980G Series II

Wheel Loader

Engine		
Engine Model	Caterpillar® 3406E EUI with ATAAC	
Flywheel Power	232 kW	311 hp
Maximum Flywheel Power	238 kW	319 hp
Weights		
Operating Weight	30 207 kg	66,576 lb
Buckets		
Bucket Capacities	3.8-5.7 m^3	5.0-7.5 yd^3

980G Series II Wheel Loader

Setting the standard for wheel loader productivity, serviceability and styling.

Power Train

✔ The Caterpillar 3406E EUI ATAAC engine powers the 980G Series II. ADEM III offers electronic governing, automatic air-fuel ratio control, injection timing control and system diagnostics. **pg. 4**

Free Wheel Stator

✔ A free wheel stator torque converter gives larger output load potential than the engine provides alone. The need for very low speed gears and the number of gears required from a direct drive configuration is reduced. **pg. 6**

Operator Station

✔ Pressurized, quiet and comfortable, the 980G Series II cab boasts a host of features that enhance operator comfort and productivity, including standard equipment air conditioning. **pg. 8**

Versatility and Application Match

Obtain excellent performance in a variety of applications when using the appropriate bucket or work tool, along with payload and bucket matching. **pg. 14**

Product Link Ready

✔ Product Link provides two-way information flow between machine systems, you and your Caterpillar dealer. The 980G Series II standard configuration allows quick and easy Product Link installation. **pg. 16**

Performance you can feel with the capability to work in the most demanding applications. Unmatched operator comfort and efficiency in a world class cab with revolutionary electronics and hydraulics for low-effort operation and increased productivity.

Courtesy of Machine.Market

Caterpillar Monitoring System

This system continuously monitors critical machine systems and provides the operator with four warning categories, depending on the severity of the situation. **pg. 10**

Structures

Articulated frame design features a durable box-section engine frame and rigid four-plate loader tower. Over 90 percent robotically welded, frame joints feature welds with deep plate penetration and excellent fusion for maximum durability and fatigue strength. **pg. 11**

Buckets and Work Tool Controls

Choose from a variety of Caterpillar Buckets and Work Tools to match your job conditions and with Command Control steering and fingertip bucket controls, productivity is increased. **pg. 12**

Serviceability

The 980G Series II offers unmatched serviceability with ground level access to all routine daily maintenance points. Lockable, ground-level service doors prevent tampering with service areas. **pg. 17**

Complete Customer Support

Your Caterpillar dealer offers a wide range of services, including worldwide parts availability and literature support, that help you operate longer with lower costs. **pg. 18**

✔ *New Feature*

Courtesy of Machine.Market

Power Train

The 980G Series II is designed for efficiency and delivers aggressive performance and easy operation.

Engine. Is a six cylinder, turbocharged and aftercooled 3406E Electronic Unit Injector (EUI) which is powerful enough for the most demanding work.

- Tier 2 compliant
- Four stroke engine features direct fuel injection for efficient, accurate fuel metering and excellent fuel economy.
- Oil cooled pistons and full-length, water-cooled cylinder liners maintain maximum heat transfer for long component life.
- Turbocharging and ATAAC provide consistent, high horsepower, while ATAAC also provides for increased altitude capability.

Engine Lubrication. Engine lubricating oil is both filtered and cooled and supplied by a gear-type pump.

Electronic Unit Injector (EUI). Is a high-pressure, direct injection fuel system that is virtually adjustment-free. It electronically monitors operator and sensor inputs to optimize engine performance.

ADEM III Electronic Control Module. Along with the Caterpillar Monitoring System controls all major engine functions and regulates the timing, duration and pressure of the injected fuel. ADEM III also offers automatic altitude compensation, a cold mode start-up strategy and oil pressure and coolant warnings which result in precise engine speed control, superior cold start capability, low smoke and emissions in all operating conditions.

Caterpillar Monitoring System (CMS). Monitors critical engine system functions and derating the engine protects the engine from damage should any of six critical conditions occur.

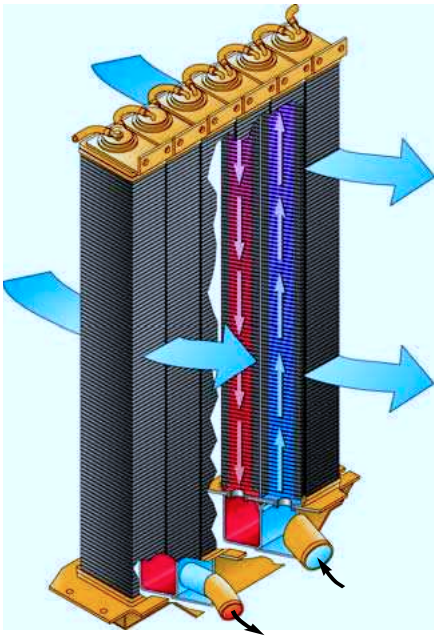
1. High coolant temperature
2. High air inlet temperature
3. Low engine oil pressure
4. High fuel pressure
5. Low fuel pressure
6. Engine over-speed

Cooling System. Is an electronically controlled, hydraulically driven on-demand fan system which reduces sound levels and increases fuel economy.

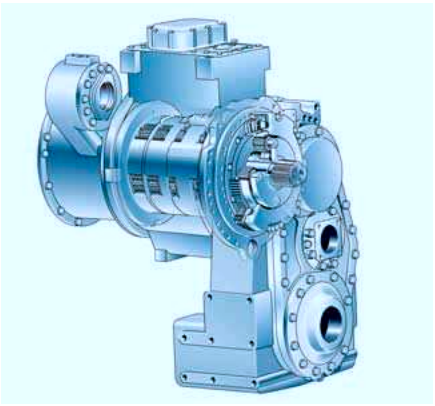
Fan Speed. Is controlled to meet the varying cooling requirements of the machine.

Constant Net Horsepower. With electronic control of the continuously variable speed on-demand fan, temperature levels of the engine coolant, transmission oil, hydraulic oil and air inlet manifold are constantly monitored. This information is used to control and maintain fan speed at the level necessary to maintain normal system temperatures. Cooler conditions result in reduced fuel consumption.

Separated System. The cooling system is isolated from the engine compartment and coupled with the variable rate fan, less air is required to pass through the system. This results in faster machine warm up in cold weather, increased fuel efficiency, less radiator plugging and lower sound levels.

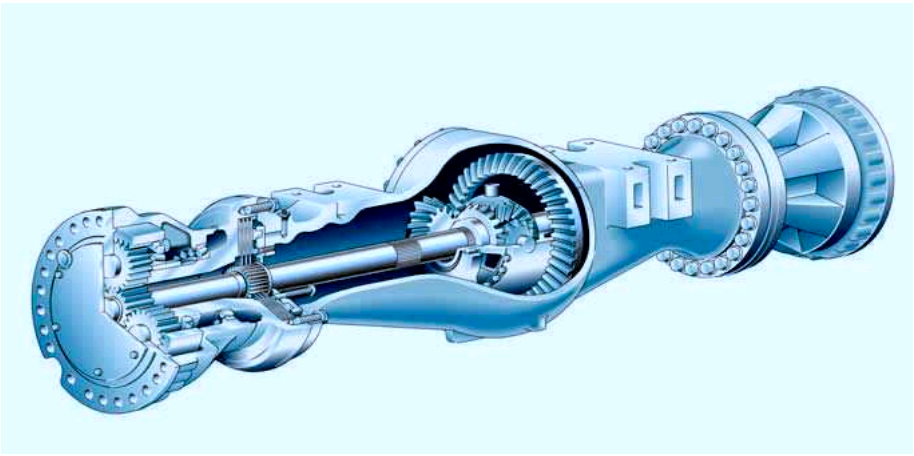


Advanced Modular Cooling System. Utilizes an exclusive two-pass cooling system that provides significantly more cooling capacity than conventional radiator systems.



Powershift Transmission. Is heavy-duty, planetary driven and electronically controlled to provide smooth shifts that improve operator comfort and machine performance.

