

# AP500E

Asphalt Paver



## Cat® C4.4 Engine with ACERT® Technology

Rated Power (ISO 14396)	106 kW/144 hp
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## Operating Weight with

AS4252C Screed	16 145 kg
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## Paving Ranges

AS4252C	
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Standard Paving Width	2550-5000 mm
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Maximum Paving Width w/Extensions	7000 mm
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## AP500E Features

*From streets to parking lots to high production projects, paving applications require equipment that is powerful, mobile, and equipped with easy-to-use features that minimise handwork and increase job site efficiency; the AP500E meets these objectives and more.*

### Excellent Power and Mobility

*The Cat® C4.4 engine provides excellent power for pushing haul trucks, while the wheeled undercarriage delivers the tractive effort and mobility required on inclines and loose base materials.*

### Convenient Operation

*The Cat material delivery system with independent control of each auger and each conveyor ensures that flow to the screed is smooth and consistent for high quality, good looking mats.*

### Visibility

*Communicating with haul trucks, adjusting mix height in the auger chamber and optimising run time without running the hopper empty requires good visibility. The AP500E provides clear sight for optimal performance.*

### Quality Screeds

*Cat screeds are easily adjustable and deliver unmatched stability with high quality results.*

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**Whatever the job, paving has distinct requirements for paving contractors and their customers. Customers demand productivity and an excellent smooth mat, while contractors need a versatile paver that can handle a wide variety of work, and the ability to operate efficiently around obstacles.**

**The AP500E medium to high production asphalt paver, offers contractors a compact versatile machine that is powerful and highly manoeuvrable. It is a true 16-17 tonne machine that can complete jobs quickly with minimal interruptions and its compact size means that it is easy to transport from job to job. The AP500E is an “all-round player” whether it is paving a parking area, residential development, national roads or on a larger motorway project.**



# Performance

Quality builds long-standing relationships.

Time constraints can lead to substantial stress on paving crews. This is especially true in paving applications since many are inconvenienced until the work has been completed. Today's paving contractors require reliable equipment that gets them in and out quickly with quality results. Establishing lasting relationships is not only good for our customers, but for theirs also; future profitability depends on it.

## Mobility

Mobility encompasses many facets of medium to high production paving applications. From the time you leave the shop early in the morning until returning late in the evening, the paver will have been loaded, unloaded and moved around to multiple job sites. The compact, lighter weight design allows contractors to haul the paver along with other necessary job site equipment, maximising machine transport while minimising costs.

## Visibility

Good visibility promotes efficient operation and mobility around the job site, it also improves mat quality. Providing multiple seating positions, a contoured engine compartment, and a dual-purpose exhaust stack, allows the paver operator to communicate effectively with the screed operators and truck drivers, leading to proper truck exchanges and smooth mix delivery to the screed.

## Quick Setup

From streets to parking lots, paving applications require countless starts and stops, making quick adjustments a key component for efficient operation. Features such as upper and lower tow-point indicators, four independent sensors of the augers and conveyors, power screed controls as well as remote-mounted switches on the extenders can all help optimise performance and increase production.

## Efficient Power

The Cat® C4.4 engine with ACERT® Technology combines the power to push loaded trucks with the fuel efficiency to operate throughout the day. Responsive power is a must in paving. The AP500E utilises an adjustable electronic speed control that reduces engine speed when the propel lever moves to neutral and then quickly adjusts to high idle when moved from neutral for quick on-demand performance.



# Precise Delivery

Continuous flow leads to better mat quality.



## Precise Mix Delivery

Providing consistent mix delivery ensures that forces against the screed remain constant. A consistent head of material leads to smoother surfaces and higher quality mats. The Cat system utilizes four individual pumps that enable each conveyor and each auger to deliver the exact amount of mix to the screed. The left and right conveyors in addition to the left and right augers are controlled independently ensuring mix demand is met when increasing or decreasing paving widths.

## Simplified Control

The Cat delivery system is equipped with four independent sensors that signal the augers and conveyors to run faster or slower when changing paving widths, thus keeping the head of material at the set level. So when paving around obstacles the system automatically makes the necessary adjustments for uniform mix delivery and high quality mats.

## Steady Flow

Eliminating cold-spots and large stone accumulation in the hopper helps prevent segregation. The sloped hopper design, narrow chain guards, and optional power folding front apron facilitate continuous flow and even delivery, leading to uniform temperatures and ideal conditions for compaction.

