

538/538 LL

Forest Machine



Engine

Engine Model	Cat® C7.1 ACERT™	
Gross Power	122 kW	164 hp

Weights

General Forestry	30 227 kg	(66,640 lb)
Log Loader (U/U)	31 558 kg	(69,574 lb)
Log Loader (O/U)	31 480 kg	(69,401 lb)
Estimated operating weight w/o attachment		

Cat 538/538 LL Forest Machine Features

Efficiency

Overall machine design, a new engine, and optimized components and parameters provide exceptional fuel savings with maximum productivity. Fuel economy is improved compared to previous model.

Performance

Boosted by higher swing torque and increased engine and hydraulic horsepower, the 538 maintains strong all around lift, stability, and work tool capability.

Stability

Wider track gauge and heavy-duty counterweight maximize stability and operator experience in diverse logging applications.

Application Versatility

Purpose-built hydraulics and new boom and stick configurations are capable of operating a wide range of work tools. New grouser options increase machine applicability on the job site and ground saw hydraulics are available from the factory.

Operating Costs

Proven Cat components continue to provide excellent reliability. Thick plating, box frame structures, and forestry duty undercarriages provide longer life, reducing downtime and operating costs per hour.

Contents

Power Train.....	4
Hydraulics	6
Work in Comfort	8
Built for the Work You Do	10
Guarding	11
A Firm Foundation	12
Pick Your Application	13
Serviceability	14
Work Tools.....	15
Integrated Technology	16
Safety	16
Focus on Customer	17
Sustainability	17
538/538 LL Forest Machine Specifications	18
538/538 LL Working Envelopes and Lift Charts	21
538/538 LL Forest Machine Std. Equipment.....	27
538/538 LL Forest Machine Opt. Equipment.....	28





Cat Forest Machines (FM) are versatile, purpose-built machines that can be customized to perform a complete range of tasks for forestry operations. First introduced in the 1990s, this family of machines has become the industry standard in many logging applications. The 500 series forest machines will continue to set trends in the industry.

This is the first model in the 500 series to meet today's U.S. EPA Tier 4 Final emission standards. The 538 features outstanding fuel efficiency and optimized work tools while increasing horsepower and swing torque and improving stability through wider track frames.

The Cat 538 is available in a general forestry (538) version for road building, stroke delimeter applications, grapple applications, site preparation and processing. It is also available in a log loader (538 LL) version for log loading, shovel logging, Butt-n-Top loading, Power Clam applications, and millyard activities.

Power Train

Power you need, fuel economy you deserve



Engine

Cat C7.1 ACERT Tier 4 Final engine with increased power, 122 kW (164 hp), maintains maximum performance under load and boasts strong fuel efficiency. The C7.1 meets U.S. EPA emissions standards.

Performance

Engine horsepower increase of 11 percent, along with a larger displacement engine, translates to the power you need for strong multi-functioning and improved implement performance – and more production.

Efficiency

The 538 features isochronous speed control to maintain a constant engine speed of 1,500 rpm – regardless of load – to improve fuel consumption. Unprecedented fuel economy has been achieved with these settings, while power is maintained with a larger pump that produces more hydraulic oil flow.

Electronic Control Module

The Electronic Control Module (ECM) works as the ‘brain’ of the engine’s control system, responding quickly to operating variables to maximize engine efficiency. Fully integrated with sensors on the engine, the ECM stores and relays data on conditions such as RPM, fuel consumption, and diagnostic information. It provides sophisticated control of fueling for maximum fuel economy and reduced emissions.

Advanced Fuel Systems

The high pressure common rail fuel system with full electronic injection further improves precision, which helps to reduce soot and boosts engine performance. Highly regulated timing controls the fuel injection process, for a cleaner, more efficient fuel reaction.

Air Management

The Tier 4 engines feature innovative air management systems that optimize airflow and enhance power, efficiency, and reliability. A fixed geometry, waste gated turbocharger allows maximum turbo performance to help improve productivity, fuel efficiency, long life, and low operating costs.

Cat NOx Reduction System

The Cat nitrogen oxide (NOx) reduction system captures a small quantity of exhaust gas and routes it back into the combustion chamber to help reduce temperature and reduce nitrogen oxide emissions. This system is the result of more than a decade of Caterpillar research to develop reliable, proven technology.



An Emissions Solution that Works

The C7.1 ACERT engine meets U.S. EPA Tier 4 Final and EU Stage IV emission standards using a blend of technologies to optimize performance, whatever the conditions. The Selective Catalytic Reduction (SCR), Diesel Oxidation Catalyst (DOC), and Ammonia Oxidation

Catalyst (AMOX) systems effectively remove nitrogen oxide gasses from the exhaust while a service-free Diesel Particulate Filter (DPF) removes soot and other particulates. All Cat C7.1 ACERT emissions technologies are designed to be transparent, so you are free to simply start the machine and be productive.



Diesel Exhaust Fluid

Cat engines equipped with a SCR system, inject Diesel Exhaust Fluid (DEF) into the exhaust to reduce nitrogen oxide emissions. Diesel exhaust fluid is a precise solution of high purity chemical grade urea and de-ionized water. The DEF used in Cat SCR systems must meet requirements of the International Organization for Standardization (ISO), requirements

that are met by many brands of DEF, including those that carry AdBlue or API certifications.



Cooling System

The Cat C7.1 ACERT engine features an improved side-by-side cooling system, and cooling capacity increase of 12 percent over the previous machine. The radiator package has been updated, and fin spacing has increased 25 percent to improve airflow and cooling capability. Service access has improved with the ability to lift both the air-to-air after-cooler and condenser out of the way.

A standard auto-reversing fan increases service intervals and maintains proper engine operating temperature. This belt driven fan is programmable and can be operated manually as well. During operation, the fan blade pitch is optimized based on engine information, coolant temperature, and hydraulic oil temperature. This helps to attain operating temperature quicker and reduces fuel consumption, therefore maximizing efficiency.

Automatic Engine Speed Control

With one-touch-idle control, the machine will revert automatically to a lower idle speed when there is a pause or lull in operations, reducing fuel consumption. The interval of time before the engine idles down is set by the operator. When the operator begins using the joysticks again, the engine automatically resumes normal operating rpm.

There is also a choice of three power modes depending on the demands of the work tasks or application. They include high power, standard power, and eco mode. Simply change between modes on the console switch pad. These features maximize engine life and fuel efficiency, reduce sound levels, and reduce repair and maintenance costs.

Pre-cleaner and Air Filter

An engine pre-cleaner is standard from the factory, which is important in forestry applications. This helps minimize debris ingress and maximizes both filter life as well as machine uptime. The radial seal air filter features a double-layer core for better filtration and extending service intervals. If debris plugs the filter above a pre-set level, the monitor displays a warning.

Compatible with Biodiesel

The engine and common rail fuel system can operate on biodiesel fuel (B20) that meets ASTM 6751 standards, flexibility that allows for potential fuel savings.



Hydraulics

Maximum efficiency for your application



Maximum Power and Efficiency

The hydraulic system has been designed for a high level of efficiency and power. Hydraulic horsepower, the power available to do work through implements and work tools, increases 10 percent. The pumps have been upsized to allow the engine to run at a lower rpm, reducing fuel consumption. This translates into processing more material while reducing your bottom line.

System Design

The main pumps, control valves, and hydraulic oil tank are located close together to allow for shorter tubes and lines between components, which reduces friction and pressure drops.

Main Control Valve Efficiency

One-piece, cast-block, back-to-back control valves are standard and help to further minimize power losses and increase efficiency through carefully designed ports and passageways. The control valve design also leads to increased reliability and serviceability, minimizing downtime. Auxiliary valve attachments mount on top of the main valve.

Operator Experience

Controllability is one of the main attributes of Cat forest machines, and a key contributor to this is the Negative Flow Control (NFC) system and the main control valve. The valve opens slowly when the range of joystick movement is small and opens rapidly when movement is faster. The system improves productivity with quick pump response and provides flow where it is needed. The result is faster implement speeds, smoother operation, and greater efficiency and performance.

Integrated and Efficient Work Tools

Key work tool parameters and specific hydraulic components have been integrated into the machine and have been finely tuned for Cat grapples and SATCO processing heads. The optimized machine package has proven to save fuel.

Swing System

Validated and proven Cat swing drive system provides 18 percent higher swing torque. Better swing performance improves productivity and operator efficiency.



Boom Regeneration Circuits

An electronic boom regeneration valve minimizes pump flow when the boom lowers by regenerating oil from one end of the boom cylinder to the other. This saves energy and improves fuel efficiency. It is optimized for any dial speed setting, which reduces pressure loss for better controllability, more productivity, and lower operating costs.

Stick Regeneration Circuits

The 538 regenerates hydraulic oil flow from the rod end of the stick cylinder to the head end of the stick cylinder during low-load, stick-in operation – an approach that reduces expenses and saves money.



Swing Priority Circuit

The swing priority circuit on the 538 uses an electric valve that is operated by the machine's Electronic Control Module (ECM). Compared to using a hydraulic valve, the electric valve enables more finely tuned control, which is critical in some operations.

Hydraulic Snubbers

Boom and stick cylinders are equipped with snubbers to cushion shocks, increase cylinder life, and reduce sound, increasing uptime and productivity.