Integrated Braking System (IBS). Is a Caterpillar exclusive feature that reduces axle oil temperatures, improves transmission neutralizer smoothness.



Axles. Are fixed on the front and oscillating ±13 degrees on the rear. The design meets the demands of Ride Control and autoshift that often result in higher speed load and carry applications.

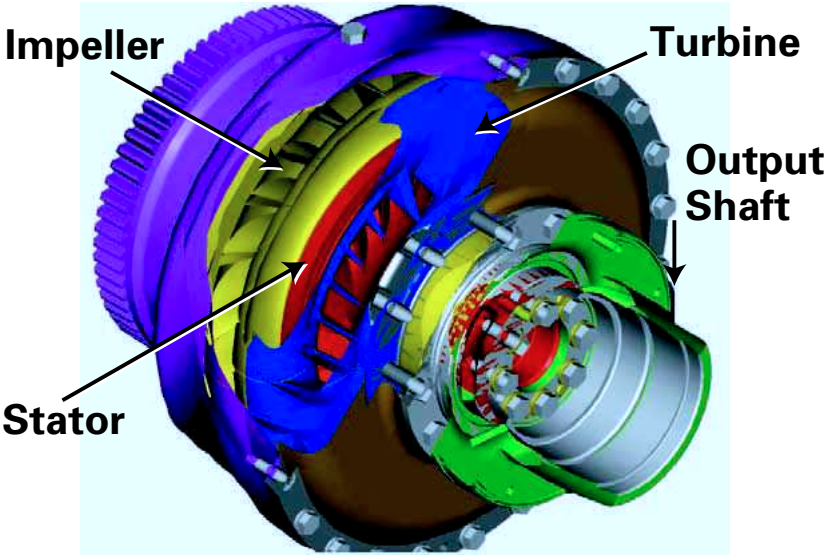
External Axle Oil Cooler. Is available as a factory installed attachment for use in "high energy" applications, such as long distance load and carry in high ambient temperature conditions. With the availability of IBS, it is estimated that very few applications (five percent or less) and conditions will require AOC. Your Caterpillar dealer can perform an application analysis using Equipment Investment Analysis software to determine if an axle oil cooler is required.

Brakes. Braking can occur using either of the cab floor-mounted pedals. The left pedal also serves as the neutralizer and activates the IBS. This system eliminates the need for an air compressor and dryer, reducing the number of components and improving reliability.

Rims and Tires. Several tire options are available with Firestone, Goodyear and Michelin offering tread types for a wide range of conditions and applications.

Free Wheel Stator

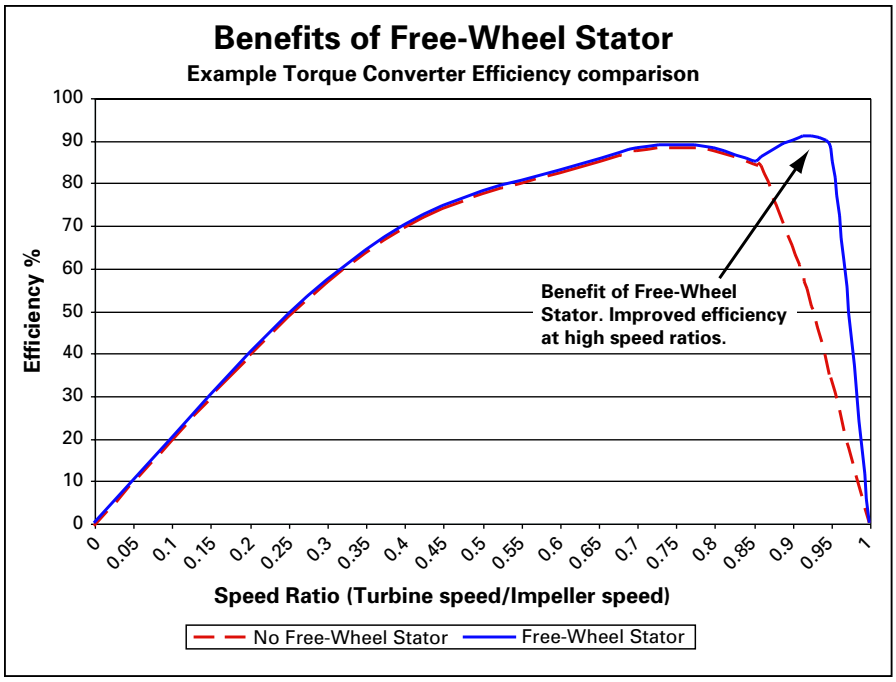
Improves power train efficiency and contributes to reduced fuel consumption.



Free Wheel Stator Torque Converter. The 980G Series II features a Free Wheel Stator Torque Convertor (FWSTC). A FWSTC improves machine power train efficiency in certain applications and contributes to the improved fuel efficiency of the 980G II. A torque converter provides a larger/broader output load potential than the engine can provide alone, reducing the need for very low speed gears and the number of gears required from a direct drive configuration.

Fixed Stator vs. Free Wheel Stator. The engine output shaft drives the torque converter's impeller. The impeller accelerates the torque converter fluid from low to high velocity, adding kinetic energy to the fluid. This energy is given up to a turbine causing the fluid to lose speed. The force of the oil that hits the turbine blades causes the turbine to rotate, driving the output shaft (input to transmission). The stator is a stationary reaction member between the turbine and impeller. The stator redirects the flow of oil as it leaves the turbine to increase the fluid's momentum as it returns to the impeller, increasing the unit's torque capacity. In conditions where demand placed on the torque converter is not extreme (output torque requirements equal to or less than input torque) such as when ground speed is high and resistance is low (machine slowing from high speed), turbine speed will be high relative to impeller speed. Oil passing through the turbine may then strike the back of the stator blades, eliminating the stator's ability to redirect and increase the oil's momentum. As a result, the stator actually lowers the efficiency of the system by increasing drag. Free wheel stator allows the stator to turn in the same direction as the turbine in this condition, minimizing drag on the converter and increasing efficiency.

How Free Wheel Stator Works. The free wheel assembly is a one-way clutch consisting of cam, rollers), springs and carrier. The cam is spline connected to the stator so that when the stator tries to move in the opposite direction to the turbine, the rollers are forced into the narrow end of the tapered grooves, preventing the cam and stator assembly from rotating around the carrier. Since the carrier is held stationary, the stator cannot turn and the free wheel assembly is locked. As the speed of the turbine approaches 85 percent of the impeller speed, oil passing through the turbine strikes that back of the stator blades so that the stator starts to turn in the same direction of the turbine. The cam then rotates so that rollers occupy the wide end of the tapered grooves. The cam and stator assembly are then free to rotate around the carrier (freewheel), thereby reducing drag and increasing efficiency.



Free Wheel Stator Benefits. The graph represents the efficiency of a fixed torque converter relative to an equivalent converter with a free wheel stator. When the turbine/impeller speed ratio of the two converter types is below 0.85 they perform virtually the same. Once the speed ratio exceeds 0.85, the benefit of a free wheel stator is realized through reduced drag in the torque converter. This higher efficiency results in increased fuel efficiency.

Operator Station

The 980G Series II cab is quiet and comfortable and enhances operator productivity.

Entry and Exit. Rear hinged, full length doors are provided on both the right and left sides. Both are equipped with sliding windows as standard equipment.

Viewing Area. Is unmatched through a wide, flat front and distortion-free windshield that features bonded glass that reduces obstructions and provides an accurate and full view of the working area. Windshield wiper sweep is increased and wet-arm, front and back wiper washers ensure a clear view is maintained.

Ventilation/Air Conditioning. The pressurized air conditioning system features improved air flow and circulation. Higher velocity air can be directed toward the operator utilizing thirteen louvered vents. Heating, cooling and defrosting functions are included. All heating and air conditioning controls are located on the upper control panel within easy reach of the operator.

Seat. The new, Caterpillar C 500 Series Comfort air suspension seat replaces the Cat® Contour Series seat and provides increased operator comfort with an automotive-style lumbar support. The seat adjusts six ways to suit individual requirements.

