



# 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 JS) unless otherwise noted.

Engine		
Engine Model	Cat® C7.1	
Net Engine Power Range (Tandem)		
ISO 9249/SAE J1349	94-174 Kw	126-233 hp
Net Engine Power Range (AWD)		
ISO 9249/SAE J1349	98-194 Kw	131-260 hp
Bore	105 mm	4.1 in
Stroke	135 mm	5.3 in
Displacement	7.01 L	1.9 gal
Torque Rise (Tandem)	29%	
Torque Rise (AWD)	28%	
Maximum Torque (Tandem)	1070 N•m	789.2 lbf-ft
Maximum Torque (AWD)	1159 N•m	854.9 lbf-ft
Derating Altitude (Tandem)	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 7 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 11 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 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.

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

Powertrain	
Forward/Reverse Gears	9 Forward/6 Reverse including finish gear
Transmission	Direct Drive Powershift
High Idle Speed	2,150 rpm
Low Idle Speed	800 rpm
Air Cleaner	Dry
Brakes	
Service	Dual Circuit Hydraulic
Service, Surface Area – Gross area per machine	23,000 cm <sup>2</sup>
Service, Surface Area – Net Area (accounting for grooves)	16,370 cm <sup>2</sup>
Parking	Spring Apply Hydraulic Release
Secondary	Dual Circuit Hydraulic

Hydraulic System		
Type (Implement/Steering/Brake)	Closed – Center	
Type (AWD)	Closed – Center	
Circuit Type	Parallel	
Pump Type	Variable Piston	
Pump Output	24,150 kPa at 2,000 rpm	3,503 psi at 2,000 rpm
System Flow for Implements, Steering, and Brake Pump		
74cc	0-148 L/min	0-39.09 gal/min
100cc (if equipped with reversing fan)	0-200 L/min	0-52.83 gal/min
Maximum System Pressure	25500 kPa	3698 psi
Reservoir Tank Capacity	60 L	15.85 gal
Standby Pressure	5000-6000 kPa	725-870 psi

\*Pump output measured at 2,000 rpm rated speed

# 140 Motor Grader Specifications

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## Operating Specifications

Top speed forward	48.3 km/h	30.1 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°	
Total Oscillation*	32°	
Forward		
Finish Gear (FG)	3.0 km/h	1.9 mph
1st	4.1 km/h	2.6 mph
2nd	5.6 km/h	3.5 mph
3rd	8.2 km/h	5.1 mph
4th	11.3 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	30.1 mph
Reverse		
1st	3.3 km/h	2.0 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

## Operating Weight – U.S. EPA Tier 3/Stage IIIA Equivalent

Weight, Typically Equipped, Lever Configuration, Tandem (Non-AWD)	18 748 kg	41,332 lb
Front Axle:	5238 kg	11,548 lb
Rear Axle:	13 510 kg	29,785 lb
Weight, Typically Equipped, Joystick Configuration, Tandem (Non-AWD)	19 040 kg	41,976 lb
Front Axle:	5315 kg	11,718 lb
Rear Axle:	13 725 kg	30,258 lb
Weight, Typically Equipped, Joystick Configuration (AWD)	19 516 kg	43,025 lb
Front Axle:	5470 kg	12,059 lb
Rear Axle:	14 046 kg	30,966 lb

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

## Power to the Ground

Next Gen 140 Motor Grader constant net power is a true constant net. No matter the ambient condition or load, power to the ground is constant for a given engine speed and gear.

	Non-AWD				AWD			
	ISO:9249 Net		Power to the Ground*		ISO:9249 Net		Power to the Ground*	
Finish Gear	94 kW	126 hp	67 kW	90 hp	98 kW	131 hp	68 kW	91 hp
1F	126 kW	169 hp	95 kW	127 hp	132 kW	177 hp	95 kW	127 hp
2F	131 kW	176 hp	98 kW	131 hp	144 kW	193 hp	104 kW	139 hp
3F	136 kW	182 hp	99 kW	133 hp	155 kW	208 hp	108 kW	145 hp
4F	143 kW	192 hp	101 kW	135 hp	164 kW	220 hp	108 kW	145 hp
5F	147 kW	197 hp	101 kW	135 hp	173 kW	232 hp	110 kW	148 hp
6F	153 kW	205 hp	98 kW	131 hp	179 kW	240 hp	108 kW	145 hp
7F	159 kW	213 hp	92 kW	123 hp	188 kW	252 hp	106 kW	142 hp
8F	167 kW	224 hp	80 kW	107 hp	186 kW	249 hp	88 kW	118 hp

\*Performance variable fan speed 90%.

