



# Cat<sup>®</sup> 12K

## Motor Grader

*The Cat<sup>®</sup> 12K Motor Grader is the machine you can count on when you need to get work done. Cat motor graders help you make the most of your investment by delivering maximum productivity and durability. The Cat C7 ACERT<sup>™</sup> engine, direct-drive power shift transmission and load sensing hydraulics work together ensuring you have the power and precision you need when you need it.*

### Performance

- Cat C7 ACERT engine meets U.S. EPA Tier 3/EU Stage IIIA equivalent or Tier 2/Stage II equivalent emissions standards, depending on emission standards of specific country.
- Power Shift Countershaft Transmission matched to engine, maximizing power to the ground.

### Efficiency

- Electronic Throttle Control helps improve productivity by optimizing HP and torque to match the power demands of the application.
- Aggressive blade angles, optimized moldboard curvature and large throat clearance allows material to roll more freely along blade, increasing efficiency.
- Hydraulic demand fan automatically adjusts speed according to cooling requirements maximizing power to the ground and improving fuel efficiency.
- Engine Idle Shutdown is available to shut down engine after a set period of time, saving fuel and helping reduce emissions.

### Ease of Operation

- Proportional Priority Pressure-Compensating (PPPC) provides load-sensing hydraulics with superior control, enhanced performance, and efficiency.
- Optional Autoshift Transmission improves ease of operation and maximizes productivity by automatically shifting the transmission at optimal shift points.
- Rocker and control switches are in easy reach.
- Proven conventional controls provide industry-standard control pattern and feel for precise cutting edge movement.

### Serviceability

- Durable nylon composite wear inserts maximize circle torque and component life.
- Sacrificial brass moldboard slide rail wear strips between blade mounting group and moldboard can be easily adjusted and replaced.
- Left-side, ground level service area access speeds up maintenance and ensures that routine service is performed on time.

### Reliability

- Utilizing rigorous component design and machine validation processes results in unmatched reliability, durability and high uptime.
- Components are designed and manufactured to Caterpillar quality standards throughout all Caterpillar facilities.

### Comfort

- Optional HVAC, defroster fan and sun shades keep you comfortable, while conveniently placed power ports keep additional communication devices charged and ready.

### Technology

- Optional Cat AccuGrade<sup>™</sup> uses positioning and guidance technologies, machine sensors, and automatic blade control to help get to grade faster, easier, and more efficiently.
- Optional Cat Product Link<sup>™</sup> aids your equipment management with remote monitoring capabilities.
- AccuGrade Attachment Ready Option (ARO) can be ordered as a factory or dealer installed option making installation of the AccuGrade grade control system faster and easier.

### Safety

- Brakes located at each tandem wheel offer the largest total brake surface area in the industry, delivering dependable stopping power.
- Standard circle drive slip clutch protects the drawbar, circle and moldboard from shock loads when the blade encounters an immovable object.
- Ground level engine shutoff allows anyone nearby to shut the machine down in case of an emergency.
- Built-in lock check valves
- Clear view to moldboard heel and tandem tires enhance productivity and safe operation.
- Blade Lift Accumulators help absorb impact loads to the moldboard by allowing vertical blade travel.



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## Engine

Engine Model	Cat C7 ACERT	
Base Power – Net	108 kW	145 hp
VHP Range – Net	108-123 kW	145-165 hp
Displacement	7.2 L	439 in <sup>3</sup>
Bore	105 mm	4.1 in
Stroke	127 mm	5 in
Torque Rise	50%	
Maximum Torque	881 N·m	650 lbf·ft
Speed @ Rated Power	2,000 rpm	
Number of Cylinders	6	
Derating Altitude	3048 m	10,000 ft
High Ambient – Fan Speed		
Maximum	1,575 rpm	
High Ambient Capability	50° C	122° F
<ul style="list-style-type: none"> <li>• Net power is tested per ISO 9249, SAE J1349, and EEC 80/1269 standards in effect at the time of manufacture.</li> <li>• Net power advertised is the power available at rated speed of 2,000 rpm, measured at the flywheel when engine is equipped with fan, air cleaner, muffler and alternator.</li> <li>• Maximum torque measured at 1,000 rpm in gears 4-8.</li> </ul>		

## Weights

Gross Vehicle Weight, Base		
Total	14 270 kg	31,460 lb
Front Axle	3820 kg	8,422 lb
Rear Axle	10 450 kg	23,038 lb
Gross Vehicle Weight, Typically Equipped		
Total	16 791 kg	37,018 lb
Front Axle	4497 kg	9,915 lb
Rear Axle	12 294 kg	27,103 lb
Operating Weight, Maximum		
Total	22 870 kg	50,420 lb
Front Axle	8005 kg	17,649 lb
Rear Axle	14 865 kg	32,771 lb
<ul style="list-style-type: none"> <li>• Base weight calculated on standard machine configuration with 14.00-24 12PR (G-2) tires, SP Rims, full fuel tank, coolant, lubricants and 90 kg (198 lb) operator.</li> <li>• Typical operating weight calculated on standard machine configuration with HVAC ROPS Cab, 14.00-24 12PR (G-2) tires, MP rims, ripper, push plate, transmission guard, full fuel tank, coolant, lubricants and 90 kg (198 lb) operator.</li> </ul>		

## Frame

Circle – Outer Diameter	1530 mm	60.2 in
Front Axle		
Wheel Lean, Left/Right	18°	
Total Oscillation per Side	32°	

## Moldboard

<b>Blade Width</b>	<b>3.7 m</b>	<b>12 ft</b>
Moldboard – Height	610 mm	24.0 in
Moldboard – Thickness	22 mm	0.9 in
Arc Radius	413 mm	16.3 in
Throat Clearance	120 mm	4.7 in
Cutting Edge – Width	152 mm	6.0 in
Cutting Edge – Thickness	16 mm	0.6 in
End Bit – Width	152 mm	6.0 in
End Bit – Thickness	16 mm	0.6 in

## Blade Range

Circle Centershift		
Right	728 mm	28.7 in
Left	752 mm	29.6 in
Moldboard Sideshift		
Right	663 mm	26.1 in
Left	512 mm	20.2 in
Blade Tip Range		
Forward	40°	
Backward	5°	
Maximum Shoulder Reach Outside of Tires		
Right	1809 mm	71.2 in
Left	1859 mm	73.2 in
Maximum Lift Above Ground	480 mm	18.9 in
Maximum Depth of Cut	735 mm	28.9 in

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