

# FM538 GF/FM538 LL

FOREST MACHINE



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Engine Model  
Net Power – ISO 9249  
Engine Power – ISO 14396

Cat® C7.1  
129 kW (172 hp)  
129 kW (174 hp)



# FM538 GF/ FM538 LL

## FOREST MACHINE

The Cat® FM538 is the best choice in its size class for today's loggers. With its high-visibility forestry cab and factory logging configurations to meet your needs, the FM538 can make your work in the woods more productive and profitable.



**GENERAL FORESTRY**



**LOG LOADER**

### DESIGNED FOR COMFORT AND EASE OF OPERATION

Available in a choice of rear or side entry, the Certified Forestry Rollover Protective Structure (ROPS) cab is sound-suppressed, sealed, and has an exceptional, unobstructed view of the task at hand.

### BOOSTS PRODUCTION

Moves heavy logs confidently with greater swing torque. Heavy lift mode increases pressure for an additional boost for bigger timber until the task is done. More travel speed and a taller undercarriage get you up, down, and over stumps faster.

### SAVES TIME AND MONEY

Experience increased uptime and reduced costs with longer-life fuel and hydraulic oil filters. Cat fuel filters have double the life of the previous filters, and the hydraulic oil return filter provides longer service life.

# LATEST FEATURES



## Machine Setup Simplification

- At the touch of fingertips and navigating user-friendly icons, the latest operator oriented User Interface (UI) maximizes uptime and gets crews to work without delay. From re-ordering work tool lists to creating new work tool combinations as needed, operators can quickly set up machines and easily access information.

## Foot Pedal Swing Control Kit

- The FM538 offers powerful, reliable performance optimized for challenging forestry tasks, and now, operators can enhance productivity and ease of operation with the optional Foot Pedal Swing Control Kit. This attachment integrates seamlessly with Caterpillar customizable joystick pattern software, enabling operators to personalize controls based on their preferences or job requirements. With the kit's two auxiliary pedals, operators can control the upper rotation of the machine using their feet, providing knuckleboom loader style of operation. The Foot Pedal Swing Control Kit is ideal for those looking to maximize control and efficiency in demanding forestry environments.

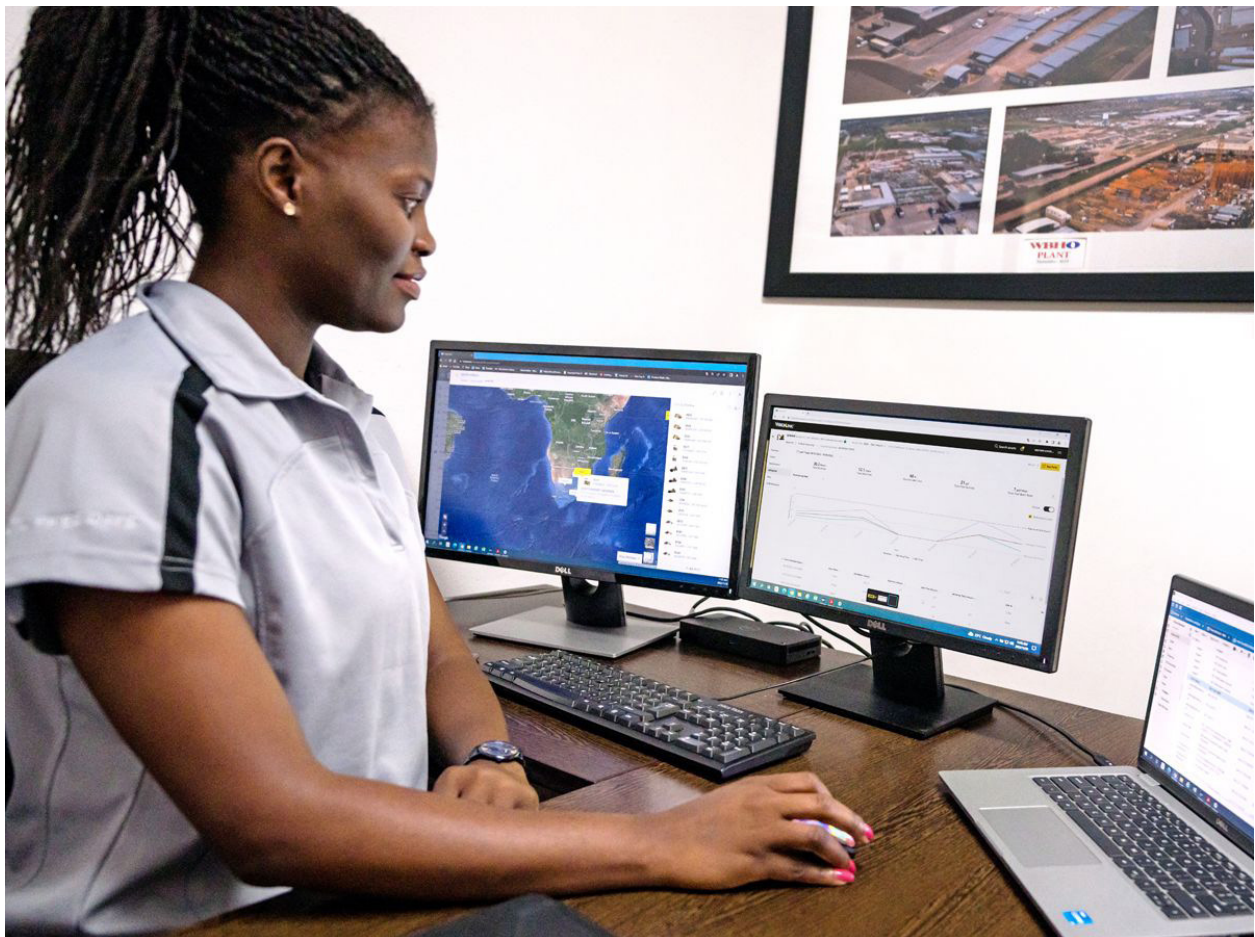
*Not all features are available in all regions. Please check with your local Cat dealer for specific offering availability in your area.  
Build Number: 07H*



