

140
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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140 Motor Grader Specifications

All data applies to all 140 configurations (Non-AWD, AWD, LVR, and JOY) unless otherwise noted.

Engine

Engine Model	Cat® C7.1	
Net Engine Power Range (Non-AWD)		
ISO 9249/SAE J1349	103-169 kW	138-227 hp
Net Engine Power Range (AWD)		
ISO 9249/SAE J1349	108-190 kW	145-255 hp
Bore	105 mm	4.1 in
Stroke	135 mm	5.3 in
Displacement	7.01 L	427.8 in^3
Torque Rise (Non-AWD)	26%	
Torque Rise (AWD)	23%	
Maximum Torque (Non-AWD)	1080 N•m	797 lbf-ft
Maximum Torque (AWD)	1183 N•m	873 lbf-ft
Derating Altitude (Non-AWD)	4500 m	14,764 ft
Derating Altitude (AWD)	3000 m	9,843 ft
Rated Speed	2,000 rpm	
Number of Cylinders	6	
Idle Speed		
High Idle Speed	2,150 rpm	
Low Idle Speed (1F-8F and 1R-6R)	800 rpm	
Low Idle Speed (Hibernate and Finish Gear)	750 rpm	
Maximum Altitude at Full Power		
Non-AWD	4500 m	14,764 ft
AWD	3000 m	9,843 ft

- Advertised power is tested per the specified standard in effect at the time of manufacture.
- See page 10 for Environmental Declarations and Sustainability information.
- Net power available at the flywheel when the engine is equipped with fan, air cleaner, aftertreatment, and alternator with engine speed at 2,000 rpm.
- Cat diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) and are compatible* with 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.

* While Caterpillar engines are compatible with these alternative fuels, some regions may not allow their use.

** Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

*** Engines with no aftertreatment devices are compatible with higher blends, up to 100% biodiesel (for use of blends higher than 20% biodiesel, consult your Cat dealer).

Powertrain

Forward/Reverse Gears	9 Forward/6 Reverse including finish gear
Transmission	Direct Drive Powershift, Countershift
Air Cleaner	Dry
Brakes	Type System
Service	Hydraulic
Parking	Spring Apply/Hydraulic Release
Secondary	Dual Circuit Hydraulic

Hydraulic System

Type (Implement/Steering/Brake)	Closed - Center
Circuit Type	Parallel Post Compensated
Pump Type	Variable Piston
Pump Output	24 129 kPa at 2,000 rpm

Operating Specifications

Top Speed Forward	48.3 km/h	30.0 mph
Top Speed Reverse	38.1 km/h	23.7 mph
Turning Radius, Outside Front Tires	7.5 m	295.3 in
Steering Range	50° Left and Right	
Articulation Angle	20° Left and Right	
Front Wheel Lean	18° Left and Right	
Total Oscillation	32°	
Forward		
Finish Gear (FG)	3.0 km/h	1.9 mph
1st	4.1 km/h	2.5 mph
2nd	5.6 km/h	3.5 mph
3rd	8.2 km/h	5.1 mph
4th	11.2 km/h	7.0 mph
5th	17.7 km/h	11.0 mph
6th	24.1 km/h	15.0 mph
7th	33.2 km/h	20.6 mph
8th	48.3 km/h	30.0 mph
Reverse		
1st	3.3 km/h	2.1 mph
2nd	6.1 km/h	3.8 mph
3rd	8.9 km/h	5.5 mph
4th	14.0 km/h	8.7 mph
5th	26.2 km/h	16.3 mph
6th	38.1 km/h	23.7 mph

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

All data applies to all 140 configurations (AWD, Non-AWD, LVR, and JOY) unless otherwise noted.

