Cat® 321

Hydraulic Excavator

Powered by the reliable Cat® C3.6 engine, the Cat 321 delivers high torque and fast cycle times to keep productivity high. Reinforced Cat structures extend machine life and stand up to the toughest conditions, while the latest cab design puts operator safety and comfort first. Every core system is rigorously tested, so you can count on consistent, reliable performance shift after shift.

Delivering Excellent Fuel Efficiency

- The Cat C3.6 engine and electrohydraulic system work in sync to help you move plenty of material while using less fuel.
- Eco mode reduces fuel consumption with no loss in lifting or digging forces.
- Adaptive engine control adjustments for maximized efficiency.
- Electro-hydraulic (EH) system eliminates the need for pilot lines and filter for improved response and enhanced savings.
- Intelligent Engine Control Module (ECM) ensures smooth, precise operation in every pass.
- Save fuel with Automatic Engine Control (AEC). It reduces engine speed when the machine is not under load to minimize fuel consumption.
- Robust and easy-to-maintain fuel system filtration reduces risk of failure from contaminated fuel.
- Boom and Stick regeneration circuits reduce fuel consumption while improving cycle times.
- Protect hydraulic components in cold weather. The auto warm-up feature speeds hydraulic oil warming in cooler temperatures.
- No derating up to 3000 m (9,840 ft) above sea level.
- The excavator has a high-ambient temperature capability of 52° C (126° F) and cold start capability of –10° C (14° F).

Built to Last

- Reinforced Cat structures extend machine life in harsh working conditions.
- The strong X-structure lower frame carries loads from the excavator's upper structure to the track.
- Reliable and durable and built on classic, proven components.
- Robotically welded booms and sticks ensure structural integrity.
- Track guards and steep-angle design shed debris, reducing wear.
- Choose between two robust undercarriage options: standard 4.1 m (13'5") or medium 4.25 m (13'11"), both built to withstand demanding conditions.
- The single plane cooling package design reduces air resistance compared to the traditional two-plane design for better cooling performance and enhanced machine productivity.
- Sloped track frame helps prevent mud and debris from accumulating in the track area.
- The center track guiding guard helps align the excavator track when traveling and working on slopes.
- High swing speed and proven Cat components keep you working longer.
- Hydraulic lines protected inside the frame reduce damage risk.
- Choose from three bucket options, including a 1.0 m^3 (1.31 yd^3) General Duty bucket for efficient earthmoving and quick discharge, a 0.92 m^3 (1.20 yd^3) Heavy Duty bucket for more demanding applications, and a 1.2 m^3 (1.57 yd^3) General Duty bucket for sand-mining applications.
- Auto warm-up speeds up hydraulic oil warming in cold temperatures and helps prolong the life of components.
- Choose the 2.25 m (7'5") stick for maximum lifting and breakout force, the 2.5 m (8'2") stick for extended reach and versatility, or the R2.9 (9'6") stick for enhanced reach in sand excavation and loading.
- Smart, Power and Eco modes let you tailor machine performance by adapting to the job, maximizing productivity or reducing fuel costs.

Low Maintenance, More Uptime

- The 321 features a safe, convenient work platform for routine service and maintenance. Anti-skid plating with countersunk bolts reduces slip and trip hazards, while integrated grips on key areas ensure easy access to the platform and operator station.
- Shared components simplify maintenance and improve parts availability.
- Scheduled Oil Sampling (S·O·S^{SM}) ports are on ground level, simplifying maintenance and allowing for quick, easy extraction of samples for fluid analysis.
- Extended and synchronized service intervals save on maintenance costs.
- Extended first engine oil change interval (500 hours) and maintenance-free batteries.
- Filters, such as fuel, engine air, and oil filters, are grouped together for easy access and preventative maintenance.
- There is no need to manually prime the fuel system after fuel filter changes. The standard electric priming pump reduces the risk of contamination by preventing unfiltered fuel from entering the fuel system.
- Maximize uptime and extended service intervals, thanks to advanced hydraulic oil filter design and no pilot and case drain filters.
- A two-stage fuel filter and anti-rust fuel tank help protect the engine against low-quality fuel.
- Routine cleaning is made easier with the single plane cooling package design.
- Proven, high-efficiency radial seal engine air filter behind the cab. The machine constantly monitors the engine air filter and will notify you, via the monitor, when service is required.
- The latest air intake filter with pre-cleaner has double the dust holding capacity of the previous air intake filter.

Safety First, Always

- The latest cab provides excellent visibility from the operator's seat. In addition, two standard mirrors help keep you aware of your surroundings.
- Optional rearview camera enhances visibility behind the machine.