The conveyors are designed with wide slats that are narrowly spaced in order to keep the material moving and the head of

material in front of the screed at a consistent level. When changes in conveyor speed are required, delivery to the augers is immediate. Running conveyors at slower speeds not only significantly reduces component wear but it can also help reduce the opportunity for segregation, especially when working with larger stone mixes that have a tendency to segregate.

## Hydraulic Front Apron (option)

The front hopper apron folds rearward in order to keep material moving and prevent accumulation of cool mix. The foldable apron also reduces clean out effort, a feature the crew will really appreciate at the end of the day.

## Reversible Conveyors and Augers

Reversible augers and conveyors assist the crew by reducing handwork and clean-up when picking up the screed. The augers are able to pull asphalt back into the main screed area when retracting the extenders while the conveyors pull mix back into the tunnels, limiting spillage when moving to a new starting point.



# Powertrain

Responsive power, smooth ride.

## Power You Can Count On

Quiet power and lower emissions ensure minimal job site disturbance, an important feature when working in residential and urban developments. The C4.4 engine with ACERT Technology is a four-cylinder engine that provides a gross power of 106 kW (144 hp) and meets EU Stage IIIa engine emission requirements.

## Integrated Power Management System

A constant paving speed is critical in achieving an optimum quality mat. The Integrated Power Management System ensures that the output to the propel and material feed system is automatically adjusted to match maximum engine power available. This system reduces fuel consumption and wear on components.

## Electronic Control Modules (ECMs)

Monitor sensors and system performance, coordinating independent systems and components to produce optimal performance. Enables engine to idle down during periods of inactivity to minimise fuel use.

# Clean Power

Lower Emissions.

## ACERT Technology

ACERT Technology is a series of Caterpillar engineered innovations that provides advanced electronic control, precise fuel delivery and refined air management, resulting in outstanding performance and lower emissions.





# Wheeled Undercarriage

Excellent mobility and maneuverability.

## Excellent Traction

Whether most of your paving applications take place on hard surfaces or soft base, the non-directional 17.5 R25 drive tyres, and the 330 mm x 559 mm solid rubber front steering wheels maximise ground contact for a smooth ride, good flotation, and excellent tractive effort for pushing trucks and working on inclines.

- Precise and consistent power to the ground while paving and pushing trucks through curves.

## Steering Assist

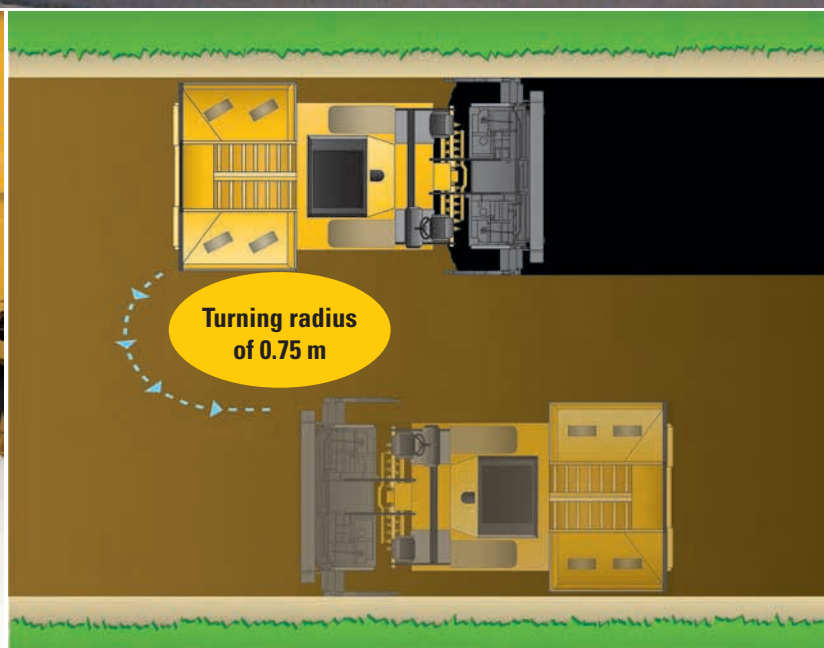
A position sensor located in the left steering cylinder provides unmatched maneuverability by distributing power to the rear drive wheels according to the steering angle of the front wheels. This feature allows the machine to turn while maintaining a consistent travel speed, leading to better mat quality and less wear on the drive system.