Power to the Ground – AWD

Power Type	ISO 9249 Net		Power to Ground*	
Finish Gear	108 kW	145 hp	77 kW	103 hp
1F	142 kW	190 hp	105 kW	140 hp
2F	154 kW	206 hp	113 kW	152 hp
3F	165 kW	221 hp	117 kW	157 hp
4F	174 kW	233 hp	117 kW	157 hp
5F	182 kW	245 hp	118 kW	159 hp
6F	189 kW	254 hp	117 kW	157 hp
7F	190 kW	255 hp	108 kW	145 hp
8F	190 kW	255 hp	95 kW	127 hp
ISO 14396 Gross	204 kW	274 hp	-	-
Max Torque	1184 N•m	873 lb-ft	-	-
Rated Speed	2,000 rpm			
Peak Torque	1,400 rpm			

Power to the Ground – Non-AWD

Power Type	ISO 9249 Net		Power to Ground*	
Finish Gear	103 kW	139 hp	76 kW	102 hp
1F	136 kW	182 hp	103 kW	139 hp
2F	141 kW	189 hp	108 kW	145 hp
3F	145 kW	195 hp	108 kW	145 hp
4F	153 kW	205 hp	110 kW	148 hp
5F	157 kW	210 hp	110 kW	147 hp
6F	162 kW	218 hp	108 kW	144 hp
7F	169 kW	226 hp	101 kW	136 hp
8F	169 kW	226 hp	81 kW	109 hp
ISO 14396 Gross	183 kW	245 hp	-	-
Max Torque	1081 N•m	797 lb-ft	-	-
Rated Speed	2,000 rpm			
Peak Torque	1,400 rpm			

• Calculated powers verified by independent testing at Nebraska Tractor Lab, Lincoln NE, August 19, 2024. Conditions include dry concrete track with average temperature 24° C (75° F).

*Ground speed matched (+/-50 rpm engine). Performance variable fan speed 90%.

140 Motor Grader Specifications

All data applies to all 140 configurations (Non-AWD, AWD, LVR, and JOY) unless otherwise noted.

Operating Weight – Tier 4/Stage V

Base Weights		
Weight, Base, Lever Configuration, Non-AWD	17 005 kg	37,490 lb
Front Axle	4703 kg	10,368 lbs
Rear Axle	12 302 kg	27,121 lbs
Weight, Base, Lever Configuration, AWD	17 995 kg	39,672 lb
Front Axle	5407	11,920 lb
Rear Axle	12 588 kg	27,752 lb
Weight, Base, Joystick Configuration, Non-AWD	17 171 kg	37,856 lb
Front Axle	4633 kg	10,214 lb
Rear Axle	12 538 kg	27,642 lb
Weight, Base, Joystick Configuration, AWD	18 099 kg	39,901 lb
Front Axle	5324 kg	11,737 lb
Rear Axle	12 775 kg	28,164 lb
Typically Equipped Weights		
Weight, Base, Lever Configuration, Non-AWD	19 027 kg	41,947 lb
Front Axle	5392 kg	11,887 lb
Rear Axle	13 635 kg	30,060 lb
Weight, Base, Lever Configuration, AWD	19 531 kg	43,058 lb
Front Axle	5546 kg	12,227 lb
Rear Axle	13 985 kg	30,832 lb
Weight, Base, Joystick Configuration, Non-AWD	19 197 kg	42,322 lb
Front Axle	5312 kg	11,711 lb
Rear Axle	13 885 kg	30,611 lb
Weight, Base, Joystick Configuration, AWD	19 629 kg	43,275 lb
Front Axle	5462 kg	12,042 lb
Rear Axle	14 167 kg	31,233 lb

- Typically equipped operating weight is calculated with full fuel tank, coolant, lubricants, operator, push block, transmission guard, rear ripper/scarifier, 14.0R24 tires on multi-piece rims, and other equipment.
- Base weight is calculated with full fuel tank, operator, 14.0R24 tires on multi-piece rims, and ROPS cab.

