140K Motor Grader



The K Series 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™ engine, direct-drive power shift transmission and load sensing hydraulics work together to ensure the power and precision you need to work in demanding conditions. And Cat motor graders are backed by the world-class Cat dealer network to keep you up and running.

Cat C7 ACERT Engine

Optimum power and fuel efficiency, combined with Power Management and Electronic Throttle Control, assure maximum productivity.

Power Train

The Power Shift transmission features direct drive and electronic control for smooth, powerful shifts at any speed.

Balanced Hydraulics

Proportional hydraulic flow gives operators outstanding "feel" and predictable movements.

Machine Safety

Cat machines are designed with features to help protect the operator and others around the job site.

Serviceability

Grouped service points make daily maintenance easier and faster, while enhanced diagnostics and monitoring help reduce downtime.



| Engine | | |
|--------------------------------------|--------------|---------------------|
| Engine Model | Cat C7 ACERT | |
| Base Power (1st gear) – Net | 128 kW | 171 hp |
| Base Power (1st gear) – Net (Metric) | | 174 hp |
| VHP Range – Net | 128-143 kW | 171-191 hp |
| VHP – gears | | |
| 1-2 Net | 128 kW | 171 hp |
| 3 Net | 135 kW | 181 hp |
| 4-8 Net | 143 kW | 191 hp |
| 1-2 Gross | 140 kW | 188 hp |
| 3 Gross | 147 kW | 198 hp |
| 4-8 Gross | 155 kW | 208 hp |
| Displacement | 7.2 L | 439 in ³ |
| Bore | 105 mm | 4.1 in |
| Stroke | 127 mm | 5 in |
| Torque Rise | 46% | |
| Maximum Torque Net | 996 N·m | 735 lb ft |
| Speed @ rated power | 2,000 rpm | |
| Number of cylinders | 6 | |
| Derating altitude | 3048 m | 10,000 ft |
| Fan Speed Maximum | 1,925 rpm | |
| High Ambient Capability | 50° C | 122° F |

- Net power is tested per ISO 9249, SAE J1349, and EEC 80/1269 standards in effect at the time of manufacture.
- 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.
- Maximum torque measured at 1,000 rpm in gears 4-8.

| Power Train | |
|-----------------------|--|
| Forward/Reverse Gears | 8 forward/6 reverse |
| Transmission | Direct drive, Power shift |
| Brakes | |
| Service | Air actuated, multiple oil-disc |
| Service, surface area | 23 948 cm ² 3,712 in ² |
| Parking | Air actuated, multiple oil-disc |
| Secondary | Dual circuit |

• Brakes meet the following standards: SAE J/ISO 3450 JAN 98.

| Operating Specifications | | |
|-------------------------------------|--------------|------------|
| Top Speed | | |
| forward | 47.3 km/h | 29.4 mph |
| reverse | 37.4 km/h | 23.2 mph |
| Turning Radius, outside front tires | 7.5 m | 24 ft 9 in |
| Steering Range – left/right | 47.5 Degrees | |
| Articulation Angle – left/right | 20 Degrees | |
| Forward | | |
| 1st | 4.1 km/h | 2.5 mph |
| 2nd | 5.5 km/h | 3.4 mph |
| 3rd | 8.0 km/h | 5.0 mph |
| 4th | 11.0 km/h | 6.9 mph |
| 5th | 17.4 km/h | 10.8 mph |
| 6th | 23.6 km/h | 14.7 mph |
| 7th | 32.5 km/h | 20.2 mph |
| 8th | 47.3 km/h | 29.4 mph |
| Reverse | | |
| 1st | 3.2 km/h | 2.0 mph |
| 2nd | 6.0 km/h | 3.7 mph |
| 3rd | 8.7 km/h | 5.4 mph |
| 4th | 13.7 km/h | 8.5 mph |
| 5th | 25.7 km/h | 16.0 mph |
| 6th | 37.4 km/h | 23.2 mph |

• Maximum travel speeds calculated at high idle on standard machine configuration with 17.50-25 12PR (G-2) tires.

