

AS-4251

Asphalt Screed



Standard Paving Width	2550 m
Paving Ranges:	
Hydraulically Extendible	2550-5000 mm
with Bolt-on Extensions	2550-7840 mm
Extension Packages	250-710 mm

AS-4251 Asphalt Screed

Ease of operation, high-efficiency screed plate heating systems, low-maintenance screed plates and superior serviceability are combined to provide a superior screed.

Features

The AS-4251 features a double width hydraulic power extension. Standard paving range from 2550 mm to 5000 mm provides maximum flexibility and great performances on job sites. **pg. 4**

End Gates

The fixed (standard version) or hinge-mounted (optional) end gates create a downward force to help contain the asphalt and follow the profile of the surface being paved. **pg. 5**

Extensions Configuration

Each mechanical extension is equipped with a tamper blade and a vibrator box, with the exception of the 250 mm extensions, providing torsional resistance, rigidity and fast paving width adjustment. **pg. 5**

Screed Plates

The screed plates incorporate a threaded bolt design that provide quick adjustment. **pg. 4**

Patent Pending 3rd Joint Design

The 3rd joint design for double extending feature promotes stability and mat quality. **pg. 5**



Left-side main screed control panel



Electric screed heat controls



Screed Plate Heating Systems

The AS-4251 offers an LPG screed plate heating system or an electric screed plate heating system.

Both systems are highly efficient and provide fast warm-up.

The LPG heating system features eight high-energy burners and optimum thermostatic temperature control.

The electric heating system features a tractor-mounted generator, replaceable heating elements and operator friendly controls. **pg. 6**

Generator System (Tractor Option)

The generator system supplies power to the optional electric screed heat providing high reliability. **pg. 7**

Auxiliary Rear Control Panel (Tractor Option)

The right-hand auxiliary rear control panel provides full control for tamper and vibrators frequencies, screed assist & counterbalance adjustment and augers group raising/lowering. **pg. 7**

Screed Control Panels

The modular patented main screed control panels are mounted on each side of the screed. The left and right control panels include extensions in-out, paving thickness control, augers & conveyor switches, adjusting working range potentiometer and emergency & horn buttons.

The LPG screed heat control panel includes electronic ignition for smoothing plates and automatic temperature control.

The electric screed heat control panel (tractor option) includes on/off heat control switch, three pre-set temperature settings for each screed section, fault indicators and manual overrides for each screed plate section.



Auxiliary rear control panel



Right-side main screed control panel



Double Width Hydraulic Power Extendible Asphalt Screed

Productivity and reliability provided in a durable package.



Production-sized screed. The AS-4251 features a standard double width paving range from 2.55 m to 5.00 m. The screed combined with Cat® asphalt pavers offers high maneuverability and advanced technology that make it an ideal piece of machinery for paving applications on medium-to-large scale sites, where maximum flexibility is required for jobs that dictate frequent changes to the paving width.

Outstanding frame rigidity. The screed frame provides optimal resistance to bending and twisting forces.

Configurations. The screed configurations with tamper, vibrators, LPG or electric heating system combine the flexibility to match equipment to operator preferences or job requirements.

Applications. Common applications include highways, interstates, airports, industrial sites, large parking lots, urban and rural roads, subdivision streets and projects that require variable width paving.

Screed Plates

Screed smoothing plates deliver a high-quality mat and a long service life.



Screed plates. The screed smoothing plates are constructed of abrasion resistant Hardox 400 that resists damage and provides an enhanced service life.

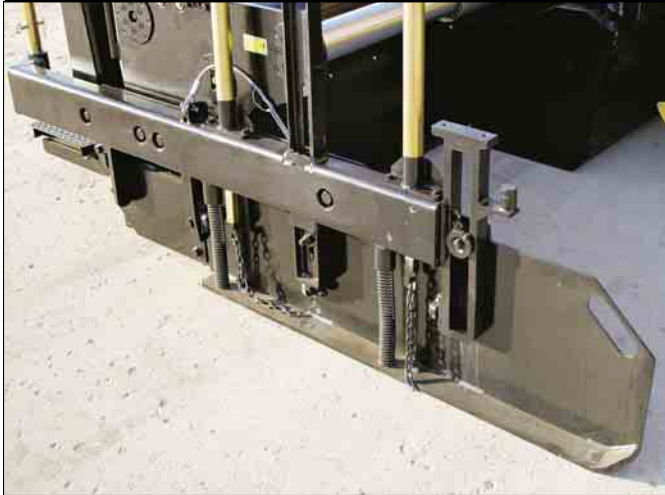
Enhanced design. The design of the screed smoothing plates provides rounded edges to prevent the smoothing plates from scoring the paving material when screed width is varied.

