825K
Soil Compactor

Engine		
Engine Model	Cat® C15 ACERT™	
Emissions	Meets U.S. EPA Tier 4 Final/EU Stage IV emission standards or meets U.S. EPA Tier 3/EU Stage IIIA equivalent emission standards	
Gross Power	324 kW	435 hp
Maximum Net Torque @ 1,300 rpm	2005 N·m	1,478.8 lbf-ft

Operating Specifications		
Operating Weight (Tier 4 Final/ Stage IV)	35 528 kg	78,326 lb
Operating Weight (Tier 3 Final/ Stage IIIA equivalent)	35 081 kg	77,340 lb

Lower your operating cost with industry leading efficiency.

Contents

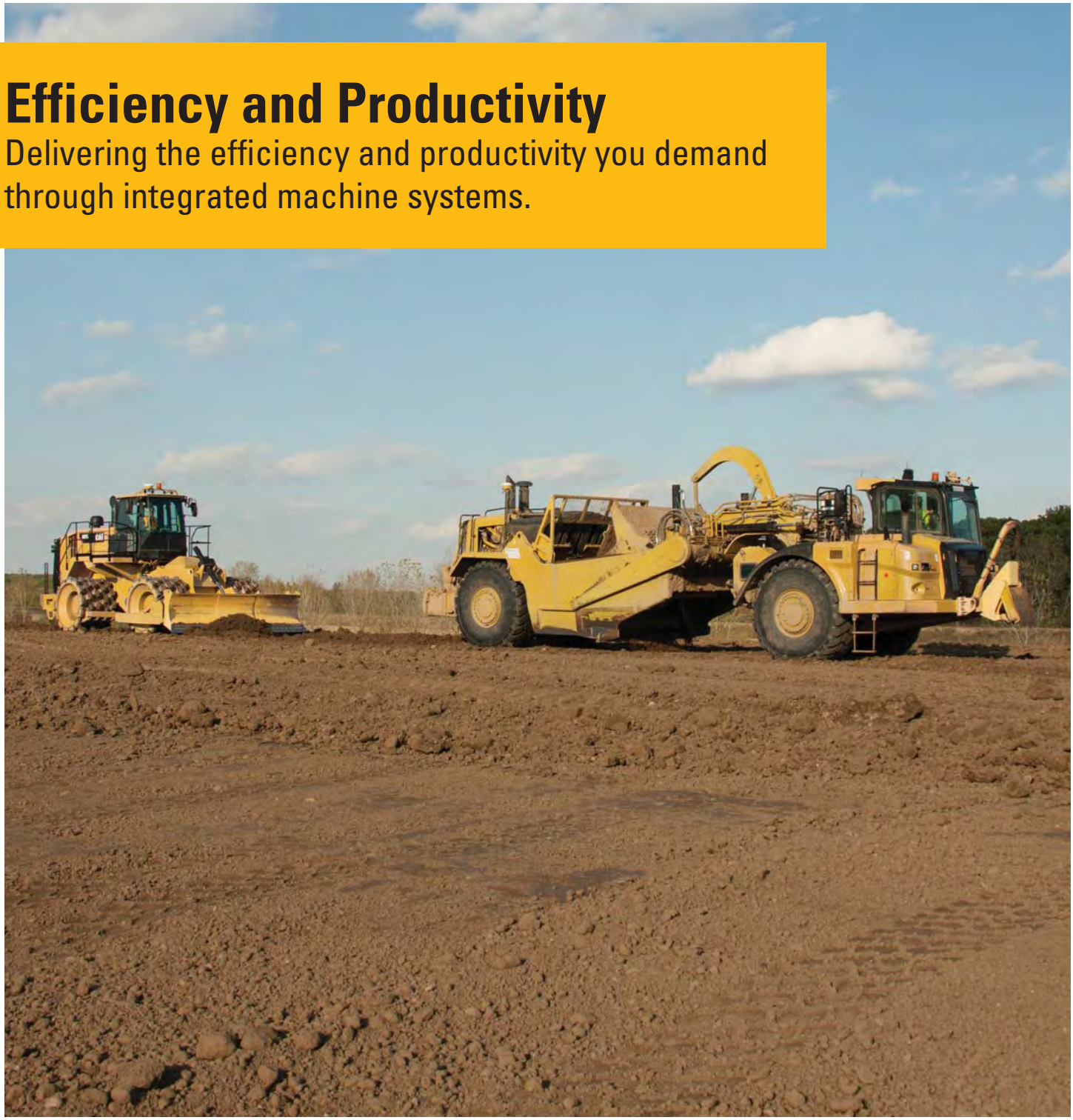
Efficiency and Productivity....4
Structures....6
Power Train....8
Tamping Wheels and Tips....9
Operator Station....10
Integrated Technologies....12
Safety....14
Sustainability....16
Serviceability....17
Customer Support....17
Operating Costs....18
Specifications....19
Standard Equipment....22
Standard Attachments and Optional Equipment....23

