

825G

Series II
Soil Compactor



Cat® 3406E ATAAC Diesel Engine

Gross Power 283 kW/380 hp

Flywheel Power 253 kW/339 hp

Operating Weight 32 700 kg

Shipping Specifications

Weight 31 200 kg

825G Series II Soil Compactor

Representing a long-standing commitment to quality and performance, this rugged and powerful machine is specifically designed and built for heavy-duty compaction and dozing operations.

Power Train

- ✓ The Cat 3406E diesel engine with EUI delivers increased power and combined with Electronic Clutch Pressure Control, planetary power shift transmission and heavy-duty final drives and axles, offers superior performance, durability and reliability in the toughest conditions. **pg. 4**

Hydraulics

Innovative hydraulics play a key role in performance and low operator effort with increased flow rate resulting in faster hydraulics. XT-3™ and XT-5™ hose, O-ring face seals and large bore cylinders carry on the tradition of reliable, high-performance Caterpillar® hydraulics. **pg. 6**

Blade

Designed for general production, dozing, road grading and cleanup work. **pg. 7**

The Power of One...

One manufacturer...

One dealer...

Once source for all your warranty, parts and service needs.

The 825G Series II soil compactor was conceived and designed with exciting innovations that exceed customer expectations for performance, durability and operator comfort.

✓ *New feature*



Operator Station and Controls

Experience a high level of productivity through Command Control steering with integrated transmission controls, fingertip blade controls, a large viewing area and spacious operator station.

pg. 8

Tamping Wheels and Tips

Tamping wheel tip design and modified chevron pattern offer greater traction, penetration and compaction for high soil compaction production. **pg. 10**

New and Optional Features

✓ Sliding cab windows, flood lights, fast fuel fill and sound suppression are available to enhance the 825G Series II. **pg. 11**

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. 12**

Complete Customer Support

Your Cat dealer is your single, 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. 14**



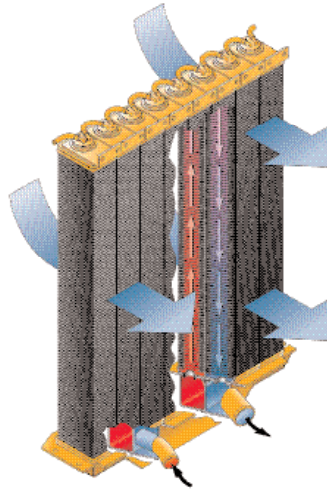
Power Train

Delivers top performance and durability in tough applications.



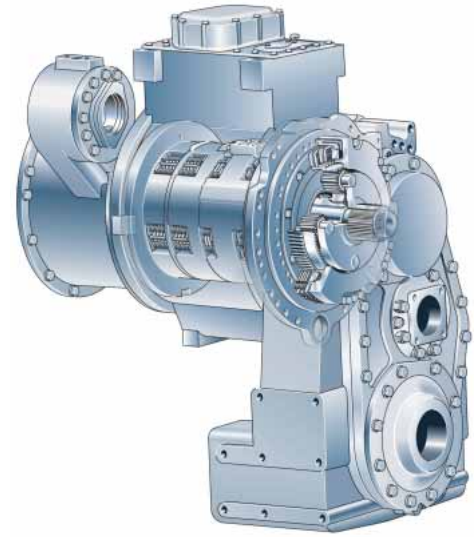
Caterpillar 3406E Engine. Is a six-cylinder, turbocharged, air-to-air aftercooled (ATAAC), Electronic Unit Injection (EUI) engine and one of the most developed and proven engines offered by Caterpillar. It has a strong reputation for reliability, durability and performance.

- The 3406E delivers a full-rated net power of 283 kW (380 hp). High torque rise delivers performance you can feel, resulting in more rimpull, greater lift force and faster cycle times.
- The four stroke engine delivers fuel economy, durability and reliability in the most demanding conditions. Improved intake and combustion chamber designs help meet the latest emission standards.
- Resilient engine mounts dampen vibration for lower sound levels.
- Meets Stage II EU Emissions Directive 97/68/EC.



Advanced Modular Cooling System (AMOCS). The G-Series II cooling system has been upgraded to the Advanced Modular Cooling System (AMOCS). It is a Caterpillar technology that improves serviceability. The brass tubes on the AMOCS are straight and in-line, along with nine fins per inch, making the radiator easy to keep clean. The tubes are welded to a large, thick header, providing the strength of the tube-header joint, reducing the possibility of coolant leaks. This larger cooling system is designed for better cooling capability.

