

814F

Wheel Dozer



Engine

| | | |
|----------------|------------------------------|--------|
| Engine Model | Cat [®] 3176C ATAAC | |
| Gross Power | 189 kW | 254 hp |
| Flywheel Power | 179 kW | 240 hp |

Weights

| | | |
|------------------|-----------|-----------|
| Operating Weight | 21 713 kg | 47,877 lb |
|------------------|-----------|-----------|

Blade Specifications

| | | |
|----------------|---------------------|----------------------|
| Blade Capacity | 2.66 m ³ | 3.49 yd ³ |
|----------------|---------------------|----------------------|

814F Wheel Dozer

Specifically designed for mobility, maneuverability and good speed in tough applications.

Power Train

- ✓ The Cat 3176C diesel engine with ATAAC delivers increased power and combined with Electronic Clutch Pressure Control and planetary powershift transmission offers superior performance and reliability in heavy-duty dozing applications. **pg. 4**

Operator Station and Controls

Operator comfort and productivity are maximized by excellent visibility, careful positioning of levers, switches and gauges, attention to air quality and sound control, as well as built-in convenience for your operator's personal items. **pg. 6**

Straight Blade

Designed for general production, dozing, road grading and clean up work. **pg. 8**

Top performance.

Cat design combines power, mobility and operator comfort for high productivity.

Reliable, durable operation.

Rugged construction and easy maintenance provide long life with low operating cost.



Optional Features

Air suspension seat, air conditioning and fast fuel fill adapter are a few of the options available to enhance the 814F. **pg. 9**

Serviceability

- ✓ Many convenient service features such as hinged service doors, accessible scheduled maintenance points, conveniently located sight gauges and a separated cooling system make servicing easy. **pg. 10**

Complete Customer Support

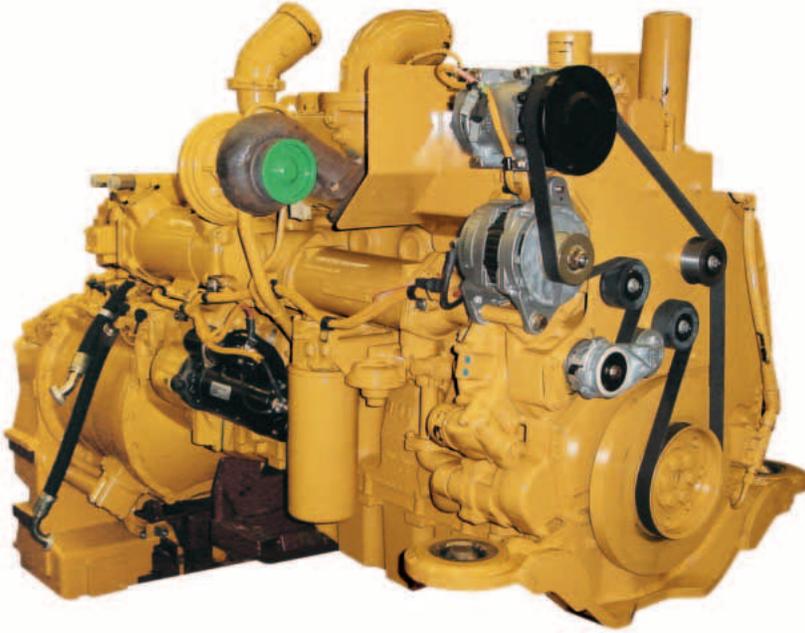
Your Cat dealer is your one safe source for all your equipment needs. They offer a wide range of services that will fit your operation and keep you working longer with lower cost. **pg. 12**



✓ *New Feature*

Power Train

Delivers top performance, durability and reliability.



Caterpillar® 3176C Diesel Engine.

