994D

Wheel Loader

Engine @ 1600 RPM		
Engine Model	Cat® 3516B EUI	
Gross Power	1027 kW	1375 hp
Flywheel Power	933 kW	1250 hp
Operating Specifications		
Operating Weight	191 200 kg	421,600 lb
Rated Payload – Standard	34.5 tonnes	38 tons
Rated Payload – High Lift	31 tonnes	34 tons
Bucket Capacity Range	15-31 m^3	19.5-41 yd^3

994D Wheel Loader

Powerful, responsive and rugged, the 994D sets the standard for high productivity.

Power Train

The Cat 3516B engine delivers high horsepower to maximize productivity. Field proven for reliable performance in the most demanding applications, the 3516B offers superior fuel efficiency, lower emissions, reduced engine noise and lower operating costs. **pg. 4**

Structures

Structural components are the backbone of the 994D's durability. The heavy duty box-section loader frame creates a durable, rugged machine. Solid steel lift arms resist twisting for maximum durability and reliability. **pg. 6**

Hydraulics

Powerful Cat hydraulics deliver the power and control needed to keep material moving. Technologically advanced system provides precise, low-effort control and trouble-free operation. Unique filtration system prevents cross contamination. **pg. 8**

Customer Support

Your Cat dealer offers a wide range of services that can be set up under a customer support agreement when you purchase your equipment. To help you get the best return on your investment, the dealer will help you choose a plan that can cover everything from machine and work tool selection to replacement. **pg. 13**

Designed for maximum productivity, the 994D builds on its productive tradition with innovations that enhance performance, reliability, durability and operator comfort, to lower your cost-per-ton.

Buckets and Ground Engaging Tools

Aggressive Cat buckets are designed for optimal loadability and structural reliability. A wide selection of buckets and ground engaging tools provide a match for every application and material condition to maximize productivity. All buckets feature new higher capacity ratings. **pg. 9**

Operator's Station

The ergonomically designed cab promotes operator comfort and ease of operation to maximize productivity. Controls are positioned with easy reach for superior control and reduced fatigue. Gear selection and steering is combined into one control for optimum efficiency. **pg. 10**

Serviceability

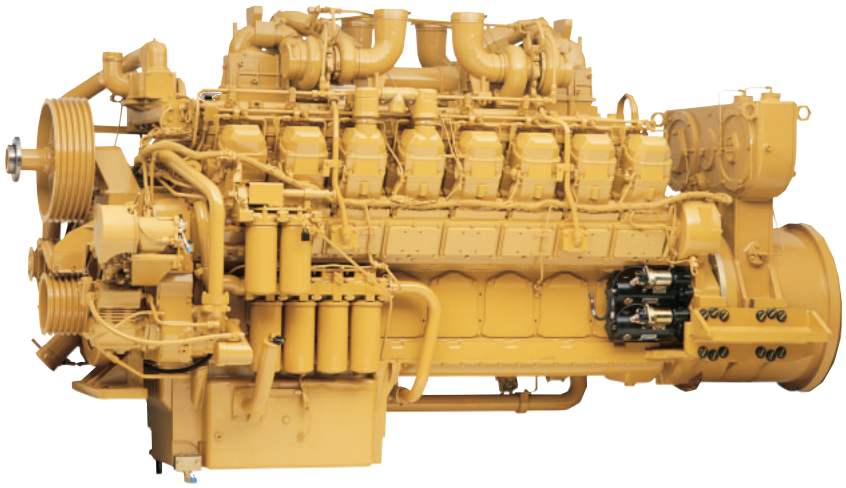
The 994D is designed for quick and easy service access. Simplified service and maintenance features are designed to minimize downtime for greater productivity. **pg. 12**

Matched Systems

An efficient loading/hauling system starts with a perfect match. Your Cat dealer can help you build an optimum system to maximize truck payloads, minimize loading time, and lower your cost-per-ton. **pg. 14**

Power Train

Cat power train delivers smooth, responsive performance and reliability in tough conditions.



Engine. Field-proven Cat 3516B EUI turbocharged and aftercooled diesel engine delivers high power and reliability in the world's most demanding mining applications. The 3516B is a 16-cylinder, four-stroke design and uses long, effective power strokes for more complete fuel combustion and optimum efficiency.

Engine Features.

- Three-ring, two-piece pistons with high strength forged steel crowns and lightweight aluminum skirts.
- Steel-backed, copper-bonded aluminum bearings.
- Uniflow cylinder head design with four alloy steel valves per cylinder.
- High carbon steel alloy crankshafts with hardened journals.
- Pressure lubrication with full-flow filtered oil and heat exchanger oil cooler.
- Direct-electric 24-volt charging system.

High Torque Rise. With 33% torque rise, the 3516B delivers high lugging forces during digging and acceleration in high rimpull conditions for maximum efficiency and fast cycle times.

Enhanced Life. High displacement, low rpm rating and conservative horsepower ratings mean more time in the field and less time in the shop.

Electronic Control Module (ECM). The ECM is the electronic "brains" of the power system. Computerized system senses operating conditions and power requirements and adjusts engine for most efficient operation at all times.

Electronic Unit Injection (EUI). The electronically controlled unit injection fuel system senses operating conditions and regulates fuel delivery for optimum fuel efficiency.

Advanced Diesel Engine Management (ADEM). ADEM system controls fuel injector solenoids to start and stop fuel injection for superior performance, greater reliability, cold start protection, automatic altitude compensation and air filter restriction indication.

Separate Circuit Aftercooler. Allows aftercooler circuit to operate cooler than jacket water temperature for a denser air charge and greater combustion.

Ether Starting Aid. Ensures reliable start-up in extreme cold operating conditions.

Cat Planetary Power Shift Transmission. Features heavy duty components to handle the toughest jobs. Electronic controls allow smooth shifting for greater productivity, durability and longer component life.

Impeller Clutch Torque Converter (ICTC). Electronically controlled impeller clutch torque converter provides maximum flexibility in regulating optimum rimpull in all conditions for smoother operation.

Inching Capability. Left brake pedal operation allows the operator to reduce rimpull to 25% then brake for more precise inching when approaching a truck or making directional changes.

Rimpull Control. Allows operator to adjust maximum rimpull from 100% down to 90, 85, 75 and 65% using a four-position dial while in first gear. Matching rimpull to job conditions provides greater traction in slippery or rough conditions for better performance and longer tire life.

Stable Design. Low mounted heavy-duty power train components ensure a stable machine, for an unequalled payload to full turn static tipping load ratio.

Proven Reliability. The 994D power train has proven itself with the most reliable and durable components in the industry for the lowest operating cost-per-ton.

Torque. Torque is developed at the wheel, generating less stress and wear on the axle shafts.

Axles. The front axle is fixed, and the rear axle oscillates ±10°, which allows either rear wheel to rise or fall 677 mm (26.7 in) while all wheels remain on the ground for maximum stability, greater traction and a more comfortable ride.

Differentials. Standard conventional differentials allow one tire to spin faster than the other, keeping developed torque out of the axles.

Axle Shafts. Free-floating axle shafts can be removed independently of the wheels and planetaries for quick and easy servicing.

U-Joints. Permanently lubricated for greater durability and long service life. Only the slipjoint requires manual lubrication.

