

IT38H

Integrated
Toolcarrier

CAT[®]



Engine

Engine Model	Cat [®] 6.6 ACERT [™]	
Gross Power – SAE J1995	147 kW	197 hp
Net Power – ISO 9249	134 kW	180 hp

- Caterpillar[®] engine with ACERT[™] Technology – EPA Tier 3, EU Stage III Compliant.

Buckets

Bucket Capacities	2.3 – 3.0 m ³	3.0 – 4.0 yd ³
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Weights

Operating Weight	16 004 kg	35,273 lb
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- For 2.5 m³ (3.30 yd³) material handling bucket with standard 20.5-R25 tires.

Operating Specifications

Static Tipping Load, Full Turn	9362 kg	20,633 lb
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- For 2.5 m³ (3.30 yd³) material handling bucket with standard 20.5-R25 tires.

IT38H Integrated Toolcarrier

Setting the standard for wheel loader productivity, durability, versatility and comfort.

Reliability

- Proven Components and Technology
- Diagnostic Systems Monitor Product Health to Ensure Reliability
- Unmatched Parts Availability and Dealer Support **pg. 4**

Durability

- ✓ • ACERT™ Technology Maintains Performance, Efficiency and Durability While Meeting Emissions Regulations
- Heavy Duty Components Stand Up to All Operating Conditions
- Strong, Solid Structures Built to Last **pg. 6**

Productivity

- ✓ • Improved Cycle Times with Load-Sensing Hydraulic System
- ✓ • Locking Differentials Provide Superior Tractive Effort in Poor Underfoot Conditions
- Constant Net Horsepower through the Operating Range **pg. 8**

Operator Comfort

- ✓ • Easy Entry and Exit
- Excellent Visibility
- ✓ • Adjustable Machine Parameters to Match Operator Preference **pg. 14**



Versatility

- Special Machine Arrangements for Unique Applications
- Large Variety of Cat® Work Tools **pg. 9**

Owning and Operating Costs

- Superior Maintenance
- Electronic Systems Monitor Product Health and Performance
- Complete Dealer Support **pg. 10**

Serviceability

- ✓ • Service Centers for Convenient Maintenance
- Exceptional Ground-Level Access to Service Points
- Monitoring Systems and Dealer Support Reduce Unexpected Downtime **pg. 12**



✓ *New Feature*

Reliability

The Cat IT38H – Tested and Proven – Ready to Work

- Validated components and technology
- Electronic systems monitor vital machine components
- Excellent uptime from the best dealer support network in the industry
- Unmatched genuine Cat parts availability



Proven Reliability. The IT38H features many of the components designed and proven in various Caterpillar products – all contribute to the reliability of the IT38H:

- Frames
- Axles
- Countershaft powershift transmission
- Individual component cooling system
- Cab



ACERT™ Technology. Since March 2003, ACERT Technology has been proving itself in on-highway trucks. More recently it has proven itself again in field tests of off-highway equipment.

This technology allows Cat engines to meet durability and reliability expectations without sacrificing performance.



Caterpillar Designed Components.

Components used to build Cat Wheel Loaders are designed and manufactured to Caterpillar quality standards to ensure maximum performance even in extreme operating conditions.

Engine electronic control modules and sensors are completely sealed against moisture and dust. Deutsche connectors and electrical wire braiding ensure that electrical connections resist corrosion and premature wear.

Hoses are engineered and manufactured for high resistance to abrasion, excellent flexibility and easy installation and replacement.

Caterpillar® couplings use o-ring face seals to provide positive sealing for durable leak-free connections.

Heavy duty components reduce the risk of leaks, corrosion and premature wear, increasing uptime and helping to protect the environment.

Monitoring Programs. Monitoring product health is key to maintaining reliability of any equipment. Many programs are available on the IT38H to help you track machine health.

Caterpillar Messenger Display.

The IT38H is equipped with the Caterpillar Messenger Display that keeps watch over the health of your loader while providing real-time diagnostic feedback. In the event of a system malfunction, Messenger will provide the operator with a description of the occurrence, and if serious enough, sound an audible alarm in addition to a flashing indicator light.

Product Link. Standard equipment on the IT38H, this state-of-the-art satellite technology enables Caterpillar dealers and customers to keep in touch with their machines. The system provides a two-way information flow between machine on-board systems and Caterpillar dealers/customers via the Cat Dealer Website and EquipmentManager.

EquipmentManager. EquipmentManager is a web-based application that uses key indicators from your equipment such as hours, location and diagnostic codes and combines it with powerful tools like mapping, maintenance and repair scheduling, and troubleshooting instructions. This application enables quick identification of actions required to maximize your equipment uptime and control owning and operating costs.

S-O-SSM Services. Keep minor repairs from becoming major ones and avoid complete failures. By regularly taking samples from the ports provided, your Cat dealer tracks wear of components and parts, oil performance, and oil condition and uses that data to predict wear-related problems before they happen. Often a simple adjustment or replacement of a part, based on S-O-SSM reports, can keep a small problem from turning into a major repair – allowing your machine to be running when you need it, not waiting in the shop for service.



Dealer Support. The Caterpillar global network of independently-owned dealers is the best in the world at providing support to keep your loader up and running. Known for parts availability and technical expertise, Cat dealers are partners in your business.



Service Capabilities. Cat field service technicians have the experience and tools necessary to service your loader on site. Field service trucks are fully loaded with state-of-the-art tools and diagnostic equipment as well as specifications and schematics for every Cat machine. Technical experts at the dealership and Caterpillar are available to provide assistance to field service technicians when needed.

When on-site repair isn't enough, Cat dealerships are fully-equipped to service your loader quickly.

Parts Availability. Caterpillar provides an unsurpassed level of personalized service for your wheel loader. With parts distribution centers throughout the world, most parts can be delivered in 24 hours.

Remanufactured Parts. Cat engines and major components are designed to be remanufactured and provide multiple life cycles. The Cat Reman program is more extensive than most rebuild programs. Components are actually remanufactured in the factory to original specifications with necessary product updates.

Strict reuse guidelines and unparalleled quality control ensure that reman products provide the reliability and durability that you expect from Caterpillar. Reman products are stocked in distribution centers around the world and are ready to install to minimize downtime, maintain productivity and profitability.

Durability

Built Strong and Tough

- ACERT™ Technology maintains engine performance, efficiency and durability while reducing emissions
- Heavy duty components withstand all operating conditions
- Strong, solid structures are built to last



Cat C6.6 ACERT. The Cat C6.6 is a 6.6 L (403 in³) displacement, in-line six cylinder engine. The C6.6 utilizes ACERT Technology, a series of Caterpillar engineered innovations that provides advanced electronic control, precise fuel delivery and refined air management, resulting in outstanding performance and lower emissions.

The C6.6 with ACERT Technology offers a compact design with big, heavy duty engine features for outstanding durability, reliability and performance. The C6.6 incorporates a new cross flow cylinder head design, 4 valve head and an ADEM™ A4 electronic controller. The C6.6 also features a proven cylinder block, pistons and crankshaft.

