M322C

Wheel Excavator

Cat® 3056E DIT ATAAC diesel engine	
Gross power	127 kW/170 hp
Net power	122 kW/164 hp
Operating Weight	20 500 to 22 700 kg
Bucket Capacities	0.54 to 1.26 m^3
Maximum Reach at Ground Level	10 320 mm
Maximum Digging Depth	6680 mm
Travel Speed	20 km/h

M322C Wheel Excavator

The C Series incorporates innovations for improved performance and versatility.

Engine

The new Cat 3056E DIT ATAAC electronically controlled engine provides increased horsepower to serve the advanced hydraulic system. Performance, reliability, durability, excellent fuel economy, and low sound levels help maximize working efficiency. The innovative cooling system is easy to clean and features increased cooling capacity through a temperature sensing on-demand fan. **pg. 4**

A Step Ahead in Environmental Considerations

Helping to protect our environment, the engine has low operator and spectator sound levels. In addition the hydraulic system can be operated with biodegradable oil. Longer filter change intervals and more fuel efficiency also help reduce impact on our environment. **pg. 6**

Ease of Operation and Enhanced Productivity

The new Joystick Steering allows the operator both to work with implements and maneuver the machine without using the steering wheel. This provides significant improvement in operator comfort and productivity. **pg. 7**

Hydraulics

The hydraulic system, featuring a separate swing pump and load-sensing system, provides maximum power and exceptional controllability leading to high performance in all applications.
The technologically advanced tool control option adds work tool flexibility to the hydraulic system.
Proportional medium pressure function allows improved control of attachments and work tools.
The new adjustable hydraulic sensitivity allows adjustment of attachments in order to find the best setup for any application. This ensures both improved productivity and greater operator comfort. **pg. 5**

Increased lifting capacity, improved cycle times and ease of operation lead to increased productivity and cost effective solutions.

Operator Comfort

The new operator station design maximizes operator comfort and visibility. A new comfort seat with air suspension (optional), ergonomic joysticks, a new soft switch panel and the WEX Multipro monitor are some of the features that help allow the operator to work free of fatigue and so remain attentive to the job in hand. The operator station also offers more space to the side and the front and features automatic climate control.
pg. 8

Undercarriage and Drive Train

Pin-On design of outriggers and dozer blade allows for interchangeability and helps increase flexibility to match the application requirements.
Heavy-duty cylinder protection and box section design help provide excellent life.
Updated drive line, new axles, travel motor and transmission control provide smooth travel. Improved hydraulic braking forces and advanced gear shifting give better controllability.
pg. 10

Booms and Sticks

The box section design of all front-end structures, together with the optimum balance of durability and weight provide the strength needed for even the toughest application. Multiple boom and stick options allow you to pick the best match for your job. **pg. 11**

Buckets and Teeth

A wide variety of bucket types are available for the M300 C-Series. These aggressive bucket designs are matched to fit the high C-Series digging forces to improve productivity.
pg. 12

Work Tools

Buckets, grapples, hammers, and quick couplers provide a total solution package to the end-user. Built for performance and durability these tools deliver high productivity, long service life and excellent value. **pg. 13**

Maintenance and Reliability

All daily maintenance points, such as oil level and greasing ports, are accessible from ground level.
A centralized greasing system allows the operator to grease the front linkage and swing bearing without climbing onto the machine. The oscillation axle is equipped and the dozer blade can be ordered for remote greasing. This is both convenient and reduces service.
pg. 14

Complete Customer Service

Your Cat dealer offers a wide range of services that can be set up under a customer support agreement when you purchase your equipment. The dealer will help you choose a plan that can cover everything from machine and attachment selection to replacement.
pg. 17

Cat 3056E DIT ATAAC Engine

The six-cylinder, turbocharged, air-to-air aftercooled and electronically controlled engine is built for power, reliability, low maintenance, excellent fuel economy and low emissions.

Powerful Performance. The 3056E DIT ATAAC engine delivers a net power of 122 kW (164 hp) at the rated speed of 2000 rpm, and meets all current worldwide emission standards.

Turbocharged and Air-to-Air Aftercooled. The turbocharger packs more dense air into the cylinders for more complete combustion and lower emission improving performance and engine efficiency. These benefits are especially useful at high altitudes. The air-to-air aftercooler reduces smoke and emissions by providing a cooler inlet air for more efficient combustion. This also extends the life of the piston rings and engine bore.

Cooling System. Features an electronically controlled variable speed on-demand fan. A hydraulic motor drives the fan and its speed is determined by engine coolant and hydraulic oil. Cooler operating conditions allow lower average fan speeds resulting in reduced fuel consumption and lower noise levels. The electronic engine control continuously compensates for this varying fan load, providing consistent net horsepower, regardless of operating conditions. The fan and air conditioner condenser are both hinged for easier cleaning of the cores.

Engine Oil. Caterpillar engine oil is formulated to optimize engine life and performance and is strongly recommended for use in Cat diesel engines.
The engine oil change interval is increased to 500 hours.

Low Sound, Low Vibration.
The 3056E design improves operator comfort by reducing sound and vibration. The M322C has been awarded the German Blue Angel for low operator and spectator sound levels.

- Operator sound level, L_{PA}, 72 dB(A)
- Spectator sound level, L_{WA} 102 dB(A)

Factory Remanufactured Parts. A large choice of factory remanufactured parts and dealer proposed repair options increase machine availability and reduce total repair costs.

Fuel Injection Pump. The new injection pump is electronically controlled and helps to reduce fuel consumption.

Service. The engine is longitudinally mounted on the right side to make it easier to access the oil filter, oil filler, oil drain valve, fuel filter, V-belt tightener, and the oil dipstick. All are accessible from ground level.

Hydraulics

Fast cycle times, increased lift capacity and high bucket and stick forces combine to maximize your productivity in any job.

Automatic Engine Control. Automatic Engine Control (AEC) reduces engine rpm if no operation is performed, maximizing fuel efficiency and reducing sound levels.

Dedicated Swing Pump. A separate dedicated variable displacement piston pump and fixed displacement piston motor power the swing mechanism. This closed hydraulic circuit helps to provide maximum swing performance without reducing power to the main hydraulic functions.

Caterpillar's XT-6 ES Hoses. To meet the critical flexibility and strength demands of wheel excavator applications, XT-6 ES hoses are installed in the high pressure hydraulic system. XT-6 ES hoses are made of four overlapping insulated wire spiral wraps bonded together for high abrasion resistance, excellent flexibility and easy installation. Hose routings are designed to protect from damage in this way reducing hose failure downtime. O-ring face seal couplings provide positive sealing for reliable and leak-free connections.

Auxiliary Hydraulic Valves. The versatility of the hydraulic system can be expanded with multiple valve options.

Multifunction Valve. The multifunction valve is the core of the innovative Tool Control system. This valve can be electronically programmed for flow direction (one or two ways), pressure and flow rate. The valve also features priority flow to maximize control of the work tool. This on-board electro-hydraulic functionality eliminates the need for manual readjustments to the auxiliary hydraulics each time a different tool is used.

Hammer. The dedicated hammer valve is the best option for machines which will only require a hammer tool and do not need the flexibility provided by the multi-function valve.

Hydraulic Cylinder Snubbers. The hydraulic cylinder snubbers at the rod end of boom cylinders, both ends of stick cylinders and bucket cylinder rod end cushion shocks, reduce sound and increase cylinder life, keeping the machine working longer.

Caterpillar® Hydraulic Oil. Maximum protection against mechanical and corrosive wear in all hydraulic systems. Its high zinc content reduces wear and extends pump life. Provided certain requirements are met (e.g. S•O•S analysis every 500 hours), the hydraulic oil change interval is extended from 2000 hours to 4000 hours.

Controllability. The hydraulic system offers precise control of the M322C, reducing operator fatigue and improving effectiveness.

Stick Regeneration Circuit. Stick re-generation circuits increase efficiency and help increase controllability for higher productivity and lower operating costs.

Adjustable Hydraulic Sensitivity. It allows the operator to adjust the aggressiveness of the machine according to needs. For precision work, one of four different levels of aggressiveness can be pre-selected on the soft-switch panel. Increased sensitivity can then be quickly activated and deactivated during the work cycle by using the joysticks.

Proportional Medium Pressure. The unique Cat proportional sliding switches provide modulation to the medium pressure circuit and better control for attachments and work tools. They are ideal for tilting buckets and rotating tools. They enable the operator to select exactly how much move-ment is required and subsequently vary this throughout the operation.

Environmentally Responsible Design

Caterpillar machines not only help you build a better world, they help maintain and preserve the fragile environment.

More Performance. The M322C is designed for outstanding performance with high fuel efficiency. This means more work done in a day, less fuel consumed and minimal impact on our environment.

Low Exhaust Emissions. The Cat 3056E used in the M322C is a low emission engine designed to meet EU Stage II Off-Highway and US EPA Tier II emission regulations.

Quiet Operation. The noise level inside the cab and as well the outside spectator sound are extremely low. As a result of the new variable speed fan and remote cooling system all machines meet the German Blue Angel award for low sound operation.

Ozone Protection. To help protect the earth's ozone layer, the M322C's air conditioning unit uses only R-134a refrigerant which does not contain harmful chlorofluorocarbons (CFC's).

Biodegradable Hydraulic Oil. Available as an option, Caterpillar Biodegradable Hydraulic Oil (HEES™) is formulated from a fully saturated Hydraulic Environmental with Ester Synthetic base stock and selected additives. It has excellent high-pressure and high-temperature characteristics and is fully compatible with our hydraulic components and allows operation over a broad temperature range. Cat's HEES is fully decomposed by soil or water microorganisms, providing a more environmentally-sound alternative to mineral-based oils. This is available as an attachment.

Fewer Leaks and Spills. Lubricant fillers and drains are designed to minimize spills. Cat O-Ring Face Seals, XT Hose and hydraulic cylinders are all designed to help prevent fluid leaks that can reduce the machine performance and cause harm to the environment.

Longer Service Intervals. 500-hour engine service intervals and Cat Extended Life Coolant/Antifreeze mean that fluid renewal and disposal are less frequent.

Ease of Operation and Enhanced Productivity

Designed for simple, easy operation, the M322C allows the operator to focus on production.

WEX Multipro. New, compact Multipro enhances viewing while displaying a variety of easy-to-read and understandable information in various languages.

Pre-start WEX Multipro System. The Pre-start Multipro system alerts the operator of low coolant or hydraulic oil levels, before starting the engine. When the engine key remains in the "ON" position for more than 2 seconds, a warning indicator and message are displayed if actual fluid levels are lower than required.

