

M316F

Wheeled Excavator

2017



Engine

Engine Model	Cat® C4.4 ACERT™
Emissions	EU Stage IV
Net Power (maximum)	
ISO 9249 at 2,000 rpm	105 kW (141 hp)
ISO 9249 at 2,000 rpm (metric)	143 hp (PS)
ISO 14396 at 2,000 rpm (gross)	110 kW (148 hp)
	150 hp (PS)

Weights

Operating Weight with Attachment	16 130 kg-19 040 kg
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Bucket Specifications

Bucket Capacities	0.35 m ³ -1.14 m ³
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Working Ranges

Maximum Reach at Ground Level	9400 mm
Maximum Digging Depth	6100 mm

Drive

Maximum Travel Speed	35 km/h
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M316F Features

Made to keep your costs down.

Not only does the machine give you all the versatility you need, but it does so while providing a great deal of precision and speed with an optimized fuel consumption – and zero impact on your efficiency.

Made to make operation easy and pleasant.

Have a seat, you will be impressed by the quietness and comfort of the cab. Feel relaxed, we help you make sure you're safe.

Enjoy integrated technologies; they act transparently.

When you add the ground level grouped service points that make your maintenance quick and easy, and multiple Cat attachments that help you do all kinds of jobs, you simply won't find a better machine.

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The new F Series generation is here to help you take on the wide variety of challenges you face every day, more easily and with more pleasure.

F Series Wheeled Excavators – Easier Than Ever.

Sustainability

Generations Ahead in Every Way



Fuel Efficiency and Reduced Exhaust Emissions

The engine meets Stage IV emission standards, is powerful and efficient, with an optimized fuel consumption and no impact on your productivity. This means less resource consumption and fewer CO₂ emissions.

Transparent Technologies and Longer Service Intervals

- The Eco Mode, Auto Engine Speed Control and Engine Idle Shutdown help further reduce your overall fuel consumption.
- Product Link™ allows remote monitoring of the machine and helps improve overall efficiency.
- Your Cat dealer can help extend service intervals, meaning fewer fluids and disposals, all adding up to lower costs.

Biodiesel and Biodegradable Hydraulic Oil

- The M316F has the flexibility of running on either ultra-low-sulfur diesel (ULSD) fuel with 10 ppm of sulfur or less or up to B20 biodiesel fuel blended with ULSD.
- Cat BIO HYDO™ Advanced HEES™ reduces the impact on the environment.

Cat Certified Used

This program is a key element in the range of solutions offered by Caterpillar and Cat dealers to help customers achieve growth at the lowest cost while eliminating waste. Used equipment is inspected, guaranteed and ready for work and customers will benefit from a Caterpillar warranty.

Engine

Power, Reliability, and Fuel Economy

The Power and Performance You Need

Constant Power Strategy

Provides a quick response to changing loads, while delivering the same amount of power regardless of operating conditions.

A Transparent Emission Solution That Works

The Cat C4.4 ACERT engine meets today's Stage IV emission standards, and it does so without interrupting your job process. It is designed to be:

- **Transparent:** no operator intervention
- **Efficient:** no work interruption, even in case of extended idling time
- **Simple:** minimum maintenance. Longitudinal engine installation, which further simplifies maintenance.

Biodiesel Not a Problem

The engine can run on up to B20 biodiesel fuel that meets ASTM 6751 standards – all to give you more potential fuel-saving flexibility.

Proven Technology

To assure that our technology will meet your expectations for reliable trouble-free service, we subjected these engines and technologies to extensive operating hours of test and validation.



Built-in Fuel Savers That Add Up

- **Automatic Engine Speed Control:** lowers engine speed when it is not needed.
- **Engine Idle Shutdown:** turns the engine off when it's been idling for more than a pre-set amount of time.
- **On-Demand Cooling System:** variable speed and on-demand fan.
- **Enhanced Eco Mode:** reduces engine speed while delivering the same power.
- **Automatic Shift to Travel Mode** when you start riding.
- **NEW! Optimized Travel Mode:** travel mode rpm levels are set automatically on-demand only to further reduce fuel consumption.



Premium Comfort

Keeps Operators Productive All Shift Long



Legacy from the Renowned Cat Wheeled Excavators

Designed for the operator, our cabs are unique.

Ergonomic Layout

- Frequently used switches are centralized, kept to the minimum and ideally located close to the joysticks.
- Storage compartments are useful... when well designed. Several areas provide sufficient room to store a hard hat, a drink, phone, or keys.

Comfortable Seat Options

Our seats provide all the comfort needed for a long day of work, including FULL adjustment. All seats are heated and air suspended. Automatic weight adjustment and ventilated seats are available.

Safety Is Not Optional

ROPS cab, compatible with FOPS, seat belt alarm, safety bar, sideview camera ... among others.

Details That Make the Difference

Have a look at the cab; you will see it is through details that we improve pleasure of operating.

Smart Controls to Reduce Fatigue

- Features like ride control, SmartBoom or Joystick Steering will be precious to increase your productivity.
- New technologies that work transparently like the swing and auto travel lock or the automatic brake and axle lock, reduce the number of tasks you need to do.

Plug, Charge and Play Your Devices

- The 12V 10A power supply socket is conveniently located for charging your laptop, or a tablet.
- A CD/MP3 Radio with speakers and USB port is available.





Simplicity and Functionality

For Ease of Operation

A Cab Just for You – Fully Adjustable

- Seat armrests, in height and angle
- Steering column adjustment, not only tilting fore/aft but also in height
- Hydraulic sensitivity of the machine to make it more or less aggressive
- NEW! Joystick and left pedal controls assignments: can be set up as desired and per tool
- NEW! Optional advanced joystick offering more controls (two sliders, five buttons each)
- Automatic air conditioning
- NEW! Optional heated mirrors are now also electrically adjustable from the cab

Low Sound Levels, Less Fatigue

Increased cab pressure, preventing from dust entry, combined with the cab design contributes to reducing sound.

Outstanding Visibility: See the Difference!

- All glass areas have been drastically increased
- Standard LED working lights and halogen front roading lights
- LED dome light
- Standard rearview AND sideview wide angle cameras
- Wide angle mirrors for better visibility even down to the ground
- Parallel intermittent (four speeds) wipers covering the whole windshield

NEW! Standard LED Lights for BOTH Cameras to See What's Going on Around, Day or Night

The rear camera is integrated into the counterweight for enhanced protection.

NEW! Split-Screen View of BOTH Cameras on the Same Monitor

The views from both cameras are displayed side by side on the additional wide color monitor for better visibility at first glance.

Large Color Machine Monitor

Easy to read and in local language, the high resolution LCD monitor will keep you aware of any important information. "Quick Access" buttons allow a quick selection of favorite functions. The tool select function lets you preset up to ten different hydraulic attachments (including the new Cat Tilt-Rotator) for quick tool changes.

The Next Generation

Easier Than Ever



Make the Move to the Next Generation

Refinements. From the whole design to the smallest details. Convenient features, new advanced and transparent technologies, not only to reduce emissions but to further improve your daily experience when working with our products.

Cruise Control – Focus on the Road, Not on Your Foot

No need to press the pedal all the time.

- Choose the very speed you wish
- Press the quick access button on the monitor
- Enjoy the ride

It's as Easy as That.

NEW! Trailer-Ready Package – Hitch-Up Your Trailer and Go

How to be more autonomous than ever while increasing your flexibility?

Our trailer-ready package includes all the necessary electrical and hydraulic systems, even for trailers equipped with a tailgate and dumping devices.

Moving your tools, and fuel along with you to each job site or material directly on site has never been easier!



Smart Technologies

Swing and Auto Travel Lock: Press, Go and Relax

No need for the operator to bend to engage the swing lock pin.

- Just press a button,
- Align the upper to the lower frame,
- Enjoy the ride: a green indicator confirms the swing and the implements have been automatically locked.
- NEW! The swing lock can be applied independently from the implements lock at low speed (below 5 km/h)

It's as Easy as That.

Integrated Pin Code – Switch Off and Relax

No need to buy an optional security system to protect your equipment against theft.