CAT®

- Optional front windshield guard helps protect the windshield from potential damage caused by rocks, flying debris, and other road materials.
- Heavy-duty base frame and reinforced "X" car body conform to ISO 15818:2017 lifting and tie-down requirements.
- Handrails and hand hold with a step on the undercarriage for easy access to the engine bay area. The handrails conform to ISO 2867:2011 requirements for added safety.
- Anti-skid plating with countersunk bolts reduces the potential for slippage and trip hazards.
- Ground-level access for daily checks improves safety and saves time.
- Serrated steps, anti-skid plating, and handrails help you avoid slips and trips – a major contributor to workplace injuries.
- A lockable disconnect switch isolates the battery and enhances safety by disconnecting the electrical energy when servicing the machine.
- The optional travel alarm provides a clear warning signal, alerting nearby individuals to the machine's movement and promoting a safe working environment.
- Bright seatbelts and a wide cab entry improve safety and usability.
- LED 1,200 lumen lights, a quiet muffler, and emergency cab exits support 24/7 operation.

Simple to Operate

- Start the engine with a push button.
- The in-cab high-resolution 203 mm (8 in) touchscreen monitor is easy to use, intuitive, and user-friendly.
- Continuously improved user interface allows for intuitive navigation, minimizing performance interruption with the easy-to-use touchscreen menu.
- The machine's electrohydraulic system allows accurate bucket control for maximum precision.
- Optimized low-effort joystick controls reduce operator fatigue.
- Customize joystick patterns and preferences; the machine remembers each operator's settings.
- Auto hammer stop protects tools from overheating and wear.

Comfort That Keeps You Going

- Ergonomically designed seat to improve operator's comfort.
- Sound suppression, seals, and viscous cab mounts decrease noise and vibration for a quieter work environment.
- Standard automatic climate control helps keep you comfortable all shift long.
- Excellent work site visibility from the cab enhances productivity and safety.
- Adjustable seat with three suspension levels and ergonomic design.
- Climate control, Bluetooth® connectivity, USB ports, and an intuitive interface enhance comfort.
- Control the excavator comfortably with easy-to-reach controls all located in front of you.
- Easy to access radio controls, engine throttle, wiper controls and Bluetooth phone pairing for operator convenience.
- Automatic climate control helps maintain consistent cab temperature. Five outlets ensure proper air circulation to keep you comfortable regardless of outside temperatures.
- There is plenty of room for you to store your gear. The cup holder and storage space in front of the controls can hold large cups and wide cell phones; storage behind the seat can hold a large lunchbox and other items.
- Bright seatbelts and a wide cab entry improve safety and usability.

Smart Fleet Management

- VisionLink™ wirelessly connects you to your equipment, giving you access to essential information you need to know to run your business. Gain valuable insight into how your machine or fleet is performing. Access data anywhere – desktop, tablet, or mobile device.
- Available CVA (Customer Value Agreements) and EPP (Extended Protection Plans) help maximize uptime and reduce risk.
- Cat dealers are second to none. From machine selection and purchase to maintenance support, operator training and rebuilds, Cat dealers have the experience and capabilities to help keep you up and running at peak performance.

Standard and optional equipment may vary. Consult your Cat® dealer for details.

	Standard	Optional
ENGINE		
Cat® C3.6 single turbo diesel engine	✓	
Three selectable modes: Power, Smart, Eco	✓	
One-touch low idle with automatic engine speed control (AEC)	✓	
Two-stage fuel filtration system with water separator and indicator	✓	
4000 m (13,120 ft) altitude capability with derate from 3000 m (9,840 ft)	✓	
52° C (126° F) high-ambient cooling capacity with derate above 48° C (118° F)	✓	
–10° C (14° F) cold start capability	✓	
100 Amp alternator	✓	
Radial sealed double element air filter	✓	
Electric fuel priming pump	✓	
HYDRAULIC SYSTEM		
Electronic main control valve, hammer ready	✓	
Boom and stick regeneration circuits	✓	
Automatic hydraulic warm-up	✓	
Automatic two-speed travel	✓	
High performance hydraulic return filter	✓	
Hydraulic auxiliary lines (hammer)		✓
CAB		
Sound-suppressed cab with viscous mounts	✓	
Front windshield guard (wire mesh)		✓
Mechanical-suspension seat with headrest and armrest angle adjustment	✓	
High-resolution 203 mm (8") LCD touchscreen monitor	✓	
Keyless push to start engine control	✓	
AM/FM Bluetooth® radio with USB/ Auxiliary ports	✓	
Cup holder and storage compartments	✓	
Upper radial wiper with washer	✓	
Openable steel hatch	✓	
Washable floor mat	✓	
51 mm (2") orange seat belt	✓	

	Standard	Optional
UNDERCARRIAGE AND STRUCTURES		
4.1 m (13'5") Standard undercarriage		✓
4.25 m (13'11") Medium undercarriage		✓
Grease-lubricated track link	✓	
Center track guiding guard	✓	
Bottom guard	✓	
3650 kg (8,050 lb) counterweight	✓	
600 mm (24") triple grouser track shoes (8.5 mm/0.34" thick)	✓	
BOOM, STICKS AND LINKAGE		
5.7 m (18'8") Reach boom	✓	
2.25 m (7'5") Reach stick		✓
2.5 m (8'2") Reach stick		✓
2.9 m (9'6") Reach stick		✓
Bucket linkage, B1 family with lifting eye	✓	
ELECTRICAL SYSTEM		
Two 750 CCA maintenance-free batteries	✓	
Simplified electrohydraulic (EH) control system/harness	✓	
Centralized electrical disconnect switch	✓	
LED chassis and cab lights	✓	
LED left-side boom light	✓	
LED right-side boom light		✓
CAT TECHNOLOGY		
VisionLink™	✓[1]	
SERVICE AND MAINTENANCE		
S·O·S℠ ports	✓	
Radiator screen for radiator/oil cooler to prevent plugging by debris	✓	
SAFETY AND SECURITY		
Rearview mirrors; handrail mounted (one), cab handhold mounted (one)	✓	
Bolt-free service platform with anti-skid plate	✓	
Neutral lever (lock out) for all controls	✓	
Ground-level accessible secondary engine shutoff switch in cab	✓	
Handrail and handhold	✓	
Signaling/warning horn	✓	
Rearview camera		✓
Travel alarm		✓