## Front-Wheel Assist or All-Wheel Drive Options

The front wheel assist feature provides power to the front bogie wheels for added traction when pushing trucks or working on soft base. The all-wheel drive feature provides power to the front and rear bogie wheels, maximizing tractive effort.

- 1 Front Wheel Assist
- 2 All Wheel Drive





### Versatile Speed Control

Mobility and consistent speeds are key to efficient paving operations. The Cat system is equipped with automatic speed control and three propel/steering modes: PAVE, TRAVEL and MANEUVER. The TRAVEL mode provides speeds of up to

16 km/hr, enabling the AP500E to be quickly repositioned around the job site. The PAVE mode enables the automatics for mix delivery, while the MANEUVER mode delivers a 0.75 m inside turning radius for excellent mobility in tight quarters.

# Operating Environment

Comfort and visibility increase performance.





Good visibility enables effective communication that leads to smooth truck exchanges and steady material flow. Also, long hours of operation can take a toll on the crew — that's why Caterpillar designs operating stations that provide good control, visibility and comfort.

### Good Visibility

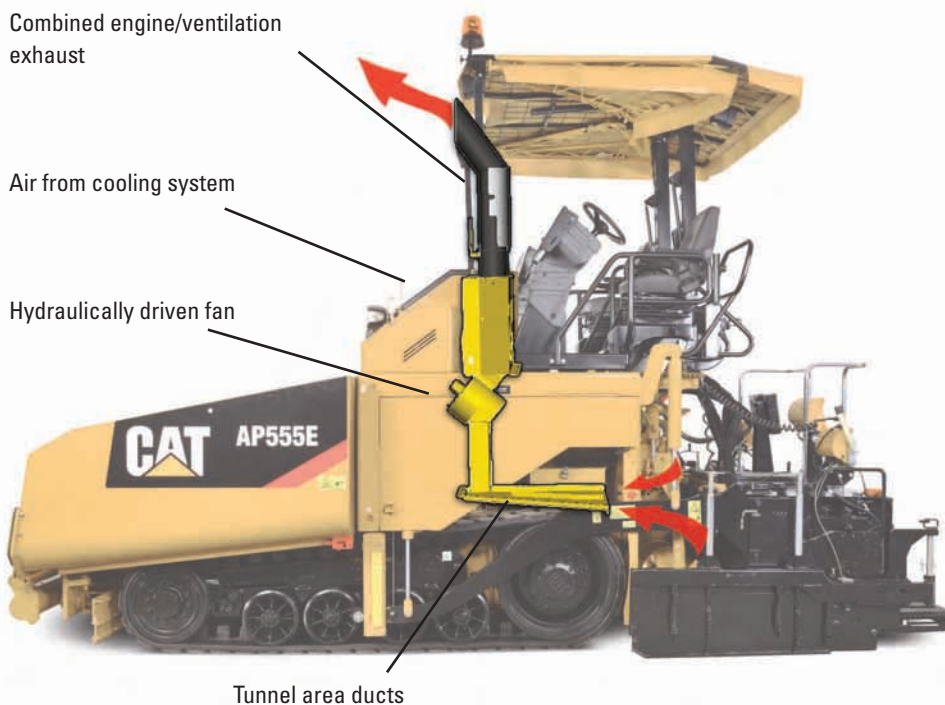
Keeping operators alert of their surroundings and aware of mix delivery to the hopper and screed is a focus of the operating stations. The swingout stations and low profile design of the cooling system provide good forward visibility that enables the operator to communicate effectively with the truck driver while monitoring mix in the hopper. The stations also provide good visibility to the auger chamber, and when combined with best practices helps produce high quality mats. Tilting consoles offer multiple positions for greater operator comfort and a clear view of the entire job site.

### Comfortable Seating with Tilting Consoles

Maintaining comfort throughout the day can be difficult. Cat pavers are equipped with dual operating stations and tilting consoles. The seats feature adjustable armrests and provide fore, aft, height and weight customisation in order to maximise comfort for day-long productivity. The stations easily rotate beyond the machine frame for better joint-matching capability and optimal rearward visibility to the auger chamber, ensuring complete control. Providing clear views around the machine reduces stress on the operator and improves performance. The dual stations also incorporate cup holders and a 12-volt power receptacle that supports the communication devices used by today's paving crews.