Cat Soil Compactors are designed with durability built in, ensuring maximum availability through multiple life cycles. With optimized performance and simplified serviceability, our machines allow you to operate more efficiently and safely.

Representing a long-standing commitment to quality and performance, this rugged, powerful machine is designed and built for heavy-duty compaction and dozing operations. Focused on helping our customers succeed, we have continued to build upon each new series. The 825K continues our legacy of reliability, performance, safety, operator comfort, serviceability, and efficiency.

Efficiency and Productivity

Delivering the efficiency and productivity you demand through integrated machine systems.



The Autoshift mode, when active, allows the machine to automatically upshift or downshift based on machine speed and torque, optimizing performance and thus saving fuel. This feature can be easily enabled or disabled on the soft keypad.

Deceleration Pedal

The left pedal acts as a brake, transmission neutralizer and an engine decelerator to override the engine speed selected by the throttle lock. This enables the operator to slow down when the throttle lock is engaged and to return to throttle lock without pressing a resume or set button again. This aids in maneuvering around trucks, tractors or any other obstacle.

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 help reduce operator fatigue through the use of low effort integrated controls

Steering System

Confident machine operation starts with precise machine control enabled by the 825K's load sensing hydraulic steering system.

- Increase efficiency with our variable displacement piston pumps
- Achieve precise positioning for easy loading in tight areas with 43 degrees each way of steering articulation
- Enhance operator comfort with integrated steering and transmission control functions

Electro Hydraulic Controls

Operators increase productivity with our responsive implements feature.

- Operate comfortably through electronically controlled hydraulic cylinder stops
- Handle easy-to-use soft detent controls

1) Decelerator 2) Brake 3) Accelerator

Structures

Purpose-built from the ground up for the toughest conditions.

Robust Structures

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

The 825 is specifically designed and made with purpose built structures to remain safe and durable for the long run. Advanced design, materials and robotic welding contribute to increased durability and overall machine strength.

Power Train

Operate more efficiently with improved power and control.

Cat Planetary Powershift Transmission

Building your success begins with a best-in-class transmission.

- Consistent, smooth shifting and efficiency through integrated electronic controls that utilize Single Clutch Speed Shifting (SCSS).
- Long life and reliability through heat treat gear and metallurgy.
- Three forward and three reverse speeds to match your application.

Cat Torque Converter (TC) with Lock-up Clutch

- Eliminates TC losses while lowering system heat
- Improves travel speeds
- Increases fuel efficiency

Cat C15 ACERT Engine

The Cat C15 ACERT engine is built and tested to meet your most demanding applications. Two engine options are available that meet Tier 4 Final/Stage IV emission standards or Tier 3/Stage IIIA equivalent emission standards.

- Fully integrated electronic engine controls works in concert with the entire machine to make your fuel go farther.
- Use less fuel idling with Engine Idle Shutdown.
- Maximized durability with Delayed Engine Shutdown.

Tamping Wheels and Tips

The heart of any compaction system.

