323D L

Hydraulic Excavator

Engine	
Engine Model	C6.4 ACERT™
Net Flywheel Power	110 kW
Weights	
Operating Weight – Minimum	23 000 kg
Operating Weight – Maximum	24 000 kg

323D L Hydraulic Excavator

The D Series incorporates innovations for improved performance, controllability and versatility.

Engine

The Cat® C6.4 engine with ACERT™ Technology offers better fuel efficiency and reduced wear. It works at the point of combustion to optimize engine performance and provide low exhaust emissions. By combining ACERT Technology with the new Economy Mode, customers can balance the demands of performance and fuel economy to suit their requirements and application. **pg. 4**

Environmentally Responsible Design

Quieter operation, lower engine emissions, less fluid disposal and cleaner service can help you meet or exceed worldwide regulations and protect the environment. **pg. 4**

Hydraulics

The hydraulic system has been designed to provide reliability and outstanding controllability with increased digging forces, lifting capacity and drawbar pull. The Tool Control System provides enhanced flexibility. The Heavy Lift Mode maximizes lifting performance and maintains excellent stability. **pg. 5**

Work Tools

A variety of work tools, including buckets, couplers, hammers, crushers, pulverizers, multi-processors, shears and grapples are available. **pg. 9**

Versatility – Electronic Control System

The compact, full-color, graphical display monitor displays machine, maintenance, diagnostic and prognostic information in twenty different languages. The new Economy Mode is also selected from the monitor. To minimize sun glare, the monitor angle is adjustable. **pg. 10**

Excellent controllability and reliability, impressive lift capacity, better fuel efficiency, simplified service and a more comfortable operator station, increase your productivity and lower your operating costs.

Operator Comfort

Provides maximum space, wider visibility and easy access to switches. The monitor is a full-color graphical display that allows the operator to understand the machine information easily. Overall, the new cab provides a comfortable environment for the operator. **pg. 6**

Structures

Caterpillar® design and manufacturing techniques ensure outstanding durability and service life from these important components. The 323D comes standard with grease lubricated tracks. Cat® designed excavator undercarriage is stable, durable and low maintenance for good machine stability and transportability. **pg. 7**

Booms, Sticks and Linkage

Caterpillar excavator booms and sticks are built for performance and long service life. Two types of booms and three sticks are available, offering a range of configurations suitable for a wide variety of applications. The bucket linkage pins have been enlarged to improve reliability and durability. **pg. 8**

Service and Maintenance

Fast, easy service has been designed in with extended service intervals, advanced filtration, convenient filter access and user-friendly electronic diagnostics for increased productivity and reduced maintenance costs. **pg. 11**

Complete Customer Support

Your Cat dealer offers a wide range of services that can be set up under a Customer Support Agreement (CSA) when you purchase your equipment. The dealer will help you choose a plan that can cover everything from machine and attachment selection to replacement. **pg. 11**

Engine

The Cat C6.4 gives the 323D exceptional power and fuel efficiency unmatched in the industry for consistently high performance in all applications.

Performance. The Cat C6.4 with ACERT™ Technology offers more engine power, and runs at lower speeds for better fuel efficiency and reduced wear.

Power Management. Optimal machine performance for each type of application. The operator can change the work mode on the monitor from Standard (STD) to either Economy Mode (ECO) or High Horsepower Mode (HHP). Economy Mode is recommended for light duty applications to save fuel, whereas High Horsepower mode is recommended for high production applications where maximum forces and machine speed are needed.

Automatic Engine Speed Control. The two-stage, one touch control maximizes fuel efficiency and reduces sound levels.

ADEM™ A4 Engine Controller. The ADEM A4 electronic control module manages fuel delivery to get the best performance per liter of fuel used. The engine management system provides flexible fuel mapping, allowing the engine to respond quickly to varying application needs. It tracks engine and machine conditions while keeping the engine operating at peak efficiency.

Fuel Delivery. The Cat C6.4 features electronic controls that govern the fuel injection system. Multiple injection fuel delivery involves a high degree of precision. Precisely shaping the combustion cycle lowers combustion chamber temperatures, generating fewer emissions and optimizing fuel combustion. This translates into more work output for your fuel cost.

Cooling System. To reduce fan noise, the cooling fan is driven from a viscous clutch which is electrically controlled by the machines ECM. It calculates optimum fan speed based on the target engine speed, coolant temperatures, hydraulic oil temperature and actual fan speed. The Cat C6.4 delivers a completely new layout that separates the cooling system from the engine compartment.

Air Cleaner. The radial seal air filter features a double-layered filter core for more efficient filtration and is located in a compartment behind the cab. A warning is displayed on the monitor when dust accumulates above a preset level.

Environmentally Responsible Design

Cat machines not only help you build a better world, they help maintain and preserve the fragile environment.

Emissions. The Cat C6.4 with ACERT Technology introduces a series of evolutionary, incremental improvements that provide breakthrough engine technology built on systems and components developed by Caterpillar with proven reliability. The technology capitalizes on Cat expertise in three core engine systems: fuel, air and electronics. By combining ACERT Technology with the new Economy Mode, customers can balance the demands of performance and fuel performance and fuel economy to suit their requirements and application.

Fewer Leak and Spills. Engine oil and encapsulated hydraulic oil filters are positioned vertically and are easy to reach to minimize spillage. Service intervals are extended to reduce the number of times fluids are changed and handled.

- Hydraulic oil service can be extended to 4,000 hours with the S•O•S℠ Oil Sampling program.
- In addition to the S•O•S program fine filtration system attachment extends the service interval to 5,000 hours.
- Cat Extended Life Coolant extends service to 12,000 hours, creating less need for fluid disposal.

