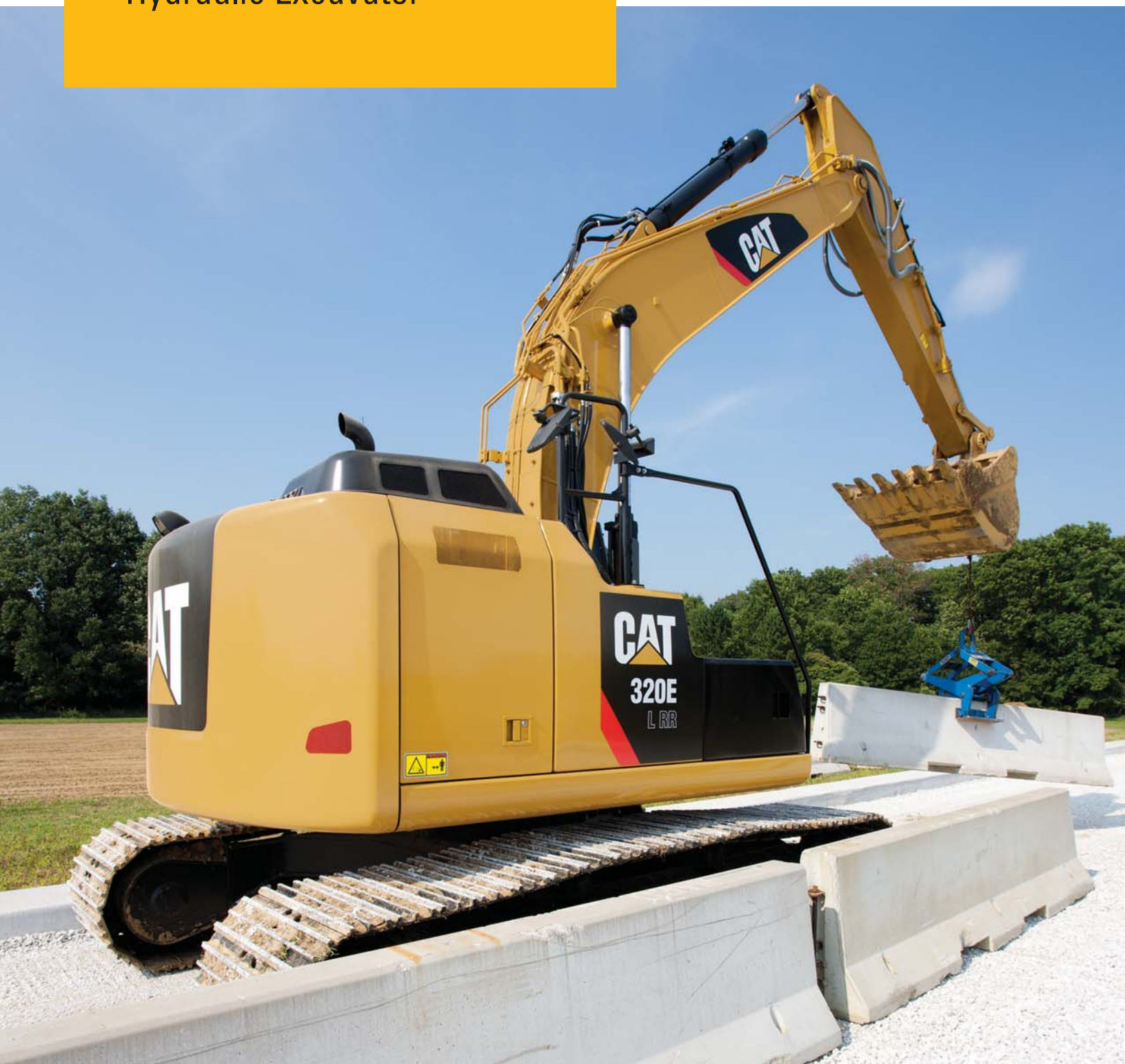


# 320E LRR

Hydraulic Excavator



## Engine

Engine Model	Cat® C6.6 ACERT™	
Net Power – SAE J1349	113 kW	152 hp
Gross Power – SAE J1995	122 kW	164 hp

## Drive

Maximum Travel Speed	5.6 km/h	3.5 mph
Maximum Drawbar Pull	205 kN	46,086 lbf

## Weight

Minimum Weight	23 700 kg	52,250 lb
Maximum Weight	25 600 kg	56,440 lb

Introduction

Since its introduction in the 1990s, the 300 Series family of excavators has become the industry standard in general, quarry, and heavy construction applications. The all-new E Series and the 320E LRR will continue that trend-setting standard.

The 320E LRR meets today's U.S. EPA Tier 4 Interim emission standards. It is also built with several new fuel-saving and comfort-enabling features and benefits that will delight owners and operators.

If you are looking for more productivity and comfort, less fuel consumption and emissions, and easier and more sensible serviceability, you will find it in the all-new 320E LRR and the E Series family of excavators.

Contents

Engine .....3

Operator Station .....4

Reduced Radius .....5

Hydraulics .....6

Structures & Undercarriage .....8

Front Linkage .....9

Work Tools.....10

Integrated Technologies.....12

Serviceability .....13

Safety .....14

Complete Customer Care.....15

Sustainability .....16

Specifications.....17

Standard Equipment.....26

Optional Equipment.....27





# Engine

Reduced emissions, economical and reliable performance

## **Cat® C6.6 ACERT™ Engine**

The Cat C6.6 ACERT engine delivers more horsepower using less fuel than the previous series engine.

### **Emissions Solution**

Equipped to meet U.S. Tier 4 emission standards, the 320E LRR's C6.6 ACERT engine features an aftertreatment regeneration solution that requires no operator intervention. The regeneration process automatically starts once the filtering system reaches a certain level – with no interruption to machine performance or the work process.

### **Biodiesel-Ready Fuel System**

The C6.6 ACERT engine is equipped with an electronic-controlled high-pressure fuel system that includes an electric priming pump and three-layer fuel hoses to allow the use of biodiesel (meeting ASTM 6751 or EN 14214) up to B20 (biodiesel 20% mixture).

### **Cooling System**

The cooling system features an air-to-air aftercooler and A/C condenser positioned for easy servicing; the viscous fan automatically adjusts to ambient temperatures to help reduce fuel consumption and noise.

### **Speed and Power Control**

The 320E LRR features speed control to maintain a constant speed – regardless of load – to improve fuel economy. Three different power modes are offered: high power, standard power, and economy power. The operator can easily change between modes through the monitor or console switch to meet the needs for the job at hand – all to help manage and conserve fuel.



# Operator Station

Comfort and convenience to keep people productive



## Seats

The seat range includes air suspension and heated options. All seats include a reclining back, upper and lower seat slide adjustments, and height and tilt angle adjustments to meet operator needs for comfort and productivity.

## Controls

The right and left joystick consoles (1) can be adjusted to meet individual preferences, improving operator comfort and productivity during the course of a day. With the touch of a button, one-touch idle reduces engine speed to help save fuel; touch it again or move the joystick and the machine returns to normal operating level.

## Monitor

The 320E LRR is equipped with a 7" LCD (Liquid Crystal Display) monitor (2) that's 40% bigger than the previous model's with higher resolution for better visibility. In addition to an improved keypad and added functionality, it's programmable to provide information in a choice of 42 languages to support today's diverse workforce.

