

# 312F GC

Hydraulic Excavator  
2017



## Engine

Engine Model	Cat® C3.4B
Net Power	52 kW (70 hp)

## Drive

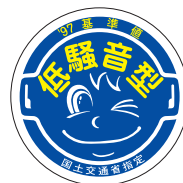
Maximum Travel Speed	5.3 km/h
Maximum Drawbar Pull	109.9 kN

## Weight

Operating Weight	12 500 kg
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オフロード法2014年  
基準適合



国土交通省指定  
低騒音型建設機械

## Introduction

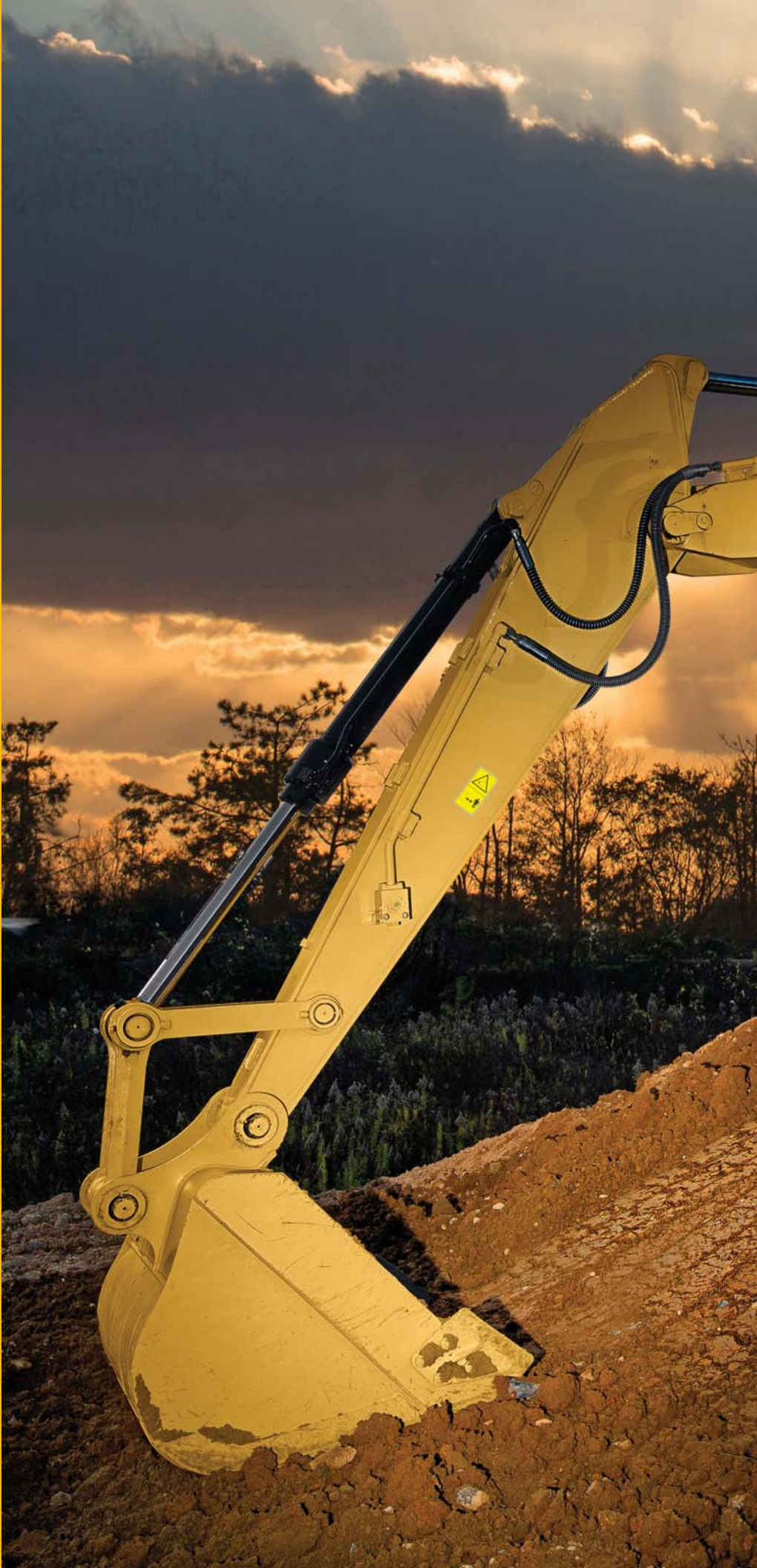
The 312F GC excavator is built for those who need dependable performance at a low cost per hour. The machine features an efficient C3.4B engine that's light on fuel – with no need for diesel exhaust fluid to meet today's emission standards. It also has a simple hydraulic system you can count on for everyday excavating tasks.