Oil-Cooled Disc Brakes. Four-wheel, fully hydraulic oil-cooled multiple disc brakes are completely sealed and adjustment free. Two brake pedals allow standard braking with right pedal plus rimpull modulation braking with left pedal.

Brake Cooling. The brake oil cooler provides additional cooling to the brake discs for greater durability.

Filtration. Screens on the brake circuit minimize the risk of contamination.

Parking/Secondary Brake. Manual, spring-applied, multiple dry-disc brake is located on the front driveline for protection from contamination. Monitoring system alerts operator if transmission is engaged while parking brake is applied, and if the pressure drops, the parking brake is automatically applied.

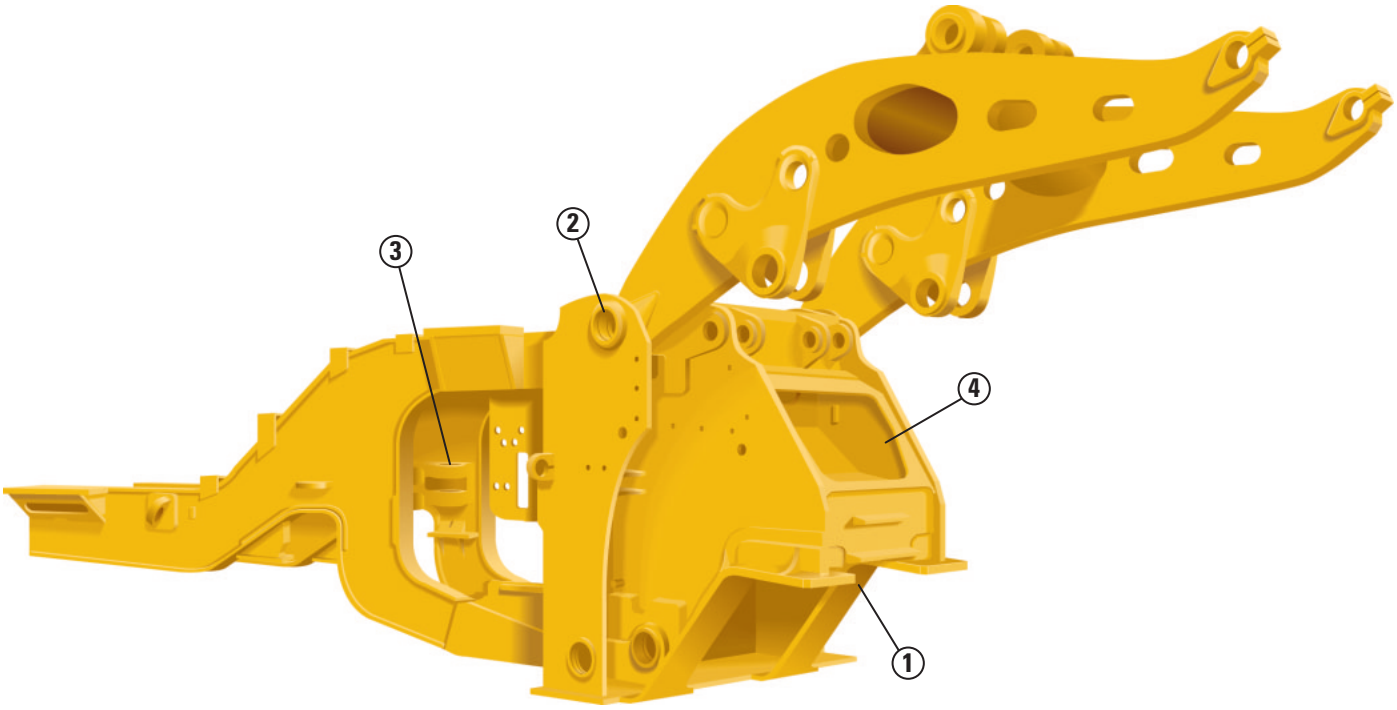
Engine Cooling. Advanced Modular Cooling System (AMOCS) significantly improves heat rejection through the use of copper cooling cores and an efficient two-pass cooling design.

Final Drives. The all-wheel drive design features four planet carrier gears with planetary double reduction in each wheel for superior reliability. Planetaries can be removed independently of the wheels and brakes for quick and easy servicing.

Duo-Cone® Seals. Seals out dirt and contamination to extend component life.

Structures

Designed for maximum strength and durability in the harshest operating environments.



Robust Structures. The 994D front loader frame features robust structural components for outstanding durability in the toughest loading conditions. The frame is the backbone of the 994D's durability and is specifically designed and manufactured to withstand the higher forces required by the machine's increased payload rating.

Frame. The box-section rear frame, articulation hitch and four-plate loader tower are designed to resist torsional shocks, twisting forces and stresses generated during the loading cycle while protecting driveline and hydraulic system components.

1) Axle Mounting Area. Thicker axle pad castings joined by a box-boom structure provides added strength and stiffness in the axle mounting area.

2) Pivot Mount Castings. Castings in the lift arm pivot mounting area better disperse stress loads for increased structural integrity.

3) Steering Cylinder Mounts. Steering cylinder mounts are thicker to more efficiently transmit steering loads into the frame.

4) Window Plate. Modified front window plate design and 60% thicker plate provides greater resistance to torsional loads.

Hitch Plate. The lower articulation hitch plate is larger for greater structural durability.

Lift Arms. The 994D's solid steel lift arms absorb high stresses generated during loading without sacrificing strength or durability. The linkage design provides an excellent view of the bucket edges, corners, and work area, allowing the operator to focus on productivity.

1) Lift Arm Cross Member. A heat-treated lift arm cross member and improved weld procedures provide greater reliability and durability.

2) Lift Arm Mounting. Life of lift arm to front frame and lift arm to bucket pin locations are greatly improved by the reduction of stress risers.

3) Stress-Relieved Lift Arms. Lift arms are stress relieved to eliminate residual stresses created during manufacturing and increase durability.

4) Auto Lube. Bucket to lift arm joint (B-pin) is automatically lubricated to increase reliability and reduce daily servicing.

Z-bar Loader Linkage. Proven Z-bar loader linkage geometry delivers maximum productivity. Fewer pivot point and moving parts are designed to reduce maintenance costs.

Breakout Force. High breakout force allows the loader to aggressively penetrate the bank.

Rackback. High rackback angle ensures greater material retention and less spillage.

Dump Speed. Controlled dumping speed protects the front linkage from excessive wear.

Hydraulics

Cat hydraulics deliver the power and control needed to keep material moving.

Hydraulic System. Completely enclosed hydraulic system uses separate circuits for lift and tilt, steering and brake control. Separate circuits provide increased cooling and elimination of cross-contamination, resulting in less downtime and greater productivity.

Lift and Tilt System. Three dedicated fixed displacement piston pumps deliver high reliability, efficiency and performance to the lift and tilt system.

Pilot Controls. Low-effort, pilot-operated finger-tip controls provide smooth, precise control of lift and tilt functions. Automatic lift kickout and return to dig detents deliver fast cycle times.