An "Engine Shutdown Setting" accessible through the monitor allows owners and operators to specify how long the machine should idle before shutting down the engine, which can save significant amounts of fuel.

The image of the rearview camera is displayed directly on the monitor. Up to two different camera images can be displayed on the screen.

## Power Supply

Two 12-volt power supply sockets are located near key storage areas for charging electronic devices.

## Storage

Storage spaces are located in the front, rear, and side consoles. A specific space near the auxiliary power supply holds MP3 players and cell phones. The drink holder accommodates large mugs with handles, and a shelf behind the seat stores large lunch or toolboxes.

## Automatic Climate Control

The climate control system features five air outlets with positive filtered ventilation, which makes working in the heat and cold much more pleasant.







# Reduced Radius

Designed for high maneuverability in confined spaces

## Reduced Radius

The 320E LRR's tail swing radius is 2080 mm (6'10") compared to 2830 mm (9'3") on the 320E. When rotated 90 degrees and working over the side, just 500 mm (1'6")\* hangs over the side, allowing the 320E LRR to work well in road construction applications and other space-restricted areas.

## Stability

The 320E LRR offers a stable platform for all applications. When compared to 320E L, the 320E LRR delivers up to 16% additional lift over the side with the heavier counterweight. One of the main contributors is the use of an additional counterweight, which allows the balance of the machine to be comparable to a standard machine with a longer tail swing.

## Comfort

While the length of the upper structure is reduced to accommodate the work at hand, the cab of the 320E LRR is the same size with all the amenities and attachments found inside the 320E L.

*\*With 790 mm (31") shoe.*

# Hydraulics

Power to move more dirt, rock, and debris with speed and precision

## Hydraulic Horsepower

Hydraulic horsepower is the actual machine power available to do work through implements and work tools. It's much more than just the engine power under the hood – it's a core strength that differentiates Cat machines from other brands.

## Hydraulic Pumps

The 320E LRR uses a two-pump, high-pressure hydraulic system to tackle the toughest work in short order. A highly efficient and simple back-to-back main control valve improves fuel consumption and allows for greater tool versatility.

## Heavy Lift

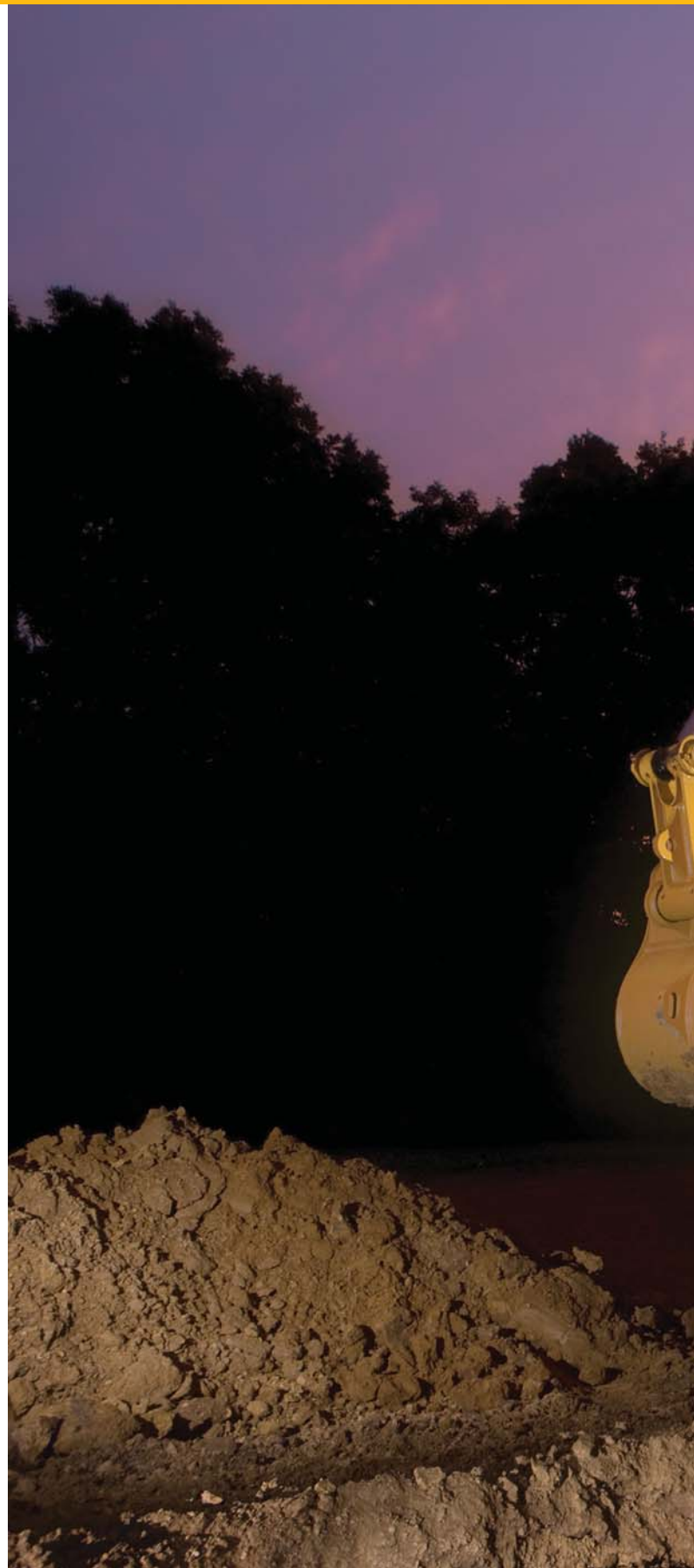
The 320E LRR features a heavy lift function to give more lift capacity over the front. With a touch of a button, pressure increases and engine speed reduces to give better control in lifting those extra-tough-to-move materials like concrete pipe and road construction barriers.

## Swing Priority Circuit

The swing priority circuit on the 320E LRR uses an electric valve that's operated by the machine's Electronic Control Module (ECM). Compared to using a hydraulic valve, an electric valve allows for more finely tuned control, which is critical during material loading.

## Electric Boom Regeneration Valve

This valve minimizes pump flow when the boom lowers down, which helps improve fuel efficiency. It is optimized for any dial speed setting being used by the operator, which results in enhanced boom lowering speed for greater controllability.







# Structures & Undercarriage

Built to work in rugged environments



## Frame

The 320E LRR features a solid foundation that's built to absorb the stresses of every day work. The main frame utilizes high-tensile-strength steel and a one-piece swing table to improve strength and reliability. The X-shaped carbody is designed to resist bending and twisting forces. The upper frame includes reinforced mountings to support the Roll-Over Protective Structure (ROPS) cab; the lower frame is reinforced to increase component durability.

## Undercarriage

The undercarriage is built to support various work applications. Precision-forged carrier rollers, press-fit pin master joints, and enhanced track shoe bolts improve durability and reduce the risk of machine downtime and the need and cost to replace components. Heavy-duty rollers and idlers are sealed and lubricated to extend service life. Track links are assembled and sealed with grease to decrease internal wear and increase life compared to dry seal undercarriage. Also, a segmented two-piece guiding guard is now offered to help maintain track alignment and improve performance in multiple applications.

