324D/ 324D L

Hydraulic Excavator

Engine	
Engine Model	Cat® C7 with ACERT™ Technology
Net Flywheel Power	140 kW
Weights	
Operating Weight – Std. Undercarriage	24 240 kg
Operating Weight – Long Undercarriage	25 560 kg

324D/324D L Hydraulic Excavator

The D Series incorporates innovations for improved performance and versatility.

Engine

✔ The Cat® C7 with ACERT™ Technology offers better fuel consumption 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 and Power Management, customers can balance the demands of performance and fuel economy to suit their requirements and application. **pg. 4**

Hydraulics

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

Operator Station

✔ 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**

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**

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**

Structures

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

Booms and Sticks

Three length of booms and five sticks are available to suit a variety of application conditions. The bucket linkage pins have been enlarged to improve reliability and durability. **pg. 9**

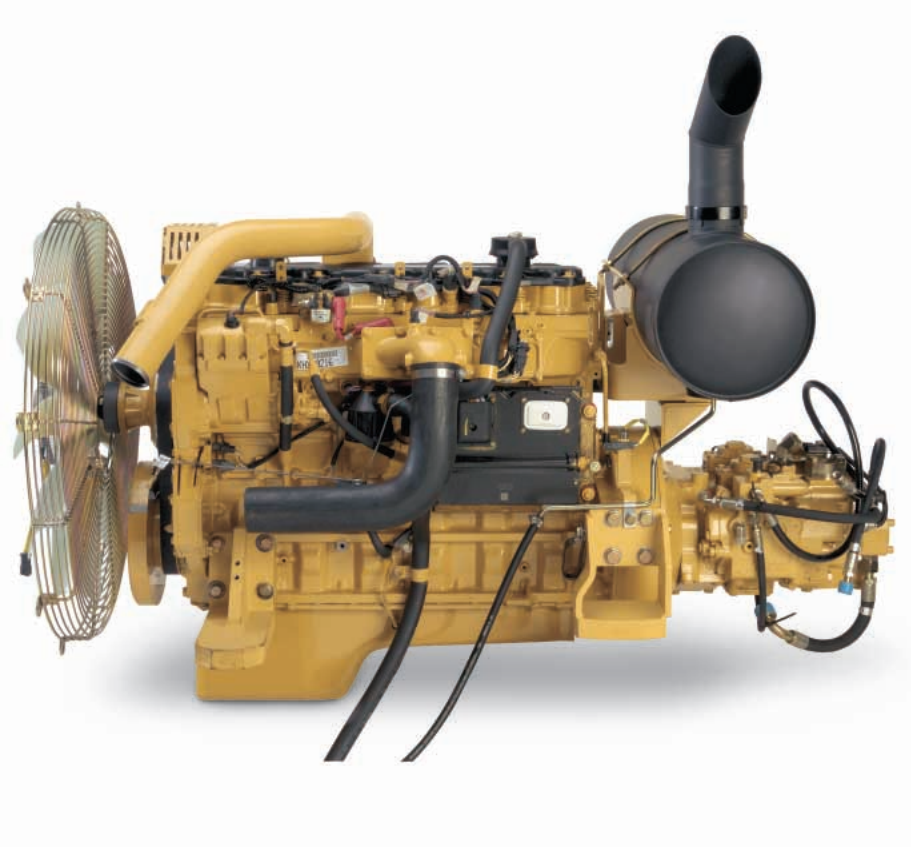
Work Tools – Attachments

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

✔ *New Feature*

Engine

The Cat® C7 gives the 324D exceptional power and fuel efficiency unmatched in the industry for consistently high performance in all applications.



Cat C7. The Cat C7 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 local engine emission regulations for off-road applications. By combining ACERT Technology with the new Economy Mode and Power Management, customers can balance the demands of performance and fuel economy to suit their requirements and application.

Performance. The Cat C7 with ACERT Technology offers more power, and runs at lower speeds for better fuel efficiency and reduced wear.

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 C7 features electronic controls that govern the unit 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.

Flexible Fuel Options.
Economy Mode. Available as standard, economy mode is best utilized in light duty applications and offers the best fuel economy while maintaining the breakout forces and lift capacity enjoyed while in standard power mode.

Power Management. Power Management optimizes machine performance for each type of application. The operator can change the engine power on the monitor (password protected) from standard to high. The high power mode is recommended for extremely productive and hard digging applications. The standard power mode is recommended for lighter duty applications and optimizes fuel efficiency.

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. The Cat C7 delivered 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.

Noise Reduction Technologies. The engine mounts are rubber-isolating mounts matched with the engine package. Further noise reduction has been achieved through design changes to the isolated top cover, oil pan, multiple injection strategy, insulated timing cover, sculpted crankcase and gear train refinements.

Hydraulics

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

Component Layout. The 324D 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 reduces 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.

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 324D. 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 Station

Designed for comfort, simple and easy operation, the 324D allows the operator to focus on production.

Operator Station. The workstation is spacious, quiet and comfortable, assuring high productivity during a long work day. 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 mounted in front of the right front cab post and is easy to see.

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. The monitor is a full color 400x234 pixels Liquid Crystal Display (LCD) graphic display. The monitor angle can be adjusted to minimize sun glare and has the capability of displaying information in twenty-seven different languages.

The Master Caution Lamp blinks ON and OFF when one of the critical conditions below occurs:

- Engine oil pressure low
- Coolant temperature high
- 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 Display. The clock and throttle dial position are displayed in this area. When Economy mode/Power management system is activated, the icon of the gas station icon will be indicated at the side of the throttle dial.

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

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 mark is displayed when no information is available to be displayed.

Joystick Control. Joystick controls have low lever effort and are designed to match the operator’s natural wrist and arm position. The operator can operate joystick controls with an arm on the armrest and the horizontal and vertical strokes have been designed to reduce operator fatigue.

Seat. A new optional air suspension seat is available in the 324D. The standard and optional seats provide 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.

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

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 left console.

Console. 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 Exterior. The exterior design uses thick steel tubing along the bottom 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.

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. To promote visibility, all glass is affixed directly to the cab, eliminating window frames. The upper front windshield opens, closes and stores on the roof above the operator with a one-touch action release system.