Electronic Control ADEM™ A4.

The Advanced Diesel Engine Management – Electronic Control Module consistently monitors important engine conditions and functions. It uses sensors throughout the engine to regulate fuel delivery and all other engine systems that require input to manage load and performance. The ADEM A4 controller is the brain behind engine responsiveness, self-diagnosis, controlling emissions and fuel economy.

Air Management. Air management is a key concept in optimizing engine performance and controlling emissions. Engines must breathe clean cool air in order to perform. To aid this, the C6.6 uses a turbocharger fitted with a smart waste gate to give precise and reliable control of the boost pressure. A new cross-flow design in the cylinder head facilitates air movement, while tighter tolerances between the piston and cylinder wall reduce blow by gases.

Fuel System. Through multiple injection fuel delivery, fuel is introduced in the combustion chamber in a number of precisely controlled microbursts. Injecting fuel in this way allows for precise shaping of the combustion cycle while reducing engine sound levels

Fuel Pump. The C6.6 uses an oil-lubricated high-pressure fuel pump to feed a common fuel rail. By using an oil-lubricated fuel pump, the C6.6 has been designed to be more tolerant of alternative fuels.

Fuel Priming Pump. An electrical fuel priming pump is located between the fuel tank and the combined water separator/primary fuel filter. The electric priming pump eliminates the need to pre-fill or manually prime filters after a change, thus reducing contamination and improving injector life.

Engine Idle Management. The Engine Idle Management System (EIMS) maximizes fuel efficiency and provides flexibility in managing idle speeds for specific application requirements. Four idle control speeds are available.



Powershift Transmission. The IT38H continues to use powershift transmission technology proven on previous series. The countershaft powershift transmission features heavy-duty components to handle the toughest applications. Built-in electronic controls enhance productivity and durability.

Control Throttle Shifting. Control Throttle Shifting regulates engine speed during high-energy directional and gear changes for smoother shifting and longer component life.

Electronic Clutch Pressure Control.

Electronic Clutch Pressure Control (ECPC) system modulates clutches individually to improve shift quality, component life and operator comfort. Adjustment is simplified with all solenoid valves externally mounted on top of the transmission housing.

Axles. The IT38H axles are designed by Caterpillar for durability in all operating conditions. The front axle is rigidly mounted to the frame to support the weight of the wheel loader and withstand internal torque loads as well as external forces encountered throughout operation.

The rear axle is designed to allow $\pm 12^\circ$ oscillation. All four wheels remain on the ground over uneven terrain providing excellent stability and traction.



Integrated Braking System. The Cat exclusive Integrated Braking System reduces axle oil temperatures and improves transmission neutralizer smoothness. IBS has a direct impact on durability of the axles and brakes especially in applications involving long distances and/or heavy braking.

Radiator. Brazed aluminum construction provides a stronger joint for maximum durability and resistance to leaks. The 6-fins-per-inch design decreases the chance of blockage and plugging.

Structures. The articulated frame design of the IT38H features a durable plate engine frame and four plate loader tower that is robotically welded. Robotic welding creates frame joints with deep plate penetration welds and excellent fusion for maximum strength and durability.

Engine End Frame (EEF). The IT38H uses a proven solid plate engine end frame which provides a strong, rigid structure that resists twisting and evenly distributes impact loads. The result is an extremely solid mounting platform for the engine, transmission, axle, ROPS and other accessories.

Hitch. The distance between the upper and lower hitch plates is an important contributor to machine performance and component life. The Caterpillar hitch design provides excellent load distribution and bearing life. Both the upper and lower hitch pins pivot on double tapered roller bearings – improving durability by distributing both vertical and horizontal loads over a larger surface area. The wide opening also provides excellent service access.

Non-Engine End Frame (NEEF).

The non-engine end frame provides a solid mounting base for the front axle, lift arms and lift cylinders. The fabricated, four-plate loader tower absorbs the forces associated with loading, twisting and material handling.



Counterweight. The one-piece counterweight is integrated into the IT38H design and provides added protection for the lights by incorporating them into the top of the structure.

8-Bar Linkage. This linkage provides parallel lift to keep the load level throughout the lift cycle – particularly important when using forks. Parallel lift allows the operator to concentrate on placing the load, instead of retaining it. Visibility to the work tool is excellent.

Productivity

Work Smart and Move More

- Hydraulics are easy to control with low effort
- Differential locks provide maximum traction in varying underfoot conditions
- Constant net horsepower across various applications
- Standard and optional features that maximize productivity



Load Sensing Hydraulics. The IT38H features a load sensing hydraulic system that supplies flow and pressure for the implements only upon demand, and only in the amounts necessary to perform the needed work thus providing a more efficient loader.

With the new S3PC Priority Proportional Pressure Compensation Valve, implement control is improved over the previous system – raise/lower and rack back/dump can be operated simultaneously.

Operators will notice enhanced ease of operation, more rimpull into the pile as well as an increase in lift force.



New! Differential Lock. Maximize productivity with the new hydraulic locking front differential. This standard feature provides operators with the confidence to maneuver through poor underfoot conditions with ‘on the fly’ engagement.

A Caterpillar exclusive, the optional automatic front/rear locking differential collects input from sensors throughout the loader and adapts tractive effort to meet operating requirements.

Constant Net Horsepower. On many competitive machines, gross horsepower is constant, meaning that net engine power available for actual work will vary based on demands made from parasitic sources, such as air conditioning or cooling fans.

The Cat C6.6 engine is electronically configured to provide constant net horsepower at full parasitic load enhancing productivity and improving fuel efficiency.

On-Demand Fan. With electronic control of the variable speed on-demand fan, temperature levels of the engine coolant, transmission oil, hydraulic oil and air inlet manifold are constantly monitored. This data is used to control and maintain fan speed at the level necessary to maintain normal system temperatures. Controlled fan speed improves fuel efficiency, lowers noise levels and reduces radiator plugging.

Isolated Cooling System. The IT38H cooling system is isolated from the engine compartment by a non-metallic shield. The hydraulically driven, variable speed fan draws in clean air from the rear of the machine and exhausts it out the sides and top of the hood. The end results are optimal cooling efficiency, increased fuel efficiency, less radiator plugging and reduced operator sound levels.



Countershaft Powershift Transmission. The electronic countershaft powershift transmission with automatic shift capability is designed and built by Caterpillar. The very responsive, full-power speed and directional changes provide excellent cycle times and productivity.

Fuel Economy Mode. Match transmission shifting patterns to machine application requirements. The Fuel Economy Mode (within Messenger) provides operators with the ability to choose between three different shift modes in order to maximize shift quality and fuel efficiency.



Ride Control. The optional Ride Control System improves ride, performance and load retention when traveling over rough terrain. Operators gain confidence moving at higher speeds in load and carry operations decreasing cycle times and increasing productivity.

Versatility

Built for Your Operation

- A variety of buckets and work tools for many applications



Work Tools and Quick Couplers.

A variety of buckets and work tools are available from the factory or from your Caterpillar dealer to customize the IT38H for your operation.

