The C-9 series of excavators developed by Sany are using the latest technology from the power system to the control system, like DOMCS (Dynamic Optimization Intelligent Matching Control), Positive flow control, hydraulic system, Heavy duty structure. Sany adopted all new exclusive technology, major breakthroughs were made in energy saving, high efficiency, reliability. This makes C-9 series of machines adaptable to characteristics of long and continuous operation, high efficiency, long service life, environmental stability.

- **Low fuel consumption**
  - Low fuel consumption of engine,
  - Advanced positive flow hydraulic control system
  - DOMCS intelligent control system
  - Multi-function mode selection
  - Automatic idle speed function

- **High efficiency**
  - Powerful engine
  - High efficiency of hydraulic components
  - Original intelligent control system
  - With the large bucket volume

- **High reliability**
  - Adapt to tough working condition of engine
  - The high quality of hydraulic components
  - Enhanced upper frame and under carriage
  - High strength working device

- **Comfortable, safe and classic working environment**
  
  High strengthen FOPS cabin feature provides safety and reliability. Pressure seated cabin feature provides anti-dust and low noise. Multiple adjustable seat features provides comfortable and convenient feeling. New type of silicone rubber shock absorber removes small cabin vibrations.

- **Low cost maintenance, convenient and quick**
  - Split type fuel filter gives economy maintenance
  - External mounting filter will be easy to change
  - Series-parallel type cooler allows to clean easy
  - Tilting under frame allows to clean easy

- **EVI remote monitoring center**

- **Technical specifications**
High efficiency and low consumption engine customized for Sany

DOMCS dynamic optimization matching intelligent control system
Dynamic optimization intelligent control adopts positive flow control system and constant torque control technology, which leads to achievement of the perfect match between main pump torque and engine power. DOMCS leads to best match of speed and torque leading to higher performance and lower fuel consumption.

Multi-function mode selection
- S Mode: suitable for standard excavation and general applications.
- H Mode: suitable for heavy duty applications. Engine speed is optimised at 100% power output leading to highest working efficiency.
- L Mode: suitable for light duty applications.
- B Mode: suitable for Rock breaker applications and other attachments.

Automatic idle speed function
Equipped with automatic idle speed and acceleration function which reduced fuel consumption by 5% - 10%. Engine comes to auto idle in 3 seconds after operation stops. This system reduces the hydraulic system's energy loss and the engine wear, which in turn saves energy and lower the engine noise. This further leads to longer engine and pump life. Engine and hydraulic system returns to optimum speed within 0.1 seconds upon joystick actuation.

High operation speed, high working efficiency
Advance electronically controlled hydraulic pump and main control valve with new dual core positive flow electronic controller improves the orations speed and gives faster response during load change.

High power engine
Sany special engine, strong power, provide enough power to ensure efficient operation. Made by the world famous manufacturer, high reliability, large capacity fuel tank, extend the excavator continuous operation ability under complex conditions.

High efficient hydraulic components
Advanced main pump control system with optimised internal pump components, enhances efficiency by 5% and advanced main control valve reduces average pressure loss by 15%. These leads to Appropriate automatic priority function with precision and speed during combined operations leading to increased efficiency by 7%.

10% more fuel efficient C-9 series
DOMCS intelligent control technology, to realize real-time matching of engine with the main pump’s power to ensure that engine working efficiency and lower fuel consumption by 10%

Low fuel consumption engine
The configuration of high-end direct multi-point fuel injection system can accurately control the engine’s fuel injection. Using turbocharged inter-cooled, optimization type multi-vortex combustor, increase the volume of air inflow, efficient burning, realize low fuel consumption and low operation maintenance cost.

Advanced positive flow hydraulic control system
Main pump pressure loss reduced by 2% compared with the current series of machines leading to improved power efficiency, and reduced energy losses. This reductions in power loss leads to better fuel efficiency and lower fuel consumption.

The world’s leading positive flow control hydraulic technology
Positive flow control system leads to real-time matching of engine speed and power with main pump flow and torque. Main pump flow rate is directly proportional to the joystick operations and output pressure signal. Controller judges actuators demand from the pilot pressure signal and adjust the main pump flow according to operator demand resulting in higher efficiency and operation speed.

