

# 966G Series II

Wheel Loader

**CAT**<sup>®</sup>



## Engine

Engine Model	Caterpillar <sup>®</sup> 3176C with ATAAC	
Flywheel Power	184 kW	246 hp
Max. Flywheel Power	194 kW	260 hp

## Weights

Operating Weight	22 870 kg	50,400 lb
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## Buckets

Bucket Capacities	3.5-4.25 m <sup>3</sup> (4.5-5.5 yd <sup>3</sup> )	
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# 966G Series II Wheel Loader

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

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## Engine

- ✓ Cat® 3176C ATAAC diesel engine is built for performance, durability, excellent fuel economy, low sound levels, and meets all world-wide emission regulations through 2005. **pg. 4**

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## Electronic Transmission

Planetary power shift transmission with automatic shift capability provides on-the-go speed and direction changes. The Electronic Clutch Pressure Control (ECPC) delivers smoother shifts. Variable Shift Control matches shift patterns to the application. **pg. 5**

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## Cooling System

- ✓ The G Series II cooling package reduces radiator plugging and contributes to increased fuel efficiency. The new cooling package traps less airborne debris and is more accessible for cleaning. **pg. 6**

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## Versatility and Application Match

- ✓ Choose from a wide variety of Caterpillar buckets, ground engaging tools, work tools, and special arrangements to match your application. **pg. 12**

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## Environmental Features

- ✓ The 966G Series II is designed and built with the environment in mind with features including the new 3176C electronic engine, electronically controlled on-demand fan, ecology drains, environmental fluids, and recyclable and remanufacturable components. **pg. 14**

*Performance and comfort you can feel, delivering strong breakout force, fast cycle times, and smooth shifts for optimal performance and comfort.*



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### Axles

Caterpillar designed and built with proven durability, the heavy-duty, four-piece axle design continues with the G Series providing maximum performance and serviceability. **pg. 7**

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### Operator Station: Conventional Steering Wheel

Conventional steering wheel with pilot hydraulic controls is one of two operator station options. The 966G Series II cab is ergonomically designed and sets the industry standard for operator comfort and efficiency. **pg. 8**

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### Operator Station: Command Control Steering

Command control steering with electro-hydraulic controls features a semicircular steering wheel with integrated transmission controls. The cab is ergonomically designed and sets the industry standard for operator comfort and efficiency. **pg. 10**

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### Complete Customer Support

In addition to machine selection, Cat dealers offer a wide range of services, from purchase options to operator training, maintenance programs and parts support. **pg. 15**

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### Serviceability

The 966G Series II leads the pack in serviceability with extended service intervals; ground-level access to all major service points; sight gauges for fluid level checks of engine coolant, hydraulic oil, and transmission oil; convenient system access; and performance feedback via the Caterpillar Monitoring System. **pg. 16**



✓ *New Feature*



## Engine

*The 966G Series II engine is built for power and reliability to deliver excellent productivity and cost effective operation.*



**Powerful Performance.** The 3176C high performance electronically controlled diesel engine - with six-cylinder, direct injection, turbo-charged, air-to-air after-cooled (ATAAC), and 4-valves per cylinder - delivers net power of 184 kW (246 hp) and enables the 966G II to perform in the most demanding of applications. The 3176C is the ultimate combination of Caterpillar diesel and electronic component technology including ADEM™ III, Caterpillar Monitoring System, and ATAAC resulting in unmatched productivity and efficiency.

**Advanced Fuel System.** The 966G II features a Caterpillar exclusive Advanced Diesel Engine Module (ADEM III) fuel system controller. ADEM III controls all major engine functions, regulates the timing, duration, and pressure of the fuel injection, providing this information to the Caterpillar Monitoring System.

### **Caterpillar Monitoring System (CMS).**

CMS monitors six major engine system functions and derates the engine should any critical conditions occur. Timely information allows operators to better manage machine operation and take necessary corrective actions, lessening the risk of potential machine damage.

**Turbocharged and ATAAC.** Turbo-charging packs dense air into the cylinders for more complete combustion and lower emissions. Air-to-air after-cooler (ATAAC) reduces smoke and emissions by providing cooler inlet air for more efficient combustion. The result is high output and efficiency while meeting EPA Tier 2 emissions compliance.

**Constant Net Horsepower.** The 3176C electronic engine continuously gathers information to control the on-demand fan speed and provide constant net horsepower regardless of operating conditions. Compensating for varying fan loads enables the machine to maintain normal system temperatures and reduce fuel consumption.

**Less Maintenance.** With the 3176C, the engine oil change interval is increased from 250 to 500 hours with the use of CH-4 oil, after an initial 250 hour oil change, to provide reduced costs and downtime.



## Electronic Transmission

*Advanced Caterpillar power train is reliable and fuel efficient.*

### **Electronic Power Shift Transmission.**

The planetary power shift transmission with automatic shift capability is designed and built by Caterpillar. The planetary design results in more gear tooth contact for transmitting loads and durability. This robust transmission allows full power, speed, and directional changes.

### **Electronic Clutch Pressure Control**

**(ECPC).** Input from both the transmission and the operator controls in the cab modulate each individual clutch through a proportional electro-hydraulic valve. Six proportional electro-hydraulic valves pressurizing the clutches are identical and are bolted on top of the transmission. This results in smoother speed and directional shifts. Energy is modulated in the clutches, resulting in longer component life.

### **Integrated Braking System (IBS).**

The Caterpillar exclusive IBS integrates downshifting and neutralizer logic into the left-hand brake pedal. IBS increases performance and productivity with an optimized transmission neutralizer and automatic downshifting. IBS also lowers owning and operating costs by reducing axle oil temperatures to extend brake life.

### **Free Wheel Stator Torque Converter**

**(FWSTC).** FWSTC reduces drags in the torque converter at high turbine speed/impeller speed ratios. This improves machine power train efficiency and contributes to improved fuel economy in certain applications.



**Variable Shift Control (VSC).** VSC transmission software allows the operator to select three different shift patterns based on the application and operating preferences. This feature reduces fuel consumption in certain applications. In all modes, full machine power remains available for production loading.

**Easy Service.** Daily oil level check is done from the ground through a well-protected sight gauge. An oil sampling valve allows quick, clean access to the transmission for S•O•S<sup>SM</sup> oil analysis.

**Ecology Drain.** A transmission oil ecology drain is standard and allows oil to be drained without spillage.

## Cooling System

*The 966G Series II cooling package provides reduced radiator plugging, fuel efficiency, and easy maintenance.*

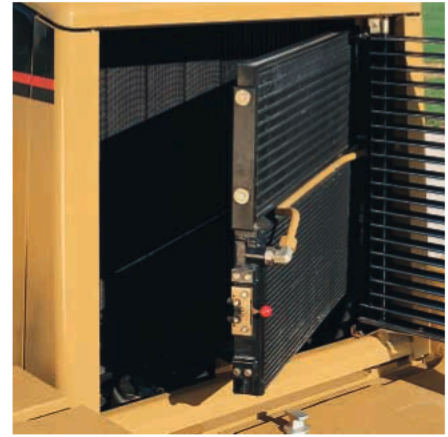


### **Reversed Airflow, Unit Core Radiator.**

The airflow is reversed on the 966G II and enters through the rear grill, exits out the top and side hood panels. Reversed air flow means less debris entering the system. In addition, a new unit core radiator with square wave shaped fins and lower fin density (6 fins per inch) allows debris to pass through more easily.