Chevron Tamping Tip Design

The modified chevron tamping wheel tip design provides greater ground pressure, more compaction, excellent traction and a smooth ride.

Compaction

Compaction is achieved from the bottom of the lift to the top. The tapered tips walk out of the lift without “fluffing” the soil. The top of the lift is compacted and the surface is relatively smooth and sealed so hauling units are able to maintain a high speed when traveling over the fill. The 825K travel speed allows four forces of compaction: pressure, manipulation, impact and vibration. Since the 825K can also spread fill, the number of spreader tractors may be able to be reduced.

Standard Tips

Standard tips are used in typical soil compaction applications where compaction specification requirements are 95-100 percent Standard Proctor.

Symmetrical Tamping Tip Pattern

Equal compaction in forward or reverse is the result of the symmetrical tamping tip pattern. Tips are full perimeter and replaceable. The tip is welded to a base assembly, which then is welded directly to the drum.

Cleaner Bars

Each wheel has two cleaner bars to keep the drums free of carryover dirt, regardless of rolling direction so efficiency is maximized.

Adjustable Cleaner Bar Tip

The adjustable cleaner bar tips are heat-treated and direct hardened, cutting edge steel to increase wear life, which translates into lower operating costs.

Your operators can work more efficiently and stay comfortable with our customer-inspired cab features.

Entry and Exit

Enter and exit the cab easily and safely with these newly designed, ergonomic features.

- Fold up STIC steer/armrest
- Reduced access stairway angles
- Standard stairway lighting

Cat Comfort Series III 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.

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

Integrated Technologies

Monitor, manage, and enhance job site operations.

Cat Connect makes smart use of technology and services to improve your job site efficiency. Using the data from technology-equipped machines, you'll get more information and insight into your equipment and operations than ever before.

Cat Connect technologies offers improvements in these key areas:

EQUIPMENT MANAGEMENT

Equipment Management – increase uptime and reduce operating costs.

PRODUCTIVITY

Productivity – monitor production and manage job site efficiency.

SAFETY

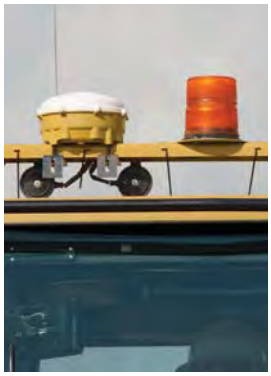
Safety – enhance job site awareness to keep your people and equipment safe.

COMPACT Technologies

COMPACT technologies combine advanced compaction measurement, in-cab guidance and reporting capabilities to help you consistently meet compaction targets fast, uniformly, and in fewer passes – saving on fuel and the cost of unnecessary rework.

Cat Compaction Control

The factory Cat Compaction Control system uses Machine Drive Power (MDP) technology to measure rolling resistance and correlates it with soil stiffness. MDP works in both cohesive or granular soils. Optional 3D mapping system maps compaction measurements to the precise location the operator is working, providing a real-time view of progress, and a record of compaction uniformity.



LINK Technologies

LINK technologies wirelessly connect you to your equipment, giving you valuable insight into how your machine or fleet is performing so you can make timely, fact-based decisions that can boost job site efficiency and productivity.

Product Link™/VisionLink®

Product Link is deeply integrated into your machine, giving you access to timely information like machine location, hours, fuel usage, idle time and event codes via the online VisionLink user interface can help you effectively manage your fleet and lower operating costs.

DETECT Technologies

DETECT technologies help keep people and equipment safe by enhancing operator awareness of the work area around working equipment and by monitoring and reporting unsafe conditions, like avoidance zones.

Rear Vision Camera

The standard rear vision camera greatly enhances visibility behind the machine to help the operator work more productively. Work with greater confidence and at peak potential while keeping people and assets safe.

Safety

Making your safety our priority.

We are constantly improving our products in an effort to provide a safe work environment for the operator and those who work on your job site. The 825K features an all new stairway access to the cab and key maintenance and service points.

