



120 GC

Motor Grader

Technical Specifications

Configurations and features may vary by region. Please consult your Cat® dealer for availability in your area.

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120 GC Motor Grader Specifications

Engine

Engine Model	Cat® C4.4	
Emissions	Meets India CEV Stage V emission standards	
Net Power: ISO 9249, SAE J1349, 80/1269/EEC	115 kW 156 mhp	154 hp
Power Range – Net	115-128 kW	154-171 hp 156-174 mhp
Bore	105 mm	4.1 in
Displacement	4.4 L	268.5 in ³
Stroke	127 mm	5.0 in
Number of Cylinders	4	
Torque Rise – ISO 9249	21%	
Peak Torque – ISO 9249	738 N·m	544 lb-ft
Derating Altitude	3000 m	9,842 ft
Maximum – Fan Speed	1,150 rpm	
Maximum – Fan Speed All-Wheel Drive	1,150 rpm	
Minimum – Fan Speed	550 rpm	
Standard Capacity	43° C	109° F
High Ambient Capacity	50° C	122° F

- Net power is tested per 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.

Net Power

Gear	kW (hp)
Forward	
1st	115 (154)
2nd	115 (154)
3rd	121 (163)
4th	121 (163)
5th	128 (171)
6th	128 (171)
Reverse	
1st	115 (154)
2nd	121 (163)
3rd	128 (171)

Powertrain

Forward/Reverse Gears	6 Forward/3 Reverse
Transmission	Countershaft Torque Converter Powershift
High Idle Speed	2,150 rpm
Low Idle Speed	900 rpm
Air Cleaner	Dry

Hydraulic System

Type	Closed – Center
Type – All-Wheel Drive	Closed – Center
Type Circuit	Parallel
Pump Type	Variable Piston
Output	24 150 kPa 3,503 psi 0-155 L/min 0-40.9 gal/min
System Flow	0-155 L/min 0-40.9 gal/min

Transmission Hydraulic System

Type	Countershaft Torque Converter Powershift
Lube Oil Pressure	20-90 kPa (2.9-13.1 psi)
Pump Type	Gear
Clutch Supply	78 L/min (20.6 gal/min) at 1600-1800 kPa (232.1-261.1 psi)

Steering

Rated Metering Capacity	160 cc/rev
Front Steering Max Angle	47.5°
Frame Steering Angle Left or Right	20°

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Front Axle

Lean Angle	18° Left and Right	
Oscillation	32° Total	
Ground Clearance at Center	610 mm	24 in

Operating Specifications

Top Speed Forward	41.5 km/h	25.8 mph
Top Speed Reverse	26.3 km/h	16.3 mph
Turning Radius, Outside Front Tires	7.6 m	24.9 ft
Steering Range	49.5° Left and Right	
Articulation Range	20.5° Left and Right	
Forward		
1st	5.2 km/h	3.2 mph
2nd	9.0 km/h	5.6 mph
3rd	10.7 km/h	6.6 mph
4th	18.2 km/h	11.3 mph
5th	26.3 km/h	16.3 mph
6th	41.5 km/h	25.8 mph
Reverse		
1st	5.2 km/h	3.2 mph
2nd	10.7 km/h	6.6 mph
3rd	26.3 km/h	16.3 mph

- Machine speed measured at 2,150 rpm with 14.00R24 (radial tires), no slip.

Base Machine Weight

Weight*	12 700 kg	27,998 lb
Front Axle	3482 kg	7,676 lb
Rear Axle	9218 kg	20,322 lb

*Base operating weight on standard machine configuration is calculated with full fluids, operator open canopy, 10' blade, 14-24 tires on single-piece rims and operator.

Typically Equipped Machine Weight*

Weight*	14 496 kg	31,958 lb
Front Axle	3950 kg	8,708 lb
Rear Axle	10 546 kg	23,250 lb

*Typically equipped machine weight is calculated with full fluids, rollover protective structure (ROPS) cab, 12' basic blade, push plate, ripper, 14-24 tires on multi-piece rims and operator.