Quick Couplers. Quick Couplers provide unmatched versatility for wheel loaders. The hydraulic model allows an operator to change attachments in seconds without leaving the cab.

Material Handling Buckets. The Material Handling Bucket is a flat-floor bucket used for handling stockpiled materials such as aggregates or other easy-to-load materials requiring moderate breakout force.

Coal Buckets. Coal Buckets maximize productivity in loading and stockpiling coal and other materials of similar density.

Waste Buckets. Waste Buckets are designed for long life in the harsh world of refuse applications. This high-capacity bucket is well-suited for loading, sorting and other transfer station work.

Woodchip and Clean-Up Buckets.

Woodchip and Clean-up Buckets are available for forestry and millyard applications.

Multi-Purpose Buckets. Multi-Purpose Buckets have a unique four-way action that can load, strip topsoil, bulldoze, clamp pipe or large chunks of concrete, clean up debris, and many other tasks.

Side Dump Buckets.

Side Dump Buckets dump both to the front and to the side of the machine, an advantage when working in tight quarters, such as street work, tunnel construction and building levees.

Angle Blades. Angle Blades allow the IT38H to sidecast soil, plow snow, pioneer roads and move debris as well as rocks.

Angle Brooms. Angle Brooms are ideal for clearing debris from parking lots, industrial plants, millyards and streets.

Special Application Brooms. Special Application Brooms are built to handle tough sweeping situations found in sewer and pipeline applications.

Snow Removal. Quick Reversing Action Plows are ideal for clearing snow on roads, airports runways and large parking lots. V-plows penetrate drifts and throw snow both directions to quickly clear a path through heavy accumulations.



Forks. Logging, Millyard and Pallet Forks are available for forestry and material handling applications.

Loader Rakes. Loader Rakes are durable, high-capacity tools for land clearing and site clean up. Rakes are available with or without top clamps.

Material Handling Arms. Material Handling Arms move pipe, concrete blocks, highway dividers and other construction materials quickly and precisely.

Ground Engaging Tools (GET).

Several GET options are available from Caterpillar for IT38H buckets. Reversible bolt on cutting edges (BOCE) as well as bolt on teeth and segments provide maximum performance in various materials.

Owning and Operating Costs

The IT38H – Best Value for Your Operation

- Sight gauges, grouped maintenance points, easy engine access, ecology drains, maintenance-free batteries – all simplify daily maintenance
- Electronic monitoring systems track product health to avoid unscheduled costly repairs
- Unsurpassed parts availability reduces downtime
- Excellent resale value provided by genuine Cat quality, outstanding dealer service and unmatched dealer support programs
- Caterpillar Financial Services and Cat dealers understand your business

Engine Idle Management System.

The Engine Idle Management System (EIMS) maximizes fuel efficiency and provides flexibility in managing idle speeds for specific application requirements. Four idle control speeds are available.

Hibernate Mode. Idle speed drops after a preset time to provide lower fuel consumption, reduced sound levels and lower emissions.

Work Mode. Adjustable working idle speeds according to customer preference and operating conditions.

Warm-Up Mode. Keep the engine at a consistent temperature in cold conditions.

Low Voltage Mode. Prevent battery drain due to high electrical loads from attachments and accessories.

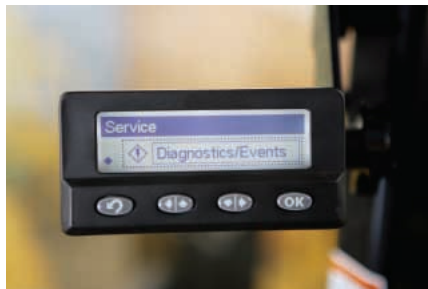
Maintenance. Proper maintenance of your wheel loader can help control expenses and lower your owning and operating costs. The IT38H provides unmatched serviceability by offering:

- Hydraulic service center
- Electric service center
- Airborne debris-resistant, swing-out grill provides more efficient airflow
- Well-protected, easily visible sight gauges

- Ground level maintenance points
- Easy access to engine compartment
- Ecology drains for simple and clean fluid drainage
- Brake wear indicators for ease of inspection
- Maintenance-free batteries
- Extended oil and filter change intervals



Monitoring Systems. Monitoring product health simplifies maintenance planning and reduces costs.



Messenger. Messenger offers the comfort of providing real-time, visual feedback on engine and machine operating conditions. It displays information on diagnostic codes, maintenance and system parameters.

Product Link. With Product Link customers and dealers can remotely obtain machine diagnostics. The system provides updates on service meter hours, machine health and equipment location.

EquipmentManager. EquipmentManager uses key indicators from equipment such as hours, location and diagnostic codes and combines them with powerful tools like mapping, maintenance and repair scheduling as well as troubleshooting instructions. This application enables quick identification of actions required to maximize equipment uptime and control owning and operation costs.

Machine Security System. Stolen equipment equates to lost production and increased costs. Eliminate machine theft and unauthorized usage with the Cat Machine Security System (MSS). MSS is integrated into the machine's electronic system and can protect most brands of equipment by requiring a uniquely coded key to start the machine.

S•O•S Services. Managing component life and machine availability decreases downtime while improving your productivity and efficiency. S•O•S Services can help you do that. Regular fluid sampling is used to track what is going on inside the equipment. Wear-related problems are predictable and easily and quickly repairable. Maintenance can be done according to your schedule, resulting in increased uptime and flexibility in maintenance and repair before failure.



Parts Availability. Caterpillar provides an unsurpassed level of personalized service for your wheel loader. With parts distribution centers worldwide, most parts can be delivered in 24 hours. Easy access to parts reduces downtime.

Resale Value. Owning quality equipment is a very important factor in maintaining resale value. Cat not only supplies quality equipment but also provides product and dealer support to maintain the reliability and durability of your machine.

Customer Support Agreements.

A Customer Support Agreement (CSA) is any arrangement between you and your Cat dealer that helps you lower your total cost per unit of production. CSAs are flexible, allowing them to be tailored to your business. They can range from simple Preventive Maintenance Kits to sophisticated Total Cost Performance Guarantees. Having a CSA with your Cat dealer allows you more time to do what you do best – run your business.

Caterpillar Equipment Training Solutions.

A thorough understanding of machine systems and a high level of skill in operation helps achieve maximum efficiency and improves return on investment. Caterpillar Equipment Training Solutions programs help provide operators with high levels of proficiency and confidence. Contact your Cat Dealer for more information on Caterpillar Equipment Training Solutions programs.

Caterpillar Financial Services

Corporation. Cat Financial understands your business, your industry and the challenges you face. That's why they can provide payment plans to fit your unique needs – and to help you achieve your goals.

