

# 320D L

## Hydraulic Excavator



### Engine

Engine Model	Cat® C6.4 ACERT™	
Net Flywheel Power	110 kW	148 hp

### Weights

Operating Weight – Std. Undercarriage	20 330 kg	44,820 lb
• Reach boom, R2.9B1 (9 ft 6 in) Stick, 0.9 m <sup>3</sup> (1.18 yd <sup>3</sup> ) Bucket, 600 mm (24 in) Shoes		

Operating Weight – Long Undercarriage	21 570 kg	47,554 lb
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- Reach boom, R2.9B1 (9 ft 6 in) Stick, 0.9 m<sup>3</sup> (1.18 yd<sup>3</sup>) Bucket, 800 mm (32 in) Shoes

# 320D L Hydraulic Excavator

*The D Series incorporates innovations for improved performance and versatility.*

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## C6.4 with ACERT™ Technology

- ✓ ACERT™ Technology works at the point of combustion to optimize engine performance and provide low exhaust emissions to meet U.S. EPA Tier 3 emission regulations, with exceptional performance capabilities and proven reliability. **pg. 4**

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## Hydraulics

The hydraulic system has been designed to provide reliability and outstanding controllability. An optional Tool Control System provides enhanced flexibility. **pg. 5**

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## 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**

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## Versatility

Caterpillar offers a wide variety of factory-installed attachments that enhance performance and job site management. **pg. 11**

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## 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. 12**

*The Caterpillar 320D L excavator provides all the elements to give you the lowest cost to own and operate. At the end of the day, it all comes down to how much work you got done and how much did it cost you. Caterpillar and the 320D L offer you the tools to help lower your owning and operating costs.*



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### Structures

Caterpillar® design and manufacturing techniques assure outstanding durability and service life from these important components. **pg. 8**

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### Booms, Sticks and Bucket Linkages

The bucket linkage pins on the mass excavation configuration have been enlarged to improve reliability and durability. **pg. 9**

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### Work Tools – Attachments

- ✓ A variety of work tools, including buckets, couplers, hammers, and shears are available through Cat® Work Tools. **pg. 10**

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### Complete Customer Support

Your Cat® dealer offers a wide range of services that can be set up under a customer support agreement when you purchase your equipment. The dealer will help you choose a plan that can cover everything from machine configuration to eventual replacement. **pg. 13**



✓ *New Feature*

## C6.4 with ACERT™ Technology

*The Cat® C6.4 gives the 320D exceptional power and fuel efficiency unmatched in the industry for consistently high performance in all applications.*

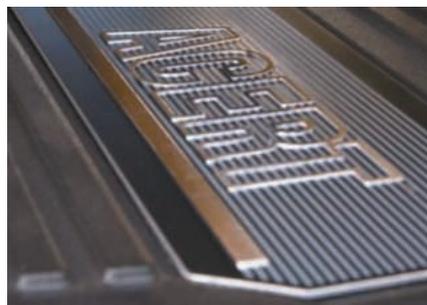


**Cat C6.4.** The Cat C6.4 with ACERT™ Technology introduces a series of evolutionary, incremental improvements that provide breakthrough engine technology. The building blocks of ACERT Technology are fuel delivery, air management and electronic control. ACERT Technology optimizes engine performance while meeting U.S. EPA Tier 3 emission regulations. With its proven technology, robust components and precision manufacturing, you can count on this engine to power up at start time and keep working productively all shift long.

**Performance.** The 320D, equipped with the C6.4 engine with ACERT™ Technology, provides 7 percent more power as compared to the 3066TA in the 320C L. The additional power delivers a speed and efficiency advantage in high production applications.

### **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.

### **Electronic Control Module.**

The Electronic Control Module (ECM) works as the “brain” of the engine’s control system, responding quickly to operating variables to maximize engine efficiency. Fully integrated with sensors in the engine’s fuel, air, coolant, and exhaust systems, the ECM stores and relays information on conditions such as rpm, fuel consumption, and diagnostic information.

**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.** The cooling fan is directly driven from the engine. An electrically controlled viscous clutch fan is available as an attachment to reduce fan noise. The optimum fan speed is calculated based on the target engine speed, coolant temperature, hydraulic oil temperature and actual fan speed. When fan speed is reduced, there’s more power available for other functions – and less fuel is burned.

## Hydraulics

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

**Component Layout.** To optimize efficiency of hydraulic performance, the hydraulic components are located close together, which reduces friction loss and pressure drops in the lines.

**System Pressure.** System pressure has been increased to 35,000 kPa (5,076 psi), which attributes to improved performance:

- Increased stick and bucket forces (up 7 percent higher than the 320C) to better handle those tight digging conditions
- More drawbar pull (206 kN – 46,322 lb) to provide more ability to climb slopes, easier spot turns and improved travel in poor underfoot conditions
- More lift capacity, generally over the front where you are generally hydraulically limited

**Heavy Lift.** The 320D features the addition of a heavy lift, which increases system pressure to 36,000 kPa (5,220 psi), giving even more lift capacity over the front. Heavy Lift is activated by depressing the soft switch on the right hand console. As the pressure increases, the engine speed is reduced, which allows better control while lifting objects.

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



### **Hydraulic Cross Sensing System.**

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

### **Boom and Stick Regeneration Circuit.**

Boom and stick regeneration circuit saves energy during boom-down and stick-in operation which increases efficiency, reduces cycle times and pressure loss for higher productivity, lower operating costs and increased fuel efficiency.

**Auxiliary Hydraulic Valve.** The auxiliary valve is standard on the 320D. Control Circuits are available as attachments, allowing for operation of high and medium pressure tools such as shears, grapples, hammers, pulverizers, multi-processors and vibratory plate compactors.

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

## Operator Comfort

*Caterpillar offers the most intuitive and easy to operate excavators while providing great all around visibility and exceptional operator comfort.*



**Operator Station.** The layout of the interior has been redesigned to maximize operator comfort and reduce operator fatigue.

- Frequently used switches have been relocated for easier access.
- Consoles and armrests have been redesigned for better comfort and adjustability.
- More seat options – choose from the standard mechanical suspension seat, or the optional air suspension seat with heater. Both provide excellent 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.

**Joystick Control.** Joystick controls have low lever effort and are designed to match the operator’s natural wrist and arm position.

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

**Automatic Climate Control.** Fully automatic climate control adjusts temperature and flow, and determines which air outlet is best in each situation with a touch of a button.

**Cab Exterior.** The exterior design uses thick steel tubing along the bottom perimeter of the cab, improving the resistance of fatigue and vibration.

**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.



**Windows.** All glass is affixed directly to the cab for excellent visibility eliminating window frames.

**Wipers.** Pillar-mounted wipers increase the operator’s viewing area and offer continuous and intermittent modes.

**Skylight.** An enlarged skylight with sunshade provides excellent visibility and ventilation.

**Monitor.** The monitor is a full color Liquid Crystal Display that gives you vital operating and performance information, alerts in text, all in a simple, easy to navigate format.

**Default Display.** Three analog gauges, fuel level, hydraulic oil temperature and coolant temperature, are displayed in this area.

**Main Menu.** Four menu options to choose from:

Settings – Adjust monitor settings, select work tool or choose video mode (when equipped with a camera)

Maintenance – Displays service intervals and hours accumulated since last serviced.

Performance – Displays machine performance attributes such as Engine Speed, Coolant and Hydraulic Oil Temperature.

Service – Allows access to machine parameters for service intervals, diagnostic information and information related to the machines software.

**Event Display.** Machine information is displayed in this area with the icon and language.

**Multi-information Display.** This area is reserved for displaying various information which is convenient for the operator. The “CAT” logo is displayed when no information is available to be displayed.

## Structures

*320D is designed to handle the most rugged operating conditions, while providing long life and value.*



**Robust Undercarriage.** A solid foundation built tough to absorb the stresses of everyday work.

- Rollers and idlers are sealed and lubricated to extend service life.
- Track links are assembled and sealed with grease to decrease internal bushing wear and increase life by as much as 25 percent, when compared to dry seal undercarriages.
- Spring recoil system stroke has been increased to better relieve excess track tension, which can occur when material builds up between the track and sprocket.

**Undercarriage Options.** Choose the undercarriage option that best matches your application.

- Standard undercarriage – Works well in restricted work spaces and on uneven, rocky terrain. It's also preferred on jobs that require frequent repositioning of the machine.
- Long undercarriage – Allows for maximum stability and lift capacity.

**Rugged Structures.** Structural components and the undercarriage are the backbone of the machine's durability. Caterpillar places a lot of emphasis on the machine's durability during the designing and manufacturing of its excavators.

- Up to 95 percent of the structural welds are welded by robots, which achieve up to three times the penetration of a manual weld and improving overall durability of the machine.
- The 320D's main frame utilizes high-tensile strength steel and a one-piece swing table, which improves strength and reliability.
- The carbody has a X-shaped, box section design to resist bending and twisting forces.
- Track roller frames are press-formed in a pentagonal shape for additional strength.

## Booms, Sticks and Bucket Linkages

*Built for Performance and long service life, Caterpillar® booms and sticks are large, welded, box-section structures with thick, multi-plate fabrications in high stress areas.*

**Front Linkage Options.** The Reach Boom allows excellent all-around versatility and a large working envelope. It can be equipped with the following three sticks:

- R3.9B1 – offers maximum reach and digging depth
- R2.9B1 – performs well in a mid-range working envelope
- R2.5B1 – a good match when the job requires a larger bucket or a hammer

Mass Excavation Boom is designed for heavy-duty, high production earthmoving applications and has a single system-matched stick

- M2.4CB2 – delivers significantly higher digging forces and allows the use of large buckets.