# TAKE THE GUESSWORK OUT OF MANAGING YOUR EQUIPMENT

- The latest operator oriented User Interface (UI) has been designed to maximize uptime by allowing operators to easily re-order work tool lists and quickly create new work tool combinations. It also eliminates the need to measure up again when changing Cat® work tool attachments and makes it manageable for a single person to check and adjust for bucket wear.
- VisionLink® provides actionable data insights for all assets – regardless of fleet size or equipment manufacturer.\* Review equipment data from your desktop or mobile device to maximize uptime and optimize assets. Dashboards provide information such as hours, miles, location, idle time, and fuel utilization. Make informed decisions that lower costs, simplify maintenance, and improve safety and security on your jobsite.
- Cat® Inspect is a mobile application that allows you to easily perform digital preventative maintenance (PM) checks, inspections, and daily walkarounds. Inspections can easily be integrated with other Cat data systems like VisionLink so you can keep a close eye on your fleet.
- Remote Troubleshoot is a mobile application that allows your Cat dealer to perform diagnostic testing on your connected machine remotely to help resolve issues quickly and with less downtime.
- Remote Flash is a mobile application that allows you to update onboard software without a technician being present, allowing you to initiate software updates when convenient, increasing your overall operating efficiency.
- The Cat PL161 attachment locator allows you to track attachments across all worksites, reduce the number of lost attachments, and plan for attachment maintenance and replacement. The work tool recognition\*\* feature automatically adjusts machine settings based on the selected tool.

*\*Data field availability can vary by equipment manufacturer.  
\*\*Recognition feature available on select excavator models.  
Consult your Cat dealer for details.*