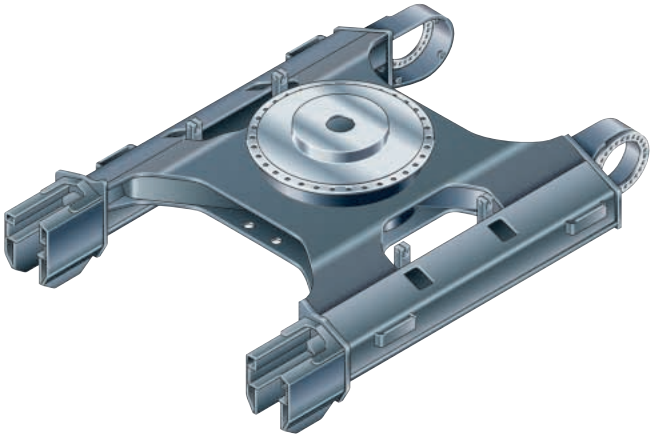
Wipers. Pillar-mounted wipers increase the operator’s viewing area and offer continuous and intermittent modes.

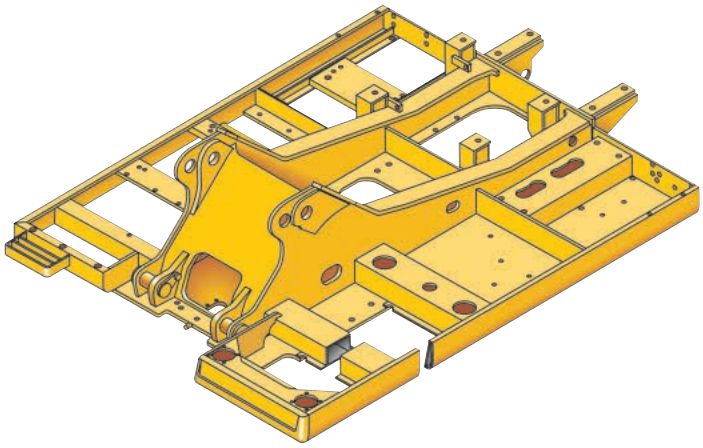
Skylight. An enlarged skylight with sunshade provides excellent visibility and excellent ventilation.

Product Link. Product Link is now an attachment available from the factory.

Structures

324D structural components and undercarriage are the backbone of the machine's durability.





Robotic Welding. Up to 95% of the structural welds on a Caterpillar® Excavator are completed by robots. Robotic welds achieve over three times the penetration of manual welds.

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

Main Frame. Rugged main frame is designed for maximum durability and efficient use of materials.

Undercarriage. Durable Cat undercarriage absorbs stresses and provides excellent stability.

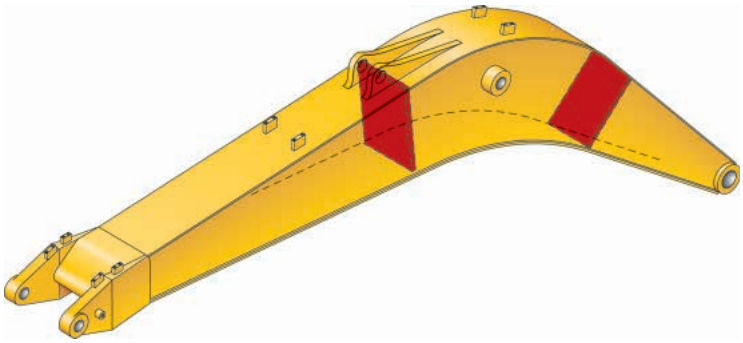
Rollers and Idlers. Sealed and lubricated track rollers, carrier rollers, and idlers provide excellent service life, to keep the machine in the field longer.

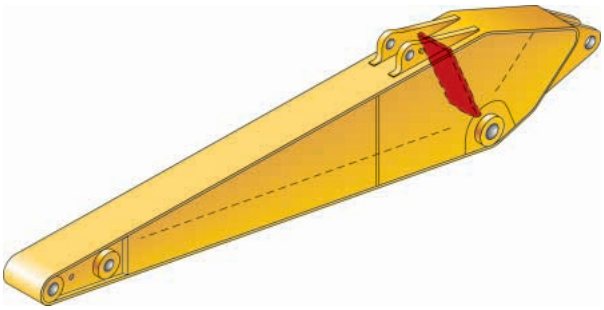
Standard Undercarriage. The standard undercarriage is well suited for applications that require frequent repositioning of the machine, have restricted working space or uneven, rocky terrain.

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

Booms and Sticks

Designed-in flexibility to help bring higher production and efficiency to all jobs.





Booms, Sticks and Attachments. Designed for maximum flexibility, productivity and high efficiency on all jobs, the 324D offers a wide range of configurations suitable for a variety of applications.

Front Linkage Attachments. Three lengths of booms and five types of sticks are available, offering a range of configurations suitable for a wide variety of application conditions.

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

Sticks. The sticks are made of high-tensile strength steel using a large box section design with interior baffle plates and an additional bottom guard.

Reach Boom. The reach boom features an optimum design that maximizes digging envelopes with three stick choices: R3.6B1, R2.95CB1 and R2.5CB1 Sticks

- The B1 and CB1-family bucket associated with these sticks have enough capacity for excellent reach and depth in trenching and general construction applications.

R3.6B1 Stick

- Stick provides maximum reach at the expense of bucket size and forces.

R2.95CB1

- The most versatile front linkage and is a good fit for all 11-ton dump trucks with regard to reach and bucket capacity.

R2.5CB1

- Provides excellent digging envelope with large bucket sizes.

Mass Excavation Boom. The mass excavation boom maximizes productivity. The mass version offers significantly higher digging forces and allows use of larger buckets.

M2.5DB and M2.0DB Sticks

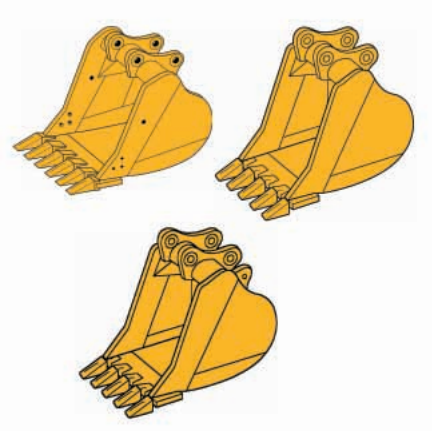
- The DB Stick uses a DB-family bucket and was designed for high volume earth moving, powerful digging force and a large capacity bucket. Combined with a Mass boom, this stick delivers outstanding productivity.

Linkage Pins. The bucket linkage pins 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 is easier to use than compared to the previous lifting eye.

Work Tools – Attachments

The 324D has an extensive selection of work tools to optimize machine performance.