Super Long Reach Front – with reaches up to 15.2 m (50 ft) this configuration is designed for light duty applications requiring an extra large working envelope.



**Linkage Pins.** The bucket linkage pins for the Mass Excavator configuration have been enlarged to improve reliability and durability. All the pins in the front linkages have thick chrome plating, giving them high wear and corrosion resistance.

**Bucket Linkage.** The power link improves durability, increases machine-lifting capability in key lifting positions and with the integrated lift-eye it is easier to use than compared to the previous power link. The lift eye also gives you the optimum lift performance. It allows you to lower the load point, which maximizes the use of the boom cylinders.

## Work Tools – Attachments

*The 320D has an extensive selection of work tools to optimize machine performance.*



- General Purpose Buckets – for digging in low impact, moderately abrasive materials such as dirt, loam, gravel and clay.
- Heavy-Duty Buckets – for use in abrasive applications such as mixed dirt, clay and rock.
- Heavy-Duty power Buckets – for use in abrasive applications where breakout force and cycle times are critical – good for materials such as mixed dirt, clay and rock.
- Ditch Cleaning Buckets – wide and shallow for ditch cleaning, bank forming and finishing.

### **Caterpillar Ground Engaging Tools (GET).**

Choose from a wide variety of tips that maximize bucket and machine performance. Sidecutters and sidebar protectors are also available.



*Pin Grabber Plus Hydraulic Pin Grabber*

**Wide Variety of Work Tools.** Caterpillar offers a complete line of work tools to match all of your application needs:

- Hammers – matched to Cat machines for optimum performance
- Thumbs, Stiff Link, Full Rotation – transforms your 320D into a versatile material handling machine
- Grapples – choose from a large variety of grapples that best suit your application
- Multi-processors – does the work of many types of demolition tools by use of interchangeable jaws
- Shears – features 360 degree rotation and high force to weight ratio

- Pulverizers – ideally suited for rapid, non-explosive demolition applications
- Vibratory Plate Compactors – provide superior compaction force in a reliable, low maintenance package
- Rippers – perfectly suited for trenching and pipeline applications where conditions aren't favorable to traditional ripping methods

**Caterpillar Buckets.** The most expansive choice of buckets that can optimize machine performance and match your application needs.

**Couplers.** Multiply the versatility and utility of 320D.

- Hydraulic Pin Grabber Plus – allows quick and easy tool changes without having to leave the cab. Picks up a large variety of tools equipped with standard pins.
- Dedicated Coupler – no loss of tip radius, maximizing the breakout forces on your 320D.

## Versatility

*A wide variety of optional factory-installed attachments are available to enhance performance and improve job site management.*

**Auxiliary Hydraulic Options.** Allows you to configure your 320D to meet your work tools needs, while increasing its versatility.

- Single Function Circuit – suited for tools that require one-way flow with both pumps, such as hammers, vibratory plate compactors.
- Double Function Circuit – suited for tools that require two-way flow, utilizing one pump, such as thumbs or non-rotation grapples or shears.
- Tool Control System – accommodates single or double function tools, as well as rotating tools when equipped with medium pressure.
  - Stores pressure and flow information for up to 10 tools
  - Cat tools selectable that have preset flows and pressures
  - Shortcut button on right hand console, making tool selection easier.



**Machine Security.** An optional Machine Security System is available from the factory on the 320D. This system controls when the machine can be operated and utilizes specific keys to prevent unauthorized machine use, a significant theft deterrent.

**More Attachments.** The 320D offers the most options available to equip your 320D to best match your application and work environment requirements. From track shoe size to guarding packages to operator comfort options, the 320D offers more options.



**Product Link.** Both the PL121 and PL321 are available as factory installed attachments.

PL121 gives you Asset Watch, which includes the following features:

- Engine hours
- Machine location
- Time based fences (when the machines can operate)
- Geo-based fences (boundaries that the machine can operate)

PL321 gives you all of the features listed for PL121, plus the ability to include Health and Maintenance Watch.

- Health Watch
  - Codes from on-board EDM's/Sensors
  - Estimated Fuel Consumption
  - Fuel Watch
- Maintenance Watch
  - Preventative Maintenance Planning
  - Preventative Maintenance Checklists
  - Overdue PM Notification
  - PM History Recording

## Service and Maintenance

*Simplified service and maintenance features save you time and money.*



**Ground Level Service.** The design and layout of the 320D 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.

**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.

**Pump Compartment.** A service door on the right side allows for ground level access to the hydraulic pump, engine oil filter, case drain and pilot filters.



**Radiator Compartment.** The air conditioning condenser swings out to allow access to the engine radiator and oil cooler. The air to air after cooler is fixed in position above the condenser.

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

**Capsule Filter.** The hydraulic return filter, a capsule filter, is situated outside the hydraulic tank. This filter prevents contaminants from entering the system when hydraulic oil is changed and keeps the operation clean.

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



**Diagnostics and Monitoring.** The 320D is equipped with S•O•S<sup>SM</sup> sampling ports and hydraulic test ports for the hydraulic system, engine oil, and for coolant. A test connection for the Cat Electronic Technician (Cat ET) service tool is located in the cab.

**Extended Service Interval.** 320D service and maintenance intervals have been extended to reduce machine service time and increase machine availability.

## Complete Customer Support

*Cat® dealer services help you operate longer with lower costs.*



**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 down time. Save money with remanufactured components.

**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.

### **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.

**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.

**SAFETY.CAT.COM™.**

## Engine

Engine Model	Cat® C6.4 ACERT™	
Net Flywheel Power	110 kW	148 hp
Net Power – ISO 9249	110 kW	148 hp
Net Power – SAE J1349	110 kW	148 hp
Net Power – EEC 80/1269	110 kW	148 hp
Bore	102 mm	4.02 in
Stroke	130 mm	5.12 in
Displacement	6.4 L	389 in <sup>3</sup>

- The 320D meets U.S. EPA Tier 3 emissions requirements.
- Net flywheel power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- No engine power derated below 2300 m (7,500 ft).

## Weights

Operating Weight – Std. Undercarriage	20 330 kg	44,820 lb
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- Reach boom, R2.9B1 (9 ft 6 in) Stick, 0.9 m<sup>3</sup> (1.18 yd<sup>3</sup>) Bucket, 600 mm (24 in) Shoes

Operating Weight – Long Undercarriage	21 570 kg	47,554 lb
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- Reach boom, R2.9B1 (9 ft 6 in) Stick, 0.9 m<sup>3</sup> (1.18 yd<sup>3</sup>) Bucket, 800 mm (32 in) Shoes

## Service Refill Capacities

Fuel Tank Capacity	410 L	108 gal
Cooling System	25 L	6.6 gal
Engine Oil	30 L	8 gal
Swing Drive	8 L	2.1 gal
Final Drive (each)	8 L	2.1 gal
Hydraulic System (including tank)	260 L	69 gal
Hydraulic Tank	120 L	32 gal
Hydraulic Tank (Including suction pipe)	138 L	36 gal

## Swing Mechanism

Swing Speed	11.5 rpm	
Swing Torque	61.8 kN·m	45,612 lb ft

## Drive

Maximum Drawbar Pull	205 kN	46,311 lb
Maximum Travel Speed	5.5 kph	3.4 mph

## Hydraulic System

Main Implement System – Maximum Flow (2x)	205 L/min	54 gal/min
Max. pressure – Equipment	35 000 kPa	5,076 psi
Max. pressure – Equipment – Heavy	35 000 kPa	5,076 psi
Max. pressure – Travel	35 000 kPa	5,076 psi
Max. pressure – Swing	24 500 kPa	3,553 psi
Pilot System – Maximum flow	32.4 L/min	9 gal/min
Pilot System – Maximum pressure	3900 kPa	566 psi
Boom Cylinder – Bore	120 mm	4.7 in
Boom Cylinder – Stroke	1260 mm	49.6 in
Reach Stick Cylinder – Bore	140 mm	5.5 in
Mass Stick Cylinder – Bore	140 mm	5.5 in
Reach Stick Cylinder – Stroke	1518 mm	59.8 in
Mass Stick Cylinder – Stroke	1504 mm	59.2 in
B1 Family Bucket Cylinder – Bore	120 mm	4.7 in
B1 Family Bucket Cylinder – Stroke	1104 mm	43.5 in
CB2 Family Bucket Cylinder – Bore	135 mm	5.3 in
CB2 Family Bucket Cylinder – Stroke	1156 mm	45.5 in