### **Electronically Controlled On-Demand Fan.**

Electronically controlled, temperature sensing variable speed on-demand fan adjusts to meet the varying cooling requirements of the machine throughout the work cycle. Hydraulic oil, engine coolant, and inlet manifold temperatures determine fan speed. In cooler operating conditions, average fan speed is reduced, resulting in less fuel consumption and lower noise levels. Lower air flow also reduces cooler core plugging in high airborne debris applications.



**Convenient System Access.** The 966G II offers both a swing-out grill and swing-out hydraulic oil cooler and air conditioner condenser for fast and easy cleaning. Left and right side panels also allow access to cores for cleaning.

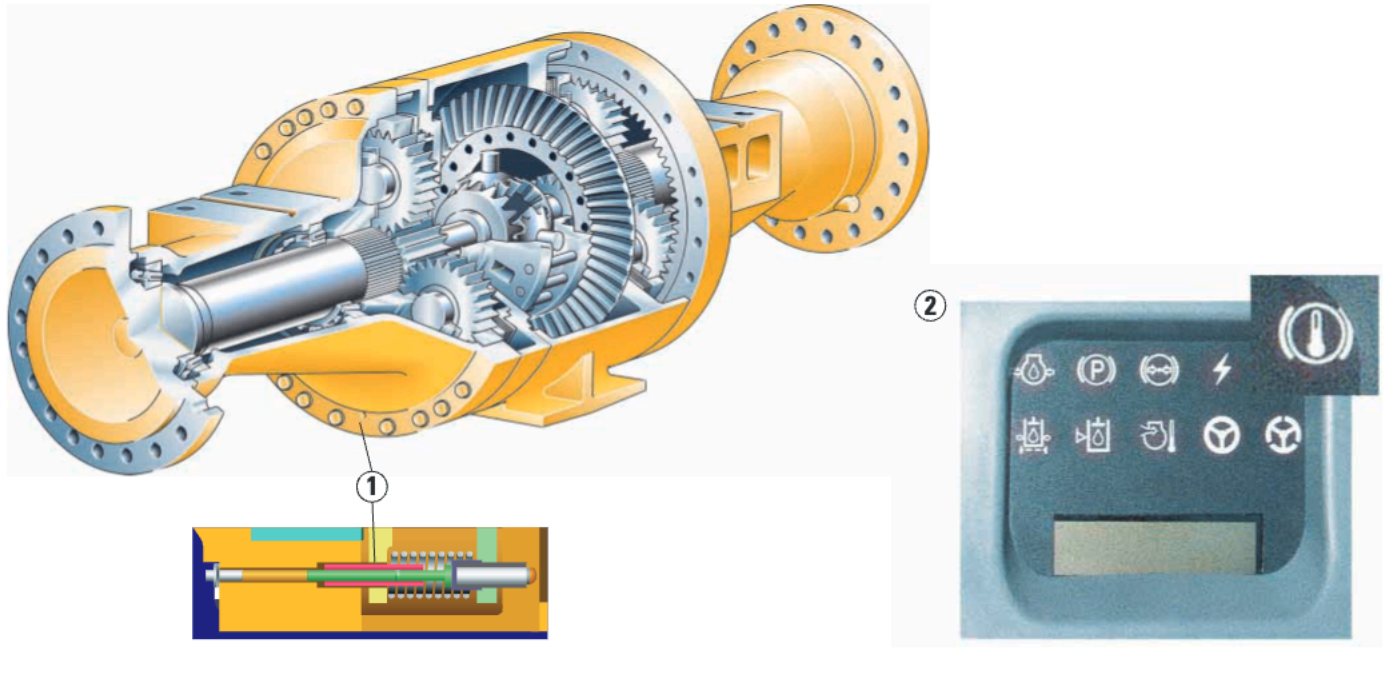
### **Airborne Debris Grill (Optional).**

An optional attachment, the airborne debris grill replaces the standard rear grill with one that has a vertically corrugated steel screen with 4 mm (0.16") perforations to restrict the entry of airborne debris. The grill is hinged to allow access to cooler cores for cleaning, and also includes brackets to seal around the fuel tank and screen material between the bottom of the grill and the counterweight.



# Axles

Heavy-duty axles protect internal components from the environment and offer excellent serviceability.



### Heavy-Duty, Four-Piece Axle Design.

Caterpillar designed and built with proven durability, the 966G four-piece axle design is maintained for the 966G Series II. Designed to last in all operating conditions, each axle contains two axle shaft housings, the center housing, and the intermediate housing. The front axle is fixed, and the rear axle oscillates  $\pm 13$  degrees.

### Fully Hydraulic Service Brake.

Inboard brakes are positioned next to the differential operating on the low torque side of the final drive. Four friction discs, two each side, are fully enclosed within each axle to lock out contaminants. Multiple oil-disc brakes are adjustment free, and bathed in axle oil for excellent cooling. Independent front and rear brake circuits use separate, heavy-duty piston-type accumulators to ensure dead engine braking.

### Integrated Axle Diagnostics.

1. Brake wear indicators (2 per axle) provide easy access to measure brake disc wear without disassembling the axle. The original brake reading is recorded in the machine controls at the factory to allow precise wear calculations.
2. Axle oil temperature sensors in both front and rear axles alert the operator on the Caterpillar Monitoring System panel of increased axle oil temperatures to allow the operator to modify the operating technique. This ensures optimum axle operating conditions for maximum component life.

### Solutions For Extreme Applications.

The left-hand pedal serves as either an additional brake or, when activated, engages Caterpillar's exclusive Integrated Braking System (IBS). IBS reduces axle oil temperatures to provide maximum axle component life. Although IBS reduces the need for axle oil coolers in many cases, an internal axle oil cooler is available as a factory installed attachment.

### Limited Slip Differentials (Optional).

Available for front and/or rear axles, limited slip differentials deliver maximum traction on uneven ground and in changing traction conditions such as mud, water, snow, and ice.

### Axle Oil Ecology Drains (Optional).

Axle oil ecology drains provide easier drainage with fewer spills.

## Operator Station: Conventional Steering Wheel

*The 966G II cab offers unmatched operator comfort and efficiency with steering and control options to fit every operator and application.*



*Conventional Steering Wheel (SW) with Pilot Hydraulic Bucket Controls*



### **1 Conventional Steering Wheel (SW).**

With a standard hand-grip feature, the SW configuration offers a low effort hand metering unit hydraulic steering system. Load sensing steering directs power through the steering system only when needed. When not steering, more engine power is available to generate rimpull, breakout force, lift force, and results in reduced fuel consumption. The steering column tilts for maximum operator comfort.

**2 Shift Lever.** SW machines are equipped with a lever on the left side of the steering column for directional and speed selection.

### **3 Pilot Hydraulic Bucket Controls.**

Pilot-assisted, hydraulic bucket controls make low-effort operation possible. Individual lift and tilt levers are standard as shown. One lift and one return-to-dig position may be adjusted on the linkage. A downshift switch is located on the lift lever for use in bucket loading. A single lever joystick is available as an attachment. Forward/Neutral/Reverse (F-N-R) switch on the lift lever is available as an attachment on either lever arrangement.

### **4 Standard Air Conditioning and Improved Ventilation.**

Air conditioning, heating, and defrosting functions are standard and airflow is improved utilizing thirteen louvered vents and a larger re-circulation filter. This ensures better air quality for the operator. All controls are located on the upper control panel within easy reach of the operator.

**5 Dual-Pedal Braking.** The left-hand pedal serves as either an additional brake or, when activated, engages the Caterpillar exclusive Integrated Braking System (IBS). IBS integrates both downshifting, transmission neutralizer logic, and braking into the left-hand pedal. Using the neutralizer maintains high engine RPM for full hydraulic flow.