Combined operations coordination.
Optimised boom and swing priority functions, presed control of each actor’s flow distribution leads to improved operation efficiency resulting in higher productivity.

Enhanced boom and arm speeds
Regeneration circuits in the boom and arm function. improves the boom and arm function faster by adding return oil through check valve in the main circuit.

Innovative controller
With innovative dual-core processor, the processing speed of the controller has increased 66% compared with the previous generation, which can easily copeup with various complex conditions of operation requirements and rapid response load change which achieves higher operation efficiency.

New electronic control system
DOMCS realises the perfect match of engine and main pump, maximising the engine’s output power, improved working efficiency.
Long experience, elaborate design and excellent manufacturing system, guarantee the machine with high reliability

Developed exclusive engine for Indian market
World famous and leading engine manufacturers has designed and developed exclusive engine for Sany excavator according to Indian working conditions to reduce down time and improve the reliability and efficiency of the engine.

Reliable hydraulic components
Key and major hydraulic components are provided by the world’s leading suppliers, Known for their product quality and long standing reliability. All major hydraulic components are equipped with electronic controls, simple and robust structure, are of high quality and reliability.

High quality fuel filter
Sany has designed high precision fuel filters with world famous filter manufacturers to improve the life of the fuel injection components and engine.

Self diagnostic system
Any abnormalities in the system, the hardware of the controller carries out self diagnosis for protection of the machine. The hardware restores machine features immediately after troubleshooting, leading to enhanced machine efficiency and durability.

Three level air filtration
Three level air filtration system through per-filter and double nano material filter, to ensure that the engine is supplied with sufficient and clean air, resulting in higher power output and reduced engine wear.

Radiator and cooler installations
Engine radiator and oil cooler are installed in parallel and condenser in series for ease of cleaning and maintenance. The radiators are made of aluminum alloy which have an excellent heat transfer capability leading to supply of cooled and dense air for combustion.

Robust undercarriage
X-type frame undercarriage with box-type beam structure are of high strength and stiffness, capable of withstanding torsional and bending resistance.
Under carriage are made with high strengthened alloy steel capable of wear resistance and long durability. Strengthened box type track frame and enlarged track pin effectively improves shock absorption. Grease lubricated track link provides good abrasion resistance and low travel noises.

Reinforced boom
Enhanced rear support and center bearing made by forgings, avoid welding stress concentration on the boom leading to improve durability. Boom is constructed with strengthen steel suitable for extreme working conditions.

Reinforced arm
Forged arm bearings reduced stress and improves arm reliability.

Wear resistant bucket
Bucket bottom area are made by highly wear resistant steel plates make the bucket more strengthened and leads to longer service life. Quadratic arc shape helps to reduce friction of rock and sand during operation resulting in low wear to the bucket body.
Comfortable, safety and humanization operating environment

Newly designed spacious cab
Newly designed spacious air conditioned cab is equipped with adjustable type suspension seat. The height, backrest inclination, armrest height and the rear pillow of the seat are adjustable as per operator requirement. This reduces operator fatigue and enhances working efficiency.

Advance silicon rubber shock absorbers
Cabin bearing adopts new type silicon rubber shock absorber which effectively reduces the vibrations caused by working conditions to improve operator comfort.

High strength roof top
Cabin roof is made up of high strength thick steel plate punched forming with stiffener, which have excellent impact and deformation resistance, leading to operator safety in adverse conditions. Top and front cabin guard are provided as optional configurations to enhance operator safety.

Steel welded structure that prevent falling objects
Cabin is made of high strength steel plate with stamping and forming process, doors and Windows equipped with toughened glass and seat belts which can maximize the protection of the driver’s life safety.

Security measures
Operator's cabin is equipped with Safety hammer, Fire extinguisher, Seat belt, Protective Fence, Indoor positive pressure.

Pump chamber and engine clapboard
Safety Clapboard in the pump chamber prevents the hydraulic oil splash to the high temperature area of the engine during hydraulic system failure.

Reliable Electronic Components
Waterproof, Shockproof, Dustproof large LCD monitor ensures safe, precise and stable operations. This LCD is easily read from all angles under natural light. Simple switch-on-off design monitor is user friendly, and functional keys are easy to operate.