Steering System. The 994D features a load-sensing steering system with variable displacement piston pump for smooth, precise control. The revolutionary steering system integrates steering and transmission control functions into a single controller. Simple side-to-side movement of the STIC steer lever turns the machine right or left. Center point frame articulation allows the machine to articulate 40° to the left or right, permitting precise positioning in tight areas.

Filtration System. Advanced filtration system consists of additional screens and filters throughout the lift/tilt, steering and brake systems to maintain cleanliness, and prevent downstream contamination. All are monitored electronically through VIMS to simplify diagnostic troubleshooting and reduce downtime.

- Lift/tilt high pressure screens
- Steering high pressure screens
- Lift/tilt case drain filters
- Steering case drain filters
- Hydraulic case drain filters
- Front pump drive lube filter
- Front and rear brake oil screens

Cat Hydraulic Hose. Field proven Cat high-pressure XT hydraulic hose is exceptionally strong and flexible for maximum system reliability and long life in the most demanding conditions. Reusable couplings with o-ring face seals provide superior, leak free performance and prolong hose assembly life. Large-bore lift and tilt cylinders round out the hydraulic system, delivering high performance and durability.

Buckets and Ground Engaging Tools

Cat buckets provide the flexibility to match the machine to the material and conditions.

High Productivity. Aggressive Cat bucket designs deliver unmatched productivity in the most demanding applications. 994D buckets have been redesigned for optimal loadability and structural reliability.

Increased Bucket Capacity Ratings. 994D buckets have been slightly modified to allow for a higher capacity rating, which better reflects the actual carrying capacity of the bucket. Physical dimensions have not changed.

Rugged Design. Cat buckets are manufactured using shell-tine construction to resist twisting and distortion. A more aggressive spade edge increases bucket penetration and fill factors and provides better retention of loose material. An integral rock guard helps retain big loads for greater fill factors and optimum truck loading.

Spade Edge Rock Buckets. Spade edge rock buckets with bolt-on segments are designed to penetrate through the pile while leaving a smooth work floor. Shouldered, double-strap adapters allow easy change-out and bolt-on segments extend base edge life.

Bucket Protection. Cat Ground Engaging Tools (G.E.T.) provide superior bucket protection for long life in the most punishing conditions. Built to absorb shock, impact, and abrasion, G.E.T. work and wear as a system to boost productivity and lower costs.

Tips. Tips extend bucket life in high wear applications.

Sidebar Protectors. Protects bucket corner and sides from wear in abrasive materials. Pin-on sidebars are reversible to extend wear life.

Edge Protectors. Protects bucket edge from wear in materials with high wear rates. Independently pinned for easy replacement without removing tips or adapters.

Wear Plates. Replaceable wear plates protect the bucket bottom. Bolt-on and weld-on wear plates protect the rear base edge from damage.

Mechanically Attached Adapter System (MAA) Designed for high wear applications, this system offers full protection for the bucket wear edge while featuring fast removal and installation (top-pinned tips require less time to change than side-pinned tips).

MAA Corner Adapters. Increases overall bucket width by 76-102 mm (3-4 in) without changing bucket capacity.

MAA Wear Indicator. Built-in wear indicator provides a visual indication of when center adapters need replaced.

Operator's Station

Ergonomically designed for operator comfort, superior control and high productivity.

Ergonomic Design. The 994D sets the standard for productivity with advanced controls and greater operator comfort. Ergonomic design creates a unique human engineered environment that helps the operator get more work done, all shift long.

1) Steering and Transmission Integrated Control System (STIC). Combines directional selection, gear selection and steering into a single lever for maximum responsiveness. Simple side-to-side motion turns machine right or left. Transmission shifting (forward/neutral/reverse) is controlled by the operator's fingers, and gear selection is controlled by the thumb. The integrated control system delivers low effort controls for smoother, faster cycles with less operator fatigue.

2) Left Brake Pedal. Operates the Impeller Clutch Torque Converter reducing rimpull to 25%, then engages the brakes for improved control and smoother directional shifts.

3) Contour Series Seat. The air suspension Cat Contour Series Seat with retractable seat belt offers six seat and armrest adjustments for precise positioning and optimum operator comfort. Ergonomic design reduces pressure on the lower back and thighs and allows unrestricted arm and leg movement for greater productivity with less fatigue.

4) Gauge Group. Four separate gauges allow the operator to constantly monitor vital machine systems.

- Hydraulic oil temperature gauge
  - Lift and tilt oil
  - Brake system oil
  - Steering system oil
- Transmission oil temperature gauge
- Coolant temperature gauge
  - Aftercooler coolant
  - Engine coolant
- Engine hour meter

5) Air Conditioner/Heater Controls. A/C system contains environmentally safe R134a refrigerant.

6) Monitoring System. Vital Information Management System (VIMS) electronically monitors and stores diagnostic and performance information in easy-to-read displays for early identification of potential problems and more accurate troubleshooting. The integrated Payload Control System displays and stores vital production information for tracking payloads, loader cycle times and other machine data. The message center displays vital machine information and alerts operator of potential problems. It also stores data that can be easily accessed through the keypad or downloaded to a laptop for quick diagnosis and troubleshooting. A data port allows for wireless transmission of data to the mine office.

7) Bucket and Hoist Controls. Two levers control bucket and lift arm functions.

- Bucket tilt/curl control – three positions: tilt back, hold, dump.
- Lift arm hoist control – four positions: raise, hold, lower, float.

Adjustable automatic kickouts for lift and bucket tilt deliver faster cycle times. Automatic bucket positioning returns to desired loading angle.

8) Throttle Lock. Similar to cruise control, throttle lock allows the operator to preset engine speed for specific applications and more effectively concentrate on productivity.

9) Rimpull Control Switch. Activates/deactivates rimpull control system.

10) Rimpull Control Dial. Allows operator to match rimpull settings to job conditions with four-position dial. Operator can adjust maximum rimpull from 100% down to 90, 85, 75 and 65% while in first gear. Matching rimpull to job conditions provides greater traction in slippery or rough conditions for better performance and longer tire life.

11) Torque Converter Lock-Up. Lock-up provides greater efficiency and faster roading capability.

12) Intermittent Wiper Control.

Serviceability

Less time spent on maintenance means more time on the job.

Easy Servicing. The 994D is designed for quick, easy servicing. Simplified access to service areas allows for quick servicing and ensures routine maintenance procedures are performed on time.

Ground-Level Access. Ground-level access to centralized lubrication points makes lube service quick and easy.

Air Cleaners. Dry-type air cleaners with primary and secondary elements, automatic dust ejector, and service indicator are positioned above the hood for easy access.

Pressure Test Ports. Hydraulic pressure test ports enable fast troubleshooting of major hydraulic circuits.

Cooling System. Two-pass Advanced Modular Cooling System (AMOCS) has modular design with removable cores for easy replacement and maintenance.

On-Board Diagnostics. Diagnostic connector allows quick troubleshooting of starting and charging functions.

Monitoring System. VIMS notifies operator and service technicians of problems before failure and identifies location to minimize troubleshooting and reduce downtime. Features:

- Three-level warning system
- Data recording system
- Payload Control System
- Off-board analysis system

Autolube. Standard automatic lubrication system reduces maintenance time by automatically lubricating bearings in:

- lift and tilt cylinders
- upper and middle bucket tilt levers
- bucket pins
- steering cylinders
- rear axle trunnions
- fan drive and belt tightening pulleys
- upper and lower articulation hitch

Lubrication timing and duration can be easily set using the VIMS keypad.

