

316F L

Hydraulic Excavator

2017



写真は海外仕様機で、オプション品を含みます。

Engine

Engine Model	Cat® C4.4 ACERT™
Net Power – SAE J1349	87.5 kW
Engine Power – ISO 14396	91.0 kW

Drive

Maximum Travel Speed	5.3 km/h
Maximum Drawbar Pull	156 kN

Weight

Minimum Operating Weight	17 100 kg
Maximum Operating Weight	17 600 kg



オフロード法2014年
基準適合

Introduction

The new Cat 316FL is a perfect choice for customers who value reliable, economical performance. Powered by a fuel-efficient C4.4 ACERT engine that meets Japan 2014 (Tier 4 Final) emission standards, the machine features a state-of-the-art hydraulic system that enables you to move material all day long with tremendous speed and precision.

When you add in a quiet operator environment that keeps you comfortable and productive, robust structures that keep you grounded and balanced, easy-to-reach service points that make your routine maintenance fast and simple, and multiple Cat work tools that help you take on a variety of tasks, you just won't find a better, more efficient excavator in its size class – any place, anywhere.

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Hydraulics

Power to move your material with speed and precision



A Powerful, Efficient Design

When it comes to moving material quickly and efficiently, you need hydraulic horsepower – the type of ground-breaking power the 316F L can deliver. Major hydraulic components like pumps and valves are located close together so shorter tubes and lines can be used. This design leads to less friction loss, reduced pressure drops, and more power to the ground for the work you need to get done.

Control Like No Other

Controllability is one of the main attributes of Cat excavators, and one of the key contributors to this is the main control valve. The valve opens slowly when your range of joystick lever movement is small and opens rapidly when movement is high. It puts flow where you need it when you need it, which leads to smoother operation, greater efficiency, and lower fuel consumption.

Auxiliary Hydraulics For Added Versatility

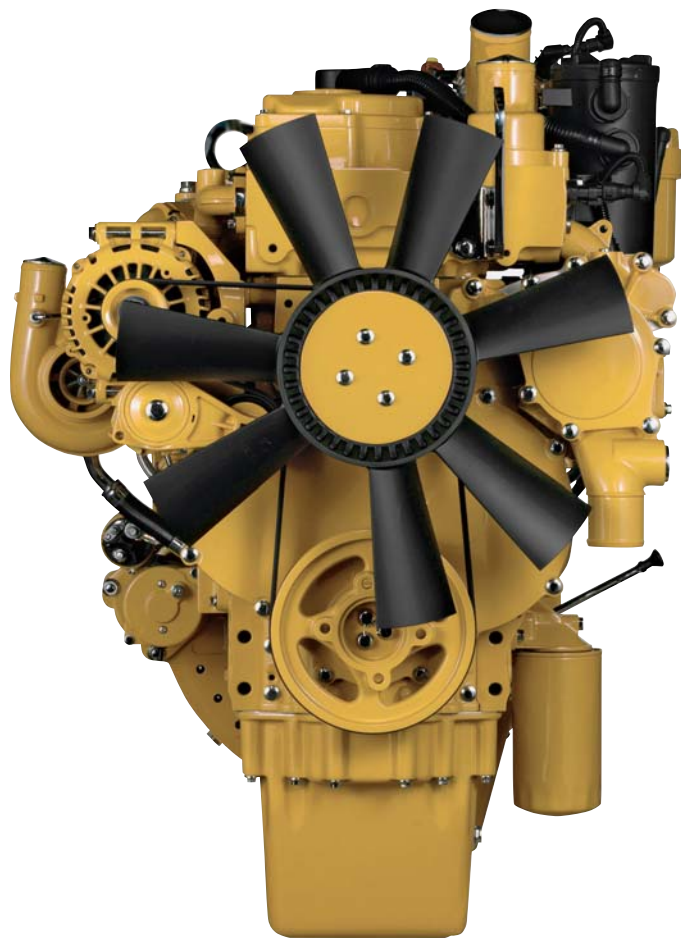
Auxiliary hydraulics give you greater tool versatility so you can take on more work with just one machine, and there are several options from which you can choose.