Fine Swing Control

Standard fine swing control cushions start and stop for better implement control.



Heavy Lift Mode

The heavy lift mode capacity increases 26 percent – an important benefit in some work conditions. Heavy lift mode reduces engine speed and pump flow to improve controllability in these situations.



Auxiliary Hydraulics

The auxiliary valve is standard. Various control circuits are available as attachments, allowing for operation of a large variety of work tools. One machine can be utilized in diverse applications, minimizing operating costs.

Pilot System

The pilot pump is independent from the main pump groups and provides pilot oil to control the boom and stick, swing, and travel valve functions.

Work in Comfort

Operator station reduces fatigue



Climate Control

A pressurized cab with updated bi-level air conditioner, heater, and defroster keeps the operator comfortable in all types of weather conditions. Other features include positive ventilation, forced air fan, and fresh air window with screen.



Cab

The workstation is spacious, quiet and comfortable, ensuring high productivity all day. Controls, joysticks, and an ergonomically designed seat are placed strategically in order to reduce operator fatigue.

Seat Comfort

Comfortable air suspension seat has varying adjustments for operator's height and weight. Adjustments include a reclining back, upper and lower seat slide, and height and tilt angle to keep the operator comfortable and productive. Wide adjustable armrests also are incorporated in the seat.



New heated and vented seat functionality maintains operator comfort in all climates during long work days. Retractable lap belt is standard, and a four-point seat belt is optional. For added safety, a hydraulic activation lever located on the side of the seat must be in the "operate" position to allow machine control functions.

Visibility

Cab design optimizes post structures and placement of scratch-resistant polycarbonate windows to provide excellent visibility to front, sides and rear. Large skylight with sunshade provides excellent upward visibility. LED lights for increased visibility in night operations and windshield wipers are standard.



Processor Cab

Optional processor cab has 19 mm (0.75-inch) front windows and other features needed for a processing application. Cab is optimized for SATCO processing heads.



Monitor, Gauges

The monitor is a full-color Liquid Crystal Display (LCD) and is easy to see and navigate. It is 40 percent larger and has four times the screen resolution. The monitor angle can be adjusted to minimize sun glare, and the keypad has been designed to increase durability. Three gauges display fuel level, hydraulic oil temperature, and coolant



temperature. It is equipped with warning lamp and buzzer for critical warnings, such as issues with engine oil pressure, coolant temperature, and oil temperature. Filters and fluid change intervals are available in the main menu. Machine information in the event display is in the form of both text and icon. The multi-informational display exhibits various information that is convenient for the operator in up to 42 languages.



Pre-Start Check

Prior to starting the machine, the system will check critical machine systems and warn the operator through the monitor in the event display area.

Controls

Joystick controls have low lever effort and are designed to match natural wrist and arm position. The controls can be operated with an arm on the armrest, and the horizontal and vertical strokes have been optimized to lessen operator fatigue. Proportional control and push buttons are programmable to operator personal preferences, allowing maximum productivity.

Certified Protection

The cab is designed and purpose-built for the toughest forestry applications. Certifications include OPS to ISO 8084 and SAE 1084, FOPS to ISO 8083, SAE J1356, ROPS to ISO8082, TOPS to OR-OSHA code 437-007-0775 and WCB to G602/G603/G604/G608. Windows are made of impact-resistant polycarbonate.

Escape Hatch

An escape hatch at the rear of the cab roof allows exit from the cab or entry from the outside in case of an emergency.



Consoles

Consoles are a simple, functional design to make it easy to operate switches, reducing fatigue and maximizing visibility. Storage space is provided within the consoles to hold small items.

Machine Layout Aids Operator Comfort

The component layout aids operator comfort by placing the radiator on the cab side of the upper structure. This allows incoming air to enter the engine compartment from the cab side and hot air and corresponding engine sound to exit on the opposite side, away from the operator. This design, along with rubber engine mounts, reduces engine compartment heat and sound in the cab.



Satellite Radio and MP3 Ready

Satellite radio and auxiliary audio port for MP3 players are standard. Two 12-volt power supply sockets are located near storage areas for charging.

Engineered for the Work You Do

Purpose-built linkage, upper frame, and carbody



Rugged Main Frame for Maximum Durability

- Outer frame utilizes curved side rails, which are die-formed for uniformity and strength
- Inverted U-channels span the width of the main frame and are formed - not fabricated - for superior strength and reduced weight
- Box section channels, certified for roll over protection, improve upper frame rigidity under the cab
- Boom tower and main rails are constructed of solid, high tensile strength steel, and reinforced at boom foot
- Swing drive area is reinforced into the main frame rails to support high stress loads, such as those found in shovel logging
- The boom foot and engine mount areas have multiple reinforcements, such as doubler plates and box sections, for additional strength
- The sheet metal supporting structure is integrated into the upper frame for additional durability

Heavy-Duty, Purpose-Built Carbody

- Long track length and wider gauge, 203 mm (8 in), contribute to excellent overall stability, especially in applications requiring work over the side, such as processing tasks
- Advanced, reinforced, purpose-built carbody design stands up in the toughest forestry applications
- The high, wide design provides maximum ground clearance for forestry applications and maneuvering over large obstacles
- Heavy-duty carbody structure provides stability and durability while improving operating effectiveness

- Upper structure weight and stresses are distributed evenly across the full length of the long track roller frame
- Smooth transitions and long robotic welds help reduce stresses at the carbody-to-roller frame junctions for excellent durability and maintain high quality and consistency during the welding process

Boom and Stick

- Large internal baffle plates are integrated into both the boom and stick internal structures for increased durability
- Durable box section design that includes thicker plating provides for maximum boom and stick life

Counterweight

New heavy-duty counterweight improves overall machine stability and provides greater operator comfort. Counterweight incorporates integrated lifting links for safe, efficient removal.

Storage

A new 0.3 m³ (10 cubic feet) storage compartment allows for easy ground level access to bars, chains, tools, and other supplies that are needed on a daily basis for machine and work tool maintenance.



BUILT FOR IT.™

Guarding

Protection for your forestry machine investment



Shoe Support Guards

Standard full length track shoe support guards help protect rollers and provide increased rigidity that enables track link alignment in rough underfoot conditions.

Undercarriage Protection

Heavy-duty final drive and hydraulic swivel guards keep debris out and protect components for increased uptime.

Right Front Corner Guard

Right front corner guard has an added tree deflector arm to provide increased protection from debris and falling trees and limbs. The arm can be rotated up into a vertical position for transport.



Heavy-Duty Access Doors

Heavy-duty access doors are made from 5 mm (0.19 in) high strength, low alloy steel. Positive locking latch stays closed in forestry applications, and hinges have larger diameters than standard doors.

Engine Hood

New single piece steel hood design exposes entire engine and cooling compartment and has two opening angles for flexible service options.

Stick Cylinder Guard

Standard heavy-duty stick cylinder guard protects hydraulic lines, fittings, and cylinder components from trees and debris.



A Firm Foundation

Stable, durable undercarriage



Heavy-Duty Grease Lubricated Track

The 329 HEX HD Positive Pin Retention System (PPR2) track links are 203 mm (8 in) in pitch, and lock pins in for added durability and reliability. The unique PPR2 system locks the pin to the link, which prevents any pin movements in relationship to the links and excludes debris as long as possible. Grease lubricated track allows more usable horsepower because of reduced internal friction; it also extends internal bushing, sprocket and system wear life, reduces noise, and reduces the chance for frozen track joints.

Heavy-Duty Rolling Components

Heavy-duty top carrier rollers with dual supports provide superior endurance. Eight heavy-duty track rollers stand up to the toughest forestry applications. Features include greater sealability, higher resistance to deformation, and greater load carrying capacity.

Heavy-Duty Final Drives

Durable, woods-proven final drives provide maximum drawbar and appropriate travel speeds that increase productivity in the toughest logging applications.

Pick Your Application

Versatile workhorse for forestry tasks



The 538 is available in two main machine configurations to meet the requirements of a wide range of forestry applications. The machines are optimized for each application with purpose-built hydraulics and customized boom and stick sets. The general forestry (538) configuration is available to do work as a road builder, grapple machine, processor, and a stroke delimeter carrier. The log loader (538 LL) configuration is the right choice for shovel logging, log loading, Butt-n-Top, Power Clam, and millyard applications.

538 - General Forestry

Front Omission

The 538 is available from the factory without a boom and stick for stroke delimeter and other applications.

Road Builder

The road builder configuration utilizes a reach boom, is quick coupler ready from the factory, and can be configured with buckets, thumbs and other attachments.

Rotate Grapple

The rotate grapple configuration allows for the use of bucket and thumbs as well as clamshells and clearing grapples through additional hydraulic lines and an auxiliary pump circuit.

Processor

Optimized hydraulics and drop nose stick allow the 538 to work efficiently and productively as a roadside processor. The integration of work tool and machine maximizes profit potential.

538 LL - Log Loader

Under/Under

The under/under configuration is best suited for shovel logging and loading applications. The under-mounted heel cylinder provides maximum heeling force for shovel logging operations.

Over/Under

This configuration is optimized for loading and millyard applications. The over-mounted heel cylinder provides maximum clearance to load and increases lift height.

Power Clam

Power Clam configuration, which includes an auxiliary pump, can be re-configured for use with AEM butt-n-top or Power Clam style attachments.