- The pin code is integrated into the monitor (standard)
- Entering the right code allows the engine to start

The Machine Security System (MSS – optional) adds even more protection when needed.

It's as Easy as That.



Dig and Go Auto Axle Lock Presses the Pedal for You, Reducing the Number of Actions You Need to Do

The machine automatically detects when the service brake and axle need to be locked (like when digging), or unlocked (roading), hence removing the need for the operator to systematically press the pedal.

Brake and axle are released automatically by pressing the travel pedal again.



Hydraulics

Fast, Precise, Flexible

When it comes to moving material quickly, you need efficient hydraulics – the type the F Series can deliver.

Efficient Design, Smart and Fast

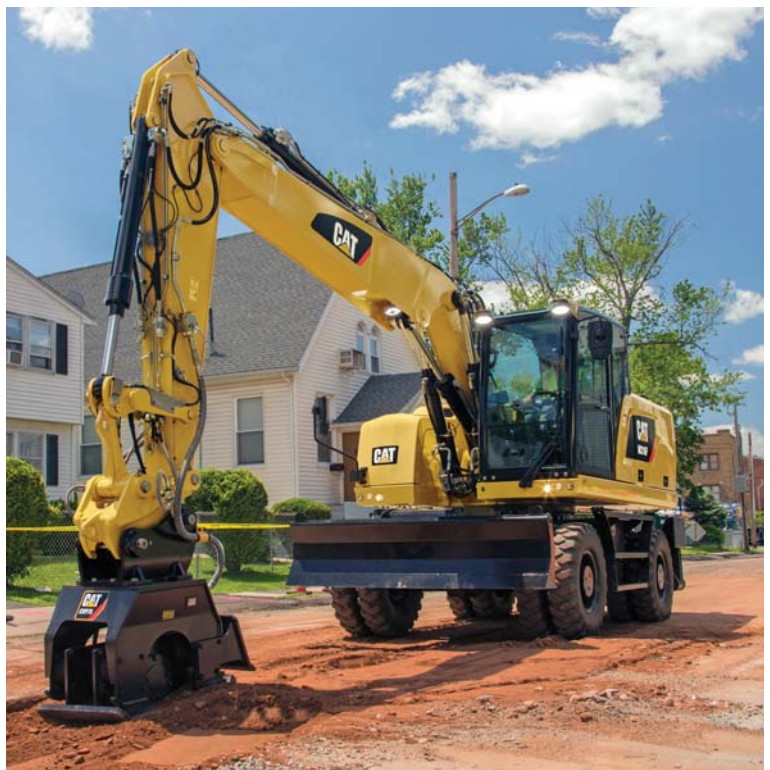
- **Simple Design:** The new hydraulic valve compartment and routings offer a simple and clean design to help ensure durability.
- **Smart Main Hydraulics:** The system allows reducing the load on the engine when not needed, which translates into lower fuel consumption.
- **Dedicated Swing Pump:** A closed hydraulic circuit is dedicated to the swing only. Having two separate pumps, one for the swing and the second for the other functions allows faster and smoother combined movements.

Control Like No Other

- **Load Sensing Hydraulics** – Controllability is one of the main attributes of Cat excavators, and one of the key contributors to this is the load sensing hydraulic system that's designed to provide fast cycle times, great lift capacity and high bucket and stick forces to maximize your efficiency in any job.
- **Adjustable Hydraulic Sensitivity** – Allows you to adjust the aggressiveness of the machine according to the application.
- **Stick Regeneration Circuit** – Increases efficiency and helps enhance controllability for higher productivity.

Proportional Auxiliary Hydraulics, Tremendous Versatility

Medium, high pressure and hydraulic quick coupler lines and circuits: they all come standard.



Undercarriage

Strength and Versatility at 35 km/h



Heavy Duty Axles

Long life with effective heavy duty axles. The transmission is mounted directly on the rear axle for protection and optimum ground clearance. The front axle offers wide oscillating and steering angles. The drive shaft offers longer service intervals (1,000 hours).

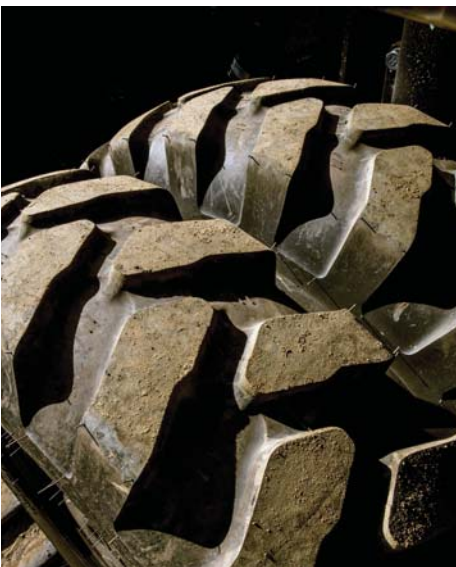
Advanced Disc Brake System

Minimizes the rocking effect when working free on wheels. The disc brake system acts directly on the hub instead of the drive shaft to avoid planetary gear backlash.



Fenders (optional)

Fenders provide excellent coverage of all tires, protecting the machine and surroundings from mud and stones being thrown up.



Joystick Steering

Keep both hands on the joysticks even when simultaneously moving the implements and repositioning the machine, by the use of the slider switch on the right joystick.

Blade Design

- Optimized design to provide rigidity, stability and ease of maintenance.
- A profile that allows material to roll better and minimizes material packing.
- Choice of radial or parallel kinematic to keep the blade parallel to the ground, in every height position. Parallel blade only available with the Trailer-Ready Package.

Booms and Sticks

Options to Take on Your Far-reaching or Up-close Tasks

Rugged Performance

Booms and sticks are welded, box section structures with thick, multi-plate fabrications in high stress areas for the tough work you do.

Flexibility

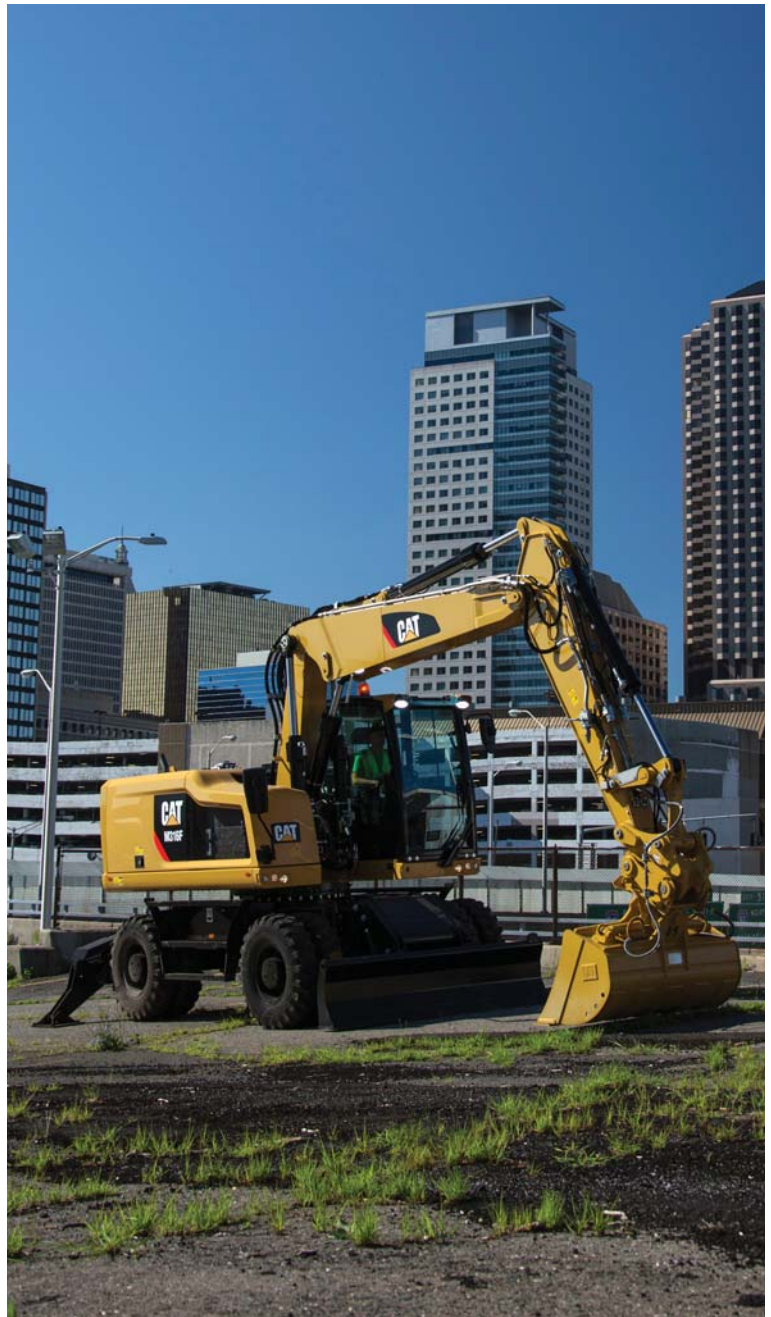
The choice of various booms and sticks provides the right balance of reach and digging forces for all applications.

