



Cat[®] 14M3

Motor Grader

Cat[®] Motor Graders continue the Caterpillar tradition of being the industry standard in heavy construction, road building, and governmental applications. The 14M3 features a host of integrated technology solutions that increase operator efficiency, boost productivity levels and lower owning and operating costs. The 14M3 takes advantage of a larger engine, increased fuel efficiency, improved machine balance, enhanced transmission performance, more powerful telematics and added operator safety/convenience features.

Technology

- Optional Stable Blade improves grading precision by decreasing engine speed at 15 percent intervals when machine bounce is detected then increases engine rpm systematically when grader stabilizes.
- Optional Cat GRADE with Cross Slope helps maintain desired cross slope by automatically controlling one side of the blade.
- Optional Cat AccuGrade™ uses positioning and guidance technologies, machine sensors, and automatic blade control to help get to grade faster, easier, and more efficiently.
- Optional Auto Articulation allows you to articulate automatically while steering in tight spaces or around curves, obstacles, and turnarounds.

Performance

- Cat C13 ACERT™ engine meets U.S. EPA Tier 4 Final/EU Stage IV, Tier 3/Stage IIIA equivalent or Tier 2/Stage II equivalent emission standards, depending on emission standards of specific country.
- Standard Economy Mode can be turned on to limit maximum engine speed which helps reduce fuel consumption.
- Standard VHP Plus provides ideal amount of power in all gears.
- Standard Automatic Differential Lock unlocks differential during a turn and re-locks when straight for easier operation and improved power train protection.

Efficiency

- Load-sensing system and advanced electrohydraulics give operator superior implement control and hydraulic performance.
- Proportional Priority Pressure-Compensating valves have different flow rates for head and rod ends of cylinder so machine responds consistently and predictably.
- Balanced hydraulic flow is proportioned to ensure all implements will operate simultaneously without slowing engine or speed of some implements.

Ease of Operation

- Simple, intuitive joystick controls replace levers, so hand and arm movement is reduced by 78%, helping reduce operator fatigue.
- Optional Advanced Control Joysticks allow operator to control automated grading solutions efficiently and safely without removing hands from the joysticks.
- Selectable blade lift modes – Fine, Normal, or Coarse – allow operator to match application requirements.
- Articulation Return-to-Center automatically returns machine to a straight frame position from any angle with the touch of a button.

Safety

- Optional rear vision camera enhances sight to rear of machine.
- Electrical disconnect and engine shutoff switches are ground level.
- Operator Presence System keeps parking brake engaged and hydraulic implements disabled until operator is seated and machine is ready for operation.
- Hydraulic Lockout disables all implement functions while still providing machine steering control – especially useful while roading.
- Optional seat belt indicator promotes safe operating habits.

Serviceability

- Convenient access from the top of the circle to the patented top-adjust wear strips and inserts make them easy to add or replace.
- Shimless Moldboard Retention System uses vertical and horizontal adjusting screws to keep moldboard wear strips aligned for reduced blade chatter and precise blade control.



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Engine

| | | |
|---|---|---------------------|
| Engine Model | Cat C13 ACERT VHP | |
| Emissions | Tier 4 Final/Stage IV, Tier 3/Stage IIIA equivalent or Tier 2/Stage II equivalent | |
| Base Power (1st gear) – Net | 178 kW | 238 hp |
| Displacement | 12.5 L | 763 in ³ |
| Bore | 130 mm | 5.1 in |
| Stroke | 157 mm | 6.2 in |
| Torque Rise | 41% | |
| Maximum Torque (VHP Plus) | 1542 N·m | 1,137 lbf·ft |
| Speed @ Rated Power | 1,850 rpm | |
| Number of Cylinders | 6 | |
| Maximum Altitude at Full Power | 4237 m | 13,900 ft |
| Maximum Altitude at Full Power (Tier 3) | 4374 m | 14,349 ft |
| Maximum Altitude at Full Power (Tier 2) | 3672 m | 12,049 ft |
| Standard – Fan Speed | | |
| Minimum | 550 rpm | |
| Maximum | 1,600 rpm | |
| Standard Capability | 50° C | 122° F |
| <ul style="list-style-type: none"> • Net power is tested per ISO 9249, SAE J1349, and EEC 80/1269 Standards in effect at the time of manufacture. • Optimized VHP Plus is standard for the 14M3. • Net power advertised is the power available at rated speed of 1,850 rpm, measured at the flywheel when engine is equipped with fan, air cleaner, muffler and alternator. • Power as declared per ISO 14396 Rated rpm 1,850 VHP+ = 228 kW (306 hp) • Cat engines equipped with a Selective Catalytic Reduction (SCR) system are required to use: <ul style="list-style-type: none"> – Diesel Exhaust Fluid (DEF) which meets the requirements outlined in the International Organization for Standardization (ISO) standard 22241-1. | | |

Frame

| | | |
|----------------------------|---------|---------|
| Circle – Outer Diameter | 1822 mm | 71.7 in |
| Front Axle | | |
| Wheel Lean, Left/Right | 17.1° | |
| Total Oscillation per Side | 32° | |

Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 2.0 kg (4.4 lb) of refrigerant which has a CO₂ equivalent of 2.860 metric tonne (2.76 ton).

Weights

| | | |
|---|-----------|-----------|
| Gross Vehicle Weight – Base* | | |
| Total | 23 124 kg | 50,980 lb |
| Front Axle | 6344 kg | 13,994 lb |
| Rear Axle | 16 780 kg | 36,994 lb |
| Gross Vehicle Weight – Typically Equipped | | |
| Total | 25 968 kg | 57,250 lb |
| Front Axle | 6915 kg | 15,245 lb |
| Rear Axle | 19 053 kg | 42,005 lb |

*Base operating weight calculated on standard machine configuration with 20.5 R25 tires, full fuel tank operator and ROPS cab.

Moldboard

| | | |
|-----------------------------------|--------------|--------------|
| Blade Width | 4.2 m | 14 ft |
| Blade Width with End Bits | 4290 mm | 169 in |
| Blade Width without End Bits | 4166 mm | 164 in |
| Blade Height with Cutting Edge | 631 mm | 24.9 in |
| Blade Height without Cutting Edge | 585 mm | 23 in |
| Arc Radius | 413 mm | 16.3 in |
| Throat Clearance | 117 mm | 4.6 in |

Blade Range

| | | |
|---|---------|---------|
| Circle Centershift | | |
| Right | 520 mm | 20.5 in |
| Left | 650 mm | 25.6 in |
| Moldboard Sideshift | | |
| Right | 790 mm | 31.1 in |
| Left | 740 mm | 29.1 in |
| Blade Tip Range | | |
| Forward | 40° | |
| Backward | 5° | |
| Maximum Shoulder Reach Outside of Tires | | |
| Right | 2004 mm | 78.9 in |
| Left | 1870 mm | 73.6 in |
| Maximum Lift Above Ground | 419 mm | 16.5 in |
| Maximum Depth of Cut | 593 mm | 23.3 in |

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