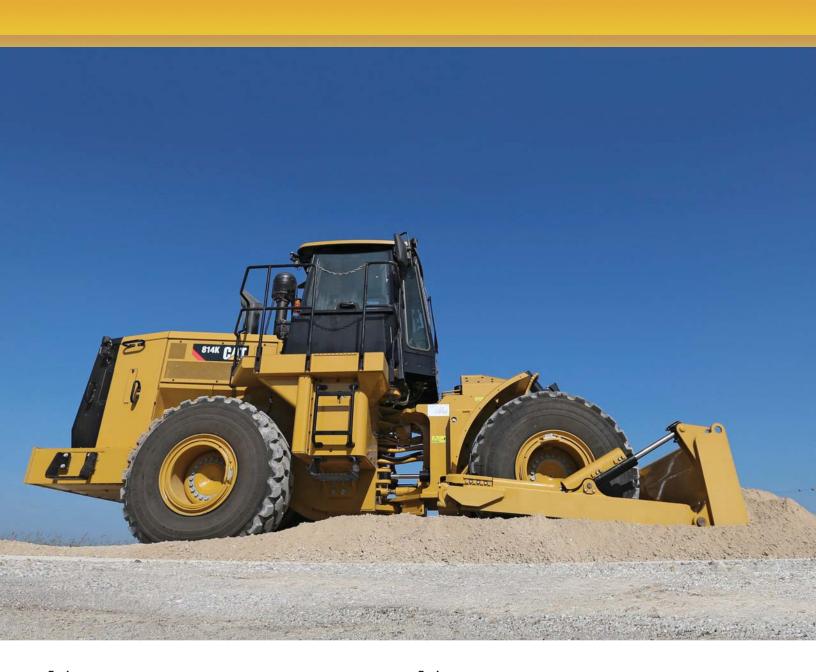
# 814K Wheel Dozer





Engine			
Engine Model	Cat® C7.1 ACERT™		
Emissions	U.S. EPA Tier 4 Final/EU Stage IV		
Gross Power – SAE J1995	212 kW	284 hp	
Net Power – SAE J1349	185 kW	248 hp	
Maximum Net Torque @1,400 rpm	1219 N·m	899 lbf-ft	
Operating Specifications			
Maximum Operating Weight	21 950 kg	48,390 lb	
Blade Capacities	2.84 m <sup>3</sup>	3.72 yd <sup>3</sup>	

Cat C7.1 ACERT		
Brazil MAR-1 and China Nonroad		
Stage III, equivalent to U.S. EPA Tier 3/		
EU Stage IIIA		
213 kW	286 hp	
186 kW	249 hp	
1016 N⋅m	749 lbf-ft	
21 671 kg	47,776 lb	
2.84 m <sup>3</sup>	3.72 yd³	
	Brazil MAR-1 and C Stage III, equivalen EU Stage IIIA 213 kW 186 kW 1016 N·m	

# Lower your operating cost with industry leading efficiency.

# **Contents**

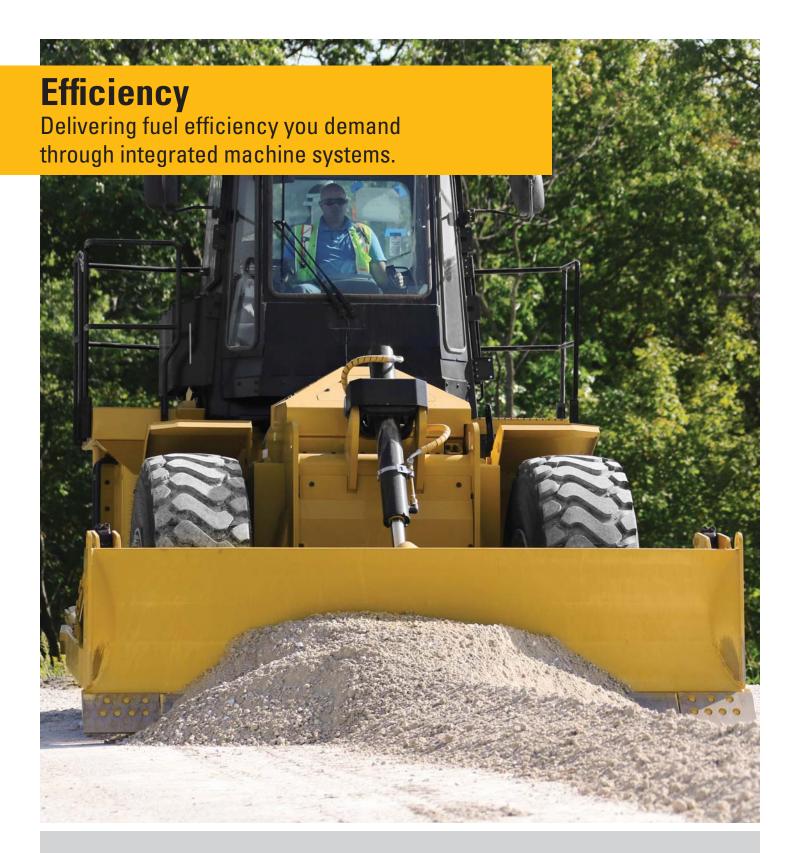
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Cat Wheel Dozers are designed with durability built in, ensuring maximum availability through multiple life cycles. With optimized performance and simplified serviceability, our machines allow you to support your job site efficiently and safely while lowering owning and operating costs.