Material Handler

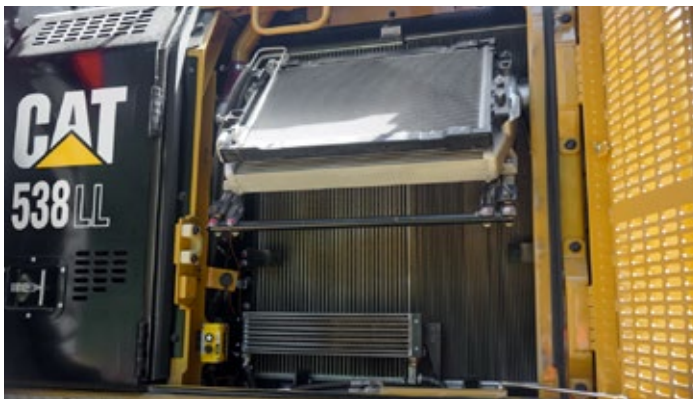
The material handler configuration is designed for short wood and log handling, sorting and stacking operations.

Serviceability

Easy to access, easy to maintain, saving you time and money

Ground Level Service

The 538 was designed with the customer and service technician in mind and to be easy to maintain. Many service locations are readily accessible at ground level, so critical maintenance can be completed quickly and efficiently. Wider and taller service doors enable better access to components.



Radiator Compartment

The left rear service door allows convenient access to the engine radiator, oil cooler, and air-to-air after-cooler for easy service and cleaning. The after-cooler and condenser lift out of the way for easy service to the water and hydraulic coolers. A drain cock is provided on the radiator for simplified maintenance. A new shunt tank for constant system pressure is located in the engine compartment.

Battery Compartment

The compartment located directly behind the cab contains the air filter, four standard batteries, ECMs, and the disconnect switch, all within easy access. The air filter features double element construction for superior cleaning efficiency. When the air filter plugs, a warning light is displayed on the monitor in the cab.



Pump Compartment

A service door on the right side of the upper structure allows ground level access to the pump, case drain filter, pilot filter, remote engine oil filter, and fuel filter. The machine is equipped with an electronic priming pump – mounted on the base of the primary fuel filter – that is more reliable and easier to service than traditional hand pumps.

Diagnostics and Monitoring

Prior to starting the machine, a system checks critical machine components, and if there is an issue, the operator is warned through the monitor in the event display area. The 538 is also equipped with S•O•SSM sampling and test ports for the hydraulic system, engine oil, and coolant. A test connection for the Cat Electronic Technician (Cat ET) service tool is located in the cab, which allows downloads and diagnostic capability of all machine parameters.

Work Tools

The right tool, optimized and integrated

SATCO Harvester Heads

SATCO heads are field proven in roadside processing or in-the-woods harvesting applications around the world. Their design utilizes large pins, bearings, and structures for long life and lower maintenance costs. These heads, matched with strong forest machine performance and optimized hydraulic systems, provide optimum harvesting or processing performance and maximum uptime and efficiency. The SATCO product line also consists of two directional felling head models for applications that require a felling head. They carry the same key attributes of the processor heads, such as durability and strong performance.

SATCO Processing/ Harvester Heads

Head	Weight		Max. Dia. Cut		Std. Feed Force	
	kg	(lb)	mm	(in)	kN	(lb-f)
SAT214	1370	(3,020)	640	(25)	21	(4721)
SAT318	2650	(5,830)	790	(31)	40	(9,000)
SAT318T	2700	(5,952)	730	(29)	40	(9,000)
SAT318T SC	2782	(6,133)	730	(29)	40	(9,000)
SAT323	2750	(6,050)	790	(31)	42	(9,445)
SAT323T	2700	(5,952)	730	(29)	42	(9,445)
SAT323T SC	2782	(6,133)	730	(29)	42	(9,445)
SAT422 DB	2750	(6,063)	630	(25)	28	(6,300)



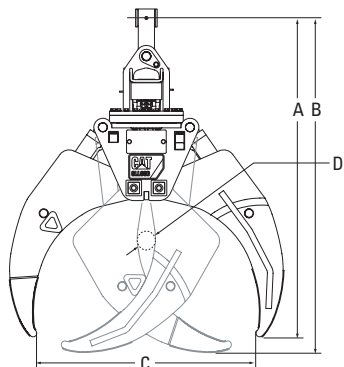
Directional Felling Heads

Head	Weight		Max. Dia. Cut		Jaw Opening	
	kg	(lb)	mm	(in)	mm	(in)
SAT 420	1450	(3,100)	635	(25)	965	(38)
SAT 630	2000	(4,400)	950	(38)	1397	(55)



Cat GLL Log Loader Grapples

Cat 360-degree continuous rotating log loading grapples for forestry machines are high capacity tools. They are built for endurance in high-volume logging applications. GLL grapple legs are made of high strength alloy steel with unique leg profiles for maximum performance in picking/sorting, bunching/loading, or shoveling applications. Cat grapples have bolt-on access panels for easy serviceability and are backed by the world-class Cat dealer network.



GLL Specifications/Dimensions

	GLL52B	GLL55B	GLL60B
Weight (kg/lb)	1255/2,767	1291/2,840	1344/2,965
Width (mm/in)	1725/68	1765/70	1935/76
A Height, open (mm/in)	2134/84	2184/86	2261/89
B Height, closed (mm/in)	2159/85	2210/87	2286/90
C Maximum Opening (mm/in)	1321/52	1397/55	1524/60
D Minimum Opening (mm/in)	127/5	127/5	127/5
Rotation, continuous	360°	360°	360°
Rotation torque at 1,200 psi (N-m/ft lb)	1153/850	1153/850	1153/850
Log volume (tip to tip)	0.41 m ² (4.5 ft ²)	0.4 m ² (4.3 ft ²)	0.51 m ² (5.5 ft ²)

Cat Live Heels

Heels are available in under/under and over/under configurations to match the requirements of log loader applications. Cat GLL grapples can pin directly to a Cat live heel for easy installation and maintenance.

Buckets

Cat buckets are designed for better performance. The leading edge has been pushed forward, for more efficient filling and better operator

control, which greatly improves productivity. Wear coverage in the corners and side cutter and sidebar protector coverage are improved. The lift eye design accepts a wide range of shackle sizes.

Couplers

Quick couplers allow one person to change work tools in seconds for maximum performance and flexibility on a job site. One machine can move rapidly from task to task, and a fleet of similarly equipped machines can share a common work tool inventory.

Integrated Technology

Work smarter

Easy to Service

Cat Product Link™, Caterpillar's machine monitoring system, is standard. When installed at the factory, the system comes with a free three-year subscription to VisionLink®, an easy-to-use user interface.

Product Link is an advanced – but user friendly – remote monitoring technology for equipment. You know where the machine is, what it is doing, and how it is performing. Using this information you can maximize efficiency and lower operating costs.

Product Link is integrated with the Electronic Control Module to collect and deliver valuable data. The information is transmitted via satellite, and you have access to it via the internet at anytime and anyplace. With Product Link you can:

- Know the location and status of your 538, including alerts if it is moved without your knowledge
- Track fuel use and idle time
- Monitor efficiency and performance, including fault codes
- Access fluid analysis results and online parts ordering
- Access model-specific daily safety and maintenance inspection checklists



Visit www.cat.com/itpaystoknow for more information on Cat Product Link.

Safety

Safely home. Everyone. Every day.™

Safety is critical in the woods, and a number of unique safety features have been designed into the 538 Forest Machine, including:

- Reinforced upper frame to accommodate the ROPS cab
- Certified forestry cab with tough polycarbonate windows
- Sealing and cab roof liner help to lower noise levels during machine operation
- Pressurized operator station for a clean, quiet environment
- 19 mm (0.75 in) window available for processing applications
- Screen guarding on fresh air side windows
- Standard LED work lights
- Standard windshield wipers
- Ground level emergency shut-off switch
- Ground level daily maintenance
- Wider track gauge that maximizes stability
- Secure access to engine enclosure with steps, hand rails, and guardrails
- Anti-skid plate is utilized on all walking surfaces on the upper structure, fuel tank, steps, and catwalks
- Integrated lifting links on counterweight to provide easy removal
- Forestry-duty cooling packages with reversible fan
- Compartmentalization of engine and hydraulic areas

Focus on Customer

Cat dealer services keep you running longer at less cost

Caterpillar is known the world over for the quality of customer support from its dealer network – the industry’s best. No matter where you are, the expertise of a Cat dealer is always nearby. Your local Cat dealer is your forestry consultant who can recommend the machines, work tools, and services to maximize your operation and provide the support to keep you at top productivity.