## Counterweights

Two counterweight options are available: 6.2 mt (6.8 ton) and 6.9 mt (7.6 ton). Integrated links enable easy removal of the counterweight for maintenance or shipping.





# Front Linkage

Made for high stress and long service life

## Booms and Sticks

The 320E LRR is offered with a range of booms and sticks (see list below). Each is built with internal baffle plates for added durability, and each undergoes ultrasound inspection to ensure weld quality and reliability.

Large box-section structures with thick, multi-plate fabrications, castings, and forgings are used in high-stress areas such as the boom nose, boom foot, boom cylinder, and stick foot to improve durability.

The boom nose retention method is a durable captured flag design. Boom durability is improved with a number of plate thickness changes. Also, the front linkage pins' inner bearing surfaces are welded, and a self-lubricated bearing is used to extend service intervals and increase uptime.

## Selections

There are two basic boom options: HD and ES.

- **HD = Heavy Duty** – This type of boom is designed to balance reach, digging force, and bucket capacity. It covers the vast majority of applications such as digging, loading, trenching, and working with hydraulic tools.
- **ES = Extreme Service** – This type of boom is best used for demolition or extreme applications where stress loads on the boom are increased. It should be used for demanding, harsh applications like 100% rock and extensive hammer use.

# Work Tools

Dig, hammer, rip, and cut with confidence



An extensive range of Cat Work Tools for the 320E LRR includes buckets, compactors, grapples, scrap and demolition shears, multi-processors, pulverizers, hammers and thumbs. Each is designed to optimize the versatility and performance of your machine.

## Quick Couplers

Quick couplers allow one person to change work tools in seconds for maximum performance and flexibility on a job site. One machine can move rapidly from task to task, and a fleet of similarly equipped machines can share a common work tool inventory.

## Cat Center-Lock™ Pin Grabber Coupler

Center-Lock is the pin grabber style coupler featuring a patented locking system. A highly visible lock clearly shows the operator when the coupler is engaged or disengaged from the bucket or work tool.

## Buckets

Cat buckets are designed as an integral part of the 320E LRR system and feature new geometry for better performance. The leading edge has been pushed forward, resulting in more efficient filling and better operator control for greatly improved productivity. Wear coverage in the corners and side cutter and sidebar protector coverage are improved. All benefits are captured in a new bucket line with a new bucket naming convention.

Caterpillar offers standard bucket categories for excavators. Each category is based on intended bucket durability when used in recommended application and material. Buckets are available as pin-on or can be used with a quick coupler.



### General Duty (GD)

GD buckets are for digging in low-impact, low-abrasion material such as dirt, loam, and mixed compositions of dirt and fine gravel.

### Heavy Duty (HD)

The most popular bucket style, HD buckets are a good starting point when digging conditions are not well known like a wide range of impact and abrasion conditions including mixed dirt, clay, and rock.

### Severe Duty (SD)

SD buckets are for higher abrasion conditions such as well shot granite and caliche. Red area on bucket image illustrates additional protection against wear as compared to a GD bucket.

### Specialty Buckets

In addition to the standard four bucket categories, specialty bucket styles are available for the 320E LRR, each with a different purpose:

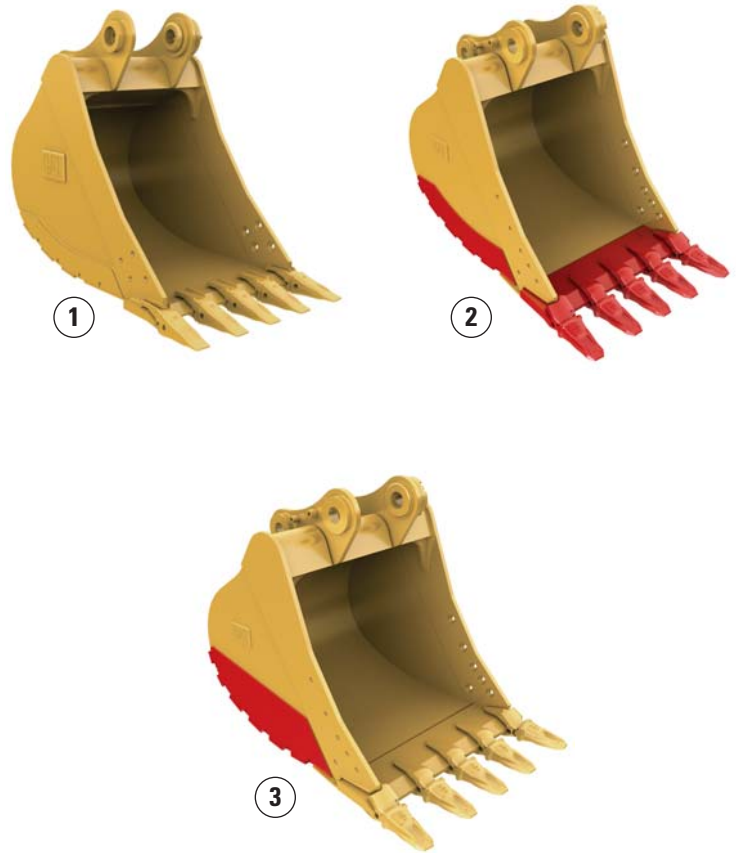
- **Ditch Cleaning** buckets for cleaning ditches, slope grading, and other finish work.
- **Center-Lock Pin Grabber Performance** buckets for maximum digging performance while keeping the versatility and convenience of a coupler.
- **Wide Tip** buckets for low impact material where leaving a smoother floor and minimal spillage are necessary.

### Hydraulic Kits

Caterpillar offers field-installed hydraulic kits that are uniquely designed to integrate Cat Work Tool attachments with Cat excavators. Hoses and tubes are pre-made, pre-shaped, and pre-painted to make installation quick and easy.

### Comprehensive Product Support

All Cat Work Tools are backed up by a world-wide network of well-stocked parts depots and highly experienced service and support personnel.



1) General Duty 2) Heavy Duty 3) Severe Duty



# Integrated Technologies

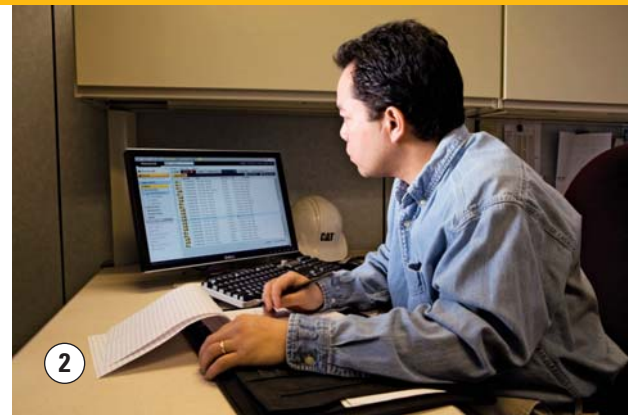
Solutions that make work easier and more efficient

## Cat® Grade Control Depth and Slope

This optional system combines traditional machine control and guidance with standard factory-installed and calibrated components, making the system ready to go to work the moment it leaves the factory. The system utilizes internal front linkage sensors – well protected from the harsh working environment – to give operators real-time bucket tip position information through the cab monitor (1), which minimizes the need and cost for traditional grade checking and improves job site safety. It also helps the operator complete jobs in fewer cycles, which means less fuel use.