Introduced in the 1970's, the 814 has been the industry leader for almost 50 years. Focused on helping our customers succeed, we have continued to build upon each new series. The 814K continues our legacy of reliability, performance, safety, operator comfort, serviceability, and efficiency.



# **Improved Hydraulic Efficiency**

- New implement and steering variable displacement load sensing piston pumps.
- Hydraulic flow now on demand, for improved fuel efficiency.

# **Cat C7.1 ACERT Engine**

The Cat C7.1 ACERT engine is designed for maximum fuel efficiency and increased power density.

- Features innovative Cat electronics, fuel injection process, airmanagement systems and aftertreatment solution (for Tier 4 Final) with Cat Selective Catalytic Reduction.
- Innovative systems effectively lower the average working engine speed and reduce overall system heat loads for improved performance and fuel efficiency.
- Deep system integration amongst engine and emissions system, power train, hydraulic and cooling system result in lower fuel consumptions on average compared to the previous model.



# **Cat Planetary Powershift Transmission**

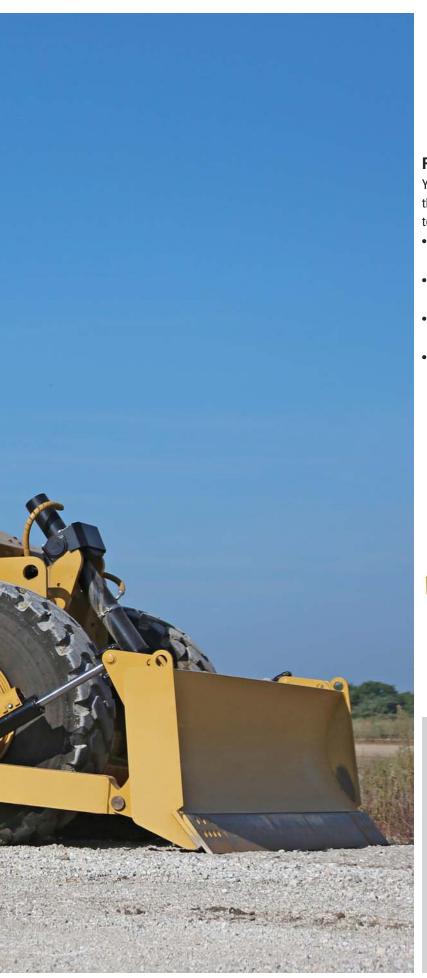
Featuring all new Advanced Productivity Electronic Control Strategy (APECS) transmission controls provides greater momentum on grades and fuel savings by carrying that momentum through the shift points.



# **Structures**

Best built for the toughest conditions.





# **Robust Structures**

Your bottom line is improved by highly durable structures that achieve multiple life cycles and withstand the toughest conditions.

- Full box-section rear frame resists torsional shock and twisting forces.
- Heavy-duty steering cylinder mounts efficiently transmit steering loads into the frame.
- Axle mounting has been optimized for increased structural integrity.
- Upper hitch pin, frame plate, and bearing size have been increased for longer life.