| Hydraulic System | | |
|---------------------------|----------------|--------------|
| Circuit Type | Load Sensing | g, Closed |
| | Center, Prop | ortional |
| | Priority Press | sure |
| | Compensatin | ig System |
| Pump Type | Variable Pist | on |
| Pump Output Standard Pump | 159.1 L/min | 42 gal/min |
| Optional High Output Pump | 210.5 L/min | 55.6 gal/min |
| Maximum System Pressure | 25 500 kPa | 3,698.5 psi |
| Standby Pressure | 3600 kPa | 522.1 psi |
| Reservoir Tank Capacity | 55 L | 14.5 gal |

[•] Pump output measured @ 2,150 rpm.

| Moldboard | | |
|------------------|-----------|-----------|
| Blade Width | 3.7 m | 12 ft |
| Moldboard | | |
| height | 610 mm | 24 in |
| 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 in |
| thickness | 16 mm | 0.6 in |
| End Bit | | |
| width | 152 mm | 6 in |
| thickness | 16 mm | 0.6 in |
| Blade Pull | | |
| base GVW | 9108 kg | 20,080 lb |
| maximum GVW | 13 379 kg | 29,496 lb |
| Down Pressure | | |
| base GVW | 7278 kg | 16,044 lb |
| maximum GVW | 13 963 kg | 30,784 lb |
| | | |

• Blade Pull calculated at 0.9 traction coefficient, which is equal to ideal no-slip conditions, and Gross Vehicle Weight (GVW).

| 728 mm | 28.7 in |
|------------|--|
| 752 mm | 29.6 in |
| | |
| 663 mm | 26.1 in |
| 512 mm | 20.2 in |
| 90 Degrees | |
| | |
| 40 Degrees | |
| 5 Degrees | |
| res | |
| 1978 mm | 77.9 in |
| 1896 mm | 74.6 in |
| 480 mm | 18.9 in |
| 735 mm | 28.9 in |
| | 752 mm 663 mm 512 mm 90 Degrees 40 Degrees 5 Degrees ires 1978 mm 1896 mm 480 mm |

| Ripper | | |
|--------------------------------------|-----------|-----------|
| Ripping depth – maximum | 462 mm | 18.2 in |
| Ripper shank holders, quantity | 5 | |
| Ripper shank holder spacing | 533 mm | 21 in |
| Penetration force | 8694 kg | 19,166 lb |
| Pryout force | 11 673 kg | 25,735 lb |
| Machine length increase, beam raised | 970 mm | 38.2 in |
| Scarifier shank holder quantity | 9 | |
| | | |

| Scarifier | | | |
|----------------------------------|---------|---------|--|
| Mid, V-Type | | | |
| Working width | 1184 mm | 46.6 in | |
| Scarifying depth, maximum | 229 mm | 9 in | |
| Scarifier shank holders quantity | 11 | | |
| Scarifier shank holder spacing | 116 mm | 4.6 in | |
| Rear | | | |
| Working width | 2300 mm | 90.6 in | |
| Scarifying depth, maximum | 266 mm | 10.5 in | |
| Scarifier shank holders quantity | 9 | | |
| Scarifier shank holder spacing | 267 mm | 10.5 in | |

• The mid-mount scarifier is positioned under the drawbar between the moldboard and front axle.

| Frame | | |
|------------------------|----------------------|---------------------|
| Circle | | |
| diameter | 1530 mm | 60.2 in |
| blade beam thickness | 35 mm | 1.4 in |
| Drawbar | | |
| height | 127 mm | 5 in |
| width | 76.2 mm | 3 in |
| Front axle | | |
| height to center | 628 mm | 24.7 in |
| wheel lean, left/right | 18 Degrees | |
| total oscillation | 32 Degrees | |
| Front-top/bottom plate | | |
| width | 305 mm | 12 in |
| thickness | 25 mm | 1 in |
| Front-side plates | | |
| width | 242 mm | 9.5 in |
| thickness | 12 mm | 0.5 in |
| Front-linear weights | | |
| minimum | 165 kg/m | 112 lb/ft |
| maximum | 213 kg/m | 144 lb/ft |
| Front-section modulus | | |
| minimum | 2083 cm ³ | 127 in ³ |
| maximum | 4785 cm ³ | 291 in ³ |