Serviceability

Easy to Maintain – Easy to Service

- Grouped service points and sight gauges for easy daily maintenance
- Convenient access to engine compartment for excellent serviceability
- Swing-out grill and cooling cores for easy cleaning
- Electronic systems to monitor product health

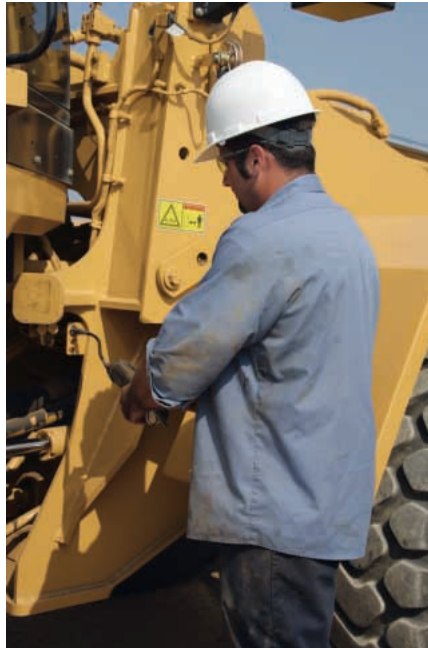


Hydraulic Service Center. Transmission and hydraulic oil filters are located in the Hydraulic Service Center, behind the hinged, right-side access ladder. The hydraulic oil tank can be drained from this location using the access port.



Electric Service Center. A lockable compartment located just below the left side access platform contains key electrical components such as the remote jump-start receptacle, battery disconnect switch, circuit breakers and hood actuation switch. The maintenance free batteries are conveniently located under the electric service center.

New! Multi-piece Axle. With the introduction of Caterpillar's new multi-piece axles, service brakes and final drives are located outboard and provide easy access when service is required.



Ground Level Grease Points.

Grease fittings are grouped throughout the machine thus facilitating easy lubrication of vital components.

S•O•S SERVICES. Sampling valves on the IT38H allow quick access to engine, transmission and hydraulic oils for S•O•S analysis. Oil change intervals and other services can be optimized according to your work schedule, reducing downtime and managing expenses.



Remote Pressure Taps. Pressure taps for key systems are grouped and centrally located throughout the machine and help facilitate quick diagnostics.

Brake Wear Indicators. Axles are equipped with standard brake wear indicators, allowing a technician to easily determine when it is necessary to service the brakes.

Sight Gauges. Well-protected, yet easily visible sight gauges for the transmission, hydraulic oil and radiator coolant allow easy daily checks while reducing the risk of contaminants entering the systems.



Engine Compartment Access. A single mechanical lift cylinder with manual back-up opens the hood. The tilting hood provides excellent access to the engine and cooling compartments and if necessary, the entire hood can be removed with the built-in lift points.



With the hood closed, quick checks of the engine oil level, coolant site gauge and air inlet indicator can be completed through the side service door.

Ecology Drains. Engine, transmission and hydraulic oils can be easily drained with standard-equipment ecology drains. An axle oil ecology drain is optional.

Electric Priming Pump. An electric fuel priming pump located on the primary fuel filter base eliminates the need to pre-fill or manually prime filters after a change, eliminating engine contamination.

Cooling System. Cooling system access for clean-out and maintenance is outstanding. The perforated and corrugated grill minimizes debris build-up and swings out for easy cleaning and access to the cooling cores.

The full-width air conditioning condenser and oil cooler cores swing out 45° to allow easy cleaning of the rear radiator face. An access panel located on the right side of the radiator support structure provides access to the front face of the radiator and ATAAC cores for easy cleaning.



Complete Customer Support. Cat field service technicians have the experience and tools necessary to service your loader on site. Technical experts at the dealership and Caterpillar can provide additional assistance to field service technicians as needed.

When on-site repair isn't enough, Cat dealerships are fully equipped to service your loader quickly.

Operator Comfort

Work Comfortably and Efficiently

- Comfortable operation
- Excellent visibility
- Easy entry and exit
- Low effort steering

Operating Environment. The IT38H provides operators with a comfortable operating environment with generous storage space and excellent visibility.



Seat. The durable seat adjusts 6-ways to accommodate all sized operators. The seat features an automotive style lumbar support for maximum comfort. The Cat C-500 Series Comfort air-suspension seat is optional as is a heated backrest and seat cushion.

Implement Pod. The newly restyled implement pod provides superior comfort through the full length adjustable armrest. Standard transmission F-N-R switch allows operators to keep their hand on the implement control levers while making directional shifts. An optional joystick with integrated F-N-R switch is available and replaces the lift and tilt levers.



Visibility. The IT38H offers excellent visibility to the front and rear of the machine. Distortion-free flat glass stretches to the floor of the cab for excellent visibility to the bucket. Wet-arm wipers on both front and back keep the windows clean in any condition.

Rear Vision Camera. An optional rear vision camera is available to clearly monitor movement behind the wheel loader.



Lighting Packages. In addition to the standard roading lights, optional lighting packages are available for low-light applications. Optional auxiliary halogen or High Intensity Discharge (HID) cab lights provide exceptional lighting for night work. A rotating beacon is available as a safety feature.

Entry and Exit. A ladder with aggressive tread pattern keeps debris build-up to a minimum. The ladder is at a 5° forward incline for easy entry and exit.

The main cab door opens a full 180° and latches in place to allow safe navigation to the rear of the machine.

The right side door opens 10°, or completely for secondary exit simply by pulling a pin. A full-length ladder on the right side facilitates safe exit if needed.

SAFETY.CAT.COM™.

Engine

Engine Model	Cat® 6.6 ACERT™	
Gross Power – SAE J1995	147 kW	197 hp
Net Power – ISO 9249	134 kW	180 hp
Net Power – SAE J1349	133 kW	178 hp
Net Power – 80/1269/EEC	134 kW	180 hp
Peak Torque (Net) @ 1,400 rpm	840 N·m	620 ft·lb
Total Torque Rise	38 %	
Bore	105 mm	4.1 in
Stroke	127 mm	5 in
Displacement	6.6 L	402.8 in ³

- Caterpillar engine with ACERT™ Technology – EPA Tier 3, EU Stage III Compliant.
- These ratings apply at 2,100 rpm when tested under the specified standard conditions.
- Rating for net power advertised based on power available when the engine is equipped with alternator, air cleaner, muffler and on-demand hydraulic fan drive at maximum fan speed.

Weights

Operating Weight	16 004 kg	35,273 lb
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- For 2.5 m³ (3.30 yd³) material handling bucket with standard 20.5-R25 tires.

Buckets

Bucket Capacities	2.3 – 3.0 m ³	3.0 – 4.0 yd ³
Maximum Bucket Capacity	3 m ³	4 yd ³

Operating Specifications

Static Tipping Load, Full Turn	9362 kg	20,633 lb
Breakout Force	126 kN	28,185 lb

- For 2.5 m³ (3.30 yd³) material handling bucket with standard 20.5-R25 tires.

Transmission

Forward 1	8.1 km/h	5 mph
Forward 2	14.6 km/h	9.1 mph
Forward 3	25.5 km/h	15.8 mph
Forward 4	43.2 km/h	26.8 mph
Reverse 1	8.1 km/h	5 mph
Reverse 2	14.6 km/h	9.1 mph
Reverse 3	25.5 km/h	15.8 mph

- Maximum travel speeds with empty bucket and 20.5-R25 tires.