Filter and Oil Change Warnings. The filter and oil change warnings are displayed when the number of hours used reaches the maintenance interval.

Languages. 23 different languages are available on the M322C.

Power Modes. There are three power mode settings. The operator can choose the best power setting for both engine and hydraulic power versus fuel efficiency.

Economy Mode. The economy mode is often used for lifting, pipe setting, grading, slope finishing and precise work. This mode helps ensure minimum fuel consumption.

Power Mode. This mode is used for normal truck loading and digging applications, trenching or hammer use.

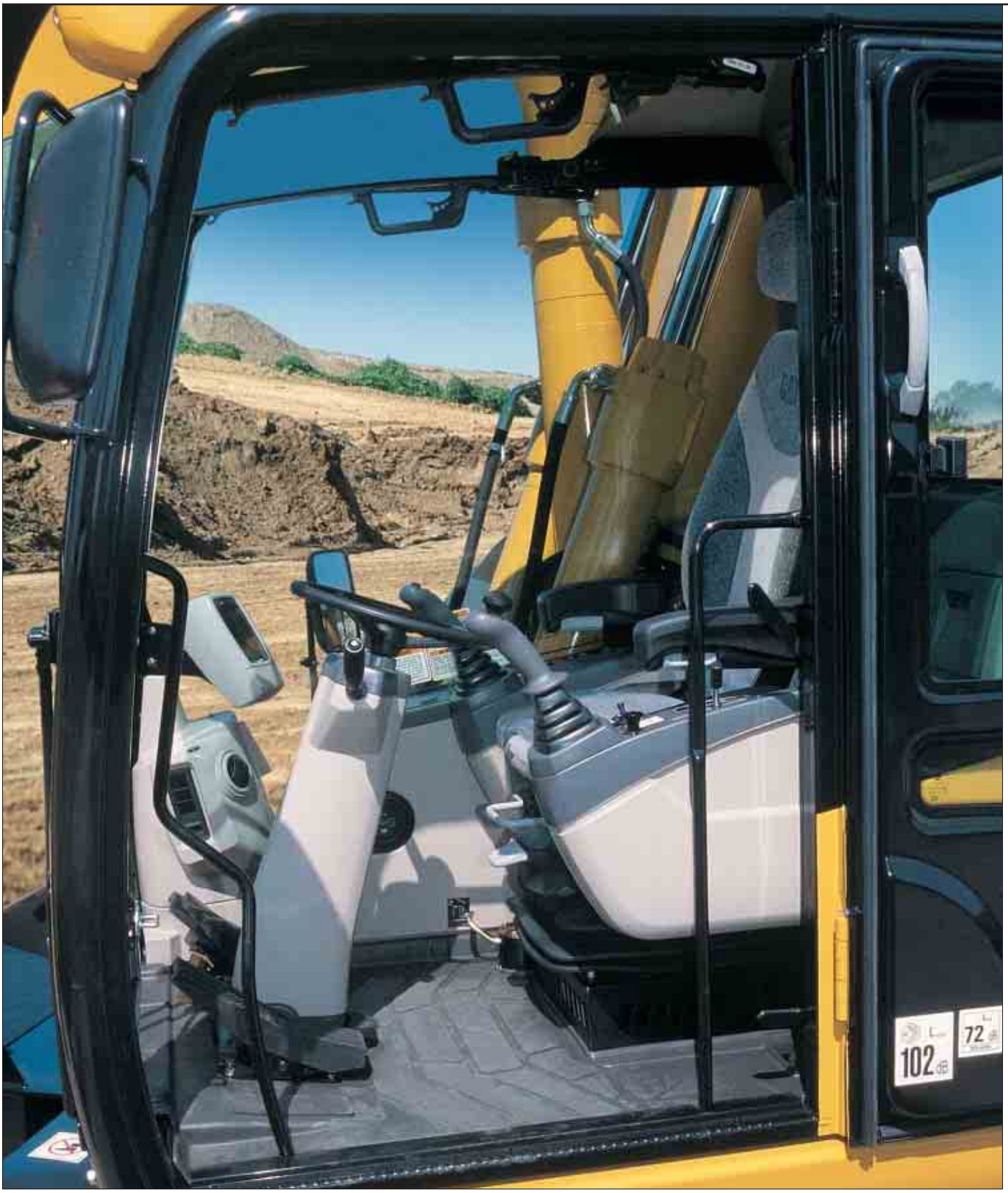
Travel Mode. The travel mode is automatically set when the travel pedal is actuated. It provides maximum speed and drawbar pull.

Integrated Tool Control System. The integrated Tool Control system allows the operator to quickly select a tool out of five pre-set combinations, eliminating the need to reset these hydraulic parameters each time a tool is changed. Specific flow and pressure can be programmed easily as well as one-way/two-way hydraulic functions. Each of the five programmed tools can even be given a specific name.

Joystick Steering. It allows the operator to reposition the machine in the first gear and work simultaneously with the implements, keeping both hands on the joysticks. The operator is able to do more precise work in a shorter amount of time. This provides increased safety for all people working around the machine by removing the need for the operator to move their hands back to the steering wheel for maneuvering.

All-day operator comfort

The M322C interior layout maximizes operator space, provides exceptional comfort and reduces operator fatigue.



Interior Operator Station. The M322C operator work station is quiet, controls have been placed conveniently for easy adjustment and ease of operation. The seat design is ergonomic and ventilation is highly effective.

Seat. The wheel excavator seat with two-tone color design offers adjustable back rest, lumbar support, cushion length and cushion angle. Independently adjustable armrests and pilot controls allow tailored ergonomics to suit operator preference. Optional Comfort seat provides air suspension, seat heating, horizontal suspension and automatic adjustment for the operator's weight to help maximize comfort.

Consoles. Designed for simplicity and functionality, the left side console is tiltable for excellent access to the cab. Dozer blade and/or outrigger controls as well as the radio-off switch are located on the left console.

Automatic Climate Control. Fully automatic climate control adjusts temperature and air flow.

Greater Control Convenience. Each control is placed within easy reach of the operator. Joysticks control all attachments and swing functions and can also be used to steer the machine and to activate the adjustable hydraulic sensitivity. By means of the soft switch panel, which is placed to be easily reached, the operator controls the oscillating axle, power modes, parking brake, automatic engine speed control and other hydraulic functions.

Cab Mounts. The cab shell is attached to the frame with resilient mounts, reducing vibration and sound.

Foot Pedals. Two-way pedals for the travel and auxiliary circuits give more floor space and reduce the need to change positions. The foot pedal for the auxiliary high-pressure circuit can now be locked in the off position to be used as a footrest for greater operator comfort.

Skylight. A unique large polycarbonate skylight provides excellent upward visibility.

Viewing Area. There is excellent viewing area through wide windows. The lower of the two-piece window can be opened separately for better air ventilation or be slid into the upper window to completely open the front bay. An optional one-piece window is available.

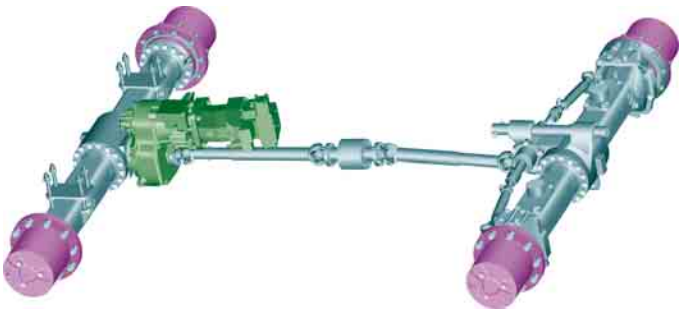
Wipers. Designed to maximize visibility in poor weather conditions. The parallel wiper system covers almost the complete front window without leaving unwiped areas in the immediate line of sight of the operator.

Large Storage Compartment. Located behind the seat, provides sufficient room. An optional cover is available to close off the storage space if preferred.

Easy Access. Conveniently located grab irons and large steps mounted to the undercarriage, together with the tiltable steering column and the tiltable left side console, provide easy access to the cab.

Undercarriage and Drive Line

Undercarriage and axle design provides maximum strength, flexibility and mobility on wheels.



Strong Undercarriage. The welded frame provides excellent rigidity and long life. Efficient hydraulic lines routing, transmission protection and heavy-duty axles make the undercarriage perfect for wheel excavator applications. Both outriggers and dozer blade are pin-on for maximum flexibility.

New Drive Line Concept. The new travel motor and transmission control in the drive line provide more comfortable travel due to increased smoothness, improved hydraulic braking and improved gear shifting.

Travel Motor. The advanced travel motor gives higher hydraulic braking forces particularly in downhill roading by continuously using the optimal displacement of the travel motor for braking. Braking characteristics can be adjusted to the operator's preferred level of aggressiveness in three steps.

Transmission Control. The intelligent implementation of the engine torque curves in an optimized gear shifting process reduces uphill travel time, particularly in hilly areas.

Heavy Duty Axles. The front axle offers great oscillating and steering angles. The transmission is mounted directly on the rear axle for protection and optimum ground clearance.

Advanced Disc Brake System. The new disc brake system acts directly on the hub instead of the drive shaft to avoid planetary gear backlash. This technical solution eliminates the rocking effect associated working free on wheels. The new axle is designed for low maintenance and lifetime costs. Oil change intervals are increased from 1000 up to 2000 working hours in order to further reduce owner and operator costs.

Outriggers. Recommended for maximum operating stability when digging and lifting, the outriggers can be individually controlled to level the machine on slopes. Featuring pin-on design, heavy-duty cylinder guards, and optimized kinematics, the outriggers can be mounted on the front, rear or on both ends of the machine.

Dozer Blade. A useful addition for leveling and clean-up work, it can also be used to stabilize the machine during digging applications. The large dozer floor and the parallel design provide minimal ground pressure reducing impact to the work surface. Featuring a pin-on design, heavy-duty cylinder guards, and optimized kinematics, the dozer blade can be mounted either on the front or the rear end.

Tool Box. A large sealed and lockable toolbox is mounted on the undercarriage between the steps on the machine's left side. A second optional toolbox is available for the right side.

Booms and Sticks

Improved strength and kinematics help to bring higher production and efficiency to all jobs.

Booms and Sticks. Built for performance and long service life, Caterpillar booms and sticks are large, welded, box-section structures with thick, multi-plate fabrications in high-stress areas.

Flexibility. The choice of two booms and three different sticks means that the M322C offers the right combination of reach and digging forces for all applications.

Hydraulically Adjustable Boom (VA). The VA boom (5440 mm) offers improved visibility and machine roading balance. When working in tight quarters or lifting heavy loads, the VA boom offers the best flexibility.

