



# SANY

Quality Changes the World



## SANY HYDRAULIC EXCAVATOR SY205C/SY215C

## ENERGY SAVING STAR , LEADING THE INDUSTRY



**P1**

High Efficiency and Low  
Consumption Cummins Engine

**P3**

High Reliability

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Safe and Comfortable Cab  
Environment

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Low-emission,  
Environment-friendly Engine

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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.



- ◆ 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

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 turbo-charger 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-8/SY215C-8 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.

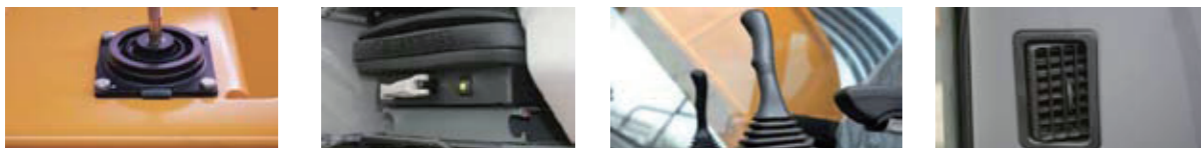


### Bucket

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 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.



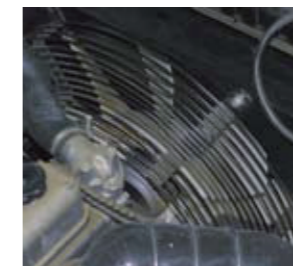
### ◆ Hydraulic Lockout Control

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



### ◆ Low Emission Engine

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

### ◆ 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.

### ◆ 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.

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

- ◆ Driver can select the above modes according to the different workloads through touching the monitor.

## 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,     |
| 2 Throttle gear    | function ON/OFF menu |
| 3 Engine coolant   | 6 Failure code       |
| temp gauge         | 7 System clock       |
| 4 Fuel level gauge | 8 Function menu      |

### ◆ Indicator

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



### Working Mode Selection

### ◆ Breaker Mode (B Mode)

Corresponding flow can be regulated according to breaker model in breaker mode.



### ◆ 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 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.

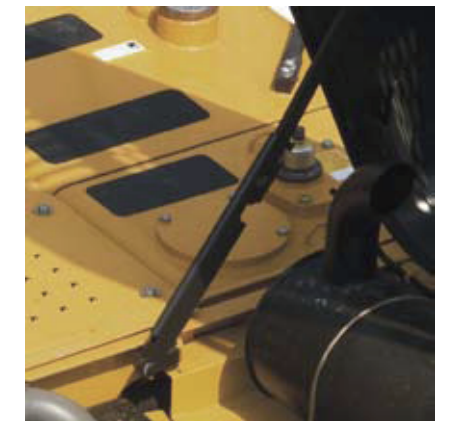
◆ Easy-to-use Reliable Engine Hood Spring and Securing Bar

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.



◆ 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.



# 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
<b>Main pump</b>	
Type.....	Variable-capacity piston pumps
Maximum flow.....	2*220ltr/min
<b>Hydraulic motors</b>	
Travel.....	2* axial piston motor with parking brake
Swing.....	1* axial piston motor with swing holding brake
<b>Relief valve setting</b>	
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
<b>Hydraulic cylinders</b>	
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.....	20375/20975kg

### 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).....	5.5/3.2km/h
Swing Speed.....	11rpm
Gradeability.....	70%35°
Ground Pressure.....	44.8/45kpa

### SERVICE CAPACITIES

Fuel tank.....	340L
Hydraulic tank.....	239L
Engine oil.....	22.75L
Radiator.....	11.5L
Final drive.....	2*5.5L
Swing drive.....	4L

### DIGGING FORCE

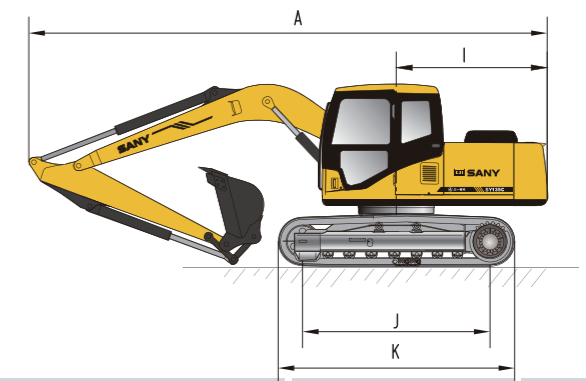
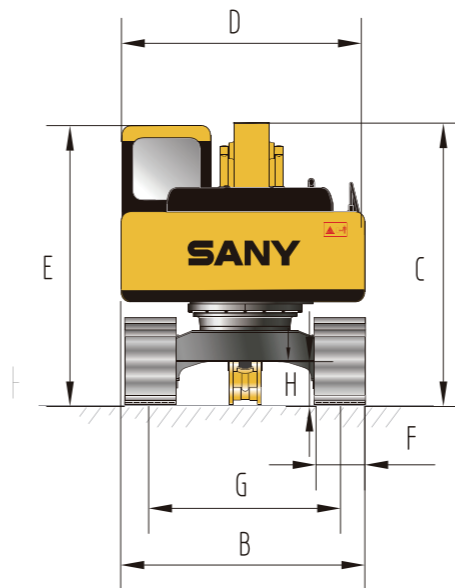
Bucket Digging Force.....	138kN
Arm Digging Force.....	100kN