Wiggins Service Center. Reduces maintenance time by centralizing fast fill connections and providing ground-level service access for:

- lift and tilt oil
- steering oil
- steering/brake actuator oil
- brake oil
- engine oil
- engine coolant
- transmission oil
- autolube
- air tank

Customer Support

Caterpillar® dealers have what it takes to keep mining machines productive.

Machine Selection. Make detailed comparisons of the machines you are considering before you buy.

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

Financing. Your dealer is expert at arranging affordable financing options for all Caterpillar products.

Customer Support Agreements. Cat dealers offer a variety of product support agreements, and work with customers to develop a plan that meets specific needs. These plans can cover the entire machine, including work tools, to help protect your investments.

Product Support. You will find nearly all parts at your dealer parts counter. Cat dealers use a worldwide computer network to find in-stock parts to minimize machine downtime. Cat reman parts offer 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 equipment training courses 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℠ 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.

www.CAT.com. For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.CAT.com.

Matched Systems

An efficient loading/hauling system starts with a perfect match.

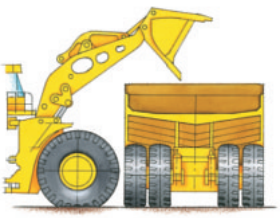
Efficient Combination. For full truck payloads with minimum loading time, an efficient loading/hauling system starts with a perfect match. Cat Wheel Loaders are matched with Cat C-Series Mining Trucks to maximize volume of material moved at the lowest operating cost-per-ton.

Application Match. The standard 994D is sized to load the 150-ton 785C in four passes. The 994D high-lift loads the 195-ton 789C in six passes and the 240-ton 793C in seven passes.

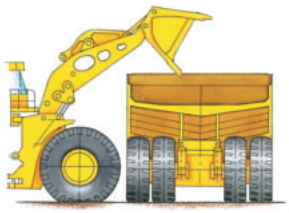
Bucket Selection. Selection of the right bucket width depends on penetration requirements and the loading target. Bucket sizes are matched to truck bed capacities for optimum loading efficiency and greater productivity.

Narrow Bucket. The narrower 5650 mm (222 in) buckets are optimally matched to load the Cat 785C, and are also sized for the 789C.

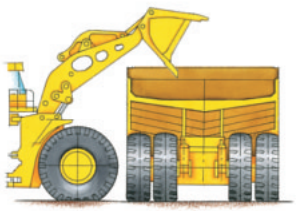
Wide Bucket. The wider 6220 mm (245 in) buckets are optimally matched to load the larger Cat 789C, and are also sized for the 793C.



994D/785C SYSTEM	
Passes	4



994D*/789C SYSTEM	
Passes	5/6



994D*/793C SYSTEM	
Passes	7

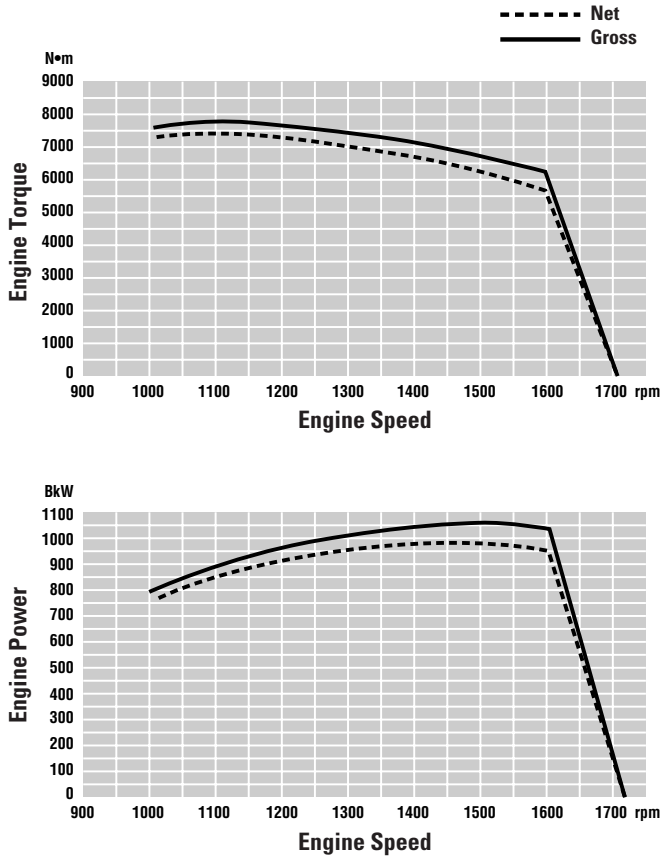
* High-lift arrangement

Engine @ 1600 RPM

Engine Model	Cat 3516B EUI	
Gross Power	1027 kW	1375 hp
Flywheel Power	933 kW	1250 hp
Net Power – Caterpillar	1027 kW	1375 hp
Net Power – SAE J1349	1015 kW	1361 hp
Net Power – ISO 9249	1027 kW	1375 hp
Net Power – EEC 80/1269	1027 kW	1375 hp
Bore	170 mm	6.7 in
Stroke	190 mm	7.6 in
Displacement	69 L	4221 in^3
Peak Torque @ 1100 rpm	7500 N.m	5786 lb ft
Torque Rise	33%	

- Net power advertised is the power available at the flywheel when the engine is equipped with fan, air cleaner, muffler, and alternator.
- Ratings based on standard air conditions of 25ºC (77ºF) and 99 kPa (29.32 Hg) dry barometer. Power based on fuel having API gravity of 35 at 16°C (60°F) and an LHV of 42 780 kJ/kg (18,390 BTU/lb) when engine used at 30ºC (86ºF).
- No engine derating required up to 3050 m (10,000 ft) altitude.

Engine Torque



Operating Specifications

Operating Weight	191 200 kg	421,600 lb
Rated Payload – Standard	34.5 tonnes	38 tons
Rated Payload – High-Lift	31 tonnes	34 tons
Cat Truck Match – Standard	785C, 789C	
Cat Truck Match – High-Lift	789C, 793C	
Bucket Capacity Range	15-31 m^3	19.5-41 yd^3

Transmission

Transmission Type	Cat planetary power shift	
Forward 1	7.3 kph	4.6 mph
Forward 2	12.9 kph	8.0 mph
Forward 3	22.6 kph	14.1 mph
Reverse 1	8.1 kph	5.0 mph
Reverse 2	14.3 kph	8.9 mph
Reverse 3	24.9 kph	15.5 mph

- Travel speeds based on two percent rolling resistance and 53.5/85-57 tires in converter drive.

Forward 1	Lock-up disabled	
Forward 2	13.8 kph	8.6 mph
Forward 3	24.1 kph	15.0 mph
Reverse 1	8.6 kph	5.3 mph
Reverse 2	15.2 kph	9.5 mph
Reverse 3	26.6 kph	16.5 mph

- Travel speeds based on two percent rolling resistance and 53.5/85-57 tires in direct drive.