Delivers, at a rated speed of 2,100 rpm, flywheel power of 179 kW (240 hp) and meets the U.S. Environmental Protection Agency Tier 2 emissions regulations and Stage II EU Emissions Directive 97/68/EC. With high horsepower and low displacement, this innovative engine provides excellent fuel economy and durability which can significantly reduce operating costs.

Torque Rise. Is increased as a result of the electronically controlled, computer actuated unit fuel system that provides high injection pressure and more precisely controlled fuel delivery as the engine lugs back from rated speed.

Advanced Diesel Engine Module

(ADEM™ III) Fuel System. Is a Caterpillar electronic control module which provides improved engine response, performance, fuel efficiency, troubleshooting diagnostics and reduced emissions. It allows integration with the electronic transmission control for maximum power train efficiency.

Turbocharger. Packs more dense air into the cylinders for more complete combustion and lower emissions, improving performance and engine efficiency. These benefits are especially useful at high altitudes.

Air-to-Air Aftercooler. Reduces smoke and emissions by providing cooler inlet air for more efficient combustion. This also extends the life of the piston rings and bore.

Dual Cooling Jets. In the block spray oil on the piston skirt and cylinder bores keep ring temperatures low for long ring and liner life with excellent oil control.

Pistons. Are two piece articulated with forged steel crowns for excellent strength and aluminum skirts for reduced weight. Pistons are oil cooled for increased heat dissipation and longer life.

Valves. Four per cylinder allow for good airflow, enhancing fuel efficiency and heat rejection. Valves and unit injection system are camshaft-actuated for precise timing.

Crankshaft. Is a steel-forged, carburized and induction-hardened for long-term durability. It is dynamically balanced for smooth operation. The crankshaft is completely regrindable, and the connecting rods can be removed through the tops of the cylinders for easy servicing.

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

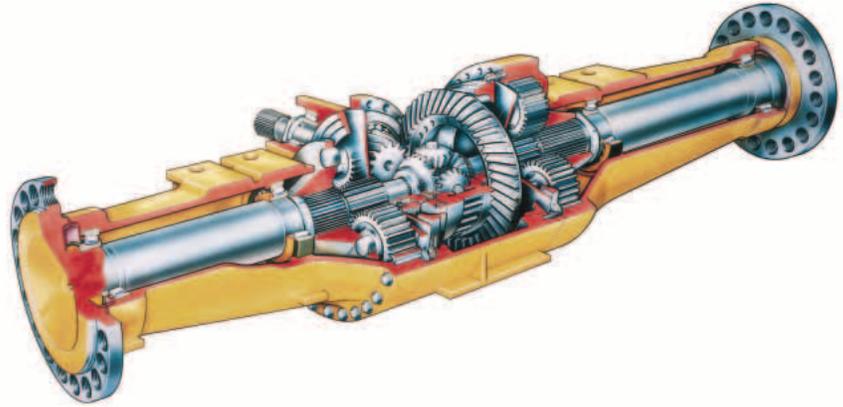
Cat Remanufactured Part. Are available, along with dealer proposed repair options, which increase machine availability and reduce total repair costs.

Caterpillar Planetary Powershift

Transmission. Features heavy-duty components to handle tough jobs. The 354.4 mm (13.6 in) planet drives operate in all gears, forward and reverse.

Heavy-Duty Axles and Brakes. Are designed to last in all kinds of operating conditions. Two front axles disc brakes provide improved braking capability and better heat dissipation. Planetary final drives use free-floating, bronze sleeve bearings in the planet gears. No-SPIN front differential is available.

- Oil disc brakes are adjustment-free and fully enclosed to lock out contaminants.



Front Axle. Is rigidly mounted to the frame to support the weight of the compactor, internal torque loads and external loads applied during compacting and dozing operations.

Rear Axle. Includes a trunnion, two trunnion supports and associated bearings, allowing it to oscillate plus or minus 12 degrees.

Four Piece Axle. Contains two axle shaft housings – the center housing and the intermediate housing. Features and benefits of this design include:

- Inboard brakes on the front axle only are positioned immediately adjacent to the differential and operate on the low torque side of the final drive, requiring less braking to stop the machine.