Boom & Stick Oil Recirculation For Added Efficiency

The 316F L recirculates the flow of oil from the head end of the boom and stick cylinders to the rod end of the boom and stick cylinders during the work cycle to save energy and improve fuel efficiency. It's optimized for any dial speed setting you select, which results in less pressure loss for higher controllability, more productivity, and lower operating costs for you.

Engine

Powerful and fuel efficient to meet
your expectations



Proven Technology

The Cat C4.4 ACERT engine meets Japan 2014 (Tier 4 Final) emission standards, and it does so without interrupting your job process. Simply turn the engine on and go to work. It will look for opportunities in your work cycle to regenerate itself, and it will give you plenty of power for the task at hand – all to help keep your owning and operating costs to an absolute minimum.

Like every Cat Japan 2014 (Tier 4 Final) engine, the C4.4 ACERT engine is equipped with a combination of proven electronic, fuel, air, and aftertreatment components. Applying these time-tested technologies lets us meet your high expectations for productivity, fuel efficiency, reliability, and service life.

Following are the results you can expect:

- **Improved fluid efficiency of up to 5%** over Tier 4 Interim products, including Diesel Exhaust Fluid (DEF) consumption.
- **High performance** across a variety of applications.
- **Enhanced reliability** through commonality and simplicity of design.
- **Maximized uptime and reduced cost** with world-class Cat dealer support.
- **Minimized impact** on emission systems – with no operator interaction required.
- **Durability** with long service life.
- **Better fuel economy** with minimized maintenance costs.
- **Same great power** and response.

Operator Station

Comfort and convenience to keep you productive

Comfortable Seat Options

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

A Safe, Quiet Cab

The ROPS cab provides you with a safe working environment when properly seated and belted. 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 as quiet inside as today's top pickup trucks.

A Cool & Warm Environment

The automatic climate control 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.

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. Also, 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.

A Helpful Monitor

The LCD monitor is easy to see and navigate. Programmable in up to 42 languages to meet today's diverse workforce, the monitor clearly displays critical information you need to operate efficiently and effectively. Plus it projects the image from the standard rearview camera to help you see what's going on around you so you can stay safely focused on the job at hand.

Ample Storage & 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. Two 12-volt power supply sockets are conveniently located near the key storage areas for charging your electronic devices like an MP3 player, a cell phone, or a tablet.





Structures & Undercarriage

Designed to work in your rugged applications

Robust Frame

The 316F L is a well-built machine designed to give you a very long service life. The upper frame has mountings made specifically to support the heavy-duty cab; it is also reinforced around key areas that take on stress like the boom foot and skirt. Massive bolts are used to attach the track frames to the body, and additional bolts are used to increase the machine's digging force, which leads to more productivity for you.

Durable Undercarriage

The 316F L undercarriage contributes significantly to its outstanding stability and durability. Track shoes, links, rollers, idlers, and final drives are all built with long-lasting, high-tensile-strength steel. Cat Grease Lubricated Track track link protects moving parts by keeping water, debris, and dust out and grease sealed in, which delivers longer wear life and reduced noise when traveling. Optional guide guards help maintain track alignment to improve the machine's overall performance – whether you're traveling on a flat, heavy bed of rock or a steep, wet field of mud.



Counterweight Option

Standard counterweight option is built with thick steel plates and reinforced fabrications to make it less susceptible to damage, and has curved surfaces that match the machine's sleek, smooth appearance along with integrated housings to help protect the standard rearview camera.

Front Linkage

Options to take on your far-reaching and up-close tasks



Designed For Range

The 316F L is offered with a reach boom and R2.6 m stick configuration. Reach configurations balance digging force and bucket capacity, covering all applications this size of machine was designed to take on such as trenching, loading, and doing demolition work with hydraulic tools.

Made To Last

Each boom and stick is built with internal baffle plates for maximum durability, and each undergoes ultrasound inspection to ensure quality and reliability for the tough work you do.

Talk to your Cat dealer to pick the best front linkage for your specific applications.



Integrated Technologies

Monitor, manage, and enhance your
job site operations



Cat Connect

The smart use of technology and services will improve your job site efficiency. In fact, using data from technology-equipped machines give you more information and insight into your equipment and operations than ever before.