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

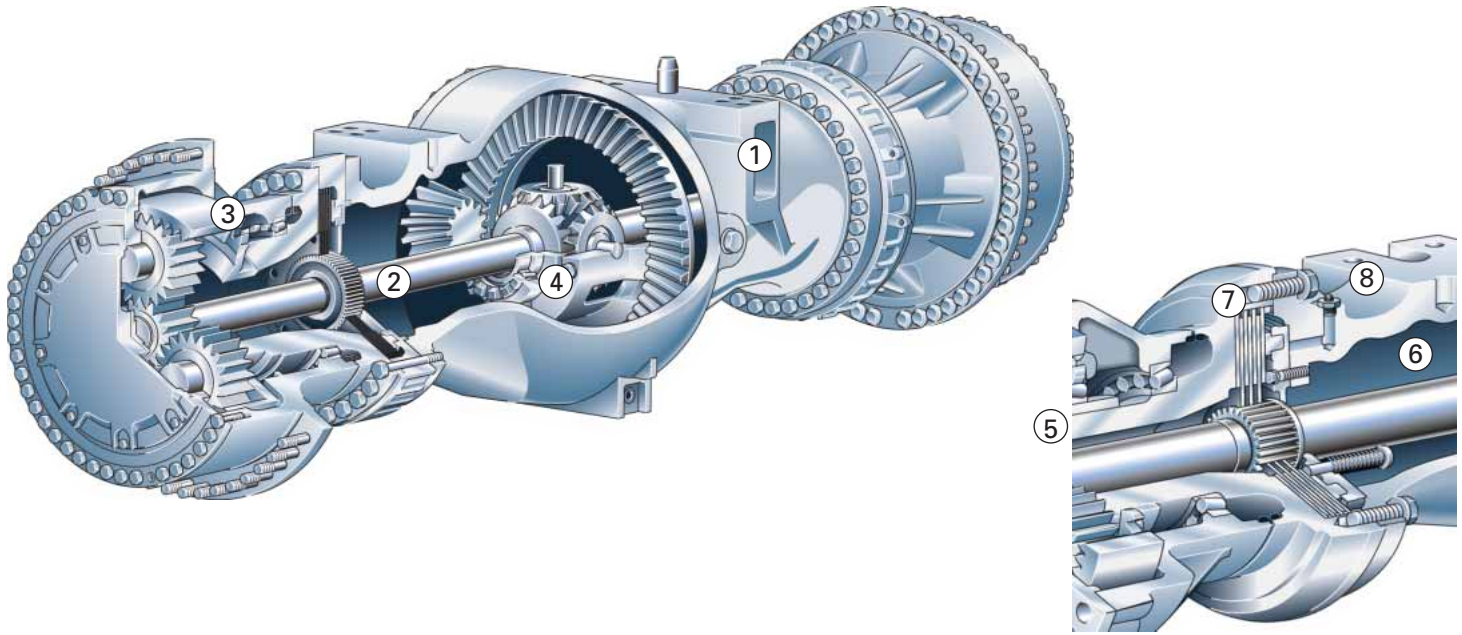


Transmission. The Caterpillar extreme duty planetary, powershift transmission features heavy-duty components to handle the toughest jobs. The 432 mm (17 in), four planet drives operate in all gears, forward and reverse. Electronic controls provide features to enhance productivity, durability and serviceability. The addition of the Electronic Clutch Pressure Control (ECPC) contributes to improved shift quality, reduced torque spikes and overall transmission durability. Control Throttle Shift (CTS) provides smoother shifts and improves clutch and power train life.

Torque Converter. The torque converter uses a high-capacity impeller to handle the engine's increased torque rise (28 percent) and power.

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

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



1 Heavy-Duty Axles. Are fixed on the front and oscillating ± 10 degrees on the rear. They feature strong gears and bearings in both the differentials and heavy-duty final drives for increased durability. Permanently lubricated, maintenance-free U-joints result in fewer parts and improved serviceability. Free-floating axle shafts can be removed independently from the wheels and planetary final drives.