# 140 Motor Grader Specifications

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

Electrical	
Starting System Type	Direct Electric
Heavy Duty Battery	
CCA at -18°	900 amp
Volts	12V
Quantity	2
Extreme Duty Battery (Standard Weather)	
CCA at -18°	1,125 amp
Volts	12V
Quantity	2
Extreme Duty Battery (Cold Weather Plus)	
CCA at -18°	1,400 amp
Volts	12V
Quantity	2
Basic Alternator	115 amps at 24V
Maximum Alternator	150 amps at 24V
Heavy Duty Alternator	200 amps at 24V

Service Refill Capacities		
Standard Circle Drive	7 L	1.8 gal
Optional High Performance Circle	9.5 L	2.5 gal
Cooling System	43 L	11.4 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	60 L	15.9 gal
Tandem Housing (each)	70 L	18.5 gal
Transmission and Differential	68 L	18.0 gal

Moldboard							
Moldboard (Size)	12 ft Moldboard		14 ft Moldboard		14 ft Plus Moldboard		
Height	609.5 mm	24.0 in	609.5 mm	2.0 ft	686 mm	27.0 in	
Width	3.7 m	12.1 ft	4.3 m	14.1 ft	4.3 m	14.1 ft	
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	125 mm	4.9 in	117 mm	4.6 in	83 mm	3.3 in	
Cutting Edge							
Height	152.4 mm	6.0 in	203.2 mm	8.0 in	203.2 mm	8.0 in	
Width	1.8 m	5.9 ft	2.1 m	6.9 ft	2.1 m	6.9 ft	
Thickness	15.9 mm	0.6 in	19 mm	0.7 in	19 mm	0.7 in	
Height (Cutting Edges with Moldboard)	535.3 mm	21.1 in	563 mm	22.2 in	563 mm	22.2 in	
Width (Cutting Edges with Moldboard)	3.7 m	12.1 ft	4.3 m	14.1 ft	4.3 m	14.1 ft	
End Bit							
Height	449.2 mm	17.7 in	449.2 mm	17.7 in	511.2 mm	20.1 in	
Width	152.4 mm	6.0 in	152.4 mm	6.0 in	235 mm	9.3 in	
Thickness	15.9 mm	0.6 in	15.9 mm	0.6 in	12.5 mm	0.5 in	
Height (Cutting edges with Moldboard)	553.6 mm	21.8 in	553.6 mm	21.8 in	577.2 mm	22.7 in	
Width (Cutting edges with Moldboard)	3.7 m	12.1 ft	3.7 m	12.1 ft	4.3 m	14.1 ft	

# 140 Motor Grader Specifications

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

## Drawbar and Circle

Range of Motion	<b>Standard</b>
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

## Standard Circle and Drawbar

Circle		
Section	Rolled Ring Forging	
Outside Diameter	1530 mm	60.2 in
Number of Teeth	64	
Rotation	360° when equipped with Cat Grade	
Drawbar		
Height	152.4 mm	6.0 in
Width	76.2 mm	3.0 in
Thickness	12.7 mm	0.5 in
Shoes	6 - with replaceable wear strips	
Bearing	N/A	

## High Performance Circle and Drawbar

Circle		
Section	Welded Ring	
Outside Diameter	1202 mm	47.3 in
Number of Teeth	110	
Rotation	Right 70°	Left 70°
Drawbar		
Height	152.4 mm	6.0 in
Width	76.2 mm	3.0 in
Thickness	12.7 mm	0.5 in
Shoes	N/A	
Bearing	320 Hex Bearing	