Unlike other brands in its size class, the 312F GC comes equipped with more unique attributes: Robust booms and sticks, strong and stable undercarriage, a quiet and comfortable Roll-Over Protective Structure (ROPS) cab, and easy-to-reach service points are just a few.

Bottom line: If you are looking for a dependable, low-cost-per-hour excavator to get your work done – backed by unmatched support from a brand you can trust – look no further than the 312F GC. It simply makes a great deal of business sense.

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\*写真は海外仕様機でオプション品を含みます。

# Engine

Reliable performance you can depend on



## A Powerful, Economical Solution

The Cat C3.4B engine meets Japan 2014 (Tier 4 Final) emission standards and provides plenty of power for the work you do without consuming a lot of fuel to do it. The engine is equipped with unique yet simple features like a turbo protector and maintenance-free emissions package that enhance service life – all to help keep your owning and operating costs to an absolute minimum.

## Fuel-Saving Features

There are built-in features to help you manage how much fuel you use. One-touch low idle lets you reduce engine speed when the machine isn't working. Engine idle shutdown turns the engine off when it's been idling for more than the time that you set. Both contribute to saving fuel, reducing emissions, and extending your service intervals.

## Proven Technology

Every Japan 2014 (Tier 4 Final) engine is equipped with a combination of proven electronic, fuel, air, and aftertreatment components. Applying these technologies lets us meet your high expectations for productivity, fuel efficiency, reliability, and service life. The right technologies fine tuned for the right applications results in the following:

- **High performance** across a variety of applications
- **Maximized uptime and reduced cost** with world-class support from the Cat dealer network
- **Minimized impact** of emission systems – designed to be transparent to the operator without requiring interaction
- **Durable designs** with long life to overhaul
- **Less fuel consumption** with minimized maintenance costs while providing the same great power and response.



# Hydraulics

Plenty of power for your line of work

### **An Efficient, Reliable System**

The 312F GC's hydraulic system is extremely reliable and features a load-sensing pump and control valve that calculate required hydraulic flow so you can meet your daily job requirements quickly and efficiently.

### **A Logical Layout**

Like all Cat excavators, hydraulic components on the 312F GC are located close together in order to minimize the length of hydraulic lines. This logical layout leads to less pressure drops and more machine power for the work you need to do.

### **Maximum Versatility**

When it comes to doing a variety of work, the machine's available high-pressure auxiliary and shovel crane function give you plenty of capability.

### **Less Components, Less Maintenance**

The addition of a pilot manifold in the valve block makes the system even easier to maintain because there is no need for a pilot pump, filter, or lines. Fewer components translate into less maintenance and lower owning and operating costs for you.

# Operator Station

Comfort and convenience to keep you productive



## A Safe, Quiet Cab

The ROPS certified cab is not only a safety feature, but it is also a sound suppressor due to its special sealing and insulation. With the door and windows closed, you will experience a machine that's as quiet as the truck you drive to work.

## A Great View

Ample glass gives you great views out front and to the side. A large rear window, aided by a low-profile engine, gives you excellent visibility out back. A large skylight provides great overhead visibility; it also serves as an emergency exit.

## A Comfortable Seat

The seat includes a reclining back, upper and lower slide adjustments, and tilt angle adjustments to meet your needs for maximum comfort.

## Controls Just for You

The right and left joystick consoles can be adjusted to improve your comfort and productivity during the course of a day. The right joystick features a button that will reduce engine speed when you are not working to help save fuel. Touch it once and speed reduces; touch it again and speed increases for normal operation.



## An Easy-to-Use Monitor

The monitor displays critical information you need to operate efficiently. Not only can it memorize up to 10 different work tools, it's also programmable in up to 42 languages to meet today's diverse workforce.

## A Cool and Warm Environment

The bi-level air conditioner system features multiple air outlets with filtered ventilation. Air flows on the floor, behind the seat, and in front of you to make your work in either hot or cold weather much more pleasant and productive.