Steering Controls. Command Control steering is a pilot operated, load sensing system that links the steering wheel and frame angle positions to provide the proper amount of steering control. The speed the machine turns is proportional to the steering wheel position. Benefits are precise control, quick response and reduced operator efforts in any application.

Steering Wheel. The semicircular shape improves visibility to the front dash and gauges. It includes the ergonomic, left hand Command Control steering grip. The steering column tilts and telescopes to adjust to personal preferences.

Transmission Controls. Are integrated into the steering grip on the Command Control wheel and provide all transmission controls. With Command Control steering and its ±70 degree steering, the operator can keep one hand on the transmission controls in all steering positions and can select forward, neutral or reverse with a three-position rocker switch. The grip rotates on the wheel like a spinner knob to provide smooth, constant effort steering. Thumb operated upshift and downshift buttons control manual shifting.

Shifting. The operator can choose manual or automatic shift modes for transmission shifting.

Transmission Neutralizer Override Switch. Activates the override so the left pedal, which also operates the IBS system and can provide traditional braking, 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.

Ride Control System (Option). Is a nitrogen oil accumulator in the hydraulic lift circuit that acts as a shock absorber to dampen forces from the bucket as the bucket and lift arms compress the nitrogen in the accumulator to improve machine stability and provide a smoother, more comfortable ride. It also contributes to increased frame and machine life by reducing shock loads into the structures.

Ride Control Operation. Is easy as the operator uses a switch in the cab to choose between Ride Control Off, Ride Control On, or Automatic Ride Control.

Payload Control System. Is designed specifically for Caterpillar Wheel Loaders to provide on-the-go weighing and tracking of material, including the type and quantity loaded by individual trucks. It is available as a factory or dealer installed attachment.

Payload Control System Operation. PCS stores all important data for later download and retrieval with a personal computer. There are twelve different reports provided to help improve various aspects of the operation. With the addition of a printer, tickets can be printed for driver records.

Convenience Features. Include standard air conditioning, a heater/defroster, computerized monitoring system, redesigned dash panel and overhead instrument/control panel that puts all indicators and controls within easy operator reach. In addition, there is a tilt and telescoping steering column and a storage area for personal items, lunchbox and beverage holder.

Caterpillar Monitoring System

Monitors critical machine systems and provides four warning categories to keep the operator informed.

System Functions. Include continuous critical machine systems monitoring. A warning system provides the operator four categories or levels of warning, depending on the severity.

Self-Test. Verifies proper operation of the outputs (displays, indicator lamps and audible alarms). The operator must observe the outputs in order to determine whether the displays are operating properly.

Category 1 Warning. Is designed only to make the operator aware of a machine condition by having the alert indicator flash. The warning identifies a system in need of operator attention, including mechanical malfunction or performance parameters requiring operator technique alteration.

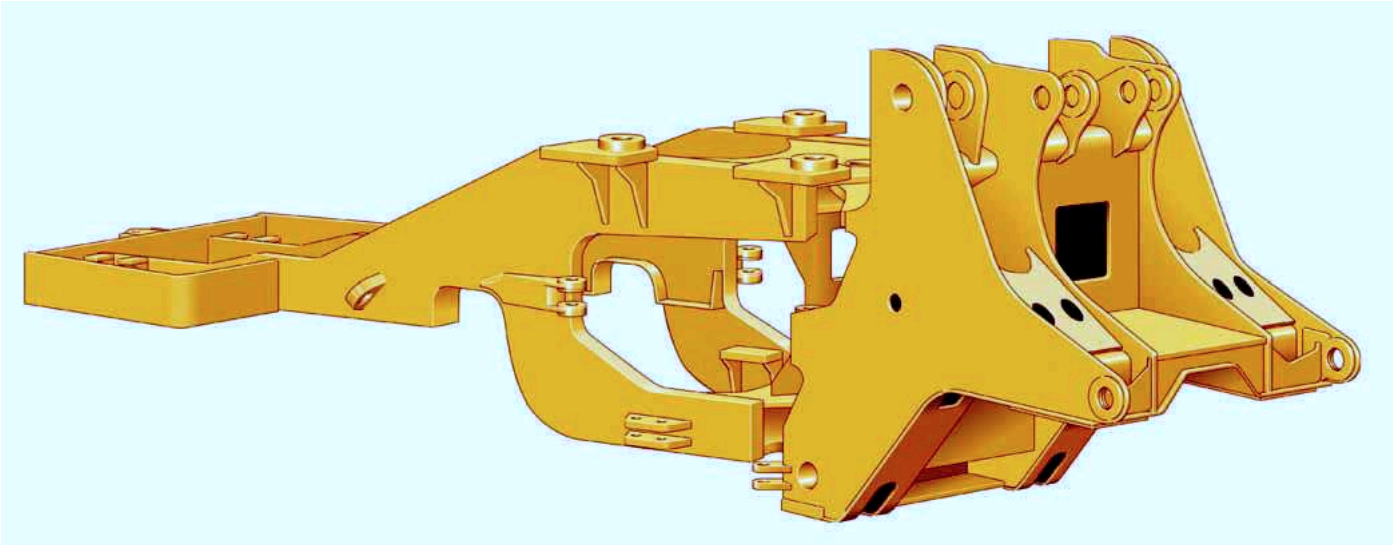
Category 2 Warning. Requires a change in machine operation to reduce excessive temperature in one or more systems.

Category 2-S Warning. Sounds a constant alarm to warn of a severe condition in one or more of the systems in Category Two. Immediate corrective action is necessary to prevent machine damage.

Category 3 Warning. Sounds the action alarm and flashes the alert indicator and action light signaling the operator to immediately shutdown the machine to prevent damage to a system and/or the entire machine.

Structures

Built with the strength and durability to provide years of service in even harsh conditions.



Engine End Frame. Is a full box section frame with hitch plates at the front end that provides a strong, rigid structure which resists twisting and impact loads. Rear counterweight mounting, battery box and toolbox are located at the back of the frame area.

Spread Hitch Design. Provides excellent load distribution and increased bearing life with thick hitch plates and a butterfly plate that supports the hitch and increases torsional stiffness. The wide opening improves service access.

Non-Engine End Frame. Supplies a solid mounting base for the front axle, lift arms, lift cylinders and tilt cylinders. It is a fabricated four-plate loader tower that absorbs severe twisting, impact and loading forces.

Linkage. Lift arms are solid steel, providing superior strength with an excellent front end viewing area. The proven design offers excellent dump clearance and reach for exceptional matching to both on- and off-highway trucks. Z-bar linkage generates excellent breakout forces and good rack back angle for better bucket loading and material retention.

Counterweight. Is two pieces that are integrated into the machine design and styling. The rear bumper and single bottom slab make up the standard counterweight.

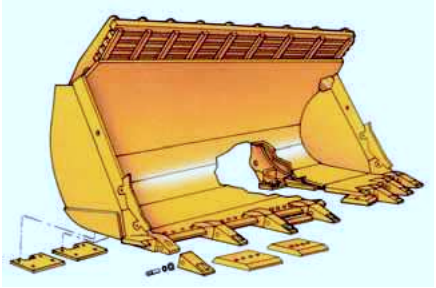
Buckets and Work Tool Controls

Caterpillar Buckets and Work Tools give you the flexibility to match the machine to your application. Low-effort controls help reduce operator fatigue and increase productivity.

General Purpose Buckets. Provide all around performance and are useful in stockpiling and rehandling applications, as well as excavating and bank loading where breakout force is required. General purpose buckets accept standard Caterpillar bolt-on cutting edges, and base edges are pre-drilled for the GET Corner Guard System. Several general purpose bucket combinations are available, ranging in capacity from 4.2 m^3 (5.5 yd^3) to 5.7 m^3 (7.5 yd^3) available. These combinations are based on four basic bucket sizes: 4.2 m^3 (5.5 yd^3), 4.7 m^3 (6.0 yd^3), 5.0 m^3 (6.5 yd^3) and 5.4 m^3 (7.0 yd^3), together with three variations of GET, teeth, teeth and segments and a reversible bolt-on cutting edge (BOCE).