Hydraulics

Cat hydraulics deliver power and precise control to keep material moving.

Component Layout. The 323D hydraulic system and component locations have been designed to provide a high level of system efficiency. The main pumps, control valves and hydraulic tank are located close together to allow for shorter tubes and lines between components, which reduce friction loss and pressure drops in the lines. The layout further provides greater operator comfort by placing the radiator on the cab side of the upper structure. This allows incoming air to enter the engine compartment from the operator side and hot air and corresponding engine sound to exit on the opposite side away from the operator. This reduces engine compartment heat and sound being transmitted to the operator.

Heavy Lift Mode. The 323D Heavy Lift Mode maximizes performance while boosting lifting capability. Heavy loads can be easily moved in the full working range of the machine maintaining excellent stability.

Hydraulic Cross Sensing System. The hydraulic cross sensing system utilizes each of the two hydraulic pumps to 100 percent, under all operating conditions. This improves productivity with faster implement speeds and quicker, stronger pivot turns.

Pilot System. The pilot pump is independent from the main pumps and controls the front linkage, swing and travel operations.

Boom and Stick Regeneration Circuits. Boom and stick regeneration circuits save energy during boom-down and stick-in operation. The regeneration circuits increase efficiency, reduce cycle time and pressure loss for higher productivity, lower operating costs and increased fuel efficiency.

Electronic Control System. Ten hydraulic pump flow settings can be preset. Factory Cat work tools matching the machine size class are standard preset.

Auxiliary Valve. The auxiliary valve is standard on the 323D. Control circuits are optional, allowing for operation of high and medium pressure work tools such as shears, grapples, hammers and pulverizers.

Hydraulic Cylinder Snubbers. Located at the rod-end of the boom cylinders and both ends of the stick cylinder to cushion shocks while reducing sound levels and extending component life.

Operator Comfort

Designed for simple, easy operation and comfort, the 323D allows the operator to focus on production.

Operator Station. The workstation is spacious, quiet and comfortable, ensuring high productivity during a long workday. The air conditioner and attachment switches are conveniently located on the right-hand wall, and the key switch and throttle dial are on the right-hand console. The monitor is easy to see and maximizes visibility.

Seat. The standard seat provides a variety of adjustments to suit the operator's size and weight including fore/aft, height and weight. Wide adjustable armrests and a retractable seat belt are also included.

Climate Control. Positive filtered ventilation with a pressurized cab is standard. Fresh air or re-circulated air can be selected with a switch on the right console.

Hydraulic Activation Control Lever. For added safety, this lever must be in the "operate" position to activate the machine control functions.

Controls. The 323D uses pilot operated control levers, positioned so the operator can operate with arms on the armrests. The vertical stroke is longer than the horizontal, reducing operator fatigue. The control lever grips are shaped to fit into the operator's hands. The horn switch and one-touch low idle switch are positioned on the left and right grip.

Skylight. A unique large polycarbonate skylight provides very good upward visibility, especially useful in above ground applications.

Implement Controls. Easy to handle joysticks with integrated push buttons and sliding switches control all implement and swing functions. The sliding switches provide modulated control for hydro-mechanical tools and are designed to increase operator comfort and reduce operator fatigue.

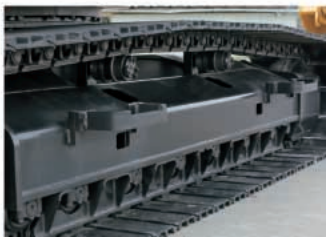
Windows. To maximize visibility, all glass is affixed directly to the cab eliminating the use of window frames. 70/30 split windshield stores the upper portion above the operator. The lower front windshield features a rounded design to maximize downward visibility and improves wiper coverage.

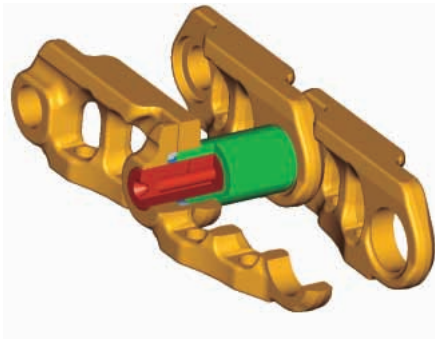
Wiper. The wiper maximizes visibility in poor weather conditions. The windshield wiper is designed to cover the most amount of glass while maintaining a low profile, which helps overall operator visibility.

Cab Exterior. The exterior design uses thick steel tubing along the bottom and perimeter of the cab, improving the resistance of fatigue and vibration. This design allows the FOGS to be bolted directly to the cab, at the factory or as an attachment later, enabling the machine to meet specifications and job site requirements.

Structures

323D structural components and undercarriage are the backbone of the machine's durability.





Tracks. The 323D comes standard with grease lubricated tracks. The track links are assembled and sealed with grease to decrease internal bushing wear, reduce travel noise and extend service life lowering operating costs.

Long Undercarriage. Durable Cat long undercarriage (L) maximizes stability and lift capacity. A long, wide and sturdy undercarriage offers a very stable work platform.

