



# 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 U.S. EPA Tier 4 Final, EU Stage V, and Korea Tier 5 emission standards	
Net Power – ISO 9249/SAE J1349/EEC 80/1269	115 kW	154 hp 156 mhp
All Wheel Drive (AWD) Net Power – ISO 9249/SAE J1349/EEC 80/1269	121 kW	163 hp 165 mhp
Power Range – Net	115-128 kW	154-171 hp 156-174 mhp
AWD Range – Net	121-128 kW	163-171 hp 165-174 mhp
Bore	105 mm	4.1 in
Displacement	4.4 L	268.5 in <sup>3</sup>
Stroke	127 mm	5 in
Number of Cylinders	4	
Torque Rise – ISO 9249	21%	
Peak Torque – ISO 9249	738 N·m	544 lb-ft
Peak Torque – ISO 9249 (AWD On)	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	Non-AWD kW (hp)	AWD Off kW (hp)	AWD On kW (hp)
Forward			
1st	115 (154)	121 (163)	121 (163)
2nd	115 (154)	121 (163)	121 (163)
3rd	121 (163)	128 (171)	128 (171)
4th	121 (163)	128 (171)	128 (171)
5th	128 (171)	128 (171)	128 (171)
6th	128 (171)	128 (171)	128 (171)
Reverse			
1st	115 (154)	121 (163)	121 (163)
2nd	121 (163)	128 (171)	128 (171)
3rd	128 (171)	128 (171)	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

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## 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
Rated Metering Capacity – All-Wheel Drive	231 cc/rev
Front Steering Max Angle	47.5°
Frame Steering Angle Left or Right	20°

## Front Axle

Lean Angle	18° Left and Right	
Oscillation	32° Total	
Ground Clearance at Center	610 mm	24 in
Ground Clearance at Center – All-Wheel Drive	616 mm	24.3 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*	12 966 kg	28,585 lb
Front Axle	3516 kg	7,751 lb
Rear Axle	9450 kg	20,833 lb
Weight (AWD)**	13 705 kg	30,214 lb
Front Axle	3820 kg	8,422 lb
Rear Axle	9885 kg	21,792 lb

\*Base operating weight on standard machine configuration is calculated with full fluids, Rollover Protection Structure (ROPS), Heating/Ventilation/Air Conditioning (HVAC) cab, 10 ft blade, 14-24 tires on single-piece rims, and operator.

\*\*Base operating weight on standard machine configuration is calculated with full fluids, ROPS HVAC cab, 10 ft blade, 14-24 tires on multi-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
All-Wheel Drive Weight (AWD)	15 042 kg	33,162 lb
Front Axle	4190 kg	9,237 lb
Rear Axle	10 852 kg	23,924 lb

\*Typically equipped machine weight is calculated with full fluids, ROPS HVAC 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

# 120 GC Motor Grader Specifications

## Air Conditioning

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.7 kg of refrigerant which has a CO<sub>2</sub> equivalent of 2.431 metric tonnes.

## 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 <sup>2</sup>	36 in <sup>2</sup>

## 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 <sup>2</sup>	543.1 in <sup>2</sup>

## Parking Brake

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

# 120 GC Motor Grader Specifications

## Moldboard

	Standard		Option 1		Option 2		Option 3	
Width	3.7 m	12 ft	3.7 m	12 ft	4.3 m	14 ft	3.1 m	10 ft
Height	580 mm	23 in	610 mm	24 in	610 mm	24 in	580 mm	23 in
End Bit	152 mm	6 in	152 mm	6 in	152 mm	6 in	152 mm	6 in
Cutting Edge	152 mm	6 in	203 mm	8 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	413 mm	16.3 in
Throat Clearance	112 mm	4.4 in	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	

## Circle

Section	Rolled Ring Forging	
Number of Teeth	64	
Rotation	360°	

## Blades

Blade Pull		
Base Gross Vehicle Weight (GVW)	8505 kg	18,750 lb
Maximum GVW	10 944 kg	24,127 lb
Base GVW (AWD)	12 335 kg	27,193 lb
Maximum GVW (AWD)	15 300 kg	33,730 lb
Blade Down Force		
Base GVW	6237 kg	13,751 lb
Maximum GVW	8586 kg	18,929 lb
Base GVW (AWD)	6733 kg	14,843 lb
Maximum GVW (AWD)	8530 kg	18,806 lb

## Maximum Shoulder Reach Outside of Tires

Blade	3.1 m (10 ft)	3.7 m (12 ft)	4.3 m (14 ft)
Right	1313 mm	51.7 in	1710 mm 67.3 in
Left	1186 mm	46.7 in	1750 mm 68.9 in

- An additional 300 mm (11.8 in) of reach can be achieved to the right or left by changing the side shift mounting bracket on the 4.3 m (14 ft) blade. Machine data with 14-24 tires.