Service Life. Caterpillar buckets increase service life and reduce repair costs.

- Dual radius design for increased heel clearance and reduced wear
- Robot welding of hinge assembly for increased weld penetration and longer life
- Incorporates the new aggressive and easier to install, K Series™ GET tool system
- High strength and heat-treated steel that exceeds T-1 in high wear areas

Excavation Buckets (X). Excavation (X) buckets for digging in low-impact, moderately abrasive materials such as dirt, loam, gravel and clay.

Heavy Duty Buckets. Heavy duty (HD) buckets for a wide range of moderately abrasive applications such as mixed dirt, clay and rock. HD buckets have best loading and dumping characteristics and will empty easier in cohesive material. More robust construction than the GP buckets.

Heavy-Duty Power (HDP) Buckets. For use in moderately abrasive applications where breakout force and cycle times are critical. Maximizes tip force and improves cycle times in most materials. Not for use in sticky material conditions. Cutting edge and GET are up-sized.

Heavy Duty Rock Buckets. Heavy duty rock for aggressive bucket loading in highly abrasive application such as shot rock and granite. Features include:

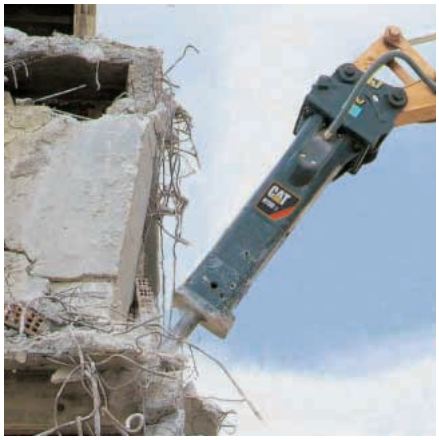
- Thickest wear plates to extend the life of bucket in severe applications
- Side wear plated extend further up the side of the bucket for maximum protection in rocky soils
- Buckets accept sidebar protectors for best sidebar protection, or sidecutters for best fill characteristics and bucket wear protection

Caterpillar Ground Engaging Tools (GET). The new Caterpillar K Series GET is featured on the new buckets. This new GET system uses a hammerless vertical retainer, which is easier to remove and install than the Cat J Series pin. The new tooth shapes are more aggressive and offer better penetration than the previous generation of tips. There is also a variety of side cutters and sidebar protectors to match operating conditions.

Tool Control System. The optional tool control system maximizes work tool productivity by configuring hydraulic flow, pressure, and operator controls to match a specific work tool. System versatility enables a wide range of tools to be used.

Versatility

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



Hammer

Cat Hydraulic Hammers are precisely matched to Cat machines for optimum performance in a wide variety of demolition and construction applications.

Thumb

Cat thumbs multiply the capabilities of your excavator. This Highly versatile tool works in conjunction with the bucket to transform an excavator into a versatile material-handling machine.

Multi-processor

Multi-processors do the work of many types of demolition tools by use of interchangeable jaw sets. Changing jaws allows a single unit to crush, pulverize and perform a variety of specialized cutting tasks, such as cutting steel rebar and tanks.

Vibratory Plate Compactor

Caterpillar Vibratory Plate Compactors provide superior compaction force in a reliable, low-maintenance package. These units produce high-power impulses at a rate of 2,200 impacts per minute. The forces generated by this vibration drive soil particles close together for solid, stable compactions. Whether in a trench or on a slope, driving sheeting or posts, Cat Compactors are the superior choice for any jobsite's compaction tasks.

360° Scrap Shear

Caterpillar Scrap Shears feature 360° rotation and a high force-to-weight ratio. Used for demolishing steel structures, and preparing bulk scrap (such as cars, farm machinery and railroad cars) for further processing.

Pin-Grabber Quick Coupler

Pin-Grabber Plus Quick Couplers multiply the versatility and utility of Cat Excavators by allowing them to pick up and use virtually any work tool equipped with standard pins.

Dedicated Quick Coupler. Quick Couplers increase the versatility of Cat excavators; allowing the ease of changing work tools to meet job requirements at hand in a matter of minutes or seconds. Dedicated quick coupler buckets have no loss of tip radius, and develop maximum breakout force.

Service and Maintenance

Simplified service and maintenance features save you time and money.

Ground Level Service. The design and layout of the 324D 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 of the upper structure allows ground-level access to the pump and pilot filter.

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

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.

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

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

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

Diagnostics and Monitoring. The 324D is equipped with S•O•S^{SM} 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. 324D 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.

Purchase. Look past initial price. 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.

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 C7 with ACERT Technology
Net Flywheel Power	140 kW
Net Power – ISO 9249	140 kW
Bore	110 mm
Stroke	127 mm
Displacement	7.2 L

- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- No engine derating needed up to 2300 m.

Weights

Operating Weight – Std. Undercarriage	24 240 kg
Operating Weight – Long Undercarriage	25 560 kg

- Reach boom, R2.95CB1 Stick, 1.0 m^3 Bucket, 600 mm Shoes
- Reach boom, R2.95CB1 Stick, 1.1 m^3 Bucket, 800 mm Shoes

Track

Standard w/Standard Undercarriage	600 mm
Standard w/Long Undercarriage	800 mm
Optional – Triple Grouser	600 mm
Optional	700 mm
Optional – Double Grouser	600 mm

Swing Mechanism

Swing Speed	9.6 rpm
Swing Torque	73.4 kN•m

Drive

Maximum Drawbar Pull	227 kN
Maximum Travel Speed	5.5 km/h

Hydraulic System

Main Implement System – Maximum Flow (2x)	235 L/min
Max. Pressure – Equipment	35 000 kPa
Max. Pressure – Travel	35 000 kPa
Max. Pressure – Swing	24 500 kPa
Pilot System – Maximum Flow	32.4 L/min
Pilot System – Maximum Pressure	3900 kPa
Boom Cylinder – Bore	135 mm
Boom Cylinder – Stroke	1305 mm
Stick Cylinder – Bore	140 mm
Stick Cylinder – Stroke	1660 mm
B1 Family Bucket Cylinder – Bore	120 mm
B1 Family Bucket Cylinder – Stroke	1104 mm
CB1 Family Bucket Cylinder – Bore	130 mm
CB1 Family Bucket Cylinder – Stroke	1156 mm
DB Family Bucket Cylinder – Bore	150 mm
DB Family Bucket Cylinder – Stroke	1151 mm

