

14M

Motor Grader



Engine

Engine Model	Cat® C11 ACERT™ VHP	
Base Power (1st gear) – Net	193 kW	259 hp
Base Power (1st gear) – Net (Metric)		262 hp
VHP Range – Net	193-205 kW	259-275 hp
VHP Range – Net (Metric)		262-279 hp
VHP Plus Range – Net	193-221 kW	259-297 hp
VHP Plus Range – Net (Metric)		262-301 hp

Moldboard

Width	4.3 m	14 ft
Weights		
Gross Vehicle Weight – Typically Equipped	24 375 kg	53,738 lb

14M Motor Grader Specifications

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VHP Plus Range – Net (Metric)	262-301 hp	
Displacement	11.1 L	677 in ³
Bore	130 mm	5.1 in
Stroke	140 mm	5.5 in
Torque Rise	21%	
Maximum Torque (VHP Plus) – Net	1422 N·m	1,049 lbf·ft
Speed @ Rated Power	1,800 rpm	
Number of Cylinders	6	
Derating Altitude	3962 m	13,000 ft
Standard – Fan speed		
Maximum	1,450 rpm	
Minimum	550 rpm	
Standard – Ambient Capability	43° C	109° F
High Ambient – Fan speed		
Maximum	1,650 rpm	
Minimum	550 rpm	
High Ambient Capability	50° C	122° F

- Power as declared per ISO 14396
Rated Speed = 1,800 rpm
VHP = 206 kW (277 hp)
VHP Plus = 222 kW (298 hp)
- VHP Plus is an optional attachment.
- Net power advertised is the power available at rated speed of 1,800 rpm, measured at the flywheel when engine is equipped with fan running at minimum speed, air cleaner, muffler and alternator.
- No engine derating required up to 3962 m (13,000 ft).

14M Net Power				
Gear	VHP	VHP+	VHP	VHP+
1/1R	193 kW	193 kW	259 hp	259 hp
2/2R	197 kW	197 kW	265 hp	265 hp
3/3-6R	201 kW	201 kW	270 hp	270 hp
4	205 kW	205 kW	275 hp	275 hp
5	205 kW	209 kW	275 hp	281 hp
6	205 kW	213 kW	275 hp	286 hp
7	205 kW	217 kW	275 hp	291 hp
8	205 kW	221 kW	275 hp	297 hp

Power Train		
Forward/Reverse Gears	8 Forward/6 Reverse	
Transmission	Direct drive, power shift, Countershaft	
Brakes		
Service	Oil-actuated, oil-disc	
Service, Surface Area	34 500 cm ²	5,347 in ²
Parking	Spring applied, hydraulically released	
Secondary	Oil-actuated, oil-disc	

Hydraulic System		
Circuit Type	Electro-hydraulic load sensing, closed center	
Pump Type	Variable piston	
Pump Output	280 L/min	74 gal/min
Maximum System Pressure	24 150 kPa	3,500 psi
Standby Pressure	3100 kPa	450 psi

- Pump output measured at 2,150 rpm.

Operating Specifications

Top Speed

Forward	50.4 km/h	31.3 mph
Reverse	39.8 km/h	24.7 mph

Turning Radius, Outside Front Tires	7.9 m	25 ft 11 in
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Steering Range – Left/Right	47.5°
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Articulation Angle – Left/Right	20°
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Forward

1st	4.4 km/h	2.7 mph
2nd	6.0 km/h	3.7 mph
3rd	8.7 km/h	5.4 mph
4th	12.0 km/h	7.4 mph
5th	18.5 km/h	11.5 mph
6th	25.1 km/h	15.6 mph
7th	34.6 km/h	21.5 mph
8th	50.4 km/h	31.3 mph

Reverse

1st	3.5 km/h	2.2 mph
2nd	6.5 km/h	4.0 mph
3rd	9.4 km/h	5.9 mph
4th	14.6 km/h	9.1 mph
5th	27.3 km/h	17.0 mph
6th	39.8 km/h	24.7 mph

Service Refill

Fuel Capacity	492 L	130 gal
Cooling System	46.5 L	12.3 gal
Hydraulic System – Tank	64 L	16.9 gal
Engine Oil	30 L	7.9 gal
Transmission/Differential/ Final Drives	89 L	23.5 gal
Tandem Housing (each)	106 L	28.0 gal
Front Wheel Spindle Bearing Housing	0.9 L	0.2 gal
Circle Drive Housing	10 L	2.6 gal