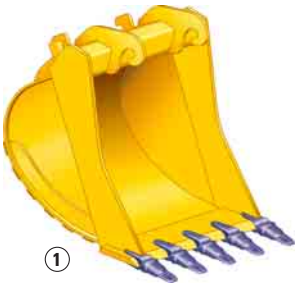
One-piece Boom. The one-piece boom (5650 mm) fits best for all standard applications such as truck loading and digging. A unique straight section in the curve of the side plate reduces stress flow and helps increase boom life.

Sticks. Three different stick lengths are offered to match different applications.

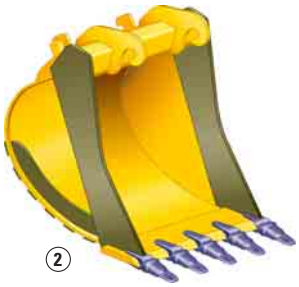
- **Short stick** (2200 mm) for maximum breakout force and lifting capability
- **Medium stick** (2500 mm) as standard for most applications
- **Long stick** (2900 mm) to match reach and depth requirements

Buckets and Teeth

A wide variety of buckets help optimize machine performance. Purpose designed and built to Caterpillar's high durability standards.



Caterpillar K Series vertical tip retention



Caterpillar K Series™ Tooth System

1 Excavation Bucket. Digs and loads soft to medium materials such as clay and earth. Features weld on tip adapters, hardened cutting edge and side bars.

2 Extreme Excavation Bucket. Digs and loads compact/abrasive materials like earth/rock, sand/clay, sand/gravel, coal, chalk and low abrasion ores. Features abrasion resistant steel for all wear parts.

3 Skeleton Bucket. For soft and moist soils and for applications where separation of materials, e.g., branches, peat moss, is required and for breaking up asphalt.

Heavy Duty Skeleton Bucket. As standard skeleton bucket, but for more demanding applications such as sorting rock from sand or gravel on demolition sites.

4 Ditch Cleaning Bucket. Wide, light bucket used mainly with long reach configurations to clean waterbeds and banks.

5 Tiltable Ditch Cleaning Bucket. Wide, light hydraulically tiltable bucket for ditch cleaning and slope finishing applications.

6 Trapezoidal Bucket. To prepare and maintain small irrigation ditches. Features angled sides to shape ditch banks in one operation. Optionally available with mechanically adjustable side angles.

Pin-on version and Quick Couplers. All Cat buckets are available in both quick coupler and pin-on version.

Tip Selection. The new Caterpillar K Series Tooth System holds tighter, changes easier and stays sharper.

10 General Duty

11 Extra Duty

12 Penetration

13 Penetration Plus

14 Heavy Penetration

15 Heavy Abrasion

16 Wide

17 Spike

18 Double Spike

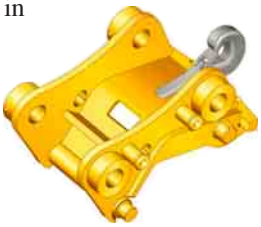
Tool Control System, Quick Couplers and Work Tools

User-friendly, integrated electro-hydraulics make changing tools easy and quick and allow the operator to focus on efficient work.

Tool Control. Five hydraulic pump flow and pressure settings can be preset on the Multipro, eliminating the need to adjust the hydraulics each time a tool is changed. Selecting the proper setting from the Multipro's menu instantly provides the operator with the correct amount of flow and pressure for the tool. The unique Cat proportional sliding switches provide modulation to the tool and make precision work easy.

Quick Couplers. Caterpillar Quick Couplers enable the operator to simply release one work tool and pick up another. Your hydraulic excavator becomes highly versatile. To suit your business and application needs, Caterpillar offers two different types of Quick Couplers.

CW-Series Dedicated Quick Coupler. The dedicated CW-Series quick coupler enables a quick tool exchange while maintaining top machine performance. It is available in a hydraulic and spindle version.



- The hydraulic version is available in a standard and a narrow version and makes it very easy for the operator to switch tools without having to leave the cab.
- The spindle version is a user-friendly mechanical version that can later be easily converted into the hydraulic version if required. The spindle version is also available in the narrow and standard version.
- A lifting hook is added to the dedicated Quick Coupler for maximum lift capacity.

A quick coupler hydraulic circuit for this CW-Series coupler is available factory installed.

Pin Grabber Plus Quick Coupler. This hydraulically controlled Pin Grabber Plus quick coupler makes changing buckets and other popular work tools simple and fast. The Pin Grabber Plus coupler mounts to the end of the stick and allows buckets, clamshells and other work tools to be used with little or no modification.

- Each model fully adjusts to different pin spreads of various tools regardless of manufacturer – it is the only coupler that accommodates a wide range of work tool makes and models.
- Pin-on assembly makes coupler installation and removal fast and easy.
- Coupler retains the same bucket opening and closing angles.
- Buckets can be reversed for greater flexibility when working around and under obstructions.
- Integrated lift eye.

Pin Grabber Plus quick coupler hydraulic circuit for wheeled excavators is available as a retrofit kit dedicated to this coupler. Ask your Cat dealer for more specific information.

Multi-Processor. The Caterpillar Multi-Processors can be equipped with different jaw types depending on your need.

- CC-jaws combi cutter.
- CR-jaws concrete crusher.
- PP-jaws primary pulverizer.
- PS-jaws secondary pulverizer.
- S-jaws steel.

Multi-Grapple. The Multi-Grapple with unlimited left and right rotation is the ideal tool for stripping, sorting, handling and loading.

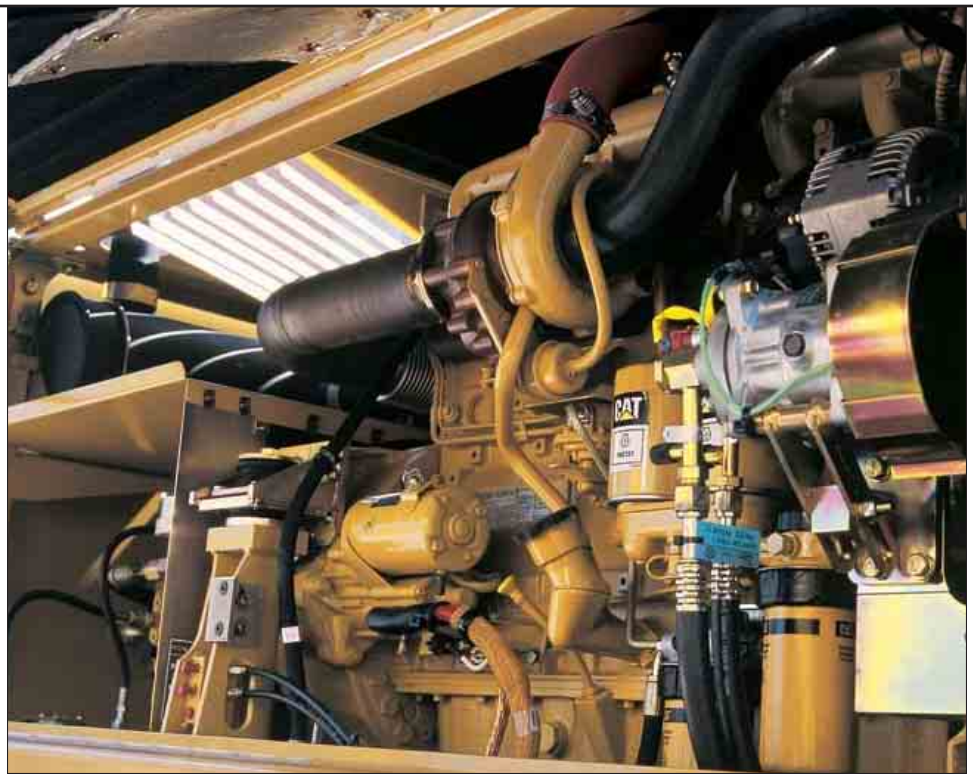
Orange Peel Grapple. Specifically designed for handling scrap and rock in recycling and transfer applications.

Clamshell. For some trenching applications or jobs being performed on inner city roads, a clamshell provides an ideal solution. The free-swinging tool makes it possible to dig small sized holes easily.

Hammer. With their wide variety of tools, Cat hammers provide the perfect match for maximum life, efficiency and productivity.

Maximum Uptime – Service and Maintenance

Extended service intervals and easy access reduce operating costs.



Extended Service Intervals. M322C service and maintenance intervals have been extended to reduce machine service time, increase machine availability and reduce operating costs. Using S•O•S hydraulic oil change intervals can be extended from 2000 hours to 4000 hours. Engine coolant change intervals are up to 12 000 hours with using Cat Extended Life Coolant/Anti-Freeze.

Easy, Wide Open Access. Gull-wing doors with pneumatically assisted lift cylinders lift up effortlessly for excellent access to the engine and to all service points. An additional toolbox located under the step leading to the upper platform offers clean, dry space for the operator.

Storage Box. The upperstructure access incorporates a sealed and lockable storage box for personal belongings of the operator.

Easy to Clean Coolers. Flat fins on all coolers reduce clogging and make it easier to remove debris.

Ground Level Service. The design and layout of the M322C was made with the service technician in mind. The fuel water separator, engine oil filter, battery, radiator fluid level, fuel filter, engine oil gauge, hydraulic oil level, air cleaner and pilot system filter are all easily accessible at ground level allowing critical maintenance to be done quickly and efficiently.

Front Compartment. The front service compartment provides ground level access to the batteries, ATAAC, AC condenser and the air filter.

Swing-Up AC Condenser. Without using tools, the AC condenser swings up vertically to allow cleaning on both sides as well as clear access to the ATAAC.

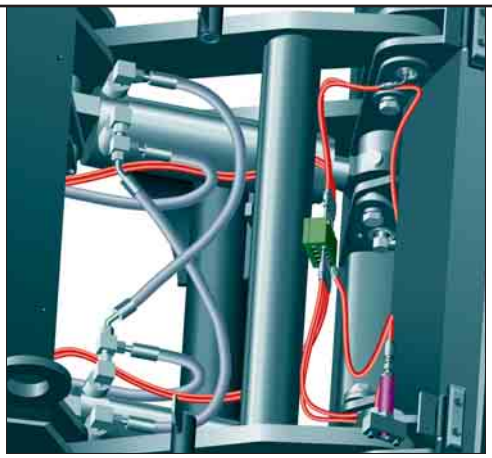
Fuel Tank Drain. Located at the bottom of the upper frame, the fuel tank drain with a hose connection allows simple, spill free fluid draining.