Operating Weight – Tier 3/Stage IIIA

Base Weights		
Weight, Base, Lever Configuration, Non-AWD	16 627 kg	36,656 lb
Front Axle	4530 kg	9,987 lb
Rear Axle	12 097 kg	26,669 lb
Weight, Base, Joystick Configuration, Non-AWD	16 999 kg	37,476 lb
Front Axle	4574 kg	10,084 lb
Rear Axle	12 425 kg	27,392 lb
Weight, Base, Joystick Configuration, AWD	17 885 kg	39,430 lb
Front Axle	5299 kg	11,682 lb
Rear Axle	12 586 kg	27,747 lb
Typically Equipped Weights		
Weight, Base, Lever Configuration, Non-AWD	18 648 kg	41,112 lb
Front Axle	5205 kg	11,475 lb
Rear Axle	13 443 kg	29,637 lb
Weight, Base, Joystick Configuration, Non-AWD	18 940 kg	41,756 lb
Front Axle	5282 kg	11,645 lb
Rear Axle	13 658 kg	30,111 lb
Weight, Base, Joystick Configuration, AWD	19 416 kg	42,805 lb
Front Axle	5437 kg	11,987 lb
Rear Axle	13 979 kg	30,818 lb

All data applies to all 140 configurations (Non-AWD, AWD, LVR, and JOY) unless otherwise noted.

Moldboard

Moldboard	12 ft Moldboard		14 ft Moldboard		14 ft Plus Moldboard	
Height (Cutting Edges + Moldboard)	556 mm	21.9 in	587 mm	23.1 in	621 mm	24.4 in
Width (Cutting Edges + Moldboard)	3658 mm	144.0 in	4267 mm	168.0 in	4267 mm	168.0 in
Thickness	22 mm	0.9 in	22 mm	0.9 in	25 mm	1.0 in
Arc Radius	413 mm	16.3 in	413 mm	16.3 in	413 mm	16.3 in
Throat Clearance, Non-HPC	119 mm	4.7 in	119 mm	4.7 in	85 mm	3.3 in
Cutting Edge						
Height	152 mm	6.0 in	203 mm	8.0 in	203 mm	8.0 in
Width	1829 mm	72.0 in	2133 mm	84.0 in	2133 mm	84.0 in
Thickness	16 mm	0.6 in	19 mm	0.7 in	19 mm	0.7 in
End Bit						
Height	452 mm	17.8 in	452 mm	17.8 in	452 mm	17.8 in
Width	152 mm	6.0 in	152 mm	6.0 in	152 mm	6.0 in
Thickness	16 mm	0.6 in	16 mm	0.6 in	16 mm	0.6 in

- 12 foot moldboard is standard on the 140.

Blade Range

	NON TOP ADJUST		TOP ADJUST		HIGH PERFORMANCE CIRCLE	
Circle centershift						
Right	773 mm	30.4 in	773 mm	30.4 in	773 mm	30.4 in
Left	823 mm	32.4 in	823 mm	32.4 in	823 mm	32.4 in
Moldboard side shift						
Right	966 mm	38.0 in	966 mm	38.0 in	966 mm	38.0 in
Left	809 mm	31.9 in	809 mm	31.9 in	809 mm	31.9 in
Maximum shoulder reach outside tires (12 ft moldboard) – through the outside surface of rear axle tires						
Right	2234 mm	88.0 in	2234 mm	88.0 in	2234 mm	88.0 in
Left	2095 mm	82.5 in	2095 mm	82.5 in	2095 mm	82.5 in
Maximum shoulder reach outside of tires (14 ft moldboard) – through the outside surface of rear axle tires						
Right	2539 mm	100.0 in	2539 mm	100.0 in	2539 mm	100.0 in
Left	2400 mm	94.5 in	2400 mm	94.5 in	2400 mm	94.5 in
Maximum blade position angle both sides	102°		102°		102°	
Maximum blade tip						
Forward	40°		40°		40°	
Rear	5°		5°		5°	
Maximum lift above ground	468 mm	18.4 in	450 mm	17.7 in	447 mm	17.6 in
Maximum depth of cut	675 mm	26.6 in	675 mm	26.6 in	678 mm	26.7 in

NOTE: Values are calculated using 14.0R24 tires.