Optimum consistency. The screed smoothing plates are 15 mm thick to enable them to be heated up quickly and uniformly without affecting durability.

Heavy-duty mounting platforms. The platforms provide rigid support for screed plates, which simplifies leveling.

End Gates

Easy-to-adjust end gates ensure a good joint with the adjacent mat.



Bolt-on design. End gate design provides optimum strength, rigidity and efficient operation. The bolt-on design allows easy end gate installation and removal.

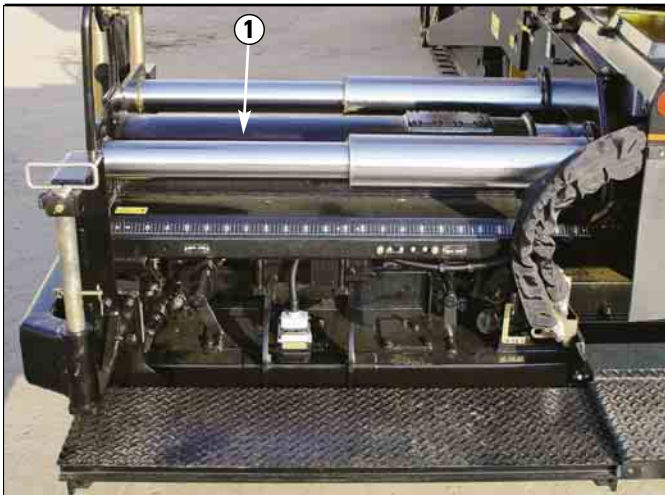
Two configurations. The end gates may be either fixed (standard version) or hinge-mounted (optional) so that they can be turned semi-automatically to bring the outline of the asphalt paver within the 2500 mm wide limit easily and effortlessly.

Steel rollers and helical springs end gates. The end gates are held in position by steel rollers and helical springs mounted on the outside to guarantee an effective containing effect which prevents deformation by the paving material. At the same time it allows the end gates to slide easily under all working conditions.

Manual adjusters. The end gates have two independent lift manual adjusters, one acting on the front of the end gate and the other on the back. The end gate can be adjusted to a well-defined working height and may even be set at an angle.

Extensions Configuration

Maximum paving width of 7800 mm with mechanical extensions provides the maximum flexibility on job sites.



1 Patent Pending 3rd Joint Design.

Patent pending 3rd joint design. The 3rd joint design for double extending feature promotes optimum stability and mat quality in paving operations.

Two extendable support tubes and a third frame member. Provide optimum support for each extension.

Visual graduated scales. A graduated scale indicates the distance that the extensions move in or out.

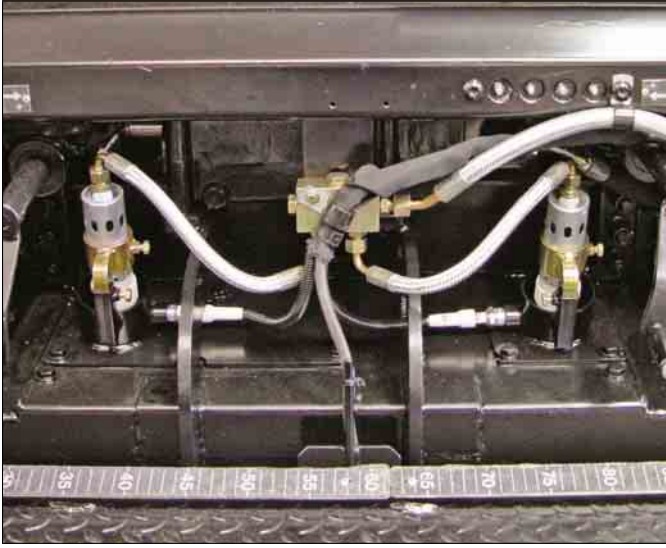
Tamper system. The tamper system prevents undesirable marks on the mat surface. Tamper adjustment is electrically controlled.