Operator Station and Controls

Comfort and control – a top quality operator's station helps maximize productivity.



1 Exceptional All-Around Viewing Area.

Reduces strain and fatigue, making operators more productive.

2 Caterpillar Monitoring System.

With electronic analog gauges is a highly effective and reliable warning and diagnostic system. As a warning system, it constantly checks machine functions and tells the operator when there is a problem. Easy-to-read gauges display fuel level, temperatures for engine coolant, transmission and hydraulic oil, engine rpm and gear range. Hour meter, odometer and analog tachometer readings are also displayed. As a diagnostic system, it identifies conditions, shows current readings and plays back maximum or highest readings registered during recent operations. The right side panel contains a three level warning system, providing full-time monitoring of key functions. The system alerts the operator of immediate or impending problems with air inlet temperature, brake oil pressure, electrical system, low voltage, engine oil pressure, engine over-speed, fuel filter status, parking brake status, steering oil pressure and transmission filter status.

3 Quick Gear Kick Up/Down Button.

Lets the operator easily downshift or upshift to a different gear. It is a convenient way to shift that saves time and effort.

4 Ignition Key Start/Stop Switch.

Is positioned for easy machine starting and stopping.

5 12-Volt Power Supply and Cat Electronic Technician (ET) Diagnostics.

Is provided inside the cab for powering radios, telephones or a laptop computer. This is particularly useful for powering a laptop running Cat ET to access the enhanced engine and transmission control system diagnostics.

6 Steering Column. Adjusts to multiple positions. The leather-like steering wheel and transmission control provide a sure grip and comfortable feel. The horn is conveniently located in the center of the steering wheel.

7 Pilot-Operated Blade Controls.

Are conveniently located and allow for precise blade movement.

8 Contour Seat. Is designed for comfort and support. Seat cushions reduce pressure on the lower back and thighs while allowing unrestricted arm and leg movement.

- A fully adjustable air suspension seat with self-contained compressor is available as an option.

9 Built-In Storage Space. Is designed to hold cups, lunch box, insulated bottle and personal items.

10 Air Vents. Throughout the cab keep fresh air flowing while improving the cab's heating, cooling, defrost and defog capability.

11 Throttle Lock. Allows an operator to set the engine speed and remove his foot from the governor (accelerator) pedal much like cruise control on an automobile. Using this feature increases productivity, fuel efficiency and improves operator comfort.

12 Decelerator Pedal. On the left acts as both an engine decelerator and a brake that overrides the engine speed selected by the throttle lock. This enables the operator to slow down when throttle lock is engaged and to return to throttle lock without pressing a button. It aids in maneuvering around shovels, haul trucks, tractors or any other obstacle.

13 Windshield Washers/Wipers. With in-the-blade washer delivery system are standard features on front and rear windows. The front wiper has intermittent speed capability.

Straight Blade

Multiple box-section construction with heat-treated moldboard and DH-2™ steel edges and end bits for long life.



Blade Package. Consists of blade, push arms, trunnion mounting, dozer length skid plate, reversible cutting edges, self-sharpening end bits, hydraulic lines guard and hydraulic blade cylinders.

Straight Blade. Is standard on the 814F.

Dozer Front Frame. Built specifically to handle greater amounts of rimpull, the machine can readily push its weight plus the weight of the material for long distances in heavy dozing applications.

Operator Controls. Lift and tilt/tip are standard options and the levers are located to the right of the operator.

Application. The 814F excels at dozing, spreading fill, backfilling, stockpiling, charging hoppers, maintaining roads and cleaning up around trucks and shovels.

Blade Options. Contact Caterpillar Work Tools and Services for additional blade options which include:

- Coal scoop with tilt
- Woodchip scoop with tilt
- Coal U-blade with 25 degree wing angle

Optional Features

Available options augment the 814F to meet your needs.

