maximum		
														mm
Arm 2919mm	7.5m					4439.18	4439.18					3142.465	3142.465	6275
	6.0m					5210.522	4631.077					3143.332	3143.332	7360
	4.5m					5905.03	4466.816	4636.063	3133.94			3099.063	2783.404	8025
Boom 5700mm	3.0m			8686.556	6388.909	6380.675	4225.128	4523.842	3030.997			3182.79	2540.632	8370
	1.5m			9504.656	5894.359	6112.185	3985.7	4396.978	2914.621			3381.353	2450.684	8435
Balance weight 3900kg	0	6663.301	6663.301	9129.424	5577.932	5922.248	3816.324	4296.374	2822.335			3717.271	2494.175	8230
	-1.5m	10708.57	10353.89	9085.849	5541.186	5840.95	3743.826	4275.637	2803.312			4110.75	2703.045	7730
	-3.0m	16360.77	10539.83	9156.213	5600.523	5882.453	3780.837					4996.223	3295.599	6870
	-4.5m	14691.74	10913.01	9415.984	5819.583							6959.281	4477.58	5485

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.

## Pressure and Capacities

### WELGHTS AND GROUND PRESSURE

Shoe type	Shoe width	Mode SY215C	
		Operating weight	Ground pressure
Tripe grouser	600mm	21575Kg	46.3Kpa
	700mm	22490Kg	41.4Kpa
	800mm	22032Kg	35.5Kpa

### SERVICE REFILL CAPACITIES

	Liters	US gal	Lmp gal
Fuel tank.....	340	89.8	74.8
Engine coolant.....	9.5	2.5	2.1
Engine oil.....	22	5.8	4.8
Swing device.....	4	1.1	0.9
Travel device(each side).....	5.5	1.5	1.2
Hydraulic system.....	220	58.1	48.4
Hydraulic oil tank.....	239	63.1	52.6

## STANDARD & OPTIONAL

### STANDARD EQUIPMENT

#### ◆ Engine

- Mode control (H, S, L and B)
- Start motor 24V/5.0KW
- Alternator 50A
- Air pre-cleaner
- Dry double-filtering air cleaner
- Cylindrical engine oil filter
- Enine oil cooler
- Radiator with protective screen
- Auxiliary water tank for radiator
- Fan cover
- Separately installed engine
- Automatic idle speed system
- Accelerating system

#### ◆ 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

#### ◆ Front Work Equipment

- Flange pin
- Bucket clearance adjustment
- Welded lever
- Central lubrication system
- Dust ring-seal of bucket pin
- 5.7 m fully-welded box boom
- 2.9/2.4 m fully-welded box arm
- Guard
- 0.83m3 standard bucket (SY205C)
- 0.93m3 standard bucket (SY215C)

#### ◆ 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

#### ◆ 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

#### ◆ 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