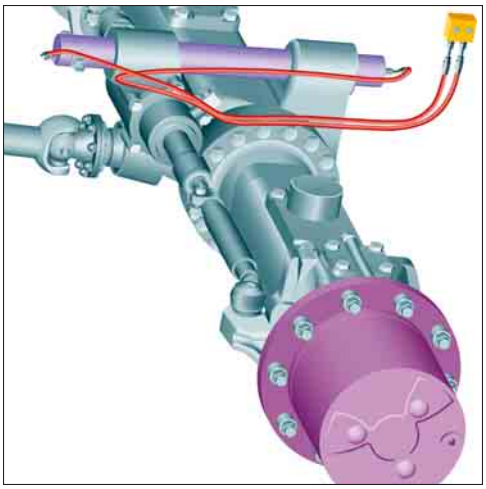
Air Filter. Caterpillar Radial Seal air filters do not require tools to service them, thus reducing maintenance time. The air filter features a double-element construction and built-in precleaner for superior cleaning efficiency. When the air cleaner plugs, a warning is displayed on the monitor screen inside the cab.

Capsule Filter. The hydraulic return filter, a capsule filter, is situated inside the hydraulic tank. This filter prevents contaminants from entering the system when hydraulic oil is changed and keeps the operation clean.

Engine Inspection. The engine can be accessed from both ground level and from the upper structure. The longitudinal layout ensures that all daily inspection items can be accessed from ground level. The engine and pump compartment are separated by a steel wall.

Water Separator. The water separator removes water from fuel even when under pressure and is located in the engine compartment.





Remote Greasing Block. A greasing block is located in the engine compartment on the upper carriage, with two grease points for the swing bearing and one for the front end attachment. This delivers grease to hard-to-reach locations. For the lower undercarriage, two remote blocks give easy access for greasing to the oscillating axle and, as an option, the dozer blade.

Hydraulic Tank Drain. The hydraulic tank drain enables simple, spill-free fluid changes.

Handrails and Steps. Well-sized handrails and steps assist the operator in climbing on and off of the machine.

Diagnostics and Monitoring. The M322C is equipped with S•O•S sampling ports for the hydraulic system and engine oil. A connection for the Electronic Technician (ET) is conveniently located in the cab.

Anti-Skid "Punched-Star" Plate. An anti-skid punched-star plate covers the top of the steps and the upper structure to prevent slipping during maintenance.

Electronic Technician (ET). The electronic engine and machine controllers provide detailed diagnostic possibility for service technicians. The ability to store both active and intermittent indicators simplifies problem diagnosis and reduces total repair time, resulting in improved machine availability and lower operating cost. ET can be used to...

- access data stored in the engine and transmission controls via the Cat Data Link System
- display the status of parameters such as engine speed, gear engaged, control switch position, etc.
- view active and non-active diagnostic codes and clear them after repair
- perform diagnostic tests and calibrations of electro-hydraulic components
- view current configuration and change parameter settings
- flash new Caterpillar software into the Electronic Control Modules

A customer version of ET is also available for your fleet of Caterpillar equipment. Contact your Caterpillar dealer.

Scheduled Oil Sampling (S•O•S) Analysis. Caterpillar has specially developed S•O•S to help ensure better performance, longer life and increased customer satisfaction. It is a thorough and reliable early warning system which detects traces of metals, dirt and other contaminants in your engine, axle and hydraulic oil. It can predict potential trouble early, thus avoiding costly failures. Your Caterpillar dealer can give you results and specific recommendations shortly after receiving your sample. Each S•O•S test can provide specific types of diagnosis:

- **Oil condition analysis** identifies loss of lubricating properties by quantifying combustion products such as soot, sulfur, oxidation and nitrates.
- **Wear analysis** monitors component wear by detecting, identifying and assessing the amount and type of metal wear elements found in the oil.
- **Chemical and physical test** detect the physical presence of unwanted fluids (water, fuel, antifreeze).

Lower Operating Costs

Improvements in operating costs provide a long-term investment.

Fuel Consumption. The new EU Stage II and US EPA Tier II, electronically controlled engine, new fuel injection system and new ATAAC combine to provide outstanding fuel consumption during both production and traveling. The Automatic Engine Speed Control reduces idle speed when the implements are not active to further improve fuel consumption.

Filter Change Intervals. 2000 hours hydraulic oil and 500 hours engine oil filter change intervals save time and money.

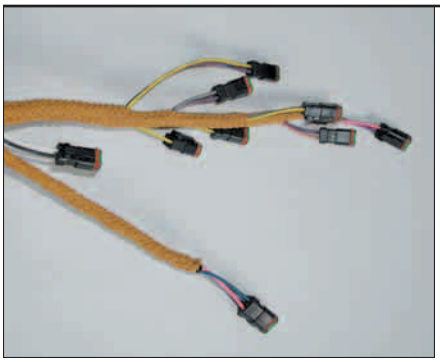
Hydraulic Oil Change Intervals. With the aid of S•O•S sampling hydraulic oil change intervals can be extended from 2000 hours to an average of 4000 hours.

Rebuildable Components. Many of the major components used in the M322C are designed for re-manufacturing. This means you have high-quality, certified rebuilt replacement parts available at a fraction of the cost of new parts. There is less scrap for disposal.

Your Caterpillar dealer can provide you with detailed calculations and simulations of how our low operating costs can benefit your particular application.

Maximum uptime – Reliability

Caterpillar standard features help to increase machine uptime.



Caterpillar Braided Harnesses. Designed and manufactured to resist the most severe conditions. Harnesses are made of large section, colored and number-coded wires with the complete harness being protected by an abrasion resistant braiding. Harnesses are properly routed and securely clamped to ensure their reliability and life.

XT-6 ES Hoses. Premium quality rubber, precision 4-ply wire reinforcement and exclusive reusable couplings are all unique features of Cat hoses which deliver top performance and long life. O-Ring face seals provide positive sealing for reliable and leak-free connections.

Caterpillar Batteries. Caterpillar maintenance-free, high output batteries are designed for high cranking power and maximum protection against vibration.

Fuel Filters. Cat high efficiency fuel filters with a Stay-Clean Valve™ feature cellulose/synthetic blend media that remove more than 98 percent of particles that are two microns or larger, increasing fuel injector life.

Complete Customer Support

Cat dealer services help you operating longer with lower costs.

Services. Customer Service is critical today in every business. That's why so many people buy Cat equipment. They know they are getting quality reliability and performance backed-up with the best Customer Service. Your Caterpillar dealer offers a wide range of services that can be set up under a Customer Support Agreement. The dealer will help you choose a plan that can cover the whole machine including work tools, to help you getting the best out of your investment.

Product Support. You will find a solution for your parts requirements at your dealer. Cat dealers utilize a worldwide network to find in-stock parts to minimize downtime. In addition your dealer can offer alternative solutions like Reman, Classic Parts and quality used parts to save money on original Caterpillar components.

Service Capability. Whether in the dealer's fully equipped shop or in the field, you will get highly trained service technicians using the latest technology and tools.

Maintenance. More and more equipment buyers are planning for effective maintenance before buying equipment. Choose from your dealer's wide range of maintenance services at the time you purchase your machine. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S•O•S Fluid Analysis and Technical Analysis help you avoid unscheduled repairs.

Selection. Make detailed comparisons of the machines you are considering before you buy. How long do components last? What is the cost of preventive maintenance? Your Cat dealer can give you precise answers to these questions to make sure you operate your machines at the lowest cost.

Purchase. Consider the financing options available as well as day-to-day operating costs. This is also the time to look at dealer services that can be included in the cost of the machine to yield lower equipment and owning and operating costs over the long run.

Operation. Improving operating techniques can boost your profits. Your Cat dealer has training material and ideas to help you increase productivity.

Replacement. Repair, rebuild or replace? Your Cat dealer can help you evaluate the cost involved so you can make the right choice.

Engine

Cat 3056E DIT ATAAC diesel engine	
Ratings	2000 rpm
Gross power	127 kW/170 hp
Net power	
ISO 9249	122 kW/164 hp
EEC 80/1269	122 kW/164 hp
Bore	100 mm
Stroke	127 mm
Displacement	6.0 liters
Cylinders	6
Maximum torque at 1400 rpm	695 Nm

- The 3056E engine meets EU directive 97/68/EC Stage II emission requirements.
- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator.
- No engine derating is required below 3000 m altitude.

Swing Mechanism

Swing speed	10.5 rpm
Swing torque	56.3 kNm
Maximum flow	112 l/min
Maximum pressure	310 bar

Tires

Standard
- 11.00-20 (dual pneumatic)

Optional
- 10.00-20 (dual solid rubber)

Hydraulic System

Tank capacity	225 liters
System	350 liters
Maximum pressure	
Implements	350 bar
Travel	350 bar
Maximum flow	340 and 112 l/min
Pilot system	
Maximum pressure	31 bar

Transmission

1st gear, forward/reverse	8 km/h
2nd gear, forward/reverse	20/25 km/h
Creeper speed (first gear)	4 km/h
Creeper speed (second gear)	11 km/h
Drawbar pull	112 kN
Maximum Gradeability	62%

Undercarriage

Maximum steering angle	35°
Oscillation axle angle	± 9°
Minimum turning radius (outside of tire)	6800 mm
Minimum turning radius (end of VA boom)	7800 mm
Minimum turning radius (end of Mono boom)	9300 mm
Ground clearance	365 mm

Service Refill Capacities

	Liter
Fuel tank capacity	385
Cooling	39
Engine crankcase	16
Rear axle housing (differential)	14.5
Front steering axle (differential)	11
Final drive	2.5
Powershift transmission	2.5

Cab

FOGS meets ISO 10262.

Sound

Low sound, low vibration. The 3056E design improves operator comfort by reducing sound and vibration. The M322C was awarded the German Blue Angel for low spectator sound levels.

Operator Sound

- The operator sound level measured according to the procedures specified in ISO 6396:1992 is L_{PA} 72 dB(A), for cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.
- Hearing protection may be needed when operating with an open cab for extended periods or in a noisy environment.

Exterior Sound

- The labeled spectator sound power level measured according to the test procedures and conditions specified in 2000/14/EC is L_{WA} 102 dB(A).