Tire Options. Are available from Goodyear (two options) and Michelin (two options).

Counterweight. Is located on either side of the front frame. For each specific application, there is a correct machine weight for proper balancing of traction, flotation, mobility and response. Lower machine weight is usually required for typical second gear applications such as fill spreading, stockpiling, road maintenance, towing implements and shovel cleanup. Higher machine weight is usually required for such typical first gear applications as heavy dozing and push loading.

Air Conditioner. Uses blended air and R134a refrigerant for immediate temperature changes.

Air Suspension Seat. Provides added comfort for the operator so productivity stays high.

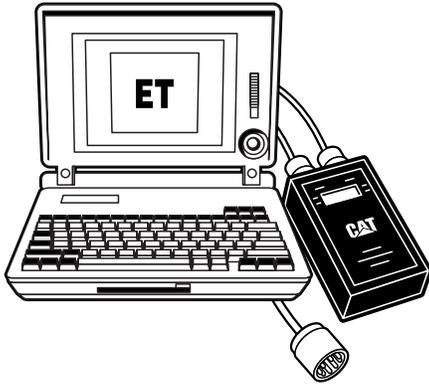
Fast Fill Adapter. Used during peak periods when high production is needed and little down time can be afforded for fueling. Fuel is pumped into the tank through a filling nozzle at rates up to 378.5 liters (100 gallons) per minute. As fuel enters the tank, air is forced out through an open vent. When the tank is full, the vent closes and the filling nozzle.



Serviceability

If maintenance is simple and areas easily accessible, it gets done.

Caterpillar Monitoring System. Provides diagnostics that allow technicians to review a machine's operation and quickly troubleshoot problems. Operating parameters, diagnostic codes and out-of-range readings are displayed through the diagnostic connector.



Cat Electronic Technician (ET). Is a software program which allows the service technician to find and identify a problem on a machine and to analyze how to fix it quickly. Cat ET provides the capability to access the electronic control modules from a personal computer.

The Cat ET is used for:

- Viewing active and non-active diagnostic codes and clearing them after repair.
- Displaying the status of all parameters such as engine speed, gear engaged, control levers position, control switch position, etc.
- Performing diagnostic tests and calibrations of electro-hydraulic components.

- Viewing current configurations and changing parameter settings.
- Flashing new Caterpillar software in the electronic control modules.
- Recording all parameters during machine operation.

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

Engine Access. All metal engine enclosure and hinged access doors allow for easy daily maintenance and inspections.



Left Side Service Access. Provides convenient entry to the engine oil filter, grease points, air filter, power train oil dipstick, coolant sight gauge, power train oil fill, power train oil filter and high speed engine oil fill.



Right Side Service Access. Features that are easily reached under the hood include fuel filter and water separator, fuel primer and engine oil dipstick.

500 Hour Oil Change Interval. Increases uptime and production by doubling the time between oil and filter changes.



Caterpillar Scheduled Oil Sampling.

Helps ensure better performance, longer life and increased customer satisfaction. It is an extremely thorough and reliable early warning system which detects traces of metals, dirt and other contaminants in your engine, axle, transmission and hydraulic oil. S·O·SSM can predict potential trouble early, thus avoiding costly unscheduled failures. Your Caterpillar dealer can give you results and specific recommendations shortly after receiving your sample.



Hinged Hydraulic Oil Cooler and Air Conditioning Condenser. Swing open without special tools and allows the cooling system to be cleaned quickly and easily.

Engine Shutdown Switch. Is located inside engine enclosure panel for simple access and extended switch life.



Battery Box. Is located in the right side bumper for convenient access to the maintenance-free batteries.

Tool Box. Is located in the left side bumper for additional protection against harsh work environments.

Complete Customer Support

Caterpillar dealers are the equipment experts.