# **Robust Structures Design**

- Push beams are through-width, not merely attached to side of frame.
- In corner dozing, stresses are transferred and absorbed through a larger portion of the frame.



# Steering and Transmission Integrated Control System (STIC™)

Experience maximum responsiveness and control with STIC that combines directional selection, gear selection and steering into a single lever.

- Simple side-to-side motion turns machine right or left, minimizing operator movements.
- Easy to operate finger controlled gear selection.
- Smoother, faster cycles and less operator fatigue through the use of low effort integrated controls.

# **Cat Planetary Powershift Transmission**

Building your success begins with a best-in-class transmission designed specifically for mining applications.

- Consistent, smooth shifting and efficiency through integrated electronic controls that utilize Advanced Productivity Electronic Control Strategy (APECS).
- Long life and reliability through heat treat gear and metallurgy.
- Four forward and four reverse speeds to match your application.

# Cat C7.1 ACERT Engine

The Cat C7.1 ACERT engine is designed for maximum fuel efficiency and increased power density. Two engine options are available to meet the emission standards for Tier 4/Stage IV or Brazil MAR-1 and China Nonroad Stage III, equivalent to Tier 3/Stage IIIA.

The Tier 4 Final configuration:

- Engine is equipped with a Selective Catalytic Reduction (SCR) system which injects DEF into the exhaust to reduce NO<sub>X</sub> emissions.
- Cat NO<sub>X</sub> Reduction System (NRS) captures and cools a small quantity of exhaust gas, then routes in back into the combustion chamber where it drives down combustion temperatures and reduces NO<sub>X</sub> emissions.
- While in operation, the aftertreatment will be seamless to the operator thanks to the passive regeneration system which is utilized.





# **Power Train**

Move material more efficiently with improved power and control.



Your operators can work more efficiently and stay comfortable with our customerinspired cab features.

### **Environment**

Your operator's productivity is enhanced with our clean, comfortable cab environment.

- Experience reduced vibrations from isolation cab mounts and seat air suspension.
- Maintain desired cab temperature with automatic temperature controls.
- Pressurized cab with filtered air.
- Reduced sound levels.
- Convenient floor storage tray/lunch box.

# **Operator Seat**

Enhance comfort and help reduce operator fatigue with Cat Comfort Series III seat.

- Mid back design and extra thick, contoured cushions.
- Air suspension system.
- Easy-to-reach seat levers and controls for six way adjustments.
- Seat-mounted implement pod and STIC steer that moves with the seat.
- 76 mm (3 in) wide retractable seat belt.

### **Control Panel**

Ergonomic placement of switches and information display keep your operators comfortable all day every day.

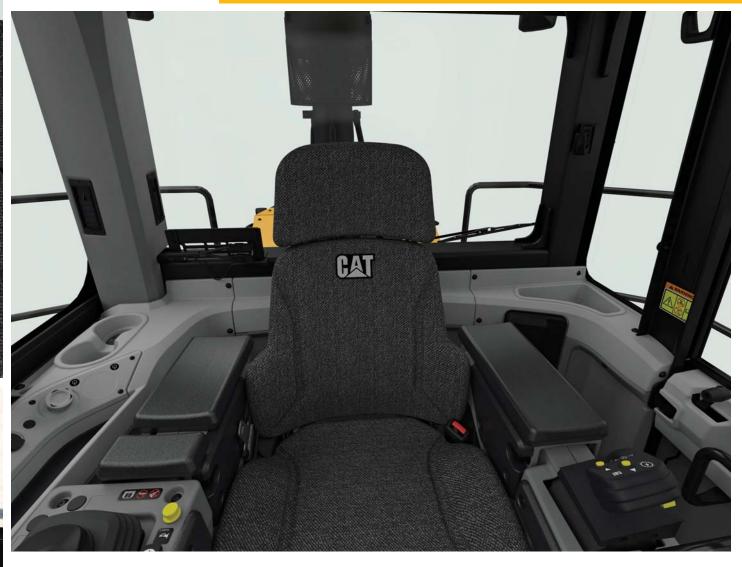
- Large backlit membrane switches feature LED activation indicators.
- Switches feature ISO symbols for quick function identification.
- Two position rocker switch activates the electro hydraulic park brake.