## Cat Product Link

This optional system is deeply integrated into the machine monitoring system and is designed to help customers improve their overall fleet management effectiveness. Events and diagnostic codes as well as hours, fuel consumption, idle time, machine location, and other detailed information are transmitted to a secure web based application (2 and 3) called VisionLink™, which uses powerful tools to communicate to users and dealers.





# Serviceability

Fast, easy and safe access built in

## Service Doors

Wide service doors (1) and a one-piece hood (2) provide easy access to the cooling and engine compartments. Both doors and hood feature enhanced hardware and a new screen design to help minimize debris entry.

## Compartments

The compartments are designed to provide technicians with quick access to major components and regular service items like filters. The fresh air filter (3), for example, is located on the side of the cab to make it easy to reach and replace as needed.

## Other Service Enhancements

The water separator with water level sensor has a primary fuel filter element located in the pump compartment near ground level.

The fuel tank features a remote drain cock located in the pump compartment to make it easy to remove water and sediment during maintenance.

The engine oil check gauge is situated in front of the engine compartment for easy access, and a uniquely designed drain cock helps prevent spills.

Hydraulic lash adjusters automatically adjust valve opening and closing events to help reduce fuel consumption and engine noise. They also eliminate the need for a valve lash, which reduces maintenance for the customer.



# Safety

Features to help protect people



## ROPS Cab

The ROPS-certified cab allows a Falling Object Guard Structure (FOGS) to be bolted directly to it.

## Sound Proofing

Improved sealing and cab roof lining lower noise levels by 5 dB inside the cab – a significant benefit to operators.

## Anti-Skid Plates

The surface of the upper structure and the top of the storage box area are covered with anti-skid plates to help prevent service personnel and operators from slipping during maintenance.

## Steps, Hand and Guard Rails

Steps (1) on the track frame and storage box along with extended hand and guard rails (2) to the upper deck enable operators to securely work on the machine.

## Time Delay Cab and Boom Lights

After the engine start key has been turned to the “OFF” position, lights will be illuminated to enhance visibility. The time delay can vary from 0 to 90 seconds, which can be set through the monitor.

## High Intensity Discharge (HID) Lights

Cab lights can be upgraded to HID for greater visibility.

## Windows

Two windshield options are available: The 70/30 split configuration features an upper window equipped with handles on the top and both sides so the operator can slide it to store in the ceiling. The lower window is removable and can be stored on the left wall of the cab shell.

The large skylight provides great overhead visibility, excellent natural lighting, and good ventilation. The skylight can be opened completely to become an emergency exit.

## Monitor Warning System

The machine’s advanced diagnostic system features a buzzer in the monitor to communicate to operators critical events like full filters or low hydraulic fluid levels so they can take immediate action.

## Rearview Camera

The standard rearview camera (3) is housed in the counterweight. The image projects through the cab monitor to give the operator a clear view of what is behind the machine.







# Complete Customer Care

Service you can count on

## **Product Support**

Cat dealers utilize a worldwide parts network to maximize your machines' uptime. Plus they can help you save money with Cat remanufactured components.

## **Machine Selection**

What are the job requirements and machine attachments? What production is needed? Your Cat dealer can provide recommendations to help you make the right machine choices.

## **Purchase**

Consider financing options and day-to-day operating costs. Look at dealer services that can be included in the machine's cost to yield lower owning and operating costs over time.

## **Customer Support Agreements**

Cat dealers offer a variety of customer support agreements and work with you to develop a plan to meet your specific needs. These plans can cover the entire machine, including attachments, to help protect your investment.

## **Operation**

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

## **Replacement**

Repair, rebuild, or replace? Your Cat dealer can help you evaluate the cost involved so you can make the best choice for your business.



# Sustainability

Generations ahead in every way

- The C6.6 ACERT engine, along with the Cat Clean Emissions Module (CEM), meets U.S. Tier 4 Interim emission standards.
- The 320E LRR has the flexibility of running on either ultra-low-sulfur diesel (ULSD) fuel with 15 ppm of sulfur or less or biodiesel (B20) fuel blended with ULSD that meets ASTM 6751 or EN 14214 standards.
- Even when operating in high horsepower and high production applications, the 320E LRR performs a similar amount of work as the previous D Series model with significantly reduced fuel consumption.
- The 320E LRR is quieter inside and out, which benefits operators and the surrounding environment.
- A ground-level overfill indicator rises when the tank is full to help the operator avoid spilling.
- The QuickEvac™ option ensures fast, easy, and secure changing of engine and hydraulic oil.
- The 320E LRR is built to be rebuilt with major structures and components capable of being remanufactured to reduce waste and replacement costs.
- An eco-friendly engine oil filter eliminates the need for painted metal cans and aluminum top plates. The cartridge-style spin-on housing enables the internal filter to be separated and replaced; the used internal element can be incinerated to help reduce waste.
- The 320E LRR is an efficient, productive machine that's designed to conserve our natural resources for generations ahead.



# 320E LRR Hydraulic Excavator Specifications

## Engine

Engine Model	Cat® C6.6 ACERT™	
Net Power – SAE J1349	113 kW	152 hp
Gross Power – SAE J1995	122 kW	164 hp
Bore	105 mm	4.1 in
Stroke	127 mm	5.0 in
Displacement	6.6 L	403 in³

## Weights

Minimum Operating Weight*	23 700 kg	52,250 lb
Maximum Operating Weight**	25 600 kg	56,440 lb

\*HD 5.7 m (18'8") boom, HD 2.9 m (9'6") stick, 6.2 mt (6.8 ton) counterweight, 1.19 m³ (1.56 yd³), 600 mm (24") shoes.  
 \*\*ES 5.7 m (18'8") boom, ES 2.9 m (9'6") stick, 6.9 mt (7.6 ton) counterweight, 1.19 m³ (1.56 yd³), 790 mm (31") shoes.

## Hydraulic System

Main System – Maximum Flow (Total)	428 L/min	113.1 gal/min
Swing System – Maximum Flow	214 L/min	56.5 gal/min
Auxiliary Circuit		
Maximum Flow – Primary	214 L/min	56.5 gal/min
Maximum Flow – Secondary	214 L/min	56.5 gal/min
Maximum Pressure – Equipment		
Heavy Lift	38 000 kPa	5,511 psi
Normal	35 000 kPa	5,076 psi
Maximum Pressure – Travel	35 000 kPa	5,076 psi
Maximum Pressure – Swing	25 000 kPa	3,626 psi
Pilot System – Maximum Flow	24.3 L/min	6.4 gal/min
Pilot System – Maximum Pressure	3920 kPa	569 psi
Boom Cylinder – Bore	120 mm	4.7 in
Boom Cylinder – Stroke	1260 mm	49.6 in
Stick Cylinder – Bore	140 mm	5.5 in
Stick Cylinder – Stroke	1504 mm	59.2 in
B1 Bucket Cylinder – Bore	120 mm	4.7 in
B1 Bucket Cylinder – Stroke	1104 mm	43.5 in

## Drive

Maximum Travel Speed	5.6 km/h	3.5 mph
Maximum Drawbar Pull	205 kN	46,086 lbf

## Swing Mechanism

Swing Speed	11.2 rpm
Swing Torque	61.8 kN·m 45,581 lb-ft

## Service Refill Capacities

Fuel Tank Capacity	290 L	76.6 gal
Cooling System	30 L	7.9 gal
Engine Oil (with filter)	23 L	6.1 gal
Swing Drive	8 L	2.1 gal
Final Drive (each)	8 L	2.1 gal
Hydraulic System (including tank)	205 L	54.2 gal
Hydraulic Tank	115 L	30.4 gal

## Track

Number of Shoes (each side)	
Long Undercarriage	49 pieces
Number of Track Rollers (each side)	
Long Undercarriage	8 pieces
Number of Carrier Rollers (each side)	
Long Undercarriage	2 pieces

## Sound Performance

Operator Noise (Closed) – ISO 6396	71 dB
Spectator Noise – ISO 6395	103 dB

- When properly installed and maintained, the cab offered by Caterpillar, when tested with doors and windows closed according to ANSI/SAE J1166 OCT98, 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.