Rock Buckets. Are designed for use in face or bank loading and feature a high penetration spade edge for greater impact loads and/or increased material penetration. Added wear strips reduce the need for costly bucket rebuilds. Select from BOCE; penetration teeth; shouldered, double-strap sidebar protectors; and mechanically attached wear plates (MAWP) in place of standard wear plates to meet the needs of specific applications.

Heavy Duty Rock Buckets. Are recommended for use in face loading where high abrasion and high impacts are encountered. Available in straight edge or spade edge versions, they have a long floor for easy, quick loading and a large bucket radius for minimal resistance. These buckets feature additional wear protection items, including a thicker base edge, a four piece liner package, inner and outer side wear plates, bottom outside skid plates, hinge bracket wear plates and base edge wear plates. Eight buckets range in size from 4.2 m^3 (5.5 yd^3) to 4.8 m^3 (6.25 yd^3).



Bucket Construction. Caterpillar General Purpose and Rock buckets feature proven shell-tine construction for maximum performance and durability. Tines reinforce the bucket floor from the hinge plates to the cutting edge, forming box sections that provide protection against impact and twisting forces. Integral spill plates provide better material retention and maintain operator visibility. Rackback stops protect the buckets from damage and impact forces.

Specialty Buckets and Work Tools. Several other specialty buckets and work tools are also available for specific applications, including:

- Coal Buckets
- Waste/Refuse Buckets
- Millyard Forks
- Logging Forks
- Block Handling Forks
- Wood Chip Buckets
- Slag Buckets

Ground Engaging Tools (GET). Are offered by Caterpillar to suit the wide range of machine and application needs. Selection of the correct GET is essential for obtaining maximum performance and lowest cost per ton operating costs. Abrasion Resistant Material (ARM) for GET helps prolong component life three to four times.

Bucket and Attachment Specifications. Operating specifications provide the information required to select the correct bucket for the application.

Bucket Controls. Electro-hydraulic (E/H) bucket and work tool controls offer precise lift, tilt and auxiliary control with extremely low operator effort. The armrest and console can be moved vertically or fore and aft. The hydraulic control console can also be tilted, and the wristrest can be adjusted vertically.

Operation. Controls consist of two single axis levers that provide precise fingertip control. Electronic sensors and hydraulics precisely match lever position to the speed and position of the lift arms and bucket.

Electro-Hydraulics. Are controlled using CMS which relies on inputs and outputs to monitor lift positions, operator commands and control the pilot valve manifold. With electro-hydraulics, in-cab adjustable lift, lower and bucket kick-outs provide faster cycle times and eliminate the need for visual spotting by providing repeatable, programmable stops.

Tilt Linkage. Is fully integrated. A tilt position sensor enables in-cab adjustment of the tilt kick-out and improves system functionality. Together with new software, finer modulation hydraulic control of lift/lower, along with bucket dump/rack back functions is possible.

Versatility and Application Match

Increase your productivity by performing a variety of jobs with one machine. Matched payloads and matched buckets ensure optimum performance.

Bank Excavation. In packed earth, clay and rocky material offers excellent breakout and bucket fill with first gear loading.

Rock Excavation. Excellent breakout force makes the 980G Series II an aggressive machine in rock excavation.

- Dump clearance allows loading of 36 tonnes (40-ton) off-highway trucks.
- Spade nose rock buckets feature two bolt corner guards and J400 teeth for better retention and added durability.
- Heavy-duty quarry buckets with additional protection are also available.

Courtesy of Machine.Market

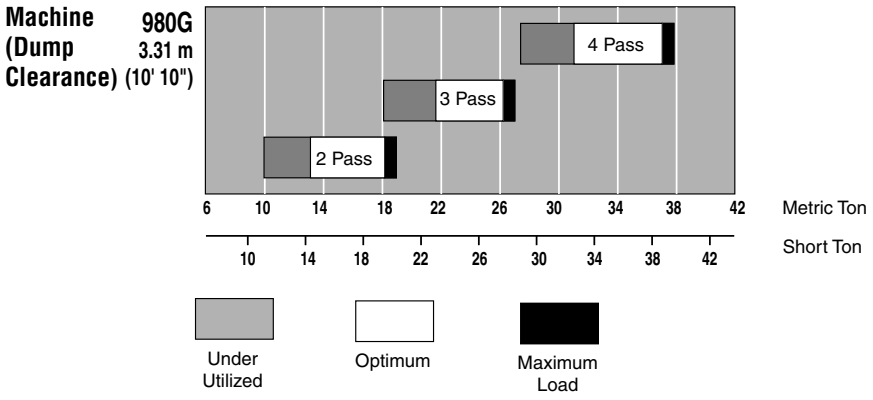
Material Handling. With more power, outstanding dump clearance and second gear performance, the 980G Series II loads both on- and off-highway trucks quickly and easily.

High Lift Arrangement (Option). Provides an additional 221 mm (9 in) of dump clearance for special dump clearance needs.

Forest Machine Arrangement (Option). Choose from large capacity millyard and other job-matched forks to sort, load and deck logs and timber. Preset the automatic fork positioner at any angle to eliminate visual spotting. Use the low profile millyard fork with widely spaced tines to hold and stabilize tree-length logs.

Waste Handling Arrangement. An optional guarding package is available for machines used in waste transfer or recycling stations. It offers an 826G hood, front driveshaft guard, headlight guards, heavy-duty engine and transmission mounts, hitch area guards, hydraulic and fuel tank guards, modified counterweight, modified front and rear frames, powered crankcase guard, powered power train guard, steel front fenders, steering cylinder guards and transmission dipstick.

Steel Mill Application Arrangement. Gives the added protection needed for extended life and lower operating costs in this rugged environment, including: additional guarding, chain clearance, extreme service transmission, fabricated rear bumper and counterweight, heavy-duty lift arms (T1 steel), heavy-duty engine and transmission mounts, hydraulic hose protection, insulated battery mounting, raised engine air precleaner, remote engine shutdown, remote parking brake release, greaseable linkage pins, steel cable ladder, Steel Command Control steering shaft cover, steel front fenders, transmission override, water glycol hydraulics (optional). Slag buckets are also available.



Truck Match. The 980G Series II is an aggressive first gear loader for face and bank excavation, but the versatility of a material handler was also designed into it. With increased rimpull and full match torque converter in second gear, the 980G Series II is an aggressive second gear stockpile loader. With ample dump clearance, it can easily load on-highway trucks in two to three passes and off-highway 36 tonnes (40 ton) trucks in four passes.

Bucket Match. General purpose, rock and heavy-duty quarry buckets are available with various GET configurations. The 5.7 m^3 (7.5 yd^3) General Purpose bucket can be used effectively in lighter materials ranging from 1305 to 1543 kg/m^3 (2200 to 2600 lb/yd^3) like crushed limestone. Depending on your material densities, choose a 5.4 m^3 (7.0 yd^3) General Purpose bucket with bolt-on cutting edge for even more stability.