**6 Seat Options.** The KAB cloth, mechanical suspension seat is standard on the SW machine. Caterpillar Comfort cloth air suspension seat is available as an attachment.

**7 Entry/Exit With Standard Sliding Windows.** Rear-hinged, full-length doors with left side ground level access and standard sliding windows.

**8 Visibility.** A wider, flat front and distortion-free windshield features bonded glass to reduce obstructions and provide an accurate and full view of the entire working area. Windshield wiper sweep is increased and wet-arm, front and back wiper washers ensure a clear view is maintained. A larger roof improves water run-off, and a stylish sloping hood provides excellent rear visibility.

**9 Generous Storage.** Larger compartments for lunchbox, cooler, cups, and storage.

**10 Caterpillar Monitoring System (CMS).** CMS monitors critical machine systems and provides four warning categories to keep the operator informed. CMS is conveniently located on the upper control module. LED indicators eliminate the need for bulb replacement.

**11 Electronic Autoshift Control.** The operator can choose manual or automatic transmission shifting. Pilot controls allow two automatic shift positions.

**12 Variable Shift Control (VSC).** VSC is a standard system that allows the operator to select 3 different shifting patterns to best match the application requirements and provide fuel efficiency, smoother shifts, and reduced sound levels. VSC rotary switch is located on the upper right control panel.

**13 Transmission Neutralizer Override Switch.** A rocker switch activates the override so the left pedal will not neutralize (or disengage) the transmission, but will function only as a service brake. Upon engine start-up, the neutralizer will default to the active position.

**14 Ride Control System (Optional).** Ride control provides a smoother, more comfortable ride, and contributes to increased frame and machine life by reducing shock loads on the structures.

**15 Payload Control System (PCS; Optional).** PCS allows on-the-go weighing of the bucket payload during the lift cycle.

**Radio-Ready.** Includes standard 12V (10 amp) converter, speakers, antenna, wiring and brackets for an entertainment radio. Entertainment radio is available as a factory installed attachment. A CB radio-ready option is also available as an attachment and includes all wiring and hardware plus a 20-amp 24V to 12V converter.

**Floor Mat.** Enhanced with contours to allow for easier cleaning.

## Operator Station: Command Control Steering

*The 966G II cab offers unmatched operator comfort and efficiency with steering and control options to fit every operator and application.*



*Command Control Steering with Electro-Hydraulic Bucket Controls*



### **1 Command Control Steering (CC).**

A pilot operated, load-sensing system, CC links the steering wheel and frame angle positions to provide the proper amount of steering control with minimal operator effort. The speed the machine turns is proportional to the steering wheel position. Steering stops are hydraulically cushioned. Benefits of this system are precise control, quick response, and reduced operator fatigue. The unique semicircular steering wheel shape provides improved visibility to the front dash and gauges. The steering column tilts and telescopes to adjust for maximum operator comfort.

### **2 Ergonomic Transmission Controls.**

CC transmission controls are ergonomically integrated onto the steering grip to allow one hand steering and shifting. Controls include a three-position rocker switch to select forward, neutral, or reverse and a thumb operated up-shift and downshift button for optional manual shift mode.

### **3 Standard Air Suspension Seat.**

Caterpillar Comfort cloth, air suspension seat with six adjustments and lumbar support is standard on the CC configuration.

### **4 Electro-Hydraulic (E/H) Bucket Controls.**

E/H offers “finger-tip” movement lift and tilt bucket controls with outstanding sensitivity and control. Automatic lift and tilt kick-outs are adjustable from inside the cab and are hydraulically cushioned for greater operator comfort and less material spillage. Enhancements to this system with the 966G II include “bucket dump rate control” for smooth flow of material from the bucket and “fine modulation control” to provide precise control for delicate bucket or work tool operations.

### **5 Standard Air Conditioning and Improved Ventilation.**

Air conditioning, heating, defrosting functions are standard and airflow is improved utilizing thirteen louvered vents and a larger re-circulation filter. This ensures better air quality for the operator. All controls are located on the upper control panel within easy reach of the operator.

**6 Dual-Pedal Braking.** The left-hand pedal serves as either an additional brake or, when activated, engages the Caterpillar exclusive Integrated Braking System (IBS). IBS integrates both downshifting, transmission neutralizer logic, and braking into the left-hand pedal. Using the neutralizer maintains high engine RPM for full hydraulic flow.

**7 Entry/Exit With Standard Sliding Windows.** Rear-hinged, full-length doors with left side ground level access and standard sliding windows.

**8 Visibility.** A wider, flat front and distortion-free windshield features bonded glass to reduce obstructions and provide an accurate and full view of the entire working area. Windshield wiper sweep is increased and wet-arm, front and back wiper washers ensure a clear view is maintained. A larger roof improves water run-off, and a stylish sloping hood provides excellent rear visibility.

**9 Generous Storage Area.** Larger compartments for lunchbox, cooler, cups, and storage.

**10 Caterpillar Monitoring System (CMS).** CMS monitors critical machine systems and provides four warning categories to keep the operator informed. CMS is conveniently located on the upper control module. LED indicators eliminate the need for bulb replacement.

### **11 Electronic Autoshift Control.**

The operator can choose manual or automatic transmission shifting. E/H controls allow four automatic shift positions.

**12 Variable Shift Control (VSC).** VSC is a system that allows the operator to select 3 different shifting patterns to best match the application requirements and provide fuel efficiency, smoother shifts, and reduced sound levels. VSC rotary switch is located on the upper right control panel.

**13 Transmission Neutralizer Override Switch.** A rocker switch activates the override so the left pedal will not neutralize (or disengage) the transmission, but will function only as a service brake. Upon engine start-up, the neutralizer will default to the active position.