# **Operator Station**

Best-in-class operator comfort and ergonomics.



# Steering and Transmission Integrated Control System (STIC™)

Enter and exit the cab easily and safely with a new fold up STIC armrest.

Experience maximum responsiveness and control with STIC that combines directional selection, gear selection and steering into a single lever.

- Simple side-to-side motion turns machine right or left, minimizing operator movements.
- Easy to operate finger controlled gear selection.
- Smoother, faster cycles help reduce operator fatigue through the use of low effort integrated controls.

# **Safety**Making your safety our priority.



We are constantly introducing features on our machines in an effort to enhance safety for the operator.

# **Machine Access**

- Railings, ladders and non-slip surfaces enhance technician and operator safety.
- Platform outside of cab allows for seamless cab access, allowing operator to easily maintain three points of contact.



# **Visibility**

- Optional heated mirrors ensure enhanced visibility for safe operation.
- Standard Cat Vision increases operator awareness around the machine.
- Optional LED lights provide excellent workspace visibility.
- Cab mounted LED warning beacons.

# **Operator Environment**

- Reduced vibrations to the operator with isolated cab mounts and seat mounted implement and steering controls.
- Low interior sound levels.
- Pressurized cab with filtered air.
- Standard 76 mm (3 in) seat belts on the operator seat.

# **Technology Solutions**

Greater productivity through integrated electronic systems.

Integrated electronics provide flexible levels of information to both the site and the operator. This integration creates a smart machine and more informed operator, maximizing the productivity of both.

# **Information Display**

We have worked hard to help our customers and operators perform at their best through our newly upgraded touch screen information display.

- Intuitive operation and easy navigation with our enhanced user interface.
- Decrease service time by keeping operators informed about machine systems.

### Cat Product Link™

Take the guesswork out of asset management with Product Link remote monitoring.

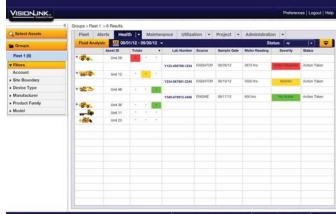
- Remote access to information through the easy-to-use VisionLink® interface.
- Maximize uptime by staying informed on machine systems and diagnostic codes.
- Track machine utilization and fuel usage.
- Stay up to date on machine location, service meter hours, and reporting status.

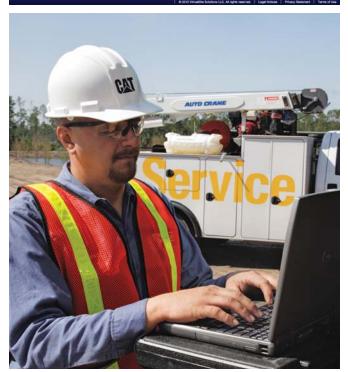
## Vital Information Management System (VIMS™)

Connect directly to the machine for access to a wide range of sensor information and enhanced machine data.

- Create productivity reports with work cycle segmentation.
- Identify operator training needs through productivity data.
- Detailed data logging of machine parameters and diagnostic codes.
- Track machine sensor information with trend analysis and histograms to monitor machine health.









Sustainability is designed and built into our 814K's features.

- Engine Idle Shutdown and Auto Idle Kickdown can help you save fuel by avoiding unnecessary idling.
- Reduce waste generation with our maintenance free batteries.
- The 814K is built for multiple lives. To assist with maximizing machine life, Caterpillar provides a number of sustainable options such as our Reman and Certified Rebuild programs. In these programs, reused or remanufactured components can deliver cost savings of 40 to 70 percent, which lowers operating cost.
- Caterpillar offers retrofit packages to bring new features to older machines, maximizing your resource. And, when you go through the Cat Certified Rebuild program, these retrofit kits are part of the rebuild process.
- The high speed oil change is standard and ensures fast, easy, and secure changing of the engine oil.

# **Blades**

# Cat blades to match your customers dozing requirements.

### **Cat Blades**

Cat blades are resilient, durable and designed with excellent dozing and rolling characteristics.