- Unsurpassed worldwide parts network
- 24-hour parts availability, where and when you need them, to minimize expensive downtime
- Remanufactured parts that carry the same warranty as new parts at reduced cost
- Operator training to get the most out of your Cat equipment through literature and classes

- Field service technicians to provide on-site help when needed
- Timely repair and replacement services
- Customer Support Agreements to lower your operating costs; can be applied to the entire machine, including attachments
- State-of-the-art diagnostic programs, such as S-O-S oil analysis, inspection services, and trend reporting to help avoid unscheduled repairs
- Financing programs for buying, renting or leasing Cat equipment
- Cat Financial Commercial Account provides a fast, convenient way to buy or rent anything offered at any Cat dealer or The Cat Rental Store
- Cat Insurance to cover equipment losses from theft, collision, flood, upset or overturn, fire, vandalism, and more
- Product Link to manage your equipment fleet through remote monitoring
- Cat Certified Rebuild to get a second life from your equipment
- Job site and machine consulting to ensure you get the right product and work tools

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

Sustainability

Generations ahead in every way

- The C7.1 ACERT engine, along with the Cat Clean Emissions Module (CEM), meets U.S. EPA Tier 4 Final emissions standards
- The 538 Forest Machine was designed and optimized to generate more horsepower, lift more payload, and consume less fuel than the previous series machine, which means more efficiency and productivity with less resource consumption and fewer CO2 emissions
- The machine has the flexibility of running on either ultra-low-sulfur diesel (ULSD) fuel with 15 ppm of sulfur or less or biodiesel (B20) fuel blended with ULSD
- Equipped with one-touch idle to reduce engine speed quickly and conveniently, conserving fuel
- Three different operating modes, including an eco mode allow the operator to tailor the machines performance to application needs, helping to increase fuel efficiency
- Can be rebuilt with major structures and components remanufactured to reduce waste and replacement costs
- An efficient, productive machine that is designed to conserve natural resources for generations ahead

538/538 LL Forest Machine Specifications

Engine

Engine Model	Cat C7.1 ACERT	
Gross Power	122 kW	164 hp
Rated Power	122 kW	164 hp
Engine Speed		
Rated	1,800 rpm	
Operation	1,500 rpm	
Travel	1,500 rpm	
Bore	105 mm	4.1 in
Stroke	135 mm	5.3 in
Displacement	7.01 L	427.8 in ³
Peak Torque	742 N*m	547.3 lb ft
Peak Torque Speed	1,400 rpm	
Number of Cylinders	6	

Weights

General Forestry - 538	30 227 kg	66,640 lb
Log Loader - 538 LL (U/U)	31 558 kg	69,574 lb
Log Loader - 538 LL (O/U)	31 480 kg	69,401 lb
Est. operating weight w/o attachment		

Operating Specifications

Max Speed (Rabbit)	4.3 km/h	2.7 mph
Max Speed (Turtle)	2.6 km/h	1.6 mph
Max Drawbar Pull	272 kN	61,193 lb
Swing Torque - 538 (GF)	80 kN*m	54,000 lb ft
Swing Torque - 538 LL	80 kN*m	54,000 lb ft
Max Swing Speed 538 (GF)	11.0 rpm	
Max Swing Speed 538 LL	11.0 rpm	
Operator Height from Ground (eye level)		
538 (GF) 0.48m (18") Riser	3.21 m	10.5 in
538 LL 1.2m (48") Riser	3.97 m	13.0 in

Hydraulic System

Maximum Flow (Per Pumps)	212 L/min	56 gpm
Maximum Flow (2 Pumps)	424 L/min	112 gpm
Maximum Pressure		
Implements	35,000 kPa	5,076 psi
Travel	35,000 kPa	5,076 psi
Swing (single)	31,000 kPa	4,496 psi
Lift Mode	38,000 kPa	5,511 psi
Auxiliary Pump - U/U, O/U and MH - 538 LL		
Maximum Flow	45 L/min	12 gpm
Max Pressure	10,335 kPa	1,499 psi
Auxiliary Pump - Grapple Rotate (538) / Power Clam (558 LL)		
Gear Ratio - Drive	1.28:1	
Max Flow	121 L/min	32 gal/min
Max Pressure	10,335 kPa	1,499 psi

Service Refill Capacities

Fuel Tank - Standard	410.0 L	108.3 gal
Fuel Tank - Total	410.0 L	108.3 gal
DEF Tank	28.0 L	7.4 gal
Engine Oil	25.0 L	6.6 gal
Cooling System	29.8 L	7.9 gal
Final Drive - Each	8.0 L	2.1 gal
Hydraulic Tank	143.0 L	37.8 gal
Hydraulic System - Total	159.0 L	42.0 gal
Swing Drive	8.0 L	2.1 gal

Undercarriage

Undercarriage Pitch	202.8 mm	8.0 in
Track Gauge	2,790.0 mm	109.8 in
Track Length	4,576.0 mm	180.2 in
Ground Clearance	659.5 mm	26.0 in
Number of Track Rollers (per side)	8	
Number of Carrier Rollers (per side)	2	

Standards

Brakes	ISO 10265:2008 ISO 11512:1995
ROPS/FOPS/OPS/TOPS	ISO8083:1989 LEVEL I, ISO8083:1989 LEVEL II, SAEJ/1084 FEB 1978, ISO8084:1993, SAEJ/1356 FEB 1988, WCB G602, G603, G604, G608 ISO3471:1997 (TABLE 1, SECTION 1) OR-OSHA 437-007- 0775(14)

538 - General Forestry Linkage

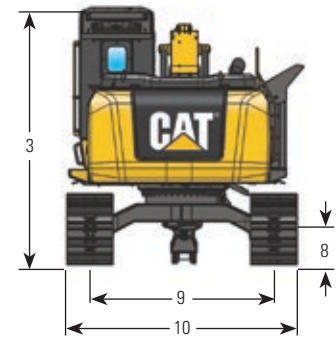
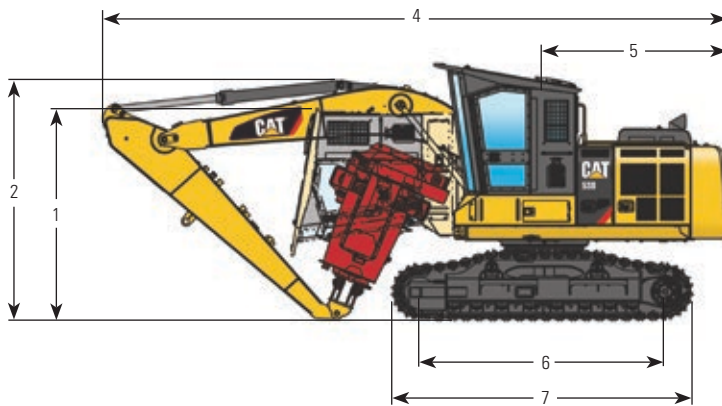
Boom Cylinder - Bore	120 mm	4.7 in
Boom Cylinder - Rod	85 mm	3.3 in
Boom Cylinder - Stroke	1,260 mm	49.6 in
Stick Cylinder - Bore	140 mm	5.5 in
Stick Cylinder - Rod	100 mm	3.9 in
Stick Cylinder - Stroke	1,504 mm	59.2 in
Bucket Cylinder - Bore	120 mm	4.7 in
Bucket Cylinder - Rod	85 mm	3.3 in
Bucket Cylinder - Stroke	1,104 mm	43.5 in

538 LL - Log Loader Linkage

Boom Cylinder - Bore	140 mm	5.5 in
Boom Cylinder - Rod	100 mm	3.9 in
Boom Cylinder - Stroke	1,160 mm	45.7 in
Stick Cylinder - Bore	150 mm	5.9 in
Stick Cylinder - Rod	105 mm	4.1 in
Stick Cylinder - Stroke	1,470 mm	57.9 in
Heel Cylinder - Bore	130 mm	5.1 in
Heel Cylinder - Rod	90 mm	3.5 in
Heel Cylinder - Stroke	1,156 mm	45.5 in

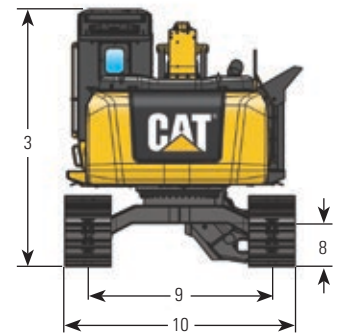
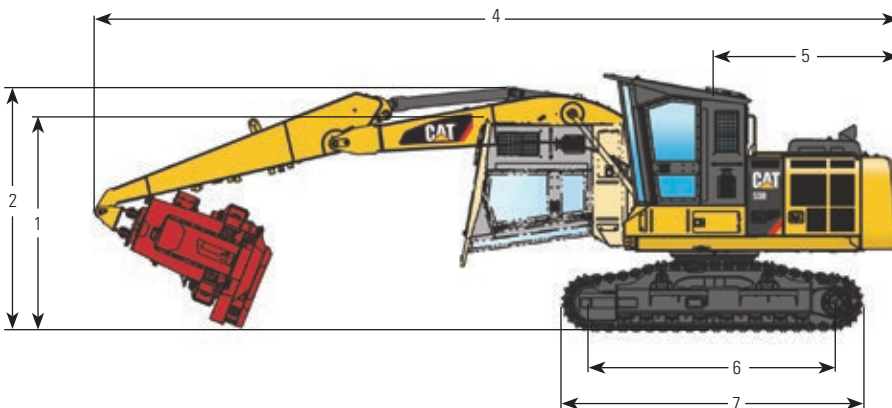
Dimensions

All dimensions are approximate



538 - General Forestry

1 Height - Cab tilted	3,225 mm	127.0 in
2 Boom Height - Shipping	3,223 mm	126.9 in
3 Height (overall)	3,901 mm	153.6 in
4 Shipping length (Processor)	9,492 mm	373.7 in
5 Tail Swing Radius	2,789 mm	109.8 in
6 Distance Between Idler / Sprocket Center	3,725 mm	146.7 in
7 Track Length	4,576 mm	180.2 in
8 Ground Clearance	660 mm	26.0 in
9 Track Gauge	2,790 mm	109.8 in
10 Width - 700mm (27.5") Shoes	3,490 mm	137.4 in