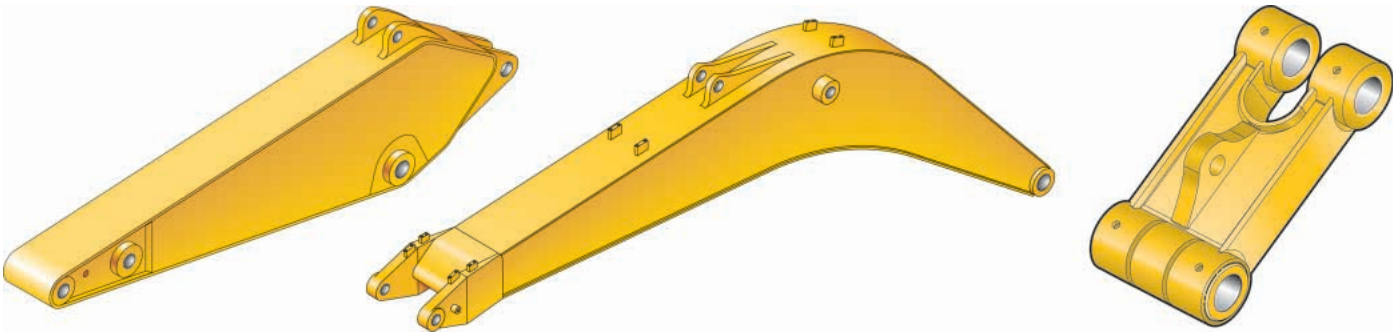
Rollers and Idlers. Sealed and lubricated track rollers, carrier rollers, and idlers provide excellent service life, to keep the machine in the field longer.

Structures. Proven structural manufacturing techniques ensure outstanding durability and service life from these important components.

Carbody Design and Track Roller Frames. X-shaped, box-section carbody design provides excellent resistance to torsional bending. Track roller frames are press-formed, pentagonal units that deliver exceptional strength and service life.

Booms, Sticks and Linkage

Designed for flexibility, high productivity and efficiency in a variety of applications.



Front Linkage Attachments. Select the right combination of front linkage with your Cat dealer to ensure high productivity from the very start of your job. Two types of booms and three sticks are available, offering a range of configurations suitable for a wide variety of applications and offer a large combination of reach and digging forces for optimum versatility.

Boom Construction. The booms have large cross-sections and internal baffle plates to provide long life durability.

Reach Boom. The 5680 mm reach boom is designed to balance reach, digging force bucket capacity, offering a wide range of applications as digging, loading, trenching and working with hydraulic tools.

Mass Excavation Boom. The 5200 mm mass boom is designed to provide maximum digging forces, bucket capacity and truck loading productivity.

Stick Construction. Sticks are made of high-tensile strength steel using a large box section design with interior baffle plates and an additional bottom guard to protect against damage.

Reach Stick. One reach stick is available to maximize versatility in the machine configuration.

- R2.5B1 – The 2500 mm stick uses larger capacity B1 family buckets and is best suited for trenching, excavation and general construction applications.

Mass Sticks. Two mass excavation sticks are available to choose from both of which provide higher digging forces and increased bucket capacity.

- M2.4CB2 – The 2400 mm stick provides a good balance of high forces and reach for same level truck loading applications.
- M1.9CB2 – The 1900 mm stick provides the most forces available and the largest bucket capacity for bench loading applications where longer reaches are not required.

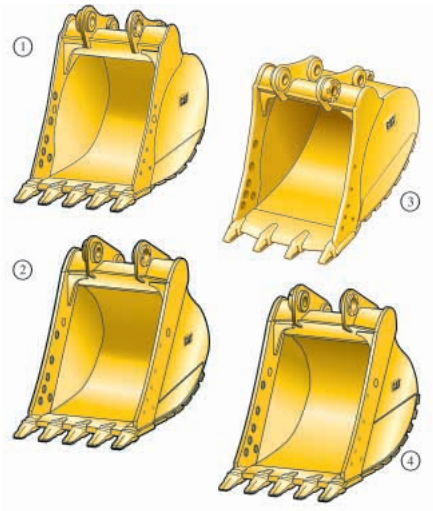
Bucket Linkage. Two bucket linkages (B1 and CB2) are available, with lifting eye on the power link.

Power Link. The new power link improves durability, increases machine-lifting capability in key lifting positions, and is easier to use compared to the previous lift bar design.

Linkage Pins. All pins used in front linkages have thick chrome plating, giving them high wear and corrosion resistance. The large diameter pins smoothly distribute the shear and bending loads to help ensure long pin, boom and stick life.

Work Tools

A wide variety of Work Tools help optimize machine performance. Purpose designed and built to Caterpillar's high durability standards.



1. **General Purpose**
2. **Heavy-Duty**
3. **Heavy-Duty Power-Spade Nose**
4. **Heavy-Duty Rock**

Work Tools. Cat work tools are designed to function as an integral part of your excavator and to provide the best possible performance in your particular application. All work tools are performance-matched to Cat machines.

Quick Couplers. Quick couplers enable the operator to simply release one work tool and connect to another, making your hydraulic excavator highly versatile. Productivity also increases, as a carrier no longer needs to be idle between jobs. Caterpillar offers Pin Grabber and Dedicated versions either manually or hydraulically controlled to best fit your needs.

Buckets. Caterpillar offers a wide range of specialized buckets, each designed and tested to function as an integral part of your excavator. Buckets feature the new Caterpillar K Series™ Ground Engaging Tools.

Ripper. The Caterpillar TR-series ripper provides a powerful single point of penetration force to break out rock and other difficult to excavate material.

Hammers. Cat hammers deliver very high blow rates, increasing the productivity of your tool carriers in demolition and construction applications. Wide oil flow acceptance ranges make Caterpillar hammers suitable for a wide range of carriers and provide a system solution from one safe source.

Orange Peel Grapples. The orange peel grapple is constructed of high-strength, wear-resistant steel, with a low and compact design that makes it ideal for dump clearance. There are several choices of tine and shell versions.