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 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 at our dealer parts counter. Cat dealers use a worldwide computer network to find in-stock parts to minimize 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, application and equipment training courses and other ideas to help you increase productivity.

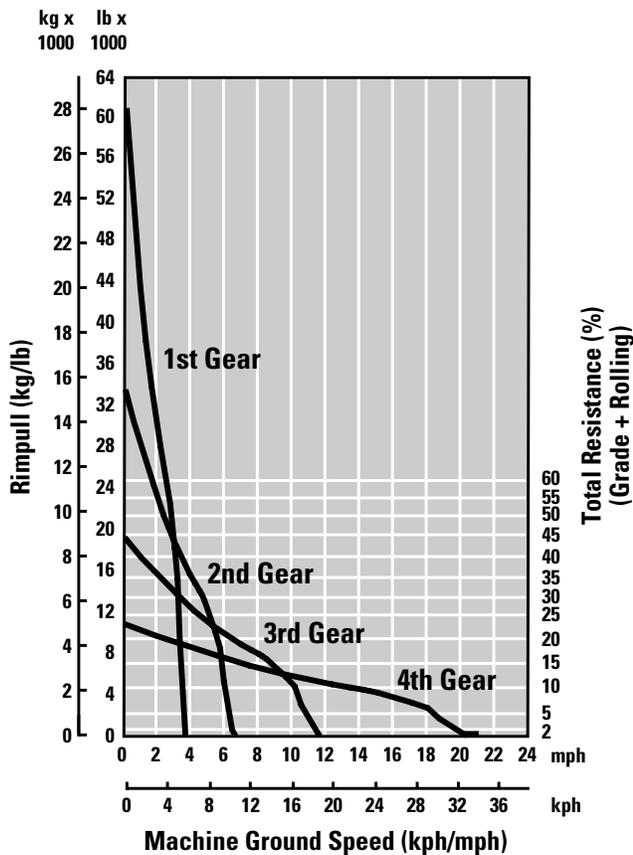
Maintenance Services. More equipment buyers are planning for effective maintenance before buying equipment. Choose from your dealer's wide range of maintenance services at the time you purchase your machine. Repair option programs guarantee the cost of repairs up front. Diagnostic programs such as S•O•SSM 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 | Cat 3176C ATAAC | |
| Gross Power | 189 kW | 254 hp |
| Flywheel Power | 179 kW | 240 hp |
| Net Power - EEC 80/1269 | 179 kW | 240 hp |
| Net Power - ISO 9249 | 179 kW | 240 hp |
| Net Power - SAE J1349 (JAN90) | 179 kW | 240 hp |
| Bore | 125 mm | 4.92 in |
| Stroke | 140 mm | 5.51 in |
| Displacement | 10.3 L | 628.5 in ³ |
| Torque Rise | 45 % | |

- Engine meets U.S. Environmental Protection Agency Tier 2 emissions regulations and Stage II EU Directive/97/68/EC.
- Engine power ratings apply at 2,100 rpm when tested under the specific standard conditions for the specified standard.
- Power rating conditions based on standard air conditions of 25° C (77° F) and 100 kPa (29.6 Hg) dry barometer, using 25° API gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) [reference a fuel density of 828.9 g/L (7.001 lb/gal)].
- Torque rise at 1,400 rpm.



Transmission

| | | |
|-----------|----------|----------|
| Forward 1 | 5.8 kph | 3.6 mph |
| Forward 2 | 10.2 kph | 6.3 mph |
| Forward 3 | 17.7 kph | 10.9 mph |
| Forward 4 | 30.9 kph | 19.2 mph |
| Reverse 1 | 6.6 kph | 4.1 mph |
| Reverse 2 | 11.5 kph | 7.1 mph |
| Reverse 3 | 20.2 kph | 12.5 mph |
| Reverse 4 | 35.1 kph | 21.8 mph |