## Sound Performance

Performance	ANSI/SAE J1166 APR 90
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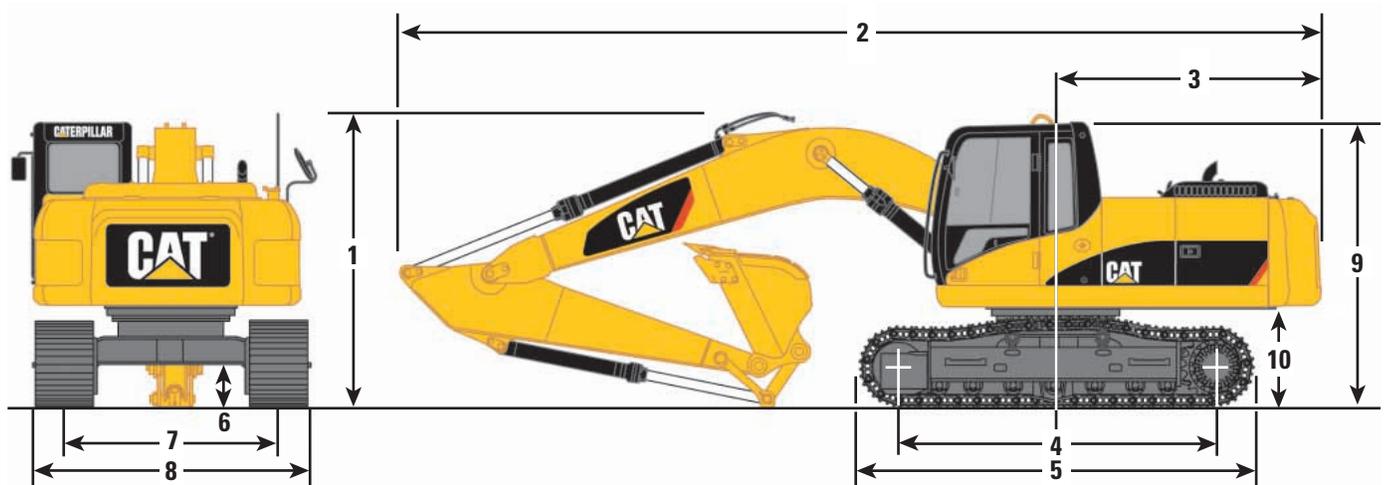
- When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 OCT 98, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture.
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.

## Standards

Brakes	SAE J1026 APR90
Cab/FOGS	SAE J1356 FEB88

## Dimensions

All dimensions are approximate.

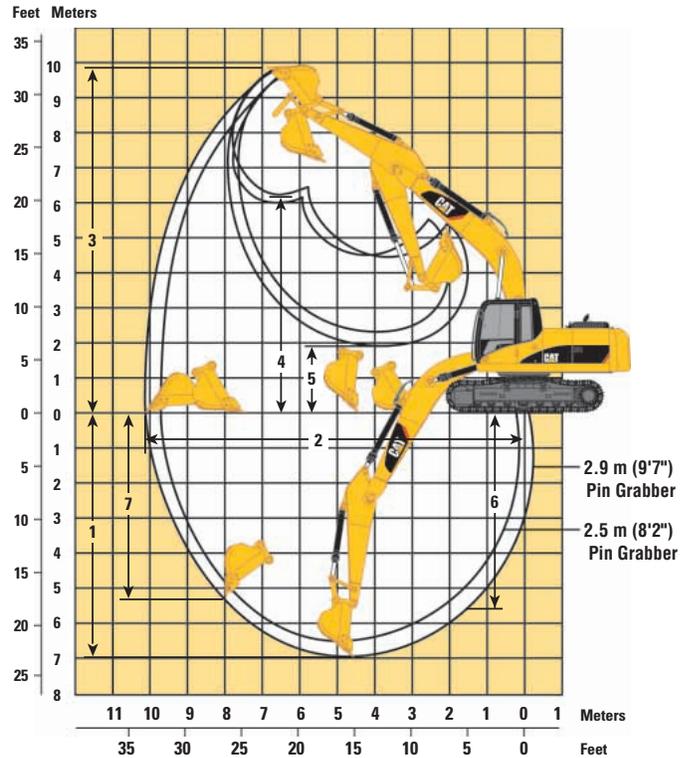
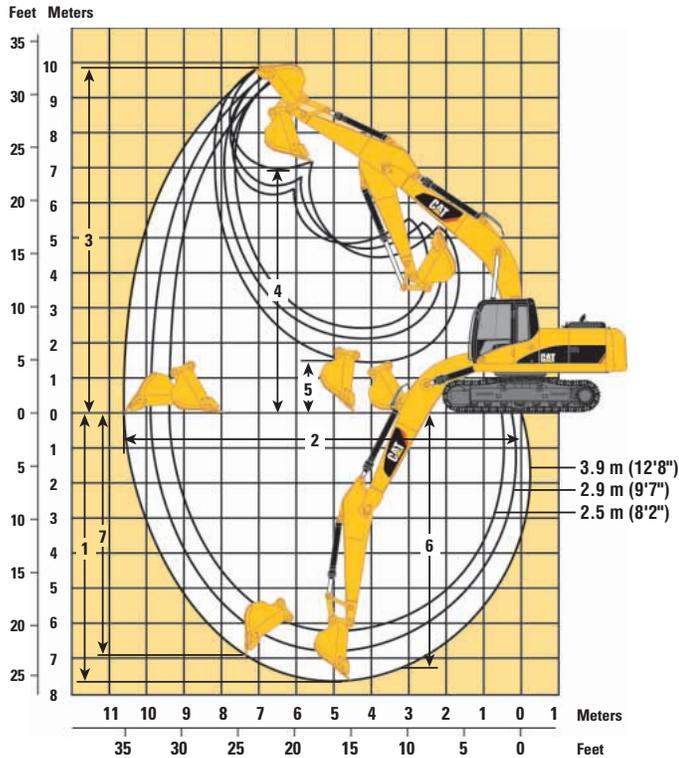


Boom Options	Reach 5.68 (18'7")	Reach 5.68 (18'7")	Reach 5.68 (18'7")	Mass 5.2 m (17'1")	Super Long Reach 8.85 m (29'1")
Stick Options	R3.9B1 m (12'8")	R2.9B1 m (9'7") Std/SA	R2.5B1 m (8'2") Std/SA	M2.4CB2 m (7'10")	6.28 m (20'7")
<b>1</b> Shipping Height	*3740 mm (12'3")	3030 mm (9'11")	3050 mm (10'0")	3280 mm (10'9")	3190 mm (10'6")
<b>2</b> Shipping Length	9440 mm (31'0")	9460 mm (31'0")	9460 mm (31'0")	9050 mm (29'8")	12 680 mm (41'7")
<b>3</b> Tail Swing Radius	2750 mm (9'0")	2750 mm (9'0")	2750 mm (9'0")	2750 mm (9'0")	2750 mm (9'0")
<b>4</b> Length to Center of Rollers					
Standard	3265 mm (10'9")	3265 mm (10'9")	3265 mm (10'9")	3265 mm (10'9")	n/a
Long	3650 mm (12'0")	3650 mm (12'0")	3650 mm (12'0")	3650 mm (12'0")	3650 mm (12'0")
<b>5</b> Track Length					
Standard	4075 mm (13'4")	4075 mm (13'4")	4075 mm (13'4")	4075 mm (13'4")	n/a
Long	4455 mm (14'7")	4455 mm (14'7")	4455 mm (14'7")	4455 mm (14'7")	4455 mm (14'7")
<b>6</b> Ground Clearance	450 mm (1'6")	450 mm (1'6")	450 mm (1'6")	450 mm (1'6")	450 mm (1'6")
<b>7</b> Track Gauge					
Standard	2200 mm (7'3")	2200 mm (7'3")	2200 mm (7'3")	2200 mm (7'3")	n/a
Long	2380 mm (7'10")	2380 mm (7'10")	2380 mm (7'10")	2380 mm (7'10")	2380 mm (7'10")
<b>8</b> Transport Width	800 mm Shoes	700 mm Shoes	600 mm Shoes		800 mm Shoes
Standard	3000 mm (9'10")	2900 mm (9'6")	2800 mm (9'2")	2800 mm (9'2")	2800 mm (9'2")
Long	3180 mm (10'5")	3080 mm (10'1")	2980 mm (9'9")	2980 mm (9'9")	2980 mm (9'9")
<b>9</b> Cab Height	2950 mm (9'8")	2950 mm (9'8")	2950 mm (9'8")	2950 mm (9'8")	2950 mm (9'8")
<b>10</b> Counterweight Clearance	1020 mm (3'4")	1020 mm (3'4")	1020 mm (3'4")	1020 mm (3'4")	1020 mm (3'4")

\* Removing the bucket and quick coupler changes the shipping height to 3390 mm (11'1").