Multi-Grapples. The multi-grapple with unlimited left and right rotation is the ideal tool for stripping, sorting, handling and loading. The powerful closing force of the grab shells combined with fast opening/closing time ensures rapid cycle time which translates to more tons per hour.

Multi-Processors. Thanks to its single basic housing design, the multi-processor series of hydraulic demolition equipment makes it possible to use a range of jaw sets that can handle any demolition job. The multi-processor is the most versatile demolition tool on the market.

Vibratory Plate Compactors. Cat compactors are performance matched to Cat machines, and integrate perfectly with the Cat hammer line – brackets and hydraulic kits are fully interchangeable between hammers and compactors.

Shears. Cat shears provide superior and effective scrap processing, and are highly productive in demolition environments. Shears are compatible with a matching Cat excavator, and bolt-on brackets are available for either stick or boom-mounted options.

Versatility – Electronic Control System

Manages the engine and hydraulics for maximum performance and safety.

Consoles. Redesigned consoles feature a simple, functional design to reduce operator fatigue, ease of switch operation and excellent visibility. Both consoles have attached armrests with height adjustments.

Cab Mounts. The cab shell is attached to the frame with viscous rubber cab mounts, which dampen vibrations and sound levels while enhancing operator comfort.

Standard Cab Equipment. To enhance operator comfort and productivity, the cab includes a lighter, drink holder, coat hook, service meter, literature holder, magazine rack and storage compartment.

Monitor Display Screen. The monitor is a full color 400x234 pixels Liquid Crystal Display (LCD) graphic display. The Master Caution Lamp blinks On and Off when one of the critical conditions below occurs:

- Engine oil pressure low
- Coolant temperature
- Hydraulic oil temperature high

Under normal conditions or the default condition, the monitor display screen is divided into four areas: Clock and throttle dial, gauge, event display and multi-information display.

Clock and Throttle Dial Area. The clock, throttle dial position and the green gas-station icon are displayed on the monitor screen.

Gauge Area. Three analog gauges, fuel level, hydraulic oil temperature and coolant temperature are displayed on the monitor screen.

Event Display Area. Machine information is displayed on the monitor screen with the icon and language.

Multi-information Display Area. This area is reserved for displaying information that is convenient for the operator. The “CAT” logo mark is displayed when information to display does not exist.

Keypad. The keypad allows the operator to select machine operation conditions and to set view preferences.

Auxiliary Hydraulic Options. Allows you to configure your 323D to meet your work tool needs, while increasing its versatility, reduces machine service time and maximizes uptime.

Available circuits:

– Single Action Circuit suitable for tools that require one-way flow from both pumps, such as hammers and vibratory plate compactors.

– Double Action Circuit is suitable for tools that require two-way flow from both pumps such as thumbs, shears, pulverizers, etc.

– Combined Action Circuit is suitable for tools that require two-way flow from both pumps as well as medium pressure circuit for tool rotations such as multi-processors.

– Hammer Return Filter Circuit adds a filter in the return line of one the circuits above to extend the life of the primary hydraulic filter element when a hammer is being used with the machine.

Product Link. Using satellite technology, this wireless system automatically reports information, including vital machine health data, to Cat dealers and customers via e-mail or pager. It can streamline diagnostic efforts, downtime and maintenance scheduling and costs.

Machine Security. An optional Machine Security System is available from the factory on the 323D. This system controls when the machine can be operated and utilizes specific keys to prevent unauthorized machine use, a significant theft deterrent. This system can also be setup be setup to allow the machine to only be run certain periods, useful feature for machines that will be used in rental fleets.

Service and Maintenance

Simplified service and maintenance save you time and money.

Extended Service Intervals. 323D service and maintenance intervals have been extended to reduce machine service time and increase machine availability.

Air Filter Compartment. The air filter features a double-element construction for superior cleaning efficiency. When the air cleaner plugs, a warning is displayed on the monitor screen inside the cab.

Ground Level Service. The design and layout of the 323D was made with the service technician in mind. Many service locations are easily accessible at ground level allowing critical maintenance to get done quickly and efficiently.

Pump Compartment. A service door on the right side of the upper structure allows ground-level access to the pump and pilot filter.

Capsule Filter. The hydraulic return filter, a capsule filter, is situated outside the hydraulic tank. This filtration design prevents contaminants from entering the system when the filter is changed.

Diagnostics and Monitoring. The 323D is equipped with S•O•S℠ sampling ports and hydraulic test ports for the hydraulic system, engine oil, and for coolant. A test connection for the Electronic Technician (ET) service tool is located behind the cab.

Anti-Skid Plate. Anti-skid plate covers top of storage box and upper structure to prevent slipping during maintenance.

Fan Guard. Engine radiator fan is completely enclosed by fine wire mesh, reducing the risk of an accident.

Greasing Points. A concentrated remote greasing block on the boom delivers grease to hard-to-reach locations on the front.

Radiator Compartment. The left rear service door allows easy access to the engine radiator, oil cooler and air-to-air aftercooler. Reserve tank and drain cock are attached to the radiator for simplified maintenance.

Complete Customer Support

Cat dealer services help you operate longer with lower costs.

Machine Selection. Make detailed comparisons of the machines you are considering before you buy. What are the job requirements, machine attachments and operating hours? What production is needed? Your Cat dealer can provide recommendations.

Purchase. Consider the financing options available as well as day-to-day operating costs. This is also the time to look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long run.

Customer Support Agreements. Cat dealers offer a variety of product support agreements, and work with customers to develop a plan the best meets specific needs. These plans can cover the entire machine, including attachments, to help protect the customer's investment.