2 Gears and Shafts. Large, shot-peened gears and increased bolt capacity improve the durability of the standard differentials. Axle shafts are stronger and feature more splines to help spread the load.

3 Spindles and Final Drives. Reduce the number of parts and greatly improve serviceability, allowing easier access to the duo-cone seals without removing the center housing from the machine. Planetary units can be removed independently from the wheels and brakes. The final drives feature planetary reduction at each wheel, and with torque developed at the wheel, less stress is placed on the axle shafts.

4 Differentials. Are conventional in the front and rear.

- 5 Oil-Enclosed, Multiple Disc Brakes.** Feature fewer parts, better heat rejection and improved serviceability. Fully hydraulic actuator circuits improve performance and reliability.
- Brakes operate on the low torque side of the final drive, requiring less force, resulting in less heat buildup.
 - Improved axle oil circulation (6) provides additional cooling to the (7) brake discs. A combination of thicker reaction plates and improved cooling improve durability.
 - Fewer parts and brake disc location improve serviceability by allowing technicians to remove the spindle, final drive and brake pack as one unit without disturbing the wheel bearings.
 - Internal brake lines increase reliability and performance.

8 Service Brakes. Are completely enclosed and located on the two front wheels. The service brakes are also self-adjusting with modulated engagement and are designed for easy servicing. With two brake pedals, the right pedal controls standard braking while engine deceleration and braking occurs with the left pedal.

Parking Brake. Is a spring-applied, oil-released, dry drum design. It is mounted on the transmission output shaft driveline for manual operation. The Caterpillar Monitoring System alerts the operator if the transmission is engaged while the parking brake is applied.

Secondary Brake. Can be applied manually by the operator. In addition, the Caterpillar Monitoring System alerts the operator if pressure drops and will automatically apply the parking brake.

Hydraulics

Well-balanced hydraulics deliver precise, low-effort control and trouble-free operation.



Hydraulic System. Provides low-effort blade control. Seat-mounted levers send electrical signals to a pilot valve mounted on the front frame. This moves the spool, heat and effort caused by a hydraulic valve out of the operator's station.

Command Control Steering.

A mechanical feedback system combines with valve ratio to provide quarter-turn, side-to-side steering. Unlike systems that rely on steering wheel velocity to activate steering cylinders, this system directly links steering wheel position to articulation. The speed the machine turns is proportional to the steering wheel position. The benefit is precise control, quicker response and dramatically reduced operator motion and effort.

Hydraulic Power Steering.

Features center-point frame articulation that permits the front and rear wheels to track. Hydraulic power is a flow-amplified system, with full-flow filtering. The steering wheel operated pilot valve controls flow to the steering cylinders. The steering angle is 42 degrees.

Load Sensing Steering.

Maximizes machine performance by directing power to the steering system only when the operator steers the machine. This allows more power to be applied to the ground when the machine is not being steered. It also helps decrease fuel consumption because the steering system does not constantly draw on the engine.

Positive-Displacement Hydraulic Pumps. Perform with high efficiency and great reliability. For improved serviceability, all hydraulic pumps are mounted on a single pump drive.

Lift Lines. Are located in a high location above the cylinder yoke where damage is less likely to occur.

XT-3 and XT-5 Hose. Along with O-ring face seals and a large capacity lift cylinder top off the hydraulic system, delivering the performance and durability owners expect. Reliable components reduce the risk of leaks and blown lines, helping protect the environment and reducing operating costs.

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

Blade

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



Blade Package. Consists of the blade, push-arms, trunnion mounting, dozer-length skid plate with replaceable wear plates, reversible cutting edges, selfsharpening end bits, hydraulic lines guard and hydraulic lift cylinders.



Applications. The 825G Series II excels at production dozing, spreading fill, backfilling, stockpiling, boosting scrapers and compacting.

Operator Controls. Lift and tilt are both standard options, and the controls are seat-mounted and located in a convenient location to the right of the operator.

Outside Mounted S-Blade.

With multiple box section construction including heat treated moldboard and DH-2 steel cutting edges and end bits for long life. The outside mounting is a stronger design because stresses are put on the frame rather than the blade so blade flexing is reduced. It also allows for higher lift and a wider blade can be used than with an inside mounted design.

Operator Station and Controls

Ergonomically designed for operator comfort with easy-to-use, low-effort controls.





Blade Control Pod and Joystick.