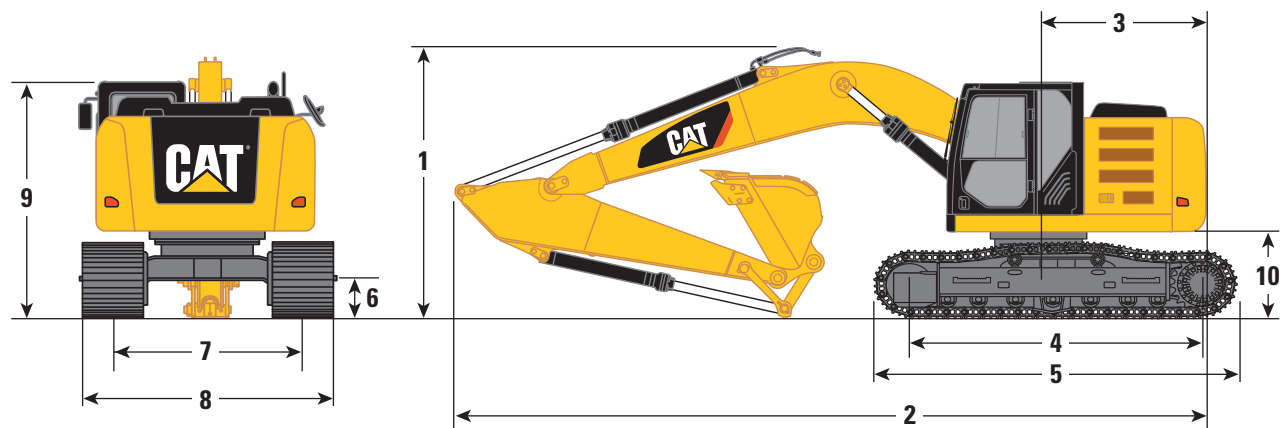
## Standards

Brakes	ISO 10265 2008
Cab/FOGS	ISO 10262 1998
Cab/ROPS	ISO 12117-2 2008

# 320E LRR Hydraulic Excavator Specifications

## Dimensions

All dimensions are approximate.



### Heavy Duty and Extreme Service Boom 5.7 m (18'8")

Stick	2.9B1 (9'6")*
	mm (ft)
1 Shipping Height**	3130 (10'3")
Shipping Height with Guard Rail	3150 (10'4")
Shipping Height with Top Guard	3150 (10'4")
2 Shipping Length	8970 (29'4")
3 Tail Swing Radius	2080 (6'8")
4 Length to Center of Rollers	3650 (12'0")
5 Track Length	4460 (14'7")
6 Ground Clearance	450 (1'6")
7 Track Gauge	2380 (7'10")
8 Transport Width	
600 mm (24") Shoes	2980 (9'9")
700 mm (28") Shoes	3080 (10'1")
790 mm (31") Shoes	3170 (10'5")
9 Cab Height	2960 (9'9")
Cab Height with Top Guard	3150 (10'4")
10 Counterweight Clearance***	1000 (3'3")

\*Cat 1200 mm (48"), 1.19 m<sup>3</sup> (1.56 yd<sup>3</sup>) HD bucket with 1571 mm (5'2") tip radius.

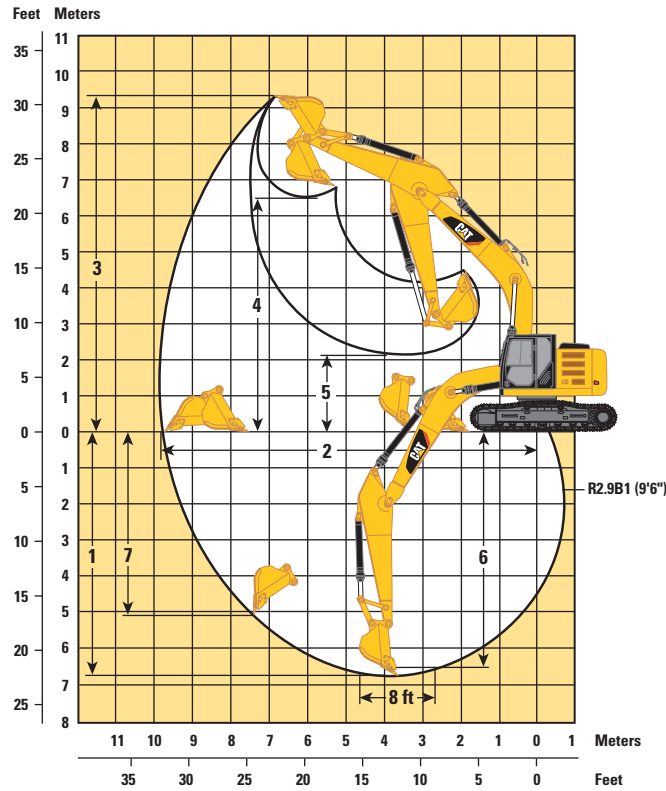
\*\*Including shoe lug height without guard rail.

\*\*\*Without shoe lug height.



## Working Ranges

All dimensions are approximate.



### Heavy Duty and Extreme Service Boom 5.7 m (18'8")

#### Stick

**2.9B1  
(9'6")\***

**mm (ft)**

<b>1</b> Maximum Digging Depth	6720 (22'1")
<b>2</b> Maximum Reach at Ground Level	9860 (32'4")
<b>3</b> Maximum Cutting Height	9370 (30'9")
<b>4</b> Maximum Loading Height	6490 (21'4")
<b>5</b> Minimum Loading Height	2170 (7'1")
<b>6</b> Maximum Depth Cut for 2440 mm (8'0") Level Bottom	6550 (21'6")
<b>7</b> Maximum Vertical Wall Digging Depth	5060 (16'7")

\*Cat 1200 mm (48"), 1.19 m<sup>3</sup> (1.56 yd<sup>3</sup>) HD bucket with 1571 mm (5'2") tip radius.