## 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

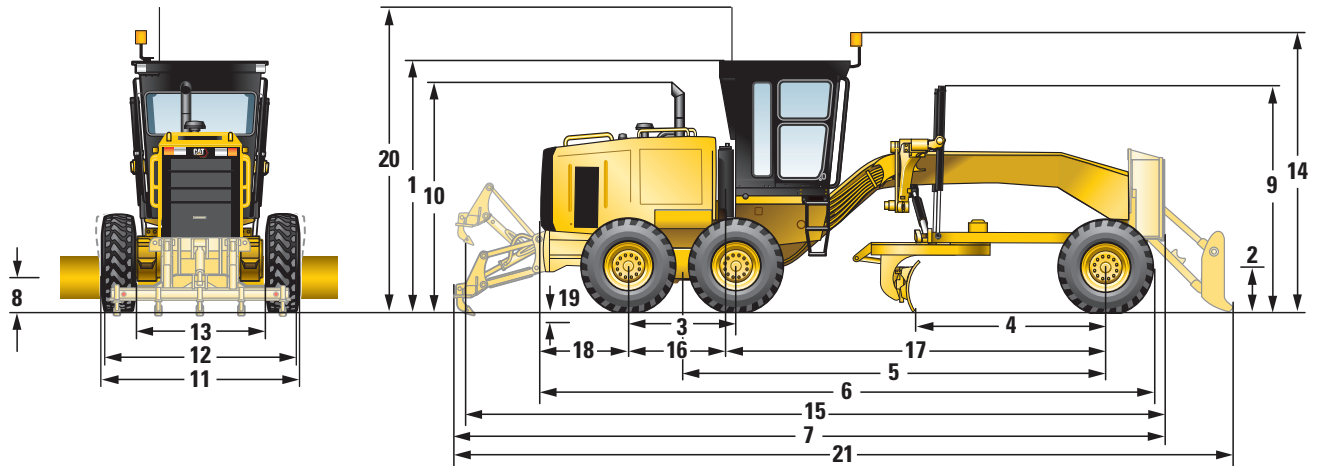
Working Width	2292 mm	90.2 in
Number of Shanks	9	
Shank Spacing	267 mm	10.5 in
Scarifying Depth, Maximum	251 mm	9.9 in

## 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	

# 120 GC Motor Grader Specifications

## Dimensions



<b>1</b> Height – High Profile Top of Cab	3347 mm	131.8 in
Height – Low Profile Top of Cab	3127 mm	123.1 in
<b>2</b> Height – Front Axle Center		
Non AWD	636 mm	25 in
AWD	614 mm	24.2 in
<b>3</b> Length – Between Tandem Axles	1510 mm	59.4 in
<b>4</b> Length – Front Axle to Moldboard		
Non AWD	2545 mm	100.2 in
AWD	2507 mm	98.7 in
<b>5</b> Length – Front Axle to Mid Tandem		
Non AWD	5833 mm	229.6 in
AWD	5795 mm	228.1 in
<b>6</b> Length – Front Tire to Rear of Machine		
Non AWD	8523 mm	335.6 in
AWD	8485 mm	334.1 in
<b>7</b> Length – Push Plate to Ripper	9941 mm	391.4 in
<b>8</b> Ground Clearance at Rear Axle	369 mm	14.5 in
<b>9</b> Height to Top of Cylinders	2872 mm	113.1 in
<b>10</b> Height to Exhaust Stack	3113 mm	122.6 in
<b>11</b> Width – Front Tire Center Lines (AWD)	2214.9 mm	87.2 in

<b>12</b> Width – Outside Rear Tires	2402 mm	94.6 in
<b>13</b> Width – Outside Front Tires		
Non AWD	2402 mm	94.6 in
AWD	2549.9 mm	100.4 in
<b>14</b> Maximum Height – with Attachments	3787.8 mm	149.1 in
<b>15</b> Length – Push Plate to Raised Ripper	9562 mm	376.5 in
<b>16</b> Width – Inside Rear Tires	1732 mm	68.2 in
<b>17</b> Length – Front Axle to Articulation Hitch		
Non AWD	5223 mm	205.6 in
AWD	5185 mm	204.1 in
<b>18</b> Length – Rear Axle to Articulation Hitch	1364.6 mm	53.7 in
<b>19</b> Length – Rear Axle to Rear of Frame	1260.3 mm	49.6 in
<b>20</b> Height – Tire Deflection at Performance Weight	61 mm	2.4 in
<b>21</b> Maximum Height – with Attachments (beacon and antenna in operating position)	4130.5 mm	162.6 in
<b>22</b> Length – Front Blade to Ripper	10 827 mm	426.3 in