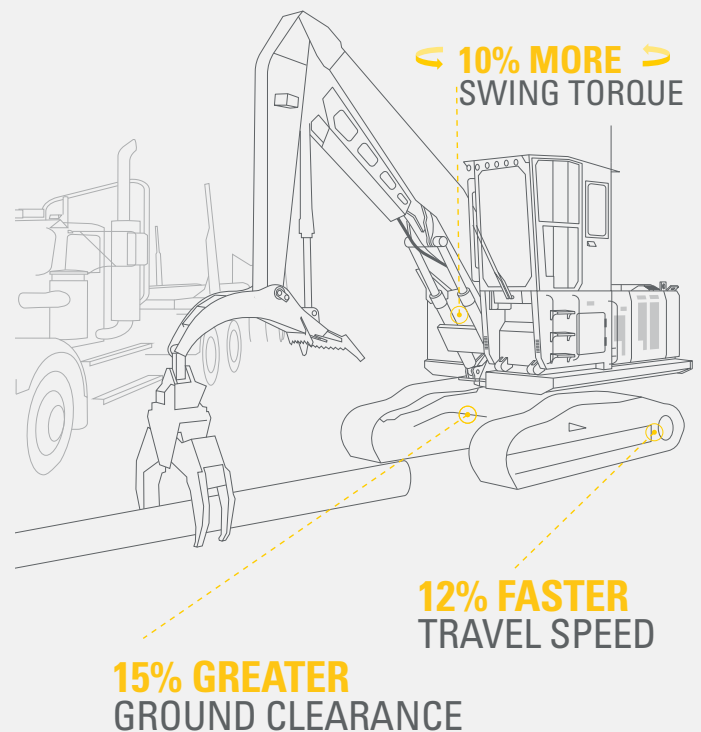
# SUPERIOR PERFORMANCE



- The Cat C7.1 engine is fuel efficient and can run on biodiesel and other renewable fuels.
- Smart mode helps reduce fuel consumption by automatically matching engine and hydraulic power to working conditions.
- Pick and place logs with precision and power with the electrohydraulic control system.
- Heavy lift mode with more swing torque helps you confidently move big logs.
- Get to work faster with up to a 12% increase in travel speed\*.
- Auxiliary hydraulic options let you use Cat grapples and various other attachments.
- Work in extreme environments with a standard high-ambient capability of 52° C (126° F) and cold start capability of -32° C (-25° F).

\*All percentages are compared to the 2020 model year 538.

## GET MORE WORK DONE



# UNMATCHED OPERATOR COMFORT

- Operators can choose the rear or side entry cab with more space and a tilt-up console.
- The dual HVAC system keeps operators comfortable in cold and warm weather.
- A wider heated and cooled air-suspension seat makes year-round work more pleasant.
- All controls are within easy reach to reduce twisting and turning and keep you focused on the work area.
- Cab risers – 165 mm (6.5”) fixed or 1219 mm (48”) hydraulic tilt – are available to meet your work needs.
- Stow your gear with in-cab storage beneath, behind the seat, and in the consoles.
- Use the standard radio’s USB ports and Bluetooth® technology to connect personal devices and make hands-free calls.



# SIMPLE OPERATION



- Cat continues to improve user interface functionality for operators of all skill levels. The touchscreen monitor is an easy-to-use operating tool that presents the jobsite dashboard with an intuitive format.
- The Cat PL161 attachment locator is a Bluetooth device designed to let users know where their attachments are across all worksites, reduce the number of lost attachments, and plan for attachment maintenance and replacement. The PL161 integrates easily into VisionLink for full fleet management of machines and attachments from one smartphone or tablet dashboard to view location and tracking details.
- The keyless push-button engine start adds security by using operator ID codes to limit and track machine access. Codes can be entered manually or via an optional Bluetooth key fob.
- Navigate quickly on the standard high-resolution 254 mm (10 in) touchscreen monitor.
- Make moving the excavator much easier with optional Cat Stick Steer. Push a button and use one hand to travel and turn instead of both hands or feet on levers or pedals.
- Not sure how a function works or how to maintain the machine? Always have the operator's manual at your fingertips in the touchscreen monitor.
- Optional auxiliary relay powers on and turns off CB radios and other attachments without you taking your hands off the joysticks.



# VERSATILE CONFIGURATIONS

## General Forestry

1. The General Forestry model is ideal for road work, grappling, processing, and delimiting.
2. With a reach boom and quick coupler, you can equip the FM538 with a processor, bucket, thumb, mulcher, and other attachments to get work done quickly and efficiently.
3. A frontless option allows you to customize the machine to fit your applications.