Hydraulic System

Steering System Pump Type	Piston	
Hydraulic Cycle Time – Raise	5.0 seconds	
Hydraulic Cycle Time – Dump	2.0 seconds	
Hydraulic Cycle Time – Lower, Empty, Float Down	2.7 seconds	
Hydraulic Cycle Time – Total	9.7 seconds	
Pilot System – Pump Output	295 L/min	77.9 gal/min

- Implement System (Standard), Piston Pump – Rated at 2,100 rpm and 6900 kPa (1,000 psi).
- Cycle time with rated payload.

Brakes

Brakes	Meets required standards
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- Meet OSHA, SAE J1473 Oct90 and ISO 3450-1985 standards.

Axles

Front	Fixed front	
Rear	Oscillating ±12°	
Maximum Single-Wheel Rise and Fall	420 mm	17 in

Tires

Tires Choose from a variety of tires to match your application

- Choice of:
 - 20.5R25 XTLA L2 Radial
 - 20.5R25 XHA L3 Radial
 - 20.5R25 GP2B L3 Radial
 - 20.5R25 HRL L3 Radial
 - 20.5R25 RL-2+ L3 Radial
 - 650/65R-25 XLD L3 Radial (Low Profile)
 - 20.5-25 SRG LD L3 Bias (16 PLY)
 - 20.5-25 SRG LD L3 Bias (20 PLY)
 - 20.5-25 RM 99 L3 Bias
- NOTE: In certain applications (such as load and carry) the loader's productive capabilities might exceed the tires' tonnes-km/h (ton-mph) capabilities. Caterpillar recommends that you consult a tire supplier to evaluate all conditions before selecting a tire model. Other special tires are available on request.

Service Refill Capacities

Fuel Tank – Standard	247 L	65.3 gal
Cooling System	36 L	9.5 gal
Crankcase	17.4 L	4.6 gal
Transmission	43 L	11.4 gal
Differentials and Final Drives – Front	57 L	15.1 gal
Differentials and Final Drives – Rear	53 L	14 gal
Hydraulic Tank	89 L	23.5 gal

Cab

ROPS/FOPS Meets SAE and ISO standards

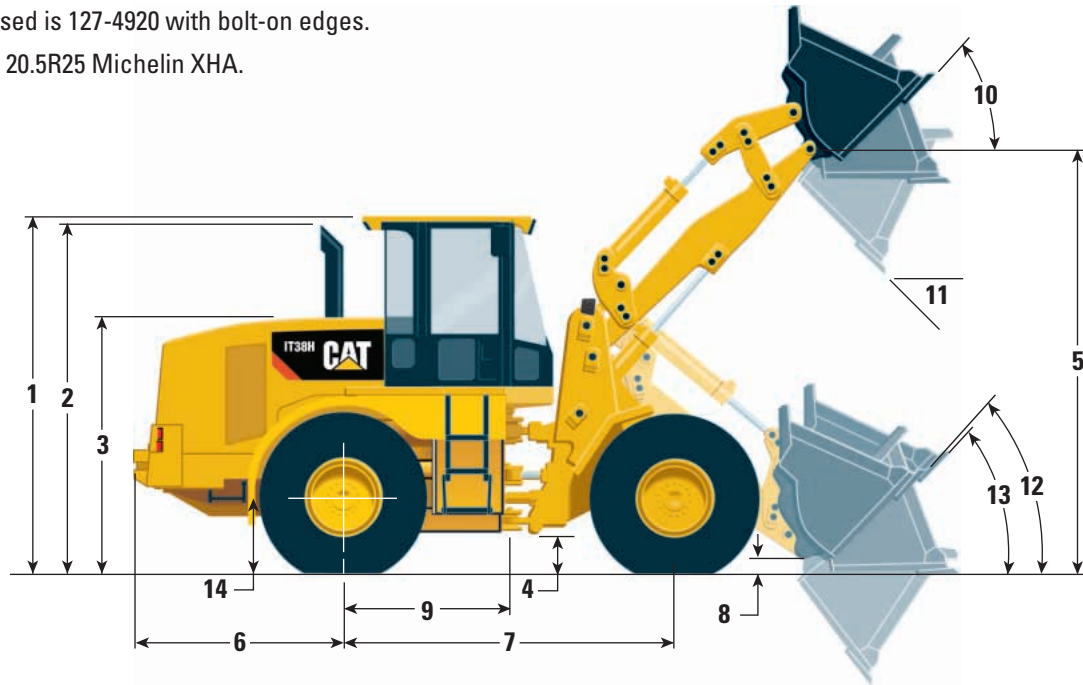
- Caterpillar cab with Integrated Rollover Protective Structure (ROPS) is standard in North America and Europe.
- ROPS meets SAE J1040 APR88 and ISO 3471:1994 criteria.
- Falling Objects Protective Structure (FOPS) meets SAE J231 Jan81 and ISO 3449:1992 Level II criteria.
- The operator sound pressure level measured according to the procedures specified in ISO 6394:1998 is 75 dB(A) for the 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 operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.
- The sound power level is 108 dB(A) measured according to the dynamic test procedure and conditions specified in ISO 6395:1998 for a standard machine configuration.

Dimensions

All dimensions are approximate and may vary with work tool.

Bucket used is 127-4920 with bolt-on edges.

Tires are 20.5R25 Michelin XHA.