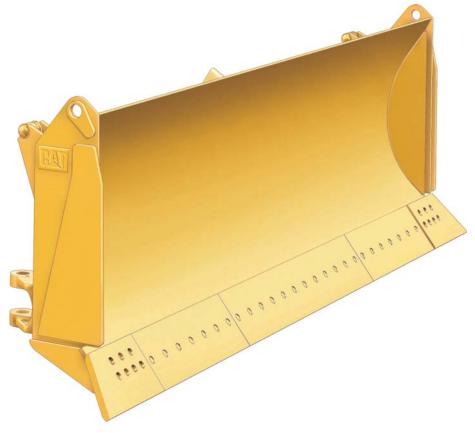
- Capacities and widths are set to achieve increased productivity.
- Spreading design allows for spreading of cover material, as well as dozing of heavier loads.

# **Straight Blade**

The straight blade (2.8 m³/3.7 yd³) is designed for production dozing in stockpile material and general earthmoving.

## **Coal Blade**

The coal blade (10.6 m³/13.8 yd³) is designed for precise and productive dozing while helping to retain load control with increased capacity for lighter materials. Wing angles help retain the load while dozing. This blade is available from Cat Work Tool and Services (CWTS).



Straight Blade



# **Operating Costs**

Save time and money by working smart.



The 814K has several features to achieve greater fuel efficiency:

- Load Sense Control Hydraulics Provides only the hydraulic flow required by the implement and steering systems for improved fuel efficiency and greater rimpull.
- ACERT Engine Advanced engine controls maximizes power and efficiency.
- Engine Idle Shutdown Automatic engine and electrical system shutdown conserves fuel.
- Advanced Productivity Electronic Control Strategy (APECS) All new APECS transmission controls provides greater momentum on grades and fuel savings by carrying that momentum through the shift points.

# **Serviceability**

Enabling high uptime by reducing your service time.



# We can help you succeed by ensuring your 814K has design features to reduce your downtime.

- Safe and convenient service with ground level or platform access to daily service points.
- Swing-out doors on both sides of the engine compartment provide easy access to important daily service checks.
- Ecology drains for ease of service and prevention of spills.
- Reduce downtime with VIMS system notifications so your operators and technicians can resolve any problems before failure.
- Quick visual inspection and minimize fluid contamination with sight gauges.
- Hydraulic oil cooler, air conditioner condenser, and fuel cooler grouped together for ease of access.
- Side access doors provided for cleanout of the cooling package.
- A new ground level service area includes a Master Disconnect Switch with integrated lock-out/tag-out, DEF purge lamp (Tier 4 Final/Stage IV machines only), circuit breakers, emergency fuel shutoff switch and the jump start receptacle.
- Centralized grease points for convenient maintenance.

# **Customer Support**

Your Cat dealers know how to keep your machines productive.

# **Legendary Cat Dealer Support**

A valued partner, your Cat dealer is available whenever you need them.

- Preventive maintenance programs and guaranteed maintenance contracts.
- · Best-in-class parts availability.
- Improve your efficiency with operator training.
- Genuine Cat Remanufactured parts.



<b>Engine (Tier 4 Final/Stage</b>	· IV)		
Engine Model	Cat C7.1 A	CERT	
Emissions	Tier 4 Final	Tier 4 Final/Stage IV	
Rated Speed	2,200 rpm		
Peak Power Speed	1,700 rpm		
Gross – SAE J1995	212 kW	284 hp	
Net – SAE J1349	185 kW	248 hp	
Bore	105 mm	4.1 in	
Stroke	135 mm	5.3 in	
Displacement	7.01 L	427.8 in <sup>3</sup>	
Peak Torque @ 1,400 rpm	1219 N·m	899 lbf-ft	
Torque Rise	52%		

# **Operating Specifications (Tier 4 Final/Stage IV)**

Operating Weight 21 950 kg 48,390 lb

# Engine (Brazil MAR-1 and China Nonroad Stage III, equivalent to Tier 3/Stage IIIA)

Engine Model	Cat C7.1 ACERT	
Emissions	Brazil MAR-1 and China Nonroad Stage III, equivalent to Tier 3/ Stage IIIA	
Rated Speed	2,200 rpm	
Peak Power Speed	2,200 rpm	
Gross – SAE J1995	213 kW	286 hp
Net – SAE J1349	186 kW	249 hp
Bore	105 mm	4.1 in
Stroke	135 mm	5.3 in
Displacement	7.01 L	427.8 in <sup>3</sup>
Peak Torque @ 1,400 rpm	1016 N·m	749 lbf-ft
Torque Rise	26%	