Service Refill Capacities

Fuel Tank Capacity	520 L
Cooling System	30 L
Engine Oil	30 L
Swing Drive	10 L
Final Drive (each)	6 L
Hydraulic System (including tank)	300 L
Hydraulic Tank	145 L

Sound Performance

Performance	ANSI/SAE J1166 APR 90

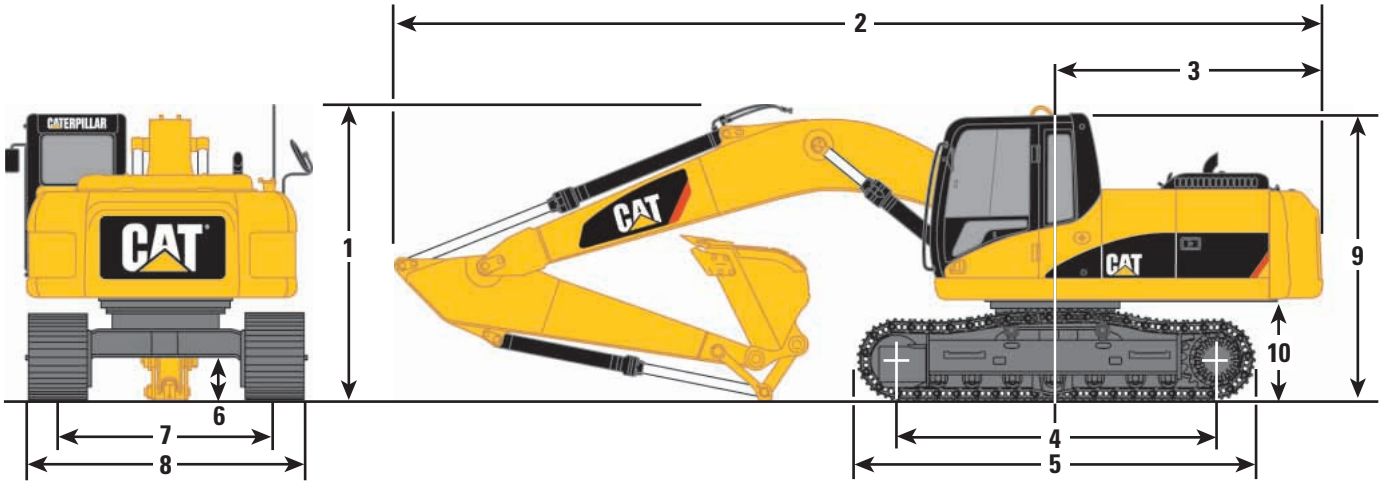
- When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 OCT 98, meets OSHA and MSHA requirements for operator sound exposure limits in effect at time of manufacture.
- Hearing protection may be needed when operating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

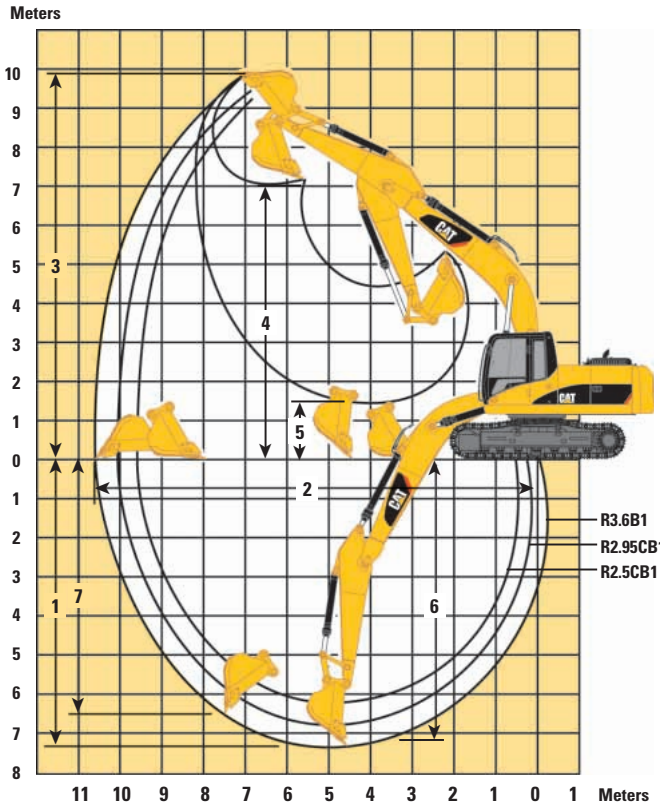


Boom Options		Reach Boom 5.9 m			Mass Boom 5.3 m	
Stick Options		**R3.6B1**	**R2.95CB1**	**R2.5CB1**	**M2.5DB**	**M2.0DB**
1	Shipping height**	3430 mm	3170 mm	3300 mm	3450 mm	3320 mm
2	Shipping length	10 050 mm	10 060 mm	10 100 mm	9480 mm	9610 mm
3	Tail swing radius	2940 mm	2940 mm	2940 mm	2940 mm	2940 mm
Undercarriage		**Fixed Gauge**			**Long Fixed Gauge**	
4	Length to center of rollers	3450 mm			3830 mm	
5	Track length	4250 mm			4630 mm	
6	Ground clearance***	470 mm			470 mm	
7	Track gauge	2390 mm			2590 mm	
8	Track width*	2990 mm			3390 mm	
9	Cab height**	2980 mm			2980 mm	
10	Counterweight clearance***	1060 mm			1060 mm	

* Track width shown is for 600 mm track shoes for Fixed Gauge and 800 mm for Long Fixed Gauge.
** Includes 30 mm shoe lug height.
*** Without 30 mm shoe lug height.