### **14 Ride Control System (Optional).**

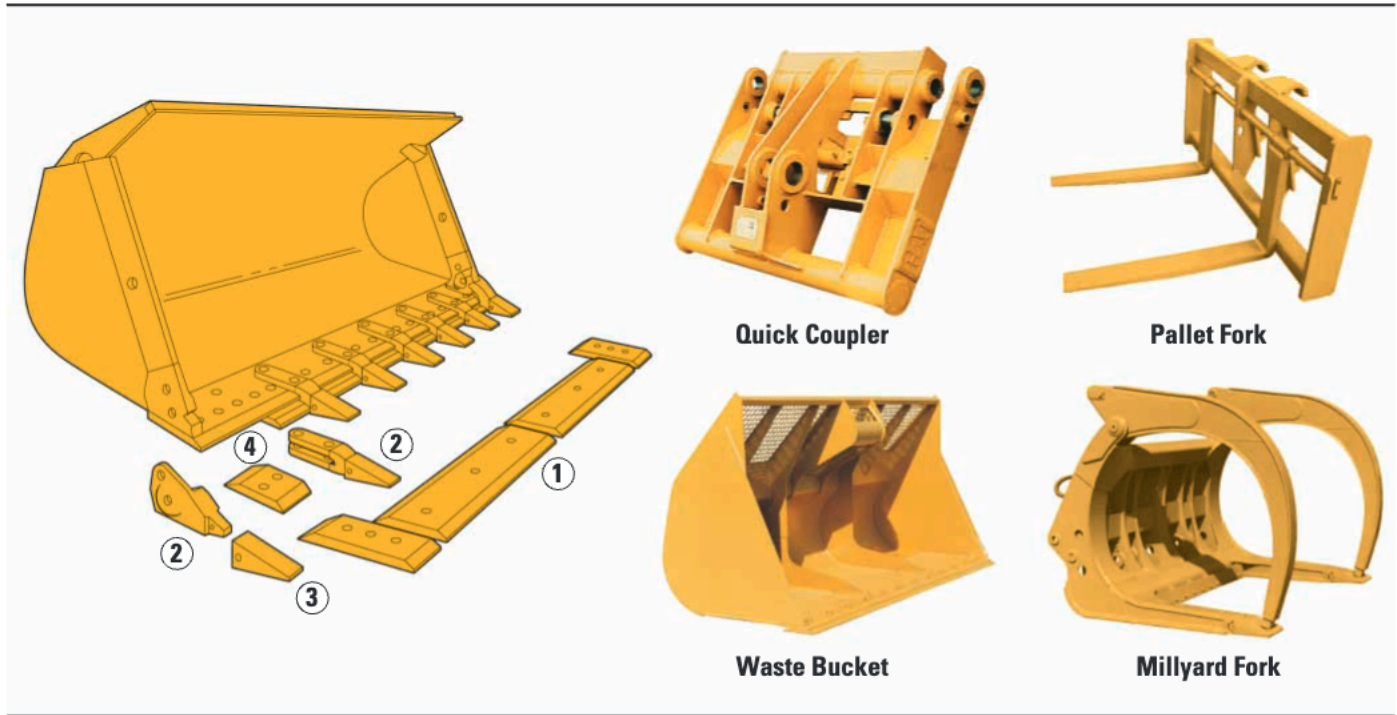
Ride control provides a smoother, more comfortable ride, and contributes to increased frame and machine life by reducing shock loads into the structures.

**Radio-Ready.** Includes standard 12V (10 amp) converter, speakers, antenna, wiring and brackets for an entertainment radio. Entertainment radio is available as a factory installed attachment. A CB radio-ready option is also available as an attachment and includes all wiring and hardware plus a 20-amp 24V to 12V converter.

**Floor Mat.** Enhanced with contours to provide for easier cleaning.

## Versatility and Application Match

The 966G Series II is built for versatility and Caterpillar offers a wide variety of tools and special arrangements to match the job for maximum productivity.



### General Purpose (GP) Buckets.

Designed and built to Caterpillar specifications, GP buckets perform well in a broad range of applications including excavation, stockpiling, and dozing. GP buckets are available in various sizes for either pin-on or quick coupler and can accept bolt-on edges, teeth, or teeth and segments.

### Material Handling (MH) Buckets.

Designed and built to Caterpillar specifications, MH buckets maximize performance in free-flowing material, as found in many stockpile applications. MH buckets are available in various sizes and can accept bolt-on edges, teeth, or teeth and segments.

### Caterpillar Ground Engaging Tools.

G.E.T. options include:

- 1 Bolt-on Cutting Edge.** Reversible, with superior strength. Heavy-duty edges are also available and provide 50% more wear life.
- 2 Bolt-on Center and Corner Adapters.**
- 3 Tips.** Five tip options are available to provide the best combination of wear life, penetration, and strength required for each application.
- 4 Segments.** Heavy-duty, reversible segments protect the cutting edge, eliminating scalloping and maintaining a smooth work surface.

**Heavy-Duty Rock Buckets.** Ideal for quarry and mining applications, standard and heavy-duty rock buckets with various G.E.T. options are available.

**Quick Coupler and Specialty Work Tools.** A quick coupler and a wide variety of specialty buckets and work tools are available through either the factory or Caterpillar Work Tools & Solutions (CWTS). Specialized work tool options include pallet forks, lumber and log forks, millyard forks, waste buckets, plows, material handling arms, side-dump buckets, coal buckets, and woodchip buckets.

### High Lift Arrangement (Optional).

Provides an additional 559 mm (22") of lift height over standard linkage for additional dump clearance. Arrangement includes extended lift arms, tilt cylinder, and additional counterweight.



**Waste Handler Arrangement (Optional).**

This arrangement provides additional guarding and features for machines used in waste transfer stations, waste to energy plants, recycling stations, and compost refuse processing. It offers the 972G II heavy duty front frame, axle seal guards, narrow steel front fenders, headlight and tail light guards, hinged and electronically actuated power train guard, front frame bottom guard, hydraulic tank guard, fuel tank guard, steering cylinder guards, and a heavy duty ladder with steel cable step. Options available with this arrangement include: (1) auto-reversing fan, to automatically reverse on a timed cycle or by manual activation to easily purge debris from the radiator; (2) roof mounted air conditioning; (3) Sy-Klone air intake precleaner with trash screen; and (4) Caterpillar Work Tools waste bucket.

**Forest Machine Arrangement (Optional).**

Coupled with a variety of Caterpillar work tools including logging and millyard forks, woodchip buckets, pallet forks, and an optional quick coupler, the 966G II forest arrangement is designed to handle a wide variety of millyard jobs. Forest arrangement offers the 972G II heavy duty front frame, third valve hydraulics, larger tilt cylinder, and additional counterweight for better load control and higher static tipping load for greater payload.

**Corrosion Resistant Paint (Optional).**

Provides a triple coat paint process, two coats of primer, and a final finish coat. Silicon sealant is applied to all exposed electrical wire terminals and connections to help protect them from corrosive atmospheres.



**Aggregates Autodig (Optional, CC/EH only).** Designed primarily to benefit stockpile operations, Aggregates Autodig controls the lift and tilt functions during the loading cycle, while the operator maintains control of steering, direction, and throttle. The ability to fully load a bucket with a consistent load time provides reduced operator fatigue and a constant level of productivity throughout the workday.

**Payload Control System (PCS; Optional).** Enhanced for the G Series II, PCS allows on-the-go weighing of the bucket payload during the lift cycle with an accuracy of  $\pm 1.5\%$  ( $\pm 1\%$  for stationary machine). PCS records date, time, weight, number of passes (up to 2,639 truckloads) with download capability.

## Environmental Features

*Caterpillar cares for the environment and continues to develop innovative solutions.*



**Low Exhaust Emissions, Fewer Oil Changes.** The electronically controlled engine adjusts the fuel-to-air ratio and the ATAAC provides more efficient combustion, lower fuel consumption, and cleaner emissions. The 966G II meets all EPA Tier 2 requirements without sacrificing any expected Caterpillar performance. In addition, engine oil change intervals are extended to every 500 hours, after an initial 250 hour oil change, helping to conserve natural resources.

**Reduced Fuel Consumption and Noise.** Electronically controlled, variable speed on-demand fan adjusts to meet the varying cooling requirements of the machine throughout the work cycle. Hydraulics oil, engine oil, coolant, and air inlet temperatures determine fan speed. In cooler operating conditions, average fan speed is reduced, resulting in less fuel consumption and lower noise levels.

**Fewer Leaks and Spills.** Oil sampling valves and pressure test ports for service diagnostics are standard and reduce the chance of spills. Engine, transmission, and hydraulic oil ecology drains are standard with the 966G II and allow fluids to be easily drained into a container without spillage. Axle oil ecology drains are also offered as an optional attachment.

**Environmental Fluids.** Extended life engine coolant with anti-foaming and anti-corrosive properties provides extended service intervals up to 6,000 hours for fewer fluid disposals. The air conditioning coolant is CFC-free. A biodegradable oil that meets Caterpillar's BF-1 specification can be used in the hydraulic system.