Operation. Improving operating techniques can boost your profits. Your Cat dealer has videotapes, literature and other ideas to help you increase productivity, and Caterpillar offers certified operator training classes to help maximize the return on your investment.

Product Support. You will find nearly all parts at our dealer parts counter. Cat dealers utilize a worldwide computer network to find in-stock parts to minimize machine downtime. You can save money with Cat remanufactured components.

Maintenance Services. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as Scheduled Oil Sampling, Coolant Sampling and Technical Analysis help you avoid unscheduled repairs.

Replacement. Repair, rebuild or replace? Your Cat dealer can help you evaluate the cost involved so you can make the right choice.

Engine

Engine Model	C6.4 ACERT
Net Flywheel Power	110 kW
Net Power – ISO 9249	110 kW
Net Power – EEC 80/1269	110 kW
Bore	102 mm
Stroke	130 mm
Displacement	6.4 L

- All engine horsepower (hp) are metric including front page.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Full engine net power up to 2300 m altitude (engine derating required above 2300 m).

Weights

Operating Weight – Minimum	23 000 kg
Operating Weight – Maximum	24 000 kg

Service Refill Capacities

Fuel Tank Capacity	410 L
Cooling System	25 L
Swing Drive	8 L
Final Drive (each)	8 L
Hydraulic System (including tank)	260 L
Hydraulic Tank	120 L

Swing Mechanism

Swing Torque	62 kN·m

Drive

Maximum Drawbar Pull	206 kN
Maximum Travel Speed	5.5 km/h

Hydraulic System

Main Implement System – Maximum Flow (2x)	205 L/min
Pilot System – Maximum flow	32 L/min
Boom Cylinder – Bore	120 mm
Boom Cylinder – Stroke	1260 mm
Stick Cylinder – Bore	140 mm
B1 Family Bucket Cylinder – Bore	120 mm
B1 Family Bucket Cylinder – Stroke	1104 mm
CB2 Family Bucket Cylinder – Bore	135 mm
CB2 Family Bucket Cylinder – Stroke	1156 mm

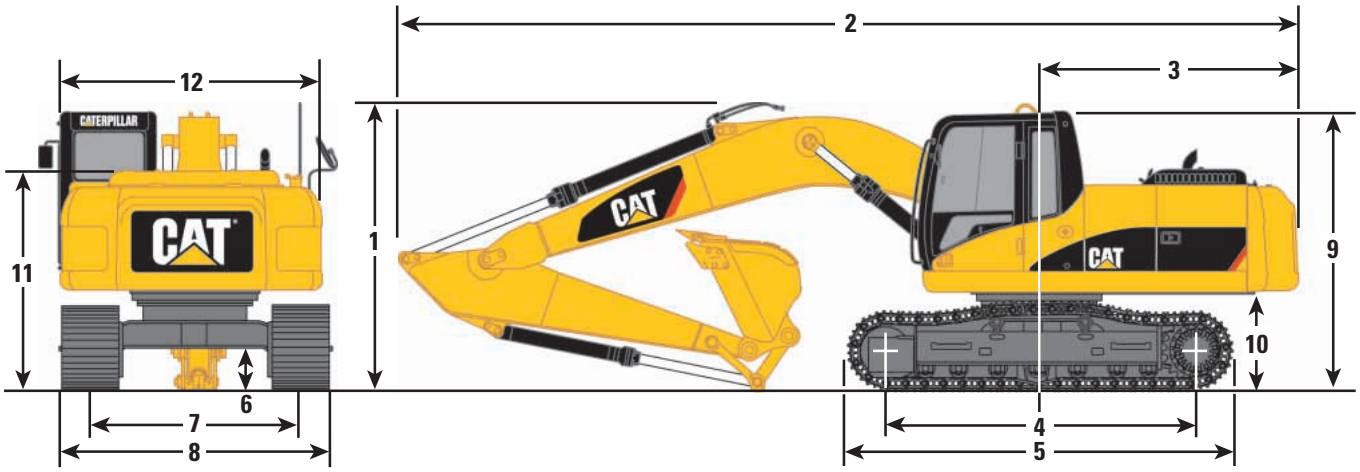
Sound Performance

Performance	ANSI/SAE J1166 APR 90

- When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 OCT 98, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture.

Dimensions

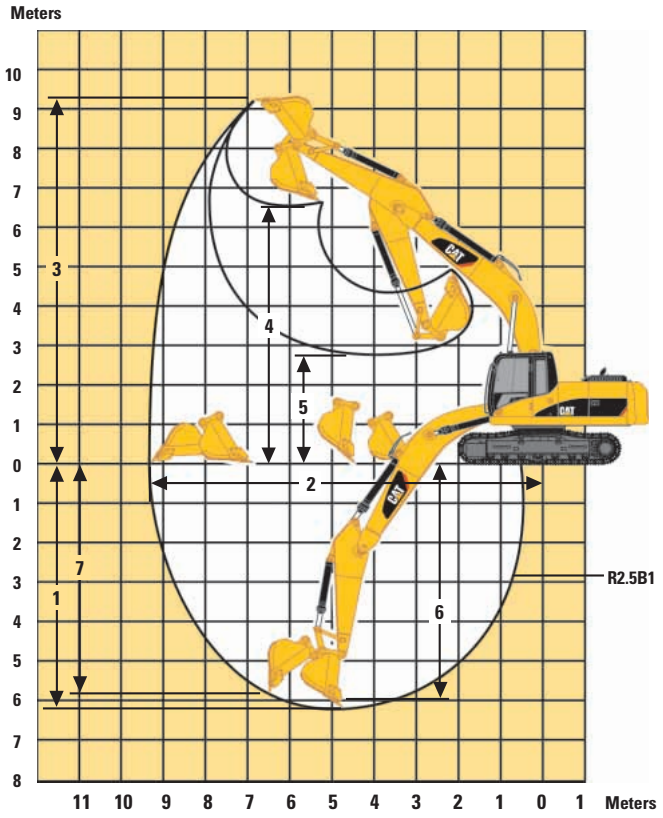
All dimensions are approximate.