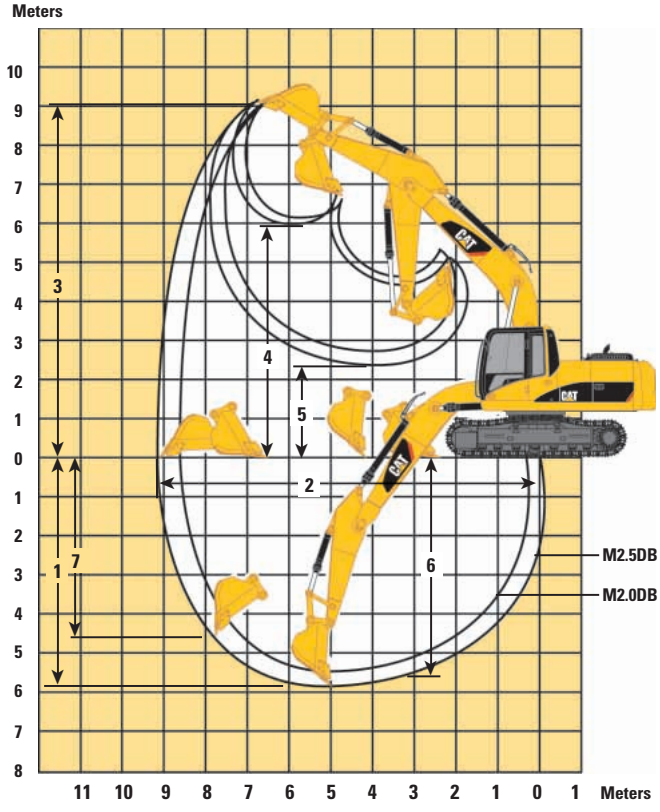
Reach Excavator Working Ranges

Reach (R) boom configuration



Mass Excavator Working Ranges

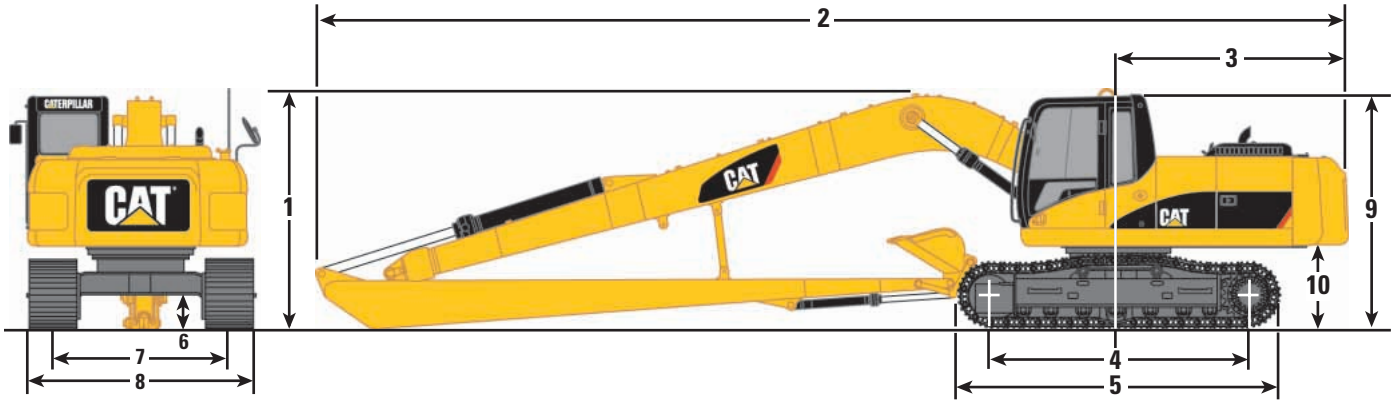
Mass (M) boom configuration



Boom Options		Reach Boom			Mass Boom	
Stick Options		**R3.6B1**	**R2.95CB1**	**R2.5CB1**	**M2.5DB**	**M2.0DB**
1	Maximum digging depth	7300 mm	6740 mm	6290 mm	5910 mm	5410 mm
2	Maximum reach at ground level	10 550 mm	10 030 mm	9620 mm	9110 mm	8650 mm
3	Maximum cutting height	9880 mm	9660 mm	9460 mm	9060 mm	8830 mm
4	Maximum loading height	7070 mm	6700 mm	6500 mm	5970 mm	5750 mm
5	Minimum loading height	1910 mm	2470 mm	2930 mm	2360 mm	2860 mm
6	Maximum depth cut for 2240 mm level bottom	7140 mm	6560 mm	6080 mm	5720 mm	5190 mm
7	Maximum vertical wall digging depth	6540 mm	5830 mm	5390 mm	4590 mm	4120 mm
	Bucket digging force (SAE)	131 kN	154 kN	154 kN	198 kN	198 kN
	(ISO)	149 kN	174 kN	174 kN	222 kN	222 kN
	Stick digging force (SAE)	105 kN	118 kN	138 kN	135 kN	154 kN
	(ISO)	108 kN	122 kN	143 kN	140 kN	160 kN

Dimensions

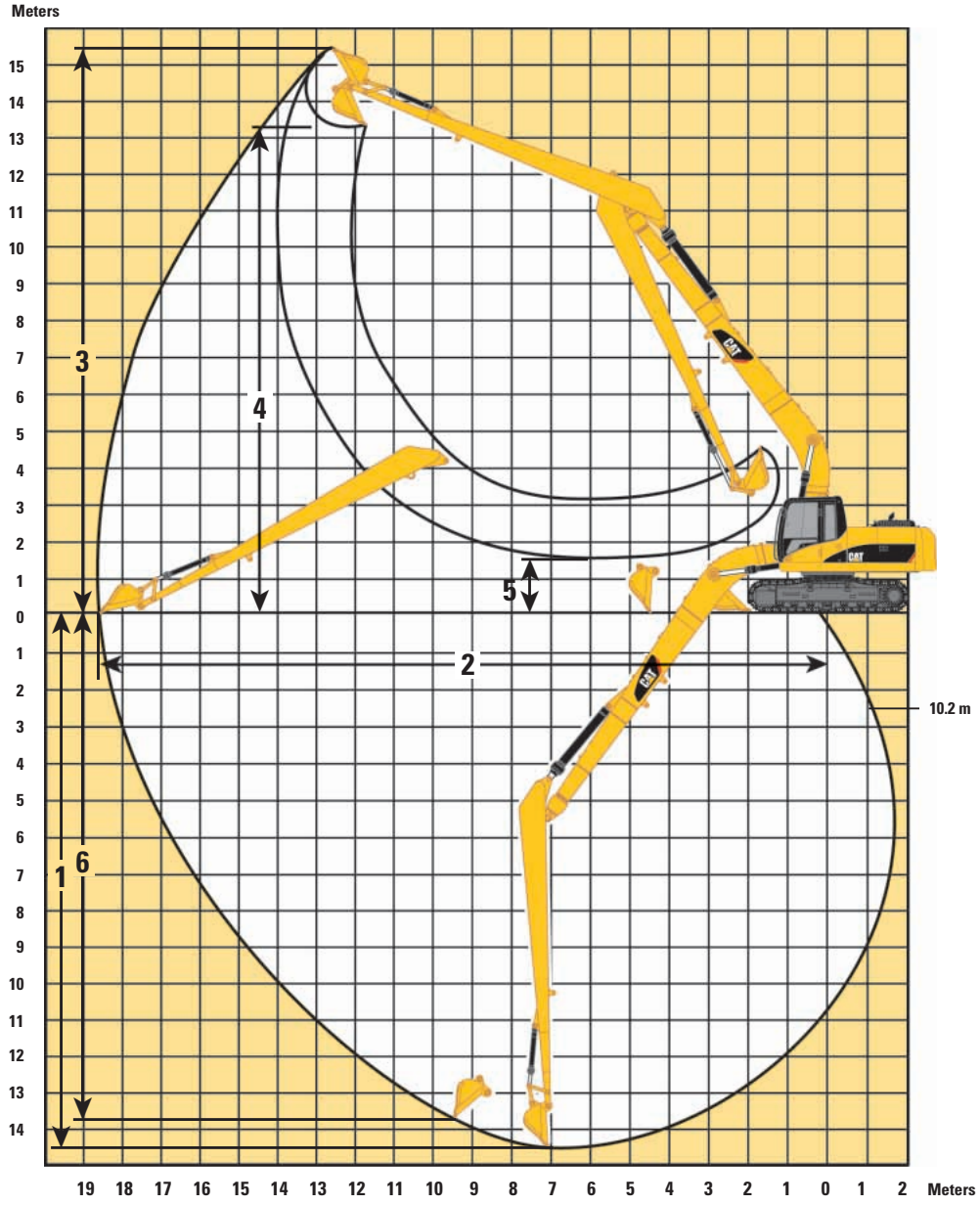
All dimensions are approximate.