Hydraulic System – Lift/Tilt

Lift/Tilt System – Circuit	Closed	
Lift/Tilt System – Pump	Piston, fixed displacement	
Max Flow at 1710 rpm (3x) (6900 kPa)	1245 L/min	329 gal/min
Relief Valve Setting – Lift/Tilt	30 400 kPa	4408 psi
Cylinders – Lift/Tilt	Double-acting	
Lift Cylinder – Bore	318 mm	13 in
Lift Cylinder – Stroke	1660 mm	65.4 in
Tilt Cylinder – Bore	267 mm	10.5 in
Tilt Cylinder – Stroke	1140 mm	44.9 in
Number of Lift/Tilt Pumps	3	
Number of Lift Cylinders	2	
Number of Tilt Cylinders	2	

Hydraulic System – Pilot

Pilot System – Circuit	Closed	
Pilot System – Pump	Gear	
Max Flow at 1710 rpm (6900 kPa)	78 L/min	20.6 gal/min
Relief Valve Setting – Pilot	2400 kPa	348 psi
Number of Pilot Pumps	1	

Hydraulic System – Steering

Steering System Type	STIC steer	
Steering System – Circuit	Closed	
Steering System – Pump	Piston, variable displacement	
Max Flow at 1710 rpm (2x) (6900 kPa)	425 L/min	112 gal/min
Relief Valve Setting – Steering	3100 kPa	4495 psi
Number of Steering Pumps	2	

Hydraulic Cycle Time

Rackback	6.0 seconds
Raise	12.5 seconds
Dump	3.4 seconds
Float Down	4.0 seconds
Power Down	7.4 seconds

Service Refill Capacities

Fuel Tank	4641 L	1226 gal
Cooling System	490 L	129 gal
Crankcase	286 L	75.5 gal
Transmission	350 L	92 gal
Differential/Final Drives (each)	621 L	164 gal
Hydraulics – Lift/Tilt	621 L	164 gal
Hydraulics – Brake Cooling	22 L	6 gal
Hydraulics – Steering/Brake	250 L	66 gal
Pump Drive – Front	7 L	2 gal

Standards

Cab/ROPS	SAE J1394 SAE J11040 APR88 ISO 3471-1 1986 ISO 3471 1994
Cab/FOPS	SAE J231 JAN81 ISO 3449 1992 Level II
Cab Sound	ISO 6394: 1998
Cab Vibration	EC 89/392EEC
Brakes	SAE J1473 OCT90 ISO 3450 1992

- The operator sound exposure Leq (equivalent sound pressure level) measured according to work cycle procedures specified in ANSI/SAE J1166 OCT98 is 80 dB(A) for cab offered by Caterpillar, when properly installed and maintained and tested with 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 a noisy environment.
- The exterior sound pressure level for the standard machine measured at a distance of 15 m (49 ft) according to the test procedures specified in SAE J88 JUN86, mid-gear moving operation is 85 dB(A).

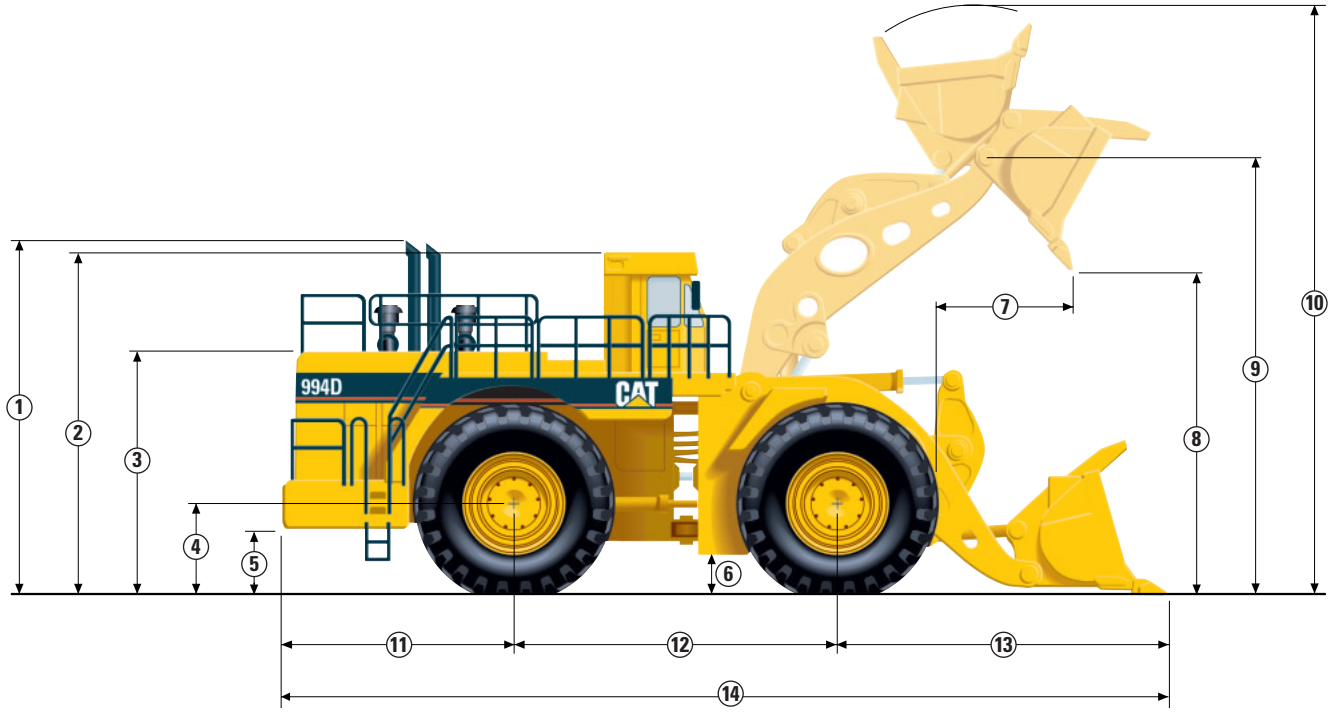
Dimensions

Height to Top of Exhaust Stacks	6914 mm	22.7 ft
Height to Top of ROPS/FOPS	6711 mm	22 ft
Height to Top of Hood	4759 mm	15.6 ft
Height to Center of Axle	1750 mm	5.7 ft
Bumper Clearance	1410 mm	4.6 ft
Ground Clearance	825 mm	2.7 ft
Reach at Max. Lift/Dump – Std	2263 mm	7.4 ft
Reach at Max. Lift/Dump – HL	2825 mm	9.3 ft
Clearance at Max. Lift/Dump – Std	5592 mm	18.3 ft
Clearance at Max. Lift /Dump – HL	5931 mm	19.5 ft
Bucket Pivot at Max. Lift – Std	8157 mm	26.8 ft
Bucket Pivot at Max. Lift – HL	8496 mm	27.9 ft
Overall Height – Bucket Raised – Std	10 996 mm	36.1 ft
Overall Height – Bucket Raised – HL	11 336 mm	37.2 ft
Length – Rear Axle to Bumper	4500 mm	14.8 ft
Wheel Base Length	6400 mm	21 ft
Front Axle to Bucket Tip – Std	5909 mm	19.4 ft
Front Axle to Bucket Tip – HL	6689 mm	22 ft
Overall Length – Std	16 809 mm	55.1 ft
Overall Length – HL	17 589 mm	57.7 ft
Width Over Tires	5449 mm	17.9 ft

- Standard machine with 53.5/85-57 tires and 19 m^3 (24.5 yd^3) 222 in. spade edge rock bucket with teeth and segments.
- High-Lift machine with 53.5/85-57 tires and 18 m^3 (23.5 yd^3) 245 in. spade edge rock bucket with teeth and segments.