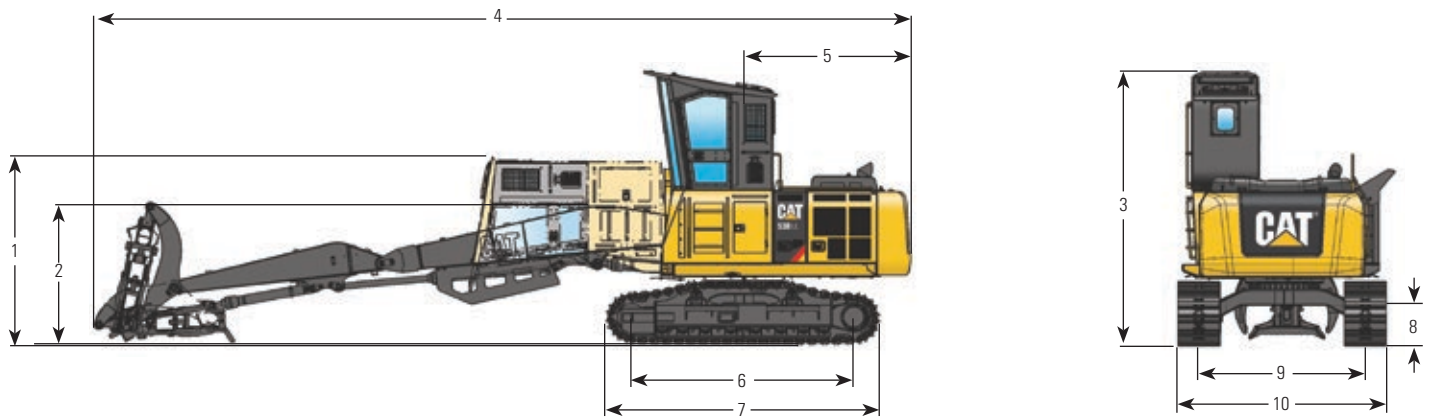


538 - General Forestry

1 Height- Cab tilted	3,225 mm	127.0 in
2 Boom Height - Shipping	3,697 mm	145.6 in
3 Height (overall)	3,901 mm	153.6 in
4 Shipping length (Processor)	12,192 mm	480.0 in
5 Tail Swing Radius	2,789 mm	109.8 in
6 Distance Between Idler / Sprocket Center	3,725 mm	146.7 in
7 Track Length	4,576 mm	180.2 in
8 Ground Clearance	660 mm	26.0 in
9 Track Gauge	2,790 mm	109.8 in
10 Width-700mm (27.5") Shoes	3,490 mm	137.4 in

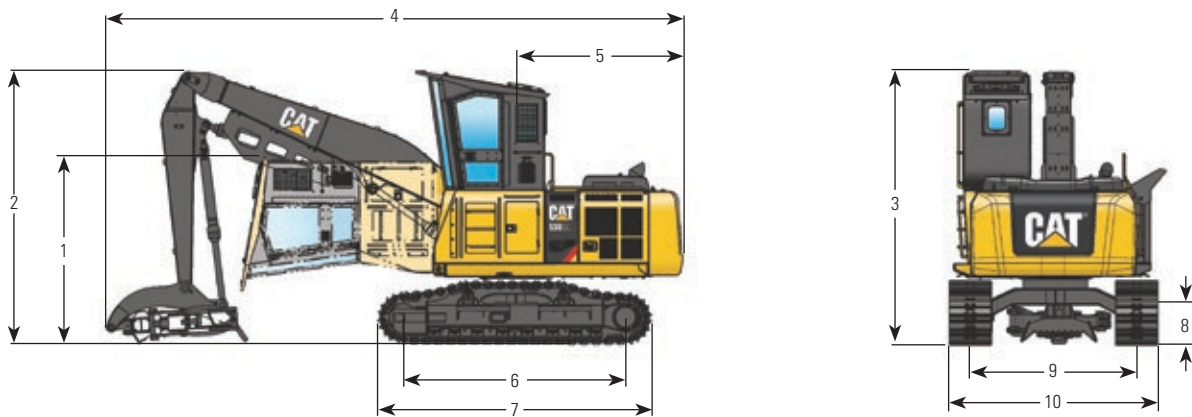
Dimensions

All dimensions are approximate



538 LL - Log Loader

1 Height - Cab tilted	3,142 mm	123.7 in
2 Boom Height - Shipping	2,323 mm	91.5 in
3 Height (overall)	4,578 mm	180.2 in
4 Shipping length (U/U)	13,485 mm	530.9 in
5 Tail Swing Radius	2,789 mm	109.8 in
6 Distance Between Idler / Sprocket Center	3,725 mm	146.7 in
7 Track Length	4,576 mm	180.2 in
8 Ground Clearance	660 mm	26.0 in
9 Track Gauge	2,790 mm	109.8 in
10 Width - 700mm (27.5") Shoes	3,490 mm	137.4 in



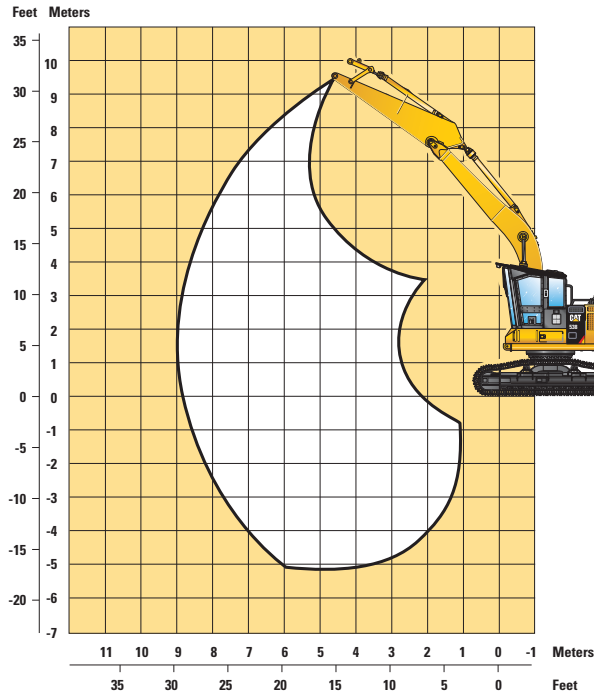
538 LL - Log Loader

1 Height - Cab tilted	3,142 mm	123.7 in
2 Boom Height - Shipping	4,558 mm	179.4 in
3 Height (overall)	4,578 mm	180.2 in
4 Shipping length (U/U)	9,643 mm	379.6 in
5 Tail Swing Radius	2,789 mm	109.8 in
6 Distance Between Idler / Sprocket Center	3,725 mm	146.7 in
7 Track Length	4,576 mm	180.2 in
8 Ground Clearance	660 mm	26.0 in
9 Track Gauge	2,790 mm	109.8 in
10 Width - 700mm (27.5") Shoes	3,490 mm	137.4 in

538/538 LL Working Envelopes and Lift Charts

538 (GF) Reach Boom Working Envelope

538 (General Forestry) Reach Boom 2.9m



538 (GF) Reach Boom Lift Capacities

Lift Point Height		3.0 m/10.0 ft		4.6 m/15.0 ft		6.1 m/20.0 ft		7.6 m/25.0 ft		9.1 m/30.0 ft		Maximum Reach		
		Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	m ft
9.1 m 30.0 ft	kg lb											*5413 *11934	*5413 *11934	4.01 13.14
7.6 m 25.0 ft	kg lb			*5271 *11620	*5271 *11620							*4388 *9673	*4388 *9673	6.06 19.88
6.1 m 20.0 ft	kg lb			*5517 *12162	*5517 *12162	*5437 *11985	*5437 *11985					*4060 *8952	*4060 *8952	7.24 23.77
4.6 m 15.0 ft	kg lb	*8355 *18421	*8355 *18421	*6686 *14740	*6686 *14740	*5918 *13047	*5918 *13047	*5597 *12339	*5597 *12339			*3982 *8780	*3982 *8780	7.97 26.14
3.0 m 10.0 ft	kg lb			*8499 *18736	*8499 *18736	*6742 *14863	*6742 *14863	*5919 *13050	*5919 *13050			*4068 *8968	*4068 *8968	8.35 27.40
1.5 m 5.0 ft	kg lb			*10237 *22568	*10237 *22568	*7610 *16778	*7610 *16778	*6330 *13956	*6330 *13956			*4312 *9507	*4312 *9507	8.44 27.69
0.0 m 0.0 ft	kg lb	*7098 *15647	*7098 *15647	*11199 *24691	*11199 *24691	*8227 *18138	*8227 *18138	*6621 *14597	*6621 *14597			*4771 *10518	*4771 *10518	8.25 27.07
-1.5 m -5.0 ft	kg lb	*11971 *26392	*11971 *26392	*11292 *24896	*11292 *24896	*8383 *18482	*8383 *18482	*6533 *14403	*6533 *14403			*5602 *12350	*5602 *12350	7.75 25.44
-3.0 m -10.0 ft	kg lb	*14852 *32744	*14852 *32744	*10527 *23209	*10527 *23209	*7825 *17251	*7825 *17251					*6605 *14562	*6605 *14562	6.89 22.60