Hydraulic pilot lock
Pilot lock disengages hydraulic system from joystick operations to prevent operating accidents.

Easy to clean floor mats
Flanged wet type cabin mats can be easily cleaned without dismantling.

Large rear view mirror
Left and right sides of the cab is equipped with large rear view mirrors which eliminates blind area and enhances vision. The operator can see excavator’s rear condition from standard position without looking back. This helps in increased operation efficiency and reduce accidents.

Safety heat shield and Fan cover
Turbocharger and engine radiator are insulated with heat resistant cover. Engine radiator fan is fully covered with wire netting to prevent fan blade from falling impurities.

Easy to clean floor mats
Flanged wet type cabin mats can be easily cleaned without dismantling.

Long type joystick
Extended joystick can be operated with small operating force, effectively reduces the fatigue of the operator.

Operator comfort features
Cabin have radio system, temperature store box, water cup, butterfly foot pedals, file boxes and ashtray.
Advanced machine structure design and configuration for convenient, quick service and low cost maintenance

Large capacity fuel tank and stain proofing
Large capacity fuel tank reduces fuel refilling cycle. High-grade anti-rust treated tanks are protected from rusting and atmospheric pressure.

Filter replacement comfort
Fuel filter, oil filter, and pilot filter are mounted in pump cabin for quick and easy replacement through single door.

Easy maintenance of engine oil filter
Engine oil filter is remotely mounted in hydraulic pump chamber for convenience and easy maintenance.

Inclined type track frame
Inclined type track frame in the machine reduces dirt accumulation on the undercarriage and is easy to clean.

Centralization lubrication
Centralized lubrication block has been installed in the root of the boom for easy lubrication.

Suspended engine bonnet
Suspension installed in the engine bonnet supports in opening and closing operation to reduce labor fatigue. The engine bonnet is locked by the fixed rod upon opening to prevent accidents.

Large LCD color display
Waterproof, dustproof and vibration proof anti-interference colourful LCD display, backlight brightness adjuster, good visibility, real-time monitoring of the machine working status, abnormal alarm function ensures safe operation.

Machine management monitoring system
Fuel quantity and oil pressure indication, cooling fluid temperature and hydraulic oil temperature anomalies are indicated in the EVI monitor to provide timely warning and display fault information.

Data storage function
Through the monitor one can view the machine history, maintenance information, working information and fault information.

Easy to clean radiator
External radiator is equipped with fence to prevent dirt accumulation. Radiator can be cleaned easily by removal of fence.

Standard oil discharge valve and drain line
Oil discharge valve and lengthened drain line to drain the engine oil, prevents oil splash and easy to maintain.

Drain Plugs arrangement
Radiator, fuel tank, hydraulic tank and engine oil pan are equipped with drain plug at the bottom to drain the debris and waste liquids at the time of oil replacement and cleaning. The tank bottom are also equipped with drain plug guard to prevent damages.
EVI is the remote monitoring system for SANY C-9 Series excavators. When a hydraulic excavator is fitted with this system, data on the machine’s operation hours, location, fuel consumption, and maintenance status can be obtained remotely.

Newly developed short message function for customers, more convenient to know the running state of machine. Customer can exactly know well about when machine condition, running information through the internet & WAP. customer can find working location of the machine through GPS. According to the function of “Setting Area”, can raise the alarm through short message or internet.

**Technical specification**

**ENGINE**

- **Model**: Mitsubishi 6D34TL
- **Type**: 6 cylinder in-line Water Cooled
- **Rated Engine Power**: 155 HP (114 kW) @ 2050 rpm
- **Max. Torque**: 590N.m @ 1400 rpm
- **Batteries**: 2 X 12 V
- **Displacement**: 5.88 L

**CONTROL SYSTEM**

- **Control System**: DOMCS Intelligent Controller
- **Control Hydraulic System**: Positive Flow
- **Working Modes**: H S L B
- **Remote Monitoring System**: GPS, GIS

**HYDRAULIC SYSTEM**

- **Main Pump**: 2 Variable Displacements Axial Piston Pumps
- **Max. Flow**: 2 X 210 lpm
- **Fuel Pump**: 1 Gear Pump
- **Travel Motor**: 2 Axial Piston Motor with Parking Brake
- **Swing Motor**: 1 Axial Piston Motor with Swing Holding Brake