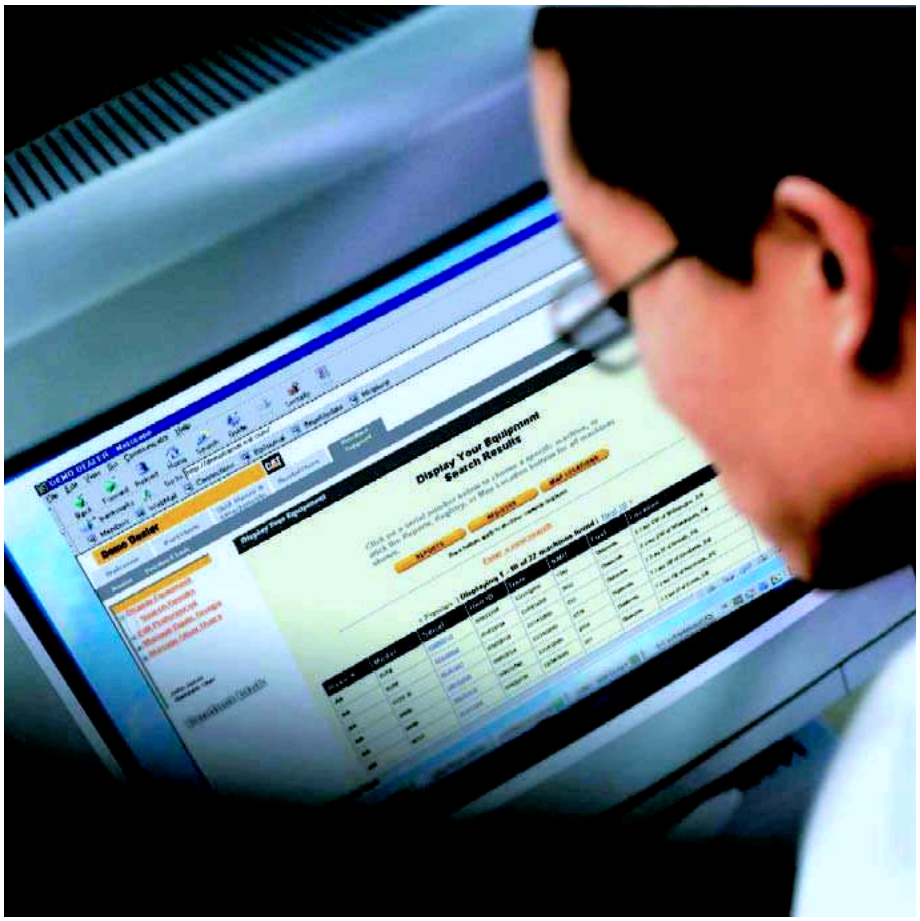
Product Link Ready

Product Link provides two-way information flow between machine systems, the Caterpillar dealer and customer.

Product Link. Utilizes a network of 28 satellites to communicate vital machine information and location to the dealer's personal computer via the dealer mailbox system. The system is designed to provide four position reports and one SMU report, which are viewed utilizing a software program residing on the PC, per day. In addition, users can obtain additional machine reports by transmitting a signal through the communication system to the individual unit, though this may incur additional monthly charges.

Product Link 151. Is available as a dealer installed option and offers:

- Service meter hour update (one per day)
- Machine location update (four per day)
- DBS machine usage file integration
- Integrated mapping, route planning
- Product Watch configurable parameters for machine location and time operation
- Four sensor inputs (digital switch type)



Product Link 201. Is available as a factory installed attachment. In addition to the Product Link 151 features, it includes:

- Event/diagnostic monitoring
- E-mail/pager alerts (interfaces with DBS Robot/AlertR function)

Courtesy of Machine.Market

Serviceability

The 980G Series II continues Caterpillar leadership in offering unmatched serviceability.

Ground Level Maintenance Points. Are located in the front hitch for the non-engine end frame and engine end frame. Remote grease lines from these areas culminate in one convenient central lube bank on the left side of the machine. U-joints are lifetime lubricated so the slip joint is the only drive line component requiring grease.

Sight Gauges. For the transmission oil, hydraulic oil and radiator coolant are easy to see and eliminate the risk of contaminants entering the system during daily checks.

Engine Compartment. Access is convenient through service doors and side panels that can be quickly lowered or easily removed.

Non-Metallic Hood. Tilts for full access to the engine, cooling system and major components. An electric screw-jack, with manual backup, tilts the hood from closed to any position up to 70 degrees. The entire hood enclosure is removable using built-in lift points.

Ecology Drains. For the engine, transmission and hydraulic oil allow for simple and clean draining of fluids. Axle oil ecology drains are provided as factory installed options.

Coolant. System is factory filled with Caterpillar Extended Life Coolant, which can provide up to 6,000 hours between change intervals. A simple check at 3,000 hours is required to determine if additive is needed.

S·O·S℠ Ports. Provide quick access to engine, transmission and hydraulic oils for representative analysis samples for S·O·S and to minimize chances for contamination. Following S·O·S program guidelines enables the owner to foresee many problems before they occur and schedule downtime for component repair or replacement.

Brake Wear Indicators. Allow a service technician to measure and track brake wear.

Swing-Out Grill. Gives access to the air conditioner and oil cooler cores – which also swing out 45 degrees for easy radiator cleaning.

Batteries. Four maintenance-free batteries sit securely in a built in battery box in the right rear frame with a lid that is sealed to prevent moisture from entering.

Removable Cab. Removal from the machine can be completed in about 45 minutes, and it is not necessary to remove or disconnect any hydraulic lines.

Caterpillar Monitoring System (CMS). Provides a wealth of machine operation and performance feedback, along with diagnostic codes which a service technician can use to quickly troubleshoot problems.

Oil Change Intervals. Are every 500 hours with the use of CH-4 oil so downtime is less frequent.

Cat QuickEvac™ System (Option). Is an exclusive Caterpillar on-board engine oil evacuation and prelubrication system that speeds the process of evacuating engine sump, allows for the purging of oil filters prior to removal and minimizes oil spills. It also enhances contamination control by ensuring complete filtration of new oil on engine refill.

Complete Customer Support

Cat dealer services help you operate longer with lower costs.

Machine Selection. Make detailed comparisons of the machines under consideration before purchase. Cat dealers can estimate component life, preventative maintenance cost and the true cost of lost production.

Purchase. Look past initial price. Consider the financing options available as well as the day-to-day operating costs. Look at dealer services that can be included in the cost of the machine to yield lower equipment owning and operating costs over the long run.

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

Product Support. You will find nearly all parts out our dealer parts counter. Cat dealers use a worldwide computer network to find in-stock parts to minimize machine downtime. Save money with genuine Cat Reman parts. You receive the same warranty and reliability as new products at cost savings of 40 to 70 percent.

Operation. Improving operating techniques can boost your profits. Your Cat Dealer has training videotapes, literature and other ideas to help you increase productivity.

Maintenance Services. Choose from your dealer's range of maintenance services when you purchase your machine. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S·O·S℠ and Coolant Sampling and Technical Analysis help you avoid unscheduled repairs.

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

Engine

Engine Model	Caterpillar 3406E EUI with ATAAC	
Flywheel Power	232 kW	311 hp
Maximum Flywheel Power	238 kW	319 hp
Flywheel Power - ISO 9249	232 kW	311 hp
Flywheel Power - DIN 70020	315 PS	
Peak Torque (Net) @ 1,200 RPM	1623 N•m	1,197 ft-lb
Total Torque Rise	47%	
Bore	137 mm	5.4 in
Stroke	165 mm	6.5 in
Displacement	14.6 L	893 in^3

- These ratings apply at 2,000 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.