## Ample Storage and Auxiliary Power

Storage spaces are located in the front, rear, and side consoles of the cab. A drink holder accommodates a large mug, and a shelf behind the seat stores large lunch or toolboxes. Power supply sockets are available for charging your electronic devices like an MP3 player, a cell phone, or even a tablet.

# Structures and Undercarriage

Made to work in your tough applications



## Robust Frames

The 312F GC is a well-built machine that's designed to give you a long service life and excellent resale value. The upper frame includes special mountings made specially to support the heavy-duty cab; the lower frame is reinforced to enhance component durability so you can count on the machine doing the tough work you need to get done.

## Durable Undercarriage

The machine's undercarriage works extremely well in various work applications and conditions. Plus its track shoes, links, rollers, idlers, and final drives are all built with high-tensile-strength steel for long-term durability.

## Great Weight

The rigid 2.1 t counterweight matches the machine's overall sleek appearance, and it provides plenty of balance for all of your work needs.





## Front Linkage

Ideal for a wide range of applications

### **Boom and Stick**

The 312F GC is offered with a 4.65 m boom and a 2.5 m stick or shovel crane stick. The shovel crane function can be used for all of your lifting needs.

### **Built to Last**

Cat booms and sticks are built with internal baffle plates for added durability, and all undergo 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. Also, the front linkage pins' inner bearing surfaces are welded with a self-lubricated bearing to extend service intervals and increase uptime.

# Attachments

Enhanced versatility to make you more productive and profitable



## **Get the Most Out of One Machine**

The 312F GC is a highly versatile machine that packs a lot of performance into a small package. You can easily expand that performance by utilizing any of the variety of attachments offered by Cat Work Tools.

## **Change Jobs Quickly**

A quick coupler brings the ability to quickly change attachments and switch from job to job. The Cat Pin Grabber coupler is the secure way to decrease downtime and increase job site flexibility and overall productivity.

## **Dig, Finish & Break**

A range of buckets dig everything from top soil to abrasive material. For finishing and grading work, compact and shallow ditch cleaning buckets fit the need. A hydraulic hammer equips the 312F GC for breaking sidewalks, driveways, and pavement.

## **Move and Handle All Sorts of Material**

Choose a thumb to work with your bucket and gain the instant ability to move and handle brush, rocks, and debris at your construction site.

## **Set Up Your Machine for Maximum Profitability**

Your Cat dealer can install hydraulic kits to properly operate all Cat Work Tool attachments – maximizing the machine's uptime and your profits.

**GRAB, SORT & BREAK**



**Thumb (Stiff Link)**



**Hammer**

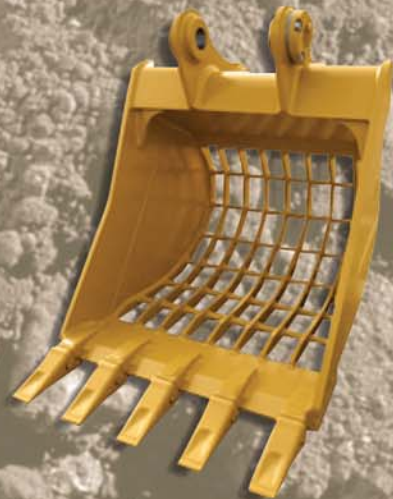
**DIG & FINISH**



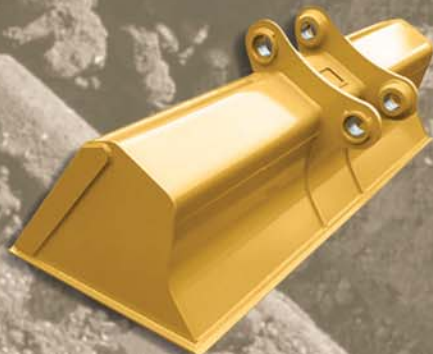
**Ditch Cleaning Tilt Buckets**



**Buckets (GD)**

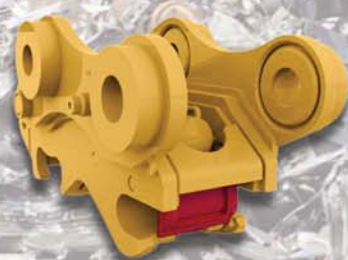


**Skeleton Buckets**



**Tamping Buckets**

**SWAP TOOLS**



**Pin Grabber Coupler**

*Please contact your nearest dealer about the available options and the estimated availability.*

# Simple Technologies

Solutions that make your work efficient



## Link Technologies

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 by Product Link™, which uses powerful tools to communicate to users and dealers.