| Tandems | | |
|--------------------|------------|---------|
| Height | 506 mm | 19.9 in |
| Width | 201 mm | 7.9 in |
| Sidewall thickness | | |
| inner | 16 mm | 0.6 in |
| outer | 18 mm | 0.7 in |
| Drive chain pitch | 51 mm | 2 in |
| Wheel axle spacing | 1522 mm | 59.9 in |
| Tandem oscillation | | |
| front up | 15 Degrees | |
| front down | 25 Degrees | |

| Service Refill | | |
|--|-------|----------|
| Fuel Capacity | 305 L | 80.6 gal |
| Cooling system | 40 L | 10.6 gal |
| Engine Oil | 18 L | 4.8 gal |
| Transmission/Differential/Final Drives | 60 L | 15.9 gal |
| Tandem housing (each) | 64 L | 16.9 gal |
| Front wheel spindle bearing housing | 0.5 L | 0.1 gal |
| Circle drive housing | 7 L | 1.9 gal |

| Weights | | |
|--------------------------------------|-----------|-----------|
| Gross Vehicle Weight – Base | | |
| total | 14 292 kg | 31,508 lb |
| front axle | 4172 kg | 9,197 lb |
| rear axle | 10 120 kg | 22,311 lb |
| Gross Vehicle Weight – Typically Equ | iipped | |
| total | 17 510 kg | 38,603 lb |
| front axle | 5053 kg | 11,140 lb |
| rear axle | 12 457 kg | 27,463 lb |
| Gross Vehicle Weight – Maximum | | |
| total | 22 870 kg | 50,420 lb |
| front axle | 8005 kg | 17,647 lb |
| rear axle | 14 866 kg | 32,773 lb |

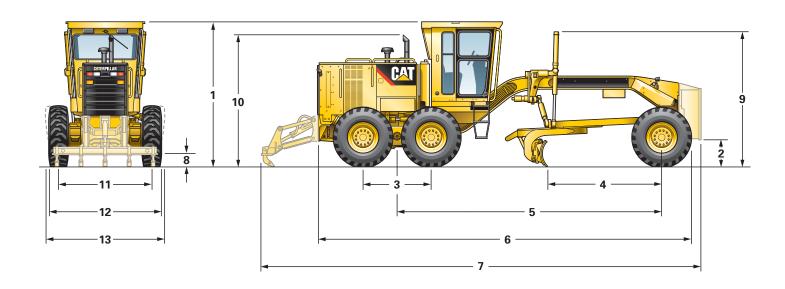
- Base weight calculated on standard machine configuration with 14.00-24 12PR (G-2) tires, full fuel tank, coolant, lubricants and operator.
- Typical operating weight calculated on standard machine configuration with Cab High Profile ROPS, rear ripper, push block, 14.00-24 12PR (G-2) tires, full fuel tank, coolant, lubricants and operator.
- Maximum Vehicle Weight includes all compatible attachments with Cab High Profile ROPS, 17.50-25 12PR (G-2) tires, full fuel tank, coolant, lubricants and operator.

| Standards | |
|-----------|----------------|
| ROPS/FOPS | ISO 3471:2008/ |
| | ISO 3449:2005 |
| Steering | ISO 5010:2007 |
| Brakes | ISO 3450:1996 |
| Sound | ISO 6394:2008 |
| | ISO 6396:2008 |

- These standards are met when the machine is equipped with a cab.
- \bullet The static operator sound pressure level is 77 dB(A) when "ISO 6394:2008" is used to measure the value for an enclosed cab. The measurement was conducted with the cab doors and the cab windows closed. The cab was properly installed and maintained.