[1]Provides core telematics data to manage health, maintenance insights, and condition monitoring. Other plans available for more comprehensive data reporting. Consult your Cat dealer for details.

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Technical Specifications

Engine

Engine Model	Cat® C3.6	
Net Power – ISO 9249	96 kW	129 hp
Net Power – ISO 9249 (DIN)	131 hp (metric)	
Engine Power – ISO 14396	100 kW	134 hp
Engine Power – ISO 14396 (DIN)	136 hp (metric)	
Bore	98 mm	4 in
Stroke	120 mm	5 in
Displacement	3.6 L	220 in^3
Biodiesel capability	Up to B20[1]	

- Noncertified emission engine.
- Recommended for use up to 4000 m (13,120 ft) altitude with engine power derate above 3000 m (9,840 ft).
- Advertised power is tested per the specified standard in effect at the time of manufacture.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air intake system, exhaust system and alternator.
- Engine speed at 2,000 rpm.

[1]Cat engines are compatible with diesel fuel blended with the following lower-carbon intensity fuels** up to:

- 100% biodiesel FAME (fatty acid methyl ester)*
- 100% renewable diesel, HVO (hydrogenated vegetable oil) and GTL (gas-to-liquid) fuels

Refer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.

*For use of blends higher than 20% biodiesel, consult your Cat dealer.

**Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

Hydraulic System

Main System – Maximum Flow – Implement	315 L/min	83 gal/min
Maximum Pressure – Equipment – Implement	35 000 kPa	5, 075 psi
Maximum Pressure – Travel	35 000 kPa	5, 075 psi
Maximum Pressure – Swing	25 000 kPa	3,625 psi

Swing Mechanism

Swing Speed	10.0 rpm	
Maximum Swing Torque	61 kN·m	45,260 lbf·ft

Weights

Operating Weight	19 300 kg	42,600 lb

4.1 m (13'5") Standard undercarriage, 5.7 m (18'8") Reach boom, R2.25 (7'5") stick, 1.0 m^3 (1.31 yd^3) General Duty (GD) bucket, 600 mm (24") triple grouser track shoes and 3650 kg (8,050 lb) counterweight.

Service Refill Capacities

Fuel Tank Capacity	370 L	97.7 gal
Cooling System	22 L	5.8 gal
Engine Oil (with filter)	11 L	2.9 gal
Swing Drive	6 L	1.6 gal
Final Drive (each)	6 L	1.6 gal
Hydraulic System (including tank)	218 L	57.6 gal
Hydraulic Tank	115 L	30.4 gal

Dimensions

Boom	**Reach 5.7 m (18'8")**	
Stick	**Reach 2.25 m (7'5")**	
Bucket	**GD 1.0 m^3 (1.31 yd^3)**	
Undercarriage	**Standard**	
Shipping Height	3250 mm	10.7 ft
Handrail Height	3010 mm	9.9 ft
Machine Length (with boom, stick, bucket installed)	9570 mm	31.4 ft
Tail Swing Radius	2830 mm	9.3 ft
Counterweight Clearance (without shoe lug height)	1020 mm	3.3 ft
Ground Clearance (without shoe lug height)	430 mm	1.4 ft
Track Length	4080 mm	13.4 ft
Track Length – Length to Center of Rollers	3270 mm	10.7 ft
Track Gauge – Undercarriage	2200 mm	7.2 ft
Transport Width – 600 mm (24") Shoes	2800 mm	9.2 ft

Working Ranges and Forces

Boom	**Reach 5.7 m (18'8")**	
Stick	**Reach 2.25 m (7'5")**	
Bucket	**GD 1.0 m^3 (1.31 yd^3)**	
Undercarriage	**Standard**	
Maximum Digging Depth	5970 mm	19.6 ft
Maximum Reach at Ground Level	9150 mm	30.0 ft
Maximum Cutting Height	9120 mm	29.9 ft
Maximum Loading Height	6250 mm	20.5 ft
Minimum Loading Height	2920 mm	9.6 ft
Maximum Depth Cut for 2440 mm (8 ft) Level Bottom	5760 mm	18.9 ft
Maximum Vertical Wall Digging Depth	5360 mm	17.6 ft
Bucket Digging Force – ISO	135 kN	30,280 lbf
Stick Digging Force – ISO	119 kN	26,800 lbf

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