Frame

Circle

Diameter	1822 mm	71.8 in
Blade Beam Thickness	50 mm	2 in

Drawbar

Height	203.2 mm	8 in
Width	76.2 mm	3 in

Front Frame Structure

Height	406.4 mm	16 in
Width	304.8 mm	12 in
Thickness	15.9 mm	0.6 in

Front Axle

Height to Center	640 mm	25.2 in
Wheel Lean, Left/Right	17.1°	
Total Oscillation per Side	32°	

Tandems

Height	616 mm	24.3 in
Width	214 mm	8.4 in

Sidewall Thickness

Inner	20 mm	0.8 in
Outer	20 mm	0.8 in

Drive Chain Pitch	57 mm	24.2 in
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Wheel Axle Spacing	1656 mm	65 in
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Tandem Oscillation

Front Up	15°
Front Down	25°

Moldboard

Moldboard

Width	4.3 m	14 ft
Height	688 mm	27 in
Thickness	25 mm	1 in

Arc Radius	413 mm	16.3 in
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Throat Clearance	117 mm	4.6 in
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Cutting Edge

Width	203 mm	8 in
Thickness	16 mm	0.6 in

End Bit

Width	152 mm	6 in
Thickness	16 mm	0.6 in

Blade Pull

Base	14 117 kg	31,123 lb
Maximum	18 352 kg	40,460 lb

Down Pressure

Base	10 123 kg	22,318 lb
Maximum	16 662 kg	36,734 lb

- Blade pull calculated at 0.9 traction coefficient, which is equal to ideal no-slip conditions, and Gross Machine Weight.

14M Motor Grader Specifications

Blade Range

Circle Centershift		
Right	520 mm	20.5 in
Left	650 mm	25.5 in
Moldboard Sideshift		
Right	790 mm	31.1 in
Left	740 mm	29.1 in
Maximum Blade Position Angle	65°	
Blade Tip Range		
Forward	40°	
Backward	5°	
Maximum Shoulder Reach Outside of Tires		
Right	2279 mm	89.7 in
Left	2169 mm	85.4 in
Maximum Lift Above Ground	419 mm	16.5 in
Maximum Depth of Cut	438 mm	17.3 in

Ripper

Ripping Depth, Maximum	401 mm	15.8 in
Ripper Shank Holders	7	
Shank Holder Spacing		
Minimum	373 mm	15 in
Maximum	472 mm	19 in
Penetration Force	12 348 kg	27,222 lb
Pryout Force	12 767 kg	28,146 lb
Machine Length Increase, Beam Raised	1156 mm	45.5 in

Weights

Gross Vehicle Weight – Base		
Total	21 423 kg	47,230 lb
Front Axle	5737 kg	12,648 lb
Rear Axle	15 686 kg	34,582 lb
Gross Vehicle Weight – Maximum		
Total	29 834 kg	65,773 lb
Front Axle	9442 kg	20,816 lb
Rear Axle	20 392 kg	44,957 lb
Gross Vehicle Weight – Typically Equipped		
Total	24 375 kg	53,738 lb
Front Axle	6216 kg	13,704 lb
Rear Axle	18 159 kg	40,034 lb

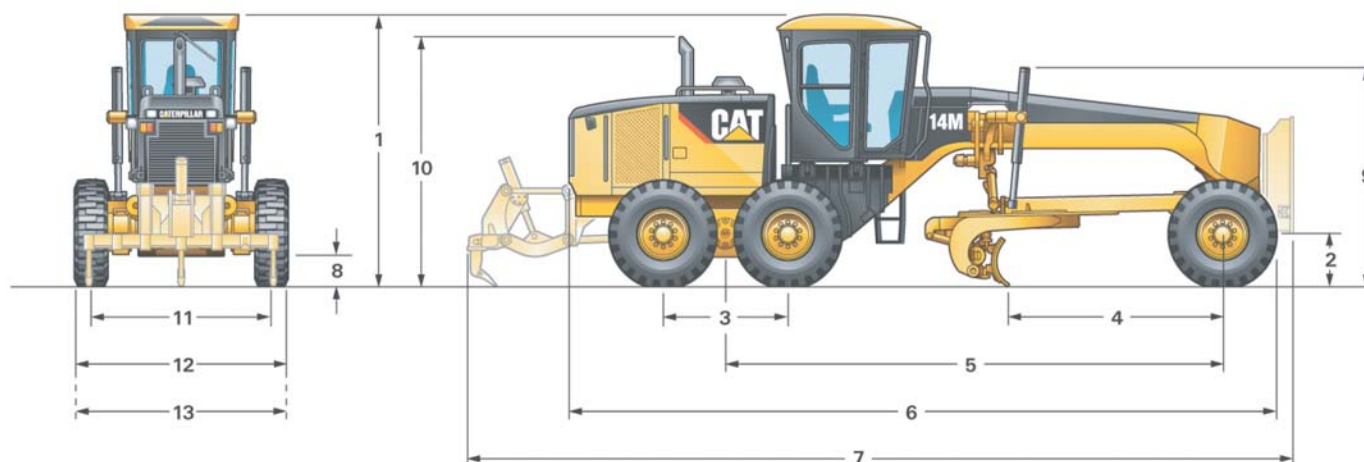
- Base operating weight calculated on standard machine configuration with 16.0R24 radial (G-2) tires, full fuel tank, coolant, lubricants and operator.