# Reach Excavator Working Ranges

Reach (R) boom configuration

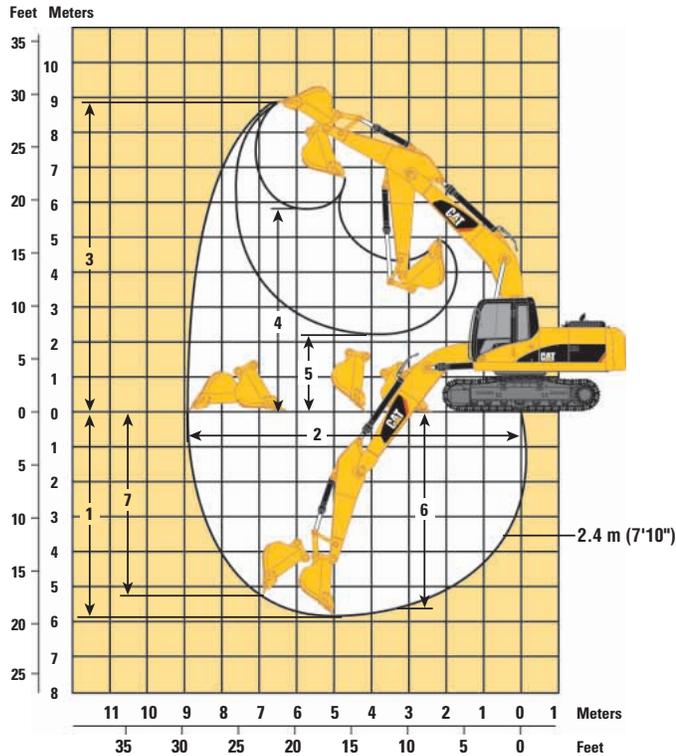


Boom Options	Reach 5.68 m (18'7")	Reach 5.68 m (18'7")	Reach 5.68 m (18'7")	Reach 5.68 m (18'7")	Reach 5.68 m (18'7")	
Stick Options	R3.9B1 m (12'8")	R2.9B1 m (9'7")	R2.5B1 m (8'2")	R2.9B1 m (9'7")	R2.5B1 m (8'2")	
Bucket	1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> )	1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> )	1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> )	Pin Grabber Quick Coupler with 1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> )	Pin Grabber Quick Coupler with 1.0 m <sup>3</sup> (1.31 yd <sup>3</sup> )	
1	Maximum Digging Depth	7660 mm (25'2")	6720 mm (22'1")	6300 mm (20'8")	6980 mm (22'11")	6560 mm (21'6")
2	Maximum Reach at Ground Level	10 760 mm (35'4")	9860 mm (32'4")	9460 mm (31'0")	10 120 mm (33'2")	9730 mm (31'11")
3	Maximum Cutting Height	9940 mm (32'7")	9490 mm (31'2")	9290 mm (30'6")	9720 mm (31'11")	9520 mm (31'0")
4	Maximum Loading Height	6940 mm (22'9")	6490 mm (21'4")	6290 mm (20'8")	6230 mm (20'5")	6030 mm (19'9")
5	Minimum Loading Height	1230 mm (4'0")	2170 mm (7'1")	2590 mm (8'6")	1910 mm (6'3")	2330 mm (7'8")
6	Maximum Depth Cut for 2440 m (8') Level Bottom	7270 mm (23'10")	6370 mm (20'11")	5950 mm (19'6")	5680 mm (18'8")	5290 mm (17'4")
7	Maximum Vertical Wall Digging Depth	6970 mm (22'10")	6060 mm (19'11")	5650 mm (18'6")	5380 mm (17'8")	4990 mm (16'4")

All measurements are approximate

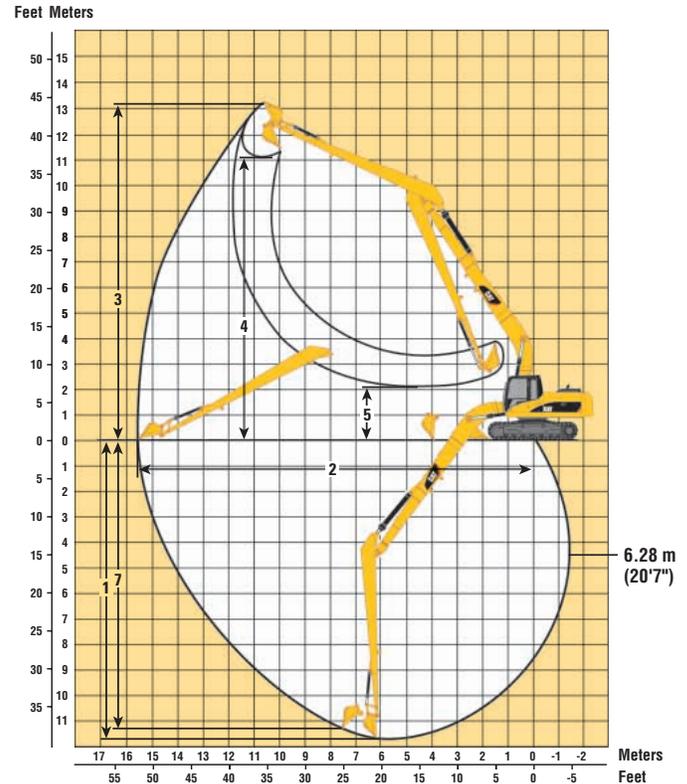
## Mass Excavator Working Ranges

Mass (M) boom configuration



## Reach Excavator Working Ranges

Reach (R) boom configuration



### Boom Options

**Mass**  
5.2 m (17'1")

**Super Long Reach**  
8.85 m (29'1")

### Stick Options

**M2.4CB2 m (7'10")**

**6.28 m (20'7")**

### Bucket

**1.35 m<sup>3</sup> (1.77 yd<sup>3</sup>)**

**0.46 m<sup>3</sup> (0.80 yd<sup>3</sup>)**

<b>1</b> Maximum Digging Depth	5890 mm (19'4")	11 740 mm (38'6")
<b>2</b> Maximum Reach at Ground Level	8960 mm (29'5")	15 590 mm (51'2")
<b>3</b> Maximum Cutting Height	8930 mm (29'4")	13 240 mm (43'5")
<b>4</b> Maximum Loading Height	5720 mm (18'9")	11 150 mm (36'7")
<b>5</b> Minimum Loading Height	2230 mm (7'4")	2100 mm (6'11")
<b>6</b> Maximum Depth Cut for 2440 m (8') Level Bottom	5660 mm (18'7")	—
<b>7</b> Maximum Vertical Wall Digging Depth	5360 mm (17'7")	11 300 mm (37'1")

All measurements are approximate

## 320D Bucket and Stick Forces

### General Purpose Buckets

Stick	R3.9B1		R2.9B1		R2.9B1 w/Coupler		R2.5B1		R2.5B1 w/Coupler		M2.4CB2	
	kN	lb	kN	lb	kN	lb	kN	lb	kN	lb	kN	lb
Bucket Digging Force (ISO)	140	31,361	140	31,361	116	26,145	140	31,361	116	26,145	175	39,319
Stick Digging Force (ISO)	89	20,098	106	23,897	100	22,436	118	26,460	110	24,706	127	28,438
Bucket Digging Force (SAE)	125	28,079	125	28,079	108	24,189	125	28,079	108	24,189	158	35,452
Stick Digging Force (SAE)	87	19,648	103	23,223	98	22,009	114	25,628	107	24,144	123	27,539

### Power Buckets

Stick	R3.9B1		R2.9B1		R2.9B1 w/Coupler		R2.5B1		R2.5B1 w/Coupler		M2.4CB2	
	kN	lb	kN	lb	kN	lb	kN	lb	kN	lb	kN	lb
Bucket Digging Force (ISO)	163	36,711	163	36,711	124	27,809	163	36,711	124	27,809	196	44,040
Stick Digging Force (ISO)	91	20,503	109	24,482	102	22,863	121	27,202	112	25,224	130	29,180
Bucket Digging Force (SAE)	144	32,417	144	32,417	113	25,493	144	32,417	113	25,493	172	38,645
Stick Digging Force (SAE)	89	19,963	106	23,717	99	22,301	117	26,235	109	24,527	125	28,034

### Heavy Duty/Rock Buckets

Stick	R3.9B1		R2.9B1		R2.9B1 w/Coupler		R2.5B1		R2.5B1 w/Coupler		M2.4CB2	
	kN	lb	kN	lb	kN	lb	kN	lb	kN	lb	kN	lb
Bucket Digging Force (ISO)	140	31,563	140	31,563	117	26,258	140	31,563	117	26,258	175	39,319
Stick Digging Force (ISO)	90	20,120	106	23,920	100	22,458	118	26,505	110	24,729	127	28,438
Bucket Digging Force (SAE)	125	28,079	125	28,079	107	24,144	125	28,079	108	24,212	155	34,800
Stick Digging Force (SAE)	87	19,626	103	23,200	98	21,964	114	25,606	107	24,100	122	27,359

## Major Component Weights

	kg	lb	
Base machine with counterweight (without front linkage)			
	STD undercarriage with 600 mm shoe	16 260	35,847
	L undercarriage with 800 mm shoe	17 470	38,515
Two boom cylinders (Each)	182	401	
Counterweight			
Standard	3860	8,510	
Super Long Reach	4830	10,648	
Boom (includes lines, pins and stick cylinder)			
Reach boom 5.7 m (18'5")	1640	3,616	
Mass boom 5.2 m (17'1")	1670	3,682	
Super Long Reach Boom – 8.85 m (29'1")	2180	4,806	
Stick (includes lines, pins, bucket cylinder and linkage)			
R3.9 (12'8")	1063	2,344	
R2.9 (9'7")	818	1,803	
R2.5 (8'2")	779	1,717	
M2.4 (7'10")	985	2,172	
Super Long Reach Stick – 6.82 m (20'7")	1600	3,527	
Undercarriage [includes Carbody, Swing bearing,			
Track frame, Rollers, Idlers, Steps, Guards, Final drive]	STD undercarriage with 600 mm shoe	6670	14,705
	L undercarriage with 800 mm shoe	7880	17,372