Sticks

- **Short stick – 2100 mm** for maximum breakout force and lifting capability
- **Medium stick – 2400 mm** for greater crowd force and lift capacity
- **Long stick – 2600 mm** for greater depth and reach
- **Industrial stick – 3100 mm:** for use with grapples in material handling and industrial applications

Booms

- **Variable Adjustable (VA)** – improved right side visibility and roading balance. When working in tight quarters or lifting heavy loads, the VA boom offers the best flexibility.
- **One-Piece Boom** – Fits best for all standard applications such as truck loading and digging. A unique straight section in the curve of the side plate reduces stress flow and helps increase boom life.
- **Offset Boom** – The large offset dimensions allow you to dig along walls, over obstacles, to grade while driving, and to dig under laid tubes without damaging them. The combination with a tiltable ditch cleaning bucket lets you operate a highly versatile system.



SmartBoom

Reduces Stress and Vibration

Rock Scraping

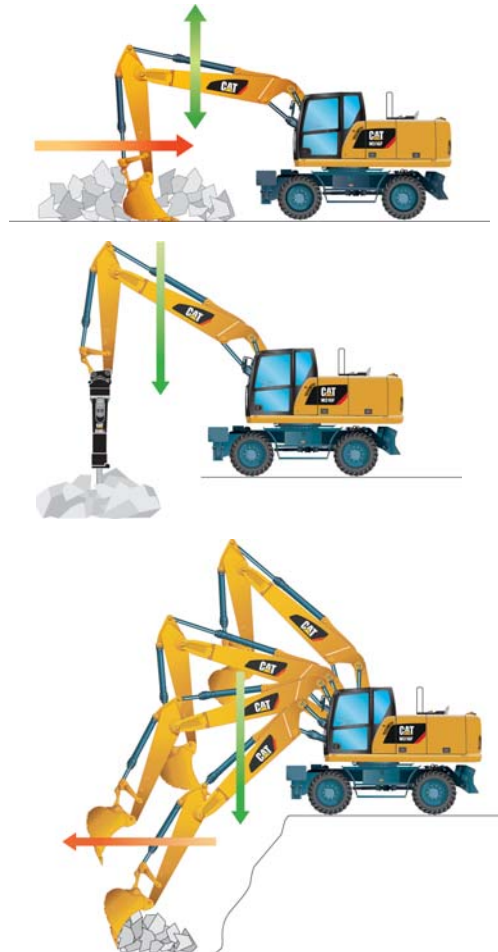
Scraping rock and finishing work is easy and fast. SmartBoom simplifies the task and allows more focus on stick and bucket, while the boom freely goes up and down without using pump flow.

Hammer Work

The front parts automatically follow the hammer while penetrating the rock. Blank shots or excessive force on the hammer are avoided resulting in longer life for the hammer and the machine. Similar advantages with vibratory plate compactors.

Truck Loading

Loading trucks from a bench is more productive and fuel efficient as the return cycle is reduced while the boom down function does not require pump flow.

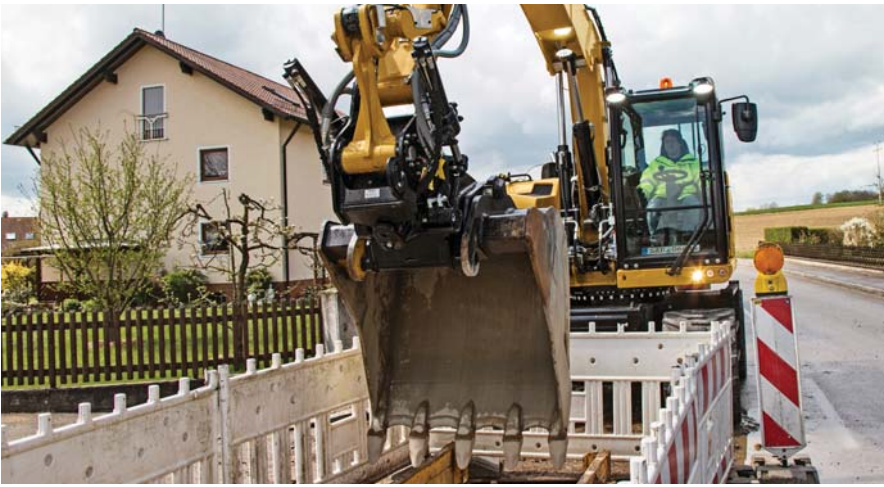


Ride Control

Fast Travel Speed with More Comfort

The ride control system lets you travel faster over rough terrain with improved ride quality for the operator. Accumulators are acting as shock absorbers to dampen the front part motion. It can be activated through a button located on the soft switch panel in the cab.



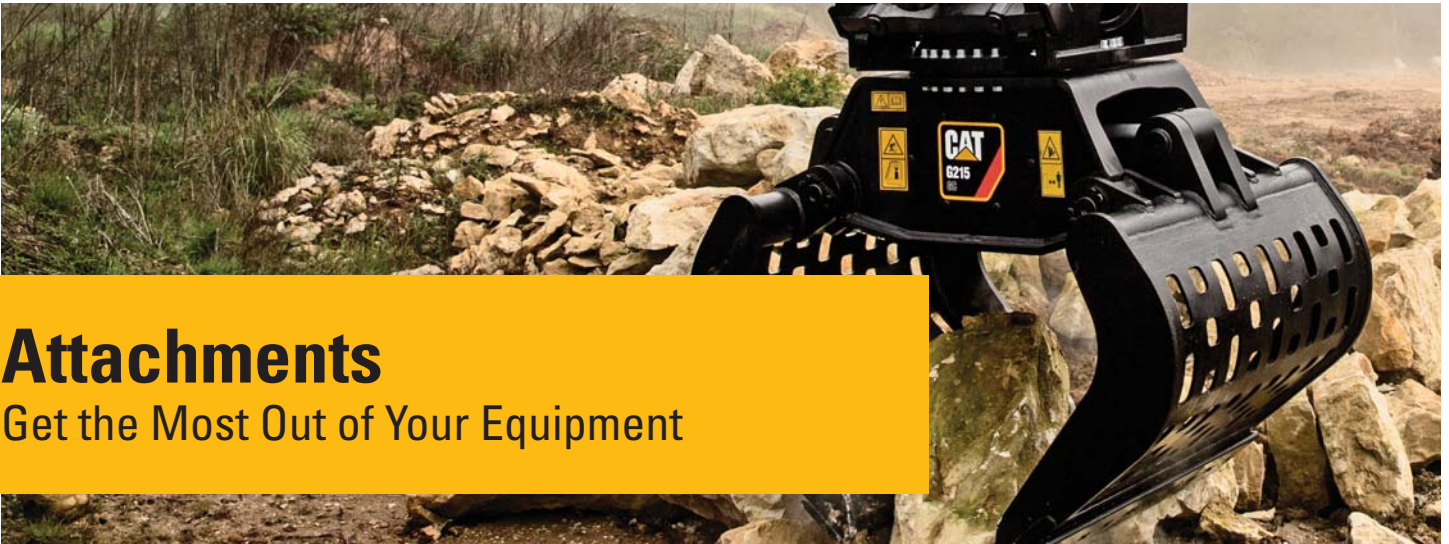


NEW! Cat Tilt-Rotator and Tilt-Rotator-Ready Option – If You Need Extreme Versatility, You Need a Cat Tilt-Rotator

Tilt-Rotators eliminate the need to constantly reposition the machine, by providing a 40° tilt and 360° rotary connection between its integrated quick coupler and any Cat attachment.