Hydraulic System

| | |
|------------------------------------|--|
| Lift cylinder, bore and stroke | 120.65 mm x 913.9 mm 4.74 in x 35.98 in |
| Steering cylinder, bore and stroke | 101.6 mm x 597 mm 3.99 in x 23.5 in |
| Relief valve setting | 15 550 kPa 2,255 psi |

Axles

| | |
|-------|------------------|
| Front | Fixed |
| Rear | Oscillating ±12° |

Steering

| | |
|----------------|------|
| Steering Angle | ±30° |
|----------------|------|

Weights

| | | |
|------------------|-----------|-----------|
| Operating Weight | 21 713 kg | 47,877 lb |
|------------------|-----------|-----------|

Service Refill Capacities

| | | |
|--|-------|-----------|
| Fuel Tank - standard | 446 L | 117.8 gal |
| Cooling system | 55 L | 14.5 gal |
| Crankcase | 34 L | 9 gal |
| Transmission | 50 L | 13.2 gal |
| Hydraulic tank | 88 L | 23.2 gal |
| Differentials and final drives - Front | 65 L | 17.1 gal |
| Differentials and final drives - Rear | 65 L | 17.1 gal |

Blade Specifications

| | | |
|--------------------------------|---------------------|----------------------|
| Straight Blade - Capacity | 2.66 m ³ | 3.49 yd ³ |
| Moldboard Length | 3596 mm | 11.8 ft |
| Straight Blade - Height | 1110 mm | 3.6 ft |
| Straight Blade - Digging Depth | 528 mm | 1.73 ft |
| Maximum Lift Above Ground | 718 mm | 2.36 ft |
| Blade Tip Angle - Total | 51.9° | |
| Blade Tip Angle - Forward | 10° | |
| Blade Tip Angle - Back | 4.5° | |
| Blade Tilt Angle - Right | 4.5° | |
| Blade Tilt Angle - Left | 8° | |
| Straight Blade - Maximum Tilt | 795 mm | 2.6 ft |

Turning Radius

| | | |
|-------------------------|---------|----------|
| Outside Corner of Blade | 8238 mm | 27.03 ft |
| Inside Corner of Blade | 4734 mm | 15.53 ft |

Cab

- | | |
|-----------|-----------------------------|
| ROPS/FOPS | Meets SAE and ISO standards |
|-----------|-----------------------------|
- Caterpillar cab and Rollover Protective Structure/Falling Object Protective Structure (ROPS/FOPS) are standard in North America, Europe and Japan.
 - ROPS meets SAE J394, SAE 1040 APR88 and ISO 3471-1986 standards.
 - FOPS meets SAE J231 JAN81 and ISO 3449-194 standards.

Sound Performance

- | | |
|-----------|-------------------------|
| Standards | Meet required standards |
|-----------|-------------------------|
- The operator sound exposure Leq (equivalent sound pressure level) measured according to the work cycle procedures specified in ANSI/SAE J1166 OCT98 is 78 dB(A), for the cab offered by Caterpillar, when properly installed, 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 exterior sound pressure level for the standard machine measured at a distance of 15 m (49.2 ft) according to the test procedures specified in SAE J88 JUN86 mid-gear-moving operation is 80 dB(A).
 - The sound power level is 111 dB(A) measured according to the dynamic test procedure and conditions specified in ISO 6395:1988/Amd. 1:1996 for a standard machine configuration.