Dimensions

All dimensions are approximate.



		Standard* 50/80-57 Tires	High Lift** 50/80-57 Tires	Standard* 53.5/85-57 Tires	High Lift** 53.5/85-57 Tires
1	Height to Top of Exhaust Stacks	6765 mm (22.2 ft)	6765 mm (22.2 ft)	6914 mm (22.7 ft)	6914 mm (22.7 ft)
2	Height to Top of ROPS/FOPS	6562 mm (21.5 ft)	6562 mm (21.5 ft)	6711 mm (22.0 ft)	6711 mm (22.0 ft)
3	Height to Top of Hood	4610 mm (15.1 ft)	4610 mm (15.1 ft)	4759 mm (15.6 ft)	4759 mm (15.6 ft)
4	Height to Center of Axle	1601 mm (5.2 ft)	1601 mm (5.2 ft)	1750 mm (5.7 ft)	1750 mm (5.7 ft)
5	Bumper Clearance	1261 mm (4.1 ft)	1261 mm (4.1 ft)	1410 mm (4.6 ft)	1410 mm (4.6 ft)
6	Ground Clearance	676 mm (2.2 ft)	676 mm (2.2 ft)	825 mm (2.7 ft)	825 mm (2.7 ft)
7	Reach at Maximum Lift/Dump	2443 mm (8.0 ft)	3005 mm (9.9 ft)	2263 mm (7.4 ft)	2825 mm (9.3 ft)
8	Clearance at Maximum Lift/Dump	5412 mm (17.8 ft)	5751 mm (18.9 ft)	5592 mm (18.3 ft)	5931 mm (19.5 ft)
9	Bucket Pivot at Maximum Lift	7977 mm (26.2 ft)	8317 mm (27.3 ft)	8157 mm (26.8 ft)	8496 mm (27.9 ft)
10	Overall Height – Bucket Raised	10 816 mm (35.5 ft)	11 156 mm (36.6 ft)	10 996 mm (36.1 ft)	11 336 mm (37.2 ft)
11	Length – Rear Axle to Bumper	4500 mm (14.8 ft)	4500 mm (14.8 ft)	4500 mm (14.8 ft)	4500 mm (14.8 ft)
12	Wheel Base Length	6400 mm (21.0 ft)	6400 mm (21.0 ft)	6400 mm (21.0 ft)	6400 mm (21.0 ft)
13	Length – Front Axle to Bucket Tip	6029 mm (19.8 ft)	6809 mm (22.3 ft)	5909 mm (19.4 ft)	6689 mm (22.0 ft)
14	Overall Length	16 929 mm (55.5 ft)	17 709 mm (58.1 ft)	16 809 mm (55.1 ft)	17 589 mm (57.7 ft)

* Standard machine equipped with 19 m^3 (24.5 yd^3) 222 in. Bucket

** High Lift machine equipped with 18 m^3 (23.5 yd^3) 245 in. Bucket

Operating Specifications – Narrow Buckets

For machines equipped with 5650 mm (222 in) and 5740 mm (226 in) buckets

		Standard Lift (53.5/85-57, 76 PR L-5 Tires)					High Lift	Tires 50/80-57
		Spade Edge Rock Buckets with Teeth and Segment			Spade Edge Rock Buckets with MAA			
Rated capacity (§)	m^3	15	17	19	17	19	Same	Same
	yd^3	19.5	22.5	24.5	22.5	24.5		
Struck capacity (§)	m^3	12.8	14	15	14	15	Same	Same
	yd^3	15.5	18	20	18	20		
Width (§)	mm	5650	5650	5650	5740	5740	Same	Same
	ft/in	18' 6"	18' 6"	18' 6"	18' 10"	18' 10"		
Dump clearance at full lift and 45° discharge (§)	mm	5799	5698	5592	5607	5502	+339	-180
	ft/in	19' 0"	18' 8"	18' 4"	18' 5"	18' 1"	+1' 1"	-7"
Reach at full lift and 45° discharge (§)	mm	2055	2157	2263	2246	2351	+562	+180
	ft/in	6' 9"	7' 1"	7' 5"	7' 4"	7' 9"	+1' 10"	+7"
Reach with lift arms horizontal and bucket level	mm	4912	5056	5206	5183	5333	+640	+180
	ft/in	16' 1"	16' 7"	17' 1"	17' 0"	17' 6"	+2' 1"	+7"
Digging depth (§)	mm	68	68	68	68	68	+14	+180
	in	3"	3"	3"	3"	3"	+0.5"	+7"
Overall length (§)	mm	16 621	16 659	16 809	16 892	17 042	+780	+120
	ft/in	54' 6"	54' 8"	55' 2"	55' 5"	55' 11"	+2' 7"	+5"
Overall height with bucket at full raise (§)	mm	10 786	10 916	10 996	11 036	11 174	+340	-180
	ft/in	35' 5"	35' 10"	36' 1"	36' 2"	36' 8"	+1' 1"	-7"
Loader clearance circle with bucket in carry position (§)	mm	25 140	25 362	25 436	25 558	25 788	+299	+64
	ft/in	82' 6"	83' 2"	83' 6"	83' 10"	84' 8"	+1' 0"	+3"
Static tipping load straight** (§)	kg	126 758	125 829	124 764	125 278	124 495	0.82†	1.02†
	lb	279,453	277,405	275,057	276,190	274,464	0.82†	1.02†
Static tipping load at full 40° turn** (§)	kg	107 095	106 166	105 101	105 615	104 832	0.80†	1.02†
	lb	236,104	234,056	231,708	232,841	231,115	0.80†	1.02†
Breakout force*** (§)	kN	1057	950	886	961	923	0.96†	1.00†
	lb	237,825	213,750	199,350	216,225	207,675	0.96†	1.00†
Operating weight** (§)	kg	189 343	190 229	191 244	190 754	191 500	+2553	-4681
	lb	417,429	419,383	421,620	420,540	422,185	+5630	-10,320

(§) Specifications rating conform to all applicable standards recommended by the Society of Automotive Engineers. SAE standard J732c governs loader ratings and is denoted in the chart by (§).

* Dimensions are measured to the tip of the bucket teeth to provide accurate clearance data. SAE standard specifies the cutting edge.

** Static tipping load and operating weight shown are based on standard machine configuration with 53.5/85-57 tires, full fuel tank, coolant and lubricants.

*** Measured 102 mm (4 in) behind tip of cutting edge with the bucket hinge pin as pivot point in accordance with SAE J732c.

† Factor multiplied by standard arrangement data to get high lift arrangement value.

◆ Buckets with Mechanically Attached Adapter (MAA) system have corner adapters that add 76-102 mm (3-4 in) to the overall bucket width. This does not change the capacity of the bucket.