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Drawbar

Non-HPC		
Height and Width	152.4 mm	6.0 in
Width	76.2 mm	3.0 in
Thickness	12.7 mm	0.5 in
Shoes	6 shoes with replaceable wear strips	
HPC		
Height and Width	152.4 mm	6.0 in
Width	76.2 mm	3.0 in
Thickness	12.7 mm	0.5 in
Shoes	None – sealed bearing	

Circle

Non-HPC		
Section	Rolled Ring Forging	
Outside Diameter	1530 mm	60.2 in
Number of Teeth	64	
Rotation with No Grade or Digital Blade Slope Meter	360°	
Rotation with Cat Grade-Cross Slope, 3D Ready and 3D	Right 70°	Left 70°
HPC		
Section	Welded Ring	
Outside Diameter	1530 mm	60.2 in
Number of Teeth	110	
Rotation with no Cat Grade and Digital Blade Slope Meter	360°	
Rotation with Cat Grade-Cross Slope, 3D Ready and 3D	Right 70°	Left 70°

Electrical

Starting System Type	Direct Electric
Extreme Duty Battery	
CCA at –18°	1125 amp
Volts	12V
Quantity	2
Standard Alternator	
Tier 3	115 amp at 24V
Tier 4/Stage V	150 amp at 24V

Service Refill Capacities

Standard Circle Drive	7 L	1.8 gal
High Performance Circle Drive	9.5 L	2.5 gal
Cooling System	54 L	14.3 gal
Diesel Exhaust Fluid (DEF) Tank*	17 L	4.5 gal
Engine Crankcase	20 L	5.3 gal
Fuel Tank	371 L	98.0 gal
Hydraulic System	123 L	32.5 gal
Non-AWD Housing (each)	70 L	18.5 gal
Transmission and Differential	60 L	15.9 gal

*Tier 4 Final/Stage V machines only

Rear Ripper

Ripping Depth Maximum	424 mm	16.7 in
Ripper Shank Holder	5	
Ripper Shank Holder Spacing		
Minimum	523.4 mm	20.6 in
Maximum	543.3 mm	21.4 in
Penetration Force		
Non-AWD	84.6 kN	62 lbf
AWD	84.6 kN	62 lbf
Pryout Force		
Non-AWD	104 kN	77 lbf
AWD	121.4 kN	90 lbf
Machine Length Increase, Beam Raised	649.2 mm	25.6 in

Scarifier

Mid-Straight Carriage		
Working Width	2310.4 mm	11.4 in
Scarifying Depth, Maximum	288.5 mm	18.4 in
Scarifier Shank Holders	19	
Scarifier Shank Holder Spacing, Minimum	111 mm	4.4 in
Scarifier Shank Holder Spacing, Maximum	213 mm	8.4 in
Mid, V-Shape Carriage		
Working Width	1392 mm	54.8 in
Scarifying Depth, Maximum	290.4 mm	11.4 in
Scarifier Shank Holders	13	
Scarifier Shank Holder Spacing, Minimum	116 mm	4.6 in
Scarifier Shank Holder Spacing, Maximum	116 mm	4.6 in

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Standards

Cab Rollover Protective Structure (ROPS)	ISO 3471:2008
Cab Fallover Protective Structure (FOPS)	ISO 3449:2005, Level II
Brakes	ISO 3450:2011
Steering	ISO 5010:2019*

*When equipped with secondary steering, which is optional on some models

Sound Standards

Sound	ISO 6395:2008 ISO 6396:2008
Spectator Sound Level	107 dB(A)
Operator Sound Level	69 dB(A)

- The dynamic spectator 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.