# Serviceability

Designed to make your maintenance quick and simple



## Easy to Maintain

The 312F GC is a simple, compact, easy-to-maintain machine. You can reach most routine maintenance items like fluid taps and grease points from the safety and convenience of ground level. Wide service doors provide excellent access to the radiator, pump, air cleaner, and engine compartments; doors latch in place to make your service work simpler.

## Room to Move

The diesel particulate filter used to capture emissions is compact and maintenance free. The engine doesn't need an air-to-air aftercooler, so that means more room to make cleaning cores easy. Also, the use of an easy-to-reach manual priming pump reduces the number of filters the machine needs. All of this leads to less complexity and lowers owning and operating costs for you.

## More Service Benefits

The fuel tank features a remote drain located in the pump compartment to make it easy for you to remove water and sediment during routine maintenance. It also has an engine oil drain cock to make oil changes easy without any tools.



# Safety

Features to help you day in and day out

## A Safe, Quiet Cab

The ROPS-certified cab provides you with a safe working environment. It also contributes to your comfort because it's attached to a reinforced frame with special viscous mounts that limit vibration and unnecessary sound. Add in special roof lining and sealing and you have a cab that's extremely quiet.

## Great Views

Ample glass gives you great views out front and to the side. A large rear window, aided by a low-profile engine, gives you excellent visibility out back. The split-configuration windshield features an upper window equipped with handles so you can slide it to store in the ceiling; it also serves as an emergency exit.

## Smart Lights

The 312F GC optional working lights provide all the illumination you will need. Plus the chassis light has a time-delay function that can be set to stay on up to five minutes after the engine has been turned off to help you safely exit the machine.

## Secure Contacts

The surface of the upper structure and the top of the storage box area are covered with anti-skid plates to help prevent you from slipping during maintenance. Steps on the track frame and storage box along with extended hand rails to the upper deck enable you to securely work on the machine.



# Complete Customer Care

Service you can count on



## Worldwide Parts Availability

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

## Advice You Can Trust

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.

## Financial Options Just for You

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.

## Support Agreements to Fit Your Needs

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.

## Operating Techniques to Boost Your Profits

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.

## What's Best for You Today ... and Tomorrow

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 C3.4B engine is fuel efficient and meets Japan 2014 (Tier 4 Final) emission standards.
- The engine does not require Diesel Exhaust Fluid (DEF), which means less resource consumption.
- The engine can run on ultra-low-sulfur diesel (ULSD) fuel with 15 ppm of sulfur or less.



# 312F GC Hydraulic Excavator Specifications

## Engine

Engine Model	Cat C3.4B
Gross Power	54 kW (72 hp)
Net Power	52 kW (70 hp)
Bore	99 mm
Stroke	110 mm
Displacement	3.4 L

- The 312F GC meets Japan 2014 (Tier 4 Final) emission standards.
- No engine power derating required below 2300 m altitude.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler and alternator.
- Rating at 1,800 rpm (travel).

## Weight

Operating Weight	12 500 kg
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• Standard Undercarriage, 4.65 m Reach Boom, R2.5 m Stick, 500 mm Shoes, 0.52 m<sup>3</sup> Bucket.

## Track

Reference Number of Shoes (each side) – Standard Undercarriage	43 pieces
Reference Number of Track Rollers (each side) – Standard Undercarriage	6 pieces
Number of Carrier Rollers (each side)	1 piece

## Swing Mechanism

Swing Speed	11.7 rpm
Swing Torque	30.9 kN·m

## Drive

Maximum Travel Speed – High	5.3 km/h
Maximum Travel Speed – Low	3.4 km/h
Maximum Drawbar Pull	109.9 kN

## Hydraulic System

Main System – Maximum Flow (total)	240 L/min
Maximum Pressure – Equipment	30.5 MPa
Maximum Pressure – Travel	30.5 MPa
Maximum Pressure – Swing	23.0 MPa
Pilot System – Maximum Pressure	4120 kPa
Boom Cylinder – Bore	110 mm
Boom Cylinder – Stroke	1015 mm
Stick Cylinder – Bore	120 mm
Stick Cylinder – Stroke	1197 mm
Bucket Cylinder – Bore	100 mm
Bucket Cylinder – Stroke	939 mm