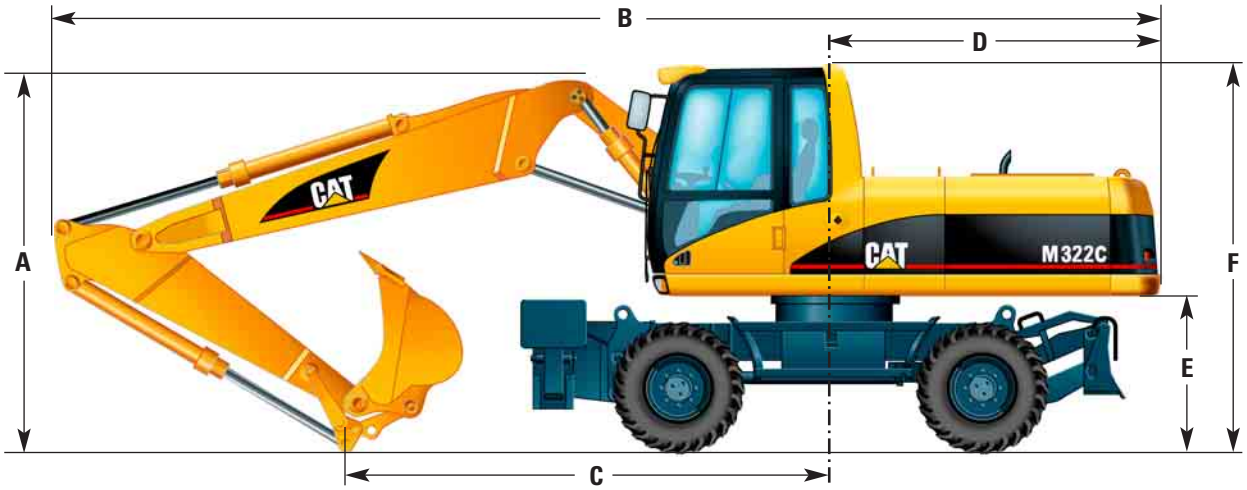
Weights

Average operating weights include a general purpose bucket, 100% fuel and an operator.

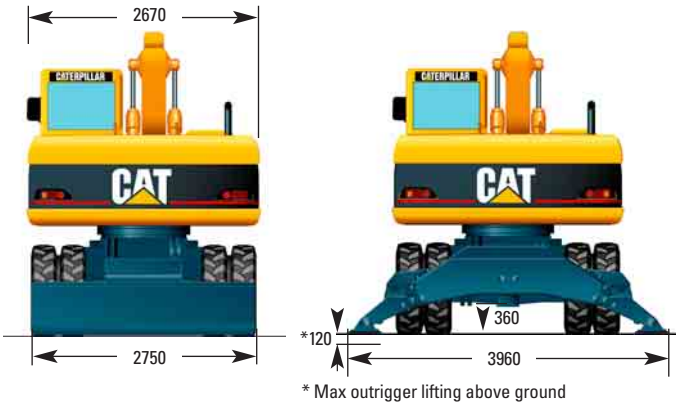
VA boom	kg
rear dozer only	21 000
rear dozer, front outriggers	22 300
front and rear outriggers	22 700
One-piece boom	
rear dozer only	20 500
rear dozer, front outriggers	21 800
front and rear outriggers	22 200
Dozer blade	900
Outriggers	1300
Counterweight	
Standard	3900
Optional	4400

Dimensions

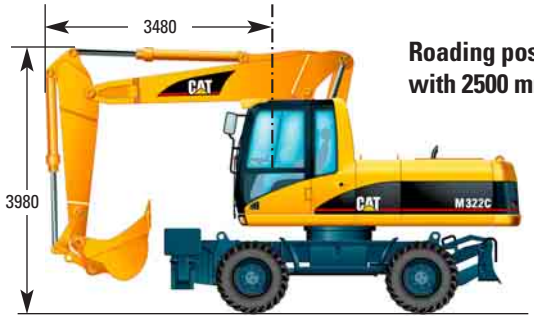
All dimensions are approximate – measured in mm.



		VA boom	One-piece boom
		mm	mm
A	Shipping height		
	2200 mm stick	3260	3300
	2500 mm stick	3230	3250
	2900 mm stick	3250	3290
B	Shipping length		
	2200 mm stick	9430	9650
	2500 mm stick	9440	9640
	2900 mm stick	9430	9650
C	Support Point		
	2200 mm stick	4160	4240
	2500 mm stick	3660	3720
	2900 mm stick	3420	3440
D	Tail swing radius	2750	2750
E	Counterweight clearance	1307	1307
F	Cab height	3200	3200
	with 1200 mm fixed cab riser	4400	4400
Overall machine width			
	Standard gauge axle	2750	2750

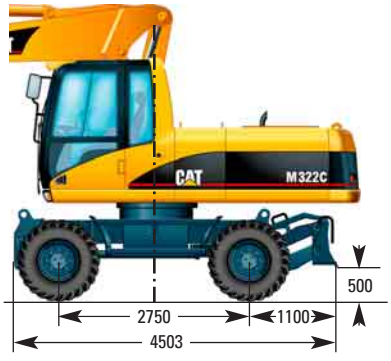


* Max outrigger lifting above ground

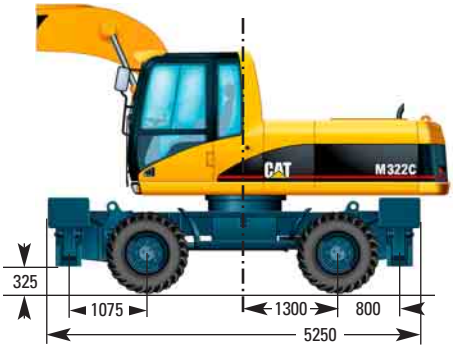


Roading position with 2500 mm stick

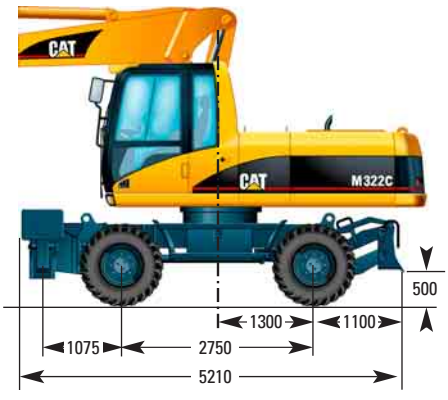
Undercarriage with dozer only



Undercarriage with 2 sets of outriggers



Undercarriage with 1 set of outriggers and dozer



Bucket Specifications

Contact your Caterpillar dealer for special bucket requirements.
Buckets are available to fit the Cat quick coupler.

Buckets without Quick Coupler

				Variable adjustable boom 5440 mm												One-piece boom 5050 mm											
Stick length				2200 mm				2500 mm				2900 mm				2200 mm				2500 mm				2900 mm			
	Width	Weight*	Capacity (ISO)	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized
	mm	kg	m^3																								
Excavation	600	601	0.44																								
	750	593	0.59																								
	1000	698	0.86																								
	1200	783	1.08																								
	1250	800	1.13																								
	1300	818	1.19																								
	1400	853	1.30									×															
	1500	888	1.41					×				×												×			
Extreme Excavation	600	589	0.44																								
	750	620	0.59																								
	1250	827	1.13																								
	1300	864	1.18									×															
	1400	901	1.30									×												×			

Buckets and Quick Coupler

				Variable adjustable boom 5440 mm												One-piece boom 5050 mm											
Stick length				2200 mm				2500 mm				2900 mm				2200 mm				2500 mm				2900 mm			
	Width	Weight**	Capacity (ISO)	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized	Free on Wheels	Dozer lowered	1 set of stabilizer lowered	Fully stabilized
	mm	kg	m^3																								
Excavation	600	786	0.44																								
	750	827	0.59																								
	1000	904	0.86																								
	1200	989	1.08									×															
	1250	1006	1.13									×															
	1300	1024	1.19									×												×			
	1400	1059	1.30	×				×				×												×			
	1500	1094	1.41	×				×				×	×			×				×				×	×		
Extreme Excavation	600	814	0.44																								
	750	857	0.59																								
	1250	1033	1.13									×															
	1300	1070	1.18					×				×												×			
	1400	1107	1.30	×				×				×	×											×			

* Bucket weight includes general duty tips.
** Bucket weight includes CW40 quick coupler and general duty tips.

Maximum Material density 1800 kg/m^3
Maximum Material density 1500 kg/m^3
Maximum Material density 1200 kg/m^3
× Not Recommended

Work Tools Matching Guide

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

			Variable adjustable boom 5440 mm									One-piece boom 5050 mm								
			Dozer lowered			2 sets of stabilizer lowered			Dozer and stabilizer lowered			Dozer lowered			2 sets of stabilizer lowered			Dozer and stabilizer lowered		
Without quick coupler		Stick length (mm)	2200	2500	2900	2200	2500	2900	2200	2500	2900	2200	2500	2900	2200	2500	2900	2200	2500	2900
Hammers	H115 s, H120C s																			
	H130 s				×			×			×			×			×			×
Multiprocessors	MP15	CC			×						×		×	×						×
		CR, S			×									×						
		PP, PS		×	×			×			×	×	×	×			×			×
	MP20	S	×	×	×		×	×		×	×	×	×	×		×	×		×	×
Crushers and Pulverizers	VHC-30			×	×			×			×		×	×						
	VHP-30																			
360° rotatable Shears (boom mounted)	S325		×	×	×							×	×	×						
	S340		×	×	×							×	×	×						
Multi-Grapples	G315B	D, R			×									×						
	G320B	D	×	×	×	×	×	×	×	×	×	×	×	×		×	×		×	×
Compactors	CVP110																			
Digging Clamshell Buckets	GGS-35				×									×						
Transfer Clamshell Buckets	GOS-35	620																		
		700																		
		780												×						
		1050	×	×	×							×	×	×						
		1260	×	×	×			×			×	×	×	×			×			×
		1460	×	×	×		×	×		×	×	×	×	×			×			×
		1670	×	×	×		×	×		×	×	×	×	×		×	×		×	×
Orange Peel Grapples	GSM-35 5 tines	500		×	×							×	×	×						
		600	×	×	×							×	×	×						
		800/1000	×	×	×			×			×	×	×	×			×			×
	GSH15B 5 tines	400																		
		500/600		×	×								×	×						
		800	×	×	×							×	×	×						
	GSH15B 4 tines	400																		
		500																		
		600												×						
		800	×	×	×							×	×	×						
	GSH20B 5 tines	600/800	×	×	×			×			×	×	×	×			×			×
		1000	×	×	×		×	×		×	×	×	×	×			×			×
	GSH20B 4 tines	600	×	×	×							×	×	×						
		800/1000	×	×	×			×			×	×	×	×			×			×
With quick coupler																				
Quick Couplers	CW-40, 40S																			
Multiprocessors	MP15	CC, CR, S	×	×	×			×			×	×	×	×			×			×
		PP	×	×	×		×	×		×	×	×	×	×		×	×		×	×
		PS	×	×	×		×	×		×	×	×	×	×			×			×
Crushers and Pulverizers	VHC-30		×	×	×			×			×	×	×	×			×			×
	VHP-30			×	×			×			×		×	×			×			×
Multi-Grapples	G315B	D, R	×	×	×			×			×	×	×	×			×			×
Compactors	CVP110																			

360° Working Range
Over the front only
Available
Maximum Material density 3000 kg/m³
Maximum Material density 1800 kg/m³
Maximum Material density 1200 kg/m³
× Not Compatible

Lift capacities

with 5440 mm Variable adjustable, Quick Coupler CW and 4400 kg counterweight. All weights are in kg.