Weights

Operating Weight	30 207 kg	66,576 lb

Buckets

Bucket Capacities	3.8-5.7 m^3	5.0-7.5 yd^3
Max Bucket Capacity	5.7 m^3	7.5 yd^3

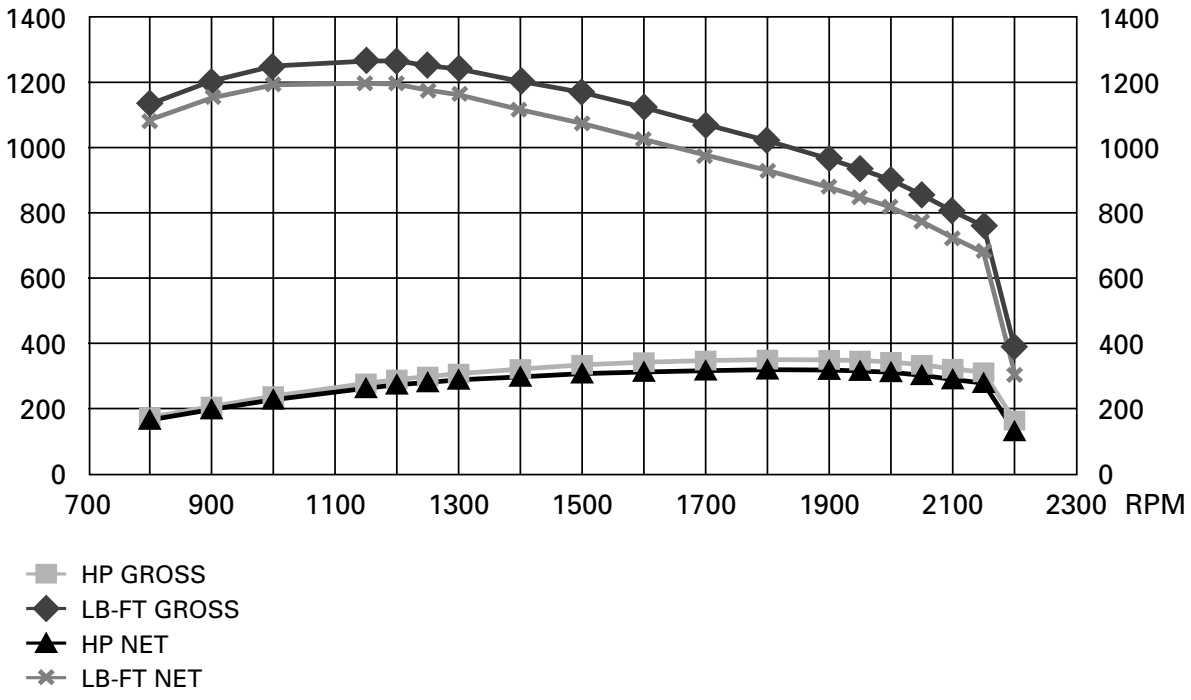
Operating Specifications

Static Tipping Load, Full Turn	18 032 kg	39,743 lb
Breakout Force	210 kN	47,277 lb

Transmission

Forward 1	7.1 kph	4.4 mph
Forward 2	12.6 kph	7.8 mph
Forward 3	21.96 kph	13.6 mph
Forward 4	37.4 kph	23.2 mph
Reverse 1	7.5 kph	4.6 mph
Reverse 2	13.1 kph	8.2 mph
Reverse 3	23 kph	14.3 mph
Reverse 4	42.8 kph	24.8 mph

- Maximum travel speeds (29.5-25 tires).



Hydraulic System

Bucket/Work Tool System (Standard), Gear-Type Pump - Output at 2,100 rpm and 6900 kPa (1000 psi)	464 L/min	120 gal/min
Bucket/Work Tool System (Standard), Gear-Type Pump - Relief Valve Setting	20 700 kPa	3,000 psi
Pilot System, Gear-Type Pump - Output at 2,000 rpm and 4310 kPa (625 psi)	38 L/min	10.3 gal/min
Pilot System, Gear-Type Pump - Main Valve Setting	3450 kPa	500 psi
Hydraulic Cycle Time - Raise	6 Seconds	
Hydraulic Cycle Time - Dump	2 Seconds	
Hydraulic Cycle Time - Lower, Empty, Float Down	3.4 Seconds	
Hydraulic Cycle Time - Total	11.4 Seconds	

Brakes

Brakes	Meets required standards.

- Meet OSHA, SAE J1473 OCT90 and ISO 3450-1985 standards.

Axles

Front	Fixed front	
Rear	Oscillating ±13°	
Maximum Single-Wheel Rise and Fall	550 mm	21.7 in

Tires

Tires	Choose from a variety of tires to match your application.

- Choice of:
  29.5 25 22PR L3 Firestone, Goodyear
  29.5 25 22PR L4 Firestone, Goodyear
  29.5 25 22PR L5 Firestone, Goodyear
  29.5-R25 GP2B L3 Goodyear
  29.5-R25 XHA L3 Michelin
  29.5-R25 XLDD2A L5 Michelin
- 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. The 26.5-25 size range and other special tires are available on request.

Cab

ROPS/FOPS	Meets SAE and ISO standards.

- Caterpillar cab with integrated Rollover Protective Structure (ROPS) are 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 80 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 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.

Service Refill Capacities

Fuel Tank - Standard	470 L	124 gal
Cooling System	90 L	23.8 gal
Crankcase	38 L	10 gal
Transmission	70 L	18.5 gal
Differentials and Final Drives - Front	87 L	23 gal
Differentials and Final Drives - Rear	87 L	23 gal
Hydraulic System (Including Tank)	250 L	66 gal
Hydraulic Tank	125 L	33 gal

Operating Specifications

		Standard machine with General Purpose Buckets								
		Teeth	Teeth and Segments	Bolt-on Edges	Teeth	Teeth and Segments	Bolt-on Edges	Teeth	Teeth and Segments	Bolt-on Edges
Rated bucket capacity (§)	m^3	4.2	4.5	4.7	4.7	4.9	5.0	5.0	5.3	5.4
	yd^3	5.5	5.75	6.0	6.0	6.25	6.5	6.5	6.75	7.0
Struck capacity (§)	m^3	3.66	3.81	3.87	4.03	4.19	4.25	4.38	4.55	4.61
	yd^3	4.79	4.98	5.06	5.27	5.48	5.56	5.73	5.95	6.03
Width (§)	mm	3533	3533	3447	3533	3533	3447	3533	3533	3447
	ft/in	11'7"	11'7"	11'4"	11'7"	11'7"	11'4"	11'7"	11'7"	11'4"
Dump clearance at full lift and 45° discharge (§)	mm	3342	3342	3448	3265	3265	3374	3201	3201	3311
	ft/in	11'0"	11'0"	11'4"	10'9"	10'9"	11'1"	10'6"	10'6"	10'10"
Reach at full lift and 45° discharge (§)	mm	1534	1534	1419	1581	1581	1469	1627	1627	1516
	ft/in	5'0"	5'0"	4'8"	5'2"	5'2"	4'10"	5'4"	5'4"	5'0"
Reach with lift arm horizontal and bucket level (§)	mm	2957	2957	2801	3047	3047	2891	3127	3127	2971
	ft/in	9'8"	9'8"	9'2"	10'0"	10'0"	9'6"	10'3"	10'3"	9'9"
Digging depth (§)	mm	103	133	138	103	133	138	103	133	138
	in	4	5	5	4	5	5	4	5	5
Overall length (§)	mm	9412	9412	9245	9502	9502	9335	9582	9582	9415
	ft/in	30'11"	30'11"	30'4"	31'2"	31'2"	30'8"	31'5"	31'5"	30'11"
Overall height with bucket at full raise (§)	mm	5994	5994	5994	6067	6067	6067	6135	6135	6135
	ft/in	19'8"	19'8"	19'8"	19'11"	19'11"	19'11"	20'2"	20'2"	20'2"
Loader clearance circle with bucket in carry position (§)	mm	15 815	15 815	15 662	15 865	15 865	15 710	15 909	15 909	15 753
	ft/in	51'11"	51'11"	51'5"	52'1"	52'1"	51'7"	52'2"	52'2"	51'8"
Static tipping load straight*	kg	21 528	21 054	21 175	21 269	20 861	20 923	21 049	20 642	20 705
	lb	47,448	46,403	46,670	46,877	45,978	46,114	46,492	45,495	45,634
Static tipping load full 37° turn	kg	19 289	18 833	18 959	19 044	18 650	18 720	18 836	18 446	18 513
	lb	42,513	41,508	41,786	41,973	41,116	41,259	41,515	40,655	40,803
Breakout force** (§)	kN	272	254	251	251	236	233	235	222	219
	lb	61,214	57,216	56,386	56,583	53,104	52,391	52,978	49,868	49,255
Operating weight* (§)	kg	29 654	29 832	29 759	29 755	29 933	29 860	29 847	30 025	29 952
	lb	65,357	65,750	65,589	65,580	65,972	65,811	65,783	66,175	66,014

* Static tipping loads and operating weights shown are based on standard machine configuration with 29.5-R25, 1-Star (L-3) tires, full fuel tank, coolant, lubricants and operator.

** Measured 102 mm (4.0 in) behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE 732C.

(§) Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, including SAE Standards J732C governing loader ratings.