Boom Options	Super Long Reach Boom 10.2 m
Stick Options	**7.85 m**
1 Shipping height	3150 mm
2 Shipping length	14 340 mm
3 Tail swing radius	3000 mm
4 Length to center of rollers	3830 mm
5 Track length	4630 mm
6 Ground clearance	440 mm
7 Track gauge	2590 mm
8 Transport width	
800 mm shoes (standard)	3390 mm
700 mm shoes (optional)	3290 mm
600 mm shoes (optional)	3190 mm
9 Cab height	2980 mm
10 Counterweight clearance	1060 mm

Reach Excavator Working Ranges

Reach (R) boom configuration



Boom Options	Super Long Reach Boom 10.2 m
Stick Options	**7.85 m**
Bucket Options	**DC 0.61 m³**
1 Maximum digging depth	14 594 mm
2 Maximum reach at ground level	18 603 mm
3 Maximum cutting height	15 411 mm
4 Maximum loading height	13 285 mm
5 Minimum loading height	1483 mm
6 Maximum vertical wall digging depth	13 922 mm

Major Component Weights

		kg
Base machine with counterweight and 800 mm shoes (without front linkage)	With 600 mm shoe	19 450
	With 800 mm shoe	20 740
Two boom cylinders (each)		227
Counterweight		
Non-removal type		4520
Boom (includes lines, pins and stick cylinder)		
Reach boom		2033
Mass boom		2138
Stick (includes lines, pins, bucket cylinder and linkage)		
R3.6B1		1199
R2.95CB1		1208
R2.5CB1		1149
M2.5DB		1470
M2.0DB		1385
Track roller frame [includes frame, rollers, idlers, steps, guards, final drive, 800 mm shoes] – each	With 600 mm shoe	7950
	With 800 mm shoe	9240

324D Bucket Specifications and Compatibility

	Capacity*	Width	Tip Radius	Weight (w/o tips)	Teeth	Total Weight	Reach Stick			Mass Stick	
	m^3	mm	mm	kg	Qty	kg	R3.6B1	R2.95CB1	R2.5CB1	M2.5DB	M2.0DB
B1 Buckets											
Excavation	0.9	1092	1488	647	5	647	●	●	●	—	—
CB1 Buckets											
Excavation	1.0	1232	1555	822	5	822	◒	●	●	—	—
	1.1	1320	1555	857	5	857	○	◒	◒	—	—
	1.2	1420	1555	896	5	896	○	○	◒	—	—
DB Buckets											
Excavation	1.4	1472	1660	1124	5	1124	—	—	—	○	●
	1.5	1559	1660	1167	5	1167	—	—	—	○	◒

324D L Bucket Specifications and Compatibility

	Capacity*	Width	Tip Radius	Weight (w/o tips)	Teeth	Total Weight	Reach Stick			Mass Stick	
	m^3	mm	mm	kg	Qty	kg	R3.6B1	R2.95CB1	R2.5CB1	M2.5DB	M2.0DB
B1 Buckets											
Excavation	0.9	1092	1488	647	5	647	●	●	●	—	—
CB1 Buckets											
Excavation	1.0	1232	1555	822	5	822	●	●	●	—	—
	1.1	1320	1555	857	5	857	◒	●	●	—	—
	1.2	1420	1555	896	5	896	◒	◒	●	—	—
DB Buckets											
Excavation	1.4	1472	1660	1124	5	1124	—	—	—	◒	●
	1.5	1559	1660	1167	5	1167	—	—	—	◒	◒

Assumptions for maximum material density rating:
1. Front linkage fully extended at ground line
2. Bucket curled
3. 100% bucket fill factor

* 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^3 max material density
◒ 1800 kg/m^3 max material density
○ 1500 kg/m^3 max material density
∴ 1200 kg/m^3 max material density
— Not Available

324D/324D L Work Tool Matching Guide

Boom Options	Reach Boom 5.9 m			Mass Boom 5.3 m	
Stick Options	**R3.6CB**	**R2.95CB**	**R2.5CB**	**M2.5DB**	**M2.0DB**
Hydraulic Hammer	H115Cs/ H120Cs/ H130Ds	H115Cs/ H120Cs/ H130Ds	H115Cs/ H120Cs/ H130Ds	H115Cs/ H120Cs/ H130Ds	H115Cs/ H120Cs/ H130Ds
Vibratory Plate Compactor	CVP110	CVP110	CVP110	CVP110	CVP110
Multi-Processor	MP20	MP20	MP20	n/a	n/a
360 Scrap Shear	S320	S320	S320	n/a	n/a
Trash Grapple	2.7 m^3	2.7 m^3	2.7 m^3	3.1 m^3	3.1 m^3
Contractors' Grapple	yes	yes	yes	n/a	n/a
Hydraulic Thumb	yes	yes	yes	n/a	n/a
Dedicated Quick Coupler	yes	yes	yes	yes	yes
Pin-Grabber Quick Coupler	yes	yes	yes	yes	yes