# 140 Motor Grader Specifications

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

## BLADE RANGE (NON-AWD)

	STANDARD		TOP ADJUST		HIGH PERFORMANCE CIRCLE	
<b>Circle centershift with 14 ft moldboard</b>						
Left	724 mm	28.5 in	724 mm	28.5 in	724 mm	28.5 in
Right	740 mm	29.1 in	740 mm	29.1 in	740 mm	29.1 in
<b>Moldboard side shift with 17.5/R25 MX12 tires</b>						
Left	821 mm	32.3 in	958 mm	37.7 in	958 mm	37.7 in
Right	947 mm	37.3 in	815 mm	32.1 in	815 mm	32.1 in
<b>Maximum shoulder reach outside of tires (12 ft moldboard)</b>						
Left	1830 mm	72.0 in	1973 mm	77.7 in	1973 mm	77.7 in
Right	1948 mm	76.7 in	1797 mm	70.7 in	1797 mm	70.7 in
<b>Maximum shoulder reach outside of tires (14 ft moldboard)</b>						
Right	2496 mm	98.3 in	2632 mm	103.6 in	2632 mm	103.6 in
Left	2612 mm	102.8 in	2482 mm	97.7 in	2482 mm	97.7 in
<b>Maximum blade position angle (both sides)</b>						
104° (L) / 101.7° (R)						
<b>Maximum lift above ground</b>						
	447 mm	17.6 in	436 mm	17.2 in	436 mm	17.2 in
<b>Maximum depth of cut</b>						
	640 mm	25.2 in	640 mm	25.2 in	640 mm	25.2 in
<b>Maximum blade tip</b>						
Forward	50°		50°		50°	
Rear	5°		5°		5°	

## BLADE RANGE (AWD)

	STANDARD		TOP ADJUST		HIGH PERFORMANCE CIRCLE	
<b>Circle centershift with 14 ft moldboard</b>						
Left	724 mm	28.5 in	724 mm	28.5 in	724 mm	28.5 in
Right	740 mm	29.1 in	740 mm	29.1 in	740 mm	29.1 in
<b>Moldboard side shift with 17.5/R25 MX12 tires</b>						
Left	821 mm	32.3 in	958 mm	37.7 in	958 mm	37.7 in
Right	947 mm	37.3 in	815 mm	32.1 in	815 mm	32.1 in
<b>Maximum shoulder reach outside of tires (12 ft moldboard)</b>						
Left	1759 mm	69.3 in	1902 mm	74.9 in	1902 mm	74.9 in
Right	1877 mm	73.9 in	1726 mm	68.0 in	1726 mm	68.0 in
<b>Maximum shoulder reach outside of tires (14 ft moldboard)</b>						
Right	2425 mm	95.5 in	2561 mm	100.8 in	2561 mm	100.8 in
Left	2541 mm	100.0 in	2411 mm	94.9 in	2411 mm	94.9 in
<b>Maximum blade position angle (both sides)</b>						
104° (L) / 101.7° (R)						
<b>Maximum lift above ground</b>						
	447 mm	17.6 in	436 mm	17.2 in	436 mm	17.2 in
<b>Maximum depth of cut</b>						
	640 mm	25.2 in	640 mm	25.2 in	640 mm	25.2 in
<b>Maximum blade tip</b>						
Forward	50°		50°		50°	
Rear	5°		5°		5°	

# 140 Motor Grader Specifications

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

Standards	
Cab Rollover Protective Structure (ROPS)	ISO 3471:2008
Cab Fallover Protective Structure (FOPS)	ISO 3449:2005, Level II
Brakes	ISO 3450:2011; AIS-143:2018
Steering	ISO 5010:2019*

Sound Standards	
Sound	ISO 6395:2008 ISO 6396:2008
Spectator Sound Level	105 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 machine was equipped with sound suppression system.
- 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. The machine was equipped with sound suppression system.

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 <sub>2</sub> equivalent of 2.288 metric tonnes (2.521 tons).	