Machine Access

- Left and right hand stairs are angled to enhance safety for operators getting on and off the 825K.
- Continuous pass-through with handrails and non-skid surfaces with toe kicks are designed into the service areas.
- Maintain three points of contact at all times through ground level or platform accessible service areas.

Visibility

- Optional rearview camera with in-cab monitor increases operator awareness around the machine.
- Standard cab mounted LED warning strobes

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

Sustainability

Stewards of the environment.

Reducing the Impact to the Environment

The 825K is designed and built with sustainability in mind.

- Engine Idle Shutdown can help you save fuel by avoiding unnecessary idling.
- Reduce waste to the environment with our maintenance free batteries.
- Built for multiple lives, the Cat 825 is one of the most rebuilt products to achieve the second and third life to get the most value from your investment. 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 while benefiting the environment.
- 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.

Serviceability

Enabling high uptime by reducing your service time.

We can help you succeed by ensuring your 825K has design features to reduce your downtime.

- Safe and convenient service with ground level or platform access and grouped 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.
- Swing out fuel, hydraulic oil coolers and condenser for easy access cleanout.
- Ground level power service center with electrical disconnect, emergency engine shutdown, and stairway light switch.
- Lighting inside the engine compartment improves visibility to service points.

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

Operating Costs

Save time and money by working smart.

Data from customer machines show Cat Soil Compactors are among the most fuel efficient machines in the industry. Several features contribute to this excellent fuel efficiency:

- **ACERT Engine** – Advanced engine controls maximizes power and efficiency.
- **Engine Idle Shutdown** – Automatic engine and electrical system shutdown conserves fuel.
- **Lockup Torque Converter** – Transfers more power to the ground and optimizes fuel efficiency in all applications.
- **Single Clutch Speed Shifting (SCSS)** – All new SCSS transmission controls provides greater momentum on grades and fuel savings by carrying that momentum through the shift points.
- **Fuel Tank Capacity** minimum of 12 hours operation depending on the application.

Engine

Engine Model	Cat C15 ACERT	
Emissions	Tier 4 Final/Stage IV Final or Tier 3/Stage IIIA equivalent	
Rated Power (Net SAE J1349)	302 kW	405 hp
Rated Power (Net ISO 9249)	302 kW	405 hp
Gross Power	324 kW	435 hp
Net Power		
Direct Drive – Gross Power	307 kW	412 hp
Direct Drive – Torque Rise	33%	
Converter Drive – Gross Power	324 kW	435 hp
Converter Drive – Torque Rise	8.5%	
Maximum Net Torque @ 1,300 rpm	2005 N·m	1,478.8 lbf-ft
Maximum Altitude without Derating (Tier 4 Final/Stage IV)	2834 m	9,298 ft
Maximum Altitude without Derating (Tier 3 Final/Stage IIIA equivalent)	2773 m	9,098 ft
Bore	137.2 mm	5.4 in
Stroke	171.4 mm	6.7 in
Displacement	15.2 L	927.6 in^3
High Idle Speed	2,300 rpm	
Low Idle Speed	800 rpm	

Operating Specifications

Maximum Operating Weight (Tier 4 Final/Stage IV)	35 528 kg	78,326 lb
Maximum Operating Weight (Tier 3 Final/Stage IIIA equivalent)	35 081 kg	77,340 lb

Transmission

Transmission Type	Planetary – Powershift – ECPC	
Travel Speeds		
Forward – First	5.5 km/h	3.4 mph
Forward – Second	9.7 km/h	6.0 mph
Forward – Third	17.2 km/h	10.7 mph
Reverse – First	6.2 km/h	3.9 mph
Reverse – Second	11.1 km/h	6.9 mph
Reverse – Third	19.7 km/h	12.2 mph