Stick
2200 mm

	Undercarriage configuration	3.0 m			4.5 m			6.0 m			7.5 m						m
6.0 m	Rear dozer up							5700		3900							
	Rear dozer down								*6000	4400							
	Rear stab down								*6000	5300							
	2 sets stab down							*6000		*6000							
	Dozer and stab down							*6000		*6000							
4.5 m	Rear dozer up				*7800		6000	5600		3900	3800		2500				
	Rear dozer down					*7800	6800		*6400	4400		*5600	2900				
	Rear stab down					*7800	*7800		*6400	*5200		*5600	3500				
	2 sets stab down				*7800		*7800	*6400		*6400	*5600		5200				
	Dozer and stab down				*7800		*7800	*6400		6300	*5600		4300				
3.0 m	Rear dozer up				8300		5800	5500		3800	3800		2500	*2400		1900	8.60
	Rear dozer down					*9500	6500		*7100	4300		*5900	2900		*2400	2200	
	Rear stab down					*9500	7700		*7100	5100		5700	3500		*2400	*2400	
	2 sets stab down				*9500		*9500	*7100		*7100	*5900		5200	*2400		*2400	
	Dozer and stab down				*9500		9500	*7100		6100	*5900		4300	*2400		*2400	
1.5 m	Rear dozer up	*12 200		10 100	8300		5600	5500		3800	3700		2500	*2400		1900	8.69
	Rear dozer down		*12 200	11 800		*10 700	6400		*7700	4300		*6100	2800		*2400	2100	
	Rear stab down		*12 200	*12 200		*10 700	*7700		*7700	5100		5700	3400		*2400	*2400	
	2 sets stab down	*12 200		*12 200	*10 700		*10 700	*7700		7200	*6100		5100	*2400		*2400	
	Dozer and stab down	*12 200		*12 200	*10 700		9300	*7700		6100	*6100		4200	*2400		*2400	
0 m	Rear dozer up	*15 100		10 000	8300		5500	5500		3600	3600		2400	*2500		1900	8.48
	Rear dozer down		*15 100	11 700		*10 900	6300		*7800	4100		*6100	2700		*2500	2200	
	Rear stab down		*15 100	14 800		*10 900	7700		*7800	5000		5500	3300		*2500	*2500	
	2 sets stab down	*15 100		*15 100	*10 900		*10 900	*7800		*7200	*6100		5000	*2500		*2500	
	Dozer and stab down	*15 100		*15 100	*10 900		9300	*7800		6200	*6100		4100	*2500		*2500	
-1.5 m	Rear dozer up	16 600		9800	8200		5300	5200		3400	3500		2300	*2800		2100	7.94
	Rear dozer down		*17 900	11 400		*11 100	6100		*8000	3900		*3600	2600		*2800	2400	
	Rear stab down		*17 900	14 800		*11 100	7500		*8000	4800		*3600	3200		*2800	*2800	
	2 sets stab down	*17 900		*17 900	*11 100		*11 100	*8000		7100	*3600		*3600	*2800		*2800	
	Dozer and stab down	*17 900		*17 900	*11 100		9500	*8000		5900	*3600		*3600	*2800		*2800	
-3.0 m	Rear dozer up	16 700		9800	8200		5300	5000		3200							
	Rear dozer down		*18 500	11 500		*11 300	6000		*6500	3700							
	Rear stab down		*18 500	14 800		*11 300	7400		*6500	4600							
	2 sets stab down	*18 500		*18 500	*11 300		*11 300	*6500		*6500							
	Dozer and stab down	*18 500		*18 500	*11 300		9300	*6500		5700							

Stick
2500 mm

	Undercarriage configuration	3.0 m			4.5 m			6.0 m			7.5 m						m
6.0 m	Rear dozer up							5700		4000							
	Rear dozer down								*5700	4500							
	Rear stab down								*5700	5300							
	2 sets stab down							*5700		*5700							
	Dozer and stab down							*5700		*5700							
4.5 m	Rear dozer up				*7400		6000	5600		3900	3800		2600				
	Rear dozer down					*7400	6700		*6200	4400		*5400	2900				
	Rear stab down					*7400	*7400		*6200	5200		*5400	3600				
	2 sets stab down				*7400		*7400	*6200		*6200	*5400		5200				
	Dozer and stab down				*7400		*7400	*6200		*6200	*5400		4400				
3.0 m	Rear dozer up	*11 200		10 600	8400		5700	5500		3800	3800		2600	*2100		1900	8.84
	Rear dozer down		*11 200	*11 200		*9100	6500		*6900	4300		*5700	2900		*2100	*2100	
	Rear stab down		*11 200	*11 200		*9100	*7800		*6900	5100		5700	3500		*2100	*2100	
	2 sets stab down	*11 200		*11 200	*9100		*9100	*6900		*6900	*5700		5200	*2100		*2100	
	Dozer and stab down	*11 200		*11 200	*9100		*9100	*6900		*6200	*5700		4300	*2100		*2100	
1.5 m	Rear dozer up	*12 500		10 400	8200		5600	5400		3800	3700		2500	*2200		1800	8.92
	Rear dozer down		*12 500	11 700		*10 500	6300		*7500	4300		*6000	2800		*2200	2000	
	Rear stab down		*12 500	*12 500		*10 500	7600		*7500	5100		5700	3400		*2200	*2200	
	2 sets stab down	*12 500		*12 500	*10 500		*10 500	*7500		7100	*6000		5100	*2200		*2200	
	Dozer and stab down	*12 500		*12 500	*10 500		9200	*7500		*6100	*6000		4300	*2200		*2200	
0 m	Rear dozer up	*15 400		10 100	8.200		5600	5500		3700	3600		2400	*2300		1800	8.72
	Rear dozer down		*15 400	11 800		*10 800	6300		*7800	4100		*6100	2700		*2300	2100	
	Rear stab down		*15 400	14 600		*10 800	7600		*7800	5000		5500	3300		*2300	*2300	
	2 sets stab down	*15 400		*15 400	*10 800		*10 800	*7800		7200	*6100		5000	*2300		*2300	
	Dozer and stab down	*15 400		*15 400	*10 800		9300	*7800		6100	*6100		4100	*2300		*2300	
-1.5 m	Rear dozer up	16 400		9800	8200		5300	5200		3500	3500		2200	*2600		2000	8.19
	Rear dozer down		*17 700	11 400		*11 000	6100		*7900	3900		*5400	2600		*2600	2300	
	Rear stab down		*17 700	14 800		*11 000	7500		*7900	4700		5400	3200		*2600	*2600	
	2 sets stab down	*17 700		*17 700	*11 000		*11 000	*7900		7200	*5400		4900	*2600		*2600	
	Dozer and stab down	*17 700		*17 700	*11 000		9500	*7900		5900	*5400		4000	*2600		*2600	
-3.0 m	Rear dozer up	16 600		9700	8100		5200	5000		3200							
	Rear dozer down		*18 300	11 400		*11 400	5900		*7200	3700							
	Rear stab down		*18 300	14 700		*11 400	7400		*7200	4500							
	2 sets stab down	*18 300		*18 300	*11 400		*11 400	*7200		7000							
	Dozer and stab down	*18 300		*18 300	*11 400		9300	*7200		5700							
-4.5 m	Rear dozer up	*14 900		9700													
	Rear dozer down		*14 900	11 400													
	Rear stab down		*14 900	14 700													
	2 sets stab down	*14 900		*14 900													
	Dozer and stab down	*14 900		*14 900													

Stick
2900 mm

	Undercarriage configuration	3.0 m			4.5 m			6.0 m			7.5 m						m
6.0 m	Rear dozer up							*5300		4000	*3600		2600				
	Rear dozer down								*5300	4500		*3600	2900				
	Rear stab down								*5300	*5300		*3600	3600				
	2 sets stab down							*5300		*5300	*3600		*3600				
	Dozer and stab down							*5300		*5300	*3600		*3600				
4.5 m	Rear dozer up				*6200		6100	5600		3900	3900		2600				
	Rear dozer down					*6200	*6200		*5800	4400		*5200	3000				
	Rear stab down					*6200	*6200		*5800	5200		*5200	3600				
	2 sets stab down				*6200		*6200	*5800		*5800	*5200		*5200				
	Dozer and stab down				*6200		*6200	*5800		*5800	*5200		4400				
3.0 m	Rear dozer up	*11 000		10 700	8400		5700	5500		3800	3900		2600	*1800		1700	9.23
	Rear dozer down		*11 000	*11 000		*8600	6500		*6600	4300		*5500	3000		*1800	*1800	
	Rear stab down		*11 000	*11 000		*8600	7800		*6600	5100		*5500	3600		*1800	*1800	
	2 sets stab down	*11 000		*11 000	*8600		*8600	*6600		*6600	*5500		5200	*1800		*1800	
	Dozer and stab down	*11 000		*11 000	*8600		*8600	*6600		6100	*5500		4400	*1800		*1800	
1.5 m	Rear dozer up	*12 400		10 300	8200		5500	5400		3700	3800		2500	*1800		1600	9.31
	Rear dozer down		*12 400	11 700		*10 200	6300		*7300	4200		*5800	2900		*1800	*1800	
	Rear stab down		*12 400	*12 400		*10 200	7600		*7300	5000		*5600	3500		*1800	*1800	
	2 sets stab down	*12 400		*12 400	*10 200		*10 200	*7300		7100	*5800		5100	*1800		*1800	
	Dozer and stab down	*12 400		*12 400	*10 200		*9200	*7300		*6000	*5800		4300	*1800		*1800	
0 m	Rear dozer up	*14 200		10 300	*8200		5600	*5400		3700	3700		2400	*2000		1600	9.11
	Rear dozer down		*14 200	11 600		*10 800	6400		*7700	4100		*6000	2700		*2000	1900	
	Rear stab down		*14 200	*14 200		*10 800	7500		*7700	5000		5600	3400		*2000	*2000	
	2 sets stab down	*14 200		*14 200	*10 800		*10 800	*7700		*7100	*6000		5000	*2000		*2000	
	Dozer and stab down	*14 200		*14 200	*10 800		9200	*7700		6000	*6000		4200	*2000		*2000	
-1.5 m	Rear dozer up	*16 300		9800	8200		5300	5300		3500	3500		2300	*2200		1800	8.62
	Rear dozer down		*17 300	11 400		*10 900	6100		*7800	4000		*5900	2600		*2200	2100	
	Rear stab down		*17 300	14 800		*10 900	7500		*7800	4900		5400	3200		*2200	*2200	
	2 sets stab down	*17 300		*17 300	*10 900		*10 900	*7800		7200	*5900		4900	*2200		*2200	
	Dozer and stab down	*17 300		*17 300	*10 900		9300	*7800		6000	*5900		4000	*2200		*2200	
-3.0 m	Rear dozer up	16 500		9600	8100		5200	5000		3200				*2600		2100	7.76
	Rear dozer down		*18 000	11 300		*11 200	6000		*7700	3700					*2600	2500	
	Rear stab down		*18 000	14 600		*11 200	7400		*7700	4600					*2600	*2600	
	2 sets stab down	*18 000		*18 000	*11 200		*11 200	*7700		7000				*2600		*2600	
	Dozer and stab down	*18 000		*18 000	*11 200		9400	*7700		5700				*2600		*2600	
-4.5 m	Rear dozer up	16 600		9800	7900		5000										
	Rear dozer down		*17 300	11 400		*9500	5800										
	Rear stab down		*17 300	14 800		*9500	7200										
	2 sets stab down	*17 300		*17 300	*9500		*9500										
	Dozer and stab down	*17 300		*17 300	*9500		9100										