Operating Specifications – Wide Buckets

For machines equipped with 6220 mm (245 in) and 6300 mm (248 in) buckets

		Standard Lift (53.5/85-57, 76 PR L-5 Tires)					High Lift	Tires 50/80-57
		Spade Edge Rock Bucket with Teeth and Segment		Straight Edge Coal Bucket	Spade Edge Rock Bucket with MAA			
Rated capacity (§)	m^3	18	19	31	18	19	Same	Same
	yd^3	23.5	25	41	23.5	25		
Struck capacity (§)	m^3	14	15	26	14	15	Same	Same
	yd^3	18	19.5	34	18	19.5		
Width (§)	mm	6220	6220	6220	6300	6300	Same	Same
	ft/in	20' 5"	20' 5"	20' 5"	20' 8"	20' 8"		
Dump clearance at full lift and 45° discharge (§)	mm	5698	5592	5610	5608	5502	+339	-180
	ft/in	18' 8"	18' 4"	18' 5"	18' 5"	18' 1"	+1' 1"	-7"
Reach at full lift and 45° discharge (§)	mm	2157	2263	2243	2246	2352	+562	+180
	ft/in	7' 1"	7' 5"	7' 4"	7' 4"	7' 9"	+1' 10"	+7"
Reach with lift arms horizontal and bucket level	mm	5056	5206	5177	5183	5333	+640	+180
	ft/in	16' 7"	17' 1"	17' 0"	17' 0"	17' 6"	+2' 1"	+7"
Digging depth (§)	mm	68	68	68	68	68	+14	+180
	in	3"	3"	3"	3"	3"	+0.5"	+7"
Overall length (§)	mm	16 659	16 809	16 888	16 892	17 042	+780	+120
	ft/in	54' 8"	55' 2"	55' 5"	55' 5"	55' 11"	+2' 7"	+5"
Overall height with bucket at full raise (§)	mm	10 919	11 011	11 032	11 036	11 174	+340	-180
	ft/in	35' 10"	36' 2"	36' 2"	36' 2"	36' 8"	+1' 1"	-7"
Loader clearance circle with bucket in carry position (§)	mm	25 362	25 436	26 354	25 558	25 788	+299	+64
	ft/in	83' 2"	83' 6"	86' 6"	83' 10"	84' 8"	+1' 0"	+3"
Static tipping load straight** (§)	kg	124 561	123 877	123 448	123 753	123 298	0.82†	1.02†
	lb	274,610	273,102	272,156	272,828	271,825	0.82†	1.02†
Static tipping load at full 40° turn** (§)	kg	104 898	104 214	103 785	104 090	103 635	0.80†	1.02†
	lb	231,260	229,752	228,807	229,479	228,476	0.80†	1.02†
Breakout force*** (§)	kN	944	877	959	958	913	0.96†	1.00†
	lb	212,400	197,325	215,775	215,550	205,425	0.96†	1.00†
Operating weight** (§)	kg	191 437	192 089	192 498	192 207	192 641	+2553	-4681
	lb	422,046	423,483	424,385	423,743	424,700	+5630	-10,320

(§) Specifications rating conform to all applicable standards recommended by the Society of Automotive Engineers. SAE standard J732c governs loader ratings and is denoted in the chart by (§).

* Dimensions are measured to the tip of the bucket teeth to provide accurate clearance data. SAE standard specifies the cutting edge.

** Static tipping load and operating weight shown are based on standard machine configuration with 53.5/85-57 tires, full fuel tank, coolant and lubricants.

*** Measured 102 mm (4 in) behind tip of cutting edge with the bucket hinge pin as pivot point in accordance with SAE J732c.

† Factor multiplied by standard arrangement data to get high lift arrangement value.

◆ Buckets with Mechanically Attached Adapter (MAA) system have corner adapters that add 76-102 mm (3-4 in) to the overall bucket width. This does not change the capacity of the bucket.

Tire Specifications

	Change in Operating Weight Standard (for four tires)		Change in Static Tipping Load			
			Standard		High Lift	
49.5/85-57, 76PR L-5*	–1056 kg	–2328 lb	–737 kg	–1625 lb	–631 kg	–1391 lb
53.5/85-57, 76PR L-5**	0 kg	0 lb	0 kg	0 lb	0 kg	0 lb
50/80-57, 68PR L-4**	–4149 kg	–9149 lb	–2895 kg	–6383 lb	–2478 kg	–5464 lb
52/80-57, 68PR L-4**	–4744 kg	–10 461 lb	–3183 kg	–7019 lb	–2724 kg	–6006 lb
55/80-R57, XMINE D2***	–1356 kg	–2990 lb	–946 kg	–2086 lb	–810 kg	–1786 lb

* with 914 mm (36 in) rims
** with 1118 mm (44 in) rims with 152 mm (6 in) flange
*** with 1118 mm (44 in) rims with 126 mm (5 in) flange

Tire Dimensions

	Width over tires		Ground clearance		Change in vertical dimensions	
49.5/85-57, 76PR L-5	5265 mm	207.28 in	828 mm	32.60 in	3 mm	0.19 in
53.5/85-57, 76PR L-5	5449 mm	214.53 in	825 mm	32.48 in	0 mm	0 in
50/80-57, 68PR L-4	5260 mm	207.09 in	676 mm	21.61 in	–149 mm	–5.87 in
52/80-57, 68PR L-4	5260 mm	207.09 in	676 mm	21.61 in	–149 mm	–5.87 in
55/80-R57, XMINE D2	5449 mm	214.53 in	705 mm	27.76 in	–120 mm	–4.72 in

Note: In certain applications, such as load and carry work, the loader's productive capabilities might exceed the tires' tonnes/kph (tons/mph) capabilities. Caterpillar recommends evaluating all operating conditions before selecting a tire.

Bucket Capacity Ratings

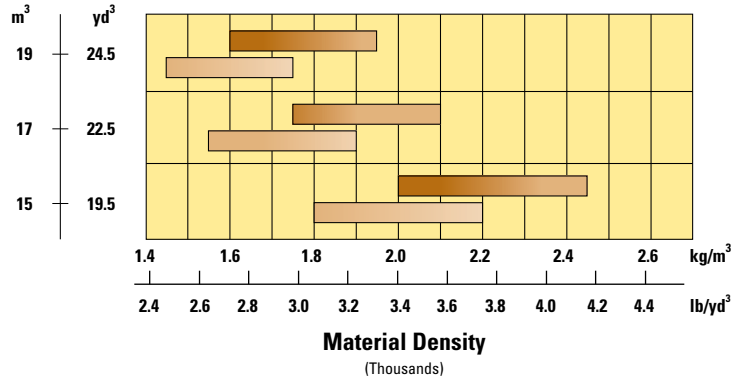
994D buckets have been slightly modified to allow for a higher capacity rating. The new ratings better reflect the actual carrying capacity of the bucket. Physical dimensions of the buckets have not changed.