Tires

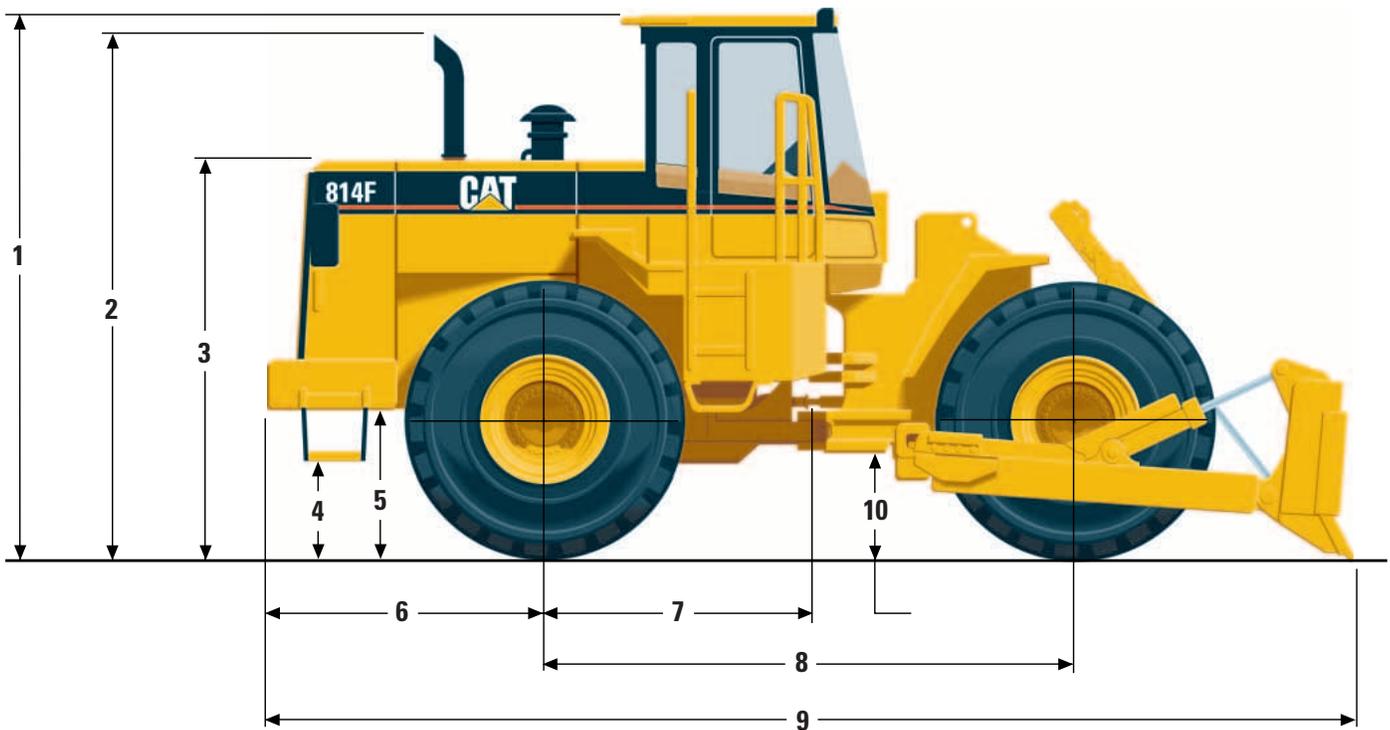
- | | |
|-------|---------------------|
| Tires | 4 options available |
|-------|---------------------|
- L-2 Traction Tread - penetration ability provides improved traction under some soil conditions.
 - L-3 Rock Tread - offers improved traction and more cut resistant rubber for use on any hard, smooth surface such as rock, concrete or compacted earth.

Brakes

- | | |
|--------|-----------------------|
| Brakes | Meet OSHA regulations |
|--------|-----------------------|

Dimensions

All dimensions are approximate.



| | | | |
|---|--|---------|----------|
| 1 | Height to Top of Cab | 3326 mm | 10.91 ft |
| 2 | Height to Top of Exhaust Pipe | 3304 mm | 10.84 ft |
| 3 | Height to Top of Hood | 2373 mm | 7.79 ft |
| 4 | Height to Bottom of Ladder | 441 mm | 1.45 ft |
| 5 | Ground Clearance to Bumper | 748 mm | 2.45 ft |
| 6 | Center Line of Rear Axle to Edge of Bumper | 1871 mm | 6.14 ft |

| | | | |
|----|-----------------------------------|---------|----------|
| 7 | Center Line of Rear Axle to Hitch | 1675 mm | 5.5 ft |
| 8 | Wheelbase | 3350 mm | 11 ft |
| 9 | Length with Blade on Ground | 6881 mm | 22.58 ft |
| 10 | Ground Clearance | 366 mm | 1.2 ft |