Hydraulically driven vibrators. Located on the extensions, are synchronized with the main screed to match frequency and amplitude.

Vertical height adjustment. The adjustment allows the extension to match the main screed height.

LPG Heating System

High efficient burner system provides fast, even screed smoothing plate heating.



High heating efficiency. The heating system of the smoothing plates reaches working temperature quickly. Heat is distributed uniformly to all parts of the smoothing plates and tamper blades. Benefits are reduction of average gas consumption and enhanced automatic temperature control.

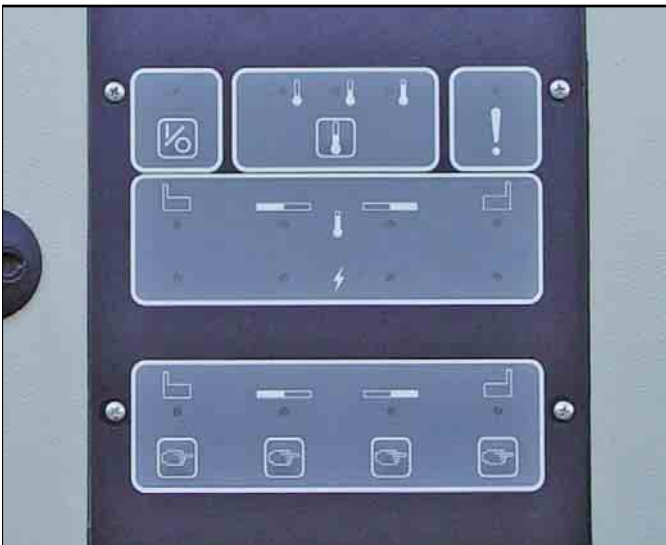
Two high-energy burners. Each section of the screed has two high-energy burners placed further apart so that heat is distributed quickly and uniformly on the smoothing plates optimizing LPG consumption. The burners are of the high-performance type capable of reaching working temperature in short time, from 15°C to 100°C in just 15 minutes.

Combustion chambers. The combustion chambers of the burners provide thermal efficiency while at the same time reducing gas consumption.

Four temperature probes. The four separate temperature probes provide independent and effective temperature control on the four sections of the main screed.

Electric Heating System

Highly efficient electric heating system provides warm-up time in 30 minutes or less.



High efficiency and long service life. The electric heating system features a tractor-mounted generator, replaceable heating elements and operator friendly controls. These features provide an operator-friendly environment.

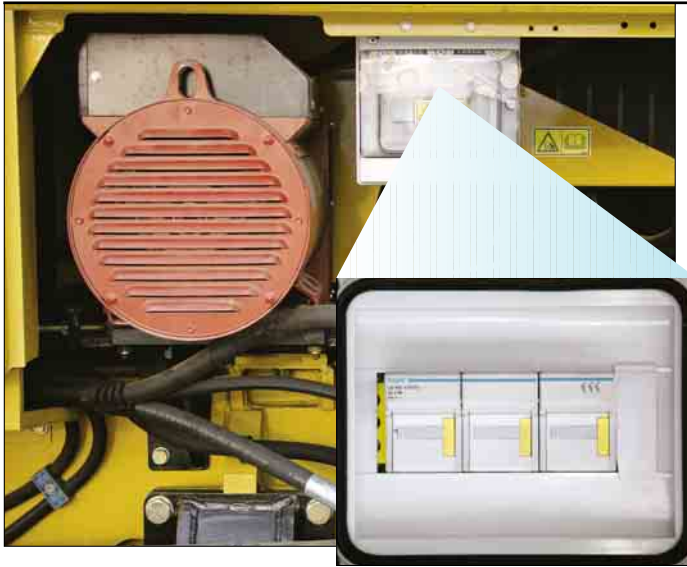
Rapid heat up time for optimum heat distribution. The electric heating system automatically maintains the screed plates at the desired temperatures.

Screed control panel. It incorporates touch-pad technology with high intensity LED's that provide simplified use and diagnostic capability with minimal operator training.

Controller. The controller automatically regulates the screed plate temperature to the selected setting.

Generator System (Tractor Option)

Continuous-duty integrated design ensures peak performance and high reliability.