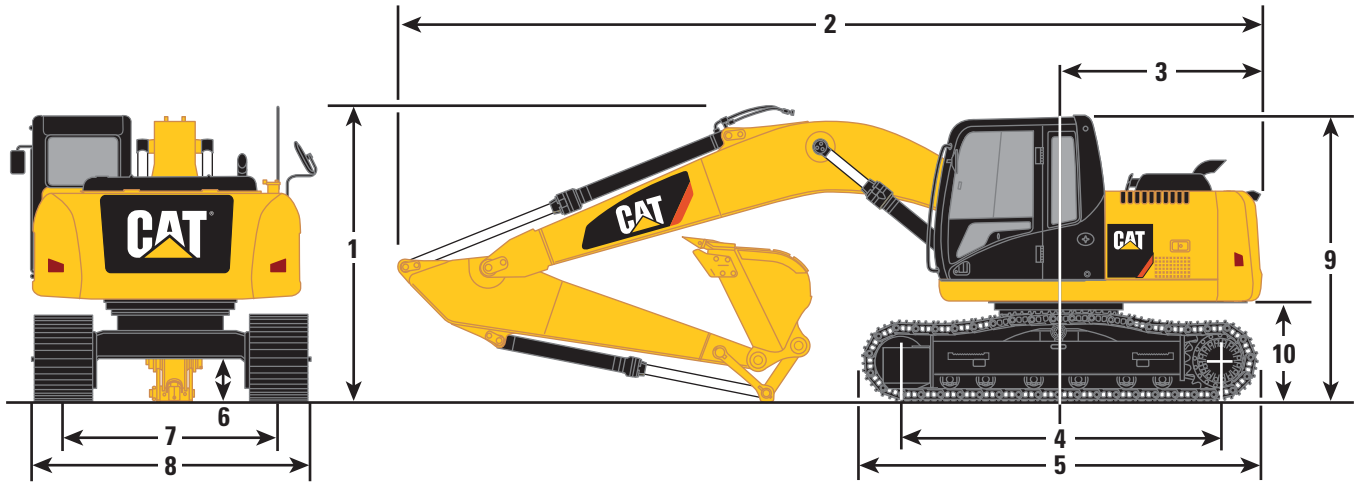
## Service Refill Capacities

Fuel Tank Capacity	250 L
Cooling System	11 L
Engine Oil	8 L
Swing Drive	2.4 L
Final Drive	3 L
Hydraulic System (including tank)	164 L
Hydraulic Tank	90.6 L

# 312F GC Hydraulic Excavator Specifications

## Dimensions

All dimensions are approximate.



### Boom Options

Reach Boom  
4.65 m

### Stick Options

R2.5 m

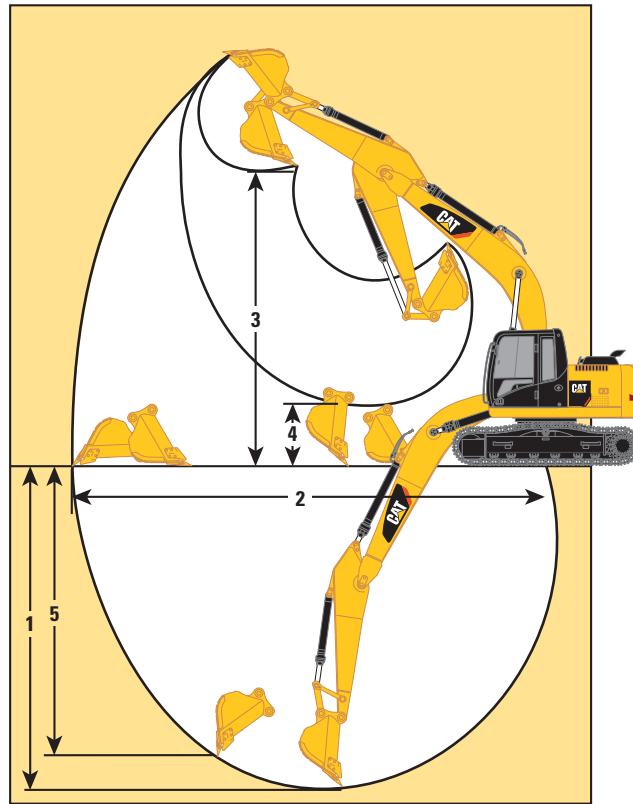
1 Shipping Height	2830 mm
2 Shipping Length	7680 mm
3 Tail Swing Radius	2180 mm
4 Length to Center of Rollers	2780 mm
5 Track Length	3490 mm
6 Ground Clearance	440 mm
7 Track Gauge (shipping)*	1990 mm
8 Transport Width	
500 mm Shoes	2490 mm
600 mm Shoes	2590 mm
700 mm Shoes	2690 mm
9 Cab Height	2760 mm
Cab Height with Top Guard	2900 mm
10 Counterweight Clearance	900 mm

\*With GD 0.52 m<sup>3</sup> Bucket.