Hydraulic System

Pump Flow at 1,800 rpm	117 L/min	30.9 gal/min
Main Relief Pressure	24 100 kPa	3,495 psi
Maximum Supply Pressure	24 100 kPa	3,495 psi
Cylinder, Double-acting: Lift, Bore and Stroke	120 mm × 1070 mm	4.7 in × 42.1 in
Cylinder, Double-acting: Tilt, Bore and Stroke	95.25 mm × 216 mm	3.75 in × 8.5 in

Service Refill Capacities

Cooling System	116 L	30.6 gal
Engine Crankcase	34 L	9.0 gal
Transmission	66 L	17.4 gal
Fuel Tank	782 L	206.6 gal
Diesel Exhaust Fluid Tank (Tier 4 Final/Stage IV)	32 L	8.5 gal
Differentials and Final Drives – Front	100 L	26.4 gal
Differentials and Final Drives – Rear	110 L	29.1 gal
Hydraulic Tank Only	134 L	35.4 gal

- All non-road Tier 4 Final and Stage IV diesel engines are required to use:
  - Ultra Low Sulfur Diesel (ULSD) fuels containing 15 ppm (mg/kg) sulfur or less. Biodiesel blends up to B20 are acceptable when blended with 15 ppm (mg/kg) sulfur or less ULSD and when the biodiesel feedstock meets ASTM D7467 specifications.
  - Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specifications are required.
  - Diesel Exhaust Fluid (DEF) that meets all requirements defined in ISO 22241-1.

Axles

Front	Planetary – Fixed
Rear	Planetary – Oscillating
Oscillation Angle	±8°

Brakes

Parking Brake	Drum and Shoe, Spring Applied, Hydraulic Released

825K Soil Compactor Specifications

Cab

	Standard	Suppression
Operator Sound Level (ISO 6396)	73 dB(A)	72 dB(A)
Machine Sound Level (ISO 6395)	113 dB(A)	110 dB(A)

Hydraulic System – Steering

Steering System – Circuit	Double Acting – End Mounted	
Bore	114.3 mm	4.5 in
Stroke	576 mm	22.7 in
Steering System – Pump	Piston – Variable Displacement	
Maximum System Flow	170 L/min @ 1,800 rpm	44.9 gal/min @ 1,800 rpm
Steering Pressure Limited	24 000 kPa	3,481 psi
Vehicle Articulation Angle	86 degrees	

Blades

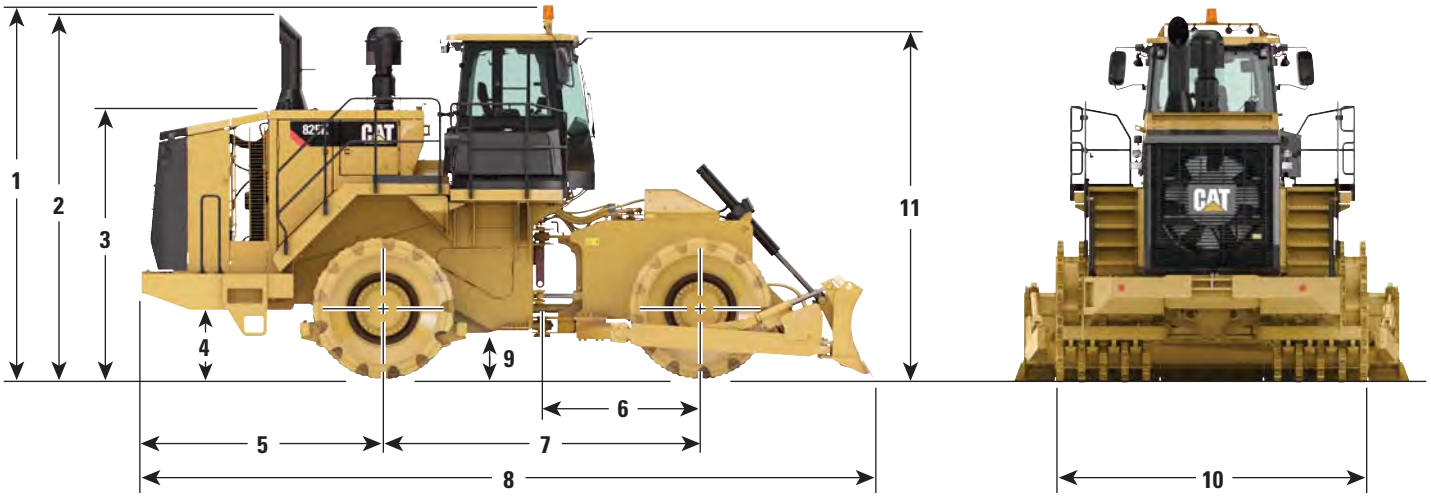
Moldboard Length	4390 mm	14.4 ft
Height Including Cutting Edge	1032 mm	3.4 ft
Maximum Depth of Cut	602 mm	1.97 ft
Maximum Lift Above Ground	958 mm	3.14 ft
Blade Tip Angle – Total	14.8°	
Blade Tip Angle – Forward	7.3°	
Blade Tip Angle – Back	7.5°	
Blade Tilt Angle – Right – Mechanical	5.1°	
Blade Tilt Angle – Left – Mechanical	4.1°	
Blade Tilt Angle – Right – Hydraulic	6.3°	
Blade Tilt Angle – Left – Hydraulic	5.4°	
Blade Tilt Angle – Right Full	10.8°	
Blade Tilt Angle – Left Full	10.1°	
Total Tilt Adjustment	890 mm	2.9 ft
Width Over End Bits	4628 mm	15.18 ft