Reach Boom Lift Capacities

 Load Point Height

 Load Radius Over Front

 Load Radius Over Side

 Load at Maximum Reach

R2.95B1 STICK – 2950 mm
BUCKET – 1.1 m³

UNDERCARRIAGE – Long
SHOES – 600 mm triple grouser

BOOM – 5900 mm

		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
														m
7.5 m	kg											*2900	*2900	8.12
6.0 m	kg									*4900	4100	*2850	*2850	9.04
4.5 m	kg							*6250	6050	*5700	4050	*2900	2550	9.58
3.0 m	kg					*9650	9100	*7350	5700	6200	3900	*3050	2350	9.81
1.5 m	kg					*11 850	8350	*8550	5350	6000	3700	*3300	2300	9.76
Ground Line	kg			*5500	*5500	*13 150	7900	8350	5100	5850	3550	*3700	2400	9.43
–1.5 m	kg	*5700	*5700	*9450	*9450	*13 350	7750	8200	4950	5750	3500	*4400	2700	8.80
–3.0 m	kg	*10 000	*10 000	*14 850	*14 850	*12 600	7800	8250	4950			5550	3400	7.77
–4.5 m	kg			*15 050	*15 050	*10 700	8050	*7600	5150			*5350	5150	6.16

* 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.

R2.5B1 STICK – 2500 mm
BUCKET – 1.2 m³

UNDERCARRIAGE – Long
SHOES – 600 mm triple grouser

BOOM – 5.9 m

		3.0 m		4.5 m		6.0 m		7.5 m				
												m
7.5 m	kg					*5800	*5800			*4000	*4000	7.60
6.0 m	kg					*5950	*5950			*3900	3200	8.59
4.5 m	kg			*8050	*8050	*6700	5950	*6050	3950	*3950	2750	9.16
3.0 m	kg			*10 400	8900	*7800	5600	6150	3850	*4150	2550	9.40
1.5 m	kg			*12 400	8150	8600	5250	5950	3700	4100	2500	9.35
Ground Line	kg			*13 300	7800	8350	5050	5800	3550	4350	2600	9.00
–1.5 m	kg	*9900	*9900	*13 200	7750	8250	4950	5800	3500	4950	3000	8.33
–3.0 m	kg	*16 300	16 250	*12 150	7850	8300	5000			*5500	3900	7.22
–4.5 m	kg	*13 400	*13 400	*9750	8200					*7350	5750	5.64

* 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.

R2.95B1 STICK – 2950 mm
BUCKET – 1 m³

UNDERCARRIAGE – Standard
SHOES – 600 mm triple grouser

BOOM – 5900 mm

		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
														m
7.5 m	kg											*2950	*2950	8.12
6.0 m	kg									*4950	3650	*2850	2600	9.04
4.5 m	kg							*6250	5400	5350	3600	*2900	2250	9.58
3.0 m	kg					*9650	8050	*7400	5050	5200	3450	*3050	2050	9.81
1.5 m	kg					11 650	7300	7250	4700	5000	3250	3200	2000	9.76
Ground Line	kg			*5500	*5500	11 150	6900	6950	4450	4850	3100	3350	2100	9.43
–1.5 m	kg	*5750	*5750	*9450	*9450	10 950	6750	6800	4350	4800	3050	3750	2350	8.80
–3.0 m	kg	*10 050	*10 050	*14 850	13 700	11 050	6800	6850	4350			4650	3000	7.77
–4.5 m	kg			*15 050	14 200	*10 700	7050	7000	4500			*5400	4550	6.16

* 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.

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

M2.5DB STICK – 2500 mm
BUCKET – 1.4 m³

UNDERCARRIAGE – Long
SHOES – 600 mm triple grouser

BOOM – 5300 mm

		1.5 m		3.0 m		4.5 m		6.0 m		7.5 m				
														m
7.5 m	kg											*3500	*3500	6.95
6.0 m	kg							*6000	5900			*3300	*3300	8.05
4.5 m	kg							*6500	5750	*4700	3650	*3300	2800	8.66
3.0 m	kg					*9600	8950	*7500	5450	5850	3550	*3500	2550	8.92
1.5 m	kg					*11 700	8150	8450	5100	5700	3400	*3800	2500	8.87
Ground Line	kg			*8550	*8550	*12 900	7700	8200	4850	5600	3300	*4350	2650	8.49
–1.5 m	kg	*7950	*7950	*14 200	*14 200	*12 950	7550	8050	4750			*5300	3150	7.75
–3.0 m	kg	*14 250	*14 250	*17 000	16 050	*11 700	7700	8150	4850			*5850	4450	6.50
–4.5 m	kg					*8200	8150					*7450	7450	4.76

* 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.

Super Long Reach Boom Lift Capacities

 Load Point Height

 Load Radius Over Front

 Load Radius Over Side

 Load at Maximum Reach – Bucket Curled

BOOM – 10.2 m
STICK – 7.85 m

BUCKET – 1142 mm
0.60 m³
291 kg

SHOES – 800 mm triple grouser
UNDERCARRIAGE – Long
HEAVY LIFT – On

		6.0 m		7.5 m		9.0 m		10.5 m		12.0 m		13.5 m		15.0 m				
																		m
12.0 m	kg															*980	*980	15.24
10.5 m	kg											*1630	*1630	*1710	*1710	*930	*930	16.16
9.0 m	kg											*1610	*1610	*1680	*1680	*900	*900	16.89
7.5 m	kg											*1730	*1730	*1710	*1710	*870	*870	17.01
6.0 m	kg											*1820	*1820	*1790	1680	*870	*870	17.62
4.5 m	kg									*2070	*2070	*1960	*1960	*1890	1600	*880	*880	17.99
3.0 m	kg					*2860	*2860	*2530	*2530	*2300	*2300	*2130	1910	*2010	1510	*910	880	18.22
1.5 m	kg	*5290	*5290	*4060	*4060	*3330	*3330	*2860	2820	*2540	2230	*2300	1780	*2140	1420	*930	860	18.32
Ground Line	kg	*6250	5670	*4690	4220	*3770	3260	*3180	2580	*2770	2060	*2480	1660	*2270	1330	*950	850	18.28
–1.5 m	kg	*6950	5140	*5220	3830	*4160	2980	*3470	2370	*2990	1910	*2650	1550	2240	1260	*1000	860	18.12
–3.0 m	kg	*7400	4820	*5600	3570	*4470	2770	*3710	2210	3090	1790	2580	1460	2180	1200	*1080	890	17.82
–4.5 m	kg	*7650	4670	*5850	3410	4550	2640	3650	2100	3000	1710	2520	1400	2140	1160	*1180	960	17.36
–6.0 m	kg	*7710	4630	5840	3340	4480	2570	3590	2040	2950	1660	2480	1370	2130	1150	*1310	1090	16.74
–7.5 m	kg	*7600	4670	5850	3350	4460	2550	3570	2030	2950	1650	2490	1380	2160	1180	*1500	1230	15.94
–9.0 m	kg	*7310	4800	*5780	3420	4510	2600	3610	2060	2990	1690	2550	1440			*1770	1480	14.92
–10.5 m	kg	*6800	4990	*5420	3550	*4430	2710	*3670	2160	*3010	1800					*2200	1870	13.63
–12.0 m	kg	*5970	5280	*4780	3770	*3870	2890	*3090	2350							*2590	*1930	11.96
–12.0 m	kg	*4620	*4620	*3630	*3630	*2700	*2700											