**Recyclable and Remanufacturable Components.** Designed with recyclability in mind, the 966G II is comprised of recyclable materials including cast iron, steel, plastic, glass, and rubber. In addition, many large components are designed for rebuilding to help reduce waste in the environment and provide cost savings to the customer.



## Complete Customer Support

*Cat dealer services help you operate longer with lower costs.*

**Machine Selection.** Cat dealers can help make detailed comparisons of the machines under consideration before purchase. It is important to compare machine specifications, standard equipment, and attachment options. In addition, Cat dealers can estimate component life, preventative maintenance cost, and the true costs of lost production.

**Purchase.** Beyond initial price, Cat dealers can explain all available financing options as well as day-to-day operating costs. They can offer dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long term.

**Customer Support Agreements.** Cat dealers offer a variety of product support agreements and will work with customers to develop a service plan that best meets each customer's specific needs. Service plans can cover the entire machine, including attachments, to help protect each customer's investment.

**Product Support.** Cat dealers have nearly all parts available at their dealer parts counters. They utilize a worldwide computer network to locate in-stock parts, resulting in minimized machine downtime. Genuine Cat Reman parts are available as an option to new components and offer the customer cost savings and a warranty with equal reliability.

**Operation.** Cat dealers can provide training media and operating techniques to assist owners and operators in increasing productivity, which in turn increases profitability.



**Maintenance Services.** Cat dealers offer a variety of maintenance services that can be included with the initial machine purchase. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S•O•S, coolant sampling, and technical analysis help avoid unscheduled repairs.

**Replacement.** Repair, rebuild or replace? Cat dealers can help you evaluate the cost involved to make the right choice.

## Serviceability

*The 966G Series II continues Caterpillar leadership in wheel loader serviceability.*



**Reduced Maintenance.** Caterpillar radial seal filters provide efficient filtration, extended filter life, and do not require tools to service, resulting in less maintenance time and lower operating costs.

### **Extended Fluid Change Intervals.**

The 3176C extends engine oil change intervals from 250 to 500 hours with the use of CH-4 oil, after an initial 250 hour oil change. The coolant system is factory filled with Caterpillar extended life coolant, which can provide up to 6,000 hours between change intervals.

### **Caterpillar Monitoring System (CMS).**

CMS provides a wealth of machine operation and performance feedback, along with diagnostic codes, which a service technician can use to quickly troubleshoot problems. A warning system provides the operator four categories or levels of warning, depending on the severity.



**Easy Access.** Engine oil fill and dipstick are conveniently accessed through a lockable ground level service door located on the right side of the hood. Swing-out cooling and air conditioning cores allow for quick service and cleaning. The non-metallic hood tilts electrically with an electric screw-jack, located in the tool box on the right rear frame. Hood tilts up to 70 degrees for full access to engine, cooling system, and major components. The cab can also be easily removed from the machine in about 45 minutes.

**Brake Wear Indicators.** A standard feature allowing a service technician to measure and track brake wear.



**Maintenance-Free 950 CCA Batteries.**

Two maintenance-free batteries are located in a lockable battery box on the left rear frame, sealed to prevent moisture.

**Ground Level Maintenance Points.**

Remote grease lines are located in the hitch area in two convenient lube banks on the left side of the machine. U-joints are lifetime lubricated. The slip joint is the only driveline component requiring lubrication.

**Convenient Sight Gauges.** Transmission oil, hydraulic oil, and radiator coolant sight gauges are conveniently located and visible from ground level.

**Caterpillar Product Link 201 (Optional).** Product Link 201 is a wireless system using satellite technology and the internet to provide up-to-date machine location, service meter hours, and machine health monitoring. Product Link simplifies maintenance scheduling, fleet management, unauthorized machine usage or movement, and product problem event tracking and diagnosis. Product Link is available installed from the factory or can be added in the field.

**Remote Pressure Taps (Optional).**

Remote pressure taps provide easy access to diagnostic pressure taps for transmission, torque converter, implement pumps, and steering (with conventional SW arrangement).



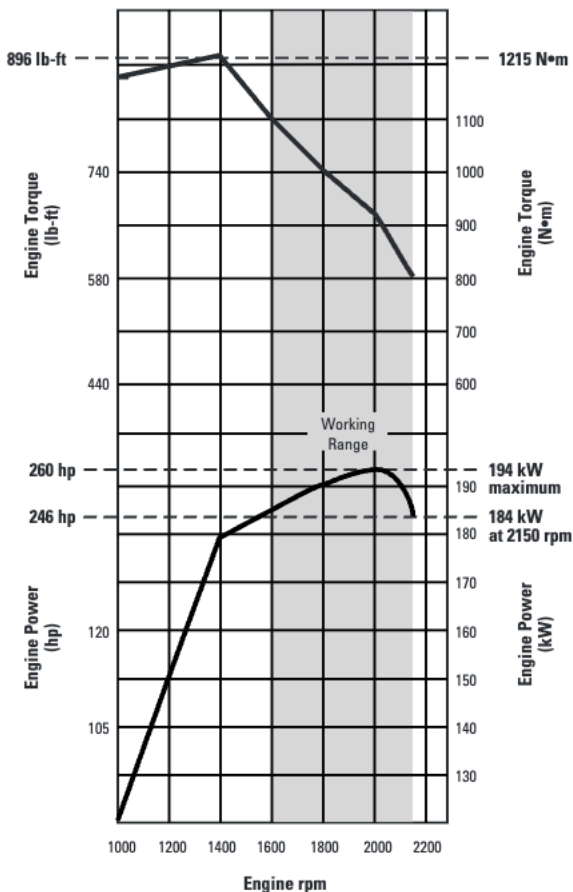
**Automated Lubrication System (Optional).** Available as a factory installed attachment, this system provides precise lubrication on pins and bushings at preset timed intervals while the machine is in operation.

Maintaining proper grease lubrication on working surfaces significantly extends component life.

## Engine

Engine Model	Caterpillar 3176C with ATAAC	
Flywheel Power	184 kW	246 hp
Max. Flywheel Power	194 kW	260 hp
Flywheel Power - ISO 9249	193 kW	259 hp
Flywheel Power - EEC 80/1269	193 kW	259 hp
Peak Torque (Net) @ 1,200 RPM	1215 N·m	896 ft·lb
Total Torque Rise	49%	
Bore	125 mm	4.9 in
Stroke	140 mm	5.5 in
Displacement	10.3 L	629 in <sup>3</sup>

- These ratings apply at 2150 rpm when tested under the specified standard conditions for the specified standard.
- Power rating conditions for flywheel power advertised is the power available when the engine is equipped with alternator, air cleaner, muffler and on-demand hydraulic fan drive at maximum fan speed.
- No derating required up to 3600 m (11,811 ft) altitude.
- The 3176C meets the following emission requirements: EU Stage II, US EPA Tier 2, and Japan MOC.