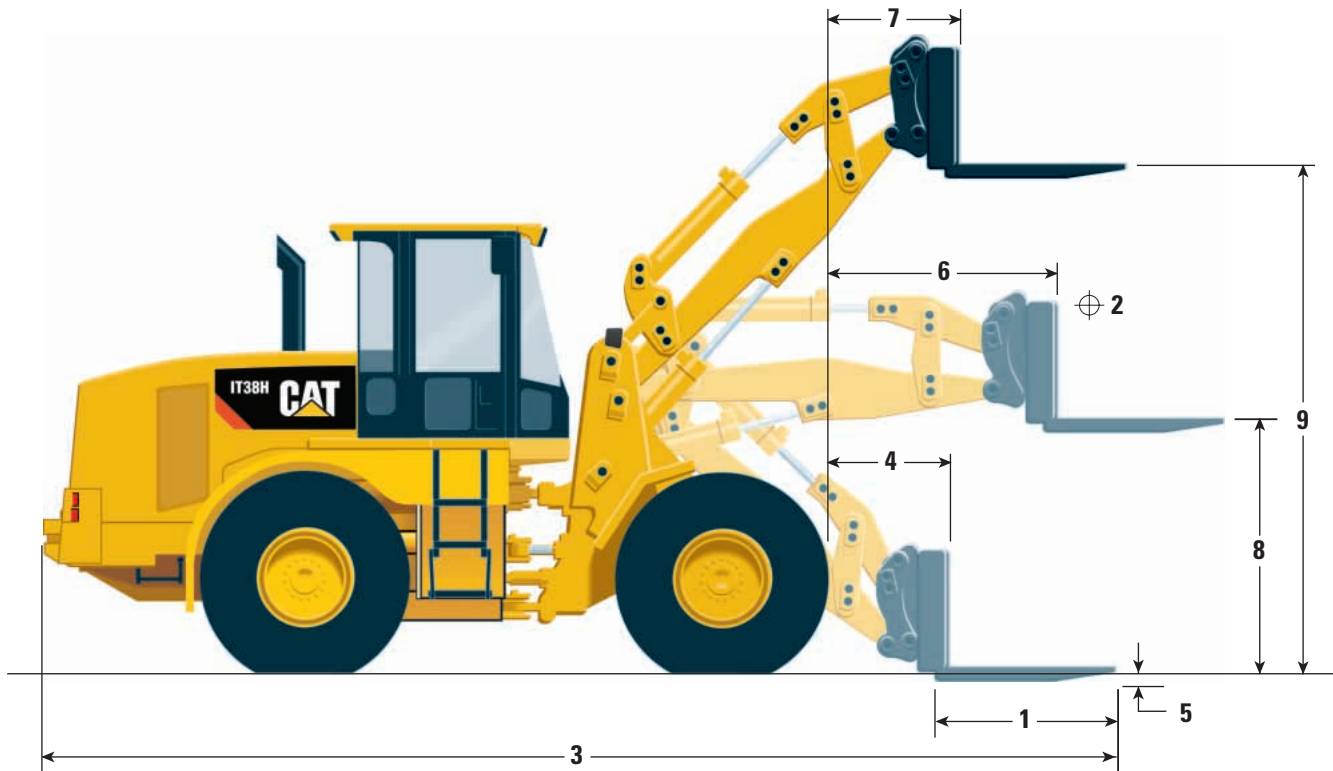
1	Height to top of ROPS	3356 mm	11'0"	8	B-pin height @ carry position	235 mm	0'9"
2	Height to top of exhaust pipe	3099 mm	10'2"	9	Center line of rear axle to hitch	1510 mm	4'11"
3	Height to top of hood	2415 mm	7'11"	10	Rack back @ maximum lift	45°	
4	Ground clearance (see chart for other tires)	397 mm	1'3"	11	Dump angle @ maximum lift	45°	
5	B-pin height @ maximum lift	3933 mm	12'10"	12	Rack back @ carry	46°	
6	Center line of rear axle to edge of counterweight	1954 mm	6'4"	13	Rack back @ ground	48°	
7	Wheelbase	3020 mm	9'10"	14	Height to center line of axle	688 mm	2'3"

Tires

		Width over tires – maximum (loaded)		Change in vertical dimensions		Change in operating weight without ballast		Change in static tipping load – straight		Change in static tipping load – articulated	
		mm	inches	mm	inches	kg	lb	kg	lb	kg	lb
20.5-R25 XTLA L2	Michelin	2603	102	-16	-1	-170	-376	-98	-217	-86	-189
20.5-R25 XHA L3	Michelin	2674	105	0	0	0	0	0	0	0	0
20.5 R25 GP2B L3	Goodyear	2619	103	+6	0	-53	-116	-30	-67	-27	-58
20.5 R25 HRL L3	Goodyear	2618	103	+23	+1	-48	-107	-28	-62	-24	-54
20.5 R25 RL-2+ L3	Goodyear	2609	103	+12	0	+13	+28	+7	+16	+6	+14
650/65R-25 XLD L3	Michelin	2733	108	0	0	+519	+1145	+301	+663	+262	+578
20.5-25 SRG LD L3	Firestone – 16 PLY	2558	101	+8	0	-242	-533	-140	-308	-122	-268
20.5-25 SRG LD L3	Firestone – 20 PLY	2556	101	+11	0	-174	-384	-101	-222	-88	-194
20.5-25 RM 99 L3	Pirelli	2540	100	+8	0	-58	-129	-34	-74	-29	-65

Dimensions – Forks

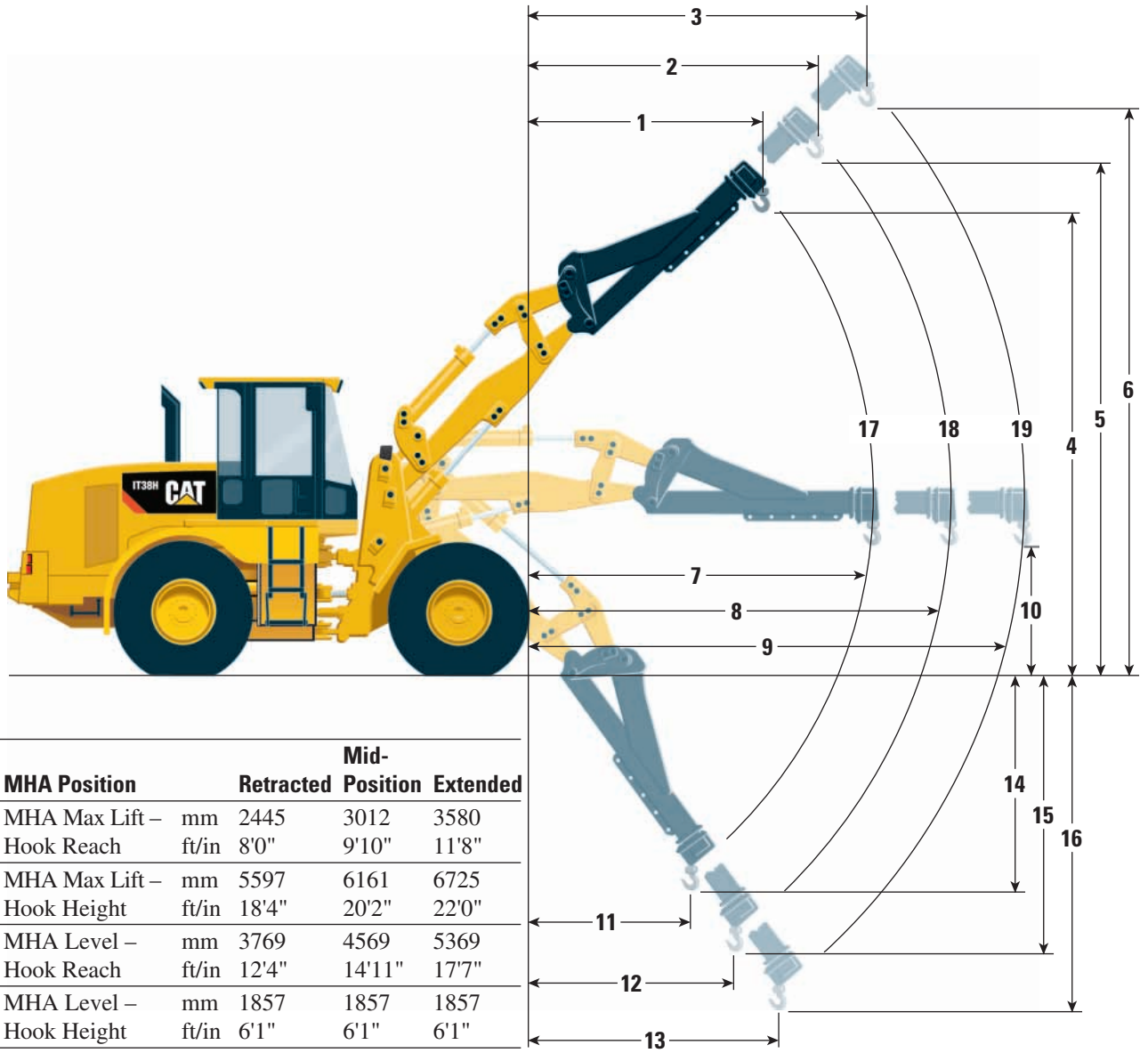
All dimensions are approximate.