The wheeled excavator Tilt-Rotator-Ready Package includes all that you need, with lines, circuits, software and advanced joysticks. This is a perfectly integrated interface between the machine and this tool.

NEW! Cat Tilt-Rotator parameters can be set directly from the machine monitor.



Attachments

Get the Most Out of Your Equipment



Save Time with Every Attachment Change

Perform hydraulic attachment changes in seconds ... The new Auto-Connect hydraulic coupler automates work tool exchange fully, so operators can change attachments quickly, from the safety and comfort of their cabs. The unique design of the Auto-Connect prevents ruptured hoses, avoiding unplanned downtime. It makes your operators more efficient and productive.



Power Match

Match your Cat hydraulic attachments to your Cat machine, and get the most out of the standard, built-in software. Attachment changes have never been easier!



Get the Most from Your Machine

If you have multiple tasks to get done, the M316F can help. And you can easily expand all the possibilities it offers by utilizing any of the variety of Cat attachments.

Change Jobs Quickly

A quick coupler brings the ability to quickly change attachments and increase your flexibility. The quick coupler circuit and lines are compatible with both Cat dedicated and Pin Grabber Couplers and do not require any change or addition to the machine.



Dig, Load and Landscape

A wide range of buckets offers solutions for digging, excavating, trenching, loading and finishing. Ditch Cleaning buckets are suitable for grading and finishing in landscaping applications or for loading loose material that is stockpiled, where teeth would damage the surface.

Sort and Handle Material

With increasing environmental regulations, you need efficient ways to deal with waste. Save on transportation, manpower and dumping costs with Cat grapples by sorting debris at source and trucking it separately. When you need good penetration, you can count on Cat digging grabs.

Build, Compact and Maintain Roads

Whether you do finish grading with leveling buckets, ditch cleaning, sewer and water, or compaction, the machine in combination with the appropriate attachment will do the job quickly.



Break and Scrap

When a structure needs to be demolished, it has to be done quickly. Cat E Series hammers deliver very high blow rates, and shears provide effective scrap processing. They also have the ability to rotate 360°.

Serviceability

When Uptime Counts

Convenient Access Built In

You can reach routine maintenance items like fuel and engine oil filters and fluid taps at ground level while fuel and DEF tanks with engine air filter are accessible from the safety of the slip-resistant new service platform. Compartments feature wide composite service doors, designed to be more resistant to shocks, which all include gas struts to facilitate the opening. Components are now gathered in specific dedicated compartments, like the special electrical and cooling compartments.

A Smart Design for Any Temperature

The side-by-side coolers and axial fan design allows greater cooling performance. The system is completely separated from the engine compartment to reduce noise and heat and all radiators are gathered in the same compartment while featuring easy-to-clean cores with a tilting device that requires no tool to unlock.

A Fresh Idea

Ventilation inside the cab allows outside air to enter through a fresh air filter. The filter is located on the side of the cab to make it easy to reach, and it is protected by a lockable door that can be opened with the ignition key.

Lube and Fuel Standard Features

An electric lubrication system is a time-saving standard feature for greasing the whole upper carriage. Greasing points for the undercarriage are kept to a minimum and grouped. The new drive shaft extends greasing intervals from 500 hours to 1,000 hours and allows simultaneous greasing with the lower axle bearing. An electric refueling pump is also standard. The hose is stored in a dedicated tray, for more cleanliness. Add in the new electric lift pump removing the need to prime the system manually, the standard fuel and water separator and you get a machine that does the fastidious maintenance works for you.

Keep It Simple.



Integrated Technologies

It Pays to Know



Cat Connect makes smart use of technology and services to improve your job site efficiency. Using the data from technology-equipped machines, you'll get more information and insight into your equipment and operations than ever before.

Cat Connect technologies offer improvements in these key areas:



EQUIPMENT MANAGEMENT

Equipment Management – increase uptime and reduce operating costs.



PRODUCTIVITY

Productivity – monitor production and manage job site efficiency.



SAFETY

Safety – enhance job site awareness to keep your people and equipment safe.

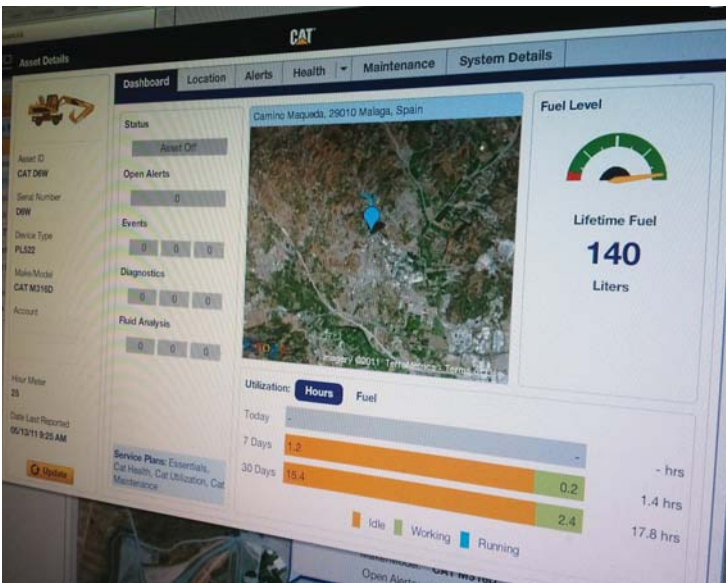
Featured Cat Connect technologies include the following:

Link

Link technologies provide wireless capability to machines to enable two-way transfer of information collected by on-board sensors, control modules, and other Cat Connect technologies.

Manage Your Machine Remotely

Cat Product Link is a system that is deeply integrated into the machine monitoring system to take the guesswork out of managing your equipment. The system tracks location, hours, fuel usage, productivity, idle time, and diagnostic codes and shares it with you through VisionLink® to help you maximize efficiency, improve productivity, and lower operating costs.



CAT® CONNECT



EQUIPMENT MANAGEMENT



PRODUCTIVITY



SAFETY



SUSTAINABILITY

Safety

Your Safety Is NOT Optional

Cab Ingress

We bring a solution to allow you to safely climb into the cab:

- Three longer access steps, aligned with the cab entry
- Anti-skid plates on all walkways and steps reducing slipping hazards
- Convenient door handrail
- Tiltable console to make sure the way in and out is free of obstacle

Safe and Quiet Cab

The cab provides you with a safe environment. It also contributes to your comfort with limited vibrations and low sound levels.





Embedded Features

Smart embedded devices help enforce safe behavior:

- 1) Laminated windshield and skylight window. One-piece 10 mm windshield and skylight, fulfilling EN356 P5A standards.
- 2) Lowering check valves
- 3) Safety seat belt indicator
- 4) Safety lever
- 5) Emergency shut-off switch
- 6) Automatic brake and axle lock
- 7) Punched, anti-slippery walking surfaces
- 8) Battery disconnect switch
- 9) Swing and implement electronic lock
- 10) Adjustable travel alarm
- 11) All doors equipped with gas struts cylinders
- 12) Emergency hammer and exit
- 13) ROPS compliant and front/top guards compatible cab
- 14) Sound proofing
- 15) Beacon available

NEW! Quick coupler control switch, ISO13031 compliant

Smart Lighting

- LED lights for all working lights for enhanced night-time visibility
- Halogen lights for front roading lights
- LED dome light for better illumination inside the cab
- NEW! Dedicated LED lights for both rear and side cameras