Major Component Weights

Moldboard (with cutting edge)		
3069 mm × 580 mm × 20 mm (10 ft × 23 in × 4/5 in)	546 kg	1,204 lb
3669 mm × 580 mm × 20 mm (12 ft × 23 in × 4/5 in)	660 kg	1,455 lb
3669 mm × 610 mm × 20 mm (12 ft × 24 in × 4/5 in)	701 kg	1,545 lb
4279 mm × 6105 mm × 20 mm (14 ft × 24 in × 4/5 in)	819 kg	1,806 lb
Guards		
Transmission	150 kg	331 lb
Rear Fender	213 kg	469 lb
Standard Push Plate	493 kg	1,087 lb
Heavy Duty Push Plate	1005 kg	2,216 lb
Rear Ripper	677 kg	1,493 lb
Mid-Mount Scarifier	997 kg	2,198 lb
Front Blade (standard)	1132 kg	2,496 lb
Front Blade (narrow)	1064 kg	2,346 lb

Air Conditioning

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a or R1234yf. See the label or instruction manual for identification of the gas.

- If equipped with R134a (Global Warming Potential = 1430), the system contains 1.7 kg (3.7 lb) of refrigerant which has a CO₂ equivalent of 2.431 metric tonnes (2.679 tons).

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Service Refill Capacities

Fuel Tank	269 L	71 gal
Diesel Exhaust Fluid (DEF)	12 L	3.2 gal
Rear Axle Oil		
Dry Caliper	127 L	33.5 gal
Wet Disc Brake	147 L	38.8 gal
Circle Drive		
Standard	1.5 L	0.4 gal
Slip Clutch	7 L	1.8 gal
Engine Crankcase	7.6 L	2.0 gal
Cooling System	39 L	10.3 gal
Hydraulic System	45 L	11.9 gal
Transmission	15 L	4.0 gal
Differential Group	27 L	7.1 gal

Tandems

Oscillation Front Up	15°
Oscillation Rear Up	25°

Service Brakes – Dry Caliper (Standard)

Type System	Dual Circuit Hydraulic	
Type Brake	Disc	
Number	6 Total Brakes Calipers	
	2 Calipers at each middle wheel	
	1 Caliper set at each rear wheel	
Size (outer diameter)	418 mm	16.5 in
Size (inner diameter)	302 mm	11.9 in
Lining Area Per Brake	232 cm ²	36 in ²

Service Brakes – Wet Disc (Optional)

Type System	Dual Circuit Hydraulic	
Type Brake	Multiple Oil Disc	
Number	4 Total Wet Disc Brakes	
	1 Wet Disc at each middle wheel	
	1 Wet Disc at each rear wheel	
Size (outer diameter)	270 mm	10.6 in
Size (inner diameter)	189 mm	7.4 in
Lining Area Per Brake	3504 cm ²	543.1 in ²

Parking Brake

Type System	Hydraulic Actuated
Type Brake	Caliper Type
Slope Holding Ability	30°
	Meets ISO 3450:2011
Secondary Brakes	Dual Circuit Control System, Applies Two Service Brakes

Moldboard

	Standard		Option 1		Option 2	
Width	3.7 m	12 ft	3.7 m	12 ft	3.1 m	10 ft
Height	580 mm	23 in	610 mm	24 in	580 mm	23 in
End Bit	152 mm	6 in	152 mm	6 in	152 mm	6 in
Cutting Edge	152 mm	6 in	203 mm	8 in	152 mm	6 in
Arc Radius	413 mm	16.3 in	413 mm	16.3 in	413 mm	16.3 in
Throat Clearance	112 mm	4.4 in	112 mm	4.4 in	112 mm	4.4 in

Drawbar Circle Moldboard

Range of Motion	Standard	
Lift Cylinders	2	
Maximum Depth of Cut	775 mm	30.5 in
Maximum Lift Above Ground	410 mm	16.1 in
Throat Clearance	120 mm	4.7 in
Circle Center Shift Cylinder		
Center Shift Right	656 mm	25.8 in
Center Shift Left	656 mm	25.8 in
Moldboard Side Shift Cylinder		
Side Shift Left	649 mm	25.6 in
Side Shift Right	526 mm	20.7 in
Blade Tip Cylinder		
Maximum Blade Tip Forward	40°	
Maximum Blade Tip Backward	5°	
Maximum Blade Position Angle	90°	
Circle Drive	360° of Blade Rotation	
Link Bar	7 positions to adjust the drawbar circle moldboard range of motion	
Drawbar Shoes	4 with replaceable wear strips	