Boom Options	Reach 5.68 m	Mass 5.2 m	Mass 5.2 m
Stick Options	**R2.5B1**	**M2.4CB2**	**M1.9CB2**
1 Shipping Height (with bucket)	3050 mm	3280 mm	3150 mm
2 Shipping Length	9460 mm	9050 mm	9220 mm
3 Tail Swing Radius	2750 mm	2750 mm	2750 mm
Undercarriage			
4 Length to Center of Idler and Sprocket	3650 mm	3650 mm	3650 mm
5 Track Length	4450 mm	4450 mm	4450 mm
6 Ground Clearance	460 mm	460 mm	460 mm
7 Track Gauge	2380 mm	2380 mm	2380 mm
8 Track Width	2980 mm	2980 mm	2980 mm
9 Cab Height	3050 mm	3050 mm	3050 mm
10 Counterweight Height (to bottom)	1020 mm	1020 mm	1020 mm
11 Body Height	2390 mm	2390 mm	2390 mm
12 Body Width	2750 mm	2750 mm	2750 mm

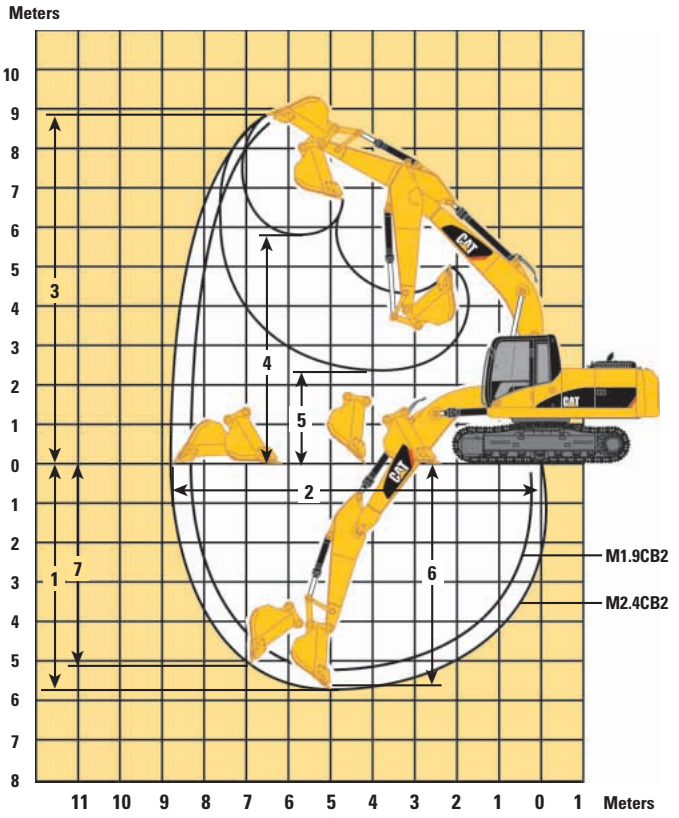
Reach Excavator Working Ranges

Reach (R) boom configuration



Mass Excavator Working Ranges

Mass (M) boom configuration



Boom Options	Reach 5.68 m	Mass 5.2 m	Mass 5.2 m
Stick Options	**R2.5B1**	**M2.4CB2**	**M1.9CB2**
1 Maximum Digging Depth	6200 mm	5890 mm	5330 mm
2 Maximum Reach at Ground Level	9440 mm	8960 mm	8520 mm
3 Maximum Cutting Height	9380 mm	8930 mm	8710 mm
4 Maximum Loading Height	6590 mm	5720 mm	5710 mm
5 Minimum Loading Height	2830 mm	2230 mm	2910 mm
6 Maximum Depth Cut for 2440 mm Level Bottom	5990 mm	5660 mm	5090 mm
7 Maximum Vertical Wall Digging Depth	5860 mm	5360 mm	3570 mm
Bucket and Stick Forces			
Bucket Tip Radius	1554 mm	1610 mm	1610 mm
Bucket Forces (ISO 6015)	141 kN	175 kN	179 kN
Stick Forces (ISO 6015)	118 kN	127 kN	147 kN

All measurements are approximate

Machine and Major Component Weights

Actual weights and ground pressures will depend on final machine configuration

Boom Options		Reach 5.68 m	Mass 5.2 m	Mass 5.2 m
Stick Options		**HD R2.5B1**	**M2.4CB2**	**M1.9CB2**
Stick Length	mm	2500	2400	1900
Bucket Weight	kg	791	756	892
Bucket Capacity	m^3	1.3	1.2	1.5
Bucket Width/Type	mm	1400/X	1300/X	1400/X
Operating Weight*				
323D L (600 mm shoes)	kg	23 200	23 190	23 490
Ground Pressure				
323D L (600 mm shoes)	bar	0.53	0.53	0.54
Stick Weight (with bucket cylinder)	kg	1100	1120	1210
Boom Weight (with stick cylinder)	kg	1680	1700	1700
Upperstructure (without counterweight)	kg	7450	7450	7450
Undercarriage				
323D L (600 mm shoes)	kg	7930	7930	7930
Counterweight				
323D L (600 mm shoes)	kg	4400	4400	4400

*With counterweight, quick coupler, bucket, full fuel tank and operator.