## Log Loader

1. The log loader configuration is ideal for truck loading, Butt-n-Top loading, power clam applications, and millyard work.
  2. An under-mounted heel cylinder provides maximum force for shovel logging with a Cat grapple. A variable displacement pump delivers high-flow rotating capability for heel and log grapples and Power Clam and Butt-n-Top grapples.
  3. An overmounted heel cylinder provides maximum clearance to load trucks and increases lift height for millyard applications.
- Rugged, reliable, simple-to-service Cat forestry grapples range in size from 1322 mm (52") to 1524 mm (60").
  - Special Tri Link shoes are available for lower ground pressure and extra flotation in soft, wet, underfoot conditions.





# EASY MAINTENANCE

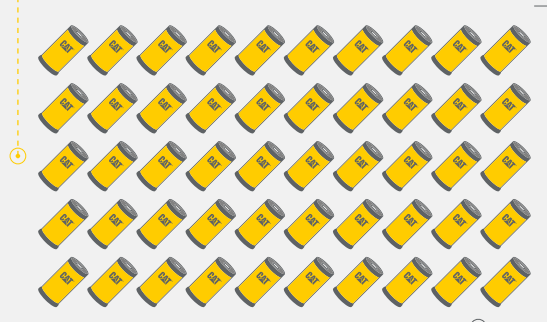


- Boost productivity with proactive service reminders. The Integrated Vehicle Health Management system alerts the operator with step-by-step service guidance and the parts needed so you don't experience unnecessary downtime.
- Expect to spend less on maintenance costs compared to the previous model.
- The engine's regeneration system functions automatically with no operator input or interruption to work.
- Using Cat genuine oil and filters and doing typical Scheduled Oil Sampling (S-O-S<sup>SM</sup>) monitoring will double the current service interval to 1,000 hours, giving you greater uptime to do more work.
- S-O-S ports simplify maintenance and allow for quick, easy extraction of fluid samples for analysis.
- The diesel particulate filter requires no maintenance.
- Replace fuel filters at 1,000 hours – twice the interval from the previous filters.
- The latest hydraulic oil filter provides improved filtration performance, anti-drain valves to keep oil clean when the filter is replaced, and longer life with a 3,000-hour replacement interval.
- The high-efficiency cooling fan runs only when needed; program intervals so the fan automatically reverses to keep cores clean without interrupting your work.



## SAVE MONEY

THE NEXT GENERATION 538  
CONSUMES **50 FEWER FILTERS\***



FEWER FILTERS,  
LONGER INTERVALS,  
LESS COST,  
MORE PRODUCTIVITY

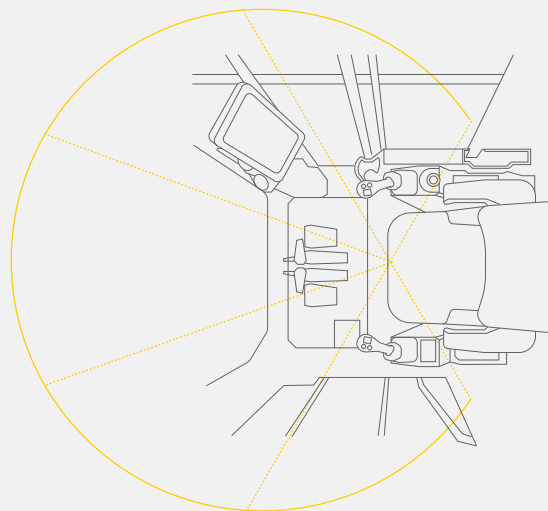
\*COMPARED TO PREVIOUS 538 OVER 12,000 HOURS

# ENHANCED SAFETY

- The cab meets applicable industry standards for Rollover Protective Structure (ROPS)/Falling Object Protective Structure (FOPS)/Operator Protective Guards (OPG) and protects the operator inside the cab.
- Access most routine maintenance points at ground level.
- The right-hand service platform design provides easy, safe, and quick access to the upper service platform; the service platform steps use an anti-skid punch plate to prevent slipping. Handrails are provided for easy access.
- Larger 32 mm (1.25") polycarbonate front window, smaller cab pillars, and a flat engine hood improve visibility by up to 50%.
- Standard rearview camera enhances jobsite visibility; right-hand-sideview cameras are optional.
- The monitor's slope and grade indicator tell you the machine's position to help optimize its performance.
- A signaling/warning horn and travel alarm enhance jobsite safety.
- Make service work easier and safer with optional inspection lighting. With the flip of a switch, lights will illuminate the engine, pump, battery, and radiator compartments to enhance visibility.