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Circle

Section	Rolled Ring Forging
Number of Teeth	64
Rotation	360°

Blades

Blade Pull		
Base GVW	8296 kg	18,750 lb
Maximum GVW	10 944 kg	24,127 lb
Blade Down Pressure		
Base GVW	6176 kg	13,751 lb
Maximum GVW	8586 kg	18,929 lb

Maximum Shoulder Reach Outside of Tires

Blade	3.1 m (10 ft)		3.7 m (12 ft)	
Right	1313 mm	51.7 in	1710 mm	67.3 in
Left	1186 mm	46.7 in	1750 mm	68.9 in

Ripper

Ripping Depth Maximum	286 mm	11.3 in
Ripper Shank Holder	5	
Ripper Shank Holder Spacing	534 mm	21 in
Machine Length Increase, Beam Raised	1051 mm	41.4 in

Rear Scarifier

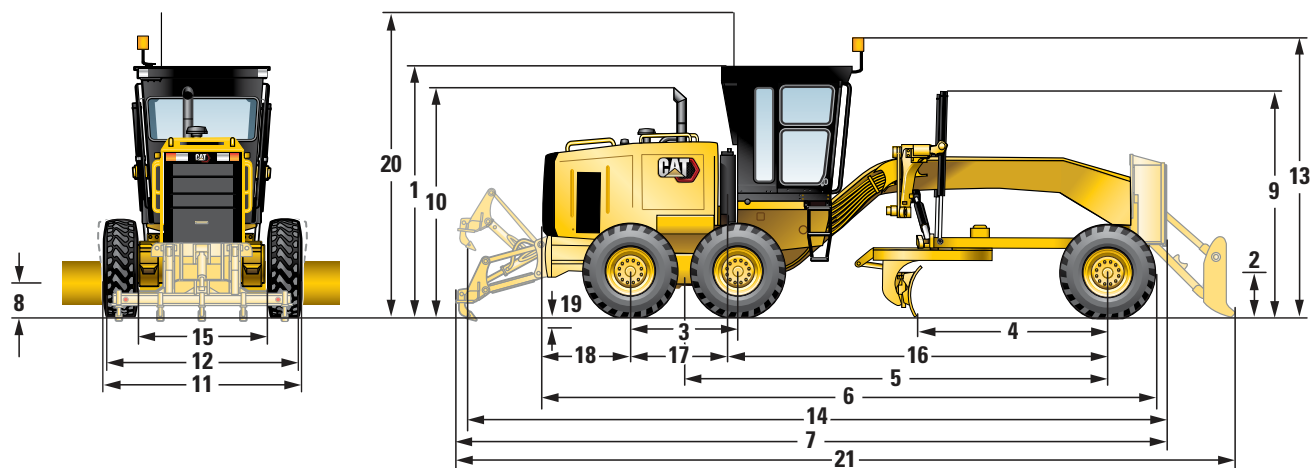
Working Width	2292 mm	90.2 in
Number of Shanks	9	
Shank Spacing	267 mm	10.5 in
Scarifying Depth, Maximum	251 mm	9.9 in

Electrical

Starting System Type	Direct Electric
Heavy Duty Battery	
CCA at -18°	1,400 amp
Volts	12V
Quantity	2
Standard Battery	
CCA at -18°	900 amp
Volts	12V
Quantity	2
Standard Alternator	100 amps at 24V
Heavy Duty Alternator	145 amps at 24V