Bucket Specifications and Compatibility

Bucket Type	Adapter	Linkage	Capacity m^3	Width mm	Tip Radius Weight* kg	Tooth Spacing Ratio	Teeth Qty	5.68 m Reach Boom R2.5m Stick kg/m^3**	5.2 m Mass Boom M2.4m Stick kg/m^3**	5.2 m Mass Boom M1.9m Stick kg/m^3**
General Duty	K80	B1	1.59	1362	1025	2.2	6	◒	–	–
Heavy-Duty	K90	B1	1.19	1224	990	2.15	6	◒	–	–
Heavy-Duty	K90	B1	1.37	1376	1070	2.57	7	○	–	–
Heavy-Duty	K100	CB2	1.35	1219	1157	3.01	5	–	○	◒
Heavy-Duty Power Spade	K100	CB2	1.2	1048	1078	2.16	4	–	◒	●
Heavy-Duty Power Spade	K100	CB2	1.57	1334	1223	2.08	5	–	◒	○

Assumptions for maximum material density rating:
1. Front linkage fully extended at ground line
2. Machine positioned 90 degrees over the side
3. Bucket curled
4. 100% Bucket Fill Factor

Please consult with your Caterpillar dealer personnel for optimum selection of buckets and work tools that best match your application.

*Weight with penetration adapters.

**Indicates maximum recommended material density.

● 2100 kg/m^3 (3,500 lb/yd^3) max material density
◒ 1800 kg/m^3 (3,000 lb/yd^3) max material density
○ 1500 kg/m^3 (2,500 lb/yd^3) max material density
◒ 1200 kg/m^3 (2,000 lb/yd^3) max material density

Work Tool Matching Guide

Boom Options	Reach 5.68 m	Mass 5.2 m	Mass 5.2 m
Stick Options	**R2.5B1**	**M2.4CB2**	**M1.9CB2**
Hydraulic Hammer	H120C/H130	H120C/H130	H120C/H130
Vibratory Plate Compactor	CVP110	CVP110	CVP110
Multi-Processor	MP15	MP15	MP15
360° Scrap Shear	S320	S320	S320
Shear – Mechanical Operation	S115	S115	S115
Trash Grapple	TG-B/S	TG-C	TG-C
Contractor's Grapple	CB-B/S	CG-C	CG-C
Hydraulic Thumb	yes	yes	yes
Fixed Thumb	yes	yes	yes
Dedicated Quick Coupler	yes	yes	yes
Pin-Grabber Quick Coupler	yes	yes	yes

Reach Boom Lift Capacities

 Load Point Height

 Load Radius Over Front

 Load Radius Over Side

 Load at Maximum Reach

STICK – R2.5B1
BUCKET – 1.2 m³

UNDERCARRIAGE – Long
SHOES – 700 mm triple grouser

HD REACH BOOM – 5.68 m
HEAVY LIFT – On

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		7.5 m (25.0 ft)				
														m
7.5 m	kg											*2250	*2250	7.45
6.0 m	kg									*3050	*3050	*2150	*2150	8.43
4.5 m	kg							*4500	*4500	*4100	3150	*2150	*2150	9.00
3.0 m	kg			*10 800	*10 800	*7850	7000	*5500	4450	*4550	3000	*2250	2000	9.25
1.5 m	kg			*5500	*5500	*6950	6400	*6500	4150	4900	2850	*2400	1950	9.22
Ground Line	kg			*4500	*4500	*7450	6250	6850	3950	4800	2750	*2700	2050	8.89
–1.5 m	kg	*3850	*3850	*6200	*6200	*7050	6200	6800	3900	4750	2700	*3250	2350	8.22
–3.0 m	kg	*8450	*8450	*9000	*9000	*6500	6350	*6500	3950			*4250	3100	7.11
–4.5 m	kg			*9650	*9650	*6400	*6400					*4800	*4800	5.28

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

Always refer to the appropriate Operation and Maintenance Manual for specific product information.

Mass Boom Lift Capacities

 Load Point Height

 Load Radius Over Front

 Load Radius Over Side

 Load at Maximum Reach

STICK – M2.4CB2
BUCKET – 1.2 m³

UNDERCARRIAGE – Long
SHOES – 600 mm triple grouser

MASS BOOM – 5.2 m
HEAVY LIFT – On

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		7.5 m (25.0 ft)				
														m
7.5 m	kg											*3150	*3150	6.89
6.0 m	kg							*4100	*4100			*3000	2800	7.90
4.5 m	kg							*4750	4600	*4350	3000	*3050	2350	8.46
3.0 m	kg			*9500	*9500	*7750	6850	*5800	4300	*4800	2900	*3200	2150	8.68
1.5 m	kg			*12 400	*12 400	*9450	6600	*6750	4000	4750	2750	*3500	2150	8.59
Ground Line	kg			*7450	*7450	*7200	6300	6750	3850	4650	2650	*4000	2300	8.18
–1.5 m	kg	*5000	*5000			*6950	6300	6750	3850			4900	2800	7.37
–3.0 m	kg	*9950	*9950	*8050	*8050	*6850	6400	*5650	3950			*4550	4050	6.06
–4.5 m	kg			*9800	*9800	*6000	*6000					*5250	*5250	4.97