Cat Connect technologies offer improvements in these key areas:

LINK Technologies

LINK technologies like Product Link™ wirelessly connect you to your equipment, giving you valuable insight into how your machine or fleet is performing. The system tracks location, hours, fuel usage, productivity, idle time, and diagnostic codes through the online VisionLink® interface so you can make timely, fact-based decisions to maximize efficiency, improve productivity, and lower operating costs.

Attachments

Tools to make you productive and profitable



Get The Most Out Of One Machine

You can easily expand the performance of your machine 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, Load & Compact

Multiple buckets dig everything from top soil to harsh, abrasive material. For finishing and grading work, compact and shallow ditch cleaning buckets fit the need. A Cat compactor prepares the area for the next phase of construction.

Break, Demolish & Scrap

A hydraulic hammer equips your machine for breaking rock in quarries and preparing trenches on construction sites. Taking down bridge pillars and heavily reinforced concrete is no problem. Shear attachments take your machine into structure demolition jobs and process the debris for reuse and recycle.

Move & Handle

Add a thumb and you have the ability to move and handle brush, rocks, and debris. For constant material handling, a grapple is your solution. Choose from three different styles for picking, sorting, and loading trash, demolition debris, or recyclables.

Set Up Your Machine For Profitability

Your Cat dealer can install hydraulic kits to properly operate all Cat Work Tool attachments, maximizing the machine's uptime and your profits. All Cat Work Tool attachments are supported by the same Cat dealer network as your Cat machine.

GRAB, SORT, LOAD



Pro Series Hydraulic Thumbs



Stiff Link Thumbs



Demolition & Sorting Grapples

SWAP TOOLS



Pin Grabber Coupler

DIG & PACK



Ditch Cleaning and Tilt Buckets



General Duty Buckets



Heavy Duty Buckets



Vibratory Plate Compactors

CUT, CRUSH, BREAK & RIP



Scrap & Demolition Shears



Hydraulic Hammers



Pin-On Ripper

Serviceability

Designed to make your maintenance quick and easy

Safe, Convenient Access

You can reach most routine maintenance items like fluid taps and grease points from the safety and convenience of ground level. You will also find filters banked together for higher service efficiency. Compartments feature wide service doors designed to help prevent debris entry, and they also securely latch in place to help make your service work simpler.

A Smart Design

The high-ambient cooling system features a fuel-saving variable-speed fan and a side-by-side-mounted radiator and oil and air coolers for easy cleaning. Wider clearance between the two makes blowing off debris easy for you, which can help improve your machine's reliability and performance.

A Fresh Idea

When you select ventilation inside the cab, outside air enters through the fresh air filter. The filter is conveniently located on the side of the cab to make it easy to reach and replace, and it is protected by a lockable door that can be opened with the engine key.



More Service Benefits

Filters are banked together to enhance service efficiency. The fuel tank's drain line makes it easy and simple for you to remove water and sediment during routine maintenance. Plus an integrated fuel level indicator pops up to help you reduce the possibility of fuel tank overfilling.

Safety

Features to help protect you day in and day out



A Safe, Quiet Cab

The ROPS cab provides you with a safe working environment when properly seated and belted. 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 as quiet inside as any of today's top pickup trucks.

Secure Contact Points

Multiple large steps get you into the cab as well as a leg up to the compartments. Extended hand rails allow you to safely climb to the upper deck. Anti-skid plates reduce your slipping hazards in all types of weather conditions, and they can be removed for cleaning.

Great Views

Ample glass gives you excellent visibility out front and to the side, and the standard rearview camera gives you a clear field of view behind the machine through the cab monitor. The available split-configuration windshield features an upper window with handles that make it easy to slide and store above you and a lower window that can be removed and stored on the inside wall of the cab. The large skylight also serves as an emergency exit and provides you with enhanced overhead visibility.

Smart Lighting

Halogen lights provide plenty of illumination, and the cab and boom lights can be programmed to stay on for up to 90 seconds after the engine has been turned off to help you safely exit the machine.