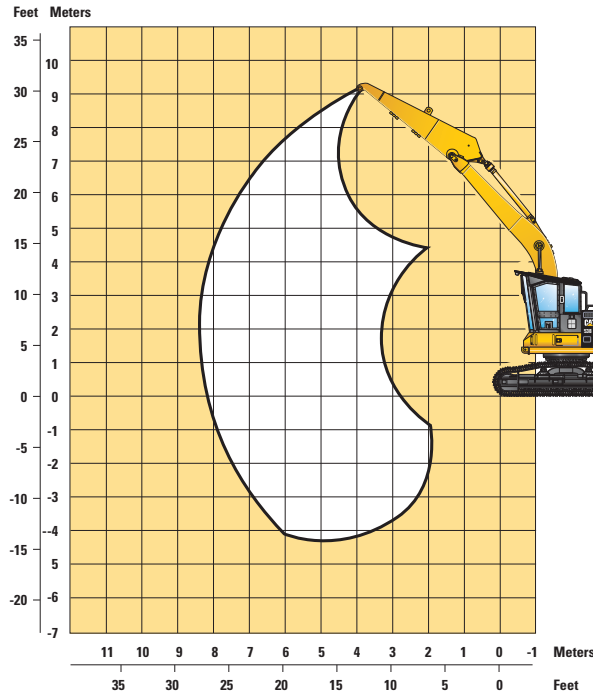
Numbers marked with "*" are limited by hydraulic capacity (work Pressure) rather than tipping
Follows ISO 10567: Does not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity
Lift Mode is activated

NOTE: Fuel level is at 100%. Other fluids are at recommended levels

Weight of all lifting accessories must be deducted from the above lifting capacities

538 (GF) Processor Working Envelope

538 (General Forestry) Processor



538 (GF) Processor Lift Capacities

Lift Point Height		1.5 m/5.0 ft		3.0 m/10.0 ft		4.6 m/15.0 ft		6.1 m/20.0 ft		7.6 m/25.0 ft		9.1 m/30.0 ft		Maximum Reach		
		Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	m ft
9.1 m 30.0 ft	kg lb													*4203 *9266	*4203 *9266	5.14 16.85
7.6 m 25.0 ft	kg lb							*4527 *9980	*4527 *9980					*3678 *8109	*3678 *8109	6.85 22.48
6.1 m 20.0 ft	kg lb							*4559 *10051	*4559 *10051	*4342 *9573	*4342 *9573			*3500 *7717	*3500 *7717	7.92 25.98
4.6 m 15.0 ft	kg lb					*5449 *12013	*5449 *12013	*5096 *11235	*5096 *11235	*4900 *10803	*4900 *10803			*3487 *7687	*3487 *7687	8.58 28.16
3.0 m 10.0 ft	kg lb			*10377 *22877	*10377 *22877	*7239 *15959	*7239 *15959	*5968 *13157	*5968 *13157	*5325 *11740	*5325 *11740			*3597 *7931	*3597 *7931	8.94 29.33
1.5 m 5.0 ft	kg lb			*10765 *23733	*10765 *23733	*9169 *20215	*9169 *20215	*6940 *15301	*6940 *15301	*5835 *12865	*5835 *12865			*3839 *8465	*3839 *8465	9.02 29.61
0.0 m 0.0 ft	kg lb			*9356 *20627	*9356 *20627	*10533 *23222	*10533 *23222	*7738 *17060	*7738 *17060	*6271 *13826	*6271 *13826			*4261 *9395	*4261 *9395	8.85 29.02
-1.5 m -5.0 ft	kg lb	*7262 *16010	*7262 *16010	*12035 *26534	*12035 *26534	*11075 *24417	*11075 *24417	*8155 *17978	*8155 *17978	*6466 *14254	*6466 *14254			*4992 *11005	*4992 *11005	8.39 27.52
-3.0 m -10.0 ft	kg lb	*10930 *24098	*10930 *24098	*15868 *34983	*15868 *34983	*10805 *23820	*10805 *23820	*8021 *17684	*8021 *17684					*6155 *13570	*6155 *13570	7.59 24.92
-4.6 m -15.0 ft	kg lb			*13576 *29931	*13576 *29931	*9524 *20998	*9524 *20998	*6914 *15243	*6914 *15243					*6514 *14360	*6514 *14360	6.34 20.82

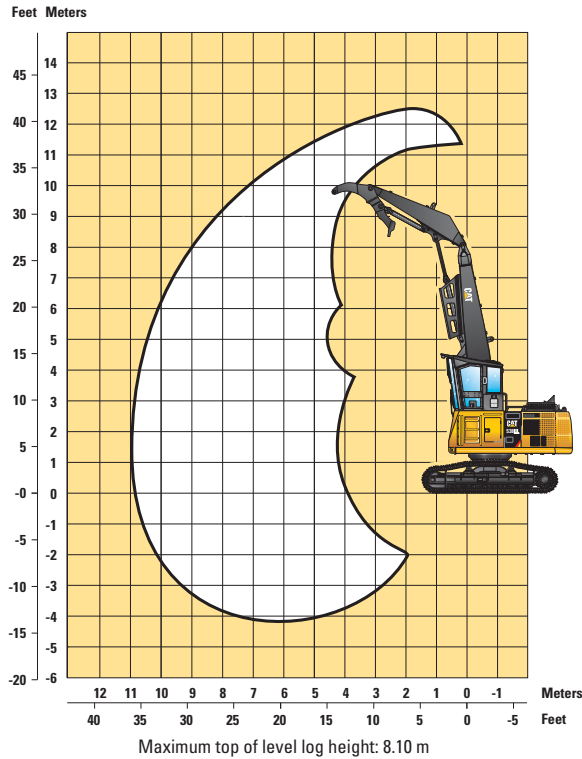
Numbers marked with “*” are limited by hydraulic capacity (work Pressure) rather than tipping
 Follows ISO 10567: Does not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity
 Lift Mode is activated

NOTE: Fuel level is at 100%. Other fluids are at recommended levels

Weight of all lifting accessories must be deducted from the above lifting capacities

538 LL Under/Under Working Envelope

538 LL Log Loader Under/Under with Live Heel



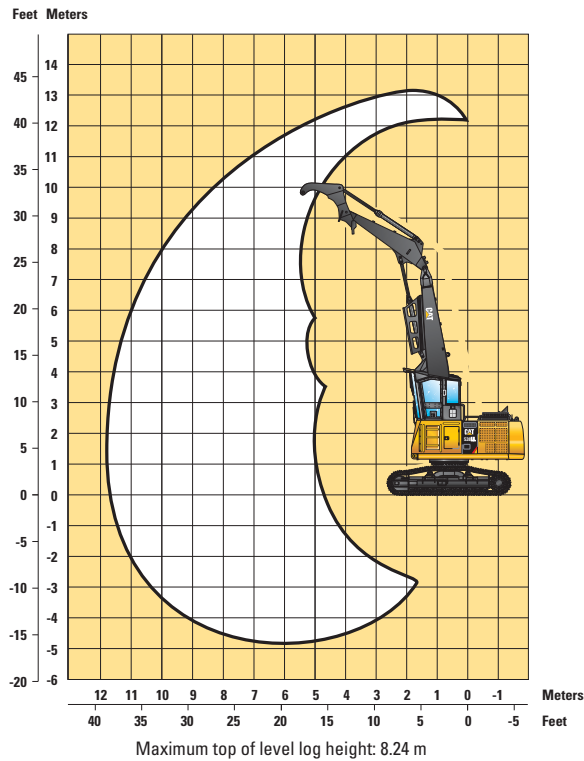
538 LL Under/Under Lift Capacities

Lift Point Height	3.0 m/10.0 ft		4.6 m/15.0 ft		6.1 m/20.0 ft		7.6 m/25.0 ft		9.1 m/30.0 ft		10.7 m/35 ft		Maximum Reach					
	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	m ft			
12.2 m 40.0 ft	kg lb													*12584 *27743	*12584 *27743	3.18 10.42		
10.7 m 35.0 ft	kg lb					*6508 *14348	*6508 *14348							*6439 *14197	*6439 *14197	6.35 20.84		
9.1 m 30.0 ft	kg lb					*8811 *19424	*8811 *19424	*6414 *14140	*6414 *14140					*5010 *11044	*5010 *11044	8.10 26.57		
7.6 m 25.0 ft	kg lb					*8637 *19040	*8637 *19040	*7813 *17225	6084 13413					*4345 *9579	*4345 *9579	9.27 30.42		
6.1 m 20.0 ft	kg lb					*8849 *19510	*8849 *19510	*7847 *17300	6053 13346	*6987 *15403	4405 9711			*3984 *8784	*3984 *8784	10.08 33.08		
4.6 m 15.0 ft	kg lb					*8927 *19680	*8927 *19680	*9451 *20835	*9451 *20835	*8105 *17869	5923 13057	6053 13345	4359 9611		*3790 *8356	*3790 *8356	10.61 34.81	
3.0 m 10.0 ft	kg lb					*12377 *27286	*12377 *27286	*10266 *22632	8157 17983	*8448 *18625	5727 12626	5953 13125	4265 9402	*4795 *10571	3282 7235	*3710 *8179	3159 6965	10.90 35.76
1.5 m 5.0 ft	kg lb					*14782 *32589	12086 26646	*10956 *24153	7742 17068	*8686 *19151	5512 12152	5838 12870	4155 9161	*5277 *11633	3252 7170	*3723 *8208	3123 6885	10.97 35.99
0.0 m 0.0 ft	kg lb					*15220 *33556	11403 25140	*11107 *24488	7397 16308	*8589 *18937	5327 11744	5740 12654	4063 8957	*4321 *9526	3242 7147	*3785 *8344	3197 7048	10.82 35.51
-1.5 m -5.0 ft	kg lb	*3941 *8688	*3941 *8688	*12421 *27385	*12421 *27385	*10406 *22942	7190 15851	*7916 *17453	5211 11489	*5840 *12876	4016 8853			*3655 *8057	*3655 *8057	10.32 33.87		
-3.0 m -10.0 ft	kg lb	*6037 *13309	*6037 *13309	*11392 *25116	*11392 *25116	*8646 *19061	7132 15724	*6389 *14086	5188 11438					*4302 *9485	*4302 *9485	9.05 29.70		

