



# 16 GC

## Motor Grader

# Technical Specifications

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

### Table of Contents

<b>Specifications</b> .....	<b>2</b>
Engine .....	2
Net Power .....	2
Powertrain .....	2
Hydraulic System .....	2
Hydraulics .....	3
Transmission Hydraulic System .....	3
Steering .....	3
Front Axle .....	3
Operating Specifications .....	4
Base Machine Weight .....	4
Typically Equipped Machine Weight .....	4
Major Component Weights .....	4
Service Refill Capacities .....	4
Tandems .....	4
Service Brakes .....	5
Parking Brake .....	5
Moldboard .....	5
Drawbar Circle Moldboard .....	5
Circle .....	5
Blades .....	5
Blade Range .....	5
Ripper .....	6
Electrical .....	6
Standards .....	6
Dimensions .....	7
Optional Tire Arrangements .....	7
<b>Standard and Optional Equipment</b> .....	<b>8</b>

# 16 GC Motor Grader Specifications

## Engine

Engine Model	Cat® C13	
Emissions	Equivalent to U.S. EPA Tier 3 and EU Stage IIIA	
Net Power		
ISO 9249/SAE J1349	210 kW	282 hp
EEC 80/1269 (Metric)	286 mhp	
Displacement	12.5 L	763 in <sup>3</sup>
Bore	130 mm	5.1 in
Stroke	157 mm	6.2 in
Engine RPM	2000 rpm	
Number of Cylinders	6	
Torque Rise – ISO 9249	46%	
Maximum Torque – ISO 9249	1738 N·m	1,282 lb-ft
Derating Altitude	3954 m	12,972 ft
Maximum – Fan Speed	1450 rpm	
Minimum – Fan Speed	550 rpm	
Standard Capacity	50° C	122° F
Biodiesel Capability <sup>(1)</sup>	Up to B20*	

- 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 2000 rpm, measured at the flywheel when engine is equipped with fan, air cleaner, muffler and alternator.
- Power as declared per ISO 14396: 267 kW (358 hp).

<sup>(1)</sup>Cat engines are compatible with diesel fuel blended with the following lower-carbon intensity fuels up to:

- ✓ 100% 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.

\*For use of blends higher than 20% biodiesel, consult your Cat dealer.

## Net Power

### Gear

#### Forward

1st	210 kW	282 hp
2nd	210 kW	282 hp
3rd	216 kW	289 hp
4th	224 kW	224 hp
5th	228 kW	306 hp
6th	232 kW	310 hp
7th	239 kW	320 hp
8th	249 kW	334 hp

#### Reverse

1st-6th	210 kW	282 hp
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## Powertrain

Forward/Reverse Gears	8 Forward/6 Reverse
Transmission	Countershaft Direct Drive Powershift
High Idle Speed	2150 rpm
Low Idle Speed	800 rpm
Air Cleaner	Dry

## Hydraulic System

Type	Closed – Center	
Type Circuit	Parallel	
Pump Type	Variable Piston	
Output	24 100 kpa	3,495 psi
System Flow	0-314 L/min	0-83 gal/min

## 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 1.6 kg (3.5 lb) of refrigerant which has a CO<sub>2</sub> equivalent of 2.288 metric tonnes (2.521 tons).

# 16 GC Motor Grader Specifications

## Hydraulics

Cylinders	Double Acting	
Steering		
Bore	80 mm	3.2 in
Rod Diameter	50 mm	2 in
Pin-Pin Closed Length	698.5 mm	27.5 in
Stroke	316 mm	12.4 in
Articulation		
Bore	100 mm	3.9 in
Rod Diameter	63 mm	2.5 in
Pin-Pin Closed Length	1004.4 mm	39.5 in
Stroke	409.25 mm	16.1 in
Blade Lift		
Bore	100 mm	3.9 in
Rod Diameter	65 mm	2.6 in
Pin- Trunnion Closed Length	822.5 mm	32.4 in
Stroke	1113.6 mm	43.8 in
Center Shift		
Bore	100 mm	3.9 in
Rod Diameter	65 mm	2.6 in
Pin-Pin Closed Length	955.3 mm	37.6 in
Stroke	479.6 mm	18.9 in
Blade Side Shift		
Bore	105 mm	4.1 in
Rod Diameter	65 mm	2.6 in
Pin-Trunnion Closed Length	1925.7 mm	75.8 in
Stroke	1531.9 mm	60.3 in
Blade Tip		
Bore	100 mm	3.9 in
Rod Diameter	50 mm	2 in
Pin-Pin Closed Length	711 mm	28 in
Stroke	355.5 mm	14 in
Wheel Lean		
Bore	100 mm	3.9 in
Rod Diameter	55 mm	2.2 in
Pin-Pin Closed Length	543.1 mm	21.4 in
Stroke	174.8 mm	6.9 in
Ripper		
Bore	130 mm	5.1 in
Rod Diameter	65 mm	2.6 in
Pin-Pin Closed Length	347.5 mm	13.7 in
Stroke	495 mm	19.5 in