# 312F GC Hydraulic Excavator Specifications

## Working Ranges

All dimensions are approximate.



<b>Boom Options</b>	<b>Reach Boom 4.65 m</b>
<b>Stick Options</b>	<b>R2.5 m</b>
<b>Bucket</b>	<b>GD 0.52 m<sup>3</sup></b>
<b>1</b> Maximum Digging Depth	5530 mm
<b>2</b> Maximum Reach at Ground Line	8170 mm
<b>3</b> Maximum Loading Height	6100 mm
<b>4</b> Minimum Loading Height	2020 mm
<b>5</b> Maximum Vertical Wall Digging Depth	4840 mm
Bucket Digging Force (ISO)	95 kN
Stick Digging Force (ISO)	65 kN

# 312F GC Hydraulic Excavator Specifications

## Operating Weights and Ground Pressures

	500 mm Shoes		600 mm Shoes		700 mm Shoes	
	Weight	Ground Pressure	Weight	Ground Pressure	Weight	Ground Pressure
	kg	kPa	kg	kPa	kg	kPa
<b>0.52 m<sup>3</sup> GD Bucket</b>						
Reach Boom – 4.65 m						
R2.5 m Stick	12 500	40.4	12 700	34.2	12 900	29.9

## Major Component Weights

	kg
Base Machine (with boom cylinder, without counterweight, front linkage and track)	4420
Standard Undercarriage	2500
Counterweight	2100
Reach Boom – 4.65 m Boom (includes lines, pins and stick cylinder)	1030
R2.5 m Stick (includes lines, pins, bucket cylinder and bucket linkage)	570
500 mm Triple Grouser Track Shoes (standard/per two track)	1460
600 mm Triple Grouser Track Shoes (standard/per two track)	1700
700 mm Triple Grouser Track Shoes (standard/per two track)	1940
GD 0.52 m <sup>3</sup> Bucket (with sidecutter and tip)	460

## Standard Equipment

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

### ENGINE

- C3.4B diesel engine
- Meets Japan 2014 (Tier 4 Final) emission standards
- 2300 m altitude capability without power derating
- Two speed travel
- Waved fin radiator with side-by-side type oil cooler
- Radial seal air filter, double element
- Cat battery

### CAB

- ROPS cab
- Laminated glass front window 70/30 split (tempered glass)
- Sliding upper door window (left-hand cab door)
- Removable lower windshield with in cab storage bracket
- Windshield washer and radial wipers
- Interior lighting
- Coat hook
- Beverage holder
- Literature holder
- Radio (meet DIN size)
- Rear window (emergency exit)
- 1 × 12V power supply 10A
- Two stereo speakers (two locations)
- Storage compartment suitable for lunch box
- Color LCD display with indicators, filter/fluid change, and working hour information
- Neutral lever (lock out) for all controls
- Utility space for magazine
- Adjustable armrest
- Adjustable console
- Travel control pedals with removable hand levers
- Capability of installing two additional pedals

### HYDRAULIC SYSTEM

- Automatic swing parking brake
- High performance hydraulic return filter
- Reverse swing damping valve
- Control pattern changer

### ELECTRICAL

- Circuit breaker (12V)

### LIGHTS

- Light, storage box mounted (one)

### UNDERCARRIAGE

- Grease lubricated track (GLT2)
- Towing eye on base frame
- Base frame with new eye for diagonal lashing
- Standard idler tension spring

### COUNTERWEIGHT

- 2100 kg counterweight

### SAFETY AND SECURITY

- Cat one key security system
- Door locks and cap locks on fuel tanks
- Signaling/warning horn
- Secondary engine shutoff switch
- Rear window for emergency exit
- Mirrors (frame – right, cab – left)
- Rearview camera
- Machine Security System

### TECHNOLOGY

- Product Link





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)

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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.

AEHQ7923-01  
Replaces AEHQ7923  
(Japan)