## Weights

Operating Weight	22 870 kg	50,400 lb
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## Buckets

Bucket Capacities	3.5-4.25 m <sup>3</sup> (4.5-5.5 yd <sup>3</sup> )
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## Transmission

Forward 1	7.2 kph	4.5 mph
Forward 2	12.6 kph	7.8 mph
Forward 3	21.7 kph	13.5 mph
Forward 4	37.2 kph	23.1 mph
Reverse 1	8.2 kph	5.1 mph
Reverse 2	14.3 kph	8.9 mph
Reverse 3	24.6 kph	15.3 mph
Reverse 4	38.5 kph	23.9 mph

- Maximum travel speeds (standard 26.5-R25 XHA L-3 tires)

## Hydraulic System

Bucket/Work Tool System - Pump Output	375 L/min	99 gal/min
Bucket/Work Tool System - Relief Valve Setting	20 700 kPa	3,000 psi
Hydraulic Cycle Time - Raise	6.9 Seconds	
Hydraulic Cycle Time - Dump	1.4 Seconds	
Hydraulic Cycle Time - Lower, Empty, Float Down	1.8 Seconds	
Hydraulic Cycle Time - Total	10.1 Seconds	
Pilot System - Pump Output	46 L/min	12 gal/min
Pilot System - Working Pressure - Pilot	2585 kPa	375 psi
Pilot System - Working Pressure - E/H	3450 kPa	500 psi

- Bucket/Work Tool System, Vane-Type Pump - Rated at 2111 rpm and 6900 kPa (1,000 psi).

## Brakes

Brakes	Meets required standards.
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- Meets the following standard: ISO 3450-1996.

## Axles

Front	Fixed front
Rear	Oscillating ±13°
Maximum Single-Wheel Rise and Fall	502 mm 19.8 in



## Cab

ROPS/FOPS	Meets SAE and ISO standards
<ul style="list-style-type: none"><li>• Caterpillar cab with integrated Rollover Protective Structure (ROPS) are standard in North America and Europe.</li><li>• ROPS meets SAE J1040 APR88 and ISO 3471:1994 criteria.</li><li>• Falling Objects Protective Structure (FOPS) meets SAE J231 JAN81 and ISO 3449:1992 Level II criteria.</li><li>• 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.</li><li>• 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.</li><li>• The sound pressure level is 112 dB(A) measured according to the static test procedure and conditions specified in ISO 6393:1998 for a standard machine configuration.</li></ul>	

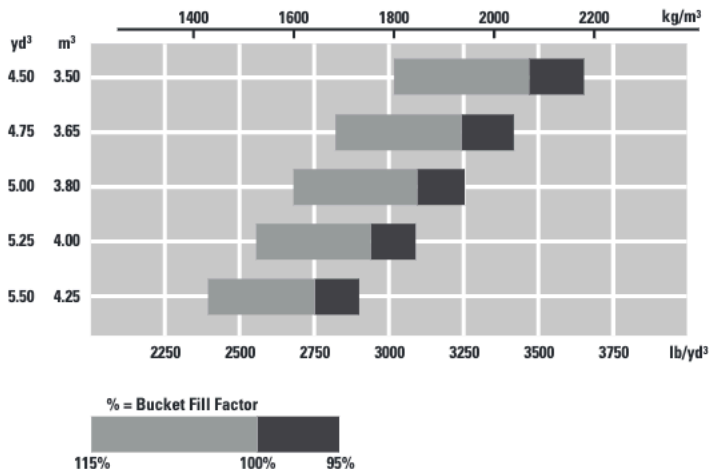
## Service Refill Capacities

Fuel Tank - Standard	380 L	100.4 gal
Cooling System	80 L	21 gal
Crankcase	35 L	9 gal
Transmission	50 L	13 gal
Differentials and Final Drives - Front	64 L	17 gal
Differentials and Final Drives - Rear	64 L	17 gal
Hydraulic System (Including Tank)	207 L	55 gal
Hydraulic Tank	140 L	37 gal

# Operation Specifications

		General Purpose Buckets								
		Teeth and segments			Teeth and segments			Teeth and segments		
		Bolt-on edges	Teeth and segments	Teeth	Bolt-on edges	Teeth and segments	Teeth	Bolt-on edges	Teeth and segments	Teeth
Rated capacity	m <sup>3</sup>	4.25	4.25	4.0	4.0	4.0	3.8	3.8	3.8	3.65
	yd <sup>3</sup>	5.5	5.5	5.25	5.25	5.25	5.0	5.0	5.0	4.75
Struck capacity	m <sup>3</sup>	3.62	3.62	3.43	3.43	3.43	3.28	3.27	3.27	3.12
	yd <sup>3</sup>	4.7	4.7	4.46	4.46	4.46	4.27	4.25	4.25	4.06
Width	mm	3220	3311	3311	3059	3150	3150	3059	3150	3150
	ft/in	10'6"	10'10"	10'10"	10'0"	10'4"	10'4"	10'0"	10'4"	10'4"
Dump clearance at full lift and 45° discharge	mm	3066	2929	2929	3066	2929	2929	3100	2963	2963
	ft/in	10'0"	9'7"	9'7"	10'0"	9'7"	9'7"	10'2"	9'8"	9'8"
Reach at full lift and 45° discharge	mm	1328	1449	1449	1328	1449	1449	1304	1426	1426
	ft/in	4'4"	4'9"	4'9"	4'4"	4'9"	4'9"	4'3"	4'8"	4'8"
Reach with lift arms horizontal and bucket level	mm	2736	2917	2917	2736	2917	2917	2694	2875	2875
	ft/in	8'11"	9'6"	9'6"	8'11"	9'6"	9'6"	8'10"	9'5"	9'5"
Digging depth	mm	129	129	99	129	129	99	129	129	99
	in	5.0"	5.0"	3.8"	5.0"	5.0"	3.8"	5.0"	5.0"	3.8"
Overall length	mm	8870	9073	9073	8870	9073	9073	8828	9031	9031
	ft/in	29'1"	29'9"	29'9"	29'1"	29'9"	29'9"	28'11"	29'7"	29'7"
Overall height with bucket at full raise	mm	5832	5832	5832	5832	5832	5832	5794	5794	5794
	ft/in	19'1"	19'1"	19'1"	19'1"	19'1"	19'1"	19'0"	19'0"	19'0"
Loader clearance circle with bucket in carry position	mm	14 726	14 923	14 923	14 578	14 776	14 776	14 557	14 754	14 754
	ft/in	48'3"	48'11"	48'11"	47'9"	48'5"	48'5"	47'9"	48'4"	48'4"
Static tipping load, straight**	kg	16 280	16 110	16 270	16 350	16 180	16 470	16 310	16 140	16 440
	lb	35,881	35,506	35,859	36,035	35,661	36,300	35,947	35,573	36,234
Static tipping load, articulated at full 37° turn	kg	14 470	14 310	14 460	14 540	14 380	14 650	14 500	14 330	14 610
	lb	31,892	31,539	31,870	32,046	31,694	32,289	31,958	31,583	32,200
Breakout force***	kN	189.1	187.9	201.1	189.4	188.3	201.5	196.7	195.6	209.6
	lb	42,477	42,221	45,184	42,562	42,306	45,260	44,189	43,940	47,092
Operating weight**	kg	22 868	23 041	22 875	22 794	22 967	22 813	22 748	22 921	22 767
	lb	50,401	50,782	50,417	50,238	50,619	50,280	50,137	50,518	50,178