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

# 120 GC Motor Grader Specifications

## 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

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-Object Protective Structure (FOPS)	ISO 3449:2005 Level II
Brakes	ISO 3450:2011
Steering	ISO 5010:2019
Machine Sound Power Level – ISO 6395:2008	103 dB(A)
Operator Sound Pressure Level – ISO 6396:2008	75 dB(A)

- The dynamic machine sound power level measurements are performed according to the dynamic test procedures that are specified in ISO 6395:2008. The measurements were conducted at 70% of the maximum engine cooling fan speed.
- The dynamic operator sound pressure level measurements are performed according to the dynamic test procedures that are specified in ISO 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.

# 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
<b>CAB</b>			<b>SAFETY</b>		
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	✓	
Electric throttle control	✓		Front/rear camera		✓
ROPS/FOPS	✓		Warning beacon		✓
Heating/cooling cab system		✓	Hydraulic brakes	✓	
Defrost fans		✓	Secondary steering system		✓
Base cab	✓		Side view mirrors	✓	
Cab plus		✓	Walkways		✓
Low profile cab		✓	Grab rails	✓	
Cab storage	✓		<b>ELECTRICAL</b>		
Analog display screen	✓		Sealed alternator	✓	
Entertainment radio ready	✓		Reversing lights	✓	
Cup holder	✓		Breaker panel	✓	
Dome interior light	✓		900 CCA standard duty batteries	✓	
Coat hook	✓		1,400 CCA heavy duty batteries		✓
Rear window screen		✓	Electric starter	✓	
Front wipers	✓		Rear lights with LED lighting	✓	
Rear wipers		✓	Halogen lighting		✓
Lower front wipers		✓	<b>SERVICE AND MAINTENANCE</b>		
Digital blade slope meter		✓	Grouped location for engine oil and fuel filters	✓	
Product Link™	✓		Extended life coolant	✓	
<b>POWERTRAIN</b>			<b>GUARDS</b>		
Cat C4.4	✓		Fender		✓
Eco mode	✓		Transmission	✓	
On-demand fan	✓		Cover, under cab platform		✓
Reversing fan		✓	<b>VERSATILITY</b>		
No-spin differential	✓		Push block		✓
Standard starter	✓		Ripper		✓
43° C (109° F) standard capacity	✓		Scarifier		✓
<b>DRAWBAR CIRCLE MOLDBOARD</b>			Front blade		✓
Standard drawbar circle moldboard	✓		Towing hitch		✓
Circle drive slip clutch		✓			
Circle saver		✓			

Cat diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels up to:

- ✓ 20% biodiesel FAME (fatty acid methyl ester)\*
- ✓ 100% renewable diesel, HVO (hydrogenated vegetable oil) and GTL (gas-to-liquid) fuels

Refer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.

\* Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel.



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>.

## Engine

- The Cat® C4.4 engine meets U.S. EPA Tier 4 Final, EU Stage V, and Korea Tier 5 emission standards.
- Cat diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) or ULSD blended with the following lower-carbon intensity fuels up to:
  - ✓ 20% biodiesel FAME (fatty acid methyl ester)\*
  - ✓ 100% renewable diesel, HVO (hydrotreated vegetable oil) and GTL (gas-to-liquid) fuels

Refer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.

*\*Engines with no aftertreatment devices can use higher blends, up to 100% biodiesel.*

## Air Conditioning System

- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.7 kg (3.7 lb) of refrigerant which has a CO<sub>2</sub> equivalent of 2.413 metric tonnes (2.659 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 Performance

Machine Sound Power Level (ISO 6395:2008) – 103 dB(A)

Operator Sound Pressure Level (ISO 6396:2008) – 75 dB(A)

- The dynamic machine sound power level measurements are performed according to the dynamic test procedures that are specified in ISO 6395:2008. The measurements were conducted at 70% of the maximum engine cooling fan speed.
- The dynamic operator sound pressure level measurements are performed according to the dynamic test procedures that are specified in ISO 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.

## 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.
  - Reduced fuel consumption up to 5% with standard Eco mode
  - On-demand fan reduces fuel consumption and under-hood heat for longer component life
  - Hydraulic system makes the machine more precise and predictable for a consistent grade
  - Cut costs with extended maintenance cycles and reversing fan option
  - Improve jobsite efficiency with lower operating costs with Product Link™ and VisionLink® insights

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at [www.cat.com](http://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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AEXQ3334-03 (04-2024)  
Replaces AEXQ3334-02  
Build Number 01A  
(N Am, Europe,  
Korea, Colombia)