# 320D L Bucket Specifications and Compatibility

	Adapter	Capacity*		Width		Tip Radius		Weight (w/o tips)		Teeth Qty	Reach Boom Stick					Mass Boom Stick M2.4CB2
		m <sup>3</sup>	yd <sup>3</sup>	mm	in	mm	in	kg	lb		R3.9B1	R2.9B1	R2.9B1 w/QC	R2.5B1	R2.5B1 w/QC	
<b>B Family</b>																
General	K80	0.55	0.72	610	24	1565	61.6	629	1,387	3	●	●	●	●	●	—
Purpose –	K80	0.75	0.98	762	30	1565	61.6	718	1,583	4	●	●	●	●	●	—
Capacity	K80	0.95	1.24	914	36	1565	61.6	790	1,742	5	◐	●	●	●	●	—
	K80	1.17	1.53	1067	42	1565	61.6	852	1,878	5	○	◐	◐	●	◐	—
	K80	1.39	1.82	1219	48	1565	61.6	926	2,041	6	●	○	○	◐	○	—
	K80	1.57	2.05	1372	54	1565	61.6	1000	2,205	6	∴	●	●	○	●	—
Heavy	K90	0.47	0.61	610	24	1578	62.1	650	1,433	3	●	●	●	●	●	—
Duty	K90	0.64	0.84	762	30	1578	62.1	743	1,638	4	●	●	●	●	●	—
	K90	0.82	1.07	914	36	1578	62.1	813	1,792	5	●	●	●	●	●	—
	K90	1.00	1.31	1067	42	1578	62.1	866	1,909	5	○	●	●	●	●	—
	K90	1.19	1.56	1219	48	1578	62.1	956	2,108	6	◐	◐	○	●	◐	—
	K90	1.38	1.80	1372	54	1578	62.1	1030	2,271	6	∴	○	◐	◐	○	—
Heavy	K90	0.54	0.70	610	24	1578	62.1	696	1,534	3	●	●	●	●	●	—
Duty	K90	0.77	1.00	762	30	1578	62.1	781	1,722	4	●	●	●	●	●	—
Rock	K90	0.84	1.10	914	36	1578	62.1	863	1,903	5	●	●	●	●	●	—
	K90	1.07	1.40	1067	42	1578	62.1	933	2,057	5	○	●	◐	●	●	—
Heavy	K90	0.79	1.03	914	36	1458	57.4	811	1,788	5	●	●	●	●	●	—
Duty	K90	0.96	1.26	1067	42	1458	57.4	875	1,929	5	◐	●	●	●	●	—
Power	K90	1.14	1.49	1219	48	1458	57.4	954	2,103	6	◐	◐	◐	●	◐	—
Ditch	n/a	1.02	1.33	1524	60	1139	44.8	726	1,601	0	◐	●	●	●	●	—
Cleaning	n/a	1.24	1.62	1830	72	1139	44.8	823	1,814	0	○	◐	◐	●	◐	—
<b>CB Family</b>																
General	K90	0.63	0.82	610	24	1656	65.2	700	1,543	3	—	—	—	—	—	●
Purpose –	K90	0.86	1.12	762	30	1656	65.2	809	1,784	4	—	—	—	—	—	●
Capacity	K90	1.09	1.43	914	36	1656	65.2	903	1,992	5	—	—	—	—	—	●
	K90	1.34	1.75	1067	42	1656	65.2	977	2,153	5	—	—	—	—	—	●
	K90	1.58	2.07	1219	48	1656	65.2	1064	2,345	6	—	—	—	—	—	○
	K90	1.83	2.39	1372	54	1656	65.2	1151	2,537	7	—	—	—	—	—	◐
Heavy	K100	0.53	0.69	610	24	1686	66.4	751	1,657	3	—	—	—	—	—	●
Duty	K100	0.73	0.95	762	30	1686	66.4	829	1,828	3	—	—	—	—	—	●
	K100	0.93	1.22	914	36	1686	66.4	944	2,080	4	—	—	—	—	—	●
	K100	1.14	1.49	1067	42	1686	66.4	1025	2,259	5	—	—	—	—	—	●
	K100	1.35	1.77	1219	48	1686	66.4	1095	2,414	5	—	—	—	—	—	◐
	K100	1.57	2.05	1372	54	1686	66.4	1181	2,604	6	—	—	—	—	—	○
	K100	1.78	2.33	1524	60	1686	66.4	1268	2,794	7	—	—	—	—	—	◐
	K100	1.99	2.60	1676	66	1686	66.4	1340	2,954	7	—	—	—	—	—	◐
Heavy	K100	0.73	0.95	762	30	1686	66.4	936	2,064	3	—	—	—	—	—	●
Duty	K100	0.93	1.22	914	36	1686	66.4	1035	2,281	4	—	—	—	—	—	●
Rock	K100	1.14	1.49	1067	42	1686	66.4	1126	2,483	5	—	—	—	—	—	●
	K100	1.35	1.77	1219	48	1686	66.4	1211	2,670	5	—	—	—	—	—	◐
Heavy	K100	1.12	1.46	1067	42	1592	62.7	1013	2,232	5	—	—	—	—	—	●
Duty	K100	1.33	1.74	1219	48	1592	62.7	1089	2,401	5	—	—	—	—	—	●
Power	K100	1.53	2.00	1372	54	1592	62.7	1180	2,601	6	—	—	—	—	—	○
Ditch	n/a	1.25	1.63	1524	60	1262	49.7	739	1,629	—	—	—	—	—	—	●
Cleaning	n/a	1.53	2.00	1830	72	1262	49.7	837	1,845	—	—	—	—	—	—	◐

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.

\* Based on SAE J296, some calculations of capacity specs fall on borderlines.

Rounding may allow two buckets to have the same English rating, but different metric ratings.

- 2100 kg/m<sup>3</sup> (3,500 lb/yd<sup>3</sup>) max material density
- ◐ 1800 kg/m<sup>3</sup> (3,000 lb/yd<sup>3</sup>) max material density
- 1500 kg/m<sup>3</sup> (2,500 lb/yd<sup>3</sup>) max material density
- 1200 kg/m<sup>3</sup> (2,000 lb/yd<sup>3</sup>) max material density
- ∴ Not Recommended
- Not Available/Recommended

# 320D Bucket Specifications and Compatibility

	Adapter	Capacity*		Width		Tip Radius		Weight (w/o tips)		Teeth Qty	Reach Boom Stick			Mass Boom Stick M2.4CB2
		m <sup>3</sup>	yd <sup>3</sup>	mm	in	mm	in	kg	lb		R3.9B1	R2.9B1	R2.5B1	
<b>B Family</b>														
General Purpose – Capacity	K80	0.55	0.72	610	24	1565	61.6	629	1387	3	●	●	●	—
	K80	0.75	0.98	762	30	1565	61.6	718	1583	4	◐	●	●	—
	K80	0.95	1.24	914	36	1565	61.6	790	1742	5	○	●	●	—
	K80	1.17	1.53	1067	42	1565	61.6	852	1878	5	○	○	◐	—
	K80	1.39	1.82	1219	48	1565	61.6	926	2041	6	∴	●	○	—
	K80	1.57	2.05	1372	54	1565	61.6	1000	2205	6	∴	∴	●	—
Heavy Duty	K90	0.47	0.61	610	24	1578	62.1	650	1433	3	●	●	●	—
	K90	0.64	0.84	762	30	1578	62.1	743	1638	4	●	●	●	—
	K90	0.82	1.07	914	36	1578	62.1	813	1792	5	○	●	●	—
	K90	1.00	1.31	1067	42	1578	62.1	866	1909	5	◐	◐	●	—
	K90	1.19	1.56	1219	48	1578	62.1	956	2108	6	∴	○	○	—
	K90	1.38	1.80	1372	54	1578	62.1	1030	2271	6	∴	◐	◐	—
Heavy Duty Rock	K90	0.54	0.70	610	24	1578	62.1	696	1534	3	●	●	●	—
	K90	0.77	1.00	762	30	1578	62.1	781	1722	4	◐	●	●	—
	K90	0.84	1.10	914	36	1578	62.1	863	1903	5	○	●	●	—
	K90	1.07	1.40	1067	42	1578	62.1	933	2057	5	◐	○	◐	—
Heavy Duty Power	K90	0.79	1.03	914	36	1458	57.4	811	1788	5	◐	●	●	—
	K90	0.96	1.26	1067	42	1458	57.4	875	1929	5	○	◐	●	—
	K90	1.14	1.49	1219	48	1458	57.4	954	2103	6	∴	○	◐	—
Ditch Cleaning	n/a	1.02	1.33	1524	60	1139	44.8	726	1601	0	○	●	●	—
	n/a	1.24	1.62	1830	72	1139	44.8	823	1814	0	◐	○	◐	—
<b>CB Family</b>														
General Purpose – Capacity	K90	0.63	0.82	610	24	1656	65.2	700	1543	3	—	—	—	●
	K90	0.86	1.12	762	30	1656	65.2	809	1784	4	—	—	—	●
	K90	1.09	1.43	914	36	1656	65.2	903	1992	5	—	—	—	●
	K90	1.34	1.75	1067	42	1656	65.2	977	2153	5	—	—	—	○
	K90	1.58	2.07	1219	48	1656	65.2	1064	2345	6	—	—	—	◐
	K90	1.83	2.39	1372	54	1656	65.2	1151	2537	7	—	—	—	∴
Heavy Duty	K100	0.53	0.69	610	24	1686	66.4	751	1657	3	—	—	—	●
	K100	0.73	0.95	762	30	1686	66.4	829	1828	3	—	—	—	●
	K100	0.93	1.22	914	36	1686	66.4	944	2080	4	—	—	—	●
	K100	1.14	1.49	1067	42	1686	66.4	1025	2259	5	—	—	—	◐
	K100	1.35	1.77	1219	48	1686	66.4	1095	2414	5	—	—	—	○
	K100	1.57	2.05	1372	54	1686	66.4	1181	2604	6	—	—	—	◐
	K100	1.78	2.33	1524	60	1686	66.4	1268	2794	7	—	—	—	∴
	K100	1.99	2.60	1676	66	1686	66.4	1340	2954	7	—	—	—	∴
Heavy Duty Rock	K100	0.73	0.95	762	30	1686	66.4	936	2064	3	—	—	—	●
	K100	0.93	1.22	914	36	1686	66.4	1035	2281	4	—	—	—	●
	K100	1.14	1.49	1067	42	1686	66.4	1126	2483	5	—	—	—	◐
	K100	1.35	1.77	1219	48	1686	66.4	1211	2670	5	—	—	—	○
Heavy Duty Power	K100	1.12	1.46	1067	42	1592	62.7	1013	2232	5	—	—	—	◐
	K100	1.33	1.74	1219	48	1592	62.7	1089	2401	5	—	—	—	○
	K100	1.53	2.00	1372	54	1592	62.7	1180	2601	6	—	—	—	◐
Ditch Cleaning	n/a	1.25	1.63	1524	60	1262	49.7	739	1629	—	—	—	—	●
	n/a	1.53	2.00	1830	72	1262	49.7	837	1845	—	—	—	—	○

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.