Air Conditioning System

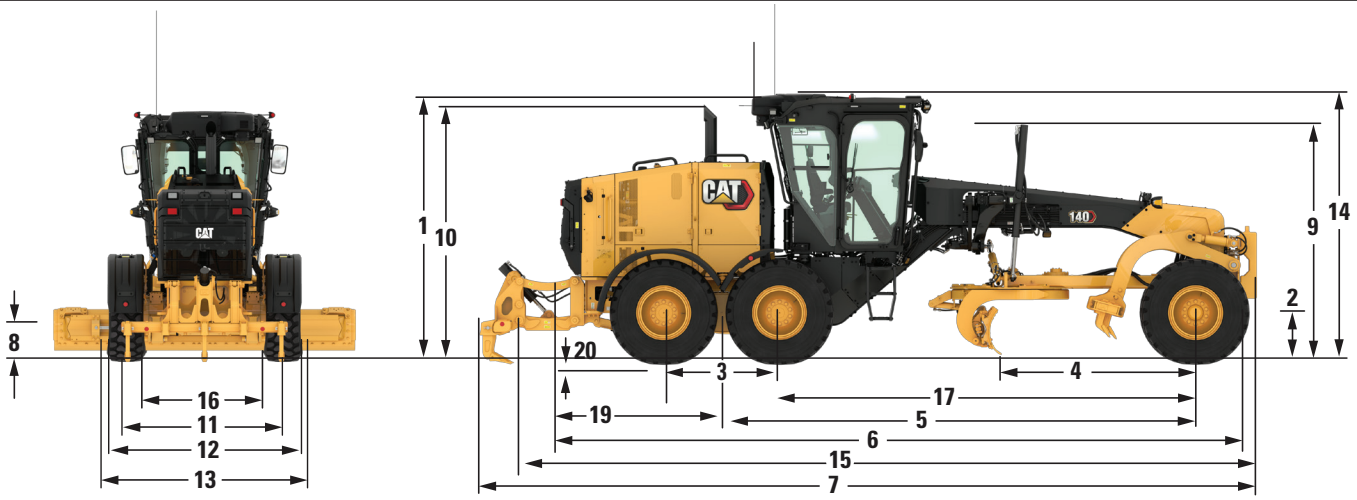
- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a or R1234yf. Refer to the machine labeling for identification of the gas.
  - If equipped with R134a (Global Warming Potential = 1430), the system contains 1.6 kg (3.5 lb) of refrigerant which has a CO_2 equivalent of 2.288 metric tonnes (2.521 tons).

140 Motor Grader Specifications

All data applies to all 140 configurations (Non-AWD, AWD, LVR, and JOY) unless otherwise noted.

Dimensions

All dimensions are approximate and may vary dependent on tire selection. Dimensions below are calculated with 14.0R24 tires.



1	Height – Top of Cab	3454 mm	136.0 in
2	Height		
	Front Axle Center	612 mm	24.1 in
3	Length – Between Non-AWD Axles	1498 mm	59.0 in
4	Length		
	Front Axle to Moldboard	2564 mm	100.9 in
5	Length		
	Front Axle to Rear Axle	6136 mm	241.6 in
6	Length		
	Front Tire to Rear of Machine (Non AWD)	8911 mm	350.8 in
7	Length – Push Plate to Ripper	10297 mm	405.4 in
8	Ground Clearance at Rear Axle	333 mm	13.1 in
9	Height to Top of Cylinders	3044 mm	119.8 in
10	Height to Exhaust Stack	3313 mm	130.4 in
11	Width – Rear Tire Center Lines	2087 mm	82.2 in
12	Width – Outside Rear Tires	2532 mm	99.7 in

13	Width – Outside Front Tires		
	LVR Configuration, Non-AWD	2521 mm	99.3 in
	Joystick Configuration, Non-AWD	2583 mm	101.7 in
	LVR Configuration, AWD	2667 mm	105.0 in
	Joystick Configuration, AWD	2667 mm	105.0 in
14	Maximum Height With Attachments		
	LVR Configuration	3476 mm	136.9 in
	Joystick Configuration	3450 mm	135.8 in
15	Length – Push Plate to Raised Ripper	9963 mm	392.2 in
16	Width – Inside Rear Tires	1642 mm	64.6 in
17	Length		
	Front Axle to Articulation Hitch	5292 mm	208.3 in
18	Length – Rear Axle to Articulation Hitch	844 mm	33.2 in
19	Length – Rear Axle to Rear of Machine	2099 mm	82.6 in
20	Height – Tire Deflection at Performance Weight	64.5 mm	2.5 in