## 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	◇	◇	◇

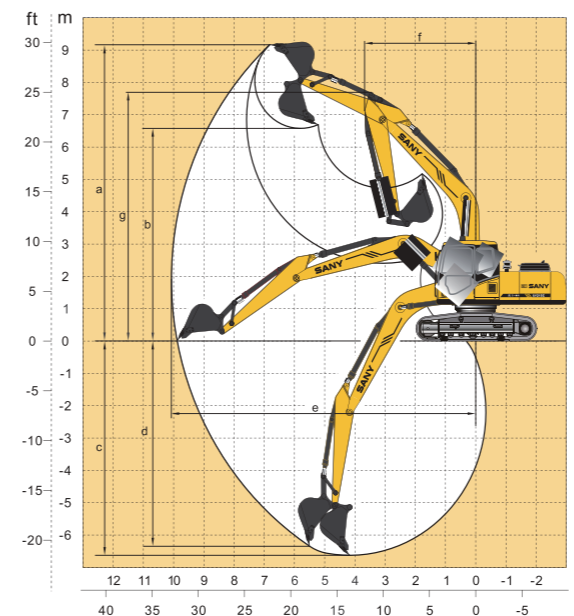
- ※ Used to load materials with a specific gravity not more than 1.2t/ m3
- △ Used to load materials with a specific gravity not more than 1.2t/ m3
- 1.5t/ m3 Used to load materials with a specific gravity not more than 1.5t/ m3
- ◇ 1.8t/ m3 Used to load materials with a specific gravity not more than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

## DIMENSION



Item (Unit: mm)	SY205C	SY215C
A Length (During Transportation)	9395	9395
B Width	2800	2980
C Height (During Transportation)	2955	2955
D Upper Body Width	2710	2710
E Cab Height	2990	2990
F Std. Track Width	600	600
G Track Gauge	2200	2380
H Min. Ground Clearance	440	440
I Tail Swing Radius	2750	2750
J Roller Gauge	3260	3445
K Track Length	4065	4250

## OPERATION RANGE



Item (Unit: mm)	SY205C/SY215C
a Max. Digging Height	9305
b Max. Dumping Height	6475
c Max. Digging Depth	6630
d Max. Vertical Digging Depth	5980
e Max. Excavating Distance	9885
f Min. Swing Radius	3630
g Height at Min. Swing Radius	7570

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.



## SY205/215C LIFTING CAPACITY

	A B	3.0m		4.5m		6.0m		7.5m		9.0m		Maximum		mm
Arm	7.5m					4439.18	4439.18					3142.465	3142.465	6275
	6.0m					5210.522	4537.41					3143.332	3143.332	7360
2919mm	4.5m					5905.03	4373.15	4459.19	3062.399			3099.063	2717.326	8025
Boom	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
5700mm	0	6663.301	6663.301	8764.721	5442.325	5684.032	3722.658	4119.501	2750.794			3620.599	2430.011	8230
Balance weight	-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

	A B	3.0m		4.5m		6.0m		7.5m		9.0m		Maximum		mm
Arm	7.5m					4439.18	4439.18					3142.465	3142.465	6275
	6.0m					5210.522	4631.077					3143.332	3143.332	7360
2919mm	4.5m					5905.03	4466.816	4636.063	3133.94			3099.063	2783.404	8025
Boom	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
5700mm	0	6663.301	6663.301	9129.424	5577.932	5922.248	3816.324	4296.374	2822.335			3717.271	2494.175	8230
Balance weight	-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.

# STANDARD AND OPTIONAL

## 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

### ◆ 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

### ◆ 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-conditioner
- Cab visor

### ◆ Swing Platform

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

### ◆ 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
- 5.7 m fully-welded box boom
- 2.9/2.4 m fully-welded box arm
- Guard
- 0.83m<sup>3</sup> standard bucket (SY205C)
- 0.93m<sup>3</sup> standard bucket (SY215C)

### ◆ 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		Arm Length (mm)	Bucket Form /Capacity (m <sup>3</sup> )		Pipeline of The Hammer	Hammer	Concentrated Grease System	Fueling Pump
			Brand	Emission Standard	Control System			Soil	Rock		Soil	Rock				
1	SY205C	SY205C9M2K	Mitsubishi	Tier2	Positive Flow	600	2900	0.83	—	—	—	—	Optional	Optional	—	Optional
2	SY215C	SY215C9M2K	Mitsubishi	Tier2	Positive Flow	600	2900	0.93	—	2400	1.0	0.9	Optional	Optional	—	Optional

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



**Quality Changes the World**

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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.