# 320E LRR Hydraulic Excavator Specifications

## Operating Weight and Ground Pressure

	790 mm (31") Triple Grouser Shoes		700 mm (28") Triple Grouser Shoes		600 mm (24") Triple Grouser Shoes	
	kg (lb)	kPa (psi)	kg (lb)	kPa (psi)	kg (lb)	kPa (psi)
Boom HD – 5.7 m (18'8")						
2.9B1 (9'6") HD	24 400 (53,790)	38.6 (5.60)	24 100 (53,130)	43.2 (6.27)	23 700 (52,250)	49.5 (7.18)
2.9B1 (9'6") ES	24 500 (54,010)	39.0 (5.66)	24 200 (53,350)	43.7 (6.34)	23 800 (52,470)	50.1 (7.27)
Boom ES – 5.7 m (18'8")						
2.9B1 (9'6") HD	24 700 (54,450)	39.1 (5.67)	24 400 (53,790)	43.7 (6.34)	24 000 (52,910)	50.2 (7.28)
2.9B1 (9'6") ES	24 900 (54,900)	39.3 (5.70)	24 600 (54,230)	43.9 (6.37)	24 200 (53,350)	50.4 (7.31)

## Major Component Weights

	kg	lb
Base Machine (with boom cylinder, without counterweight, front linkage and track)	6500	14,330
Long Undercarriage	7850	17,300
Counterweight		
6.2 mt (6.8 ton)	6200	13,670
6.9 mt (7.6 ton)	6900	15,210
Boom (includes lines, pins and stick cylinder)		
Boom HD – 5.7 m (18'8")	1720	3,790
Boom ES – 5.7 m (18'8")	2010	4,430
Boom HD for CGC – 5.7 m (18'8")	1730	3,810
Boom ES for CGC – 5.7 m (18'8")	2020	4,450
Stick (includes lines, pins and bucket cylinder)		
2.9B1 (9'6") HD	680	1,510
2.9B1 (9'6") ES	840	1,850
2.9B1 (9'6") HD for CGC	690	1,530
2.9B1 (9'6") ES for CGC	850	1,880
Track Shoe (Long/per two tracks)		
600 mm (24") Triple Grouser	2700	5,940
700 mm (28") Triple Grouser	3070	6,780
790 mm (31") Triple Grouser	3360	7,410
790 mm (31") Triple Grouser HD	3800	8,370
Quick Coupler		
Center-Lock 252 (UQC)	420	920
Buckets		
B1 1200 mm (48") HD 347-6731 SAE 1.19 m <sup>3</sup> (1.56 yd <sup>3</sup> )	930	2,050

All weights are rounded up to nearest 10 kg and lb except for quick coupler and buckets. Kg and lb were rounded up separately so some of the kg and lb do not match.

Base machine includes 75 kg (165 lb) operator weight, 90% fuel weight, and undercarriage with center guard.



## Bucket and Stick Forces

	HD Boom 5.7 m (18'8")
Stick	R2.9B1 (9'6")
	B1 – Family Bucket
	kN (lbf)
General Duty	
Bucket Digging Force (ISO)	140.5 (31,600)
Stick Digging Force (ISO)	106.7 (24,000)
Bucket Digging Force (SAE)	125.9 (28,300)
Stick Digging Force (SAE)	103.9 (23,400)
Heavy Duty	
Bucket Digging Force (ISO)	150.4 (33,800)
Stick Digging Force (ISO)	106.4 (23,900)
Bucket Digging Force (SAE)	133.5 (30,000)
Stick Digging Force (SAE)	103.2 (23,200)
Severe Duty	
Bucket Digging Force (ISO)	150.4 (33,800)
Stick Digging Force (ISO)	106.4 (23,900)
Bucket Digging Force (SAE)	133.5 (30,000)
Stick Digging Force (SAE)	103.2 (23,200)

# 320E LRR Hydraulic Excavator Specifications

## HD Boom Lift Capacities



Load Point Height



Load at Maximum Reach



Load Radius Over Front



Load Radius Over Side

**Boom** – 5.7 m (18'8")















**Counterweight** – 6.2 mt (6.8 t)

**Bucket** – None

**Stick** – 2.9B1 (9'6")

**Shoes** – 790 mm (31") triple grouser

**Heavy Lift Mode On**

		1.5 m/5.0 ft		3.0 m/10.0 ft		4.5 m/15.0 ft		6.0 m/20.0 ft		7.5 m/25.0 ft				m ft
														
7.5 m 25.0 ft	kg lb							*4950	*4950			*4300 *9,500	*4300 *9,500	6.15 19.78
6.0 m 20.0 ft	kg lb							*5450 *12,000	*5450 *12,000			*3950 *8,750	*3950 *8,750	7.28 23.71
4.5 m 15.0 ft	kg lb							*6000 *13,050	5650 12,150	*5650 *12,400	4000 8,600	*3900 *8,550	3650 8,050	7.98 26.10
3.0 m 10.0 ft	kg lb					*8750 *18,850	8200 17,700	*6900 *14,950	5400 11,650	*6050 *13,150	3950 8,450	*4000 *8,750	3350 7,350	8.35 27.38
1.5 m 5.0 ft	kg lb					*10 600 *22,900	7750 16,650	*7850 *16,950	5200 11,200	6000 12,900	3800 8,200	*4200 *9,250	3200 7,100	8.44 27.70
Ground Line	kg lb			*6600 *15,150	*6600 *15,150	*11 650 *25,200	7450 16,050	8150 17,550	5050 10,800	5900 12,700	3750 8,000	*4650 *10,250	3300 7,200	8.26 27.09
-1.5 m -5.0 ft	kg lb	*7050 *15,750	*7050 *15,750	*11 400 *25,850	*11 400 *25,850	*11 750 *25,450	7400 15,850	8100 17,400	4950 10,650	5900 12,650	3700 7,950	*5500 *12,100	3550 7,800	7.78 25.48
-3.0 m -10.0 ft	kg lb	*12 100 *27,100	*12 100 *27,100	*15 600 *33,750	14 300 30,650	*11 000 *23,800	7450 16,000	8100 17,450	5000 10,750			6600 14,650	4150 9,150	6.94 22.67
-4.5 m -15.0 ft	kg lb			*12 450 *26,650	*12 450 *26,650	*8950 *19,100	7650 16,450					*6800 *14,900	5650 12,750	5.60 18.08

**Boom** – 5.7 m (18'8")















**Counterweight** – 6.9 mt (7.6 t)

**Bucket** – None

**Stick** – 2.9B1 (9'6")

**Shoes** – 790 mm (31") triple grouser

**Heavy Lift Mode On**

		1.5 m/5.0 ft		3.0 m/10.0 ft		4.5 m/15.0 ft		6.0 m/20.0 ft		7.5 m/25.0 ft				m ft
														
7.5 m 25.0 ft	kg lb							*4950	*4950			*4300 *9,500	*4300 *9,500	6.15 19.78
6.0 m 20.0 ft	kg lb							*5450 *12,000	*5450 *12,000			*3950 *8,750	*3950 *8,750	7.28 23.71
4.5 m 15.0 ft	kg lb							*6000 *13,050	6000 12,900	*5650 *12,400	4300 9,200	*3900 *8,550	3850 8,550	7.98 26.10
3.0 m 10.0 ft	kg lb					*8750 18,800	8700 18,800	*6900 *14,950	5750 12,400	*6050 *13,150	4200 9,000	*4000 *8,750	3550 7,850	8.35 27.38
1.5 m 5.0 ft	kg lb					*10 600 *22,900	8250 17,700	*7850 *16,950	5550 11,900	6350 13,650	4050 8,750	*4200 *9,250	3450 7,550	8.44 27.70
Ground Line	kg lb			*6600 *15,150	*6600 *15,150	*11 650 *25,200	7950 17,100	*8500 *18,400	5350 11,550	6250 13,450	4000 8,550	*4650 *10,250	3500 7,700	8.26 27.09
-1.5 m -5.0 ft	kg lb	*7050 *15,750	*7050 *15,750	*11 400 *25,850	*11 400 *25,850	*11 750 *25,450	7850 16,950	8550 18,350	5300 11,400	6200 13,400	3950 8,500	*5500 *12,100	3800 8,300	7.78 25.48
-3.0 m -10.0 ft	kg lb	*12 100 *27,100	*12 100 *27,100	*15 600 *33,750	15 200 32,600	*11 000 *23,800	7900 17,050	*8200 *17,600	5300 11,450			*6700 *14,750	4400 9,750	6.94 22.67
-4.5 m -15.0 ft	kg lb			*12 450 *26,650	*12 450 *26,650	*8950 *19,050	8100 17,500					*6800 *14,900	6000 13,550	5.60 18.08

\*Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories must be deducted from the above lifting capacities. Lifting capacities are based on the machine standing on a firm, uniform supporting surface. The use of a work tool attachment point to handle/lift objects, could affect the machine lift performance.