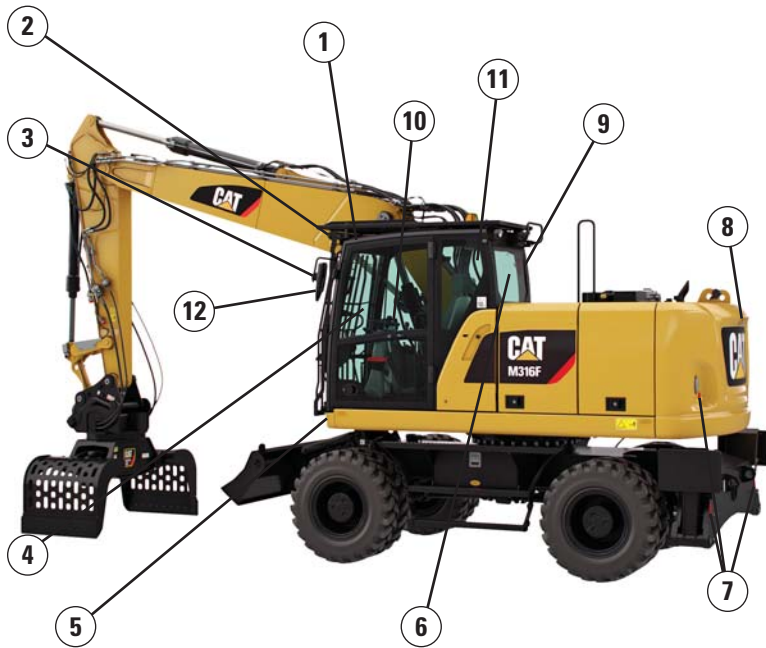


Great Views

- Enlarged glass gives you excellent visibility to the front, top, rear, and sides, even to the right
- Standard rearview camera gives you a clear field of view behind the machine
- Standard sideview camera, to check nothing is hidden to you from the front right hand side to the rear of the machine
- NEW! Monitor split-screen to easily check cameras rearview and sideview on the same display
- Lenses of all the cameras are wide angle and heated
- All mirrors are wide angle and allow view not only around the machine but also to the ground

Unmatched Visibility

Make Sure Nothing Is Hidden to You



Visibility all around is critical, especially for machines which go on public roads.

- 1) Increased skylight and windshield glass areas
- 2) Improved lighting with standard LED lights for all working lights
- 3) Optional electrically adjustable and heated mirrors
- 4) Great left hand side visibility with all glass door
- 5) Halogen front roading lights
- 6) Wide rear window
- 7) Red reflectors, on counterweight and rear blade/outriggers
- 8) Standard wide rearview camera with LED light
- 9) Standard wide sideview camera with LED light
- 10) Split-screen display of both cameras on the same monitor
- 11) Large right hand side window
- 12) Mirrors, wide angle, with additional lower mirror for ground visibility

Complete Customer Care

Your Cat Dealer Will Support You Like No Other

Support You Can Count On

From helping you to choose the right machine to knowledgeable on-going support, Cat dealers provide the best-in-sales and services.

- **Best long-term investment** with financing options and services
- **Productive operation** with training programs
- **Preventive maintenance** and guaranteed maintenance contracts
- **Uptime**, with best-in-class parts availability
- **Repair, rebuild, or replace?** Your dealer can help evaluate the best option.



M316F Wheeled Excavator Specifications

Engine

Engine Model	Cat C4.4 ACERT ⁽¹⁾
Ratings	2,000 rpm
Engine Gross Power (maximum)	
ISO 14396	110 kW (148 hp)
ISO 14396 (metric)	150 hp (PS)
Net Power (Rated) ⁽²⁾	
ISO 9249/SAE J1349	105 kW (141 hp)
ISO 9249/SAE J1349 (metric)	143 hp (PS)
80/1269/EEC	105 kW (141 hp)
Net Power (maximum)	
ISO 9249/SAE J1349	105 kW (141 hp)
ISO 9249/SAE J1349 (metric)	143 hp (PS)
80/1269/EEC	105 kW (141 hp)
Bore	105 mm
Stroke	127 mm
Displacement	4.4 L
Maximum Torque at 1,400 rpm	560 N·m
Number of Cylinders	4

⁽¹⁾ Meets Stage IV emission standards.

⁽²⁾ Rated speed 2,000 rpm.

- Net power advertised is the power available at the flywheel when engine is equipped with air cleaner, CEM exhaust gas aftertreatment, alternator, and cooling fan running at intermediate speed.
- No deratings required up to 3000 m altitude. Automatic derating occurs after 3000 m.

Transmission

Forward/Reverse	
1st Gear	10 km/h
2nd Gear	35 km/h
Creeper Speed	
1st Gear	3 km/h
2nd Gear	12 km/h
Drawbar Pull	102 kN
Maximum Gradeability (16 500 kg)	78%

Service Refill Capacities

Fuel Tank (total capacity)	330 L
Diesel Exhaust Fluid Tank	19 L
Cooling System	38 L
Engine Crankcase	8 L
Rear Axle Housing (differential)	14 L
Front Steering Axle (differential)	10.5 L
Final Drive	2.5 L
Powershift Transmission	2.5 L

Swing Mechanism

Maximum Swing Speed	9 rpm
Maximum Swing Torque	42 kN·m

Undercarriage

Ground Clearance	360 mm
Maximum Steering Angle	35°
Oscillation Axle Angle	±8.5°
Minimum Turning Radius	
Outside of Tire	6300 mm
End of One-Piece Boom	8400 mm
End of VA Boom	7100 mm
End of Offset Boom	7100 mm
Maximum Towable Trailer Mass	8000 kg

Weights

Operating Weights*	16 130 kg-18 400 kg
Weights	
VA Boom	
Rear Dozer Only	16 390 kg
Rear Dozer, Front Outriggers	17 360 kg
Front and Rear Outriggers	17 850 kg
One-Piece Boom	
Front Dozer, Rear Outriggers	16 880 kg
Front and Rear Outriggers	17 370 kg
Offset Boom	
Rear Dozer, Front Outriggers	17 910 kg
Front and Rear Outriggers	18 400 kg
Sticks**	
Short, 2100 mm	705 kg
Medium, 2400 mm	735 kg
Long, 2600 mm	755 kg
Industrial-Drop Nose, 3100 mm	420 kg
Counterweights	
Standard	3200 kg
Optional	3700 kg

*Operating weight includes medium stick, 3200 kg counterweight, full fuel tank, operator, quick coupler (210 kg), bucket (600 kg) and dual pneumatic tires. Weight varies depending on configuration.

**Includes cylinder, bucket linkage, pins and standard hydraulic lines.

M316F Wheeled Excavator Specifications

Hydraulic System

Tank Capacity	122 L
System	240 L
Maximum Pressure	
Implement Circuit	
Normal	350 bar
Heavy Lift	375 bar
Travel Circuit	350 bar
Auxiliary Circuit	
High Pressure	350 bar
Medium Pressure	185 bar
Swing Mechanism	370 bar
Maximum Flow	
Implement/Travel Circuit	240 L/min
Auxiliary Circuit	
High Pressure	240 L/min
Medium Pressure	50 L/min
Swing Mechanism	78 L/min

Tires

Standard	10.00-20 (Dual Pneumatic)
Optional	10.00-20 (Dual Solid Rubber) 11.00-20 (Dual Pneumatic) 315/70R22.5 (Dual Pneumatic – No spacer ring between tires) 445/70/R19.5 TL XF (Single Pneumatic)

Dozer Blade

Blade Type	Radial	Parallel
Width	2540 mm	2550 mm
Blade Roll-Over Height	540 mm	576 mm
Blade Total Height	580 mm	680 mm
Maximum Lowering Depth From Ground	120 mm	131 mm
Maximum Raising Height Above Ground	475 mm	496 mm

Emissions and Safety

Engine Emissions	Stage IV
Diesel Exhaust Fluid	Must meet ISO 22241
Fluids (Optional)	
Cat Bio HYDO Advanced	Readily biodegradable EU Flower eco-label certified
Biodiesel up to B20	Meets EN 14214 or ASTM D6751 with EN590 or ASTM D975 Standard Mineral diesel fuels
Vibration Levels	
Maximum Hand/Arm	
ISO 5349:2001	<2.5 m/s ²
Maximum Whole Body	
ISO/TR 25398:2006	<0.5 m/s ²
Seat Transmissibility Factor	
ISO 7096:2000-spectral class EM5	<0.7