Industrial, continuous-duty generator. Working range from 1250 to 2200 rpm provides high reliability and low sound levels.

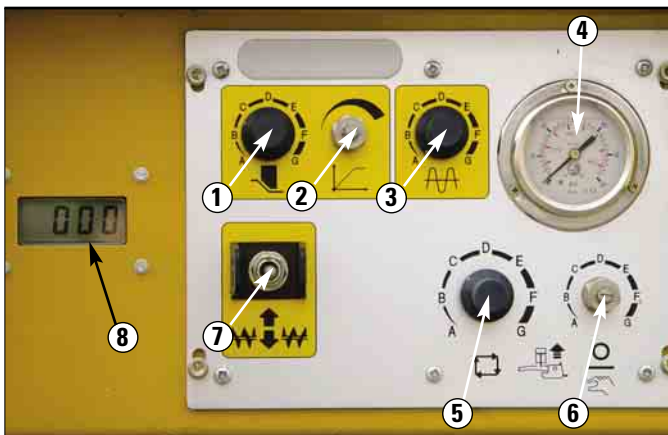
Single control switch. A single control switch located on the tractor's operating console activates the generator.

Full power. The integrated, tractor-mounted generator provides full power to the electric screed while the engine is operating from 1250 rpm.

Circuit breaker protection. Extend service life and internal electronic voltage regulation system provides consistent power.

Auxiliary Rear Control Panel (Tractor Option)

Full control of tamper and vibrators frequencies for easy ground crew usage.



Right-hand auxiliary rear control panel. Mounted on the right rear side of the tractor provides constant and easy control for ground crew usage during paving operations.

Monitoring and adjustment. Tamper and vibrators frequencies, screed assist & counterbalance system and augers group are conveniently controlled on the panel.

Screed assist. An electro-hydraulic device maintains a constant screed pressure on the bituminous mix, independently from the mix bearing capacity and the paving width. Screed assist and counterbalance system guarantees superior mat quality and flatness regardless of the speed variations and machine stops for material refilling.

Lockable panel cover. The lockable vandal cover efficiently protects panel controls.

- | | |
|---|---|
| 1 Tamper Adjustment Potentiometer | 5 Automatic Screed Assist Pressure Adjustment Potentiometer |
| 2 Adjusting Tamper Starting Potentiometer | 6 Screed Assist Stand-by Pressure Adjustment Potentiometer |
| 3 Vibrator Adjustment Potentiometer | 7 Augers Unit Lift/Lower Switch |
| 4 Screed Assist Pressure Gauge | 8 Optional Tamper rpm Display |

Reliability and Serviceability

Reliability and serviceability are integrated into every Caterpillar® machine. These important features keep your machine investment profitable.



The AS-4251 asphalt screed has been designed for easy service and maintenance with special attention given to component access. Fully integrated with the Caterpillar asphalt pavers, the AS-4251 provides optimum performances on job sites.

Control system. Easy operation is provided with screed assist pressure gauge, tamper ramp control and LCD-display for tamper frequency fitted above the screed behind the tractor.

Hydraulic hoses and electrical wiring harnesses. Cleanly routed and clamped to reduce wear and provide easy service.

Remote-mounted fittings. For vibrator bearings provide simplified lubrication access.

O-Ring face seal. Fittings and couplings provide maximum protection against hydraulic leaks.

Exposed hoses. Provided with nylon sleeve protection to reduce abrasion.

Vibrator system hydraulic lines.

Cat XT™ hoses provide optimum durability and resistance to damage.

Integrity of the electrical system.

Is ensured with the use of high-quality components.

The Caterpillar electrical standards.

Enhance reliability and durability, feature numbered and color-coded wires. Nylon-braided wrap efficiently protects the electrical wires.

Electrical schematics. Detailing wire numbers, wire colors and component

part numbers are located in the electrical schematic technical publication.

Mechanical extension box coupling.

Provides easy and fast paving width adjustment.

Frame and Screed Plates

Double width hydraulic power extendible asphalt screed provides the maximum flexibility on job sites.