# Operating Specifications (Brazil MAR-1 and China Nonroad Stage III, equivalent to Tier 3/Stage IIIA)

Operating Weight 21 671 kg 47,776 lb

Transmission		
Transmission Type	Cat Planeta	ry Power Shift
Forward 1	5.7 km/h	3.6 mph
Forward 2	10.1 km/h	6.3 mph
Forward 3	17.6 km/h	11 mph
Forward 4	30.5 km/h	19 mph
Reverse 1	6.5 km/h	4.1 mph
Reverse 2	11.5 km/h	7.2 mph
Reverse 3	20.1 km/h	12.5 mph
Reverse 4	34.6 km/h	21.5 mph
Hydraulic System – Lift/Tilt		

nyuraunc System – Ling int		
Lift/Tilt System – Circuit	Pilot operated LS valve with EH	
Lift/Tilt System	Variable disp piston	lacement
Maximum Flow at 2,200 rpm	89 L/min	23.5 gal/min
Relief Valve Setting – Lift/Tilt	22 000 kPa	3,190 psi
Cylinders, Double Acting: Lift, Bore, Stroke	120 mm × 915 mm	4.7 in × 36.0 in
Cylinders, Double Acting: Left and Right Tilt, Bore, Stroke	101.6 mm × 234 mm	4.0 in × 9.2 in
Pilot System	Open center, fixed displacement gear	
Pilot Relief Valve Setting	21 000 kPa	3,046 psi

Hydraulic System – Steering		
Steering System – Circuit	Pilot, load se	ensing
Steering System – Pump	Variable disp	lacement piston
Maximum Flow @ 2,200 rpm	147 L/min	38.8 gal/min
Relief Valve Setting – Steering	27 600 kPa	4,003 psi
Total Steering Angle	72°	
Steering Cycle Time (high idle)	3.0 sec	
Steering Cycle Time (low idle)	8.2 sec	

Service Refill Capacities		
Fuel Tank	500 L	132.1 gal
Diesel Exhaust Fluid Tank	16 L	4.2 gal
Cooling Systems – Tier 4 Final/ Stage IV	81 L	21.4 gal
Cooling Systems – Brazil MAR-1 and China Nonroad Stage III, equivalent to Tier 3/Stage IIIA	73 L	19.3 gal
Engine Crankcase	20 L	5.3 gal
Transmission	50 L	13.2 gal
Differentials and Final Drives – Front	65 L	17.2 gal
Differentials and Final Drives – Rear	65 L	17.2 gal
Hydraulic System – Implement	N/A	N/A
Hydraulic System – Steering	N/A	N/A
Hydraulic System – Implement/ Steering	129 L	34.1 gal
Hydraulic Tank Only	75 L	19.8 gal
Oil Renewal System (ORS)	N/A	N/A
AC Refrigerant	19 hg	
AC Oil	126 mL	4.26 oz

Axles	
Front	Planetary – Fixed
Rear	Planetary – Oscillating
Oscillation Angle	±10°
Brakes	
Brakes	Single Disc Wet (enclosed) 4 WHL

Jouna i enormance (nei 4 i mai/stage iv)		
	Standard	Suppression
Operator Sound Level (ISO 6396)	71 dB(A)	70 dB(A)
Machine Sound Level (ISO 6395)	111 dB(A)	109 dB(A)

# Sound Performance (Brazil MAR-1, equivalent to Tier 3/Stage IIIA)

	Standard	Suppression
Operator Sound Level (ISO 6396)	71 dB(A)	70 dB(A)
Machine Sound Level (ISO 6395)	112 dB(A)	110 dB(A)

- The operator sound pressure level was measured according to the test procedures and conditions specified in ISO 6396:2008.
  The measurement was conducted at the maximum engine cooling fan speed.
- Hearing protection may be needed when the machine is operated with a cab that is not properly maintained or when the doors or windows are open for extended periods or in a noisy environment.
- The machine sound power level was measured according to the test procedures and conditions specified in ISO 6395:2008. The measurement was conducted at the maximum engine cooling fan speed.