### Front-Mounted Cooling System and Fumes Extraction Option

The top-mounted cooling system keeps the temperatures of the engine and hydraulic components at optimal operating levels, even in high ambient conditions. The variable speed fan directs exhaust air toward the hopper and away from operators and ground personnel for a more comfortable work environment. A fumes extraction system improves operator comfort by drawing air from the conveyor tunnels and auger chamber and directing it through the dual-purpose exhaust stack.



# Project Planning

## Key to Success!

Profitability of paving projects often hinges on the ability of the crew to get the job done quickly. Pre-planning is essential for establishing the best course of action for paving the irregular areas associated with medium to large applications. Caterpillar offers many tools to assist the contractor when laying the groundwork for successful completion.

### Production Calculator

The interactive production calculator is a computer-based pre-planning tool that is designed to establish a balance between plant output, trucking, paving speed and compaction speed. It also helps calculate production per truck and total daily production.

# Operator Controls

Automated operation increases efficiency.

## Advisor Display

Providing visual references and planning tools generates operator confidence for better overall job site performance. The Advisor display provides access to a start-up checklist, operator preferences, engine and machine operating parameters, “Paving Calculator”, and “Paving by the Numbers”. The system also lists fault codes for machine functions making troubleshooting quick and easy. The display includes many operator friendly features including:

- Automatic engine speed control adjustment
- Engine rpm and temperature monitoring
- Calibration of machine components

## Convenient Controls

Quick setup enables crews to optimise performance and fine-tune the paving operation. Controls that are automated, well labelled, and grouped by function make operation more efficient. The dual operating stations offer grouped controls for mix delivery and speed control that maximises operator efficiency. The dual stations maintain a similar layout that allows the operator to quickly move from side to side when working in close proximity to curbs, pillars and other obstacles.

## Consistent Paving Speed

Controlling paving speed has a direct effect on mat quality. Erratic speeds generate changes in the head of material and result in open surfaces and bumps in the mat. The Cat speed control dial used in conjunction with the propel lever provides a cruise control type function that ensures consistent speed and smooth mix delivery. Moving the propel lever to full forward ensures that the machine travels at the speed determined by the adjustable dial. Calculating the optimum paving speed based on material delivery rates and the compactors ability to keep pace with the paver leads to higher quality mats. Determining the effective paving speed also helps prevent lengthy stops that can limit compaction capability.



## “Paving By The Numbers”

This guide enables the crew to accurately setup the paver and screed before paving begins. Proper setup provides a consistent line of pull that allows the screed to rise and fall over irregular graded surfaces. Following a step-by-step process ensures that proper screed setup occurs each time you pull off the joint. Repeatable methods allow operators to produce quality results each time out.

## Training Materials

Caterpillar continues to develop training materials that help operators, technicians and supervisory personnel perform more effectively. “Understanding Mat Defects” is just one example that explains what the crew should look for and fundamental solutions to help prevent defects. Contact your Cat Dealer today for more information.







# Levelling Systems

Plug & play systems provide an intuitive operator interface.

## 2D Cat Grade and Slope System

The Cat Grade and Slope System, available for the AS4252C screed, features a 2D system that helps contractors increase productivity, lower operating costs and maximise profitability. The goal of grade and slope controls is to remove irregularities from the surface and control mat thickness. Paving depth that is thicker than intended results in higher material costs, especially with today's high price of asphalt.

The 2D system offers features that are very easy to use and understand. An LCD display mounted on the screed provides a visual reference that enables the operator to easily configure the system to meet the required job site specifications. The sonic grade sensor with five separate transducers provides unmatched accuracy. Signals received by the grade sensor/sensors are sent to the Electronic Control Module (ECM). The signals are then averaged and the tow-points are adjusted accordingly.

Whether paving for profile or ride, the Cat Grade and Slope System is highly reliable and provides unsurpassed accuracy. The system allows contractors to place the exact amount of mix on the surface, leading to better compaction performance, optimal material usage, and superior mat quality for more accurate planning and higher profitability.