Complete Customer Care

Service you can count on

Parts Where You Work

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

Sustainability

Generations ahead in every way



- The C4.4 ACERT engine meets Japan 2014 (Tier 4 Final) emission standards.
- An overfill indicator rises when the fuel tank is full to help service technicians avoid spilling.
- The machine is built to be rebuilt with major structures and components capable of being remanufactured to reduce waste and replacement costs.
- An efficient 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 316F L is an efficient, productive machine that's designed to conserve our natural resources for generations ahead.

316F L Hydraulic Excavator Specifications

Engine

Engine Model	Cat C4.4 ACERT
Net Power – SAE J1349	87.5 kW
Engine Power – ISO 14396	91.0 kW
Bore	105 mm
Stroke	127 mm
Displacement	4.4 L

Weights

Minimum Operating Weight*	17 100 kg
Maximum Operating Weight**	17 600 kg

*5.1 m boom, 2.6 m stick, 2.8 t counterweight, 0.65 m³ bucket, and 500 mm shoes.

**5.1 m boom, 2.6 m stick, 2.8 t counterweight, 0.65 m³ bucket, and 700 mm shoes.

Hydraulic System

Main System – Maximum Flow (Total)	300 L/min
Maximum Pressure – Equipment	35 000 kPa
Maximum Pressure – Travel	35 000 kPa
Maximum Pressure – Swing	25 000 kPa
Pilot System – Maximum Flow	23 L/min
Pilot System – Maximum Pressure	4120 kPa
Boom Cylinder – Bore	110 mm
Boom Cylinder – Stroke	1193 mm
Stick Cylinder – Bore	120 mm
Stick Cylinder – Stroke	1331 mm
Bucket Cylinder – Bore	110 mm
Bucket Cylinder – Stroke	1039 mm

Drive

Maximum Travel Speed	5.3 km/h
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Swing Mechanism

Swing Speed	8.9 rpm
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Service Refill Capacities

Fuel Tank Capacity	290 L
Cooling System	26 L
Engine Oil (with filter)	13.5 L
Swing Drive	2.4 L
Final Drive (each)	6 L
Hydraulic System (including tank)	190 L
Hydraulic Tank	120 L
DEF Tank Capacity	20 L

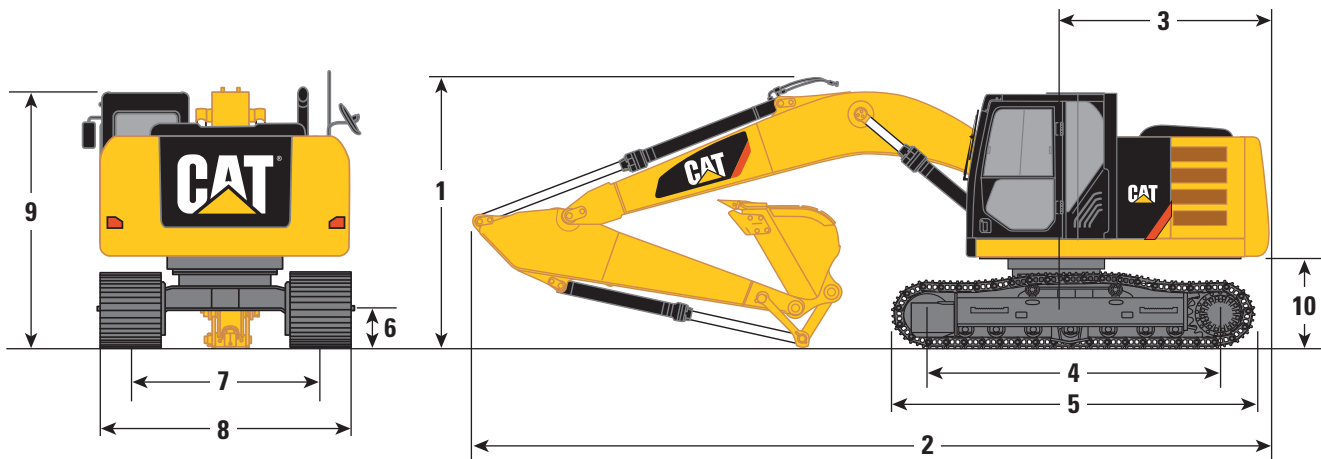
Track

Number of Shoes (each side)	44 pieces
Number of Track Rollers (each side)	7 pieces
Number of Carrier Rollers (each side)	2 pieces

316F L Hydraulic Excavator Specifications

Dimensions

All dimensions are approximate.