**RELIEF VALVE SETTINGS**

- **Implement Circuit**: 34.3 Mpa
- **Swing Circuit**: 32 Mpa
- **Travel Circuit**: 34.3 Mpa
- **Pillar Circuit**: 3.9 Mpa

**UNDERCARRIAGE & WORKING DEVICE**

- **Track Shoe(each side)**: 470 mm
- **Overall Length**: 9650 mm
- **Upper Width**: 2875 mm
- **Overall Width**: 2980 mm
- **Overall Height**: 3440 mm
- **Overall Height of Cab**: 2990 mm
- **Upper Rollers**: 2
- **Lower Rollers**: 8
- **Track Guard**: 2
- **Claim Track**: 5790 mm
- **Track Gauge**: 2380 mm
- **Max. Cutting Height**: 9113 mm
- **Max. Height at Min. Swing Radius**: 7680 mm
- **Max. Digging Reach**: 9312 mm
- **Max. Digging Depth**: 6037 mm

**PERFORMANCE**

- **Max. Travel Speed(High/Low)**: 5.4/3.3 km/h
- **Max. Dumping Height** 6730 mm
- **Breaking force**: 590 N
- **Amm Unit**: 775 N
- **Under car length**: 4250 mm
- **Arm**: 2900 mm
- **Max. Tracking Force**: 209 kN
- **Bucket Digging Force**: 152 kN
- **Arm Digging Force**: 137 kN

**SERVICE REFILL CAPACITIES**

- **Hydraulic**: 180 L (Refill) 239 L (Tank)
- **Fuel Tank**: 340 L
- **Engine Oil**: 22 L
- **Radiator**: 24 L
- **Swing Device**: 4 L
- **Travel Device**: 2 X 5.5 L

**CAB**

- **AC**: Std.
- **Cabin Guard**: Opt.

**DIMENSION (Unit: mm)**

- **Arm 2400**: 9650
- **Arm 2900**: 9680
- **C. Overall Length**: 9650
- **B. Overall Width**: 2980
- **A. Overall Length**: 9680
- **K. Under Carriage Length**: 4250
- **J. Distance between Tumbles**: 3445
- **I. Rear-end Swing Radius**: 2890
- **H. Min. Ground Clearance**: 440
- **G. Track Gauge**: 2380
- **F. Min. Ground Clearance**: 440
- **E. Min. Swing Radius**: 3730
- **D. Max. Digging Reach**: 9945
- **C. Max. Digging Depth**: 6600
- **B. Max. Dumping Height**: 6730
- **A. Max. Cutting Height**: 9600

**BUCKET**

- **Capacity**: 1.0 m³ GP, 0.9 m³ HD-Opt.
- **Width (mm)**: 1370
- **Weight (kg)**: 782
- **Tooth Point**: 2.4
- **Amm Length**: 2.9

Internet and WAP, can inquire all kinds of working conditions and location information of the excavator, customer can know well about what time the excavator switched on and what time switched off, also the running hours, fuel consumption and so on.

**SERVICE**

- **Control System**: Safe and convenient
- **Control Hydraulic System**: Positive Flow
- **Working Modes**: H S L B
- **Remote Monitoring System**: GPS, GIS

**EVI remote monitoring management**

- **Internet and WAP**: Inquire all kinds of working conditions and location information of the excavator, customer can know well about what time the excavator switched on and what time switched off, also the running hours, fuel consumption and so on.

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  - Batteries: 2 X 12 V
  - Displacement: 5.88 L

- **Control System**
  - Control System: DOMCS Intelligent Controller
  - Control Hydraulic System: Positive Flow
  - Working Modes: H S L B
  - Remote Monitoring System: GPS, GIS

- **Hydraulic System**
  - Main Pump: 2 Variable Displacements Axial Piston Pumps
  - Max. Flow: 2 X 210 lpm
  - Fuel Pump: 1 Gear Pump
  - Travel Motor: 2 Axial Piston Motor with Parking Brake
  - Swing Motor: 1 Axial Piston Motor with Swing Holding Brake