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

STICK – M1.9CB2
BUCKET – 1.57 m³

UNDERCARRIAGE – Long
SHOES – 600 mm triple grouser

MASS BOOM – 5.2 m
HEAVY LIFT – On

		1.5 m (5.0 ft)		3.0 m (10.0 ft)		4.5 m (15.0 ft)		6.0 m (20.0 ft)		7.5 m (25.0 ft)				
														m
7.5 m	kg											*3750	*3750	6.08
6.0 m	kg							*4750	4600			*3550	3150	7.32
4.5 m	kg					*5800	*5800	*5000	4450			*3550	2500	8.00
3.0 m	kg			*11 550	*11 550	*8050	6750	*5800	4200	4800	2750	*3700	2250	8.30
1.5 m	kg			*8000	*8000	*9550	6350	*6650	3950	4650	2650	3950	2200	8.26
Ground Line	kg			*7250	*7250	*7900	6100	6650	3800	4600	2600	4250	2400	7.88
–1.5 m	kg	*6150	*6150	*9150	*9150	*7900	6100	6650	3750			*4900	2950	7.08
–3.0 m	kg			*8650	*8650	*7650	6300					*3950	*3950	5.74
–4.5 m	kg											*6450	*6450	4.15

* Limited by hydraulic capacity rather than tipping load. The above loads are in compliance with SAE hydraulic excavator lift capacity rating standard J1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

Always refer to the appropriate Operation and Maintenance Manual for specific product information.

Standard Equipment

Standard equipment may vary. Consult your Caterpillar dealer for details.

Electrical
- 50 Ampere alternator
- Base machine light (frame)
- Heavy-duty maintenance free batteries (2)
- Jump start terminals
- Lights
  - Boom, left side
  - Cab interior
  - Frame mounted
- Signal/Warning horn
- Travel alarm with cutout switch

Engine
- Automatic engine speed control
- C6.4 with ACERT™ Technology
  - 2300 m altitude capability without derate
- 52° cooling capacity
- Engine air pre-filter
- Fine swing control
- Fuel filter
- Secondary engine shut-off switch
- Side-by-side cooling system with separately mounted AC condenser
- Water separator, with level indicator, for fuel line

Guards
- 6 mm swivel guard on undercarriage
- Heavy-duty bottom guards on upper frame
- Heavy-duty travel motor guards on undercarriage
- Full length track guiding guards

Operator Station
- 2 – 12V, 7A power supply ports
- Adjustable armrests
- Air conditioner, heater, defroster with automatic climate control
- AM/FM Radio
- Ashtray with 24 volt lighter
- Beverage/cup holder
- Capability to install two additional pedals
- Coat hook
- Floor mat, washable
- Instrument panel and gauges with full color graphical display, start-up level checks
- Laminated front windshield
- Literature compartment
- Mirrors – left and right
- Neutral lever (lock out) for all controls
- Opening skylight (polycarbonate)
- Positive filtered ventilation, pressurized cab
- Rear window, secondary exit
- Retractable seat belt
- Sliding upper door window
- Storage compartment suitable for lunch box cooler
- Travel control pedals with removable hand levers
- Upper windshield wiper and washer

Undercarriage
- Automatic swing parking brake
- Automatic travel parking brakes
- Grease lubricated track
- Hydraulic track adjusters
- Steps – four
- Two speed travel

Other Standard Equipment
- Auxiliary hydraulic valve for hydro-mechanical tools
- Cat branded XT hoses and fix-type couplings
- Cat Datalink and capability to use ET
- Caterpillar one key security system with locks for doors, cab and fuel cap
- Caterpillar Product Link 321
- Counterweight with lifting eyes
- Cross-roller type swing bearing
- Drive for auxiliary pump
- Full-steel firewall between engine and hydraulic pump compartment
- Heavy lift mode
- Regeneration circuit for boom and stick
- S•O•S℠ quick sampling valves for engine, hydraulic oil and coolant
- Swing out A/C condenser
- Vehicle gradability 35°

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for details.

Auxiliary Hydraulics
- Auxiliary boom lines (high pressure for reach and mass booms)
- Auxiliary boom lines for quick coupler
- Auxiliary stick lines (high pressure for reach and mass booms)
- Auxiliary stick lines for quick coupler
- Basic control arrangements:
  - – Single action (one-way high pressure circuit for hammer application)
  - – Double action (two-way, high pressure circuit for thumbs, shears, and pulverizers)
  - – Combined (two-way, high pressure circuit for thumbs, shears, pulverizers with medium pressure circuit for rotation)
- Hammer return filter circuit
- High pressure control group for quick coupler

Front Linkage
- Booms (with two working lights)
  - Reach – 5680 mm
  - Mass excavation – 5200 mm
- Bucket Linkage
  - B1 Family for B1 stick (with lifting eye)
  - CB-family for CB sticks (with lifting eye)
- Buckets and quick coupler
- Sidebar protectors
- Sidecutters
- Strike-off sidecutters
- Sticks, heavy-duty
  - For reach boom
  - – R2.5B1
  - For mass boom
  - – M1.9CB2
  - – M2.4CB2
- Tips

Guards
- Falling Object Guarding System (FOGS), bolt-on
- Cab, front windshield screen (for hammer use)
- Bucket cylinder guard
- Upper frame side, rubber bumper

Operator Compartment
- Machine Security System with programmable keys
- Visor, sun

Shoes
- Triple grouser
  - 600 mm
  - 700 mm
  - 800 mm

Miscellaneous Options
- Cab, front rain protector
- Cab, sun visor
- Cold weather starting package
- Electric refueling pump with auto shut-off
- Fine filtration filter
- Light, right side boom
- Quick coupler, pin grabber hydraulically actuated
- Spare bucket pins
- Straight travel pedal
- Work lights, cab mounted

323D L Hydraulic Excavator

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