**50% GREATER VISIBILITY\***



\*CAT NEXT GENERATION 538 COMPARED TO PREVIOUS 538

# SUSTAINABILITY

- The Cat 7.1 engine meets U.S. EPA Tier 4 Final and EU Stage V 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)\* or 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.
- Auto Engine Speed Control reduces unnecessary fuel burn and greenhouse gas emissions by allowing the engine to automatically go into idle mode when the machine is not working.
- Extended maintenance intervals reduce downtime and decrease the amount of fluid and filters that are replaced over the machine’s life.
- Cat VisionLink displays the CO<sub>2</sub> emissions for monitored assets, calculated by fuel type for the Runtime Fuel Burned each day in a selected date range.

- Remote Flash minimizes downtime and maintenance time while keeping your asset running at maximum efficiency. Alerts for machine updates are sent virtually from your Cat dealer, and updates can be deployed without a dealer technician needing to be onsite.
- Remote Troubleshoot decreases maintenance time and keeps your machine running with maximum efficiency by allowing your Cat dealer to virtually test the machine while working. Once a problem is identified, a technician can fix it the first time, saving time and money.

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



INCREASE YOUR PRODUCTIVITY AND PROFIT

# WITH CAT ATTACHMENTS

Easily expand the performance of your machine by utilizing any of the variety of Cat attachments. Each Cat attachment is designed to fit the weight and horsepower of the Cat machine for improved performance, safety, and stability.



## GRAPPLES

Cat log loading grapples are made with high-strength steel for maximum performance. They are ideal for picking and sorting, bunching and loading, and shoveling applications. Bolt-on access panels make them easier to service.



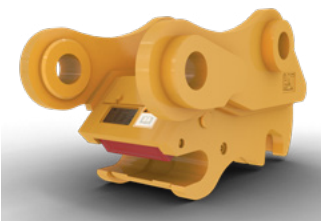
## MULCHERS

Cat forestry mulchers make land clearing fast and safe. Staggered teeth quickly turn trees into mulch; a hydraulically controlled door lets the operator direct mulch flow to enhance jobsite safety.



## BUCKETS

Cat buckets move material quickly and efficiently. Their unique design enables more efficient filling and better operator control, which improves overall productivity.



## COUPLERS

Cat quick couplers allow you to change between tools in minutes, making the machine capable of doing a variety of money-making tasks.



## ATTACHMENT TRACKING MADE EASY

The Cat PL161 Attachment Locator is a Bluetooth device that makes finding grapples, buckets, and other gear quick and easy. The excavator's onboard Bluetooth reader will locate the device automatically.

# TECHNICAL SPECIFICATIONS

## Engine

Engine Model	Cat C7.1	
Net Power – ISO 9249	129 kW	172 hp
Engine Power – ISO 14396	129 kW	174 hp
Net Power – ISO 9249 (DIN)	175 hp (metric)	
Engine Power – ISO 14396 (DIN)	176 hp (metric)	
Bore	105 mm	4 in
Stroke	135 mm	5 in
Displacement	7 L	428 in <sup>3</sup>
Biodiesel Capability	B20 <sup>1</sup>	
Emissions	Meets U.S. EPA Tier 4 Final, EU Stage V emission standards.	

Net power advertised is the power available at the flywheel when the engine is equipped with fan, air intake system, exhaust system, and alternator with engine speed at 2,200 rpm. Advertised power is tested per the specified standard in effect at time of manufacture.

<sup>1</sup>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)\* or 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 (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.