\* Based on SAE J296, some calculations of capacity specs fall on borderlines.

Rounding may allow two buckets to have the same English rating, but different metric ratings.

- 2100 kg/m<sup>3</sup> (3,500 lb/yd<sup>3</sup>) max material density
- ◐ 1800 kg/m<sup>3</sup> (3,000 lb/yd<sup>3</sup>) max material density
- 1500 kg/m<sup>3</sup> (2,500 lb/yd<sup>3</sup>) max material density
- 1200 kg/m<sup>3</sup> (2,000 lb/yd<sup>3</sup>) max material density
- ∴ Not Recommended
- Not Available/Recommended

## 320D/320D L Work Tool Matching Guide

<b>Boom Options</b>	<b>Reach Boom 5.7 m (18'5")</b>			<b>Mass Boom 5.2 m (17'1")</b>
<b>Stick Options</b>	<b>R3.9B1 (12'8")</b>	<b>R2.9B1 (9'7")</b>	<b>R2.5B1 (8'2")</b>	<b>M2.4CB2 (7'10")</b>
Hydraulic Hammer	H115s/ H120Cs/ H130s	H115s/ H120Cs/ H130s	H115s/ H120Cs/ H130s	H115s/ H120Cs/ H130s
Vibratory Plate Compactor	CVP110	CVP110	CVP110	CVP110
Multi-Processor	MP15	MP15	MP15	MP15
360 Scrap Shear	S320	S320	S320	S320
Trash Grapple	2.7 m <sup>3</sup> (3.5 yd <sup>3</sup> )			
Contractor's Grapple	yes	yes	yes	n/a
Hydraulic Thumb	yes	yes	yes	n/a
Dedicated Quick Coupler	yes	yes	yes	yes
Pin-Grabber Quick Coupler	yes	yes	yes	yes

# Reach Boom Lift Capacities



Load Point Height



Load Radius Over Front



Load Radius Over Side



Load at Maximum Reach

**R3.9B1 STICK** – 3.9 m (12'10")  
**BUCKET** – 0.8 m<sup>3</sup> (1.07 yd<sup>3</sup>)

**UNDERCARRIAGE** – Long  
**SHOES** – 800 mm (32") triple grouser

**BOOM** – 5.7 m (18'9")  
**COUNTERWEIGHT** – 3.87 ton (8,532 lb)

	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)		9.0 m (30.0 ft)				m ft	
																
7.5 m 25.0 ft	kg lb									*2900 *5,850	*2900 *5,850			*1550 *3,450	*1550 *3,450	8.94 29.05
6.0 m 20.0 ft	kg lb									*3300 *7,250	3200 6,850			*1500 *3,250	*1500 *3,250	9.78 31.96
4.5 m 15.0 ft	kg lb									*3600 *7,850	3150 6,700	*2750 *5,250	2100 4,500	*1450 *3,200	*1450 *3,200	10.29 33.71
3.0 m 10.0 ft	kg lb							*4600 *9,950	4500 9,700	*4100 *8,900	3000 6,400	3600 *7,300	2050 4,400	*1550 *3,350	1500 3,250	10.52 34.52
1.5 m 5.0 ft	kg lb			*11 950 *27,200	*11 950 *27,200	*7650 *16,450	6700 14,400	*5650 *12,250	4200 9,000	*4650 *10,150	2850 6,100	3500 7,500	2000 4,250	*1650 *3,600	1450 3,200	10.50 34.46
Ground Line	kg lb			*7450 *17,150	*7450 *17,150	*9250 *19,950	6200 13,300	*6600 *14,250	3950 8,400	4700 10,500	2700 5,750	3450 7,350	1950 4,100	*1850 *4,050	1500 3,300	10.23 33.55
-1.5 m -5.0 ft	kg lb	*4800 *10,700	*4800 *10,700	*9050 *20,550	*9050 *20,550	*10 050 *21,750	5900 12,650	6600 14,150	3750 8,050	4600 9,800	2600 5,550	*3350	1900	*2150 *4,750	1650 3,650	9.67 31.69
-3.0 m -10.0 ft	kg lb	*7700 *17,300	*7700 *17,300	*12 400 *28,150	11 750 25,100	*10 100 *21,850	5850 12,500	6550 14,000	3700 7,900	4550 9,750	2600 5,500			*2700 *6,000	2050 4,450	8.78 28.69
-4.5 m -15.0 ft	kg lb	*11 400 *25,700	*11 400 *25,700	*13 900 *29,950	12 000 25,700	*9350 *20,050	5950 12,750	6600 14,150	3750 8,050					*3800 *8,500	2800 6,300	7.41 24.06
-6.0 m -20.0 ft	kg lb			*10 600 *22,350	*10 600 *22,350	*7150 *14,950	6200 13,400							*5050 *11,100	4350 10,000	5.66 18.13

\* 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. Weight of all lifting accessories must be deducted from the above lifting capacities.

Heavy Lift – On

**R2.9B1 STICK** – 2.9 m (9'7")  
**BUCKET** – 0.8 m<sup>3</sup> (1.18 yd<sup>3</sup>)

**UNDERCARRIAGE** – Long  
**SHOES** – 800 mm (32") triple grouser

**BOOM** – 5.7 m (18'9")  
**COUNTERWEIGHT** – 3.87 ton (8,532 lb)

	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 ft	
														
7.5 m 25.0 ft	kg lb											*2000 *4,450	*2000 *4,450	7.84 25.38
6.0 m 20.0 ft	kg lb									*3650	3200	*1900 *4,200	*1900 *4,200	8.81 28.74
4.5 m 15.0 ft	kg lb							*4700 *10,150	*4700 10,050	*4400 *9,600	3100 6,650	*1900 *4,150	*1900 *4,150	9.38 30.71
3.0 m 10.0 ft	kg lb			*11 300 *24,000	*11 300 *24,000	*7150 *15,350	*7150 *15,350	*5550 *12,050	4450 9,550	*4800 *10,450	3050 6,450	*1950 *4,300	1900 4,150	9.64 31.61
1.5 m 5.0 ft	kg lb					*8950 *19,300	6550 14,100	*6500 *14,050	4200 9,000	4900 10,500	2900 6,200	*2100 *4,650	1850 4,050	9.61 31.54
Ground Line	kg lb			*6400 *14,650	*6400 *14,650	*10 100 *21,850	6200 13,350	6850 14,700	4000 8,600	4800 10,250	2800 6,000	*2400 *5,250	1950 4,250	9.30 30.52
-1.5 m -5.0 ft	kg lb	*5900 *13,200	*5900 *13,200	*9950 *22,600	*9950 *22,600	*10 450 *22,600	6050 13,050	6750 14,450	3900 8,350	4750 10,150	2750 5,900	*2800 *6,200	2200 4,800	8.68 28.44
-3.0 m -10.0 ft	kg lb	*9950 *22,300	*9950 *22,300	*14 650 *31,700	*14 650 *31,700	*9950 *21,500	6100 13,100	6750 14,500	3900 8,400			*3600 *8,000	2750 6,100	7.65 24.97
-4.5 m -15.0 ft	kg lb			*12 100 *26,000	*12 100 *26,000	*8450 *18,050	6300 13,550	*5800	4050			*4000 *9,300	*4000 *9,300	6.02 19.59

\* 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. Weight of all lifting accessories must be deducted from the above lifting capacities.