Dimensions

All dimensions are approximate.



| | mm | in |
|--|--------|-------|
| 1 Height – ROPS Cab | 3354 | 132.0 |
| Height – Non-ROPS Cab | 3348 | 131.8 |
| Height – ROPS Canopy | 3354 | 132.0 |
| 2 Ground Clearance – Center Front Axle | 626 | 24.6 |
| 3 Length – Between Tandem Axles | 1523 | 60.0 |
| 4 Length – Front Axle to Moldboard | 2598 | 102.3 |
| 5 Length – Front Axle to Mid Tandem | 6086 | 239.6 |
| 6 Length – Front Tire to Rear of Machine | 8504 | 334.8 |
| 7 Length – Counterweight to Ripper | 10 013 | 394.2 |
| 8 Ground Clearance, Trans. Case | 362 | 14.3 |
| 9 Height – Top of Cylinders | 3049 | 120.0 |
| 10 Height to Exhaust Stack | 2895 | 114.0 |
| 11 Width – Tire Center Lines | 2065 | 81.3 |
| 12 Width – Outside Rear Tires | 2452 | 96.6 |
| 13 Width – Outside Front Tires | 2481 | 97.7 |

140K Motor Grader Standard Equipment

Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

ELECTRICAL

- Alternator, 115 Ampere
- Backup alarm, reversing lights
- Batteries, maintenance free 750 CCA
- Electrical system, 24 volt
- · Horn, electric
- · Lights, stop and tail
- Motor, starting
- Product Link Ready
- Working lights

OPERATOR ENVIRONMENT

- Accelerator
- Control console, adjustable
- Gauge cluster (includes voltmeter, articulation, engine coolant temperature, air brake pressure and fuel level)
- Guard rails, operator station
- Hydraulic controls, load sensing (right/left blade lift, circle drive, centershift, sideshift, front wheel lean and articulation)
- Indicator lights (includes high beam, LH and RH turn, low engine oil pressure, throttle lock, check engine, transmission filter bypass and check, centershift pin, brake air pressure, parking brake engaged, auto shift)
- Key start/stop switch
- · Meter, hour
- Power steering, hydraulic
- · Seat, vinyl-covered static
- · Seat belt
- Steering wheel, tilt, adjustable
- Storage area, cooler/lunch box
- Throttle, electronic control

POWER TRAIN

- Air cleaner, dry type radial seal with service indicator and automatic dust ejector
- Air to air after cooler (ATAAC)
- Blower fan
- · Brakes, oil disc, four-wheel air actuated
- · Differential with lock/unlock
- Engine, Cat C7 with ACERT Technology, diesel with automatic engine derate and idle control. The 140K is offered with two variations of the C7 ACERT engine. One meets China Nonroad Stage III emission standards and U.S. EPA Tier 3/EU Stage IIIA equivalent emission standards. The other variation meets Tier 2/Stage II equivalent emission standards.
- Fuel water separator
- Muffler, under hood
- Parking brake, multi-disc, sealed and oil cooled
- Prescreener
- Priming pump, fuel, resiliently mounted
- Sediment drain, fuel tank
- · Tandem drive
- Transmission, 8 speed forward and 6 speed reverse, power shift, direct drive with electronic shift control and overspeed protection
- VHP (Variable Horse Power)

OTHER STANDARD EQUIPMENT

- · Bumper, rear
- CD ROM Parts Book
- Circle drive slip clutch
- Cutting edges, 152 mm × 16 mm (6 in × 5/8 in) curved DH-2 steel
- Doors, Engine compartment
- Drawbar, 6 shoe replaceable nylon composite wear strips
- Endbits, 16 mm (5/8 in) DH-2 steel
- · Frame, articulated with safety lock
- Fuel tank, 305 L (80.6 gal)
- · Ground level engine shutdown
- · Link bar, 7 position
- Moldboard, 3658 mm × 610 mm × 22 mm (12 ft × 24 in × 7/8 in) blade with hydraulic sideshift and mechanical tip
- S·O·S ports, engine, hydraulic, transmission and cooling
- Toolbox with padlock
- Vandalism protection including cap locks for hydraulic tank, radiator access cover, fuel tank, engine and transmission oil check/fill and lockable battery boxes.

