



Cat[®] 312F

Hydraulic Excavator

The Cat[®] 312F Excavator is a reliable and versatile solution for your light- to medium-duty applications. Featuring a fuel-efficient Cat C4.4 engine with ACERT[™] technologies, robust frames and components, and a state-of-the-art hydraulic system, the 312F allows you to move material all day with speed and precision.

High Performance

- The Cat C4.4 engine with ACERT technologies can run on biodiesel up to B20 and meets Japan 2014 (Tier 4 Final) emission standards with an aftertreatment system that requires no maintenance or downtime.
- Two power modes – eco and high power – help you manage fuel for the work you need to do.
- Reduce engine speed and minimize fuel consumption during no-load or light-load conditions with automatic engine speed control (AEC).
- Engine idle shutdown allows you to set intervals so you don't waste fuel; it also helps reduce emissions and wear and tear on your excavator.
- Work at altitudes up to 2300 m above sea level without de-rating.
- Get the job done with a powerful and efficient hydraulic system. Major components are located close together creating less friction, reducing pressure drops, and increasing power to the ground.
- Save energy and improve fuel efficiency with boom and stick oil regeneration. This feature improves controllability, increases productivity, and reduces operating costs.
- Don't let the temperature stop you from working. The excavator has a standard ambient temperature capability of 52° C. Standard cold start capability is –18° C and an optional cold start package of –25° C is also available.

Reduced Maintenance Costs

- Spend more time working and less time greasing. Front linkage greasing intervals are 500 hours.
- Check and service your machine faster with many ground-level routine service and maintenance points. Grouped filters and wide service doors allow easy access to the radiator, pump, air cleaner, and engine compartments.
- Change your oil without the use of tools with the incorporated engine oil drain valve.
- Three levels of fuel filtration protect the engine from dirty fuel.
- Blowing out debris is easy with wide clearance between the radiator, oil cooler, and air conditioning condenser.
- Extract fluid samples for analysis quickly and easily with S-O-SSM ports.

Reliability and Durability You Can Count On

- Count on your machine to withstand wear throughout the years. Boom, sticks, and other high-stress areas are reinforced with thick multi-plate fabrications, castings, and forgings to ensure quality and reliability.
- Self-lubricating bearings extend service intervals and increase the machine's uptime.
- Elongated bolts secure the large swing bearing to help handle the most swing-intensive work.
- Protect your moving parts with the Grease Lubricated Track undercarriage. Keep water, dust, and debris out and grease sealed in while prolonging wear life and reducing travel noise.



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基準適合

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- Robust bottom guards protect machine components that may be damaged while swinging.
- Hydraulic snubbers on the boom and stick cylinders reduce end-of-stroke impact prolonging the machine's life.
- Maintain track alignment and improve overall performance while traveling or working on slopes with an idler guard and bolt-on center guard.
- The upper frame uses specially designed mountings to support the heavy-duty cab and the lower frame is reinforced to enhance component durability.
- You are supported. The Cat Dealer Network is there to provide assistance when you need it.

Boost Efficiency and Productivity with Integrated Cat Connect Technologies

- Product Link™ collects data automatically and accurately from your assets – any type and any brand. Information such as location, hours, fuel usage, productivity, idle time, maintenance alerts, diagnostic codes, and machine health can be viewed online through web and mobile applications.
- Upgrade to optional Cat GRADE Control – Depth and Slope, 3D capability which provides vertical and horizontal positioning at the bucket tip. The 3D design plan indicates precisely where to work and how much to cut or fill.

Unmatched Comfort

- Work comfortably in the spacious, quiet cab with automatic climate control; an adjustable heated seat increases comfort and reduces operator fatigue.
- Control the excavator comfortably with easy to access controls and switches.
- Adjust the joystick consoles and armrests to a comfortable position.
- Navigate quickly on the standard LCD monitor which is programmable in 42 languages.
- Stow your gear with plenty of in-cab storage to the front and rear of the right-side console and behind the seat. A cup holder, document holder, and coat hook are also provided.
- Keep your personal devices conveniently charged using the two standard 12V power ports. Each provide up to 10A of power.

Safety

- Rollover Protection Structure (ROPS)-certified cab provides a safe work environment.
- Enter and exit the cab and walk on the upper structure safely with handrails and anti-skid plating which are meant to reduce slipping and tripping.
- Increase visibility with a standard rearview camera and mirrors. The camera is integrated into the counterweight to protect against damage.
- Stay safe in an emergency situation. The skylight and 70/30 front window function as emergency exits.
- Reduce the risk of theft with the optional Machine Security System (MSS). The MSS prevents the engine from starting with an unauthorized key.
- The hydraulic activation lever lock cuts the pilot pressure for the control levers, preventing the operator from starting the engine when in a locked position.
- Shut the engine down quickly and easily in the event of an emergency with a secondary engine shutoff switch.
- Protect yourself from overhead impact with the optional Falling Objects Guarding System (FOGS) and other attachments available from your Cat dealer.