For machines with offset boom deduct approx. 3% from the above loads.

Load Point Height Load Radius Over Front Load Radius Over Rear Load Radius Over Side Load at Maximum Reach

* Limited by hydraulic rather than tipping load.
The above loads are in compliance with hydraulic excavator lift capacity ratings standard ISO 10567, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all tools and lifting accessories must be deducted from the above lifting capacities.

Lift capacities

with 5650 mm One-piece boom, Quick Coupler CW and 4400 kg counterweight. All weights are in kg.

Stick
2200 mm

	Undercarriage configuration	3.0 m			4.5 m			6.0 m			7.5 m						m
6.0 m	Rear dozer up							5600		3800							
	Rear dozer down								*5900	4300							
	Rear stab down								*5900	5200							
	2 sets stab down							*5900		*5900							
	Dozer and stab down							*5900		*5900							
4.5 m	Rear dozer up							5500		3700	3800		2500				
	Rear dozer down								*6400	4200		*5600	2900				
	Rear stab down								*6400	5000		*5600	3500				
	2 sets stab down							*6400		*6400	*5600		5200				
	Dozer and stab down							*6400		6200	*5600		4300				
3.0 m	Rear dozer up				8100		5200	5200		3500	3700		2400	*2500		1900	8.79
	Rear dozer down					*9600	6000		*7100	3900		*5900	2800		*2500	2200	
	Rear stab down					*9600	7400		*7100	4800		5600	3400		*2500	*2500	
	2 sets stab down				*9600		*9600	*7100		*7100	*5900		5100	*2500		*2500	
	Dozer and stab down				*9600		9300	*7100		5900	*5900		4200	*2500		*2500	
1.5 m	Rear dozer up				7600		4800	5000		3200	3600		2300	*2500		1800	8.88
	Rear dozer down					*10 800	5500		*7700	3700		*6100	2700		*2500	2100	
	Rear stab down					*10 800	6900		*7700	4600		5500	3300		*2500	*2500	
	2 sets stab down				*10 800		*10 800	*7700		6900	*6100		4900	*2500		*2500	
	Dozer and stab down				*10 800		8800	*7700		5700	*6100		4100	*2500		*2500	
0 m	Rear dozer up				7400		4600	4800		3100	3500		2300	*2600		1900	8.67
	Rear dozer down					*10 900	5300		*7900	3600		*6100	2600		*2600	2100	
	Rear stab down					*10 900	6700		7700	4400		5400	3200		*2600	2600	
	2 sets stab down				*10 900		10 700	*7900		6800	*6100		4900	*2600		*2600	
	Dozer and stab down				*10 900		8500	*7900		5500	*6100		4000	*2600		*2600	
-1.5 m	Rear dozer up	*7400		*7400	7300		4600	4800		3100	3500		2300	*2900		2000	8.14
	Rear dozer down		*7400	*7400		*10 000	5300		*7500	3500		*5400	2600		*2900	2300	
	Rear stab down		*7400	*7400		*10 000	6700		*7500	4400		5400	3200		*2900	2900	
	2 sets stab down	*7400		*7400	*10 000		*10 000	*7500		6700	*5400		4800	*2900		*2900	
	Dozer and stab down	*7400		*7400	*10 000		8500	*7500		5500	*5400		4000	*2900		*2900	
-3.0 m	Rear dozer up	*10 700		8900	7400		4700	4800		3100				*3400		2500	7.22
	Rear dozer down		*10 700	10 500		*8300	5400		*6100	3600					*3400	2800	
	Rear stab down		*10 700	*10 700		*8300	6800		*6100	4400					*3400	*3400	
	2 sets stab down	*10 700		*10 700	*8300		*8300	*6100		*6100				*3400		*3400	
	Dozer and stab down	*10 700		*10 700	*8300		*8300	*6100		5600				*3400		*3400	

Stick
2500 mm

	Undercarriage configuration	3.0 m			4.5 m			6.0 m			7.5 m						m
4.5 m	Rear dozer up							5500		3700	3800		2500				
	Rear dozer down								*6100	4200		*5400	2900				
	Rear stab down								*6100	5100		*5400	3500				
	2 sets stab down							*6100		*6100	*5400		5200				
	Dozer and stab down							*6100		*6100	*5400		4300				
3.0 m	Rear dozer up				8200		5300	5200		3500	3700		2400	*2200		1800	9.01
	Rear dozer down					*9300	6100		*6900	4000		*5700	2800		*2200	2100	
	Rear stab down					*9300	7500		*6900	4800		5600	3400		*2200	*2200	
	2 sets stab down				*9300		*9300	*6900		*6900	*5700		5100	*2200		*2200	
	Dozer and stab down				*9300		*9300	*6900		6000	*5700		4200	*2200		*2200	
1.5 m	Rear dozer up				7600		4800	5000		3200	3600		2300	*2300		1700	9.09
	Rear dozer down					*10 600	5600		*7600	3700		*6000	2700		*2300	2000	
	Rear stab down					*10 600	6900		*7600	4600		5500	3300		*2300	*2300	
	2 sets stab down				*10 600		*10 600	*7600		6900	*6000		4900	*2300		*2300	
	Dozer and stab down				*10 600		8800	*7600		5700	*6000		4100	*2300		*2300	
0 m	Rear dozer up				7400		4600	4800		3100	3500		2200	*2400		1800	8.89
	Rear dozer down					*10 900	5300		*7900	3500		6100	2600		*2400	2000	
	Rear stab down					*10 900	6700		7600	4400		5400	3200		*2400	*2400	
	2 sets stab down				*10 900		10 700	*7900		6800	*6100		4800	*2400		*2400	
	Dozer and stab down				*10 900		8500	*7900		5500	*6100		4000	*2400		*2400	
-1.5 m	Rear dozer up	*8500		*8500	7300		4500	4700		3000	3500		2200	*2700		1900	8.38
	Rear dozer down		*8500	*8500		*10 300	5300		*7600	3500		*5700	2500		*2700	2200	
	Rear stab down		*8500	*8500		*10 300	6600		7600	4300		5300	3200		*2700	2700	
	2 sets stab down	*8500		*8500	*10 300		*10 300	*7600		6700	*5700		4800	*2700		*2700	
	Dozer and stab down	*8500		*8500	*10 300		8500	*7600		5500	*5700		4000	*2700		*2700	
-3.0 m	Rear dozer up	*11 600		8800	4800		3100	4800		3100				*3300		2300	7.49
	Rear dozer down		*11 600	10 300		*6500	3500		*6500	3500					*3300	2600	
	Rear stab down		*11 600	*11 600		*6500	4400		*6500	4400					*3300	3300	
	2 sets stab down	*11 600		*11 600	*6500		*6500	*6500		*6500				*3300		*3300	
	Dozer and stab down	*11 600		*11 600	*6500		5500	*6500		5500				*3300		*3300	
-4.5 m	Rear dozer up				*5900		4800										
	Rear dozer down					*5900	5600										
	Rear stab down					*5900	*5900										
	2 sets stab down				*5900		*5900										
	Dozer and stab down				*5900		*5900										