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



## ES Boom Lift Capacities



Load Point Height



Load at Maximum Reach



Load Radius Over Front



Load Radius Over Side

**Boom** – 5.7 m (18'8")















**Counterweight** – 6.9 mt (7.6 t)

**Bucket** – None

**Stick** – 2.9B1 (9'6")

**Shoes** – 790 mm (31") triple grouser

**Heavy Lift Mode On**

	1.5 m/5.0 ft		3.0 m/10.0 ft		4.5 m/15.0 ft		6.0 m/20.0 ft		7.5 m/25.0 ft				m ft	
														
7.5 m 25.0 ft	kg lb						*4900 *11,650	*4900 *11,650			*4200 *9,350	*4200 *9,350	6.15 19.78	
6.0 m 20.0 ft	kg lb						*5300 *11,650	*5300 *11,650			*3900 *8,600	*3900 *8,600	7.28 23.71	
4.5 m 15.0 ft	kg lb						*5850 *12,700	*5850 12,650	*5450 *12,000	4150 8,900	*3850 *8,400	3750 8,250	7.98 26.10	
3.0 m 10.0 ft	kg lb				*8550 *18,350	*8550 *18,350	*6700 *14,500	5600 12,100	*5850 *12,700	4050 8,650	*3900 *8,600	3400 7,500	8.35 27.38	
1.5 m 5.0 ft	kg lb				*10 300 *22,250	8000 17,200	*7600 *16,450	5350 11,500	6200 13,350	3900 8,400	*4150 *9,150	3300 7,250	8.44 27.70	
Ground Line	kg lb			*6550 *15,000	*6550 *15,000	*11 300 *24,450	7700 16,550	*8250 *17,850	5150 11,100	6100 13,100	3800 8,200	*4600 *10,100	3350 7,350	8.26 27.09
-1.5 m -5.0 ft	kg lb	*7000 *15,600	*7000 *15,600	*11 350 *25,700	*11 350 *25,700	*11 400 *24,700	7600 16,300	8350 17,950	5100 10,950	6050 13,050	3800 8,150	*5400 *11,950	3600 7,950	7.78 25.48
-3.0 m -10.0 ft	kg lb	*12 000 *26,950	*12 000 *26,950	*15 150 *32,750	14 800 31,650	*10 650 *23,050	7650 16,450	*7900 *17,000	5100 11,000			*6450 *14,250	4250 9,400	6.94 22.67
-4.5 m -15.0 ft	kg lb			*12 050 *25,750	*12 050 *25,750	*8650 *18,400	7900 17,000					*6550 *14,350	5850 13,150	5.60 18.08

\*Indicates that the load is limited by hydraulic lifting capacity rather than tipping load. The above loads are in compliance with hydraulic excavator lift capacity standard ISO 10567:2007. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. Weight of all lifting accessories must be deducted from the above lifting capacities. Lifting capacities are based on the machine standing on a firm, uniform supporting surface. The use of a work tool attachment point to handle/lift objects, could affect the machine lift performance.

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

## Work Tool Offering Guide\*

<b>Boom</b>	<b>5.7 m (18'8")</b>
<b>Stick</b>	<b>2.9 m (9'6")</b>
Hydraulic Hammer	H115Es H120Es H130Es
Multi-Processor	MP15**
Pulverizer	P215
Mobile Scrap and Demolition Shear	S320B** S325B*** S340B***
Compactor (Vibratory Plate)	CVP110
Contractors' Grapple	G120B-G130B
Trash Grapple	
Thumbs	
Rakes	
Center-Lock Pin Grabber Coupler	

These work tools are available for the 320E LRR.  
Consult your Cat dealer for proper match.

\*Matches are dependent on excavator configurations. Consult your Cat dealer for proper work tool match.

\*\*Pin-on only.

\*\*\*Boom-mount.

# 320E LRR Hydraulic Excavator Specifications

## Bucket Specifications and Compatibility

	Linkage	Width		Capacity		Weight		Fill	Boom (HD)	Boom (ES)
		mm	in	m³	yd³	kg	lb	%	2.9 HD (9'6")	2.9 ES (9'6")
Without Quick Coupler										
General Duty (GDC)	B	600	24	0.55	0.72	618	1,363	100%	●	●
	B	750	30	0.75	0.98	710	1,566	100%	●	●
	B	900	36	0.95	1.24	786	1,733	100%	●	●
	B	1050	42	1.16	1.52	847	1,867	100%	●	●
	B	1200	48	1.38	1.80	925	2,038	100%	⊙	⊙
	B	1350	54	1.59	2.08	1002	2,209	100%	⊖**	⊖
Heavy Duty (HD)	B	600	24	0.46	0.61	649	1,430	100%	●	●
	B	750	30	0.64	0.84	747	1,647	100%	●	●
	B	900	36	0.81	1.06	825	1,818	100%	●	●
	B	1050	42	1.00	1.31	879	1,937	100%	●	●
	B	1200	48	1.19	1.56	970	2,138	100%	●	●
	B	1350	54*	1.38	1.81	1051	2,316	100%	⊙**	⊙
Severe Duty (SD)	B	600	24	0.46	0.61	693	1,527	90%	●	●
	B	750	30	0.64	0.84	801	1,765	90%	●	●
	B	900	36	0.81	1.06	887	1,955	90%	●	●
	B	1050	42	1.00	1.31	962	2,121	90%	●	●
	B	1200	48	1.19	1.56	1051	2,316	90%	●	●
Maximum load pin-on (payload + bucket)								kg	3620	3520
								lb	7,978	7,758

The above loads are in compliance with hydraulic excavator standard EN474, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity with front linkage fully extended at ground line with bucket curled.

Capacity based on ISO 7451.

Bucket weight with General Duty tips.

\*This bucket might reduce boom structure life.

\*\*For light dirt loading applications only. Consult your dealer to understand your application before using this bucket in combination with this stick.

### Maximum Material Density:

● 2100 kg/m³ (3,500 lb/yd³)

⊙ 1800 kg/m³ (3,000 lb/yd³)

⊖ 1500 kg/m³ (2,500 lb/yd³)

Caterpillar recommends using appropriate work tools to maximize the value customers receive from our products. Use of work tools, including buckets, which are outside of Caterpillar's recommendations or specifications for weight, dimensions, flows, pressures, etc. may result in less-than-optimal performance, including but not limited to reductions in production, stability, reliability, and component durability. Improper use of a work tool resulting in sweeping, prying, twisting and/or catching of heavy loads will reduce the life of the boom and stick.