Boom Type	Reach Boom 5.1 m
Stick Size	R2.6 m
1 Shipping Height*	3050 mm
Shipping Height at Boom Top	3050 mm
Shipping Height with Hand Rail	2930 mm
Shipping Height with Top Guard	3100 mm
2 Shipping Length	8570 mm
3 Tail Swing Radius	2500 mm
4 Length to Center of Rollers	3170 mm
5 Track Length	3970 mm
6 Ground Clearance	440 mm
7 Track Gauge	1990 mm
8 Transport Width	
500 mm Shoes	2520 mm
600 mm Shoes	2590 mm
700 mm Shoes	2690 mm
9 Cab Height	2890 mm
Cab Height with Top Guard	3100 mm
10 Counterweight Clearance**	1010 mm

All dimensions were calculated with a 0.65 m³, 900 mm bucket.

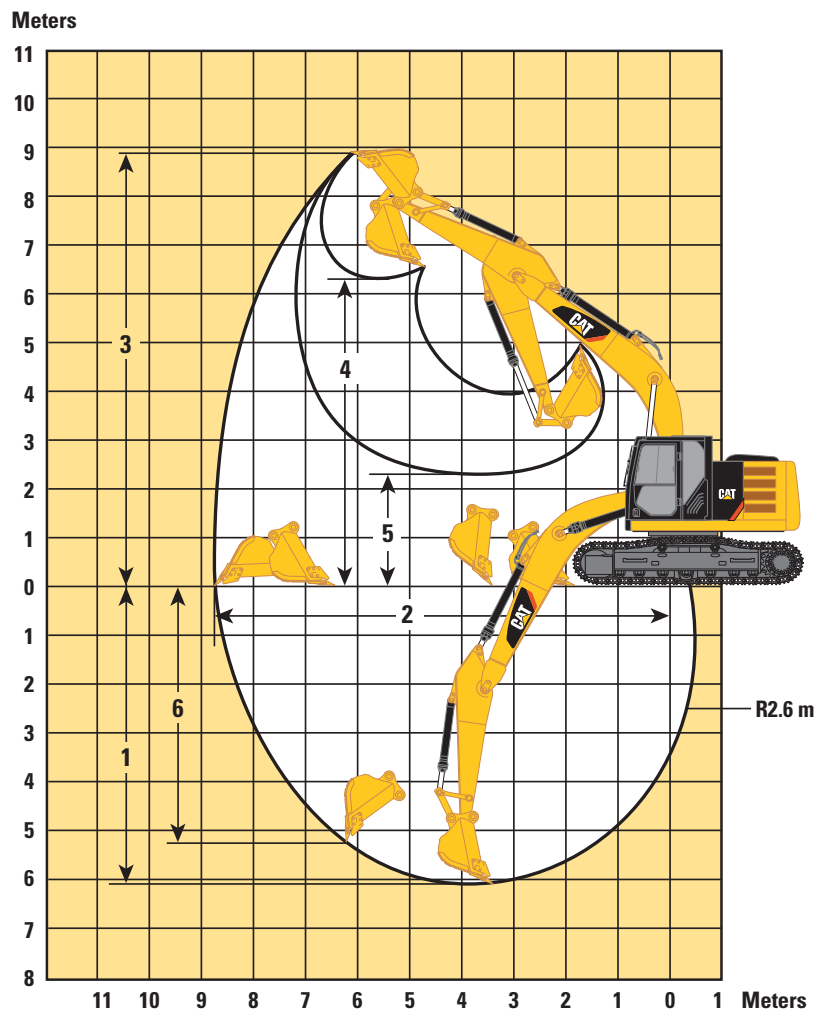
*Including shoe lug height.