Is ergonomically designed. The pod is situated at an 18 degree angle for natural wrist positioning. The controller offers a sturdy handle for multiple hand positions.

Right and Left Rear-Hinged Doors.

Provide a walk-through operator's station. Both doors can be fully opened and latched for easy entry and exit.

Caterpillar Comfort Series Seat.

Provides comfort and support with six-way adjustment. The seat cushions reduce the pressure on the lower back and thighs, while offering unrestricted arm and leg movement. Air suspension adds to the overall comfort level by smoothing the ride over rough terrain.

Caterpillar Monitoring System.

Provides four gauges on the left side of the dash monitoring fuel level; engine coolant, hydraulic oil and transmission oil temperatures. The center panel contains the tachometer/speedometer. 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 overspeed, fuel filter status, parking brake status, steering oil pressure and transmission filter status.

Storage Space. With room for a lunch cooler, insulated bottle, cup and other personal items. There is also a coathook.

Ventilation Ducts and Vents.

Provide more air flow to the operator and windows. Post-mounted vents direct air to the rear window.

Service Brakes. Offer standard braking with the right pedal. The brakes are completely enclosed and located on the two front wheels with stopping capability provided to all four wheels through fulltime, all-wheel driveline. They are selfadjusting with modulated engagement.



Decelerator Pedal. Provides engine deceleration for the first 50 percent of travel and then the brake engages.

This left pedal enables the operator to slow down when the throttle lock is engaged and to return to throttle lock without pressing a button.

Throttle Lock. Allows the operator to preset the engine speed for operator and machine efficiency (similar to cruise control on an automobile).

Radio-Ready. Includes 12-volt converter, speakers, antenna, all wiring and brackets for communications or entertainment radio installation.

Sound Levels. A thick, non-metallic floor, along with outside the cab hydraulics and a separated cooling system contribute to a quiet work environment.

Tamping Wheels and Tips

The heart of any compaction system.



Wheel Tips. There are 13 tips per row and 65 tips per wheel for excellent 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. 825G Series II travel speed allows for four forces of compaction: pressure, manipulation, impact and vibration. Since it can also spread fill, the number of spreader tractors may be able to be reduced.

1 Chevron Tamping Tip Design.

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

2 High Density Wheels.

Are designed with longer and narrower tips that provide higher ground contact pressure and provide the ability to achieve more difficult density requirements. They are capable of liquid ballast for additional compactive benefit and self-seating valves can relieve pressure from the ballast. High density tips meet stringent compaction specification requirements (90-95 percent of Modified Proctor). Tip height is 215 mm and width is 168 mm.

3 Standard Tips. Are used in typical soil compaction applications where compaction specification requirements are 95-100 percent Standard Proctor. Tip height is 188.3 mm and width is 224 mm.

Symmetrical Tamping Tip Pattern.

Is used for equal compaction in forward or reverse. Tips are full perimeter and are replaceable. The tip is welded to a base assembly, which then is welded directly to the drum.

4 Cleaner Bars. With two cleaner bars per wheel, the drums are kept free of carryover dirt regardless of rolling direction, helping maximize efficiency.

5 Adjustable Cleaner Bar Tip.

Are constructed from cutting edge steel that is heat treated and direct hardened, which increases the wear life and translates into lower operating costs.



New and Optional Features

Available options augment the 825G Series II to meet your needs.



Air Conditioning. Is standard and uses blended air for immediate temperature changes, clears windows easily and improves operator comfort. The cooling system is located behind the operator's seat and uses R134a refrigerant.



Fast Fuel Fill. 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 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 automatically shuts off.



Floodlights. Located on the 825G Series II exterior are super damp and will last up to seven times longer than previous lights.



Optional Sliding Cab Windows. Are located in the right and left doors to provide access to outside air without opening the door.

Auxiliary Light Package. With four additional lights on top of the cab (two facing forward and two facing rearward) is available.

Sound Suppression. Panels used in the engine compartment reduce noise.



Serviceability

If maintenance is simple and accessible, it gets done.



Engine Access. New engine enclosure replaces a non-metallic hood assembly which increases durability in tough applications where soil conditions are less than optimum.

500 Hour Oil Change Interval.

Increases uptime and production by doubling the time between oil and filter changes without requiring increased oil sump capacity.