Standards

ROPS	ROPS (Rollover Protective Structure) offered by Caterpillar meets ROPS criteria ISO 12117-2:2008
Operator Protective Structure: top/front guards	FOPS (Falling Object Protective Structure) meets FOPS criteria ISO 10262:1998 and SAE J1356:2008
Cab/Sound Levels	Meets appropriate standards as listed below

Sound Performance

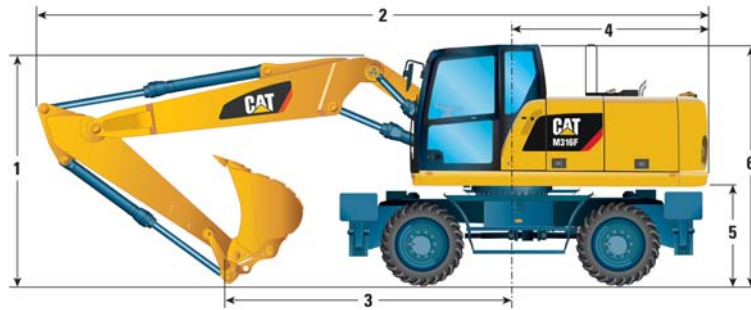
Operator Sound	
2000/14/EC	71 dB(A)
Spectator Sound	
2000/14/EC	100 dB(A)

- Operator Sound – The operator sound level is measured according to the procedures specified in 2000/14/EC, for a cab offered by Caterpillar, when properly installed and maintained and tested with the door and windows closed.
- Exterior Sound – The labeled spectator sound power level is measured according to the test procedures and conditions specified in 2000/14/EC.
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained for doors/windows open) for extended periods or in noisy environment(s).

M316F Wheeled Excavator Specifications

Dimensions

All dimensions are approximate. Values are with 10.00-20 pneumatic tires and standard undercarriage.



Stick Length	mm	Variable Adjustable Boom				One-Piece Boom				Offset Boom	
		2100	2400	2600	3100	2100	2400	2600	3100	2100	2400
1 Shipping Height with Falling Object Guard and Handrails Lowered (highest point between boom and cab)	mm	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
2 Shipping Length	mm	8645	8640	8635	8610	8485	8490	8495	8505	8640	8630
3 Support Point	mm	3915	3655	3550	3650	3570	3285	3165	3230	4020	3775
4 Tail Swing Radius	mm		2220				2220			2220	
5 Counterweight Clearance	mm		1260				1260			1260	
6 Cab Height – No Falling Object Guard, Handrails Lowered	mm		3170				3170			3170	
	No Falling Object Guard, Handrails not Lowered	mm		3240				3240		3240	
	With Falling Object Guard	mm		3300				3300		3300	
7 Overall Machine Width		Radial/Parallel Blade Undercarriage									
Width with Outriggers on Ground	mm		3645/3680				3645/3680				3645/3680
Width with Outriggers Up	mm		2545/2550				2545/2550				2545/2550
Width with Blade	mm		2540/2550				2540/2550				2540/2550
8 Maximum Outriggers Depth	mm		110/120				110/120				110/120



*Maximum tire clearance with outrigger fully down



Roading position with 2400 mm stick



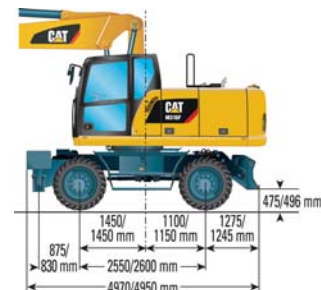
Undercarriage with dozer only



Undercarriage with 2 sets of outriggers



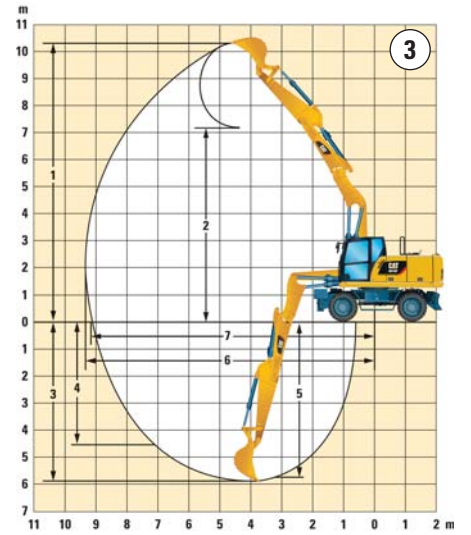
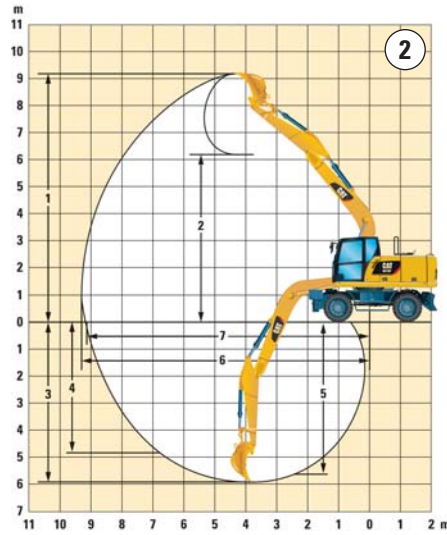
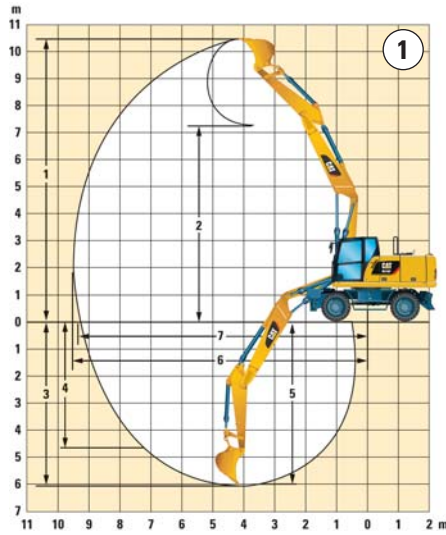
Undercarriage with 1 set of outriggers and dozer



When two values are provided the first is for the radial blade undercarriage, the second for the parallel blade undercarriage.

M316F Wheeled Excavator Specifications

Working Ranges



		①				②				③	
		Variable Adjustable Boom				One-Piece Boom				Offset Boom	
Stick Length	mm	2100	2400	2600	3100	2100	2400	2600	3100	2100	2400
1 Digging Height	mm	10 070	10 250	10 410	8950	9020	9120	9230	7700	10 100	10 300
2 Dump Height	mm	6920	7110	7270	—	5980	6080	6200	—	6960	7150
3 Digging Depth	mm	5610	5900	6100	5050	5410	5710	5910	4840	5610	5910
4 Vertical Wall Digging Depth	mm	4380	4610	4790	—	4500	4680	4860	—	4420	4660
5 Depth 2.5 m in Straight Clean-Up	mm	5500	5800	6000	—	5180	5500	5710	—	5500	5800
6 Reach	mm	9110	9380	9570	8370	8910	9170	9360	8130	9130	9400
7 Reach at Ground Level	mm	8940	9210	9400	8170	8730	8990	9190	7920	8950	9230
Bucket Forces (ISO 6015)	kN	114	114	114	—	114	114	114	—	114	114
Stick Forces (ISO 6015)	kN	84	77	73	—	84	77	73	—	84	77

Industrial stick has no bucket linkage. Working range dimensions refer to stick nose pin, with pneumatic tires.

Range values are calculated with GD Bucket, 1100 mm, 0.80 m³ with tips K080 and CW-20-H.4.N quick coupler with a tip radius of 1574 mm.

Breakout force values are calculated with heavy lift on (no quick coupler) and a cutting edge radius of 1237 mm.

M316F Wheeled Excavator Specifications

Bucket Specifications and Compatibility

Contact your Cat dealer for special bucket requirements.