Wheels

Weight	7333 kg	16,167 lb
Outside Diameter	1672 mm	5 ft 5.8 in
Drum Diameter	1299 mm	4 ft 3.1 in
Drum Width	1125 mm	3 ft 8.3 in
Tips per Wheel	65	
Width over Drums	3650 mm	11 ft 11.7 in

Dimensions

All dimensions are approximate.



1	Height to Top of Beacon	4381 mm	14 ft 14.5 in
2	Height to Top of Exhaust Pipe	4290 mm	14 ft 0.9 in
3	Height to Top of Hood	3162 mm	10 ft 4.5 in
4	Ground Clearance to Bumper	810 mm	2 ft 7.9 in
5	Center Line of Rear Axle to Edge of Counterweight	2830 mm	9 ft 3.4 in
6	Hitch to Center Line of Front Axle	1850 mm	6 ft 1 in
7	Wheelbase	3700 mm	12 ft 2 in
8	Length with Blade on Ground	8561 mm	28 ft 1 in
9	Ground Clearance	492 mm	1 ft 7.4 in
10	Width over Wheels	3650 mm	11 ft 11.7 in
11	Height to ROPS/Canopy	4059 mm	13 ft 3.8 in
Turning Radius – Inside of Push Arms		2627 mm	8 ft 7.4 in

825K Standard Equipment

Standard Equipment

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

POWER TRAIN

- Air to air aftercooler
- Autoshift
- Brakes, full hydraulic, enclosed, wet multiple disc service brakes
- Cat clean emission module (Tier 4 Final/Stage IV)
- Electro-hydraulic parking brake
- Electronic Clutch Pressure Control (ECPC)
- Engine, Cat C15 with ACERT Technology
  - Tier 4 Final/Stage IV
  - Tier 3/Stage IIIA equivalent
- Fuel priming pump (electric)
- Fuel to air cooler
- Ground level engine shutoff
- Hydraulically driven demand fan
- Integrated braking system
- Muffler (under hood) (Tier 3/Stage IIIA equivalent)
- Radiator, Aluminum Modular (AMR)
- Separated cooling system
- Single Clutch Speed Shifting (SCSS)
- Starting aid (ether) automatic
- Throttle lock
- Torque converter with Lock Up Clutch (LUC)
- Transmission, planetary, with 3F/3R speed range control