## Standard Lift Bucket Selection Guide/Material Density





			Material Handling Buckets						Rock Buckets		Heavy-Duty Rock Buckets	
Bolt-on edges	Teeth and segments	Teeth	Bolt-on edges	Teeth and segments	Teeth	Bolt-on edges	Teeth and segments	Teeth	Bolt-on edges	Teeth and segments	Bolt-on edges	Teeth and segments
3.65	3.65	3.5	4.0	4.0	3.8	3.8	3.8	3.65	3.5	3.5	3.5	3.5
4.75	4.75	4.5	5.25	5.25	5.0	5.0	5.0	4.75	4.5	4.5	4.5	4.5
3.1	3.1	2.96	3.46	3.46	3.31	3.22	3.22	3.08	3.0	3.0	3.0	3.0
4.04	4.04	3.85	4.49	4.49	4.3	4.18	4.18	4.0	3.9	3.9	3.9	3.9
3059	3150	3150	3220	3311	3311	3220	3311	3311	3306	3252	3306	3252
10'0"	10'4"	10'4"	10'6"	10'10"	10'10"	10'6"	10'10"	10'10"	10'10"	10'8"	10'10"	10'8"
3135	2999	2999	3021	2874	2874	3063	2916	2916	2952	2756	2952	2756
10'3"	9'10"	9'10"	9'10"	9'5"	9'5"	10'0"	9'6"	9'6"	9'8"	9'0"	9'8"	9'0"
1281	1404	1404	1204	1313	1313	1162	1270	1270	1273	1381	1273	1381
4'2"	4'7"	4'7"	3'11"	4'3"	4'3"	3'9"	4'2"	4'2"	4'2"	4'6"	4'2"	4'6"
2651	2832	2832	2701	2882	2882	2641	2822	2822	2799	3013	2799	3013
8'8"	9'3"	9'3"	8'10"	9'5"	9'5"	8'7"	9'3"	9'3"	9'2"	9'10"	9'2"	9'10"
129	129	99	129	129	99	129	129	99	129	129	129	129
5.0"	5.0"	3.8"	5.0"	5.0"	3.8"	5.0"	5.0"	3.8"	5.0"	5.0"	5.0"	5.0"
8785	8988	8988	8835	9038	9038	8775	8978	8978	8933	9196	8933	9196
28'9"	29'5"	29'5"	28'11"	29'7"	29'7"	28'9"	29'5"	29'5"	29'3"	30'2"	29'3"	30'2"
5754	5754	5754	5783	5783	5783	5727	5727	5727	5716	5716	6042	6042
18'10"	18'10"	18'10"	18'11"	18'11"	18'11"	18'9"	18'9"	18'9"	18'9"	18'9"	19'9"	19'9"
14 535	14 732	14 732	14 709	14 905	14 905	14 679	14 874	14 874	14 837	14 945	14 837	14 945
47'8"	48'3"	48'3"	48'3"	48'10"	48'10"	48'1"	48'9"	48'9"	48'8"	49'0"	48'8"	49'0"
16 440	16 270	16 570	16 080	15 910	16 210	16 180	16 020	16 320	16 350	16 260	16 190	16 100
36,234	35,859	36,520	35,440	35,066	35,727	35,661	35,308	35,969	36,035	35,837	35,678	35,484
14 620	14 450	14 730	14 290	14 120	14 400	14 380	14 210	14 500	14 510	14 420	14 350	14 260
32,222	31,848	32,465	31,495	31,120	31,738	31,694	31,319	31,958	31,980	31,782	31,630	31,429
203.4	202.3	217.3	196.0	194.9	208.8	206.1	205.1	220.4	180.0	178.9	179.2	178.1
45,704	45,442	48,819	44,029	43,797	46,920	46,313	46,075	49,515	40,441	40,195	40,262	40,018
22 705	22 878	22 724	22 863	23 036	22 870	22 793	22 966	22 800	22 919	23 011	23 077	23 168
50,042	50,423	50,084	50,390	50,771	50,405	50,236	50,617	50,251	50,513	50,716	50,862	51,062

# Operation Specifications

		Quick Coupler Buckets			Waste Buckets	High-Lift Delta*
		Bolt-on edges	Teeth and segments	Teeth	Bolt-on edges	All buckets
Rated capacity	m <sup>3</sup>	3.85	3.85	3.65	6.5	
	yd <sup>3</sup>	5.0	5.0	4.75	8.5	
Struck capacity	m <sup>3</sup>	3.3	3.3	3.1	5.6	
	yd <sup>3</sup>	4.3	4.3	4.1	7.28	
Width	mm	3112	3033	3033	3355	
	ft/in	10'2"	9'11"	9'11"	11'0"	
Dump clearance at full lift and 45° discharge	mm	2975	2813	2813	2969	558
	ft/in	9'9"	9'2"	9'2"	9'8"	1'10"
Reach at full lift and 45° discharge	mm	1414	1546	1546	1220	-25
	ft/in	4'7"	5'0"	5'0"	4'0"	-1.0"
Reach with lift arms horizontal and bucket level	mm	2861	3067	3067	2750	404
	ft/in	9'4"	10'0"	10'0"	9'0"	1'3"
Digging depth	mm	139	139	108	154	-25
	in	5.4"	5.4"	4.2"	6.0"	-1.0"
Overall length	mm	9003	9239	9239	8904	544
	ft/in	29'6"	30'3"	30'3"	29'2"	1'9"
Overall height with bucket at full raise	mm	5742	5742	5742	6162	558
	ft/in	18'10"	18'10"	18'10"	20'2"	1'9"
Loader clearance circle with bucket in carry position	mm	14 699	14 765	14 765	14 877	432
	ft/in	48'2"	48'5"	48'5"	48'9"	1'5"
Static tipping load, straight**	kg	16 890	16 810	17 170	18 560	810
	lb	37,226	37,049	37,843	40,906	1785
Static tipping load, articulated at full 37° turn	kg	15 020	14 940	15 280	16 430	550
	lb	33,104	32,928	33,677	36,212	1212
Breakout force***	kN	172.0	172.6	184.1	184.9	-15.6
	lb	38,633	38,770	41,363	41,542	-3505
Operating weight**	kg	22 693	22 810	22 659	23 444	1900
	lb	50,015	50,273	49,940	51,671	4188

\* High lift column shows changes in specifications from standard lift to high lift. Add or subtract as indicated to or from specifications given for appropriate bucket to calculate high lift specifications.

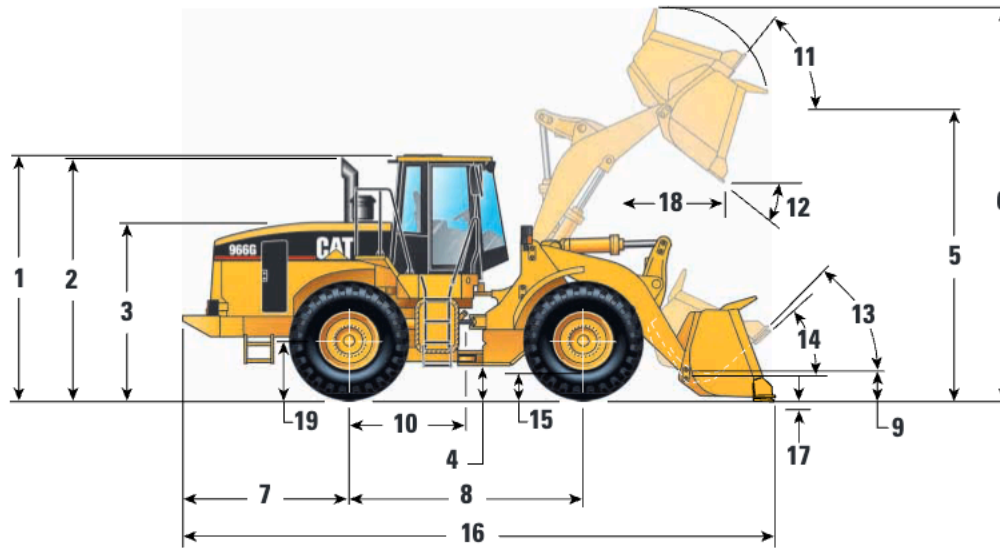
\*\* Static tipping load and operating weight shown include sound-suppression cab and ROPS, 26.5 R25 XHA (L-3) steel radial tires, full fuel tank, coolant, lubricants and operator.