413 mm

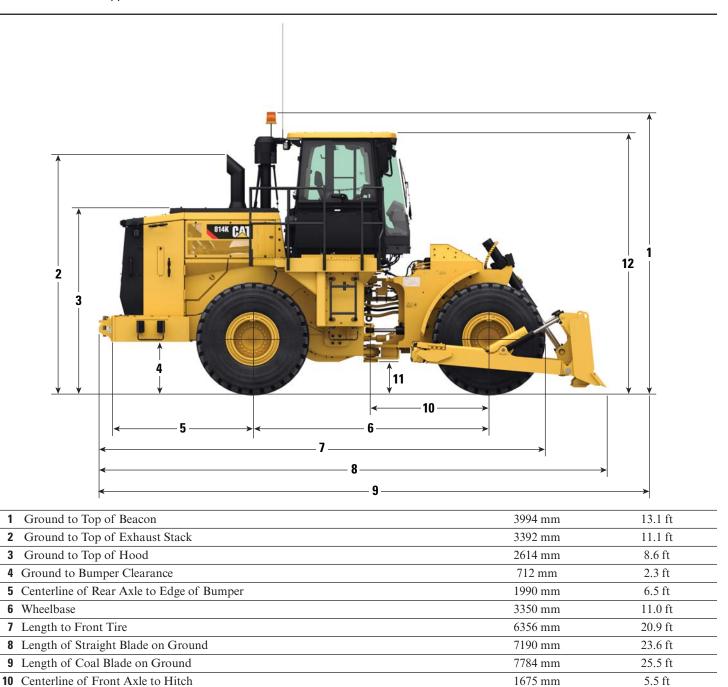
3694 mm

# **Dimensions**

11 Ground Clearance

**12** Height to Top of Cab

All dimensions are approximate.



1.4 ft

12.1 ft

# **Blade Specifications**

Blade Type	Capacity	Overall Width	Height	Digging Depth	Ground Clearance	Maximum Tilt	Turning Radius – Outside Corner of Blade	Turning Radius – Inside Corner of Blade	Weight	Total Operating Weight
Straight Blade	$2.84 \text{ m}^3$ $3.72 \text{ yd}^3$	3656 mm 12.0 in	1001 mm 3.3 in	493 mm 1.6 in	904 mm 3.0 in	802 mm 2.6 in	7166 mm 23.5 in	3550 mm 11.6 in	1361 kg 3,000 lb	21 950 kg 48,390 lb
Coal Blade	10.55 m <sup>3</sup> 13.8 yd <sup>3</sup>	4321 mm 14.2 in	1470 mm 4.8 in	488 mm 1.6 in	932 mm 3.1 in	945 mm 3.1 in	7647 mm 25.1 in	3420 mm 11.2 in	2009 kg 4,429 lb	22 616 kg 49,860 lb

# **Standard Equipment**

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

### **POWER TRAIN**

- Advanced Productivity Electronic Control System (APECS)
- · Air to air aftercooler
- Brakes, full hydraulic, enclosed, wet single disc service brakes
- Cat clean emission module (Tier 4 Final/ Stage IV only)
- Electro-hydraulic parking brake
- Electronic Clutch Pressure Control (ECPC)
- Engine, Cat C7.1 with ACERT Technology configured for two emissions options
- -Tier 4 Final/Stage IV
- -Brazil MAR-1 and China Nonroad Stage III, equivalent to Tier 3/Stage IIIA
- Engine driven cooling fan suction
- Fuel priming pump (electric)
- · Fuel to air cooler
- · Ground level engine shutoff
- Muffler (under hood) (Brazil MAR-1 and China Nonroad Stage III, equivalent to Tier 3/Stage IIIA)
- · Radiator, unit core
- Starting aid (ether)
- · Throttle lock
- Torque converter
- Transmission, planetary, with 4F/4R speed range control

### **ELECTRICAL**

- · Alarm, back-up
- Alternator, 150 amp
- Batteries, maintenance-free
- Electrical system, 24V
- Ground level lockable master disconnect switch
- Lights, directional (rear)
- Light, warning switched (LED strobe)
- Lighting system, (front and rear)
- Starter, electric
- · Starting receptacle for emergency start