## Transmission Hydraulic System

Type	Countershaft Direct Drive Powershift
Lube Oil Pressure	14 to 380 kPa
Pump Type	Gear
Clutch Supply	184 L/min (48.6 gal/min) at 2560 kPa

## Steering

Rated Metering Capacity	400 cc/rev
Front Steering Max Angle	47.5°
Frame Steering Angle Left or Right	22°
Minimum Turning Radius (Outside Front Tires)	8.7 m (28.5 ft)

## Front Axle

Lean Angle	18° Left and 17° Right
Oscillation	35° Total
Ground Clearance at Center	670 mm      26.4 in

# 16 GC Motor Grader Specifications

## Operating Specifications

Top speed forward	51.7 km/h	32.1 mph
Top speed reverse	40.8 km/h	25.4 mph
Steering Range	47.5° Left and Right	
Articulation Range	22° Left and Right	
Forward		
1st	4.5 km/h	2.8 mph
2nd	6.1 km/h	3.8 mph
3rd	8.9 km/h	5.5 mph
4th	12.3 km/h	7.6 mph
5th	19.0 km/h	11.8 mph
6th	25.8 km/h	16.0 mph
7th	35.5 km/h	22.1 mph
8th	51.7 km/h	32.1 mph
Reverse		
1st	3.6 km/h	2.2 mph
2nd	6.6 km/h	4.1 mph
3rd	9.7 km/h	6.0 mph
4th	15.0 km/h	9.3 mph
5th	28.0 km/h	17.4 mph
6th	40.8 km/h	25.4 mph

- Machine speed at 2,150 rpm with 23.5R25 radial tires (767 mm rolling radius), no slip.

## Base Machine Weight

Weight*	27 556 kg	60,751 lb
Front Axle	7487 kg	16,506 lb
Rear Axle	20 069 kg	44,245 lb

- \*Base operating weight on standard machine configuration is calculated with full fluids, operator, base cab, 4.9 m (16 ft) blade, Maxam tires.

## Typically Equipped Machine Weight\*

Weight*	31 809 kg	70,127 lb
Front Axle	8642 kg	19,052 lb
Rear Axle	23 167 kg	51,075 lb

- \*Typically equipped machine weight is calculated with full fluids, 4.9 m (16 ft) blade, push plate, ripper, bottom guard, tires and operator.

## Major Component Weights

Moldboard (with cutting edge)		
4898 mm × 787 mm × 25.1 mm (16 ft × 31 in × 1 in)	1423 kg	3,137 lb
5500 mm × 787 mm × 25.4 mm (18 ft × 31 in × 1 in)*	1957 kg	2,110 lb
Guards		
Transmission	136 kg	300 lb
Rear Fender	605 kg	1,334 lb
Push Plate	1501 kg	3,309 lb
Rear Ripper	1947 kg	4,292 lb

- \*Available in Indonesia only.

## Service Refill Capacities

Fuel Tank	432 L	114 gal
Circle Drive	10 L	2.6 gal
Engine Crankcase	36 L	9.5 gal
Cooling System	69 L	18.2 gal
Hydraulic System	56 L	14.8 gal
Transmission/Differential	117 L	30.9 gal
Tandem Housing (each)	125 L	33 gal
Front Spindle Housing (each)	0.9 L	0.24 gal

## Tandems

Oscillation Front Up	15°
Oscillation Rear Up	25°

# 16 GC Motor Grader Specifications

## Service Brakes

Type System	Dual Circuit Hydraulic	
Type Brake	Wet Brake Disc	
Number of Brakes	4	
Number of Brake Discs (each)	6	
Size (Outer Diameter)	398.7 mm	15.5 in
Size (Inner Diameter)	293 mm	11.5 in
Lining Area Per Brake	6517 cm <sup>2</sup>	1010 in <sup>2</sup>
Secondary Brakes	Dual Circuit Control System, Applies Two Service Brakes	

## Parking Brake

Type System	Hydraulic Actuated, Spring Release	
Type Brake	Multi-Disc	
Slope Holding Ability	25%	

## Moldboard

	Standard	Optional*
Blade Width	4.9 m (16 ft)	5.5 m (18 ft)
Blade Height	787 mm (31 in)	787 mm (31 in)
Arc Radius	413 mm (16.3 in)	413 mm (16.3 in)
Throat Clearance	126 mm (5 in)	126 mm (5 in)
End Bit Width	152 mm (6 in)	152 mm (6 in)

\*Available in Indonesia only.