				Variable Adjustable Boom						One-Piece Boom						Offset Boom			
Stick Length				2100 mm		2400 mm		2600 mm		2100 mm		2400 mm		2600 mm		2100 mm		2400 mm	
	Width	Weight*	Capacity (ISO)	Free on wheels	Front dozer lowered and rear outriggers	Fully stabilized	Free on wheels	Front dozer lowered	Front dozer and rear outriggers	Fully stabilized	Free on wheels	Front dozer lowered	Front dozer and rear outriggers	Fully stabilized	Free on wheels	Front dozer lowered	Front dozer and rear outriggers	Fully stabilized	
Pin-on Buckets				With 3.2 mt Counterweight															
General Duty (GD)	750	464	0.49																
	1100	583	0.79																
	1200	651	0.91																
	1300	663	1.00																
	1400	712	1.09																
Heavy Duty (HD)	1300	699	1.00																
				With 3.7 mt Counterweight															
General Duty (GD)	750	464	0.49																
	1100	583	0.79																
	1200	651	0.91																
	1300	663	1.00																
	1400	712	1.09																
Heavy Duty (HD)	1300	699	1.00																
Pin Grabber Coupler				With 3.2 mt Counterweight															
General Duty (GD)	750	464	0.49																
	1100	583	0.79																
	1200	651	0.91																
	1300	663	1.00																
	1400	712	1.09																
Heavy Duty (HD)	1300	699	1.00																
				With 3.7 mt Counterweight															
General Duty (GD)	750	464	0.49																
	1100	583	0.79																
	1200	651	0.91																
	1300	663	1.00																
	1400	712	1.09																
Heavy Duty (HD)	1300	699	1.00																

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 Long tips.

- Maximum material density 2100 kg/m³
- Maximum material density 1800 kg/m³
- Maximum material density 1500 kg/m³
- Maximum material density 1200 kg/m³
- Not recommended

Caterpillar recommends using appropriate attachments to maximize the value customers receive from our products. Use of attachments, 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 an attachment resulting in sweeping, prying, twisting and/or catching of heavy loads will reduce the life of the boom and stick.

M316F Wheeled Excavator Specifications

Bucket Specifications and Compatibility

Contact your Cat dealer for special bucket requirements.

				Variable Adjustable Boom						One-Piece Boom						Offset Boom			
Stick Length				2100 mm		2400 mm		2600 mm		2100 mm		2400 mm		2600 mm		2100 mm		2400 mm	
	Width	Weight*	Capacity (ISO)	Free on wheels	Front dozer lowered and rear outriggers	Fully stabilized	Free on wheels	Front dozer lowered	Front dozer and rear outriggers	Fully stabilized	Free on wheels	Front dozer lowered	Front dozer and rear outriggers	Fully stabilized	Free on wheels	Front dozer lowered	Front dozer and rear outriggers	Fully stabilized	
CW20/CW20s Buckets				With 3.2 mt Counterweight															
Ditch Cleaning (DC)	1800	646	1.14																
General Duty (GD)	600	431	0.35																
	750	464	0.49																
	900	524	0.62																
	1100	583	0.79																
	1200	633	0.91																
	1300	663	1.00																
	1400	693	1.09																
Heavy Duty (HD)	1200	649	0.91																
	1300	681	1.00																
	1400	712	1.09																
				With 3.7 mt Counterweight															
Ditch Cleaning (DC)	1800	646	1.14																
General Duty (GD)	600	431	0.35																
	750	464	0.49																
	900	524	0.62																
	1100	583	0.79																
	1200	633	0.91																
	1300	663	1.00																
	1400	693	1.09																
Heavy Duty (HD)	1200	649	0.91																
	1300	681	1.00																
	1400	712	1.09																

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 Long tips.

- Maximum material density 2100 kg/m³
- Maximum material density 1800 kg/m³
- Maximum material density 1500 kg/m³
- Maximum material density 1200 kg/m³
- Not recommended

Caterpillar recommends using appropriate attachments to maximize the value customers receive from our products. Use of attachments, 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 an attachment resulting in sweeping, prying, twisting and/or catching of heavy loads will reduce the life of the boom and stick.

M316F Wheeled Excavator Specifications

M316F Attachment Offering Guide

When choosing between various attachment models that can be installed onto the same machine configuration, consider attachment application, productivity requirements, and durability. Refer to attachment specifications for application recommendations and productivity information.

Boom Type – One-Piece Boom		Counterweight															
Undercarriage	Stick Length	3.2 mt						3.7 mt									
		(1)		(2)		(3)		(1)		(2)		(3)					
		2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm
Attachments																	
Hydraulic Hammer	H110Es, H115Es																
	H120Es																
Multi-Processor	MP318 CC, D & U Jaws																
	MP318 P Jaw																
	MP318 S Jaw																
Crusher	P315																
Pulverizer	P215																
Demolition and Sorting Grapple (D-Demolition shells, R-Recycling shells, WH-Waste Handling shells)	G310B-D/R																
	G310B-D/R fixed CAN																
	G313 GC																
	G313 GC fixed CAN																
	G315 GC																
	G315 GC fixed CAN																
	G315B-D/R & WH																
	G315B-D/R fixed CAN																
Scrap and Demolition Shear	S320B																
	S325B																
Compactor Plate	CVP75																
Material Handling Grapples																	
Orange Peel Grapple (4 or 5 Tines)	GSH15B 400L, 500L, 600L							1.8					1.8				1.8
	GSM25 400L				1.2			1.8					1.8				1.8
Orange Peel Grapple (5 Tines)	GSM25 500L							1.8					1.8				1.8
	GSM25 600L							1.8					1.8				1.8
Possible match up to 1500L	GSM35 500L							1.8					1.8				1.8
	GSM35 600L							1.8					1.2				1.2
Clamshell Grapple (Transfer)	CTV15 1000L							1.8					1.2				1.2
Clamshell Grapple (Digging)	GGS25 580L	1.8*				1.8	1.8	1.8		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	GGS35 450L	1.8*				1.8	1.8	1.8		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	GGS35 700L					1.8	1.8	1.8		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Material Density		0.6 [T/m ³] (light material)/1.2 [T/m ³] (less dense material)/1.8 [T/m ³] (standard material)															
Pin Grabber Coupler	Cat-PG	These couplers are available for the M316F (straight/linkage stick).															
Dedicated Quick Coupler	CW-20/CW20s																
	CWAC-40 (AutoConnect)																
Cat Tilt-Rotator System	TRS14	Tilt-Rotator compatible with buckets, compactors, hammers, and more...															

- (1) Dozer lowered
 - (2) 2 sets outriggers lowered
 - (3) Dozer and outrigger lowered
- Attachment is a match
 - Pin-on or dedicated coupler
 - Pin-on only
 - Over the front only
 - Boom Mount
 - Over the front only with dedicated coupler
 - Over the front only with Pin Grabber coupler
 - Not recommended

Offerings not available in all areas. Matches are dependent on Wheeled Excavator configurations. Consult your Cat dealer to determine what is offered in your area and for proper attachment match.

Note: Demolition and Sorting Grapple: fixed CAN – fixed hinge plates for CW quick coupler usage.

*With Heavy Duty undercarriage only.

M316F Wheeled Excavator Specifications

M316F Attachment Offering Guide

When choosing between various attachment models that can be installed onto the same machine configuration, consider attachment application, productivity requirements, and durability. Refer to attachment specifications for application recommendations and productivity information.

Counterweight		3.2 mt												3.7 mt											
		(1)				(2)				(3)				(1)				(2)				(3)			
Undercarriage	Stick Length	2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm	2100 mm	2400 mm	2600 mm	3100 mm
		Attachments																							
Hydraulic Hammer	H110Es																								
	H115Es																								
	H120Es																								
Demolition and Sorting Grapple (D-Demolition shells, R-Recycling shells, WH-Waste Handling shells)	G310B-D/R																								
	G310B-D/R fixed CAN																								
	G313 GC																								
	G313 GC fixed CAN																								
Scrap and Demolition Shear	S320B																								
	S325B																								
Compactor Plate	CVP75																								
Material Handling Grapples																									
Orange Peel Grapple (4 or 5 Tines)	GSH15B 400L & 500L																								
	GSH15B 600L																								
Orange Peel Grapple (5 Tines)	GSM25 400L																								
	GSM25 500L & 600L																								
	GSM35 500L																								
	GSM35 600L																								
	GSM35 1000L																								
	GSM35 1500L																								
Clamshell Grapple (Digging)	GG525 580L																								
	GG535 450L																								
	GG535 700L																								
Clamshell Grapple (Transfer)	CTV15 1000L																								
Material Density		0.6 [T/m ³] (light material)/1.2 [T/m ³] (less dense material)/1.8 [T/m ³] (standard material)																							
Pin Grabber Coupler	Cat-PG	These couplers are available for the M316F (straight/linkage stick).																							
Dedicated Quick Coupler	CW-20/CW20s																								
	CWAC-40 (AutoConnect)																								
Cat Tilt-Rotator System	TRS14	Tilt-Rotator compatible with buckets, compactors, hammers, and more...																							