Daily Maintenance. Lockable ground level service doors give quick access to engine oil fill and dipstick, coolant sight gauge (shown), rear frame grease fittings, relay panel and electrical breakers. The transmission oil fill tube is located beneath the platform area and the transmission oil dipstick has a sight gauge next to the fill tube. All four maintenance-free batteries are secure in a built-in battery box in the right rear frame. U-joints are lifetime lubricated, leaving the slip joint as the only driveline component needing grease.



Service Access. Scheduled maintenance points are well within reach. An air filter service indicator is visible from the cab or platform, with the air filter accessible from the left platform and the engine oil filter from the right platform. A remote grease fitting is provided to lubricate the lift cylinder yoke. Removable treadplates in the platform give access to less commonly serviced components.



Transmission Oil Fill Tube. Is located beneath the platform area and the transmission oil dipstick has a sight gauge next to the fill tube for easy maintenance.

Separated Cooling System. Isolates the fan and radiator away from the engine for a quieter running machine. The oil cooler and fan swing away for easy cleaning through the easy access service door.

Operator Station. Can be removed or replaced in about 45 minutes without having to disconnect hydraulic lines. Quick disconnect couplings allow fast disconnect of the air conditioning unit without releasing refrigerant.

Engine Shutdown Switch. Is located inside the left cooling system access door for simple access and extended switch life.

Bolt-on Bumper. Improves the angle of the departure from 18 degrees to 20 degrees by shortening the overall machine length.

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.



Hinged Air Conditioning Condenser. Swings open 30 degrees and coupled with the swing out oil cooler, allows the cooling system to be cleaned quickly and easily.



Hinged Hydraulic Oil Cooler. Can be swung open 30 degrees without special tools.

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 video tapes, 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

Cat 3406E ATAAC Diesel

Gross Power	283 kW/380 hp
Flywheel Power	
ISO 9249	253 kW/339 hp
EU 80/1269	253 kW/339 hp
Peak Totque (Net) at 1200 rpm	1671 Nm
Bore	137.2 mm
Stroke	165.1 mm
Displacement	14.6 Liters
Torque Rise	28%

- Power ratings at 2000 rpm
- Net power advertised is the power available (at the flywheel) when the engine is equipped with air cleaner, muffler, alternator and hydraulic fan drive.
- No derating required up to 2300 m altitude.
- Meets Stage II EU Emissions Directive 97/68/EC.

Transmission

Forward	km/h
1	5.3
2	9.3
3	15.6
Reverse	
1	6.1
2	10.6
3	17.2

Brakes

- Brakes meet ISO 3450-1996 standards.

Steering

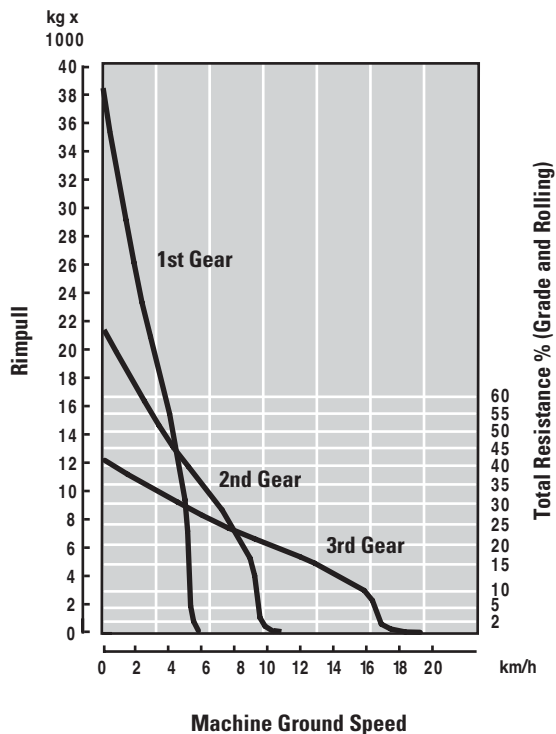
Steering Angle $\pm 42^\circ$

Hydraulic System

Vane Pump Output at 2200 rpm and 6900 kPa	72 L/min
Bore and Stroke	
Lift Cylinder	95.25 x 711 mm
Relief Valve Setting	24 125 kPa

Blades

Blade Capacity	3.79 m ³
Moldboard Length	4390 mm
Height, Including Cutting Edge	1034 mm
Maximum Depth of Cut	312 mm
Maximum Lift Above Ground	932 mm
Blade Tip Angle	
Total	13.5°
Forward	6.9°
Back	6.6°
Right, Left	
Mechanical	4.3°
Hydraulic	5.6°
Full	10°
Total Tilt Adjustment	787 mm
Width Over End Bits	4628 mm



Axles

Front	
Planetary	Fixed
Oscillating Rear	
Planetary	$\pm 10^\circ$

Weights

Operating Weight	32 734 kg
■ Maximum operating weight with standard wheels.	