Heavy Lift – On

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

# Reach Boom Lift Capacities



Load Point Height



Load Radius Over Front



Load Radius Over Side



Load at Maximum Reach

**R2.5B1 STICK** – 2.5 m (8'3")  
**BUCKET** – 0.8 m<sup>3</sup> (1.07 yd<sup>3</sup>)

**UNDERCARRIAGE** – LC  
**SHOES** – 800 mm (32") triple grouser

**BOOM** – 5.7 m (18'9")  
**COUNTERWEIGHT** – 3.87 ton (8,532 lb)

		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 ft
														
7.5 m 25.0 ft	kg lb											*2400 *5,300	*2400 *5,300	7.32 23.67
6.0 m 20.0 ft	kg lb							*4550 *9,950	*4550 *9,950			*2250 *5,000	*2250 *5,000	8.37 27.29
4.5 m 15.0 ft	kg lb							*5050 *11,000	4650 9,900	*4700 *10,250	3050 6,550	*2250 *4,950	2200 4,900	8.98 29.38
3.0 m 10.0 ft	kg lb					*7700 *16,550	7000 15,050	*5900 *12,750	4400 9,450	5000 10,700	3000 6,400	*2350 *5,150	2050 4,450	9.25 30.32
1.5 m 5.0 ft	kg lb					*9400 *20,250	6450 13,850	*6750 *14,650	4150 8,900	4850 10,450	2900 6,150	*2550 *5,550	2000 4,400	9.22 30.25
Ground Line	kg lb			*5700 *13,100	*5700 *13,100	*10 300 *22,250	6150 13,200	6850 14,650	4000 8,550	4800 10,250	2800 6,000	*2850 *6,200	2100 4,600	8.89 29.18
-1.5 m -5.0 ft	kg lb	*6400 *14,350	*6400 *14,350	*10 500 *23,850	*10 500 *23,850	*10 400 *22,450	6050 13,050	6750 14,500	3900 8,400	4750 10,200	2800 5,950	*3350 *7,400	2400 5,300	8.23 26.97
-3.0 m -10.0 ft	kg lb	*11 350 *25,450	*11 350 *25,450	*13 850 *29,950	12 300 26,350	*9650 *20,850	6150 13,200	6800 14,600	3950 8,500			*4350 *9,600	3100 6,950	7.13 23.25
-4.5 m -15.0 ft	kg lb			*10 900 *23,300	*10 900 *23,300	*7700 *16,350	6400 13,800					*5800 *12,800	4750 10,700	5.50 17.76

\* 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. Weight of all lifting accessories must be deducted from the above lifting capacities.

Heavy Lift – On



Load Point Height



Load Radius Over Front



Load Radius Over Side



Load at Maximum Reach – Coupler Curled

**R2.9B1 – QUICK COUPLER STICK** – 2.9 m (9'7")  
**BUCKET** – Equipped with Coupler – No Bucket

**UNDERCARRIAGE** – Long  
**SHOES** – 800 mm (32") triple grouser

**BOOM** – 5.7 m (18'9")  
**COUNTERWEIGHT** – 3.87 ton (8,532 lb)

		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 ft
														
7.5 m 25.0 ft	kg lb											*3200 *7,150	*3200 *7,150	6.60 21.29
6.0 m 20.0 ft	kg lb									*3700 3500		*3000 *6,600	*3000 *6,600	7.67 24.97
4.5 m 15.0 ft	kg lb							*5100 *11,050	5000 10,750	*4800 *10,500	3450 7,450	*2950 *6,500	2900 6,350	8.33 27.26
3.0 m 10.0 ft	kg lb			*11 650 *24,750	*11 650 *24,750	*7500 *16,150	7400 15,950	*5950 *12,900	4750 10,250	*5200 *11,350	3350 7,200	*3050 *6,650	2650 5,750	8.69 28.48
1.5 m 5.0 ft	kg lb					*9350 *20,200	6900 14,800	*6900 *14,950	4500 9,700	5200 11,200	3250 6,950	*3200 *7,050	2550 5,550	8.77 28.79
Ground Line	kg lb			*6850 *15,650	*6850 *15,650	*10 550 *22,800	6550 14,100	7150 15,400	4350 9,300	5100 11,000	3150 6,750	*3600 *7,850	2550 5,650	8.60 28.20
-1.5 m -5.0 ft	kg lb	*6250 *14,000	*6250 *14,000	*10 400 *23,600	*10 400 *23,600	*10 850 *23,500	6450 13,800	7050 15,150	4250 9,100	5050 10,850	3100 6,650	*4200 *9,250	2750 6,050	8.14 26.67
-3.0 m -10.0 ft	kg lb	*10 350 *23,250	*10 350 *23,250	*15 100 *32,750	12 600 27,000	*10 400 *22,450	6450 13,850	7050 15,200	4250 9,100			5250 11,650	3200 7,100	7.35 23.99
-4.5 m -15.0 ft	kg lb			*12 550 *26,900	*12 550 *26,900	*8850 *18,900	6600 14,250	*6200 14,250	4400			*6000 *13,250	4300 9,650	6.09 19.72

\* 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. Weight of all lifting accessories must be deducted from the above lifting capacities.

Heavy Lift – On

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

# Reach Boom Lift Capacities



Load Point Height



Load Radius Over Front



Load Radius Over Side



Load at Maximum Reach – Coupler Curled

**R2.5B1 – QUICK COUPLER STICK – 2.5 m (8'3")**  
**BUCKET – Equipped with Coupler – No Bucket**

**UNDERCARRIAGE – LC**  
**SHOES – 800 mm (32") triple grouser**

**BOOM – 5.7 m (18'9")**  
**COUNTERWEIGHT – 3.87 ton (8,532 lb)**

		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 ft
														
7.5 m 25.0 ft	kg lb							*4150 *4150				*3850 *8,600	*3850 *8,600	6.06 19.49
6.0 m 20.0 ft	kg lb							*4950 *10,850	*4950 *10,850			*3550 *7,850	*3550 *7,850	7.21 23.47
4.5 m 15.0 ft	kg lb							*5450 *11,850	4950 10,600	*5100 *10,950	3450 7,300	*3500 *7,700	3100 6,850	7.92 25.89
3.0 m 10.0 ft	kg lb					*8100 *17,400	7300 15,650	*6300 *13,650	4700 10,150	5300 11,400	3350 7,150	*3600 *7,900	2800 6,200	8.29 27.18
1.5 m 5.0 ft	kg lb					*9800 *21,150	6800 14,600	*7150 *15,500	4500 9,650	5200 11,150	3200 6,900	*3850 *8,450	2700 5,950	8.38 27.49
Ground Line	kg lb			*6100 *14,000	*6100 *14,000	*10 750 *23,250	6500 14,000	7150 15,350	4300 9,250	5100 11,000	3150 6,750	*4300 *9,500	2750 6,050	8.19 26.88
-1.5 m -5.0 ft	kg lb	*6750 *15,050	*6750 *15,050	*10 950 *24,850	*10 950 *24,850	*10 800 *23,450	6450 13,800	7050 15,200	4250 9,100	5100 10,950	3100 6,700	4900 10,800	3000 6,600	7.71 25.26
-3.0 m -10.0 ft	kg lb	*11 750 *26,350	*11 750 *26,350	*14 350 *31,050	12 700 27,250	*10 100 *21,800	6500 13,950	7100 15,300	4300 9,200			5850 12,950	3550 7,900	6.87 22.42
-4.5 m -15.0 ft	kg lb			*11 350 *24,250	*11 350 *24,250	*8100 *17,200	6700 14,450					*6200 *13,650	5050 11,350	5.50 17.77

\* 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. Weight of all lifting accessories must be deducted from the above lifting capacities.

Heavy Lift – On

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

**M2.4CB2 STICK** – 2.4 m (7'11")  
**BUCKET** – 1.35 m<sup>3</sup> (1.77 yd<sup>3</sup>)

**UNDERCARRIAGE** – LC  
**SHOES** – 800 mm (32") triple grouser

**BOOM** – 5.2 m (17'1")  
**COUNTERWEIGHT** – 3.87 ton (8,532 lb)

		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 ft
														
7.5 m 25.0 ft	kg lb											*3250	*3250	6.49
6.0 m 20.0 ft	kg lb							*4700 *10,350	4400 9,400			*3000 *6,650	2800 6,250	7.68 25.00
4.5 m 15.0 ft	kg lb							*5050 *10,950	4350 9,300			*3000 *6,600	2250 5,000	8.34 27.28
3.0 m 10.0 ft	kg lb			*24,700	*24,700	*7400 *15,850	6850 14,700	*5750 *12,500	4150 8,900	4700 10,000	2700 5,700	*3150 *6,900	2000 4,450	8.62 28.28
1.5 m 5.0 ft	kg lb					*9050 *19,450	6300 13,500	*6600 *14,200	3900 8,400	4600 9,800	2600 5,500	*3450 *7,500	2000 4,350	8.59 28.19
Ground Line	kg lb			*8650 *19,900	*8650 *19,900	*10 000 *21,550	5950 12,700	6600 14,150	3750 8,000	4500	2550	3850 8,450	2100 4,650	8.23 26.99
-1.5 m -5.0 ft	kg lb	*7900 *17,700	*7900 *17,700	*14 300 *32,600	11 750 25,100	*10 050 *21,700	5850 12,500	6550 14,000	3650 7,850			4550 10,000	2550 5,600	7.49 24.53
-3.0 m -10.0 ft	kg lb	*14 150 *31,800	*14 150 *31,800	*13 200 *28,500	12 100 25,850	*9050 *19,450	5950 12,750	*6200	3750			*4650 *10,200	3600 8,100	6.23 20.27
-4.5 m -15.0 ft	kg lb											*6000	*6000	4.47

\* 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. Weight of all lifting accessories must be deducted from the above lifting capacities.