Standards

ROPS/FOPS	ISO 3471/ISO 3449
Steering	ISO 5010:1992
Brakes	ISO 3450
Sound	ISO 6394/ISO 6395

- The static operator sound pressure level is 73 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.
- The dynamic spectator sound pressure level is 107 dB(A) when “ISO 6395:2008” is used to measure the value for an enclosed cab. The measurement was conducted at 70% of the maximum engine cooling fan speed.

Dimensions



1	Height – Top of Cab	3535 mm	139 in
	Height – Top of Cab Product Link (cell)	3747 mm	148 in
2	Height – Front Axle Center	630 mm	24.8 in
3	Length – Between Tandem Axles	1656 mm	62.2 in
4	Length – Front Axle to Moldboard	2840 mm	112 in
5	Length – Front Axle to Mid Tandem	6559 mm	258 in
6	Length – Front Tire to Rear of Machine	9349 mm	368 in
7	Length – Counterweight to Ripper	10 896 mm	429 in
	Length – Push Plate to Ripper Retracted	10 632 mm	419 in
8	Ground Clearance at Rear Axle	369 mm	14.5 in
9	Height to Top of Cylinders	2835 mm	112 in
10	Height to Exhaust Stack	3245 mm	128 in
11	Width – Tire Center Lines	2366 mm	93.1 in
12	Width – Outside Rear Tires	2801 mm	110 in
13	Width – Outside Front Tires	2801 mm	110 in

All dimensions are approximate, based on standard machine configuration with 16.0R24 radial (G-2) tires.

Optional Tire Arrangements

Common tire options for the 14M.

Rim Size	Wheel Group	Tires
10 × 24	Multi-piece	16.0R24
17 × 25	Multi-piece	20.5R25

Note: Consult your dealer for individual tire width, size, and brand.

14M Standard Equipment

Standard Equipment

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

OPERATOR ENVIRONMENT

- Accelerator
- Air Conditioning with heater
- Arm and wrist rest, adjustable
- Articulation, automatic Return-to-Center
- Cat Messenger, operator information system
- Centershift pin indicator
- Coat hook
- Cup holder
- Display, digital speed and gear
- Doors, left and right side with wiper
- Gauge, machine level
- Gauge cluster (analog) inside the cab – articulation, engine coolant temp, engine RPM, fuel, and hydraulic oil temp
- Hour meter, digital
- Joystick hydraulic controls implements, steering, transmission
- Lights, night time cab
- Mirror, inside rearview, wide angle
- Power port, 12V
- Radio Ready, Entertainment
- ROPS cab, sound suppressed
- Seat, cloth-covered, comfort suspension
- Seat belt, retractable 76 mm (3 in)
- Storage area for cooler/lunchbox
- Throttle control, electronic
- Windows: laminated glass
 - fixed front with intermittent wiper
 - side and rear (3)

POWER TRAIN

- Air cleaner, dual stage, dry type, automatic dust ejector, service indicator through Cat Messenger
- Air-to-air after cooler (ATAAC)
- Belt, serpentine, automatic tensioner
- Brakes, four-wheel hydraulic
- Differential, lock/unlock
- Drain, engine oil, ecology
- Electronic over speed protection
- Engine, Cat C11 with ACERT Technology
- Engine Idle Shutdown (EIS)
- Ether starting aid
- Fuel-water separator
- Hydraulic demand fan
- Muffler, under hood
- Parking brake – multi-disc, sealed, oil-cooled
- Priming pump, fuel
- Rear axle, modular
- Sediment drain, fuel tank
- Transmission, 8F/6R, power shift, direct drive
- VHP (Variable Horsepower)