Features

- Outstanding frame rigidity is provided for optimal resistance to bending and twisting forces.
- Smoothing plates are 15 mm thick providing quick and uniform heat up without affecting durability.
- Smoothing plates of the screed extensions are provided with rounded edges to prevent score the paving material when screed width is varied.
- The connection between the smoothing plates does not score paving material, even in case of high, positive or negative values of camber.
- The step used to get on or off the footplate of the screed has been provided with slip-proof profile, thus improving stability.
- System for adjusting the angle of the screed to the paving material is simple and robust.
- System for adjusting the height of the smoothing plates over the hydraulic extensions is simple to use and precise.
- Each section of the main screed is provide with a centralized lubrication system. All lubrication points are located in a single area easy to access.

End Gates

End gate design provides strength, rigidity and efficient paving operation on job sites.

Features

- Two configurations with fixed (standard version) or hinge-mounted end gates (optional).
- Steel rollers and helical springs provide an effective containing effect which prevents deformation by the paving material.
- Two independent lift manual adjusters can be adjusted to a well-defined working height and may even be set at an angle.
- Easy fitting and removing.
- The semi-automatic opening and closing mechanism of the mobile end gate is simple to operate. If mobile end gates are fitted, the hinge prevents footplates from being folded.

Extensions Configuration

Each mechanical extension provides torsional resistance, rigidity and fast paving width adjustment.

Features

- New patent pending 3rd joint design for double extending feature provides optimum stability and mat quality.
- Screeds equipped with LPG heat: each extension has an electronic ignition system used to light the burners, detect the presence of the flame and control the temperature of the extension.
- Screeds equipped with Electric heat: the temperature control is independent for each screed extension. Great efficiency is provided by one specially designed high power heating element for tamper bar heating with reinforced electrical connection and steel armored cabling.

Platforms and Covers

- Top covers and sliding walkways are built onto the screed by means of silent blocks, thus reducing noise emission due to vibration.
- Back of main frame covers are provided with rubber plates, making access easier to the screed inner area. Rubber plate also greatly reduces noise.

Tamper and Vibrator

- System operation is adjustable in a wide range of frequencies and can be activated automatically when machine begins to advance.
- Vibrator system provides initial compaction.
- Tamper system starts gradually to prevent marks on the mat surface during paving operations.

Screed Control Panels

Controls are logically grouped providing easy operation.

The main screed control panels, one for each side of the screed, provide easy access for ground crew and include controls for extensions, paving thickness and augers & conveyor switches.

Control panel for LPG screed heat includes all electrically actuated controls. The electronic burner ignition, flame detector safety and screed smoothing plate thermoregulation system provide high performance, improving working capabilities and facilitating installation on the screed flame.

Control panel for electric screed heat (tractor option) incorporates touch-pad technology with high intensity LED's for simplified use and diagnostic capability with minimal operator training.

Electrical System

The electrical system is 24-volts to match the tractor.

Integrity of the electrical system on Cat machines is ensured with the use of high-quality components.

The Caterpillar electrical standards, developed to enhance reliability and durability, feature numbered and color-coded wires with nylon-braided wrap to protect the electrical harness.

Generator (Tractor Option)

The tractor mounted generator is hydraulically driven by a load-sensing, pressure compensating pump. The pump provides quiet operation.

The integrated, continuous-duty generator provides power to the electrically heated screed while the engine is operating at idle speed.

The generator system is designed to accommodate the electric screed, work tools and other power needs that are essential to the paving operation.

Hydraulic System

The extensions and vibrator systems are hydraulically controlled with electric-over-hydraulic components. The tractor supplies hydraulic flow. Systems are equipped with test ports for easy access to sample pressures.

Hydraulic connections have O-ring face seal (ORFS) fittings and couplings to provide maximum protection against hydraulic system leaks. High-pressure Cat XT hoses provide an extended service life.

Auxiliary Rear Control Panel (Tractor Option)

The right-hand auxiliary rear control panel provides continuous and simple control in paving operations for ground crew usage.

Potentiometers for tamper and vibrators frequencies, screed assist & counterbalance and augers group adjustments are conveniently controlled on the panel to match job requirements.

Optional Equipment

Some options listed may be an option in some areas and standard in others. Consult your dealer for specifics.

LGP – 250 mm Extensions Boxes.

Bolt-on LPG mechanical extensions and tamper blade extension for 5500 mm paving width.

LGP – 710 mm Extensions Boxes.

Bolt-on LPG mechanical extensions with auger extensions, independent tamper blade and electronic ignition for paving widths up to 6420 mm and 7840 mm.