Stick
2900 mm

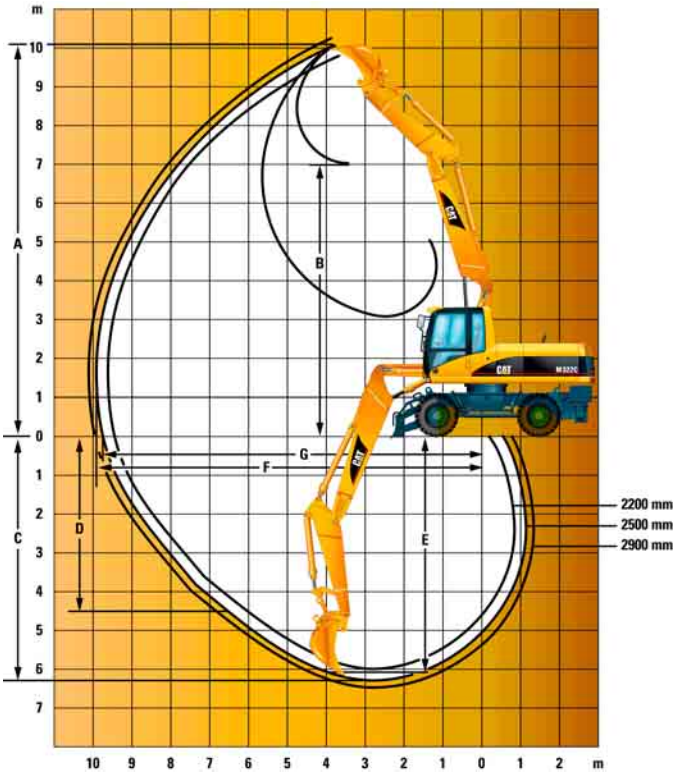
	Undercarriage configuration	3.0 m			4.5 m			6.0 m			7.5 m			9.0 m						m
6.0 m	Rear dozer up										3900		2600							
	Rear dozer down											*4000	2900							
	Rear stab down											*4000	3600							
	2 sets stab down										*4000		*4000							
	Dozer and stab down										*4000		*4000							
4.5 m	Rear dozer up							5500		3800	3800		2600							
	Rear dozer down								*5800	4200		*5200	2900							
	Rear stab down								*5800	5100		*5200	3500							
	2 sets stab down							*5800		*5800	*5200		*5200							
	Dozer and stab down							*5800		*5800	*5200		4300							
3.0 m	Rear dozer up				8300		5400	5300		3500	3700		2400				*1800		1700	9.40
	Rear dozer down					*8700	6200		*6600	4000		*5500	2800					*1800	*1800	
	Rear stab down					*8700	7600		*6600	4800		*5500	3400					*1800	*1800	
	2 sets stab down				*8700		*8700	*6600		*6600	*5500		5100				*1800		*1800	
	Dozer and stab down				*8700		*8700	*6600		6000	*5500		4200				*1800		*1800	
1.5 m	Rear dozer up				7700		4900	5000		3200	3600		2300	*2300		1700	*1900		1600	9.48
	Rear dozer down					*10 300	5600		*7300	3700		*5900	2600		*2300	1900		*1900	1800	
	Rear stab down					*10 300	7000		*7300	4600		5500	3300		*2300	*2300		*1900	*1900	
	2 sets stab down				*10 300		*10 300	*7300		7000	*5900		4900	*2300		*2300	*1900		*1900	
	Dozer and stab down				*10 300		8900	*7300		5700	*5900		4100	*2300		*2300	*1900		*1900	
0 m	Rear dozer up				7300		4600	4800		3100	3400		2200				*2000		1600	9.28
	Rear dozer down					*10 800	5300		*7800	3500		*6000	2500					*2000	1900	
	Rear stab down					*10 800	6700		7600	4400		5300	3200					*2000	*2000	
	2 sets stab down				*10 800		10 700	*7800		6700	*6000		4800				*2000		*2000	
	Dozer and stab down				*10 800		8500	*7800		5500	*6000		400				*2000		*2000	
-1.5 m	Rear dozer up				7200		4500	4700		3000	3400		2200				*2300		1700	8.80
	Rear dozer down					*10 500	5200		*7600	3400		*5800	2500					*2300	2000	
	Rear stab down					*10 500	6500		7500	4300		5300	3100					*2300	*2300	
	2 sets stab down				*10 500		*10 500	*7600		6600	*5800		4700				*2300		*2300	
	Dozer and stab down				*10 500		8400	*7600		5400	*5800		3900				*2300		*2300	
-3.0 m	Rear dozer up	*12 800		6800	7300		4500	4700		3000	3400		2200				*2800		2100	7.96
	Rear dozer down		*12 800	10 100		*9200	5200		*6800	3400		*4100	2500					*2800	2400	
	Rear stab down		*12 800	*12 800		*9200	6600		6800	4300		*4100	3100					*2800	*2800	
	2 sets stab down	*12 800		*12 800	*9200		*9200	*6800		6600	*4100		*4100				*2800		*2800	
	Dozer and stab down	*12 800		*12 800	*9200		8500	*6800		5400	*4100		4000				*2800		*2800	
-4.5 m	Rear dozer up	*9100		8900	*6800		4700	*4500		3100										
	Rear dozer down		*9100	*9100		*6800	5400		*4500	3600										
	Rear stab down		*9100	*9100		*6800	6800		*4500	4400										
	2 sets stab down	*9100		*9100	*6800		*6800	*4500		*4500										
	Dozer and stab down	*9100		*9100	*6800		*6800	*4500		*4500										

Load Point Height | Load Radius Over Front | Load Radius Over Rear | Load Radius Over Side | Load at Maximum Reach

* Limited by hydraulic rather than tipping load.
The above loads are in compliance with hydraulic excavator lift capacity ratings standard ISO 10567, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity. Weight of all tools and lifting accessories must be deducted from the above lifting capacities.

VA Boom Working Ranges

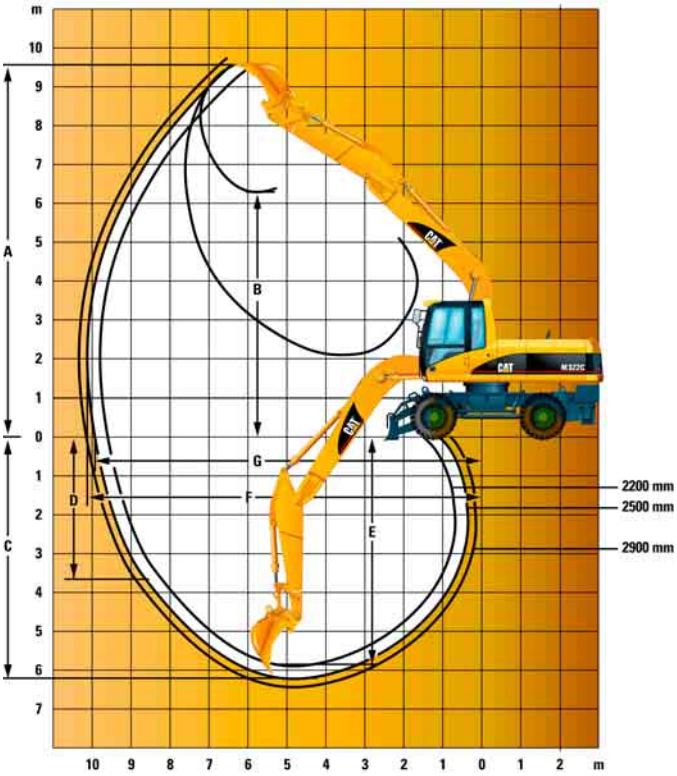
5440 mm Variable adjustable boom, quick coupler and bucket.



Stick Length	mm	2200	2500	2900
A Maximum Digging Height	mm	10 380	10 410	10 710
B Maximum Dump Height	mm	6970	7000	7300
C Maximum Digging Depth	mm	5980	6280	6680
D Maximum Vertical Wall Digging Depth	mm	4430	4470	4830
E Maximum Depth 2500 mm Straight Clean-up	mm	5775	6090	6507
F Maximum Reach	mm	9710	9940	10 330
G Maximum Reach at Ground Level	mm	9530	9760	10 160
Tip Radius	mm	1712	1712	1712
Bucket Forces (ISO 6015)	kN	131	131	131
Stick Forces (ISO 6015)	kN	115	106	97

One-piece Boom Working Ranges

5650 mm One-piece boom, quick coupler and bucket.



Stick Length	mm	2200	2500	2900
A Maximum Digging Height	mm	9670	9540	9760
B Maximum Dump Height	mm	6300	6230	6450
C Maximum Digging Depth	mm	5770	6070	6470
D Maximum Vertical Wall Digging Depth	mm	4480	4780	5160
E Maximum Depth 2500 mm Straight Clean-up	mm	5565	5580	6297
F Maximum Reach	mm	9890	10 100	10 490
G Maximum Reach at Ground Level	mm	9720	9930	10 320
Tip Radius	mm	1712	1712	1712
Bucket Forces (ISO 6015)	kN	131	131	131
Stick Forces (ISO 6015)	kN	115	106	97

Standard Equipment

Standard equipment may vary. Consult your Caterpillar dealer for specifics.

Operator Station
Ashtray with cigarette lighter
Air conditioner with automatic climate control
Bolt-on FOGS capability
Bottom mounted parallel wiper and washer
Coat hook
Drink holder
Filtered ventilation
Floormat, washable
Fully adjustable suspension seat
Heater and defroster
Joysticks, adjustable
LH console, tiltable
Light, interior
Literature holder
Low fuel indicator light
Openable two-piece front windscreen
Parking brake
Pre-wired radio mounting
Polycarbonate skylight
Power supply 12V – 7A
Retractable seat belt
Steering column, tiltable
Storage compartment suitable for a lunch box
Sunscreen

Language display WEX Multipro
Clock with 10-day backup battery
Filter / fluid change information
Gauges for fuel level, engine coolant temperature and hydraulic oil temperature
Headlights indicator
Indicator for engine dial setting
Pre-start level check for hydraulic oil and engine coolant
Turn signal indicator
Warning messages
Working hour information

Engine
Automatic engine speed control
Automatic starting aid
Cat 3056E DIT ATAAC Stage II engine, turbocharged with air-to-air aftercooler
Muffler

Undercarriage
11.00-20 16 PR tires
HD-axles, with advanced disc brake system and advanced travel motor with adjustable braking force
Oscillating front axle with remote greasing
Pin-on design preparation for dozer blade and outriggers
Toolbox in undercarriage
Two-piece drive shaft
Upper carriage storage box

Hydraulics
Cat XT-6 ES hoses
Load-sensing plus hydraulic system
Manual work modes (economy, power, travel)
Oil cooler
Overload warning device
Separate swing pump
Stick regeneration circuit

Electrical
Alternator, 75A
Boom working light
Heavy-duty maintenance-free batteries
Horn
Main shut-off switch
Roading lights

Other equipment
Automatic swing brake
Door locks and caps locks with Caterpillar one-key security system
Lockable Tool Box in upper frame
Mirrors, frame and cab

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for specifics.

Operator Station
Falling objects guard
Fixed cab riser (1200 mm)
Fixed one-piece front windscreen
Headrest
Lid for storage compartment
Travel speed lock
Vandalism guard
Visor, rain protection, polycarbonate
WEX comfort seat with seat heating and air suspension

Electrical
Back-up alarm
Refueling pump
Rotating beacon
Working lights, cab mounted (front and rear)

Booms and Sticks
Hydraulically adjustable boom (5440 mm)
One-piece-boom (5650 mm)
Sticks:
2200 mm, 2500 mm, 2900 mm

Undercarriage
Dozer blade, front or rear mounted
Optional tires
Outriggers, front or rear mounted
Remote dozer blade greasing
Second storage box for undercarriage
Wide dozer blade, front or rear mounted

Hydraulics
Control group for quick coupler
Generator valve with priority function
Hammer valve
Hydraulic lines for quick coupler – boom and stick
Lowering control devices for boom and stick
Multifunction valve, provides up to 5 programmed tools and tool selection from the cab (including hammer function)
Proportional medium pressure function
Synthetic ester based biodegradable hydraulic oil

Other equipment
Adjustable hydraulic sensitivity
Cat Machine Security System (MSS)
Counterweight 4400 kg
Custom paint
Joystick steering

M322C Wheel Excavator

HEHH2840-2 (01/2005) hr

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