## Drawbar Circle Moldboard

Range of Motion	Standard	
Lift Cylinders (2)		
Maximum Depth of Cut	470 mm	18.5 in
Maximum Lift Above Ground	400 mm	15.7 in
Circle Center Shift Cylinder		
Center Shift Right	560 mm	22 in
Center Shift Left	690 mm	27.2 in
Moldboard Side Shift Cylinder		
Side Shift Left	790 mm	31.1 in
Side Shift Right	740 mm	29.1 in
Blade Tip Cylinder		
Maximum Blade Tip Forward	40°	
Maximum Blade Tip Backward	5°	
Link Bar	5 Positions to adjust the drawbar circle moldboard range of motion	
Drawbar Shoes	6 with replaceable wear strips	

## Circle

Section	Rolled Ring Forging	
Number of Teeth	64	
Rotation	317°	

## Blades

Blade Pull Adv. Base GVW	18 062 kg	39,820 lb
Blade Down Force Adv. Base GVW	13 369 kg	29,473 lb
Blade Pull Adv. Typically Equipped GVW	20 926 kg	46,133 lb
Blade Down Force Adv. Typically Equipped GVW	15 488 kg	34,145 lb
Blade Pull Adv. Max GVW	23 855 kg	52,591 lb
Blade Down Force Adv. Max GVW	19 633 kg	43,283 lb

## Blade Range

Maximum Shoulder Reach Outside of Tires	4.9 m (16 ft)*	5.5 m (18 ft)**
Right	2415 mm (95 in)	2727 mm (107.4 in)
Left	2240 mm (88.2 in)	2552 mm (100.5 in)

\*An additional 305 mm (12 in) of reach can be achieved to the right by changing the side shift mounting bracket on the 4.9 m (16 ft) blade.

\*\*Available in Indonesia only. An additional 305 mm (12 in) of reach can be achieved to the right or left by changing the side shift mounting bracket on the 5.5 m (18 ft) blade.

# 16 GC Motor Grader Specifications

## Ripper

Ripping Depth Maximum	452 mm	17.8 in
Ripper Shank Holder	7	
Ripper Shank Holder Spacing	445-500 mm	17.5-19.7 in
Machine Length Increase, Beam Raised	1175 mm	46.3 in

## Electrical

Starting System Type	Direct Current
Standard Battery	
CCA at -18°	1400 amp
Volts	12V
Quantity	2
Standard Alternator	145 amps at 24V

## Standards

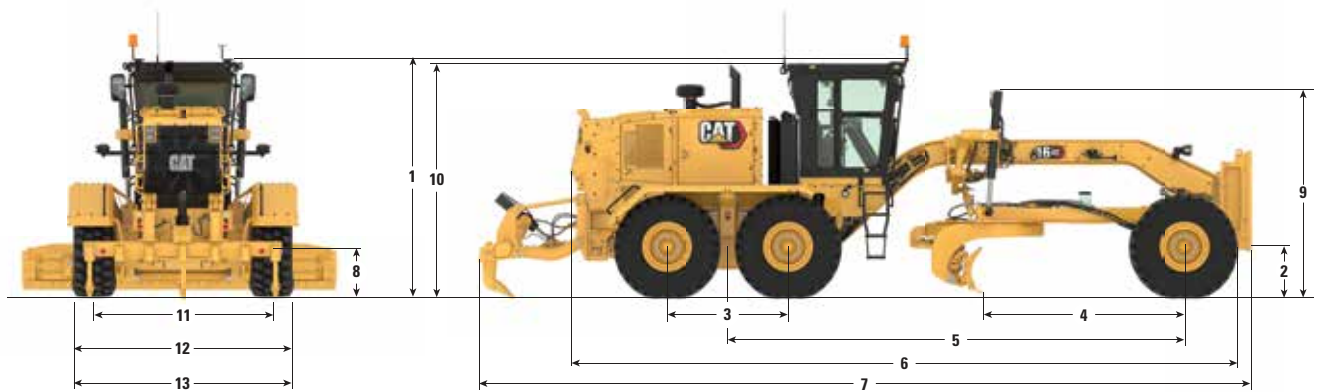
Rollover Protective Structure (ROPS)	ISO 3471:2008
	Maximum Mass: 37 500 kg (82,673 lb)
Falling Object Protective Structure (FOPS)	ISO 3449:2005 Level II
Brakes	ISO 3450:2011
Steering	ISO 5010:2019*
EMC	ISO13766:2018
Exterior Noise Level – ISO 6395:2008	109 dB(A)
Operator Noise Level – ISO 6396:2008	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.

