



Cat[®] 14

Motor Grader

Cat[®] Motor Graders continue the Caterpillar tradition of being the industry standard in heavy construction, road building, and governmental applications. The 14 features a host of integrated technology solutions that increase operator efficiency, boost productivity levels and lower owning and operating costs. The 14 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 factory-installed 3D mastless Cat Grade enables operators to improve grading efficiency, accuracy, and productivity in both rough grading and finish grading applications. When mastless Grade is installed at factory, e-fence is not included.
- Optional Cat Grade with Cross Slope helps maintain desired cross slope by automatically controlling one side of the blade.
- Optional Cat Grade 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 to articulate automatically while steering in tight spaces or around curves, obstacles, and turnarounds.

Performance

- Cat C13 engine either meets U.S. EPA Tier 4 Final/EU Stage V emission standards, or emits equivalent to Tier 3/Stage IIIA or Tier 2/Stage II, 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 VHP	
Emissions	Tier 4 Final/Stage V, 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 14. • 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

Environmental Declaration

The following information applies to the machine at the time of final manufacture as configured for sale in the regions covered in this document. The content of this declaration is valid as of the date issued; however, content related to machine features and specifications are subject to change without notice. For additional information, please see the machine's Operation and Maintenance Manual.

For more information on sustainability in action and our progress, please visit <https://www.caterpillar.com/en/company/sustainability>.

ENGINE

- The Cat® C13 VHP engine is available in configurations that meet U.S. EPA Tier 4 Final and EU Stage V emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA or U.S. EPA Tier 2 and EU Stage II.
- Cat U.S. EPA Tier 4 Final and EU Stage V diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels up to:
 - ✓ 20% biodiesel FAME (fatty acid methyl ester)*
 - ✓ 100% renewable diesel, HVO (hydrotreated vegetable oil) and GTL (gas-to-liquid) fuels
- Cat engines equivalent to U.S. EPA Tier 3 and EU Stage IIIA or U.S. EPA Tier 2 and EU Stage II, are compatible with diesel fuel blended with the following lower-carbon intensity fuels up to:
 - ✓ 100% biodiesel FAME (fatty acid methyl ester)**
 - ✓ 100% renewable diesel, HVO (hydrogenated vegetable oil) and GTL (gas-to-liquid) fuels

Refer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.

* Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel (for use of blends higher than 20% biodiesel, consult your Cat dealer).

** For use of blends higher than 20% biodiesel, consult your Cat dealer.

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 tonnes (3.152 tons).

PAINT

- Based on best available knowledge, the maximum allowable concentration, measured in parts per million (PPM), of the following heavy metals in paint are:
 - Barium < 0.01%
 - Cadmium < 0.01%
 - Chromium < 0.01%
 - Lead < 0.01%

SOUND PERFORMANCE

- The dynamic spectator sound power level is 108 dB(A) for Stage V certified configurations and 110 dB(A) for Tier 2/Stage II and Tier 3/Stage IIIA equivalent machines when measured according to the dynamic test procedures that are specified in ISO 6395:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed.
- The dynamic operator sound pressure level is 72 dB(A) for Stage V certified configurations and 72 dB(A) for Tier 2/Stage II and Tier 3/Stage IIIA equivalent machines when measured according to the dynamic test procedures that are specified in ISO 6396:2008. The measurement was conducted at 70% of the maximum engine cooling fan speed, with the cab doors and the cab windows closed. The cab was properly installed and maintained.

OILS AND FLUIDS

- Caterpillar factory fills with ethylene glycol coolants. Cat Diesel Engine Antifreeze/Coolant (DEAC) and Cat Extended Life Coolant (ELC) can be recycled. Consult your Cat dealer for more information.
- Cat Bio HYDO™ Advanced is an EU Ecolabel approved biodegradable hydraulic oil.
- Additional fluids are likely to be present, please consult the Operations and Maintenance Manual or the Application and Installation guide for complete fluid recommendations and maintenance intervals.

FEATURES AND TECHNOLOGY

- The following features and technology may contribute to fuel savings and/or carbon reduction. Features may vary. Consult your Cat dealer for details.
 - ECO mode minimizes fuel consumption for light applications
 - Engine Idle Shutdown Timer reduces fuel burn, greenhouse gas emissions and unnecessary idle time by shutting down the machine after a pre-set idling period
 - Improve productivity with the Electronic Throttle Control which matches engine power and torque to application requirements
 - Cat Grade helps reduce fuel burn and greenhouse gas emissions by enabling you to achieve grade faster and more accurately by automating blade actions
 - Extended maintenance intervals not only reduce downtime but decrease the amount of fluid and filters that are replaced over the life of the machine
 - Improve jobsite efficiency with lower operating costs with Product Link™ and VisionLink® insights

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

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AEXQ1749-07 (01-2024)
Replaces AEXQ1749-06
Build Number: 15A
(Tier 4 Final/EU Stage V,
Tier 3/Stage IIIA equivalent,
or Tier 2/Stage II equivalent)