Shipping Specifications

Weight	31 200 kg
Height	3755 mm
Width	4390 mm
Depth	8379 mm

Wheels

Drum	
Width	1125 mm
Diameter	1299 mm
Outside Diameter	1677 mm
Wheel Weight	1766 kg

- All dimensions except for weight are the same for standard and high density wheels/tips.

Dimensions

Width Over Drums	3650 mm
Blade Height Straight	1034 mm

Operating Specifications

Turning Radius Blade	
Outside	7417 mm
Inside	3362 mm

Service Refill Capacities

	Liters
Fuel Tank - standard	608
Cooling system	83
Crankcase	34
Transmission	62
Hydraulic tank	88
Differentials and final drives	
Front	90
Rear	90

ROPS/FOPS

- Caterpillar cab with integrated Rollover Protective Structure (ROPS/FOPS) are standard.
- ROPS meets ISO 3471:1994 criteria.
- FOPS meets ISO 3449:1992 criteria.

Cab

- Standard air conditioning system contains environmentally friendly R134a refrigerant.

Sound

Operator Sound

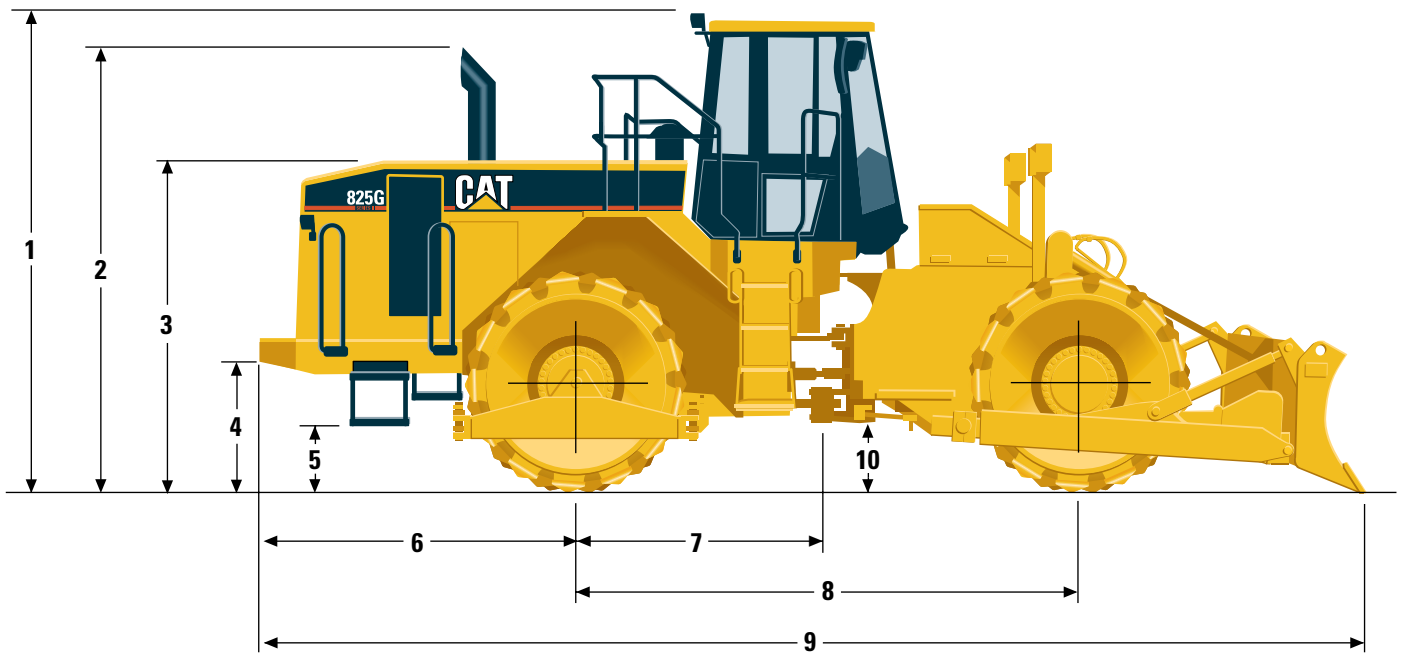
- The operator sound level measured according to the procedures specified in ISO 6394:1998 is 77 dB(A), for cab offered by Caterpillar, when properly installed and maintained and tested with the doors and windows closed.
- Hearing protection may be needed when operating with an open operator station and cab (when not properly maintained or doors/windows open) for extended periods or in noisy environment.