Optional Tire Arrangements

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

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

Standard and Optional Equipment

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

	Standard	Optional
OPERATOR ENVIRONMENT		
Cab, base (JOY)	✓	
Cab, base (LVR)	✓	
Cab Plus (sliding side windows) (JOY)		✓
Cab Plus (sliding side windows) (LVR)		✓
Cab Premium (sliding side windows, door wiper/ washer) (LVR)		✓
Cab Premium (heated front glass, right-door glass, and right-side glass) (JOY)		✓
Cab storage	✓	
CB radio mount bracket with converter		✓
Cellphone holder	✓	
Cup holder	✓	
Differential lock, auto (JOY)	✓	
Differential lock, manual (LVR)	✓	
Heating, ventilation, and air conditioning (HVAC)	✓	
Lights, dome interior	✓	
Radio ready (JOY)	✓	
AM/FM, Bluetooth®, Weatherband		✓
Satellite radio		✓
DAB radio		✓
Push to Start	✓	
Rollover protective structure (ROPS)/falling objects protective structure (FOPS)	✓	
Screen, rear sun shade		✓
Seat belt	✓	
Seat belt w/indicator		✓
Seat, air suspension	✓	
Seat, premium heated and ventilated		✓
SAFETY		
Back-up alarm	✓	
Signaling/warning horn	✓	
Beacon mounts (2)		✓
Drawbar toolbox		✓
Grab rails	✓	
Hydraulic brakes	✓	
Hydraulic system – integrated dead engine implement lower	✓	
Hydraulic system – integrated work port pressure relief	✓	
License plate bracket	✓	
Lockout, hydraulic (JOY)	✓	
Lockout, manual (LVR)		✓
Operator Presence System	✓	
Parking brake	✓	
Mirror, rearview	✓	
Mirrors, side view (LVR)	✓	
Mirrors, side view (JOY)		✓
Mirrors, B-post		✓

	Standard	Optional
SAFETY (CONTINUED)		
Sound suppression, bottom		✓
Sound suppression, engine		✓
Steering, secondary	✓	
POWERTRAIN		
Cat® C7.1 engine	✓	
Eco mode	✓	
All-wheel drive (AWD)		✓
Cold weather package		✓
Cold weather package plus		✓
Ecology drain	✓	
Engine idle shutdown	✓	
High-speed engine oil drain		✓
Reversing fan		✓
Transmission with auto shift		✓
Transmission, 9-speed	✓	
DRAWBAR CIRCLE MOLDBOARD		
Bottom adjust circle (LVR)	✓	
Top adjust circle (JOY)	✓	
High Performance Circle with circle saver		✓
Circle drive slip clutch	✓	
Circle saver, top adjust and bottom adjust		✓
Blade lift accumulators		✓
Moldboard, 12 foot	✓	
Moldboard, 14 foot		✓
Moldboard cutting edges		✓
Moldboard end bits		✓
Moldboard grader bits		✓
ELECTRICAL		
1400 CCA battery (LVR/JOY)		✓
1125 CCA battery (JOY)	✓	
150A Alternator	✓	
200A Alternator (LVR/JOY)		✓
Fold down rear lights and turn signals		✓
LED lights – rear lights	✓	
LED lights – snow wing		✓
LED working lights basic – mid-toe and heel lights		✓
LED working lights plus – mid-toe, heel, ripper, and cab roading lights		✓
Low light or high light bars		✓
Reversing lights	✓	

(Continued on next page)