- (1) Dozer lowered
 - (2) 2 sets outriggers lowered
 - (3) Dozer and outrigger lowered
- Attachment is a match
 - Pin-on or dedicated CW coupler
 - Pin-on only
 - Over the front only
 - Boom Mount
 - Over the front only with dedicated CW coupler
 - Over the front only with Pin Grabber coupler
 - Not recommended

Offerings not available in all areas. Matches are dependent on Wheeled Excavator configurations. Consult your Cat dealer to determine what is offered in your area and for proper attachment match.

Note: Demolition and Sorting Grapple: fixed CAN – fixed hinge plates for CW quick coupler usage.

Standard Equipment

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

ELECTRICAL

- Alternator, 100 A
- Lighting
 - LED light package, including all working lights (compatible with falling object guard). Working lights include cab mounted lights (two front, one rear), one on the counterweight for the rear camera and one on the right for the sideview camera.
 - Boom LED working light
 - Cab interior LED Light
 - Roading lights two front, halogen
 - Roading lights two rear, LED modules
- Main shut-off switch
- Maintenance free batteries, heavy duty
- Signal/warning horn
- Electrical refueling pump

ENGINE

- Cat C4.4 engine with ACERT Technology meets Stage IV emission standards
- Aftertreatment technologies including the Cat Clean Emission Module (Cat CEM) package
- Automatic Engine Speed Control (AESC), including one touch low idle
- Engine Idle Shutdown (EIS)
- Power mode selector
- Altitude 3000 m capability without de-rate
- Automatic starting aid
- Fuel/water separator with water in fuel switch
- Electric fuel priming pump

HYDRAULICS

- Adjustable hydraulic sensitivity
- All Cat XT™-6 ES hoses
- Anti-drift valves for bucket, and tool control/multi-function circuits
- Auxiliary boom and stick lines
- Basic control circuits:
 - Medium pressure
 - Two-way, medium pressure circuit, for rotating or tilting of attachments
 - Tool control/multi function
 - One/two-way high pressure for hammer application or opening and closing of an attachment
 - Programmable flow and pressure for up to 10 attachments – selection via monitor
 - Quick coupler circuit and lines for hydraulic quick coupler (both Cat Pin Grabber and dedicated/CW Quick couplers, controlled by a dedicated switch)
- Boom Lowering Check Valve (BLCV), including overload warning device
- Heavy lift mode
- Load-sensing hydraulic system
- Separate swing pump
- Stick Lowering Check Device (SLCV)
- Stick regeneration circuit

(continued on next page)

Standard Equipment *(continued)*

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

OPERATOR STATION

- Reinforced (ROPS) cab structure compliant with 2006/42/EC and tested according to ISO 12117-2:2008
- Adjustable armrests
- Air conditioner, heater and defroster with automatic climate control
- Cigarette lighter (24 volt)
- Beverage cup/can holder
- Bolt-on Falling Object Guards (FOGS) capability
- Bottle holder
- Bottom mounted intermittent (four speeds) wiping system that covers the upper and lower windshield glass
- Cameras
 - Rear mounted wide angle camera (integrated into the counterweight)
 - Right side wide angle camera, mounted on the cooling hood
 - Both cameras are displayed side by side on a dedicated large color monitor
- Coat hook
- Cruise Control System
- Fastened seat belt warning signal
- Floor mat, washable, with storage compartment
- FM Radio with CD player, speakers and USB port
- Fully adjustable suspension seat
- Instrument panel, full graphic and color display
 - Information and warning messages in local language
 - Gauges for fuel level, engine coolant, Diesel Exhaust Fluid (DEF) and hydraulic oil temperature
 - Filters/fluids change intervals
 - Indicators for headlights, turning signal, low fuel, engine dial setting
 - Clock with 10-day backup battery
- Interior LED lighting with door switch
- Joystick pilot operated with one proportional slider
- Laminated upper front windshield
- Left side console, tiltable, with lock out for all controls
- Literature holder in right hand side panel
- Mobile phone holder
- Parking brake
- Pin-code, engine start prevention
- Power supply, 12V-10A
- Rain protector*
- Rear window (tempered glass)/emergency exit, with hammer
- Retractable seat belt, integrated into the seat
- Safety lever, integrated into the left console
- Skylight, laminated glass
- Sealed cab with positive filtered ventilation
- Sliding door windows
- Steering column, adjustable height and angle
- Storage area suitable for a lunch box
- Sunshade for windshield and skylight

UNDERCARRIAGE

- All wheel drive
- Automatic brake/axle lock
- Creeper speed
- Electronic swing and travel lock
- Heavy-duty axles, advanced disc brake system and travel motor, adjustable braking force
- Oscillating front axle, lockable, with remote greasing point
- Steps with box in undercarriage (left and right)
- Two-piece drive shaft with 1,000 hours greasing intervals
- Two speed hydrostatic transmission
- Spacer rings for tires

OTHER EQUIPMENT

- Auto-lube, centralized greasing (implement and swing gear)
- Automatic swing brake
- Counterweight, 3200 kg
- Engine emergency shutoff switch
- Mirrors, wide angle, frame and cab
- Product Link
- S•O•SSM sampling valves for engine oil, hydraulic oil and coolant
- Bucket linkage for digging sticks

*Not compatible with the falling objects guards

Optional Equipment

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

AUXILIARY CONTROLS AND LINES

- Basic control circuits:
 - Second high pressure
 - Additional two-way, high pressure circuit, for tools requiring a second high or medium pressure function
- Grapple open/close controllable via bucket control on right joystick, can be selected in the monitor
- SmartBoom

HYDRAULICS

- Cat BIO HYDO Advanced HEES biodegradable hydraulic oil

FRONT LINKAGE

- Booms
 - One-piece boom, 5050 mm
 - VA boom (two piece), 5200 mm
 - Offset boom, 5200 mm
- Sticks
 - 2100 mm
 - 2400 mm
 - 2600 mm
 - 3100 mm Industrial Stick (without autolube)

ELECTRICAL

- Adjustable travel alarm
- Rotating beacon on cab

OPERATOR STATION

- Joystick steering
- Advanced joysticks with two proportional sliders
- Seat, adjustable high-back, with vertical and horizontal air-suspension and head rest
 - Comfort, automatic weight adjustment, mechanical lumbar support, heated
 - Deluxe seat adds automatic height and weight adjustment, pneumatic lumbar support, premium fabric, heated and ventilated
- Windshield
 - One-piece impact resistant, laminated windshield and skylight (EN356 P5A standards, 10 mm)
 - 70/30 split, openable
- Mirrors electrically adjustable and heated, frame and cab
- High pressure auxiliary pedal
- Joystick pattern, changeable
- Falling Objects Guards (top and front)

UNDERCARRIAGE

- Rear blade only (radial)
- Front blade (radial)/rear outriggers
- Front outriggers/rear blade (radial)
- Front and rear outriggers
- Rear blade (parallel), with trailer-ready package
- Front blade (parallel)/rear outriggers, with trailer-ready package
- Travel restraint, for roading with a clamshell

OTHER EQUIPMENT

- Cat Machine Security System (MSS)
- Cooling protection package for dusty applications (includes fine mesh for enhanced radiator protection and engine air precleaner)
- Counterweight, 3700 kg
- Fenders, front and rear
- Ride Control
- Tires (see pg. 22)
- Attachments (see pg. 25-28)
- Cat Tilt-Rotator-Ready Package

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