Operating Specifications (continued)

		Standard machine with Rock Buckets — Spade Nose						
		Teeth	Teeth and Segments	Bolt-on Edges	Teeth	Teeth	Teeth and Segments	No Teeth
Rated bucket capacity (§)	m^3	5.4	5.6	5.7	3.8	4.2	4.5	4.2
	yd^3	7.0	7.25	7.5	5.0	5.5	5.75	5.5
Struck capacity (§)	m^3	4.68	4.85	4.92	3.25	3.53	3.73	3.53
	yd^3	6.12	6.34	6.44	4.25	4.62	4.88	4.62
Width (§)	mm	3533	3533	3447	3492	3492	3492	3492
	ft/in	11'7"	11'7"	11'4"	11'5"	11'5"	11'5"	11'5"
Dump clearance at full lift	mm	3160	3160	3271	3271	3206	3206	3415
and 45° discharge (§)	ft/in	10'4"	10'4"	10'9"	10'9"	10'6"	10'6"	11'2"
Reach at full lift	mm	1656	1656	1545	1760	1798	1798	1580
and 45° discharge (§)	ft/in	5'5"	5'5"	5'1"	5'9"	5'11"	5'11"	5'2"
Reach with lift arm horizontal	mm	3177	3177	3021	3169	3243	3243	2940
and bucket level (§)	ft/in	10'5"	10'5"	9'11"	10'5"	10'8"	10'8"	9'8"
Digging depth (§)	mm	103	133	138	103	103	133	103
	in	4	5	5	4	4	5	4
Overall length (§)	mm	9632	9632	9465	9614	9687	9687	9357
	ft/in	31'7"	31'7"	31'1"	31'7"	31'9"	31'9"	30'8"
Overall height with bucket	mm	6205	6205	6205	6282	6360	6360	6360
at full raise (§)	ft/in	20'4"	20'4"	20'4"	20'7"	20'10"	20'10"	20'10"
Loader clearance circle with	mm	15 937	15 937	15 780	15 718	15 757	15 757	15 563
bucket in carry position (§)	ft/in	52'3"	52'3"	51'9"	51'7"	51'8"	51'8"	51'1"
Static tipping load straight*	kg	20 688	20 288	20 217	21 292	20 026	20 508	21 334
	lb	45,596	44,715	44,558	46,928	46,341	45,200	47,020
Static tipping load full	kg	18 481	18 009	18 032	19 072	18 811	18 311	19 119
37° turn	lb	40,732	39,890	39,743	42,035	41,459	40,357	42,138
Breakout force** (§)	kN	225	213	210	233	224	207	228
	lb	50,736	47,836	47,277	52,488	50,473	46,485	51,228
Operating weight* (§)	kg	30 102	30 280	30 207	29 699	29 910	30 169	29 686
	lb	66,345	66,737	66,576	65,457	65,922	66,092	65,428

		Material Handling	Coal Bucket	Refuse Bucket	High Lift
Rated bucket capacity (§)	m^3	5.5	8	8	—
	yd^3	7.5	10.4	10.4	
Struck capacity (§)	m^3	4.9	6.6	6.05	—
	yd^3	6.4	8.6	7.9	
Width (§)	mm	3404	3607	3886	—
	ft/in	11'2"	11'10"	12'8"	
Dump clearance at full lift	mm	3198	2942	2892	221
and 45° discharge (§)	ft/in	10'6"	9'7"	9'5"	9"
Reach at full lift	mm	1447	1654	1696	—
and 45° discharge (§)	ft/in	4'9"	5'4"	5'6"	
Reach with lift arm horizontal	mm	3020	3348	3413	160
and bucket level (§)	ft/in	9'11"	10'10"	11'2"	6"
Digging depth (§)	mm	122	157	162	—
	in	4	6	6	
Overall length (§)	mm	9463	9791	9856	199
	ft/in	31"	32'1"	32'4"	8"
Overall height with bucket	mm	6178	9894	10 382	221
at full raise (§)	ft/in	20'3"	32'2"	3'4"	9"
Loader clearance circle with	mm	15 984	16 455	16 763	225
bucket in carry position (§)	ft/in	52'5"	53'10"	54'10"	9"
Static tipping load straight*	kg	20 966	19 412	20 369	(1830)
	lb	46,222	42,796	44,905	(4,034)
Static tipping load full	kg	18 903	17 333	18 217	(1680)
37° turn	lb	41,673	38,212	40,161	(3,704)
Breakout force** (§)	kN	222	182	176	—
	lb	49,996	41,025	39,617	
Operating weight* (§)	kg	28 880	29 590	30 062	727
	lb	63,669	65,234	66,275	1,602

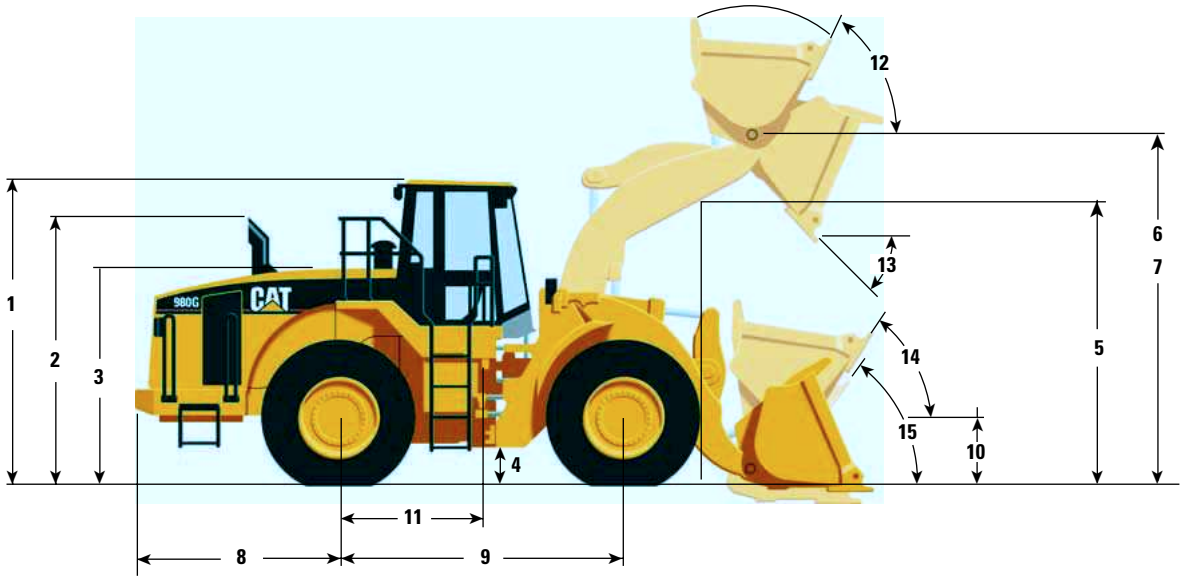
* Static tipping loads and operating weights shown are based on standard machine configuration with 29.5-R25, 1-Star (L-3) tires, full fuel tank, coolant, lubricants and operator.

** Measured 102 mm (4.0 in) behind tip of cutting edge with bucket hinge pin as pivot point in accordance with SAE 732C.

(§) Specifications and ratings conform to all applicable standards recommended by the Society of Automotive Engineers, including SAE Standards J732C governing loader ratings.

Dimensions

All dimensions are approximate.