1 Fork Tine Length	mm	1524	1524
	in	60	60
2 Load Center	mm	610	762
	in	24	30
Tipping Load – Forks Level Straight	kg	8866	8453
	lb	19,540	18,631
Tipping Load – Forks Level Articulated	kg	7680	7323
	lb	16,926	16,140
Rated Load (SAE J1197)	kg	3840	3662
	lb	8,463	8,070
Rated Load (CEN 474-3 Firm and Level Ground)	kg	6144	5859
	lb	13,541	12,912
3 Maximum Overall Length	mm	8345	
	ft/in	27'4"	
4 Reach with Forks at Ground Level	mm	1097	
	ft/in	3'7"	
5 Ground to Top of Tine at Minimum Height and Fork Level	mm	85	
	in	3	
6 Reach with Arms Horizontal and Forks Level	mm	1632	
	ft/in	5'4"	
7 Reach with Fork at Maximum Height	mm	903	
	ft/in	2'11"	
8 Ground to Top of Tine with Arms Horizontal and Fork Level	mm	1692	
	ft/in	5'6"	
9 Ground to Top of Tine at Maximum Height and Fork Level	mm	3545	
	ft/in	11'7"	
Operating Weight	kg	15 741	
	lb	34,693	

Dimensions – Material Handling Arm

All dimensions are approximate.

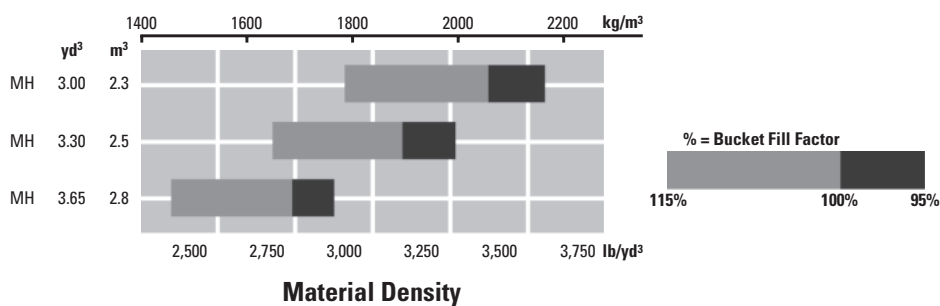


MHA Position		Retracted	Mid-Position	Extended
1, 2, 3	MHA Max Lift –	mm 2445	3012	3580
	Hook Reach	ft/in 8'0"	9'10"	11'8"
4, 5, 6	MHA Max Lift –	mm 5597	6161	6725
	Hook Height	ft/in 18'4"	20'2"	22'0"
7, 8, 9	MHA Level –	mm 3769	4569	5369
	Hook Reach	ft/in 12'4"	14'11"	17'7"
10	MHA Level –	mm 1857	1857	1857
	Hook Height	ft/in 6'1"	6'1"	6'1"
11, 12, 13	MHA Min Lift –	mm 1809	2279	2749
	Hook Reach	ft/in 5'11"	7'5"	9'0"
14, 15, 16	MHA Min Lift –	mm 1983	2630	3278
	Hook Height	ft/in 6'5"	8'4"	10'2"
17, 18, 19	Static Tipping	kg 5261	4462	3869
	Load, Articulated	lb 11,594	9,833	8,527
17, 18, 19	Rated Load	kg 2630	2231	1934
	(SAE J1197)	lb 5,797	4,917	4,263
	Operating	kg 15 514	15 514	15 514
	Weight	lb 34,192	34,192	34,192

Operation Specifications

		Material Handling Buckets					
		Bolt-on edges			Teeth and segments		
		Bolt-on edges	Teeth and segments	Teeth	Bolt-on edges	Teeth and segments	Teeth
Rated capacity	m ³	2.34	2.34	2.21	2.53	2.53	2.41
	yd ³	3.00	3.00	2.85	3.30	3.30	3.15
Struck capacity	m ³	1.89	1.89	1.79	2.06	2.06	1.96
	yd ³	2.47	2.47	2.34	2.69	2.69	2.56
Width	mm	2708	2777	2777	2708	2777	2777
	ft/in	8'10"	9'1"	9'1"	8'10"	9'1"	9'1"
Dump clearance at full lift and 45° discharge	mm	2805	2693	2693	2805	2693	2693
	ft/in	9'2"	8'10"	8'10"	9'2"	8'10"	8'10"
Dump reach at full lift and 45° discharge	mm	1152	1243	1243	1152	1243	1243
	ft/in	3'9"	4'0"	4'0"	3'9"	4'0"	4'0"
Reach with lift level arm, level tool	mm	2475	2618	2618	2475	2618	2618
	ft/in	8'1"	8'7"	8'7"	8'1"	8'7"	8'7"
Digging depth	mm	66	66	41	66	66	41
	in	2.6"	2.6"	1.62"	2.6"	2.6"	1.62"
Overall length	mm	7543	7699	7699	7543	7699	7699
	ft/in	24'8"	25'3"	25'3"	24'8"	25'3"	25'3"
Overall height with tool at full raise	mm	5119	5119	5119	5235	5235	5235
	ft/in	16'9"	16'9"	16'9"	17'2"	17'2"	17'2"
Loader clearance circle with tool in carry position	mm	12 136	12 303	12 303	12 136	12 303	12 303
	ft/in	39'9"	40'4"	40'4"	39'9"	40'4"	40'4"
Static tipping load, straight	kg	10 849	10 763	10 968	10 843	10 757	10 962
	lb	23,911	23,721	24,174	23,898	23,708	24,161
Static tipping load, articulated	kg	9371	9285	9478	9362	9275	9468
	lb	20,654	20,464	20,890	20,633	20,442	20,869
Breakout force	kN	125.7	125.1	134.1	125.5	124.9	133.9
	lb	28,239	28,115	30,135	28,185	28,061	30,078
Operating weight	kg	15 975	16043	15950	16 004	16 072	15 979
	lb	35,209	35,358	35,154	35,273	35,422	35,217
Reach at 2134 mm (7'0") height, 45° dumped	mm	1611	1644	1644	1611	1644	1644
	ft/in	5'3"	5'4"	5'4"	5'3"	5'4"	5'4"
Clearance at full raise and dump, on stops	mm	2802	2690	2690	2802	2690	2690
	ft/in	9'2"	8'9"	8'9"	9'2"	8'9"	8'9"
Dump angle at full raise and dump, on stops	degrees	45.2	45.2	45.2	45.2	45.2	45.2
Rated payload	kg	4806	4761	4861	4801	4756	4856
	lb	10,592	10,494	10,713	10,581	10,483	10,702