Exterior Sound

- The labeled spectator sound power level measured according to the test procedures and conditions specified in 2000/14/EC is 111 dB(A).

Dimensions

All dimensions are approximate.



1	Height to Top of Cab	3755 mm
2	Height to Top of Exhaust Pipe	3570 mm
3	Height to Top of Hood	2613 mm
4	Height to Rear Bumper	940 mm
5	Height to Bottom of Ladder	488 mm

6	Center Line of Rear Axle to Edge of Rear Bumper	3132 mm
7	Center Line of Rear Axle to Hitch	1850 mm
8	Wheelbase	3700 mm
9	Length with Blade on Ground	8379 mm
10	Ground Clearance	596 mm

Standard Equipment

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

Electrical

Alarm, back-up
Alternator (70-amp)
Batteries, maintenance-free
Diagnostic connector
Lighting system, halogen
(front and rear)
Lockable master disconnect switch
Starter, electric (heavy-duty)
Starting and charging system (24-volt)
Starting receptacle for emergency starts

Operator Environment

Air conditioner
Blade control system locks
Cab, pressurized and sound suppressed
(ROPS/FOPS)
Radio ready (entertainment) includes
antenna, speakers and converter
(12-volt, 5-amp)
Cigar lighter and ashtray
Coat hook
Command Control steering
Electro-Hydraulic blade controls
Fingertip shift controls (steering wheel
mounted)
Gear selection display
Heater and defroster
Horn, electric (steering wheel mounted)
Hour meter display
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
Light, dome (two in cab)
Lunchbox and beverage holder
Mirrors, rearview (interior and exterior)
Seat, (cloth) Comfort Series, suspension
Seat belt, retractable, 76 mm (3 in) wide
Wet-arm wipers/washer (front and rear)
Intermittent front wiper

Power Train

Brakes, fully hydraulic, enclosed,
wet-disc
Cat axles, outboard final drives
Engine, Cat 3406E with ATAAC diesel
Fan, radiator, hydraulically driven
Fuel priming aid
Muffler, sound suppressed
Precleaner, engine air intake
Radiator, Advanced Modular Cooling
System (AMOCS)
Starting aid (ether)
Switch, transmission neutralizer lockout
Torque converter
Transmission, planetary with (F3/R3)
electronic clutch
pressure control

Other standard Equipment

Caterpillar O-ring face seals couplings
XT™ hoses
Cleaner bars with teeth
Coolers
Engine oil, hydraulic oil and
transmission oil
Cylinders, tilt control
Guards, power train and crankcase
Hitch, drawbar with pin
Hood, metallic with lockable service
doors
Hydraulic steering
S•O•S valves
Tamping wheels
Vandalism protection caplocks

Optional Equipment

Optional equipment may vary. Consult your Caterpillar dealer for specifics. All weights approximate.

	kg		kg
Auxiliary cab light package	3	Heater, 220-volt	1
Bulldozer arrangement includes hydraulic lift cylinder and lines, push arms and dozer pins	5289	High density compaction wheels*	86
Cab sliding windows	13	Intermittent rear wiper	0.9
Drive shaft guard	58	Internal panoramic mirror	5
Engine coolant heater	2	Internal rearview mirror	3
Extended Life Coolant -50° C	0	Quick oil change system	1
Fast fuel adapter	4	Sound suppression, spectator	103
		Visor, front	14.5

* High density wheel weight represents variance from the standard wheel weight, which is included in the machine operating weight.

825G Series II Soil Compactor

HEHG5454 (09/2003) hr

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

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