## Intuitive Operator Interface

The system can be equipped with single or dual LCD displays. The large displays utilise icons that provide a visual reference of the screed, making interpretation and setup easy. The text-based displays offer multiple language options that support today's diverse paving crews. Whether paving during the night or in full sun, the brightness and contrast controls optimise visibility in various lighting conditions. Large adjustment keys provide easy access and also function as grade indicators that provide a visual reference as to whether the screed is on, above, or below grade.

## Levelling Systems

The Cat Grade and Slope System allows crews to work with a number of many different grade or slope sensors.

- Sonic Grade Sensors
- Contacting Grade Sensors
- Slope Sensor
- Sonic Averaging Beam

Cat Pavers and Screeds are compatible with Topcon and Moba levelling systems. Cat Dealers possess exceptional knowledge of the grade and slope system, as well as paver and screed operation, providing a single source that meets all your paving needs.



# Service Features

Quality components last longer and save money.

## Quick Resolution

Problem solving has never been easier with the Advisor display and electronic control modules (ECM). The multiple ECMs communicate with the Advisor display. The display lists fault codes and makes reference quick and easy. The ECMs are compatible with Cat Electronic Technician and easily connect to a laptop computer for fast technical support.

## Accessibility is Fundamental

These machines work in harsh environments, therefore, components eventually need to be replaced. Having quick access to components and routine service points is fundamental to Cat equipment. The hydraulic system contains grouped pressure test ports and oil sampling ports that make diagnostic efforts easy, with no need to break into the circuit and risk contamination. The filters for engine oil, hydraulic oil, fuel, and air are all easily accessible, while the drain ports utilise remote lines that simplify collection.

## Longer Service Intervals Save Money

The standard 500 hour engine oil change interval keeps service costs low. Extended service intervals have a positive impact on the bottom line by maximising uptime and minimising oil and filter replacement costs.

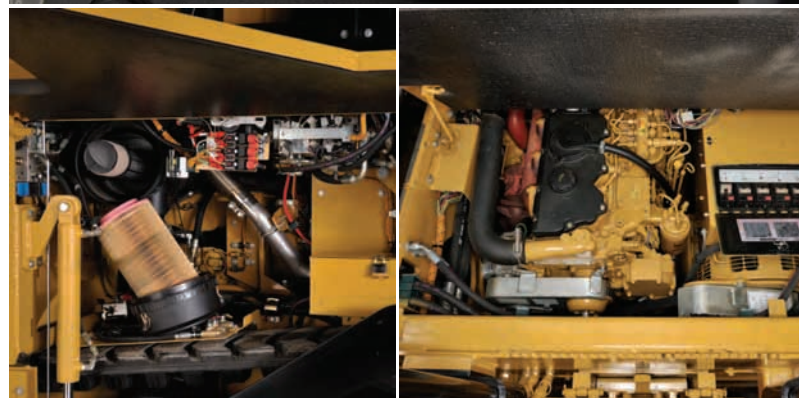
## Sustainability

Creating sustainable business solutions is on the minds of today's paving contractors. Caterpillar continues to lead the way in sustainable development by producing components that reduce emissions, conserve resources and last longer; benefits that protect the health of the environment as well as the crew. The following are just a few examples of how Caterpillar continues to promote sustainability.

- Cat C4.4 engine with ACERT Technology meets Stage IIIa emissions requirements.
- Automatic speed control reduces fuel consumption and emissions.
- Remote-mounted fluid drains provide clean collection.
- Thick steel fabrication leads to durable components and preserves resources.

## Machine Tracking Made Easy

The optional Product Link System ensures maximum uptime and minimal repair costs by simplifying the tracking of equipment fleets. The system provides automatic machine location, hour updates, and diagnostic codes that can be used to schedule service requirements at more opportune times.



## Extend Operation

### Plan Ahead.

Reduce service costs by planning ahead. Knowing which components need to be serviced and when the machine will need them allows service personnel to make the necessary arrangements to help you save money.

### Rebuild Programs

Rebuild programs consisting of in-depth inspections of high wear items can be scheduled with your Cat Dealer in the off-season. These programs can prevent unscheduled downtime during the busy paving season.



# Versatile Screeds

Stabile and easily adjustable.