**Without shoe lug height.

316F L Hydraulic Excavator Specifications

Working Ranges

All dimensions are approximate.



Boom Type	Reach Boom 5.1 m
Stick Size	R2.6 m
1 Maximum Digging Depth	6070 mm
2 Maximum Reach at Ground Level	8750 mm
3 Maximum Cutting Height	8890 mm
4 Maximum Loading Height	6300 mm
5 Minimum Loading Height	2330 mm
6 Maximum Vertical Wall Digging Depth	5260 mm

All dimensions were calculated with a 0.65 m³, 900 mm bucket.

316F L Hydraulic Excavator Specifications

Operating Weight and Ground Pressure

	700 mm Triple Grouser Shoes		600 mm Triple Grouser Shoes		500 mm Triple Grouser Shoes	
Reach Boom – 5.1 m						
R2.6 m	17 600 kg	35.7 kPa	17 300 kg	41.1 kPa	17 100 kg	48.6 kPa

Major Component Weights

Base Machine (with boom cylinder, without counterweight, front linkage, track and bucket)	5430 kg
Long Undercarriage	3750 kg
Counterweight	2800 kg
Boom (includes lines, pins and stick cylinder)	
Reach Boom – 5.1 m	1300 kg
Stick (includes lines, pins, bucket cylinder, and bucket linkage)	
R2.6 m	800 kg
Track Shoe (Long/per two tracks)	
500 mm Triple Grouser	2190 kg
600 mm Triple Grouser	2420 kg
700 mm Triple Grouser	2660 kg

All weights are rounded up to nearest 10 kg.

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

Bucket and Stick Forces

Boom Type	Reach Boom 5.1 m
Stick Size	R2.6 m
General Duty	
Bucket Digging Force (ISO)	111 kN
Stick Digging Force (ISO)	80 kN

316F L Hydraulic Excavator Specifications

Work Tool Offering Guide*

Boom Type	Reach Boom
Stick Size	R2.6 m
Hydraulic Hammer	H110Es H115Es H120Es
Mobile Scrap and Demolition Shear	S325B**
Compactor (Vibratory Plate)	CVP75
Demolition & Sorting Grapple	G310B

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

**Boom-mount.

Standard Equipment

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

ENGINE

- C4.4 ACERT diesel engine
- Meets Japan 2014 (Tier 4 Final) emission standards
- 2300 m altitude capability
- Electric priming pump
- 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
- Secondary filter
- Screen filter in fuel line
- Cold weather battery –25° C

HYDRAULIC SYSTEM

- Regeneration circuit for boom and stick
- Reverse swing dampening valve
- Automatic swing parking brake
- High-performance hydraulic return filter
- Control pattern quick-change, four way

CAB

- Pressurized operator station with positive filtration
- Sliding upper door window
- 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 indicators, 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
- Two power outlets, 10 amp (total)
- Laminated glass front upper window and tempered other windows

UNDERCARRIAGE

- Grease Lubricated Track GLT, resin seal
- Towing eye on base frame
- Swivel guard

ELECTRICAL

- 80 amp alternator
- Circuit breaker

LIGHTS

- Halogen boom light
- Time delay function for boom light and cab light
- 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

TECHNOLOGY

- Product Link

316F L Optional Equipment

Optional Equipment

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

HYDRAULIC SYSTEM

- Auxiliary hydraulics
- Boom and stick lines
- High-pressure line
- Medium-pressure line

CAB

- Cab hatch emergency exit
- Seat, high-back mechanical suspension
- Windshield wiper
- Left pedal
- Right pedal
- Cab mirror
- Ashtray

UNDERCARRIAGE

- 500 mm triple grouser shoes
- 600 mm triple grouser shoes
- 700 mm triple grouser shoes
- Guard, heavy-duty bottom
- Center track guiding guard

COUNTERWEIGHT

- 2.8 t

FRONT LINKAGE

- Bucket linkage, without lifting eye
- 5.1 m reach boom
- 2.6 m stick

LIGHTS

- Working lights, cab mounted with time delay
- Halogen boom lights (right side)

SECURITY

- FOGS, bolt-on
- Guard, cab front, mesh

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

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(Japan)

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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.