1	Height to top of ROPS	3753 mm	12'4"
2	Height to top of exhaust pipe	3390 mm	11'1"
3	Height to top of hood	2332 mm	7'8"
4	Ground clearance/ Standard tire 29.5-R25 (L-3) See Chart below for other tires	467 mm	1'6"
5	Lift arm clearance @ maximum lift	3764 mm	12'4"
6	B-Pin height	4505 mm	14'9"
7	Optional high lift	4727 mm	15'6"

8	Center line of rear axle to edge of counterweight	2493 mm	8'2"
9	Wheelbase	3700 mm	12'2"
10	Height to center line of axle	457 mm	1'6"
11	Center line of rear axle to hitch	1850 mm	6'1"
12	Rack back @ maximum lift	61°	
13	Dump angle @ maximum lift	45°	
14	Rack back @ carry	46°	
15	Rack back @ ground	36°	

Tread width for 29.5-25 is 2440 mm (8')

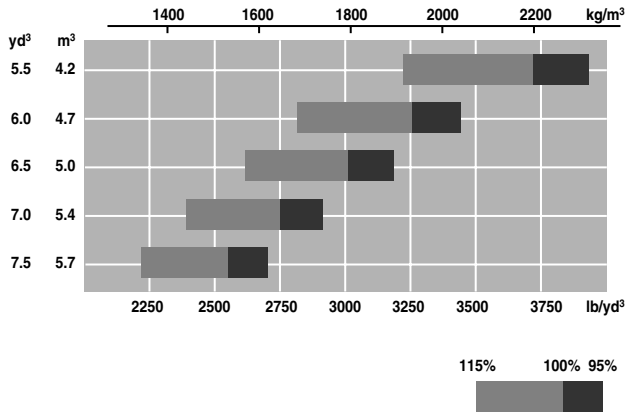
	Width over tires		**Ground clearance**		**Change in vertical dimensions**	
	mm	inches	mm	inches	mm	inches
29.5-25, (L-5)	3274	128.9	521	20.5	+54	+2.1
29.5-25, (L-4)	3285	129.3	515	20.3	+48	+1.9
29.5-25, (L-3)	3265	128.5	484	19.1	+26	+1.0
29.5-R25 (L-3)	3248	127.9	467	18.4	—	—
29.5-R25 (L-2/L-3)	3253	128.1	470	18.5	+3	+0.1
29.5-R25 (L-5)	3258	128.3	492	19.4	+25	+1.0

Typical Material Densities-Loose

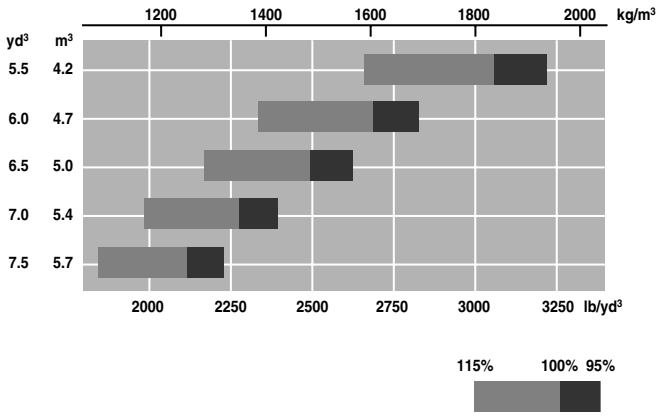
	kg/m³	lb/yd³
Basalt	1960	3,300
Bauxite, Kaolin	1420	2,400
Clay		
natural bed	1660	2,800
dry	1480	2,500
wet	1660	2,800
Clay and gravel		
dry	1420	2,400
wet	1540	2,600
Decomposed rock		
75% rock, 25% earth	1960	3,300
50% rock, 50% earth	1720	2,900
25% rock, 75% earth	1570	2,650
Earth		
dry, packed	1510	2,550
wet, excavated	1600	2,700
Granite		
broken	1660	2,800
Gravel		
pitrun	1930	3,250
dry	1510	2,550
dry, 6-50 mm (.2-2")	1690	2,850
wet, 6-50 mm (.2-2")	2020	3,400

	kg/m³	lb/yd³
Gypsum		
broken	1810	3,050
crushed	1600	2,700
Limestone		
broken	1540	2,600
crushed	1540	2,600
Sand		
dry, loose	1420	2,400
damp	1690	2,850
wet	1840	3,100
Sand and clay		
loose	1600	2,700
Sand and gravel		
dry	1720	2,900
wet	2020	3,400
Sandstone	1510	2,550
Shale	1250	2,100
Slag		
broken	1750	2,950
Stone		
crushed	1600	2,700

Standard Lift Bucket Selection



High Lift Bucket Selection



Standard Equipment

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

Electrical
- Alarm, back-up
- Alternator (65-amp, brushless)
- Batteries, maintenance-free (4) 740CCA
- Lighting system, halogen (6 total)
- Main disconnect switch
- Starter, electric, heavy-duty
- Starting and charging system (24-volt)
- Starting receptacle for emergency start

Operator Environment
- Air conditioner/HVAC system
- Bucket/Work Tool function lockout
- Cab, pressurized and sound suppressed
  - ROPS/FOPS, radio ready (entertainment) includes antenna, speakers and converter (12-volt, 10-amp)
- Cigar lighter and ashtray
- Coat hooks (2) with straps
- Controls, bucket/work tool electro-hydraulic
- Heater and defroster
- Horns, electric (steering wheel mounted)
- Computerized Monitoring System
  - Instrumentation, Gauges:
    - Digital gear range indicator
    - Engine coolant temperature
    - Fuel level
    - Speedometer/Tachometer
    - Transmission oil temperature
  - Instrumentation, Warning Indicators:
    - Axle oil temperature
    - Electrical, alternator output
    - Engine air filter restriction
    - Engine oil pressure
    - Fuel level and pressure
    - Hydraulic filter bypass
    - Hydraulic oil level
    - Parking brake
    - Service brake oil pressure
    - Primary steering oil pressure
    - Transmission filter bypass
- Lunchbox and beverage holders
- Mirrors, rearview (externally mounted)
- Seat, C-500 Series (cloth) air suspension
- Seatbelt, retractable, 76 mm (3 in) wide
- Steering column, adjustable, tilt and telescope
- Wet-arm, wipers/washers (front and rear)
  - Intermittent front wiper
- Window, sliding (left and right side)

Power Train
- Brakes, full hydraulic enclosed wet-disc
  - with Integrated Braking System (IBS) and brake wear indicator pin
- Engine, Cat 3406E diesel with ATAAC
- Fan, radiator, hydraulically driven, variable speed (temperature sensing)
- Filters, fuel/engine air, primary/secondary
- Fuel priming aid (electric pump)
- Fuel/water separator
- Muffler, sound suppressed
- Precleaner, engine air intake
- Radiator, Advanced Modular Cooling System (AMOCS)
- Starting aid (ether)
- Switch, transmission neutralizer lockout
- Torque converter (free wheel stator)
- Transmission, automatic planetary power shift (4F/4R)
- Variable Shift Control (VSC)

Other
- Automatic bucket positioner, in-cab adjustable
- Counterweight
- Doors, service access (locking)
- Ecology drains for engine, transmission and hydraulics
- Fenders, steel front with mudflaps/rear with extensions
- Guard, power train and crankcase
- Hitch, drawbar with pin
- Hood, non-metallic power tilting
- Kickout, lift and tilt, automatic (in-cab adjustable)
- 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

Hydraulics
- Couplings, Caterpillar O-ring face seals
- Diagnostic pressure taps
- Hoses, XT
- Hydraulic oil cooler (swing-out)
- Steering, load sensing

Tires, Rims and Wheels
- A tire must be selected from the mandatory attachments section. Base machine price includes a tire allowance.

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 specifics.

Axle oil cooler ready
Axle oil cooler
Buckets and Work Tools
Bucket Ground Engaging Tools - see Cat dealer
Cat QuickEvac™ System
CB radio ready (20-amp)
Differentials, limited slip (front or rear), No-SPIN (rear axle only)
Fast fill system, fuel
Fast fill system, oil
Fenders, roading
Fenders, narrow
Fuel tank guarding
Heater, engine coolant
High ambient radiator
High lift arrangement
Hydraulic arrangement, three-valve
Hydraulic tank guarding
Lights, directional
Lighting, auxiliary (4)
Forestry arrangement
Mirrors, rearview, interior
Open canopy
Payload Control System
Precleaner, turbine
Precleaner, turbine/trash
Ride Control System, two- and three-valve
Steel mill arrangement
Steering, secondary
Sound suppression
Tires
Transmission, extreme service
Waste Handling arrangement
Visor, front

980G Series II Wheel Loader

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