140 Standard and Optional Equipment

Standard and Optional Equipment *(continued)*

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

	Standard	Optional
SERVICE AND MAINTENANCE		
Engine service light	✓	
Extended life coolant	✓	
Ground-level diesel exhaust fluid (DEF) and fuel fill (Tier 4 Final, Stage V only)	✓	
Grouped location for engine oil and fuel filters	✓	
Next generation fluid filters	✓	
Service doors, barrel-hinged	✓	
Service doors, lower panel toolless removal	✓	
GUARDS		
Cover, under cab platform		✓
Fenders		✓
Steering cylinder guards (AWD only)		✓
Transmission		✓
TIRES		
14.0R24		✓
17.5-25		✓
17.5R25		✓
550/65R25		✓
ATTACHMENTS		
Angling plow		✓
Brooms		✓
Counterweight		✓
Front blade		✓
Lift groups		✓
Mid-machine scarifier (MMS)		✓
Plows		✓
One-way plow		✓
Push block		✓
Rear ripper/scarifier		✓
Snow wing		✓
Straight plow		✓
Tow hitch		✓
Trip edge plow		✓
U-V plow		✓
V-Plow		✓

	Standard	Optional
TECHNOLOGY		
Digital blade slope meter (LVR)		✓
ARO (LVR)		✓
Cross Slope Assist (2D) (LVR)		✓
Cross Slope Assist: E-Fence (2D) (JOY)	✓	
Cat Grade 3D Mastless		✓
Cat Grade 3D Ready w/Mastless (JOY)		✓
Front Vision		✓
Rear Vision		✓
RTK corrections radios for Cat Grade w/3D Mastless		✓
Security System Passcode	✓	
Security System Bluetooth Key Fob		✓
Stable Blade		✓
Surround Vision (360°)		✓
Surround Vision (360°) w/People Detection		✓
Tire Pressure Monitoring System (TPMS)		✓
VisionLink™		✓
Application Segmentation and Efficiency Coach (JOY)		✓
Auto articulation (JOY)	✓	

140 Environmental Declaration

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 C7.1 engine is available in configurations that meet U.S. EPA Tier 4 Final, EU Stage V emission standards, and Japan 2014 emission standards.
- The Cat C7.1 engine is available in configurations that meet Brazil MAR-1 emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA.
- Cat diesel engines are required to use ULSD (ultra-low sulfur diesel fuel with 15 ppm of sulfur or less) and are compatible* with 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.

* While Caterpillar engines are compatible with these alternative fuels, some regions may not allow their use.

** Tailpipe greenhouse gas emissions from lower-carbon intensity fuels are essentially the same as traditional fuels.

*** Engines with no aftertreatment devices are compatible with higher blends, up to 100% biodiesel (for use of blends higher than 20% biodiesel, consult your Cat dealer).

Air Conditioning System

- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a or R1234yf. Refer to the machine labeling 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_2 equivalent of 2.71 metric tonnes (2.674 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

Spectator Sound Level – (ISO 6395:2008) 107 dB(A)

Operator Sound Level – (ISO 6396:2008) 69 dB(A)

- The dynamic spectator 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 contribute to fuel savings and/or carbon reduction. Features may vary. Consult your Cat dealer for details.
  - – Eco mode minimizes fuel consumption for light application.
  - – Engine Idle Shutdown Timer reduces fuel burn, greenhouse gas emissions and unnecessary idle time by shutting down the machine after a preset idling period.
  - – Cat Grade helps reduce fuel burn and greenhouse gas emissions by enabling you to achieve grade faster and more accurately by automating blade actions.
  - – Cut maintenance costs with extended service intervals next generation filters.
  - – Improve jobsite efficiency with lower operating costs with VisionLink™ insights.

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	81.95%
Iron	11.90%
Nonferrous Metal	1.45%
Mixed Metal	0.04%
Mixed Metal and Nonmetal	2.47%
Plastic	0.51%
Rubber	0.07%
Mixed Nonmetallic	0.44%
Fluid	0.28%
Other	0.56%
Uncategorized	0.33%
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 – 98%



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For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at **www.cat.com.**

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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