Numbers marked with “*” are limited by hydraulic capacity (work Pressure) rather than tipping
 Follows ISO 10567: Does not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity
 Lift Mode is activated
 NOTE: Fuel level is at 100%. Other fluids are at recommended levels
 Weight of all lifting accessories must be deducted from the above lifting capacities

538 LL Over/Under Working Envelope

538 LL Log Loader Over/Under with Live Heel



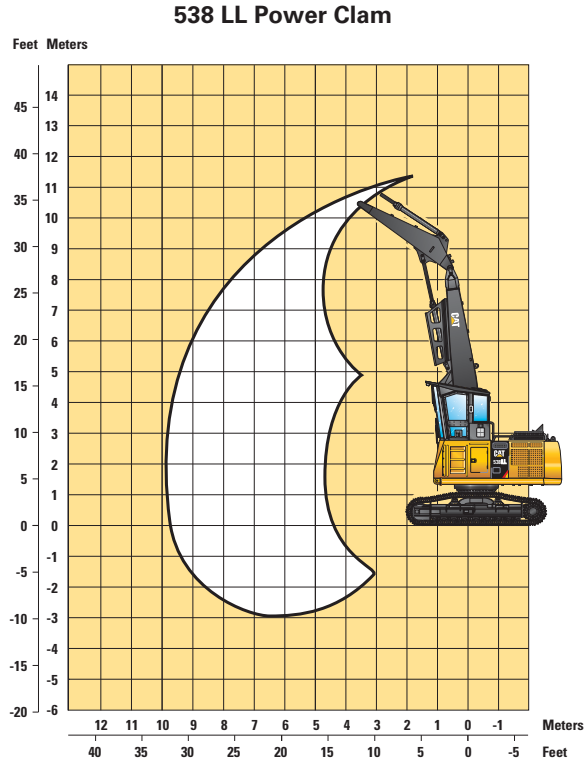
538 LL Over/Under Lift Capacities

Lift Point Height		3.0 m/10.0 ft		4.6 m/15.0 ft		6.1 m/20.0 ft		7.6 m/25.0 ft		9.1 m/30.0 ft		10.7 m/35 ft		Maximum Reach		
		Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	m ft
12.2 m 40.0 ft	kg lb			*9116 *20096	*9116 *20096									*7423 *16365	*7423 *16365	5.22 17.11
10.7 m 35.0 ft	kg lb					*8110 *17880	*8110 *17880							*5080 *11200	*5080 *11200	7.57 24.82
9.1 m 30.0 ft	kg lb							*7442 *16407	6291 13869					*4188 *9233	*4188 *9233	9.08 29.78
7.6 m 25.0 ft	kg lb							*7284 *16059	*7284 *16059	*6718 *14812	4585 10107			*3719 *8199	*3719 *8199	10.14 33.26
6.1 m 20.0 ft	kg lb							*7378 *16266	6324 13943	*6691 *14751	4594 10128	*4853 7506	3405 7506	*3448 *7602	*3448 *7602	10.88 35.70
4.6 m 15.0 ft	kg lb					*7757 *17102	*7757 *17102	*7689 *16952	6164 13590	*6800 *14992	4517 9957	4921 10849	3415 7529	*3296 *7266	*3296 *7266	11.37 37.31
3.0 m 10.0 ft	kg lb					*9122 *20110	*9122 *20110	*8115 *17891	5923 13059	*6956 *15336	4387 9671	4867 10731	3364 7416	*3228 *7117	*3228 *7117	11.64 38.20
1.5 m 5.0 ft	kg lb					*10527 *23208	7975 17582	*8495 *18729	5645 12445	*7048 *15537	4235 9336	4794 10569	3294 7261	*3232 *7125	*3232 *7125	11.71 38.41
0.0 m 0.0 ft	kg lb					*11004 *24260	7497 16528	*8622 *19009	5386 11875	5956 13130	4094 9026	*5374 *11848	3232 7125	*3306 *7289	*3306 *7289	11.57 37.97
-1.5 m -5.0 ft	kg lb			*14383 *31709	10983 24213	*10747 *23694	7165 15795	*8280 *18254	5197 11459	*6422 *14158	3996 8810	*4462 *9838	3209 7075	*3262 *7191	*3262 *7191	11.15 36.57
-3.0 m -10.0 ft	kg lb	*4786 *10551	*4786 *10551	*12771 *28156	10759 23720	*9548 *21050	7008 15451	*7245 *15972	5108 11262	*5257 *11591	3968 8748			*3663 *8076	*3663 *8076	10.13 33.25
-4.6 m -15.0 ft	kg lb			*9434 *20799	*9434 *20799	*7210 *15895	*7210 *15895	*5210 *11487	*5210 *11487					*5031 *11091	*5031 *11091	7.76 25.45

Numbers marked with “*” are limited by hydraulic capacity (work Pressure) rather than tipping
Follows ISO 10567: Does not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity
Lift Mode is activated

NOTE: Fuel level is at 100%. Other fluids are at recommended levels
Weight of all lifting accessories must be deducted from the above lifting capacities

538 LL Power Clam Working Envelope



538 LL Power Clam Lift Capacities

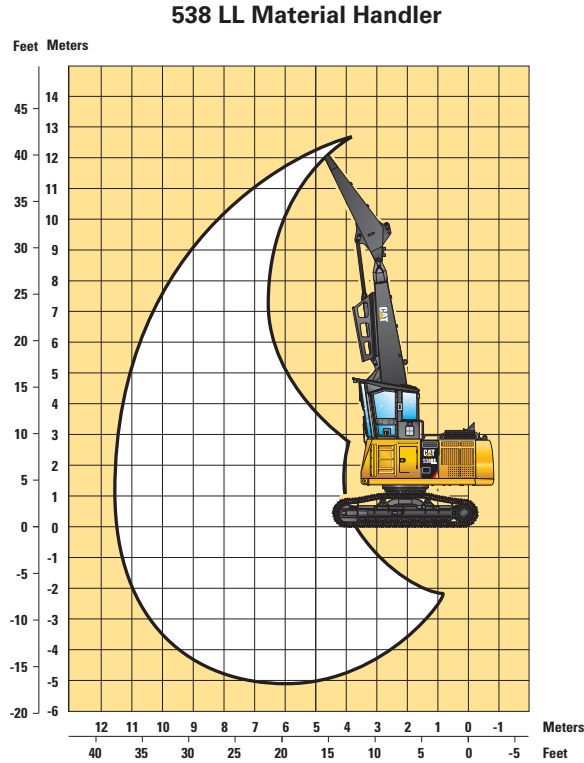
Lift Point Height		4.6 m/15.0 ft		6.1 m/20.0 ft		7.6 m/25.0 ft		9.1 m/30.0 ft		10.7 m/35 ft		12.2 m/40.0 ft		Maximum Reach		
		Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	m ft
10.7 m 35.0 ft	kg lb													*12847 *28324	*12847 *28324	4.16 13.63
9.1 m 30.0 ft	kg lb	*12977 *28609	*12977 *28609	*11536 *25434	9804 21615									*9117 *20099	*9117 *20099	6.53 21.43
7.6 m 25.0 ft	kg lb			*10139 *22353	*10139 *22353	*9825 *21660	6930 15279							*7628 *16816	*7628 *16816	7.95 26.07
6.1 m 20.0 ft	kg lb	*10844 *23906	*10844 *23906	*9269 *20435	7968 17567	*8492 *18721	5856 12910							*6642 *14643	5632 12417	8.88 29.13
4.6 m 15.0 ft	kg lb	*11831 *26083	*11831 *26083	*9401 *20727	7429 16377	*7898 *17411	5135 11320	6292 13873	4447 9804					*5887 *12979	4789 10559	9.48 31.09
3.0 m 10.0 ft	kg lb	*14619 *32230	12566 27704	*10357 *22834	7410 16336	*7900 *17416	4838 10666	5603 12352	3758 8286					*5299 *11681	4163 9177	9.80 32.15
1.5 m 5.0 ft	kg lb			*11399 *25130	7716 17011	*8085 *17825	4862 10719	*5987 *13200	3449 7603					*4877 *10752	3719 8200	9.88 32.41
0.0 m 0.0 ft	kg lb	*12299 *27114	*12299 *27114	*11621 *25621	8022 17685	*7900 *17417	5003 11030	*5124 *11297	3356 7399					*3935 *8675	*3935 *8675	9.71 31.87
-1.5 m -5.0 ft	kg lb	*13276 *29268	*13276 *29268	*10519 *23190	8175 18022	*6815 *15025	5094 11230							*3523 *7767	*3523 *7767	9.03 29.64