Rear Ripper/Scarifer		
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
Scarifier Depth Maximum	264 mm	10.4 in
Scarifier Shank Holders	9	
Scarifier Shank Spacing		
Minimum	255.7 mm	10.1 in
Maximum	277.7 mm	10.9 in
Penetration Force		
Non-AWD	84.6 kN	19018.8 lbf
AWD	84.6 kN	19018.8 lbf
Pryout Force		
Non-AWD	104 kN	23380. lbf
AWD	121.4 kN	27291.8 lbf
Machine Length Increase, Beam Raised	649.2 mm	25.6 in

Scarifier		
Front, V-Shape Carriage		
Working Width	1205 mm	47.4 in
Scarifying Depth, Maximum	467 mm	18.4 in
Scarifier Shank Holders	5 / 11	
Scarifier Shank Holder Spacing	116 mm	4.6 in
Mid, V-Shape Carriage		
Working Width	1781 mm	70.1 in
Scarifying Depth, Maximum	292 mm	11.5 in
Scarifier Shank Holders	13	
Scarifier Shank Holder Spacing	116 mm	4.6 in
Mid, Straight Carriage		
Working Width	2486 mm	97.9 in
Scarifying Depth, Maximum	283.8 mm	11.2 in
Scarifier Shank Holders	19	
Scarifier Shank Holder Spacing	114.3 mm	4.5 in

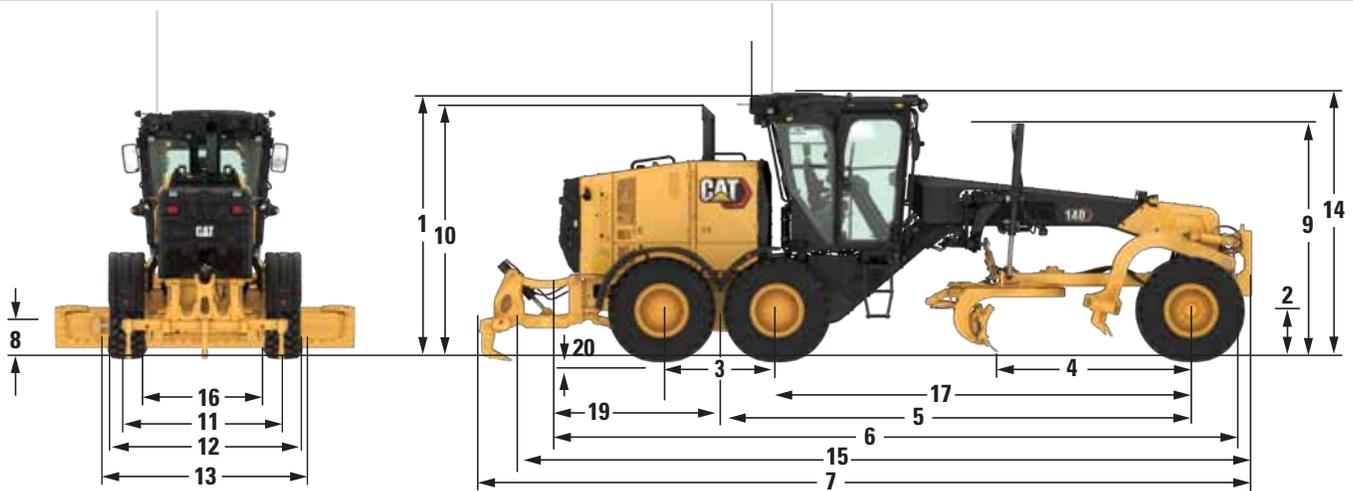
\* When equipped with optional secondary steering