Standard Equipment

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

ELECTRICAL

- Alarm, backup
- Alternator (70 amp)
- Batteries, maintenance-free
- Diagnostic connectors
- Lighting system, halogen (front, rear and cab-mounted)
- Starting and charging system (24-volt)
- Starting receptacle for emergency start

OPERATOR ENVIRONMENT

- Blade control system locks
- Cab, pressurized and sound suppressed (ROPS/FOPS)
 - Radio ready (entertainment) includes antenna, speakers and converter (12-volt, 5-amp)
- Coat hook
- Cigar lighter and ashtray
- Caterpillar Monitoring System
 - Instrumentation, Gauges
 - Engine coolant temperature
 - Fuel level
 - Hydraulic oil temperature
 - Speedometer/tachometer
 - Transmission oil temperature
 - Instrumentation, Warning Indicators
 - Air inlet temperature
 - Brake oil pressure
 - Electrical system, low voltage
 - Engine oil pressure
 - Engine overspeed
 - Fuel filter status
 - Parking brake status
 - Steering oil pressure
 - Transmission filter status
- Dome light (cab)
- Heater and defroster
- Horn, electric (steering wheel mounted)
- Hydraulic steering
- Lunchbox and beverage holder
- Mirrors, rearview (internally-mounted)
- Seat, KAB mechanical suspension
- Seatbelt, retractable, 76 mm (3 in) wide
- Wet-arm wipers/washers (front and rear)
 - Intermittent front wiper

POWER TRAIN

- Brakes, hydraulic enclosed, wet-disc service brakes
- Engine, Cat 3176C with ATAAC
- Fuel priming pump
- Muffler
- Radiator, Advanced Modular Cooling System (AMOCS)
- Starting aid (ether)
- Torque converter
- Transmission, planetary (4 forward/4 reverse speeds)
 - Electronic Clutch Pressure Control

Optional Equipment

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

| | kg | lb | | kg | lb |
|--|------|------|---------------------------------------|------|------|
| Air conditioner | 36 | 80 | Engine coolant heater | 2 | 4 |
| Air suspension seat | 32 | 71 | Extended Life Coolant -50° C (-58° F) | 0 | 0 |
| Bulldozer – fill spreading includes trunnion gp, mounting gp, hydraulic cylinders and lines gp | 1725 | 3802 | External mirrors | 28 | 62 |
| Cab visor | 2 | 5 | Fast fill adapter | 3 | 6 |
| Canopy, ROPS | -176 | -389 | Front counterweight | 1656 | 3651 |
| Drive shaft guard | 55 | 121 | Internal (panoramic) mirrors | 5 | 11 |
| | | | Power train guard | 102 | 224 |
| | | | Spectator sound suppression | 52 | 114 |

Mandatory Attachments

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

| | kg | lb | | kg | lb |
|--|-----|-----|--------------------|-----|-----|
| Tires, rims and wheels All tires are tubeless, include rims and come in a set of four. | | | Michelin | | |
| Goodyear | | | 23.5 R25 XHA MX L3 | 408 | 900 |
| 23.5-25 12PR GY L2 | 0 | 0 | 26.5 R25 XHA MX L3 | 0 | 0 |
| 23.5-25 23PR GY L3 | 167 | 368 | | | |

Tire weights represent known variance from the standard tire weight, which is included in the machine operating weight.

Notes

814F Wheel Dozer

AEHQ5485-01 (10-02)

Replaces AEHQ5485

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Featured machines in photos may include additional equipment.
See your Caterpillar dealer for available options.

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