\*If equipped with optional secondary steering

# 16 GC Motor Grader Specifications

## Dimensions



### 16 GC

<b>1</b>	Height – Top of Cab	3539 mm 139.3 in
<b>2</b>	Height – Front Axle Center	716 mm 28.2 in
<b>3</b>	Length – Between Tandem Axles	1841 mm 72.5 in
<b>4</b>	Length Front Axle to Moldboard	3066 mm 120.7 in
<b>5</b>	Length – Front Axle to Mid Tandem	6956 mm 273.9 in
<b>6</b>	Length – Front Tire to Rear of Machine	10 379 mm 408.6 in
<b>7</b>	Length – Push Plate to Ripper (lowered)	11 781 mm 463.8 in
<b>8</b>	Ground Clearance at Rear Axle	387 mm 15.2 in
<b>9</b>	Height to Top of Cylinders	3105 mm 122.2 in
<b>10</b>	Height to Exhaust Stack	3525 mm 138.8 in
<b>11</b>	Width – Tire Center Lines	2703 mm 106.4 in
<b>12</b>	Width – Outside Rear Tires	3319 mm 130.7 in
<b>13</b>	Width – Outside Front Tires	3319 mm 130.7 in

## Optional Tire Arrangements

Rim Size	Wheel Group	Tires
19.5 × 25	Multi-Piece	23.5R25 Radial Bridgestone L3 VJT
19.5 × 25	Multi-Piece	23.5R25 Triangle E4 TB598S
19.5 × 25	Multi-Piece	23.5-25 Bias Maxam L3 MS913

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

# 16 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>		
Mechanical Suspension Seat	✓		Parking brake	✓	
Air Suspension Seat		✓	Operator presence system	✓	
Adjustable Steering Wheel/Lever Controls	✓		Signaling/warning horn	✓	
Seat Belt	✓		Back-Up Alarm	✓	
Electric Throttle Control	✓		Rearview mirror	✓	
Rollover protective structure/falling objects protective structure (ROPS/FOPS)	✓		Rear camera		✓
Heating/Cooling Cab System	✓		Warning Beacon		✓
Defrost Fans		✓	Hydraulic brakes	✓	
Low Profile Cab	✓		Secondary steering system		✓
Cab Storage	✓		Side view mirrors	✓	
12V Power Ports	✓		Walkways	✓	
Cell Phone Holder	✓		Grab Rails	✓	
Information Display Screen	✓		<b>ELECTRICAL</b>		
Entertainment Radio Ready	✓		145A Brushed Alternator	✓	
Cup Holder	✓		Reversing Lights	✓	
Dome Interior Light	✓		Breaker Panel/Fuse Block	✓	
Coat Hook	✓		1400 CCA Standard Duty Batteries	✓	
Rear Window Screen		✓	Electric Starter	✓	
Front Wiper	✓		LED Lighting		✓
Lower Front Wipers	✓		<b>SERVICE AND MAINTENANCE</b>		
Rear Wiper		✓	Next generations filters for fuel and engine oil	✓	
Digital Blade Slope Meter		✓	Extended Life Coolant	✓	
Product Link™ Elite	✓		Fast fill fueling (492 lpm/130 gpm)		✓
MineStar™		✓	Underhood lighting		✓
<b>POWERTRAIN</b>			<b>GUARDS</b>		
Cat® C13 Engine	✓		Steering Cylinder Guards		✓
Eco mode	✓		Transmission Guard		✓
On-Demand Fan	✓		<b>VERSATILITY</b>		
Manual Locking Differential	✓		Push block		✓
50° C (122° F) Ambient Capacity	✓		Ripper		✓
<b>DRAWBAR CIRCLE MOLDBOARD</b>			Retrieval hitch		✓
Standard Drawbar Circle Moldboard	✓				
Circle Drive Slip Clutch	✓				
Remote pinion lube		✓			
4.9 m/16 ft moldboard	✓				
5.5 m/18 ft moldboard*		✓			

\*Available in Indonesia only



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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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