Heavy Lift – On

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

# Super Long Reach Boom Lift Capacities



Load Point Height



Load Radius Over Front



Load Radius Over Side



Load at Maximum Reach

**SUPER LONG REACH STICK** – 6.28 m (20'7")

**UNDERCARRIAGE** – Long

**BOOM** – 8.85 m (29'0")

**BUCKET** – 1142 mm (45") Ditch Cleaning Bucket

**SHOES** – 800 mm (32") triple grouser

**COUNTERWEIGHT** – 4.82 ton (10,624 lb)

	4.5 m (15.0 ft)		6.0 m (20.0 ft)		7.5 m (25.0 ft)		9.0 m (30.0 ft)		10.5 m (35.0 ft)		12.0 m (40.0 ft)		13.5 m (45.0 ft)				m ft	
																		
12.0 m 40.0 ft	kg lb															*800 *1,800	*800 *1,800	11.54 37.25
10.5 m 35.0 ft	kg lb															*750 *1,650	*750 *1,650	12.78 41.52
9.0 m 30.0 ft	kg lb											*1850 *3,550	1800 *3,550			*700 *1,550	*700 *1,550	13.72 44.74
7.5 m 25.0 ft	kg lb									*4,050 *4,050	*4,050 *4,050	*1850 *4,050	1800 3,750	*1000 *1000		*700 *1,550	*700 *1,550	14.42 47.15
6.0 m 20.0 ft	kg lb									*2000 *4,350	*2000 *4,350	*1950 *4,250	1750 3,650	*1750 *3,200	1300 2,700	*700 *1,550	*700 *1,550	14.92 48.87
4.5 m 15.0 ft	kg lb						*2400 *5,150	*2400 *5,150	*2200 *4,800	2150 4,600	*2050 *4,500	1650 3,500	*2000 *4,350	1250 2,650	*750 *1,550	*750 *1,550	15.24 49.98	
3.0 m 10.0 ft	kg lb			*3950 *8,450	*3950 *8,450	*3200 *6,850	*3200 *6,850	*2750 *5,900	2650 5,700	*2450 *5,250	2000 4,300	*2250 *4,850	1550 3,300	*2100 *4,550	1200 2,550	*750 *1,650	*750 *1,650	15.40 50.52
1.5 m 5.0 ft	kg lb	*6950 *14,850	6550 14,100	*4800 *10,300	4450 9,550	*3700 *8,000	3200 6,900	*3100 *6,650	2450 5,200	*2650 *5,800	1850 4,000	*2400 *5,200	1450 3,100	2050 4,400	1150 2,400	*800 *1,750	*800 *1,750	15.40 50.53
Ground Line	kg lb	*4650 *10,650	*4650 *10,650	*5500 *11,900	3950 8,500	*4200 *9,050	2900 6,250	*3400 *7,350	2250 4,750	*2900 *6,250	1750 3,700	2450 5,250	1350 2,900	2000 4,300	1100 2,300	*850 *1,900	850 1,850	15.24 49.99
-1.5 m -5.0 ft	kg lb	*4450 *10,050	*4450 *10,050	*6000 *12,950	3650 7,850	*4550 *9,850	2700 5,800	3650 7,850	2100 4,450	*2900 *6,250	1650 3,450	2350 5,050	1300 2,750	1950 4,200	1050 2,200	*950 *2,100	850 1,900	14.91 48.89
-3.0 m -10.0 ft	kg lb	*4900 *11,050	*4900 *11,050	*6250 *13,500	3500 7,550	4600 9,900	2550 5,500	3550 7,600	1950 4,200	2850 6,050	1550 3,300	2300 4,950	1250 2,650	1950 4,150	1000 2,150	*1100 *2,350	900 2,000	14.40 47.19
-4.5 m -15.0 ft	kg lb	*5700 *12,850	5350 11,450	*6300 *13,600	3450 7,450	4550 9,750	2500 5,350	3500 7,500	1900 4,100	2800 6,000	1500 3,250	2300 4,900	1250 2,600			*1250 *2,750	1000 2,250	13.70 44.81
-6.0 m -20.0 ft	kg lb	*6750 *15,300	5450 11,700	*6150 *13,250	3500 7,500	4550 9,750	2500 5,400	3500 7,500	1900 4,100	2800 6,000	1500 3,250	2300 5,000	1250 2,650			*1500 *3,400	1200 2,600	12.76 41.64
-7.5 m -25.0 ft	kg lb	*7600 *16,300	5600 12,100	*5750 *12,400	3600 7,700	*4550 *9,800	2550 5,500	3550 7,600	1950 4,200	2850 6,150	1600 3,400					*1950 *4,400	1450 3,200	11.53 37.46
-9.0 m -30.0 ft	kg lb	*6600 *14,100	5900 12,700	*5100 *10,850	3750 8,100	*4050 *8,600	2700 5,850	*3200 *6,750	2100 4,500							*2400 *5,300	1950 4,400	9.89 31.84
-10.5 m -35.0 ft	kg lb	*5100 *11,200	*5100 *11,200	*3950 *8,200	*3950 *8,200	*3050 *6,150	2950 *6,150									*2650 *5,750	2600 *5,750	8.18 25.98

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## Standard Equipment

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

### Electrical

- 50 Ampere alternator
- Base machine light (frame)
- Horn
- Pre-start monitoring system – checks for low fluids (engine oil, coolant, hydraulic oil) prior to starting machine

### Operator Environment

- Air conditioner, heater, defroster with automatic climate control
- AM/FM Radio with antenna and 2 speakers
- Ashtray with 24 volt lighter
- Beverage/cup holder
- Bolt-on Falling object Guarding System (FOGS) capability
- Cab Glass
  - Openable and retractable two- piece front windshield
  - Sky-light, pop-up, polycarbonate
- Coat hook
- Floor mat
- Instrument panel and gauges
- Joysticks, console mounted, pilot operated
- Light, interior
- Literature compartment
- Monitor, full graphic color display
- Neutral lever (lock out) for all controls
- Polycarbonate side windows
- Positive filtered ventilation
- Pressurized cab
- Seat, suspension, with high back and head rest
- Seat belt, retractable – 76 mm (3 in)
- Storage compartment suitable for lunch box cooler
- Sun shade (for skylight)
- Travel control pedals with removable hand levers
- Windshield wiper and washer (upper and lower)

### Engine/Power Train

- C6.4 with ACERT™ Technology
  - Air intake heater
  - Air-to-air aftercooler (ATAAC)
  - 24 volt electric start
  - HEUI™ fuel injectors
  - 2300 m (7,500 ft) altitude capability without derate
- Automatic engine speed control with one touch low idle
- Condenser, A/C – Swing out – No tools required
- Cooling
  - Protection of 43° C (110° F) to –18° C (0° F) at 50% concentration
- Electric priming pump
- Straight line travel
- Two-speed auto-shift travel
- Water separator in fuel line

### Undercarriage

- Grease lubricated track
- Hydraulic track adjusters
- Idler and center section track guards

### Other Standard Equipment

- Automatic swing parking brake
- Auxiliary hydraulic valve
- Capability of stackable valves (max of 3) for main valve
- Capability of auxiliary circuit
- Counterweight with lifting eyes
- Door locks, cap locks and Caterpillar® one key security system
- Fine swing control
- Fully pressurized hydraulic system
- Heavy lift
- Mirrors (frame-right, cab left)
- S•O•S<sup>SM</sup> quick sampling valves for engine and hydraulic oil
- Wave fin radiator
- Wiring provision for Product Link

## Optional Equipment

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

### Front Linkage

#### Booms

- Reach/S.A. 5.68 m (18 ft 7 in)
- Mass 5.2 m (17 ft 1 in)
- Super Long Reach 8.85 m (29 ft 1 in)

#### Sticks

- Reach 3.9 m (12 ft 8 in)
- Reach/S.A. 2.9 m (9 ft 7 in)
- Reach/S.A. 2.5 m (8 ft 2 in)
- Mass 2.4 m (7 ft 10 in)
- Super long reach 6.82 m (20 ft 7in)

#### Bucket Linkage

- B1 Family
- CB2 Family

#### Boom Lowering Control Device

### Electrical

- Machine Security System (MSS)
- Light, Boom – Right side
- Lights, Cab mounted (2)
- Power supply (12V-7 AMP)
- Product Link (PL121SR/PL321SR)
- Pump, Electric refueling
- Travel Alarm (Mandatory attachment)

### Guarding

- Falling Object Guarding System (FOGS)
- Front windshield guard
  - Full length, wire mesh
- Heavy-duty bottom guards
- Rubber bumpers (Side)
- Track guiding guards
  - Sprocket end, idler end guard
  - Two-piece full length (center guard removed)
- Vandalism guards

### Operator Environment

- Hand control pattern changer (ISO-SAE)
- Rear window, secondary exit
- Sunscreen – roller type
- Seat, high back with air suspension and heater
- Third pedal, straight travel
- Wiper, Lower windshield
- Washer, windshield

### Engine/Power Train

- High ambient cooling
  - For conditions up to 52° C (125° F)
  - Viscous clutch demand fan
- Prefilter, air
- Starting, Cold weather package
  - Two additional maintenance free batteries
  - High capacity starter motor
  - Heavy-duty cable
  - Jump-start receptacle
- Water level indicator (Fuel)

### Undercarriage

- Standard undercarriage
- Long undercarriage
- Track shoes
  - 600 mm (24 in) double or triple grouser
  - 700 mm (28 in) double or triple grouser
  - 800 mm (32 in) Heavy-duty triple grouser
- Heavy-duty rollers

### Auxiliary Hydraulics

- Hammer Circuit
  - For single function (1 way/2 pump) hydraulic tools
- Thumb Circuit
  - For double function (2 way/1 pump) hydraulic tools
- Tool Control System
  - For single or double function, (1 or 2 way, 1 or 2 pump) hydraulic tools
  - Joysticks with additional switches
  - Program up to 10 tools in memory
  - Capability of adding medium pressure
  - Medium pressure circuit for tools requiring medium pressure
- Hydraulic pin grabber quick coupler and controller
- Lines for booms and sticks

### Work Tools

- Wide offering of buckets, tips and sidecutters

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## Notes



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## Notes

# 320D L Hydraulic Excavator

AEHQ5856-02 (4-08)

Replaces AEHQ5856-01

NACD

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