## Cat Screeds

Rigid supports, reliable heating systems and easily adjustable screed plates make Cat screeds the choice of commercial contractors. Power controls can be easily accessed from the main control panels as-well-as from the extenders, allowing personnel to quickly fine tune performance for a tight mat finish. The threaded-bolt screed adjusters simplify levelling and replacement of the screed plates for quick service requirements.

## Electric Heat is Standard

Touch-pad technology, fast heating, and even distribution make the Cat electric heat system a perfect fit for urban paving applications. Picking up and moving to a new starting point is not a concern, the robust system is ready when you need it.

## Industrial, Single-phase Generator

The belt-driven generator provides 25 kW of power at 100 Hz for the electric screed heat and the optional auxiliary power panel. The 4 kW power panel is equipped with two 220 V receptacles that provide power for job site lighting, including balloon lights and other work tools.

## AS4252C Screed

The AS4252C is a double width hydraulic power extendible screed with a standard paving range from 2.55 m to 5.00 m. The screed features variable frequency tamper and vibrators, CANbus electrical system and electrically heated screed plates. The extenders have 330 mm wide screed plates, making it perfect for urban applications that require frequent width changes. The AS4252C screed is also capable of paving at 7.00 m with bolt-on extensions.

Common applications include urban and rural roads, subdivision streets and also larger scale applications like motorways, dual carriageways, airports and industrial sites.



## Optional Equipment

- Auger and Mainframe Extensions
- Auxiliary Power Panel
- Decelerator Pedals
- Ecological Washdown System and Hose Reel
- Feeder Sensors (Mechanical or Sonic)
- Fumes Extraction
- Folding Operator's Station Canopy
- Front Wheel Assist/All-Wheel Drive
- Grade and Slope Controls
- levelling Devices
- Lights (Working or
- Roading and Night Operation)
- Mobil-trac Belt (Smooth or Treadbar)
- Power Folding Front Apron
- Product Link
- Road Homologation
- Screed Extensions
- Tow-point Indicators (Upper)
- Up-time Kit
- Warning Beacon
- Wide Width Paving Packages

# Customer Support

Unmatched support makes the difference!



## Your Cat Dealer is ready to assist you with your purchase decision and everything after.

- Make comparisons of machines with estimates of component life, preventative maintenance and cost of production.
- Financing packages are flexible to meet your needs.
- Your Cat Dealer can evaluate the cost to repair, rebuild and replace your machine, helping you can make the right choice.
- For more information on Cat products, dealer services and industry solutions, visit us at [www.cat.com](http://www.cat.com).

## Service Training

Service training offers in-depth instruction for technicians, either at Cat training centres or at customer locations. These sessions provide hands-on training in order to provide a better understanding of their machines and the complexities of asphalt compaction.

## Interactive Training Materials

Interactive, self-paced training materials incorporate a combination of multimedia graphics, narration, animation and video, making paving operations more profitable and crews more knowledgeable, without the additional travel expenses.

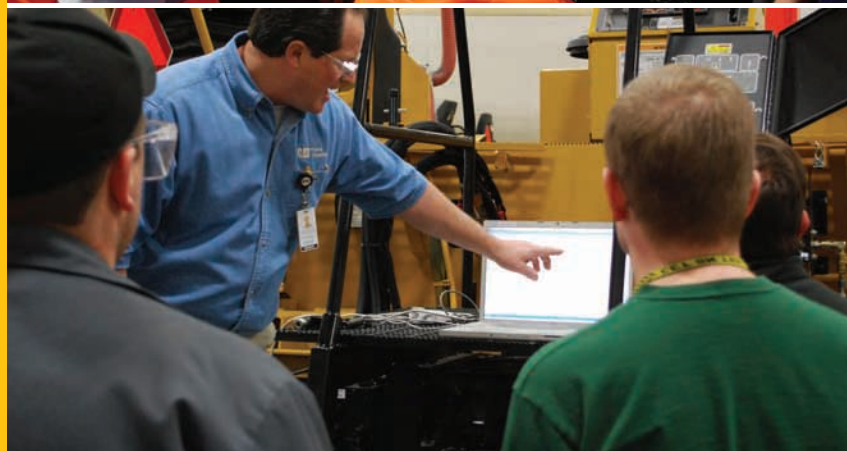
# Crew Training

We bring it to you.

We help each crew member understand what their role is and how it effects the paving operation. Providing this type of understanding not only improves efficiency and quality, it also increases your profit.