# 140 Motor Grader Specifications

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

## Dimensions

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



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

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

# 140 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>OPERATOR ENVIRONMENT</b>			<b>SAFETY (CONTINUED)</b>		
Seat, vinyl	✓		Tandem toolbox	✓	
Seat belt	✓		Tandem walkways	✓	
Seat, air suspension		✓	Drawbar toolbox		✓
Seat, mechanical suspension		✓	Warning beacon mounts		✓
Seat, premium heated and ventilated		✓	Integrated hazard lights		✓
Wipers, front	✓		Sound suppression		✓
Wipers, lower front		✓	Cat® Detect – rear people detection		✓
Wipers, rear		✓	Cameras, 360° view		✓
Screen, rear sun shade	✓		<b>POWERTRAIN</b>		
Screen, rear window		✓	Cat C7.1	✓	
Cab, base	✓		Eco mode	✓	
Cab, plus		✓	Reversing fan		✓
Differential lock, manual	✓		43° C (109° F) standard capacity	✓	
Electric throttle control	✓		Transmission with autoshift		✓
Information display screen	✓		High-speed engine oil drain		✓
Cellphone holder	✓		Ecology drain	✓	
Coat hook	✓		Cold weather package		✓
Cup holder	✓		Cold weather package plus		✓
Cab storage	✓		Engine idle shutdown	✓	
Mirrors, B-pillar	✓		Shifter with upshift/downshift rocker	✓	
Push to start	✓		All-Wheel Drive (AWD)		✓
Lights, dome interior	✓		<b>DRAWBAR CIRCLE MOLDBOARD</b>		
Rollover protective structure (ROPS)/falling objects protective structure (FOPS)	✓		Drawbar, circle, moldboard – Bottom Adjust	✓	
Heaters, auxiliary	✓		Drawbar, circle, moldboard – Top Adjust		✓
Fans, defrost		✓	Drawbar, circle, moldboard – High Performance Circle		✓
Heating/cooling cab system	✓		Circle drive slip clutch		✓
Radio ready		✓	Circle saver		✓
AM/FM, Bluetooth®, Weatherband		✓	Blade lift accumulators		✓
CB radio with converter		✓	12-foot moldboard	✓	
Satellite radio		✓	14-foot moldboard		✓
<b>SAFETY</b>			<b>ELECTRICAL</b>		
Back-up alarm	✓		Sealed alternator	✓	
Grab rails	✓		145A brushed alternator	✓	
Hydraulic brakes	✓		Reversing lights	✓	
Hydraulic system – integrated dead engine implement lower	✓		Breaker panel	✓	
Hydraulic system – integrated work port pressure relief	✓		900 CCA standard duty batteries	✓	
License plate bracket		✓	1,125 CCA heavy duty batteries		✓
Manual lock out		✓	Rear lights with LED lighting	✓	
Operator Presence System (N Am)	✓		LED lights	✓	
Operator Presence System		✓	Low light and high light bars	✓	
Parking brake	✓		Snow wing LED lights		✓
Rearview camera		✓	Drop down rear lights and turn signals	✓	
Rearview mirror	✓		<b>SERVICE AND MAINTENANCE</b>		
Secondary steering system		✓	Ground-level DEF and fuel fill	✓	
Side view mirrors	✓		Grouped location for engine oil and fuel filters	✓	
Signaling warning horn	✓		Extended life coolant	✓	
			Next generation fluid filters	✓	
			Engine service light		✓

# 140 Standard and Optional Equipment (Continued)

## Standard and Optional Equipment (continued)

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

	Standard	Optional		Standard	Optional
<b>GUARDS</b>			<b>TECHNOLOGY</b>		
Fender		✓	Attachment Ready Option (ARO)		✓
Transmission	✓		Cat® Grade 3D		✓
Cover, under cab platform		✓	Cross Slope Assist		✓
Steering Cylinder Guards (AWD only)		✓	RTK corrections radios for Cat Grade with 3D mastless		✓
<b>TIRES</b>			Stable Blade		✓
14-24		✓	VisionLink™		✓
17.5-25		✓	Digital blade slope meter		✓
14.0R24		✓			
17.5R25		✓			
550/65R25		✓			
<b>ATTACHMENTS</b>					
Lift Groups		✓			
Counterweight		✓			
Push block		✓			
Mid-Machine Scarifier (MMS)		✓			
Rear Ripper/Scarifier		✓			
Moldboards		✓			
Front Blade		✓			
Snow Wings		✓			
V-Plow		✓			
Straight Plow		✓			
Brooms		✓			
One-way plow		✓			
Angling plow		✓			
U-V plow		✓			
Trip edge plow		✓			
Tow hitch		✓			
Grader Bits on 14-foot moldboard		✓			

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 available in configurations that meet Brazil MAR-1 emission standards, equivalent to U.S. EPA Tier 3 and EU Stage IIIA.
  - Cat engines emitting equivalent to U.S. EPA Tier 2, or equivalent to U.S. EPA Tier 3 and EU Stage IIIA, 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.

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

\*\* 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<sub>2</sub> 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) 105 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 machine was equipped with a sound suppression system.
- 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. The machine was equipped with sound suppression system.

## 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 and 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%



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).

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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