



Cat[®] 538/538 LL

Forest Machine

Efficiency

- Engine, hydraulics, and work tool integration are optimized to minimize power losses and increase overall machine efficiency
- Steady state high idle speed and U.S. EPA Tier 4 Final technology reduces fuel consumption
- Larger hydraulic pump allows engine to operate at lower rpm with increased performance to maximize efficiency
- Component layout and back-to-back main hydraulic control valve reduces oil flow restrictions and aids in greater fuel economy
- Machine designed for integration and optimization with SATCO[®] work tools and Cat[®] grapples
- Powerful, multi-functioning hydraulics, combined with strong machine performance ensure work tools function quickly and fluidly to complete work faster

Performance

- Cat C7.1 ACERT[™] Tier 4 Final engine with increased horsepower maintains maximum performance under load
- Strong hydraulic horsepower for efficient implement performance and greater productivity
- An increase in swing torque of 18 percent, provides added power to move trees, which enables more efficiency and productivity
- Heavy lift mode features increased lift capacity to handle larger payloads with improved control

Stability

- Wider undercarriage, by 203 mm (8 in), improves stability for increased lift and swing capabilities
- Heavy duty counterweight as standard equipment ensures machine platform is stable in varied applications

Application Versatility

- Boom arrangements and hydraulic systems for specific applications enable more effective road building, loading, processing, shoveling, or millyard stacking
- New track options meet shovel logging and low ground pressure application requirements
- Ground saw hydraulics are available for log loader applications
- Purpose built processor cab that includes 19 mm (0.75 in) front windows

Reliability and Durability

- Variable pitch, reversing cooling fan maintains optimum fluid temperatures in heavy duty forestry applications
- Cooling capability increased 12 percent for trouble-free operation
- High-wide carbody features double-supported carrier rollers, reinforced idler mounts, heavy-duty top hat, extra gussets, and thick doubler plates for structural integrity in severe applications
- Larger 203 mm (8 in) pitch Positive Pin Retention 2 links (329 HEX) provide greater life in variable forestry working conditions
- Purpose-built upper frames provide increased life with box section members, thick doubler plates, reinforced swing drive mounts, rugged door components, and 5 mm (0.2 in) sheet metal
- Linkage configurations incorporate internal baffle plates, large box sections, and thicker plating to increase service life
- Validated and proven excavator technologies ensure overall machine reliability

Serviceability

- One-piece engine hood design, with two opening angles, allows easy access to engine and cooling compartments
- Side-by-side engine and hydraulic coolers provide easy access for cleaning, while reduced cooling fins per inch allows better debris flow-through to reduce clogging potential
- 0.28 m³ (10 ft³) of storage space at ground level, gives ready access to tools, equipment, and supplies that operators use daily

Operator Comfort and Technology

- Fully adjustable, air ride cab seat that includes heating and cooling capability for comfort and reduced operator fatigue
- LED lights increase visibility
- Cat Product Link[™] allows for remote location of a machine and enables tracking of fuel consumption and other events

Work Tools

- Both machine models are optimized for a wide variety of processing and harvesting heads, grapples, heels, quick couplers, and thumbs



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Engine

Engine Model	Cat C7.1 ACERT	
Gross Power at 1,800 rpm	122 kW	164 hp
Engine Speed		
Operation	1,500 rpm	
Travel	1,500 rpm	
Travel (maximum load)	1,800 rpm	
Displacement	7.01 L	427.8 in ³
Number of Cylinders	6	

Weights

Estimated Operating Weight without Attachment		
538 (General Forestry, Reach)	30 227 kg	66,639 lb
538 LL (Log Loader, U/U)	31 558 kg	69,573 lb
538 LL (Log Loader, O/U)	31 480 kg	69,401 lb

Operating Specifications

Maximum Speed (Turtle)	2.6 km/h	1.6 mph
Maximum Speed (Rabbit)	4.3 km/h	2.7 mph
Maximum Drawbar Pull	272 kN	61,148 lb
Swing Torque – 538 (GF)	73.2 kN·m	54,000 lb ft
Swing Torque – 538 LL	73.2 kN·m	54,000 lb ft
Maximum Swing Speed – 538 (GF)	11.0 rpm	
Maximum Swing Speed – 538 LL	11.0 rpm	

Hydraulic System

Main Pumps Maximum Flow (per pump)	212 L/min	56 gal/min
Main Pumps Maximum Flow (both pumps)	424 L/min	112 gal/min
Maximum System Pressure		
Implements	35 000 kPa	5,076 psi
Travel	35 000 kPa	5,076 psi
Swing	31 000 kPa	4,496 psi
Heavy Lift Mode	38 000 kPa	5,511 psi
Auxiliary Pump – U/U and O/U (538 LL)		
Maximum Flow	45 L/min	12 gal/min
Maximum Pressure	10 335 kPa	1,499 psi
Auxiliary Pump – Grapple Rotate (538) / Power Clam (538 LL)		
Pump Drive Gear Ratio	1.28:1	
Maximum Flow	121 L/min	32 gal/min
Maximum Pressure	10 335 kPa	1,499 psi

Service Refill Capacities

Fuel Tank – CWT	410.0 L	108.3 gal
DEF Tank	28.0 L	7.4 gal
Engine Crankcase	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	2790.0 mm	109.8 in
Track Length	4576.0 mm	180.2 in
Ground Clearance	659.5 mm	26.0 in

Dimensions

General Forestry – 538 (boom stretched out)		
Height of Tilted Side Entry Cab	3225 mm	127.0 in
Boom Height	3697 mm	145.6 in
Overall Height	3901 mm	153.6 in
Overall Length (Processor)	12 192 mm	480.0 in
Tail Swing Radius	2789 mm	109.8 in
Distance Between Idler and Sprocket Centerline	3725 mm	146.7 in
Track Length	4576 mm	180.2 in
Ground Clearance	660 mm	26.0 in
Track Gauge	2790 mm	109.8 in
Width with 700 mm (28 in) Shoes	3490 mm	137.4 in
Log Loader – 538 LL (boom stretched out)		
Height of Tilted Side Entry Cab	3142 mm	123.7 in
Boom Height	2323 mm	91.5 in
Overall Height	4578 mm	180.2 in
Overall Length (U/U)	13 485 mm	530.9 in
Tail Swing Radius	2789 mm	109.8 in
Distance Between Idler and Sprocket Centerline	3725 mm	146.7 in
Track Length	4576 mm	180.2 in
Ground Clearance	660 mm	26.0 in
Track Gauge	2790 mm	109.8 in
Width with 700 mm (28 in) Shoes	3490 mm	137.4 in

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