* 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.

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.

Upper Structure
- Electrical
  - Alternator, 80A
  - Light, storage box mounted (one)
  - Signaling/Warning horn
- Engine
  - Cat C7 with ACERT Technology
  - 2300 m altitude capability with no deration
  - Air intake heater
  - Automatic engine speed control
  - Radial seal air filter
  - Water separator in fuel line
  - Waved fin radiator with space for cleaning
  - 2 micron fuel filter
- Automatic swing parking brake
- Boom drift reducing valve
- Boom lowering device for back-up
- Caterpillar one key security system
- Counterweight
- Door locks and cap locks
- Mirrors, rearview (frame-right, cab-left)
- Regeneration circuit for boom and stick
- Reverse swing damping valve
- Stick drift reducing valve
- Two speed travel

Operator Station
- Cab
  - Adjustable armrest
  - Ashtray with lighter
  - Beverage holder
  - Bi-Level air conditioner (automatic) with defroster
  - Bolt-on FOGS capability
  - Capability of installing two additional pedals
  - Coat hook
  - Front windshield glass split 70/30
  - Interior lighting
  - Literature holder
  - Mounting for two stereo speakers (two locations)
  - Neutral lever (lock out) for all controls
  - Openable front windshield with assist device
  - Openable skylight
  - Pillar mounted upper windshield wiper and washer
  - Pressurized cab (positive filtered ventilation)
  - Radio mounting (DIN size)
  - Rear window, emergency exit
  - Removable lower windshield with in-cab storage bracket
  - Seat with integrated, adjustable console
  - Seat belt, retractable (50.8 mm width)
  - Sliding upper door window
  - Storage compartment suitable for lunch box
  - Travel control pedals with removable hand levers
  - Utility space for magazine
  - Washable floor mat
- Monitor
  - Economy mode
  - Full time clock
  - Language display – Full color and graphical display
  - Machine condition, error code and tool mode setting
  - Start-up level check for hydraulic oil, engine oil and coolant
  - Warning information, filter/fluid change information and working hour

Undercarriage
- Grease lubricated GLT2, resin seal
- Idler and center section track guiding
- 800 mm triple grouser track shoe (324D L)
- 600 mm triple grouser track shoes (324D)

Optional Equipment

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

- Front Linkage
  - Bucket linkage, B1-family with lifting eye
  - Bucket linkage, CB1-family with lifting eye
  - Bucket linkage, DB-family with lifting eye
  - Heavy-duty 5.9 m reach boom (with left and right side light)
  - Heavy-duty 2.95 m stick for heavy-duty reach boom
  - Reach boom 5.9 m with left and right side light
    - R3.6B1 3600 mm stick
    - R2.95CB1 2950 mm stick
    - R2.5CB1 2500 mm stick
  - Mass boom 5.3 m with left and right side light
    - M2.5DB 2500 mm stick
    - M2.0DB 3200 mm stick
- Track
  - Standard undercarriage
    - 700 mm triple grouser shoes
    - 800 mm triple grouser shoes
  - Long Undercarriage
    - 600 mm triple grouser shoes
    - 700 mm triple grouser shoes
- Guards
  - FOGS, bolt-on
  - Guard, cab front
  - Guard, cab top
  - Guard, full length for long undercarriage (two piece)
  - Guard, heavy-duty bottom, 4 mm, with out swivel guard and travel motor protection
  - Guard, track end guide for long undercarriage
  - Guard, track end guide for standard undercarriage
  - Guard, vandalism
  - Heavy-duty swivel protection, 16 mm, swivel guard only
  - Heavy-duty travel motor protection
  - Net for front guard (full net, one piece)
  - Net for front guard (half net, one piece)
  - Swivel protection, 6 mm, swivel guard only
- Auxiliary Hydraulics and Lines
  - Additional circuit
    - Hammer return filter circuit
  - Boom and stick lines
    - Cat quick coupler line (high and medium pressure capable)
    - Drain line
    - High pressure line
    - Medium pressure line
  - Quick coupler
    - Quick coupler for high pressure
  - Tool control system
    - Configuration 1 (hammer 1), foot pedal operated 1P, one-way circuit
    - Configuration 2 (common), foot pedals operated 1/2P, common circuit
    - Configuration 3 (hammer 2), foot pedal operated 2P, one-way circuit
- Operator Station
  - Tempered glass windows
  - Polycarbonate windows
  - Power supply, 12V-7A (1)
  - Power supply, 12V-7A (2)
  - Rear window emergency exit
  - Seat, high-back air suspension
  - Seat, high-back air suspension with heater
  - Seat, high-back mechanical suspension
  - Seat, low-back suspension without headrest
  - Headrest
  - Sunscreen
  - Windshield wiper, lower with washer
  - Working lights, cab mounted
  - Rain protector for front windshield
  - Sun visor
  - AM/FM radio
  - Control pattern quick-changer, two way
  - Control pattern quick-changer, four way
  - Cat MSS (anti-theft device)
  - Lunch box with cover
  - Water level indicator for water separator
- Other Optional Equipment
  - Additional gear train for auxiliary pump
  - Air pre-filter
  - Cooling package, high ambient with VSF
  - Cooling package, semi-high ambient
  - Electric refueling pump with auto shut off
  - Fine swing
  - Starting kit, cold weather, –32° C
  - Travel alarm

Notes

Notes

Notes

324D/324D L Hydraulic Excavator

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at **www.cat.com**

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Caterpillar dealer for available options.

AEHQ6000 (8-08)

Replaces AEHQ5664-04

APD

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