Versatile Solution for Light- to Medium-Duty Applications

- Transition quickly between attachments with optional auxiliary hydraulics.
- Expand your work capabilities with attachments for a variety of applications including breaking rock in quarries, preparing trenches, demolition work, and moving and handling material.
- Cat dealers can install hydraulic kits to properly operate attachments, maximizing machine uptime and profits.

Standard and Optional Equipment

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

	Standard	Optional		Standard	Optional
BOOM AND STICKS			SERVICE AND MAINTENANCE		
4.65 m reach boom	✓		S-O-S sampling port for engine and hydraulic oil	✓	
R3.0 m stick		✓	Grease gun with holder	✓	
R2.5 m stick		✓	SAFETY AND SECURITY		
CAB			One key security system	✓	
ROPS, standard sound suppression	✓		Machine security system (MSS)	✓	
Adjustable seat, armrest, and console	✓		Door and cap locks	✓	
177 mm color LCD monitor	✓		Lockable external tool/storage box	✓	
Automatic climate control	✓		Signaling/warning horn	✓	
AM/FM radio	✓		Secondary engine shutoff switch	✓	
Travel control pedals with removable hand levers	✓		Emergency boom down	✓	
CAT CONNECT TECHNOLOGY			Openable skylight as emergency exit	✓	
Cat Product Link	✓		Bolt-on FOGS		✓
Depth and Slope, 3D		✓	Rearview camera	✓	
ELECTRICAL SYSTEM			Rearview mirrors (frame – right, cab – left)	✓	
Two 12V, 10A power supplies	✓		UNDERCARRIAGE AND STRUCTURES		
Left-side boom light with delay	✓		1.75 mt counterweight		✓
Right-side boom light		✓	Towing eye on base frame	✓	
Cab light with time delay	✓		Grease Lubricated Track with resin seal	✓	
ENGINE			500 mm triple grouser shoes		✓
C4.4 Japan MLIT Step 5 diesel engine	✓		500 mm single grouser shoes		✓
Biodiesel capable up to B20	✓		600 mm triple grouser shoes		✓
2300 m altitude capability	✓		700 mm triple grouser shoes with step		✓
Automatic engine speed control	✓		Center track guiding guard		✓
Side-by-side cooling system	✓		2500 mm blade with replaceable cutting edge with lever control		✓
–18° C cold start capability	✓		2600 mm blade with replaceable cutting edge with lever control		✓
–25° C cold start capability		✓	2700 mm blade with replaceable cutting edge with lever control		✓
Block heater capability	✓				
Engine idle shutdown function	✓				
HYDRAULIC SYSTEM					
Boom and stick regeneration circuit	✓				
Automatic swing brake	✓				
Fine swing control		✓			
High-performance hydraulic return filter	✓				
Auxiliary hydraulics		✓			
Quick coupler line		✓			
Four-way control pattern changer	✓				
Medium-pressure line		✓			
High-pressure line		✓			

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Technical Specifications

Engine

Engine Model	Cat C4.4
Gross Power – SAE J1995/ISO 14396	74.4 kW
Net Power – SAE J1349	68.5 kW
Bore	105 mm
Stroke	127 mm
Displacement	4.4 L

Hydraulic System

Main System – Maximum Flow (total)	256 L/min
Maximum Pressure – Equipment	30 500 kPa
Maximum Pressure – Travel	30 500 kPa
Maximum Pressure – Swing	25 000 kPa
Pilot System – Maximum Flow	19.3 L/min
Pilot System – Maximum Pressure	4120 kPa

Machine Weights

Minimum Operating Weight	12 600 kg
Maximum Operating Weight	14 000 kg

Service Refill Capacities

Fuel Tank Capacity	223 L
DEF Tank Capacity	20 L
Cooling System	22 L
Engine Oil (with filter)	13.5 L
Swing Drive	2.4 L
Final Drive (each)	3 L
Hydraulic System (including tank)	164 L
Hydraulic Tank	91 L

Dimensions

Boom	Reach Boom – 4.65 m
Stick	R2.5 m
Bucket	GD 0.52 m³
Shipping Height	2870 mm
Shipping Length	7610 mm
Tail Swing Radius	2170 mm
Length to Center of Rollers	3040 mm
Track Length	3750 mm
Ground Clearance	440 mm
Track Gauge	1990 mm
Transport Width – 500 mm Shoes	2490 mm
Cab Height	2760 mm
Counterweight Clearance	880 mm

Working Ranges

Boom	Reach Boom – 4.65 m
Stick	R2.5 m
Bucket	GD 0.52 m³
Maximum Digging Depth	5530 mm
Maximum Reach at Ground Line	8170 mm
Maximum Cutting Height	8480 mm
Maximum Loading Height	6100 mm
Minimum Loading Height	2020 mm
Maximum Vertical Wall Digging Depth	5000 mm
Bucket Digging Force (ISO)	96 kN
Stick Digging Force (ISO)	66 kN

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Based on the Labor, Safety and Health Laws in Japan, employer of small construction equipment are required to provide specific training for all operators on machines with ship weight less than 3 metric ton. For machines greater than 3 metric ton, operator needs to obtain operator license certification from a Government approved registered training school.

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