## Hydraulic System

Main System – Maximum Flow	468 L/min	124 gal/min
Maximum Pressure – Equipment	35 000 kPa	5,076 psi
Maximum Pressure – Equipment – Lift Mode	38 000 kPa	5,511 psi
Maximum Pressure – Travel	35 000 kPa	5,076 psi
Maximum Pressure – Swing	30 000 kPa	4,351 psi

## Drive

Maximum Travel Speed	4.9 km/h	3 mile/h
Maximum Drawbar Pull	256 kN	57,551 lbf

## Swing Mechanism

Swing Speed	11 r/min	
Maximum Swing Torque	98 kN-m	72,281 lb-ft

## Weights

Operating Weight – General Forestry	30 000 kg	66,140 lb
• High Wide undercarriage, 165 mm (6.5") riser, Reach boom, R3.7 m (12'2") Drop Nose stick, 700 mm (28") double grouser shoes, no processor head.		
Operating Weight – Log Loader	31 590 kg	69,640 lb
• High Wide undercarriage, 1219 mm (48") riser, Log Loader boom, 3.5 m (11'6") under/under stick with live heel, 700 mm (28") double grouser shoes, no grapple.		

## Air Conditioning System

The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system on the 22"/48" Riser Cab contains 2.1 kg of refrigerant, which has a CO<sub>2</sub> equivalent of 3.003 metric tonnes. The system on the 72" Riser Cab contains 2.2 kg of refrigerant, which has a CO<sub>2</sub> equivalent of 3.146 metric tonnes.

## Service Refill Capacities

Fuel Tank	990 L	262 gal
Cooling System	17.5 L	5 gal
Engine Oil	25 L	7 gal
Swing Drive	11.5 L	3 gal
Final Drive – Each	4.5 L	1 gal
Hydraulic System – Including Tank	262 L	69 gal
Hydraulic Tank	143 L	38 gal
Diesel Exhaust Fluid (DEF) Tank	41 L	11 gal

## Working Ranges

### General Forestry

Reach 5.7 m (18'8") boom, thumb-ready 2.9 m (9'6") stick, 1.4 m<sup>3</sup> (1.8 yd<sup>3</sup>) HD bucket

Maximum Reach at Ground Level	9820 mm	32'3"
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### Log Loader

#### Under/Under

Log Loader 5.9 m (19'6") boom, under/under 3.5 m (11'6") stick

Maximum Reach at Ground Level	10 790 mm	35'5"
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#### Over/Under

Log Loader 5.9 m (19'6") straight boom, over/under 3.8 m (12'6") stick

Maximum Reach at Ground Level	11 540 mm	37'10"
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#### Power Clam

Log Loader 5.9 m (19'6") straight boom, under/under 3.8 m (12'6") stick

Maximum Reach at Ground Level	9680 mm	31'9"
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## Dimensions

Shipping Height – Tilted Cab	3400 mm	11.2 ft
Handrail Height	3270 mm	10.8 ft
Length: General Forestry – Boom Stretched Out	12840 mm	42.2 ft
Length: Log Loader – Boom Stretched Out	13690 mm	44.9 ft
Tail Swing Radius	3130 mm	10.3 ft
Counterweight Clearance	1280 mm	4.2 ft
Ground Clearance	750 mm	2.5 ft
Track Length	4670 mm	15.3 ft
Track Length to Center of Rollers	4670 mm	15.3 ft
Track Gauge	2790 mm	9.2 ft
Transport Width	3490 mm	11.4 ft

# STANDARD & OPTIONAL EQUIPMENT

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

	Standard	Optional
<b>UNDERCARRIAGE AND STRUCTURES</b>		
High Wide undercarriage	✓	
203 mm (8") pitch Cat grease lubricated track chain with PPR3 positive pin retention	✓	
Catwalks	✓	
Tie down points	✓	
Counterweight fuel tank	✓	
Heavy-duty track rollers and frames	✓	
Heavy-duty travel motor guards	✓	
Heavy-duty bottom guards	✓	
Track guiding guards	✓	
High drawbar final drives	✓	
Heavy-duty recoil springs	✓	
Heavy-duty hydraulic swivel	✓	
Heavy-duty hydraulic swivel guard	✓	
900 mm (36") triple grouser Tri Link shoes		✓
800 mm (31") triple grouser shoes		✓
700 mm (28") double grouser shoes		✓
600 mm (24") double and single grouser shoes		✓
<b>BOOMS AND STICKS</b>		
5.7 m (18'7") Reach boom – General Forestry		✓
5.9 m (19'6") Straight boom – Log Loader		✓
2.9 m (9'6") Thumb-ready stick		✓
3.7 m (12'2") Drop Nose stick		✓
3.5 m (11'6") under/under stick		✓
3.8 m (12'6") over/under stick		✓
3.8 m (12'6") power clam stick		✓
4.2 m (13'9") under/under extended reach stick		✓
B1 family bucket linkage		✓
<b>SERVICE AND MAINTENANCE</b>		
Integrated vehicle health management system	✓	
Side-entry service platform	✓	
Grouped location for engine oil and fuel filters	✓	
Ground level dipstick for engine oil	✓	
S-O-S ports	✓	
<b>CAT TECHNOLOGIES</b>		
VisionLink	✓	
VisionLink Productivity		✓
Remote Flash	✓	
Remote Troubleshoot	✓	
Cat Payload	✓	