## Bucket Specifications and Compatibility

	Linkage	Width		Capacity		Weight		Fill	Boom (HD)	Boom (ES)
		mm	in	m³	yd³	kg	lb	%	2.9 HD (9'6")	2.9 ES (9'6")
With Center Lock Coupler										
General Duty (GDC)	B	600	24	0.55	0.72	618	1,363	100%	●	●
	B	750	30	0.75	0.98	710	1,566	100%	●	●
	B	900	36	0.95	1.24	786	1,733	100%	●	●
	B	1050	42	1.16	1.52	847	1,867	100%	●	⦿
	B	1200	48	1.38	1.80	925	2,038	100%	⊖	⊖
	B	1350	54	1.59	2.08	1002	2,209	100%	○	○
Heavy Duty (HD)	B	600	24	0.46	0.61	649	1,430	100%	●	●
	B	750	30	0.64	0.84	747	1,647	100%	●	●
	B	900	36	0.81	1.06	825	1,818	100%	●	●
	B	1050	42	1.00	1.31	879	1,937	100%	●	●
	B	1200	48	1.19	1.56	970	2,138	100%	⦿	⦿
	B	1350	54*	1.38	1.81	1051	2,316	100%	⊖	⊖
Severe Duty (SD)	B	600	24	0.46	0.61	693	1,527	90%	●	●
	B	750	30	0.64	0.84	801	1,765	90%	●	●
	B	900	36	0.81	1.06	887	1,955	90%	●	●
	B	1050	42	1.00	1.31	962	2,121	90%	●	●
	B	1200	48	1.19	1.56	1051	2,316	90%	●	⦿
	B	1200	48	1.19	1.56	1000	2,204	90%	●	⦿
Maximum load with coupler (payload + bucket)								kg	3210	3110
								lb	7,075	6,855

### Maximum Material Density:

- 2100 kg/m³ (3,500 lb/yd³)
- ⊙ 1800 kg/m³ (3,000 lb/yd³)
- ⊖ 1500 kg/m³ (2,500 lb/yd³)
- 1200 kg/m³ (2,000 lb/yd³)

The above loads are in compliance with hydraulic excavator standard EN474, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity with front linkage fully extended at ground line with bucket curled.

Capacity based on ISO 7451.

Bucket weight with General Duty tips.

\*This bucket might reduce boom structure life.

Caterpillar recommends using appropriate work tools to maximize the value customers receive from our products. Use of work tools, including buckets, which are outside of Caterpillar's recommendations or specifications for weight, dimensions, flows, pressures, etc. may result in less-than-optimal performance, including but not limited to reductions in production, stability, reliability, and component durability. Improper use of a work tool resulting in sweeping, prying, twisting and/or catching of heavy loads will reduce the life of the boom and stick.



# 320E LRR Standard Equipment

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

## ENGINE

- C6.6 diesel engine
- Biodiesel capable
- EPA Tier 4 Interim
- 2300 m (7,500 ft) altitude capability
- Automatic engine speed control
- Economy and high power modes
- Two-speed travel
- Side-by-side cooling system
- Radial seal air filter
- Primary filter with water separator and water separator indicator switch
- Starting kit, cold weather, -18° C (0° F)
- Screen fuel filter in fuel line
- Primary fuel filter
- Secondary fuel filter
- Quick drains, engine and hydraulic oil (QuickEvac)

## HYDRAULIC SYSTEM

- Regeneration circuit for boom and stick
- Reverse swing dampening valve
- Automatic swing parking brake
- High-performance hydraulic return filter
- Capability of installing HP stackable valve and medium and QC valve
- Capability of installing additional auxiliary pump and circuit
- Capability of installing boom lowering control device and stick lowering check valve
- Capability of installing Cat Bio hydraulic oil
- Fine swing control

## CAB

- Pressurized operator station with positive filtration
- Mirror package
- Sliding upper door window (left-hand cab door)
- Glass-breaking safety hammer
- Removable lower windshield with in cab storage bracket
- Coat hook
- Beverage holder
- Literature holder
- AM/FM radio
- Radio with MP3 auxiliary audio port
- Two 12V stereo speakers
- Storage shelf suitable for lunch or toolbox
- Color LCD display with warning, filter/fluid change, and working hour information
- Adjustable armrest
- Height adjustable joystick consoles
- Neutral lever (lock out) for all controls
- Travel control pedals with removable hand levers
- Capability of installing two additional pedals
- Two power outlets, 10 amp (total)
- Laminated glass front upper window and tempered other windows

## UNDERCARRIAGE

- Grease Lubricated Track GLT2, resin seal
- Towing eye on base frame

## ELECTRICAL

- 80 amp alternator
- Circuit breaker
- Capability to electrically connect a beacon

## LIGHTS

- Boom light with time delay
- Exterior lights integrated into storage box

## SECURITY

- Cat one key security system
- Door locks
- Cap locks on fuel and hydraulic tanks
- Lockable external tool/storage box
- Signaling/warning horn
- Secondary engine shutoff switch
- Openable skylight for emergency exit
- Rearview camera
- Travel alarm

## TECHNOLOGY

- Product Link

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

## ENGINE

Starting kit, cold weather, -25° C (-13° F)  
Jump start receptacle  
Radiator screen  
Block heater (jacket water heater)

## HYDRAULIC SYSTEM

Control pattern quick-changer, two way  
Additional circuit  
Boom and stick lines  
High-pressure line  
Medium-pressure line  
Cat quick coupler line –  
high-pressure capable  
Electronic Control device, 1/2P,  
one-way circuit  
Electronic Control device (Common),  
1/2P, common circuit  
Electronic Control device, 1P,  
two-way circuit

## CAB

Cab hatch emergency exit  
Seat, high-back air suspension with heater  
Seat, high-back mechanical suspension  
Sunscreen  
Windshield wiper with washer  
Left foot switch  
Left pedal  
Straight travel pedal

## UNDERCARRIAGE

600 mm (24") triple grouser shoes  
700 mm (28") triple grouser shoes  
790 mm (31") triple grouser shoes  
Guard, full length for long FG undercarriage  
Guard, heavy-duty bottom  
Center track guiding guard  
Segmented (2 piece) track guiding guard  
HD track roller

## COUNTERWEIGHT

6.2 mt (6.8 t) without lifting eye  
6.9 mt (7.6 t) without lifting eye

## FRONT LINKAGE

Quick coupler  
Bucket linkage, B1 family with  
and without lifting eye  
5.7 m (18'7") heavy duty and  
extreme service booms  
2.9 m (9'6") heavy-duty stick

## LIGHTS

Working lights, cab mounted with time delay  
HID lights, cab mounted with time delay  
Halogen boom lights

## SECURITY

FOGS, bolt-on  
Side rubber bumper  
Cat MSS (anti-theft device)

## TECHNOLOGY

Cat Grade Control Depth and Slope

# 320E LRR Hydraulic Excavator

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://www.cat.com)

© 2012 Caterpillar Inc.  
All rights reserved

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

CAT, CATERPILLAR, SAFETY.CAT.COM, their respective logos, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

AEHQ6443-01 (04-2012)  
Replaces AEHQ6443  
(Americas)

