

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.



140K Motor Grader Specifications

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, Closed Center, Proportional Priority Pressure Compensating System	
Pump Type	Variable Piston	
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.

140K Motor Grader Specifications

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).

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
Maximum Blade Position Angle	90 Degrees	
Blade Tip Range forward	40 Degrees	
backward	5 Degrees	
Maximum shoulder reach outside of tires right	1978 mm	77.9 in
left	1896 mm	74.6 in
Maximum lift above ground	480 mm	18.9 in
Maximum depth of cut	735 mm	28.9 in

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

140K Motor Grader Specifications

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 Equipped		
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

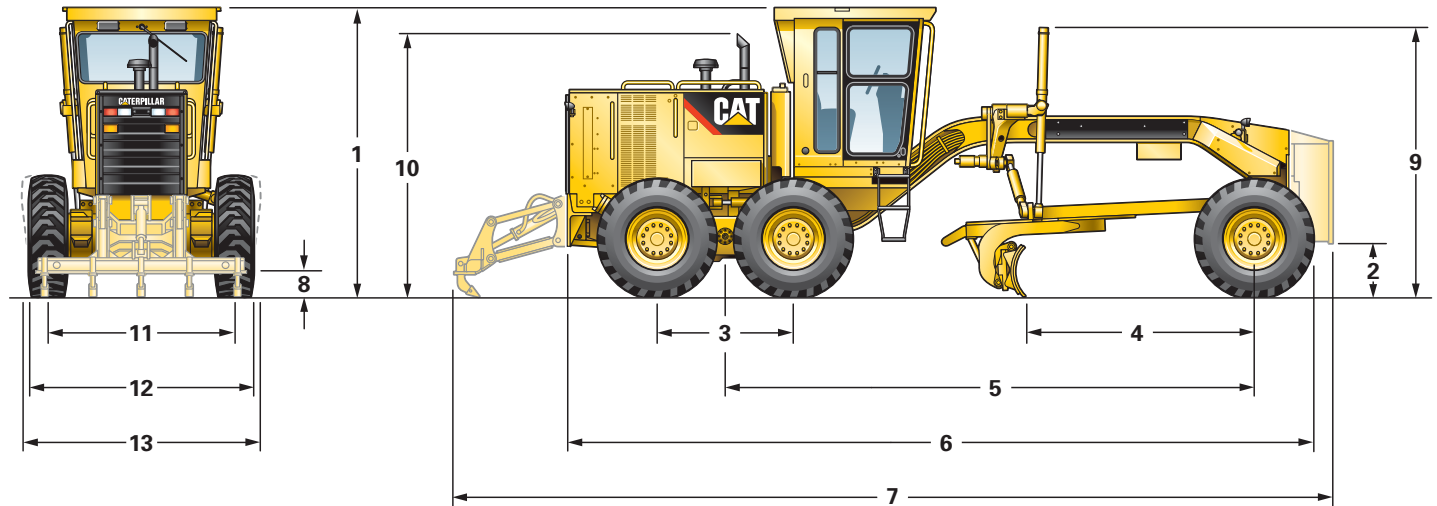
ROPS/FOPS	ISO 3471:2008/ ISO 3449:2005
Steering	ISO 5010:2007
Brakes	ISO 3450:1996
Sound	ISO 6394:2008 ISO 6396:2008

- These standards are met when the machine is equipped with a cab.
- 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.

140K Motor Grader Specifications

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	lb		kg	lb		kg	lb
GUARDS			RIPPER/SCARIFIER			HYDRAULICS		
Guard, transmission	98	216	Ripper/Scarifier, rear mounted*	-961	-2,119	Pump, hydraulic, high capacity (210 L/min 55.7 gal/min)	2	4
OPERATOR ENVIRONMENT			Scarifier, mid mounted, V-type	845	1,862	Hydraulic arrangements with one or more additional hydraulic valves are available for rear ripper, mid-mount scarifier, dozer, snow plow and snow wing.		
Air conditioner with heater	91	201	LIGHTS			BLADES, MOLDBOARDS		
Heater, cab	14	31	Bar mounted, low, directional and headlights	13	29	Moldboard		
CAB/CANOPY			Cab and bar mounted, high, directional, headlights and work lights	22	49	Blade, 4267 mm × 610 mm × 22 mm (14' × 24" × 7/8")	93	205
Cab, ROPS*	0	0	POWER TRAIN			Blade, front	1180	2,601
Cab, Non-ROPS*	-182	-401	Autoshift	2	4	Cutting edge, 203 mm × 19 mm (8" × 3/4"). For use with 14' blade	50	110
Canopy, ROPS*	-118	-260	OTHER ATTACHMENTS			Endbits, overlay, reversible pair for use with 203 mm (8") cutting edges	11	24
Seat, vinyl adjustable	14	31	Product Link	5	10			
Seat, cloth, contour	11	24	Snow Wing Mounting, frame-ready	91	201			
Fan, defroster, front window	2	4	AccuGrade ARO	10	22			
Fan, defroster, rear window	2	4	Dryer, air	13	29			
Sun shade, rear	3	7	Push plate, counterweight*	-907	-2,000			
Wiper/washer, rear	7	15	Accumulator, blade lift	77	170			
Wipers, intermittent front	1	2	Battery, extreme duty (1400 CCA)	14	31			
Mirrors, dual inside	1	2	Ether, starting aid	1	2			
Mirrors, outside mounted	8	18	Heater, engine coolant, 220V	1	2			
Power port, 12V accessory	2	4						
Radio ready entertainment	5	11						
Tachometer/Speedometer	1	2						

* Weights represent changes to Typically Equipped machine weights.

140K Motor Grader

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AEHQ6975-01 (04-2016)
Replaces AEHQ6975