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Dimensions



1 Height – High Profile Top of Cab	3347 mm	131.8 in
Height – Low Profile Top of Cab	3127 mm	123.1 in
2 Height – Front Axle Center	636 mm	25 in
3 Length – Between Tandem Axles	1510 mm	59.4 in
4 Length – Front Axle to Moldboard	2545 mm	100.2 in
5 Length – Front Axle to Mid Tandem	5833 mm	229.6 in
6 Length – Front Tire to Rear of Machine	8523 mm	335.6 in
7 Length – Push Plate to Ripper	9941 mm	391.4 in
8 Ground Clearance at Rear Axle	369 mm	14.5 in
9 Height to Top of Cylinders	2872 mm	113.1 in
10 Height to Exhaust Stack	3113 mm	122.6 in
11 Width – Outside Rear Tires	2493 mm	98.1 in
12 Width – Outside Front Tires	2493 mm	98.1 in
13 Maximum Height – with Attachments	3787.8 mm	149.1 in
14 Length – Push Plate to Raised Ripper	9562 mm	376.5 in
15 Width – Inside Rear Tires	1732 mm	68.2 in
16 Length – Front Axle to Articulation Hitch	5223 mm	205.6 in
17 Length – Rear Axle to Articulation Hitch	1364.6 mm	53.7 in
18 Length – Rear Axle to Rear of Frame	1260.3 mm	49.6 in
19 Height – Tire Deflection at Performance Weight	61 mm	2.4 in
20 Maximum Height – with Attachments (beacon and antenna in operating position)	4130.5 mm	162.6 in
21 Length – Front Blade to Ripper	10 827 mm	426.3 in

Note: Dimensions based on machine equipped with 14.0-24 tires.

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Optional Tire Arrangements

Rim Size	Wheel Group	Tires
9 × 24	Single-Piece	14.00-24
10 × 24	Multi-Piece	14.00-24
10 × 24	Multi-Piece	14R24
14 × 25	Multi-Piece	17.5R25
14 × 25	Multi-Piece	17.5-25

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

Standards

Rollover Protective Structure (ROPS)	ISO 3471:2008 if equipped Maximum Mass: 17 000 kg (37,479 lb) (Enclosed Cab) Maximum Mass: 17 000 kg (37,479 lb) (Canopy Cab)
Falling Objects Protective Structure (FOPS)	ISO 3449:2005 Level II
Brakes	AIS 143:2018, ISO 3450:2011
Steering	ISO 5010:2019*
Machine Sound Power Level – ISO 6395:2008, ISO 6393:2008	103 dB(A)
Operator Sound Pressure Level – ISO 6396:2008, ISO 6394:2008	75 dB(A)

- The machine sound power level measurements are performed according to the test procedures that are specified in ISO 6393:2008 and 6395:2008. The measurements were conducted at 70% of the maximum engine cooling fan speed.
 - The operator sound pressure level measurements are performed according to the test procedures that are specified in ISO 6394:2008 and 6396:2008. The measurements were 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.
- * If equipped with optional secondary steering

120 GC Motor Grader Standard and Optional Equipment

Standard and Optional Equipment

Standard and optional equipment may vary. Consult your Cat® dealer for details.

	Standard	Optional		Standard	Optional
CAB			SAFETY		
Vinyl seat	✓		Parking brake	✓	
Mechanical suspension seat		✓	Signaling/warning horn	✓	
Air suspension seat		✓	Back-up alarm	✓	
Adjustable steering wheel/lever controls	✓		Dual internal mirror		✓
Seat belt	✓		Rearview mirror	✓	
Four-point seat belt		✓	Front/rear camera		✓
Electric throttle control	✓		Warning beacon		✓
Rollover protective structure/falling objects protective structure (ROPS/FOPS)		✓	Hydraulic brakes	✓	
Heating/cooling cab system		✓	Secondary steering system		✓
Defrost fans		✓	Side view mirrors	✓	
Base cab	✓		Walkways		✓
Cab plus		✓	Grab rails	✓	
Low profile cab		✓	ELECTRICAL		
Cab storage	✓		Sealed alternator	✓	
Analog display screen	✓		Reversing lights	✓	
Entertainment radio ready	✓		Breaker panel	✓	
Cup holder	✓		900 CCA standard duty batteries	✓	
Cell phone holder	✓		1,400 CCA heavy duty batteries		✓
Dome interior light	✓		Electric starter	✓	
Coat hook	✓		Rear lights with LED lighting	✓	
Rear window screen		✓	Halogen lighting		✓
Front wipers	✓		SERVICE AND MAINTENANCE		
Rear wipers		✓	Grouped location for engine oil and fuel filters	✓	
Lower front wipers		✓	Extended life coolant	✓	
Digital blade slope meter		✓	GUARDS		
Product Link™	✓		Fender		✓
POWERTRAIN			Transmission	✓	
Cat C4.4	✓		Cover, under cab platform		✓
Eco mode	✓		VERSATILITY		
On-demand fan	✓		Push block		✓
Reversing fan		✓	Ripper		✓
No-spin differential	✓		Scarifier		✓
Standard starter	✓		Front blade		✓
43° C (109° F) standard capacity	✓		Towing hitch		✓
DRAWBAR CIRCLE MOLDBOARD			Lift group from factory		✓
Standard drawbar circle moldboard	✓		Attachment Ready Option (ARO) from factory		✓
Circle drive slip clutch		✓			
Circle saver		✓			