Numbers marked with "*" are limited by hydraulic capacity (work Pressure) rather than tipping
 Follows ISO 10567: Does not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity
 Lift Mode is activated

NOTE: Fuel level is at 100%. Other fluids are at recommended levels

Weight of all lifting accessories must be deducted from the above lifting capacities

538 LL Material Handler Working Envelope



538 LL Material Handler Lift Capacities

Lift point height		3.0 m/10.0 ft		4.6 m/15.0 ft		6.1 m/20.0 ft		7.6 m/25.0 ft		9.1 m/30.0 ft		10.7 m/35 ft		Maximum Reach		
		Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	m ft
12.2 m 40.0 ft	kg lb			*7659 *16885	*7659 *16885									*6827 *15051	*6827 *15051	5.00 16.40
10.7 m 35.0 ft	kg lb					*7371 *16251	*7371 *16251							*5222 *11513	*5222 *11513	7.42 24.34
9.1 m 30.0 ft	kg lb							*6923 *15262	*6923 *15262					*4583 *10104	*4583 *10104	8.96 29.38
7.6 m 25.0 ft	kg lb							*7588 *16730	*7588 *16730	*6235 *13747	5032 11095			*4257 *9384	*4257 *9384	10.03 32.90
6.1 m 20.0 ft	kg lb							*7697 *16969	*7697 *16969	*7123 *15703	5025 11077	*4493 *9906	*4493 *9906	*4090 *9018	*4090 *9018	10.78 35.37
4.6 m 15.0 ft	kg lb					*8950 *19732	*8950 *19732	*8051 *17749	6556 14453	*7261 *16009	4956 10926	*5872 *12945	3892 8580	*4030 *8884	*4030 *8884	11.28 37.00
3.0 m 10.0 ft	kg lb			*9593 *21148	*9593 *21148	*9956 *21950	*9956 *21950	*8550 *18850	6363 14027	*7467 *16462	4848 10689	5191 11444	3843 8472	*4054 *8938	3401 7498	11.55 37.89
1.5 m 5.0 ft	kg lb			*14261 *31441	*14261 *31441	*11002 *24256	8489 18714	*9029 *19906	6140 13537	6406 14123	4724 10415	5126 11302	3781 8337	*4161 *9173	3345 7375	11.61 38.11
0.0 m 0.0 ft	kg lb			*15741 *34702	12346 27218	*11670 *25729	8107 17873	*9271 *20440	5932 13079	6284 13854	4609 10161	5069 11175	3727 8216	*4360 *9613	3380 7451	11.48 37.65
-1.5 m -5.0 ft	kg lb	*6646 *14653	*6646 *14653	*15704 *34621	11859 26145	*11601 *25575	7836 17277	*9052 *19956	5778 12738	*7178 *15826	4526 9978	*5336 *11763	3700 8156	*4512 *9947	3514 7748	11.13 36.51
-3.0 m -10.0 ft	kg lb	*7641 *16847	*7641 *16847	*14089 *31061	11661 25709	*10573 *23309	7702 16980	*8147 *17962	5699 12565	*6146 *13549	4495 9910			*4152 *9153	*4152 *9153	10.41 34.14
-4.6 m -15.0 ft	kg lb			*10952 *24145	*10952 *24145	*8400 *18519	*8400 *18519	*6272 *13827	*6272 *13827					*5301 *11686	*5301 *11686	8.32 27.31

Numbers marked with "*" are limited by hydraulic capacity (work Pressure) rather than tipping
 Follows ISO 10567: Does not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity
 Lift Mode is activated
 NOTE: Fuel level is at 100%. Other fluids are at recommended levels
 Weight of all lifting accessories must be deducted from the above lifting capacities

538/538 LL Forest Machine Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

POWERTRAIN

Cat C7.1 ACERT engine certified to EPA Tier 4 Final, EU Stage IV
After Treatment system: CEM (DOC+DPF +SCR) and DEF system (DEF tank and DEF lines)
24-volt electric starting
Air intake heater
Automatic engine speed control with one touch low idle
Water separator in fuel line
Two speed auto-shift travel
Easy clean cooling system with full screens
Reversing fan
High ambient capability, 48 degrees C (118 degrees F)
Side-by-side cores
Muffler
Cold weather starting aid package with two additional batteries, HD starter, and ether aid

UNDERCARRIAGE

High-wide undercarriage
Heavy duty track roller frames
Straddle mounted carrier rollers
Heavy duty track rollers (8 per side)
Heavy duty recoil mechanisms
PPR2, 329 203 mm (8 in) pitch track
Idler track guiding guards
Heavy duty travel motor guards
Full length track shoe support
High drawbar final drives
Heavy duty hydraulic swivel
Heavy duty hydraulic swivel guard
Towing eyes on base frame

ELECTRICAL

80 Ampere alternator
4 Front working lights
1 Left side working light
2 Riser mounted lights
Rear working light, cab mounted
2 Right front working lights
Horn
Pre-start monitoring system

OPERATOR ENVIRONMENT

Purpose built forestry cab
Scratch resistant polycarbonate windows
FOPS/ROPS/OPS/OR-OSHA/WCB certified
Seat with air suspension, heated and ventilated functionality, retractable seatbelt, and head rest
Integrated seat and joystick type controls
Standard operator controls with functions for grapple or processor
Language display monitor with gauges, warning information, filter/fluid change information, machine condition, error codes, and tool mode setting information
Full time clock on monitor
Retractable sun shade
Interior lighting
Windshield wiper and washer
Filtered ventilation, pressurized cab
Forced air fan
Behind seat storage tray
CB radio mounts

Fire extinguisher mount
Secondary roof exit
2 Coat hooks
Literature holder
Cup holder
Neutral lever (lockout) for all controls
Travel control pedals
Noise dampening, washable floor mat
Radio/CD player
Converter & sockets for 12V power supply

FLUIDS

Antifreeze
Includes 50% concentration with protection of -34 degrees C (-30 degrees F)

OTHER STANDARD EQUIPMENT

Heavy duty upper frame with catwalks
Heavy duty doors and covers
Heavy duty bottom guards
Back-to-back control valve
Door and cover locks with Caterpillar one key security system
Automatic swing parking brake
Fully pressurized hydraulic system
Fine swing control
Travel alarm
Counterweight with lifting eyes
Right front corner guard with log deflector
Right front corner storage box
Product Link PL631E

538/538 LL Forest Machine Attachments

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

MANDATORY ATTACHMENTS

Booms, Sticks and Linkages

538 (General Forestry)

(must select one of the following)

- Linkage omission with boom cylinders
- Linkage omission without main boom cylinders
- Reach linkage for road building
- Reach linkage with rotate grapple capability
- Processor linkage

538 LL (Log Loader)

(must select one of the following)

- Under/under log loader linkage
- Over/under log loader linkage
- Powerclam linkage
- Material handler linkage
- Linkage omission

Undercarriage

(must select one of the following)

- 600 mm (24 in) track; DG w/trap holes
- 600 mm (24 in) track; SG w/trap holes
- 700 mm (28 in) track; DG w/trap holes
- 800 mm (32 in) HD track; TG w/slot holes
- 900 mm (36 in) Tri-Track; TG w/slot holes

Hydraulics

(must select one of the following)

- Standard pedals for 18" riser
- Straight travel pedal for 18" riser
- Standard pedals for 48" riser
- Straight travel pedal for 48" riser

Operator Environment

(must select one of the following)

- Side entry standard cab
- Side entry processor cab

Riser

(must select one of the following)

- Riser for 18" side entry cab
- Riser for 48" side entry cab

Riser

538 Log Loader Only

(must select one of the following)

- Standard log loader carbody
- Ground saw hydraulics equipped carbody

Instructions

(must select one of the following)

- ANSI instructions
- ISO instructions

OPTIONAL ATTACHMENTS

Booms, Sticks and Linkages

B1 family bucket linkage

Grapples

(grapples available through Cat Forest Products)

- Grapple, GLL52B log loading
- Grapple, GLL55B log loading

Heels

Heel with bottom mounted cylinder

Heel with top mounted cylinder

Processing Heads

(Full line of SATCO processing heads available through Cat Forest Products)

Hydraulics

Vacuum pump

Fluids

Antifreeze, -50° C (-58° F)

Matching Guide

	GLL52B	GLL55B	GLL60B
538 LL	●	○	
324D FM	●	●	
558 LL	○	●	●
568 LL	○	●	●

● Provides optimum machine match

○ Provides acceptable machine match

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

© 2016 Caterpillar. All Rights Reserved.

VisionLink is a trademark of Trimble Navigation Limited, registered in the United States and in other countries.

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Cat dealer for available options.

CAT, CATERPILLAR, BUILT FOR IT, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.
www.cat.com www.caterpillar.com

AEHQ7922 (06-2016)