ELECTRICAL

- Alarm, back-up
- Alternator, 150 amp
- Batteries, maintenance-free (4 – 1,000 CCA)
- Electrical system, 24V
- Ground level lockable master disconnect switch
- Light, warning unswitched (LED strobe)
- Lighting, access stairway
- Lighting, under hood
- Lighting system, halogen (front and rear)
- Lights, directional (rear)
- Starter, electric (heavy duty)
- Starting receptacle for emergency start

OPERATOR ENVIRONMENT

- 12V power port for mobile phone or laptop connection
- AccuGrade™ mapping (ready)
- Air conditioner
- Cab, sound-suppressed pressurized
- Cab door, sliding window (LH)
- Compaction control (ready)
- Coat and hard hat hooks
- Electro-hydraulic tilt and lift controls
- Finger tip shifting controls
- Flip-up armrest
- Heater and defroster
- Horn, electric
- Implement hydraulic lockout
- Instrumentation, gauges
  - DEF fluid level (Tier 4 Final/Stage IV)
  - 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
- Internal four-post rollover protective structure (ROPS/FOPS)
- Laminated glass
- Light, (dome) cab
- Lunch box and beverage holders
- Mirror, internal (panoramic)
- Mirrors, heated ready
- 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
- Wet-arm wipers/washers (front and rear)
- Intermittent wipers (front and rear)

TIRES, RIMS AND WHEELS

- Wheels, tamping tips

GUARDS

- Guard, driveshaft
- Guards, crankcase and power train

BLADES

- Bulldozer straight blade, hydraulics, and linkage are included in the base machine

FLUIDS

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

OTHER STANDARD EQUIPMENT

- Cleaner bars with teeth
- Doors, service access (locking)
- Ecology drains for engine, radiator, transmission, hydraulic tank
- Emergency platform egress
- Engine, crankcase, 500 hour interval with CJ-4 oil
- Engine idle management features
  - Auto idle kickdown
  - Delayed engine shutdown
  - Engine idle shutdown
- Fast fuel system
- Fire suppression ready
- Fuel tank, Fast Fill, 782 L (207 gal)
- Hitch, drawbar with pin
- Hoses, Cat
- Hydraulic, engine, and transmission oil coolers
- Oil change system, high speed
- Oil sampling valves
- Product Link
- Stairway, left and right rear access
- Steering, load sensing
- Toe kicks
- Total hydraulic filtration system
- Vandalism protection caplocks
- Venturi stack
- Fold down exhaust stack for shipping

825K Standard Attachments and Optional Equipment

Standard Attachments

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

HYDRAULICS
- Hydraulics
  - Standard or EU and Canada

OPERATOR ENVIRONMENT
- Glass (window)
  - Standard bonded or rubber-mounted glass
- Precleaner – cab
  - Standard or powered

POWER TRAIN
- Axles
  - Standard or non-spin rear

SPECIAL ARRANGEMENTS
- Engine
  - Sound suppression
- Engine Precleaners
  - Turbine or dual stage

TECHNOLOGY PRODUCTS
- Product Link
  - GSM, satellite

TIRES, RIMS, AND WHEELS
- Wheels
  - Tamping or high impact tips

Optional Equipment

Optional equipment may vary. Some options may be included/excluded in arrangement packages. Consult your Cat dealer for details.

OPERATOR ENVIRONMENT
- Camera, rear vision
- Radio, AM/FM/AUX/USB/BLUETOOTH
- Radio, CB (ready)

TECHNOLOGY PRODUCTS
- Compaction control, basic

FLUIDS
- Antifreeze, –50° C (–58° F)

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

MISCELLANEOUS
- Film (ANSI) (Tier 4 Final/Stage IV)
- EU certification (Tier 4 Final/Stage IV)
- Plate – year of manufacture (Tier 3/Stage III Equivalent)

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

AEHQ7316 (09-2014)

© 2014 Caterpillar
All rights reserved

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

CAT, CATERPILLAR, SAFETY.CAT.COM, their respective logos, “Caterpillar Yellow” and the “Power Edge” trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

VisionLink is a trademark of Trimble Navigation Limited, registered in the United States and in other countries.