Pin-On Bucket Selection Guide



Bolt-on edges	Teeth and segments	Teeth
2.80	2.80	2.65
3.65	3.65	3.50
2.30	2.30	2.16
3.01	3.01	2.83
2708	2777	2777
8'10"	9'1"	9'1"
2733	2621	2621
8'11"	8'7"	8'7"
1224	1315	1315
4'0"	4'3"	4'3"
2577	2720	2720
8'5"	8'11"	8'11"
66	66	41
2.6"	2.6"	1.61"
7644	7800	7800
25'0"	25'7"	25'7"
5295	5295	5295
17'4"	17'4"	17'4"
12 196	12 364	12 364
40'0"	40'6"	40'6"
10 638	10 551	10 754
23,446	23,253	23,701
9175	9088	9279
20,222	20,029	20,452
114.9	114.3	122.0
25,817	25,691	27,417
16048	16115	16022
35,369	35,518	35,313
1647	1676	1676
5'4"	5'5"	5'5"
2730	2618	2618
8'11"	8'7"	8'7"
45.2	45.2	45.2
4705	4660	4759
10,370	10,272	10,488

Standard Equipment

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

ELECTRICAL

- Alarm, back-up, adjustable
- Alternator, 24V/65A
- Battery disconnect switch with removable key
- Lighting:
 - Turn signals with flashing hazard function
 - Two halogen headlights with high/low beam
 - Parking lights
 - Two front and rear halogen work lights, cab mounted
- Jumpstart receptacle

OPERATOR ENVIRONMENT

- Air Conditioning
- Bucket/Work tool lever lockout feature
- Cab, ROPS/FOPS, pressurized and sound suppressed
- Coat hook
- Controls, lift and tilt functions
- Radio ready including antenna, speakers, two 12V/5A power outlets, includes cigar lighter
- Electric horn, dual actuation (steering wheel, implement pod)
- Sun Visor, Front
- Cab heating with fresh air inlet and defrosting function
- Messenger System
 - Monitoring and logging of machine data
 - Clock
 - Operator keypad
 - Axle oil temperature
- Product Link Ready (optional in some regions)
- Operator display, Gauges:
 - Engine coolant temperature
 - Fuel level
 - Hydraulic oil temperature
 - Speedometer
 - Gear indicator
 - Tachometer
 - Transmission oil temperature
- Operator display, Warning Indicators:
 - Glow Plugs
 - Electrical, alternator output
 - Engine inlet manifold temperature
 - Engine oil pressure
 - Fuel pressure
 - Hydraulic oil temperature
 - Parking brake
 - Primary steering oil pressure
 - Service brake oil pressure
 - Transmission filter bypass
 - Axle oil temperature
- Dual interior rearview mirrors
- Dual exterior rearview mirrors
- Interior operator lighting
- Storage compartments

- Lunchbox compartments
- Beverage holder
- Seat, KAB, cloth, adjustable
- Seat belt, retractable, 51mm/2" wide
- Adjustable steering column/wheel
- Forward/Neutral/Reverse switch by implement controls
- LH door with sliding window
- RH sliding window and emergency exit
- Windshield wipers, front and rear
- Interval function for front and rear wipers
- Windshield washers, front and rear

POWER TRAIN

- Brakes, full hydraulic enclosed wet-disc
- Brake wear indicators with Integrated Braking System (IBS)
- Front axle with locking differential
- Drive line, extreme service
- Engine, Cat C6.6 ACERT and ATAAC technology, electronically controlled
- Fan, radiator, electronically controlled, hydraulically driven, temperature sensing, on demand
- Filters, fuel, primary/secondary
- Fuel priming pump (Electric)
- Fuel/Water separator
- Monitoring System, Axle Oil Temperature
- Muffler, sound suppressed
- Radiator, unit core (6 fpi) with ATAAC
- Starting aid (Glow Plugs)
- Trans, neutralizer lockout in messenger
- Torque converter
- Transmission, countershaft, automatic power shift (4F/3R)
- Variable Shift Control (VSC), messenger

OTHER STANDARD EQUIPMENT

- Automatic bucket positioner
- Counterweight
- Couplings, Caterpillar O-ring face seal
- Fenders, Extension, Platform, Rear
- Guards, (bottom crankcase and fuel tank)
- Hitch, drawbar with pin
- Hood, non-metallic power tilting
- Hoses, Caterpillar XT
- Hydraulics, Load Sensing
- Kickout, lift, automatic
- Kickout, tilt, adjustable
- Linkage, Z-bar, cast crosstube/tilt lever
- Oil sampling valves
- Remote Diagnostic Pressure Taps
- Sight Gauges: Engine coolant, hydraulic oil and transmission oil level
- Steering, load sensing
- Vandalism protection caplocks

Standard Equipment

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

HYDRAULICS

- Load sensing implement system, pressure sensing
- Load sensing steering system
- Two function hydraulic valve (lift and tilt)
- Two lever operator implement controls

TIRES, RIMS, & WHEELS

- A tire must be selected from the mandatory attachments section. Base machine price includes an allowance based on a premium radial tire.

ANTIFREEZE

- Premixed 50% concentration of Extended Life Coolant with freeze protection to -34°C (-29°F)

Optional Equipment

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

- Alternator, heavy-duty
- Antifreeze, -50°C (-58°F)
- Autolube
- Buckets and work tools
- Bucket Ground Engaging Tools (GET) – see Cat dealer for details
- Camera, rear view
- Coolant, extended life
- Cooler, axle oil
- Differential Lock, automatic front and rear
- Drain, axle ecology
- Ether Starting Aid
- Fenders/Platforms, narrow
- Fenders, roading
- Guards, axle seal
- Guard, front window, wide mesh
- Guard, power train bolt-on
- Guard, power train hinged
- Guard, hitch area
- Guard, front driveshaft
- Guard, roading light, front and rear
- Guard, tilt cylinder
- Guard, transmission oil fill
- Heater, engine coolant, 120- or 240-volt
- High Lift, three-valve

- High Lift, three-valve with hydraulic horizontal pin quick coupler
- Hydraulics, three or four-valve
- Joystick control, two, three or four valve
- Ladder, cable
- Lights, auxiliary cab lights
- Lights, high intensity discharge (HID)
- Lights, warning beacon
- Machine Security System
- Mirrors, heated external
- Open canopy
- Precleaner, turbine
- Precleaner, turbine/trash
- Quick Coupler, hydraulic horizontal pin
- Quick Coupler ready lines
- Radio, AM/FM CD player
- Ride Control
- Seat, air suspension
- Seat, heated air suspension
- Seatbelt, 76 mm (3") wide
- Seatbelt, 76 mm (3") wide (KAB)
- Steering, secondary
- Sunscreen, rear
- Toolbox

IT38H Integrated Toolcarrier

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