### **OPERATOR ENVIRONMENT**

- 12V power port for mobile phone or laptop connection
- Air conditioner
- · Cab, sound-suppressed pressurized
- Cab door, sliding window (LH)
- · Camera, rear vision
- Cat Detect: Object Detection (ready)
- · Coat and hard hat hooks
- Finger tip shifting controls
- Flip-up armrest
- · Heater and defroster
- Horn, electric
- Hydraulic controls seat mounted
- Implement hydraulic lockout
- · Instrumentation, gauges
- -DEF fluid level (Tier 4 Final/ Stage IV only)
- -Engine coolant temperature
- -Fuel level
- Hydraulic oil temperature
- -Speedometer/tachometer
- Torque converter temperature
- Instrumentation, warning indicators
- Action alert system, three categories
- Brake oil pressure
- -Electrical system, low voltage
- Engine failure malfunction alert and action lamp
- -Parking brake status
- Light, (dome) cab
- Lunch box and beverage holders
- Mirror, internal (panoramic)
- Mirrors, rearview (externally mounted)
- Radio ready for entertainment
- -Antenna
- -Speakers
- -Converter (12V, 10-15 amp)
- Seat, Cat Comfort (cloth) air suspension
- Seat belt with minder, retractable, 76 mm (3 in) wide
- STIC control system with lockout
- Sun visor, front
- Tinted glass
- Transmission gear (indicator)
- Vital Information Management System (VIMS)
- -Graphical information display
- -External data port
- Customizable operator profiles
- -Event indicator light on rear grill
- Wet-arm wipers/washers (front and rear)
- -Intermittent wipers (front and rear)

### **GUARDS**

- Guards, crankcase and power train
- · Guard, driveshaft

### **FLUIDS**

• Antifreeze, premixed 50% concentration extended life (–34° C/–29° F)

### **OTHER STANDARD EQUIPMENT**

- DEF tank fill gauge
- Doors, service access (locking)
- Ecology drains for engine, radiator, transmission, hydraulic tank
- Engine, crankcase, 500 hour interval with CJ-4 oil
- Emergency platform egress
- Fire suppression ready
- Fuel tank, 500 L (132.1 gal)
- Hitch, drawbar with pin
- Hoses, Cat XT<sup>TM</sup>
- Hydraulic, engine, and transmission oil coolers
- · Oil change system, high speed
- Oil sampling valves
- · Steering, load sensing
- Total hydraulic filtration system
- Vandalism protection caplocks
- Venturi stack

# **814K Optional Equipment**

# **Optional Equipment**

Optional equipment may vary. Consult your Cat dealer for specifics.

## **STARTING AIDS**

- Heater, engine coolant, 120V
- Heater, engine coolant, 240V

### **OPERATOR ENVIRONMENT**

• Radio, AM/FM/AUX/USB/Bluetooth®

## **OTHER ATTACHMENTS**

- Counterweight (front)
- Sound suppression (required for Brazil)

### **BLADES**

• Blade (straight)

## **FLUIDS**

• Antifreeze, -50° C (-58° F)

# **814K Mandatory Attachments**

# **Mandatory Attachments**

Select one from each group. Mandatory and optional equipment may vary. Consult your Cat dealer for specifics.

## **SPECIAL ARRANGEMENT**

- Bulldozer arrangement
- -Bulldozer Standard

### **POWER TRAIN**

- Axles
- -Standard or non-spin rear
- Engine precleaners (based on engine configuration)

### **ELECTRICAL**

- Lights
- -Standard or LED

## **OPERATOR ENVIRONMENT**

- Cab Packages
- -Deluxe
- Mirrors cab
- -Standard or heated

### **TECHNOLOGY PRODUCTS**

- Product Link
- -Cell, satellite, none

### **FUEL SYSTEMS**

- Fuel tanks
- -Non-fast or fast fill

## TIRES, RIMS, AND WHEELS

- Tires
  - -Tires or rims only

### **OTHER ATTACHMENTS**

- Fenders
- -Without or with counterweight

# Notes

# Notes



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

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

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AEHQ8101-01 (01-2019) Replaces AEHQ8101