Bucket Description	Former Capacity Rating		New Capacity Rating	
Spade Edge Rock Buckets – 5650 mm (222 in) – with Teeth and Segments	14 m^3	18 yd^3	15 m^3	19.5 yd^3
	16 m^3	21 yd^3	17 m^3	22.5 yd^3
	18 m^3	23 yd^3	19 m^3	24.5 yd^3
	20 m^3	26 yd^3	21 m^3	27.5 yd^3
Spade Edge Rock Buckets – 6220 mm (245 in) – with Teeth and Segments	16 m^3	21 yd^3	18 m^3	23.5 yd^3
	18 m^3	23 yd^3	19 m^3	25.0 yd^3
Spade Edge Rock Buckets – 5650 mm (222 in) – with MAA	16 m^3	21 yd^3	17 m^3	22.5 yd^3
	18 m^3	23 yd^3	19 m^3	24.5 yd^3
Spade Edge Rock Buckets – 6300 mm (248 in) – with MAA	16 m^3	21 yd^3	18 m^3	23.5 yd^3
	18 m^3	23 yd^3	19 m^3	25.0 yd^3
Spade Edge Coal Buckets – 6220 mm (245 in) – with Teeth and Segments	30 m^3	40 yd^3	31 m^3	41.0 yd^3

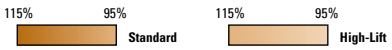
Bucket Capacity/Material Density Selection Guide

The following table provides a guideline for bucket selection based on various material densities and estimated fill factors. Based on the new ratings, fill factors are expected to be 110-120% in cohesive materials with easy digging, 100-110% in typical shot rock loading, and 90-100% in poorly shot rock with large rocks and difficult penetration. For many mining applications, the 994D standard lift is matched with the 19 m^3 (24.5 yd^3) rock bucket and the high lift is matched with the 17 m^3 (22.5 yd^3) rock bucket.

Bucket Capacity



Bucket Fill Factor



Changes in bucket weight, including field installed wear iron, can impact rated payload. Consult your Caterpillar dealer for assistance in selecting and configuring the proper bucket for the application. The Caterpillar Large Wheel Loader Payload Policy is a guideline intended to maximize wheel loader structural and component life.

Standard Equipment

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

ELECTRICAL
- Alarm, back-up
- Alternator, 100 amp
- Batteries, dry
- Converter, 15 amp, 24V to 12V
- Diagnostic connector
- Lights, halogen, working; access/service platform lights
- Starting and charging system, 24V

OPERATOR ENVIRONMENT
- Air conditioner
- Cab, sound suppressed and pressurized
- Cab, external rollover protective structure, ROPS/FOPS
- Cab, cleanout hose
- Cigar lighter, ashtray
- Coat hook
- Controls, lift and tilt function
- Heater, defroster
- Horn, electric
- Instrumentation, gauges
  - Coolant temperature
  - Engine hour meter
  - Hydraulic oil temperature
  - Transmission oil temperature
- Light, cab, dome
- Lunchbox, beverage holders
- Mirrors, rearview, externally mounted
- Rimpull Control System
- Seat, Cat Contour, air suspension, six-way adjustable, cloth
- Seat belt, retractable, 76 mm (3 in) wide
- STIC Control System
- Tinted glass
- Transmission gear indicator
- Vital Information Management System (VIMS)
  - External data port, Integral Payload Control System
  - Message center, universal gauge
  - VIMS Keypad
- Wipers/washers, intermittent, front/rear

POWER TRAIN
- Brakes, oil-cooled, multi-disc, service/secondary
- Driveline parking brake
- Engine, 3516B EUI Diesel, turbocharged, aftercooled
- Fuel priming pump
- Guard, transmission/torque converter
- Ground level engine shutoff
- Precleaner, engine air intake (above hood)
- Radiator, Advanced Modular Cooling System (AMOCS)
- Rims, factory installed
- Starting aid, ether, automatic
- Throttle lock, electronic
- Torque converter, impeller clutch (ICTC), lockup clutch
- Transmission, planetary powershift, 3F/3R electronic control

OTHER
- Air tank, ECC compliant (EN286)
- Air line dryer
- Antifreeze, premixed, 50% concentration extended life coolant w/freeze protection to –50°C (–58°F)
- Automatic bucket lift kickout
- Automatic bucket positioner
- Automatic lubrication system, fast fill, Wiggins
- Blower fan
- Doors, service access, locking
- Ecology drains
- Engine oil change system, high speed, Wiggins
- Fast fill fuel system, Wiggins
- Fuel tank, 4641 L/1226 gal
- Hitch, drawbar, pin
- Hydraulic system
  - Couplings, Cat o-ring face seal
  - Filtration/screening system, steering, brake
  - Hoses, Cat XT
  - Steering, load-sensing
- Mufflers
- Oil sampling valves
- Rear access, cab, service platform
- Supplemental steering system
- Wiggins Service Center
- Vandalism protection, caplocks

Mandatory Attachments (select one from each group)

Mandatory and optional equipment may vary. Consult your Caterpillar dealer for specifics.

LIFT ARRANGEMENTS		
Standard	0 kg	0 lb
High Lift	2553 kg	5630 lb
LINES GROUP		
Fuel lines without heater	0 kg	0 lb
Cold weather starting	32 kg	71 lb
RIMS		
914 mm (36") wide	0 kg	0 lb
1118 mm (44") wide with 126 mm (5") flange	531 kg	1170 lb
1118 mm (44") wide with 152 mm (6") flange	428 kg	944 lb

STARTERS		
Air start, vane, Ingersoll	0 kg	0 lb
Air start, turbine, TDI	0 kg	0 lb
Electric – not recommended in ambient temperatures below 0°C (32°F)	193 kg	426 lb

Optional Equipment

BUCKETS		
NARROW – 5650 mm (222 in)		
Rock – 15 m^3 (19.5 yd^3) (J800)	18 652 kg	41,120 lb
Rock – 17 m^3 (22.5 yd^3) (J800)	19 536 kg	43,070 lb
Rock – 19 m^3 (24.5 yd^3) (J800)	20 552 kg	45,310 lb
WIDE – 6220 mm (245 in)		
Rock – 18 m^3 (23.5 yd^3) (J800)	20 661 kg	45,550 lb
Rock – 19 m^3 (25.0 yd^3) (J800)	21 315 kg	46,990 lb
Coal – 31 m^3 (41.0 yd^3) (J700)	21 723 kg	47,890 lb
GROUND ENGAGING TOOLS		
BUCKET TIPS*		
Heavy duty – long – rock (J800)	88 kg	193 lb
Heavy duty – abrasion – rock (J800)	105 kg	232 lb
Penetration – rock (J800)	54 kg	120 lb
Heavy duty – long – coal (J700)	51 kg	113 lb
Heavy duty – abrasion – coal (J700)	66 kg	145 lb
BUCKET WINGS		
Low profile	350 kg	772 lb

COLD WEATHER		
Arctic hoses	0 kg	0 lb
Arctic lubricants	0 kg	0 lb
Transfer case heater	14 kg	30 lb
POWER TRAIN		
Crankcase guard	300 kg	662 lb
Engine prelube	23 kg	50 lb
RIMS		
914 mm (36 in) wide	1813 kg	3996 lb
1118 mm (44 in) wide with 126 mm (5 in) flange	1926 kg	4245 lb
1118 mm (44 in) wide with 152 mm (6 in) flange	2096 kg	4620 lb
OTHER		
Rockford fan without brake	0 kg	0 lb
Sy-Klone turbine precleaner	11 kg	25 lb

* Requires multiple quantities.

994D Wheel Loader

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