## Paver Operator Training (POT)

Paver operation training is a structured course that emphasises the fundamentals of asphalt paving. The training offers a mix of classroom and hands-on training, with hands-on training making up most of the time spent.

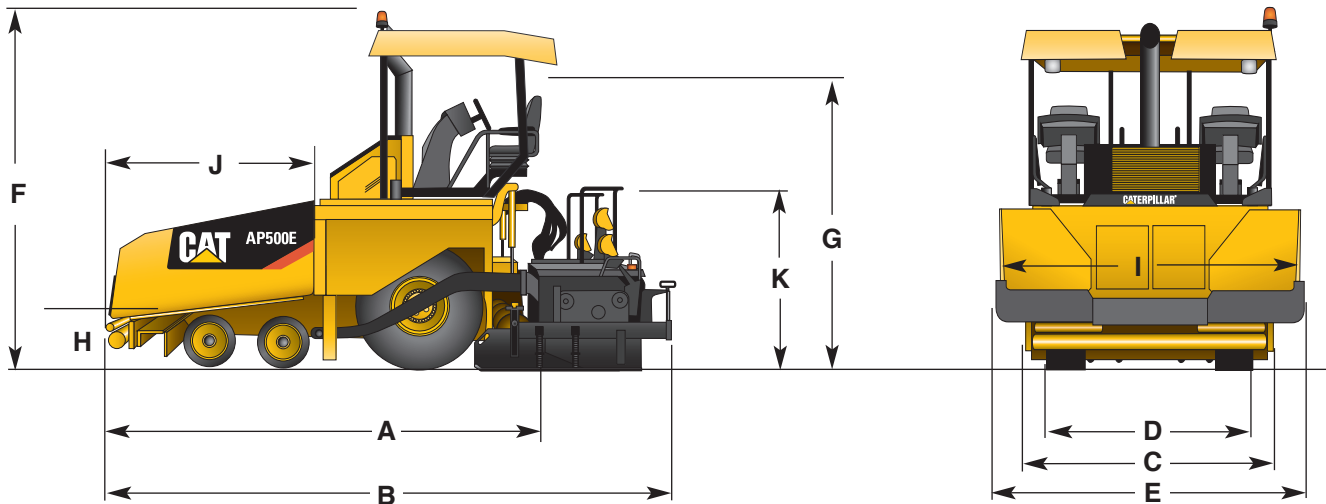




# AP500E Asphalt Paver Specifications

## Dimensions

All dimensions are approximate.



	mm
<b>A</b> Tractor length with push roller	4380
<b>B</b> Tractor length with AS4252C Screed w/walkway up	5810
Tractor length with AS4252C Screed w/walkway down	6030
<b>C</b> Transport width with screed end gates (hoppers raised)	2750
Transport width without screed end gates (hoppers raised)	2550
<b>D</b> Wheel gauge width	2490
<b>E</b> Tractor operating width (hopper lowered)	3310

	mm
<b>F</b> Operating height with canopy	3840
<b>G</b> Transport height with canopy, fumes stack and seat lowered	3100
<b>H</b> Truck entry height (apron)	545
<b>I</b> Truck entry width	3200
<b>J</b> Hopper length	1960
<b>K</b> Deck height	1780

## Powertrain

Cat C4.4 Engine @ 2200 rpm	
Net power (ISO 9249)	103 kW (140 hp)
Rated power (ISO 14396)	106 kW (144 hp)
Speeds	
Paving	25 m/min
Travel	16 km/h

## Miscellaneous

Fuel tank capacity	190 L
Hydraulic oil tank	170 L
Engine oil w/filter	9.5 L
Cooling system (total)	30 L
Washdown spray	38 L
Hopper capacity	6.2 m <sup>3</sup>
Electrical system	24 V, 75 A Alternator
Generator size	25 kW

## Screed

AS4252C	
Standard width	2550 to 5000 mm
Maximum width	7000 mm
Maximum paving depth	305 mm
Frequency	
Tamper	0 to 1700 rpm (0 to 28.3 Hz)
Smoothing plate	0 to 3400 rpm (0 to 56.7 Hz)

## Operating Weights

AP500E (Tractor)	12 750 kg
with AS4252C	16 145 kg

# AP500E Asphalt Paver

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://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 Caterpillar dealer for available options.

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