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.html>.

Engine

- The Cat® C4.4 engine meets India CEV Stage V emission standards.
- All nonroad India CEV Stage V diesel engines are required to use only Ultra Low Sulfur Diesel (ULSD) fuels containing 15 ppm (mg/kg) sulfur or less. Biodiesel blends up to B20 (20% blend by volume) are acceptable when blended with 15 ppm (mg/kg) sulfur or less ULSD. B20 should meet ASTM D7467 specification (biodiesel blend stock should meet Cat biodiesel spec, ASTM D6751 or EN 14214). Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specification are required. Consult your OMM for further machine specific fuel recommendations.
- Cat engines equipped with a Selective Catalytic Reduction (SCR) system are required to use:
 - Diesel Exhaust Fluid (DEF) which meets the requirements outlined in the International Organization for Standardization (ISO) standard 22241-1.

Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a or R1234yf. See the label or instruction manual for identification of the gas.

- If equipped with R134a (Global Warming Potential = 1430), the system contains 1.7 kg (3.7 lb) of refrigerant which has a CO₂ equivalent of 2.431 metric tonnes (2.679 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

- The declared dynamic operator sound pressure level is 75 dB(A) when “ISO 6396:2008” is used to measure the value for a European Union “CE” marked machine. The measurement was conducted at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.
- The declared exterior sound power level is 103 dB(A) when the value is measured according to the dynamic test procedures and the conditions that are specified in “ISO 6395:2008.” The measurement was conducted for a European Union “CE” marked machine at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds and during diesel particulate filter regeneration.

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.
 - Autodig with auto set tires provides consistent high bucket fill factors for up to 10% more productivity
 - 5-speed advanced powershift transmission, including a lock-up clutch torque converter, delivers smooth shifting, fast acceleration, and speed on grade, amplifying your performance and fuel efficiency
 - Reliable fuel systems boost machine performance and fuel economy, lowering overall costs and fuel consumption
 - Automatic engine idle shutdown system reduces idle hours
 - Extended maintenance intervals reduce fluid and filter consumption
 - Remote Flash and Remote Troubleshoot

Recycling

- The materials included in machines are categorized as below with approximate weight percentage. Because of variations of product configurations, the following values in the table may vary.

Material Type	Weight Percentage
Steel	66.76
Iron	10.85
Nonferrous Metal	2.04
Mixed Metal	0.38
Mixed Metal and Nonmetal	0.73
Plastic	0.91
Rubber	4.45
Mixed Nonmetallic	0.02
Fluid	4.22
Other	2.91
Uncategorized	6.64
Total	100

- A machine with higher recyclability rate will ensure more efficient usage of valuable natural resources and enhance end-of-life value of the product. According to ISO 16714 (Earthmoving machinery – Recyclability and recoverability – Terminology and calculation method), recyclability rate is defined as percentage by mass (mass fraction in percent) of the new machine potentially able to be recycled, reused or both.

All parts in the bill of material are first evaluated by component type based on a list of components defined by the ISO 16714 and Japan CEMA (Construction Equipment Manufacturers Association) standards. Remaining parts are further evaluated for recyclability based on material type.

Because of variations of product configurations, the following value in the table may vary.

Recyclability – 92%

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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Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

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