	Standard	Optional
<b>ENGINE</b>		
Electric fuel priming pump	✓	
Three selectable modes: Power, Smart, Eco	✓	
Automatic engine speed control	✓	
Automatic engine idle shutdown	✓	
Up to 4600 m (15,092 ft) altitude capability	✓	
48° C (118° F) high-ambient cooling capacity	✓	
-32° C (-25° F) cold start capability	✓	
Hydraulic reverse fan	✓	
Two-stage fuel filter system	✓	
Double element air filter with integrated pre-cleaner	✓	
Cold start package with block heaters and ether assist		✓
<b>CAB</b>		
Rear entry		✓
Side entry		✓
165 mm (6.5") fixed riser		✓
1219 mm (48") tilting riser		✓
CB radio mounts		✓
Cat Stick Steer		✓
Auxiliary relay		✓
ROPS Forestry cab with polycarbonate windows	✓	
4-point harness seat belt	✓	
Heated and cooled seat with air-adjustable suspension	✓	
Integrated joysticks	✓	
Tilt-up left-side console (side-entry cab only)	✓	
High-resolution touchscreen monitor	✓	
Bluetooth integrated radio (including USB, auxiliary port and microphone)	✓	
12V DC outlets	✓	
Keyless push-to-start engine control	✓	
Automatic bi-level air conditioner	✓	
LED dome and floor lights	✓	
Windshield wiper and washer	✓	
Behind seat storage	✓	
Retractable sunshade	✓	

(continued on next page)

# STANDARD & OPTIONAL EQUIPMENT *(continued)*

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

	Standard	Optional		Standard	Optional
<b>HYDRAULIC SYSTEM</b>			<b>SAFETY AND SECURITY</b>		
Boom and stick regeneration circuits	✓		Caterpillar One Key security system	✓	
Boom and stick drift reduction valve	✓		Lockable service doors	✓	
Electronic main control valve	✓		Lockable external tool/storage box	✓	
Automatic hydraulic oil warm up	✓		Lockable fuel cap and hydraulic tank	✓	
Automatic swing parking brake	✓		Lockable disconnect switch	✓	
High performance hydraulic return filter	✓		Right-hand rail and hand hold	✓	
Automatic two speed travel	✓		Service platforms with anti-skid plate and countersunk bolts	✓	
Bio hydraulic oil capability	✓		Signaling/warning horn	✓	
High torque swing drive	✓		Travel alarm	✓	
Swing cushion valve	✓		Operator Protective Guards	✓	
Tool control software	✓		Ground-level secondary engine shutoff switch	✓	
Medium pressure circuit		✓	Reaview camera	✓	
<b>ELECTRICAL SYSTEM</b>			Easy lock cab tilting system		✓
Maintenance-free 1,000 CCA batteries (x4)	✓		Cab riser light		✓
Centralized electrical disconnect switch	✓		Inspection lighting		✓
LED chassis, boom, and cab lights	✓		Swing alarm		✓
115-amp alternator	✓		Right-hand sideview camera		✓
24-volt electric starting	✓				
Pre-start monitoring system	✓				
Tool control software	✓				
Secondary engine shut off switch	✓				
Premium lighting – General Forestry – 6 additional LED lights		✓			
Premium lighting – Log Loader – 10 additional LED lights		✓			

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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AEXQ4174-00  
Build Number: 07H  
(Aus-NZ, Chile, N Am)