Electric – 250 mm Extension Boxes.

Bolt-on electric heated mechanical extensions and tamper blade extension for 5500 mm paving width.

Electric – 710 mm Extensions Boxes.

Bolt-on electric heated mechanical extensions with auger extensions and independent tamper blade. Paving widths – 6420 mm and 7840 mm.

Rotating Side Screed End Gates.

Bolted on hinged end gates reduce screed width for easy transportation.

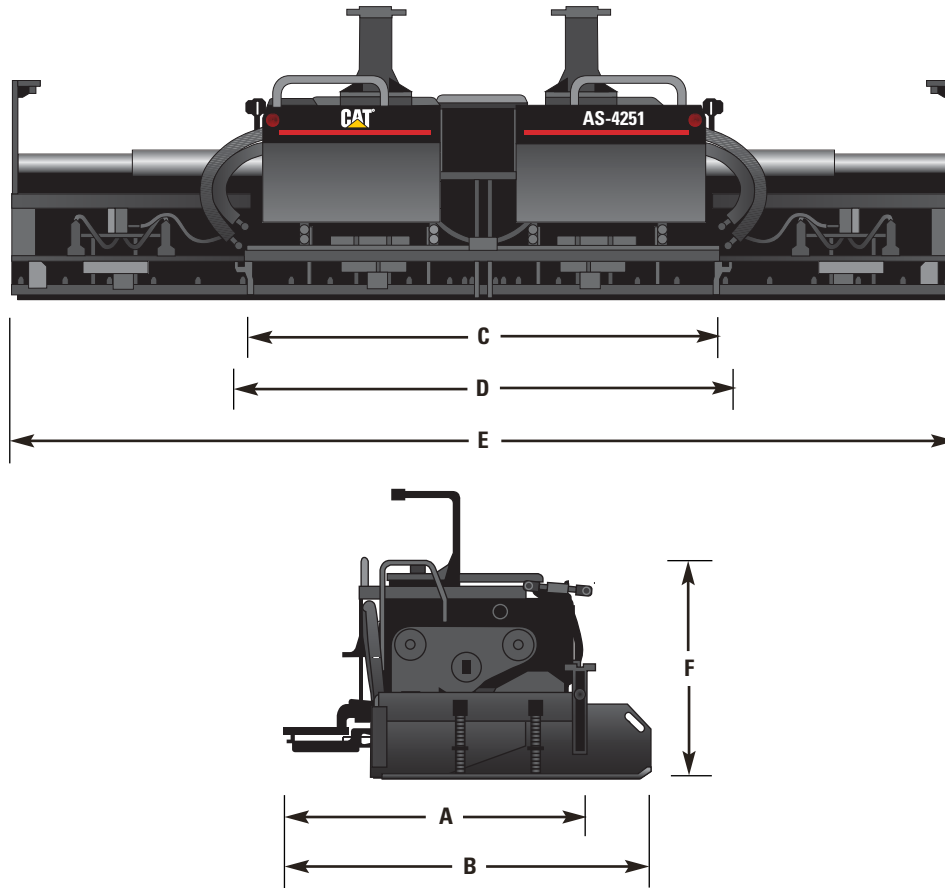
Motorized Screed Camber Adjustment.

Electric motor modifies screed plate camber angles between +4.5% and -2.5%. Infrared joint heater.

Automatic Greasing System for Tractor & Screed.

Centralized and automatic lubrication of conveyors, augers, tamper and vibrator shafts.

Dimensions



	mm
A Length without End Gates (front to rear)	1580
B Length with End Gates (front to rear)	2260
C Width without End Gates	2550
D Width with End Gates	2730
E Maximum Width	5000
F Height	1520

Paving Widths

	mm
Standard paving width	2550
Paving ranges	
hydraulically extendible	2550-5000
with bolt-on extensions	2550-7840
Extension packages	250-710

Specifications

		LPG Heat Screed	Electric Heat Screed
Weight for basic Tamper and Vibrator configuration	kg	4000	4000
Heating system		LPG	Electric
Screed plates length/thickness	mm	400/15	400/15
Crown adjustment	%	+4.5/-2.5	+4.5/-2.5
Maximum Tamper/Vibrator frequency	rpm	1700/3400	1700/3400

AS-4251 Asphalt Screed

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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