\*\*\* Measured 102 mm (4.0"): behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE J732c.



## Dimensions

All dimensions are approximate.



1	Height to top of ROPS	3580 mm	11'9"	11	Rack back @ maximum lift	61°
2	Height to top of exhaust pipe	3535 mm	11'7"	12	Dump angle @ maximum lift (GP bucket)	50°**
3	Height to top of hood	2555 mm	8'5"	13	Rack back @ carry	47°
4	Ground clearance/ Standard tire 26.5 R25 XHA (L-3) See chart below for other tires	471 mm	18.5"	14	Rack back @ ground	42°
5	B-Pin height	4225 mm	13'10"	15	Axle Housing Clearance	430 mm 1'5"
6	Overall height*	Dimensions vary with bucket		16	Overall Length*	Dimensions vary with bucket
7	Center line of rear axle to edge of counterweight	2460 mm	8'1"	17	Digging Depth*	Dimensions vary with bucket
8	Wheelbase	3450 mm	11'4"	18	Reach*	Dimensions vary with bucket
9	B-Pin height @ carry	485 mm	19"	19	Height to center line of axle	795 mm 2'7"
10	Center line of rear axle to hitch	1725 mm	5'8"			

\*Refer to Operation Specifications chart.  
\*\*MH bucket is 45°.

## Tires

Tread width for all tires is 2230 mm (7'4")

	Width over tires		Change in vertical dimensions		Change in operating weight		Change in static tipping load – straight	
	mm	inches	mm	inches	kg	lb	kg	lb
26.5-25 20PR (L-2)	2965	117	-80	-3.2	-469	-1030	-349	-770
26.5-25 20PR (L-3)	3035	119	-25	-1.0	-224	-490	-168	-370
26.5 R25 XHA 1 (L-3) standard	2965	117	—	—	—	—	—	—
26.5 R25 GP-2B 1 (L-3)	3000	118	-30	-1.2	-49	-100	-36	-80
26.5 R25 MX (L-5)	3000	118	+63	+2.5	+1012	+2230	+732	+1314

### NOTE:

Tire options include tires and rims.

In certain applications (such as load-and-carry work) the loader's productive capabilities might exceed the tires' tonnes-km/h (ton-mph) capabilities. Caterpillar recommends consulting a tire supplier to evaluate all conditions before selecting a tire model.

## Standard Equipment

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

### Electrical

- Alarm, back-up
- Alternator, 65-amp, brushless
- Batteries, (2) maintenance-free 950 CCA
- Ignition key; start/stop switch
- Lighting system, halogen (6 total)
- Main disconnect switch
- Starter, electric, heavy-duty
- Starting and charging system (24-volt)

### Operator Environment

- Air conditioner, heater, defroster
- Bucket/Work Tool function lockout
- Cab, pressurized and sound suppressed
  - ROPS/FOPS, entertainment radio-ready includes antenna, speakers and converter (12-volt, 10-amp)
- Cigar lighter and ashtray
- Coat hooks (2) with straps
- Controls, lift and tilt functions

- Computerized Monitoring System
- Instrumentation, Gauges:

- Digital gear range indicator
- Engine coolant temperature
- Fuel level
- Hydraulic oil temperature
- Speedometer/tachometer
- Transmission oil temperature

### Instrumentation, Warning Indicators:

- Axle oil temperature
- Electrical, alternator output
- Engine air filter restriction
- Engine inlet manifold temperature
- Engine oil pressure
- Fuel level and pressure, Hi/Low
- Hydraulic filter bypass
- Hydraulic oil level
- Parking brake
- Primary steering oil pressure
- Service brake oil pressure
- Transmission filter bypass

- Horn, electric
- Lunchbox and beverage holders
- Mirrors, rearview (internally mounted)
- Seat, Cat Comfort (cloth), air suspension (CC)
- Seat, KAB (cloth), mechanical suspension (SW)
- Seat belt, retractable, 76 mm (3 in) wide
- Steering column, adjustable angle (SW, CC) and length (CC)
- Wet-arm, wipers/washers (front and rear), intermittent front wiper
- Windows, sliding (left and right sides)

### Power Train

- Brakes, full hydraulic enclosed wet-disc with Integrated Braking System (IBS)
- Engine, Cat 3176C diesel air to air aftercooled, with ATAAC, electronically controlled
- Fan, radiator, hydraulically driven, temperature sensing, on-demand
- Filters, fuel/engine air, primary/secondary
- Fuel priming aid (electric pump)
- Muffler, sound suppressed
- Precleaner, engine air intake
- Radiator, unit core with ATAAC (6 fins per inch)
- Starting aid, ether
- Switch, transmission neutralizer lockout
- Torque converter, free wheel stator
- Transmission, automatic planetary power shift (4F/4R)
- Variable Shift Control (VSC)

### Other Standard Equipment

- Automatic bucket positioner
- Counterweight
- Couplings, Caterpillar O-ring face seal
- Diagnostic Pressure Taps
- Doors, service access, locking
- Ecology drains for engine, transmission, and hydraulics
- Fenders, front and rear
- Hitch, drawbar with pin
- Hood, non-metallic power tilting
- Hoses, Caterpillar XT™
- Hydraulic oil cooler
- Kickout, lift automatic, lift and tilt automatic
- Linkage, Z-bar, cast crosstube/tilt lever
- Oil sampling valves
- Product Link Ready
- Sight gauges:
  - Engine coolant
  - Hydraulic oil level
  - Transmission oil level
- Vandalism protection caplocks



## Optional Equipment

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

### Drive Train

- Axle oil cooler
- Differential Limited Slip, front/rear axle
- Differential No SPIN, rear axle

### Electrical

- Auxiliary halogen lighting on cab, 2 front/2 rear
- Directional lights
- Starting aid receptacle

### Fenders

- Fender extensions
- Roading fenders

### Guards

- Axle seal
- Power train

### Hydraulic

- Automatic Ride Control
- Hydraulic arrangement, third valve

### Operator Environment

- Aggregates Autodig on CC/EH
- Joystick control
- Lift lever F-N-R switch
- Machine Security System
- On the SW steering version:
  - Caterpillar Comfort air suspension seat, 6-way adjustable, cloth
- Radio, AM/FM/Cassette with weatherband
- Radio-Ready, CB with 20-amp 24V to 12V converter
- Rearview mirrors, exterior
- Visor

### Preventive Maintenance

- Cat Turbine Precleaner
- Ecology drain, axle
- Extended Life Coolant antifreeze (-35° to -50° C)
- Product Link 201
- Remote Diagnostics Pressure Taps

### Starting Aid

- Heater, engine coolant, 120-volt

### Other Optional Attachments

- Airborne debris grill
- Autolube
- Auto reversing fan
- Axle seals
- Corrosion resistant paint
- Forest arrangement
- High Lift arrangement
- High Lift arrangement with hydraulic third valve
- High speed oil change
- Lift cylinder baffle
- Oil change system, high speed
- Open cab, including ROPS structure
- Payload Control System
- Quick coupler
- Roof mounted air conditioning
- Rubber mounted glass cab
- Secondary steering
- Value package
- Various buckets and work tools
- Waste Handler arrangement





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## Notes

# 966G Series II Wheel Loader

AEHQ5521-02 (1-03)  
Replaces AEHQ5521-01

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Materials and specifications are subject to change without notice.  
Featured machines in photos may include additional equipment.  
See your Caterpillar dealer for available options.

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