ANTIFREEZE

• Extended Life Coolant to -35° C (-30° F)

140K Motor Grader Optional Equipment

Optional Equipment

Optional equipment may vary. Consult your Cat dealer for details.

| | kg | 1b |
|--------------------------|------|------|
| GUARDS | | |
| Guard, transmission | 98 | 216 |
| OPERATOR | | |
| ENVIRONMENT | | |
| Air conditioner with | 91 | 201 |
| heater | | |
| Heater, cab | 14 | 31 |
| CAB/CANOPY | | |
| Cab, ROPS* | 0 | 0 |
| Cab, Non-ROPS* | -182 | -401 |
| Canopy, ROPS* | -118 | -260 |
| Seat, vinyl adjustable | 14 | 31 |
| Seat, cloth, contour | 11 | 24 |
| Fan, defroster, | 2 | 4 |
| front window | | |
| Fan, defroster, | 2 | 4 |
| rear window | | |
| Sun shade, rear | 3 | 7 |
| Wiper/washer, rear | 7 | 15 |
| Wipers, intermittent | 1 | 2 |
| front | 1 | |
| Mirrors, dual inside | 1 | 2 |
| Mirrors, outside mounted | 8 | 18 |
| Power port, 12V | 2 | 4 |
| accessory | | |
| Radio ready | 5 | 11 |
| entertainment | | |
| Tachometer/ | 1 | 2 |
| Speedometer | | |

^{*} Weights represent changes to Typically Equipped machine weights.

| | kg | 1b | | |
|---|------|--------|--|--|
| RIPPER/SCARIFIER | | | | |
| Ripper/Scarifier, rear mounted* | -961 | -2,119 | | |
| Scarifier, mid mounted, V-type | 845 | 1,862 | | |
| LIGHTS | | | | |
| Bar mounted, low, directional and headlights | 13 | 29 | | |
| Cab and bar mounted, high, directional, headlights and work lights | 22 | 49 | | |
| POWER TRAIN | | | | |
| Autoshift | 2 | 4 | | |
| OTHER ATTACHMENTS | | | | |
| Product Link | 5 | 10 | | |
| Snow Wing Mounting, frame-ready | 91 | 201 | | |
| AccuGrade ARO | 10 | 22 | | |
| Dryer, air | 13 | 29 | | |
| Push plate, counterweight* | -907 | -2,000 | | |
| Accumulator, blade lift | 77 | 170 | | |
| Battery, extreme duty (1400 CCA) | 14 | 31 | | |
| Ether, starting aid | 1 | 2 | | |
| Heater, engine coolant, 220V | 1 | 2 | | |

| | kg | 1b |
|---------------------------------------|------|-------|
| HYDRAULICS | | |
| Pump, hydraulic, | 2 | 4 |
| high capacity | | |
| (210 L/min 55.7 gal/min) | | |
| Hydraulic arrangements | | |
| with one or more | | |
| additional hydraulic | | |
| valves are available for | | |
| rear ripper, mid-mount | | |
| scarifier, dozer, snow | | |
| plow and snow wing. | | |
| | | |
| BLADES, | | |
| MOLDBOARDS | | |
| Moldboard | | |
| Blade, 4267 mm × | 93 | 205 |
| $610 \text{ mm} \times 22 \text{ mm}$ | | |
| $(14' \times 24'' \times 7/8'')$ | | |
| Blade, front | 1180 | 2,601 |
| Cutting edge, 203 mm | 50 | 110 |
| \times 19 mm (8" \times 3/4"). | | |
| For use with 14' blade | | |
| Endbits, overlay, | 11 | 24 |
| reversible pair for | | |
| use with 203 mm (8") | | |
| cutting edges | | |

140K Motor Grader

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AEHQ6975-01 (04-2016) Replaces AEHQ6975