- **Relief Valve Settings**
  - Implement Circuit: 34.3 Mpa
  - Swing Circuit: 32 Mpa
  - Travel Circuit: 34.3 Mpa
  - Pillar Circuit: 3.9 Mpa

- **Undercarriage & Working Device**
  - Track Shoe: 470 mm
  - Overall Length: 9650 mm
  - Upper Width: 2875 mm
  - Overall Width: 2980 mm
  - Overall Height: 3440 mm
  - Upper Rollers: 2
  - Lower Rollers: 8
  - Track Guard: 2
  - Claim Track: 5790 mm
  - Track Gauge: 2380 mm
  - Max. Cutting Height: 9113 mm
  - Max. Height at Min. Swing Radius: 7680 mm
  - Max. Digging Reach: 9945 mm
  - Max. Digging Depth: 6600 mm
  - Max. Dumping Height: 6730 mm

- **Performance**
  - Max. Travel Speed: 5.4/3.3 km/h
  - Grading: 70% / 35°
  - Grading: 70% / 35°
  - Max. Tracking Force: 209 kN
  - Bucket Digging Force: 152 kN
  - Arm Digging Force: 137 kN

- **Service Refill Capacities**
  - Hydraulic: 180 L (Refill) 239 L (Tank)
  - Fuel Tank: 340 L
  - Engine Oil: 22 L
  - Radiator: 24 L
  - Swing Device: 4 L
  - Travel Device: 2 X 5.5 L

- **Cab**
  - AC: Std.
  - Cabin Guard: Opt.

- **DIMENSION (Unit: mm)**
  - Arm 2400: 9650
  - Arm 2900: 9680
  - Overall Length: 9650 mm
  - Overall Width: 2980 mm
  - Overall Height: 3440 mm
  - Upper Rollers: 2
  - Lower Rollers: 8
  - Track Guard: 2
  - Claim Track: 5790 mm
  - Track Gauge: 2380 mm
  - Max. Cutting Height: 9113 mm
  - Max. Height at Min. Swing Radius: 7680 mm

**EVI remote monitoring**

- Query the excavator’s detail
- Location & Tracking
- Help customer for a better maintenance
- Machine operation management
- Internet and WAP, can inquire all kinds of working conditions and location information of the excavator, customer can know well about what time the excavator switched on and what time switched off, also the running hours, fuel consumption and so on.

- **Remote Monitoring System**
  - GEO Tracking System
  - GPS, GIS

**Newly developed short message function for customers, more convenient to know the running state of machine. Customer can exactly know well about when machine condition, running information through the internet & WAP, customer can find working location of the machine through GPS. According to the function of “Setting Area”, can raise the alarm through short message or internet.**
SY220C-9 LIFTING CAPACITY

<table>
<thead>
<tr>
<th>A</th>
<th>3.0m</th>
<th>4.5m</th>
<th>6.0m</th>
<th>7.5m</th>
<th>9.0m</th>
<th>Maximum</th>
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<td>35151.44</td>
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</table>

Remarks:
1. Rated figure meets the criterion of GBT 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

WEIGHTS AND GROUND PRESSURE

<table>
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<tr>
<th>Shoe type</th>
<th>Shoe width</th>
<th>Mode SY220C-9</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>Operating weight</td>
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<tr>
<td>Tripe grouser</td>
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<td>21900kg</td>
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</tbody>
</table>

STANDARD EQUIPMENT

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

- **Hydraulic System**
  - Working mode selection switch
  - Power enhancement device
  - Control valve with main relief valve
  - Spare oil port for control valve
  - Oil suction filter
  - Oil return filter
  - Pilot filter

- **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 alternate hammer
  - Storage box, literature bag
  - Hydraulic lockout control
  - Fully automatic air-conditioner
  - Cab visor

- **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
  - 2.4 m fully-welded box arm
  - 1.0 m³ GP standard bucket

- **Others**
  - Standard battery
  - Lockup engine hood
  - Lockup fuel filter cap
  - Anti-skid film, handhold and travel direction mark
  - Hand grease gun

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

OPTIONALS

- 2.9 m Arm
- 0.8 m³ HD Bucket
- Cabin front and top guard
- Extended Warranty on Major Components