ELECTRICAL

- Alarm, back up
- Alternator, 80 ampere, sealed
- Batteries, maintenance free, heavy duty, 1,125 CCA
- Breaker panel, ground accessible
- Electrical system, 24V
- Grade Control Ready – Cab harness, software, electrical hydraulic valves, bosses and brackets
- Lights, reversing
- Lights, roading, roof-mounted
- Lights, stop and tail, LED
- Product Link Ready

OTHER STANDARD EQUIPMENT

- Brake accumulators, dual certified
- Bumper, rear, integrated with hitch
- CD ROM Parts Book
- Clutch, circle drive slip
- Cutting edges
 - curved DH-2 steel
 - 203 mm × 16 mm (8 in × 5/8 in)
 - 19 mm (3/4 in) mounting bolts
- Doors (3), engine compartment, locking
- Drawbar – 6 shoe with replaceable wear strips
- Endbits
 - 16 mm (5/8 in) DH-2 steel
 - 19 mm (3/4 in) mounting bolts
- Extended Life Coolant to –35° C (–30° F)
- Fluid check, ground level
- Frame, articulated, with safety lock
- Fuel tank, 492 L (130 gallon), ground level access
- Guards, debris, underside
- Guards, service center debris
- Ground level engine shutdown
- Hammer (emergency exit)
- Horn, electric
- Hydraulics, base 8 implement controls
- Hydraulics, load-sensing
- Lockout, hydraulic implement for roading
- Moldboard
 - 4287 mm × 686 mm × 25 mm (14 ft × 27 in × 1 in)
 - hydraulic sideshift and tip
- Paint, glare reducing – top of front frame and rear enclosure
- Radiator cleanout access
- Secondary steering
- Serviceability, LH side
- S•O•SSM ports: engine, hydraulic, transmission, coolant, fuel
- Tandem walkway/guards
- Tool box
- Tow hitch

TIRES, RIMS, & WHEELS

- Partial allowance for tires and multi-piece rims

Optional Equipment

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

	kg	lb		kg	lb		kg	lb
ELECTRICAL								
Alternator, 150 ampere	2	5	Shade, sun	2	5	Hydraulic arrangements with one or more additional hydraulic valves are available for rear ripper, dozer, snow plow and snow wing.		
Batteries:			Wiper, each side	0	1			
extreme duty, 1,400 CCA	14	30	Wiper/washer, rear	2	4			
Converter, communications (CB)	5	11	POWER TRAIN			Security system	2	5
Lights:			Automatic Differential Lock/Unlock			Snow wing mounting, frame ready	91	200
5 Lighting Arrangements and Rear Rooding, Drop Down			Engine, Variable Horsepower Plus (VHP Plus)			Sound suppression	11	25
Warning, LED strobe	1	2	Fuel tank, fast fill	14	31	WORK TOOLS/ GROUND ENGAGING TOOLS		
Starter, electric, heavy duty	10	21	Precleaner, Sy-Klone	5	10	Blade/moldboard, 4877 mm × 686 mm × 25 mm (16 ft × 27 in × 1 in)	136	299
GUARDS			Transmission, autoshift	2	5	Cutting Edges, curved	43	95
Covers, screen	4	9	OTHER ATTACHMENTS			Push plate, counterweight	851	1,875
Transmission	156	344	AccuGrade ARO	39	85	Ripper, mounting	34	75
Sound	91	200	Accumulators, blade lift	71	156	Ripper, rear	1552	3,421
OPERATOR ENVIRONMENT			AutoLube, Lincoln	23	50	Ripper tooth	28	61
Deluxe CD radio with MP3 and Bluetooth technology			AutoLube, Lincoln, ripper enhancement	5	10	MACHINE ARRANGEMENTS		
Fan, defroster, rear window	2	4	Cat Grade Control Cross Slope	75	165	Canadian Arrangement		
Horn, air	7	15	Camera, rearview	27	60	European Arrangement		
Mirrors, outside:			Caterpillar Product Link 321SR	5	10	Snow Arrangement		
heated 24V	15	33	Compressor/tank, Air	23	50			
mounted	10	22	Fenders, rear	184	405			
Precleaner, HVAC	5	10	Heater, engine coolant:					
Seat, air suspension, cloth	2	5	120V	1	3			
			240V	1	3			

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