**M SERIES – MAKING YOUR CHOICE EASY:**

- **Enjoy All Day Comfort** – Have a seat in the new M Series Small Wheel Loader and enjoy automatic temperature control, class leading sound levels, excellent all around visibility and low-effort joystick controls that move with you on a fully adjustable seat suspension. A large spacious operator environment combined with Caterpillar’s hydraulic cylinder damping and smooth predictable controls make this the most comfortable seat on your job site.

- **Work Made Easy** – Move more with Caterpillar’s patented quick loading Performance Series buckets and optimized Z-bar linkage with enhanced forward visibility that combines the digging efficiency of a traditional Z-bar with tool carrier capabilities. The parallel lift and high tilt forces throughout the working range allow you to confidently handle loads with precise control.

Multi-function work has never been easier with dedicated pumps for each system and a flow sharing implement valve governed by an intelligent power management system. Simultaneously lift, steer and drive without compromise. The M Series Small Wheel Loader simply does what you ask it to do.

- **Efficiently Powerful** – Experience hybrid like fuel efficiency with an intelligent hydrostatic power train and industry leading fuel savings through a lower maximum engine speed of just 1,600 rpm in Standard Mode. Power when you need it with Caterpillar’s exclusive Power-by-Range technology that increases power in Range 4 for improved speed on grade. For your toughest and most demanding applications a new Performance Mode will allow you to boost the power and hydraulic speed in all Ranges to get the job done even quicker. Meets U.S. EPA Tier 4 Final/EU Stage V emission standards with a Cat® C7.1 ACERT™ engine that is designed to manage itself so you can concentrate on your work.

- **Customize Your Experience** – Meet your application requirements and individual preferences with Caterpillar’s industry first Hystat™ Operator Modes featuring four unique power train settings. Select classic Torque Converter for smooth rollout, conventional Hystat for aggressive engine braking, an Ice Mode that maximizes your control on slippery underfoot, or default mode which blends the best of Hystat and Torque Converter characteristics. Fine tune machine performance with adjustments at your fingertips through the soft touch buttons and optional secondary display. Quickly set hydraulic response along with linkage kick-out positions, maximum wheel torque, and peak ground speed to efficiently perform a multitude of tasks.

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### Specifications

<table>
<thead>
<tr>
<th>Engine</th>
<th>Cat C7.1 ACERT**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Model</td>
<td>Standard Mode</td>
</tr>
<tr>
<td>Power Mode</td>
<td>Performance Mode</td>
</tr>
<tr>
<td>Speed Range</td>
<td>Range 1-3*</td>
</tr>
<tr>
<td>Maximum Rated Gross Power</td>
<td>Range 1-4</td>
</tr>
<tr>
<td>Maximum Engine Speed</td>
<td>1,600 rpm</td>
</tr>
<tr>
<td>ISO 14396</td>
<td>1,800 rpm</td>
</tr>
<tr>
<td>ISO 14396 (DIN)</td>
<td>129 kW</td>
</tr>
<tr>
<td>ISO 9249 at Minimum Fan Speed</td>
<td>131 kW</td>
</tr>
<tr>
<td>SAE J1349 at Minimum Fan Speed</td>
<td>170 hp</td>
</tr>
<tr>
<td>Rated Net Power</td>
<td>1,600 rpm</td>
</tr>
<tr>
<td>Maximum Gross Torque</td>
<td>137 kW</td>
</tr>
<tr>
<td>ISO 14396</td>
<td>183 hp</td>
</tr>
<tr>
<td>ISO 9249 at Minimum Fan Speed</td>
<td>172 hp</td>
</tr>
<tr>
<td>ISO 9249 (DIN) at Minimum Fan Speed</td>
<td>128 kW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine (continued)</th>
<th>Standard Mode</th>
<th>Performance Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Gross Torque</td>
<td>870 N·m</td>
<td></td>
</tr>
<tr>
<td>ISO 14396</td>
<td>642 lbf-ft</td>
<td></td>
</tr>
<tr>
<td>Maximum Net Torque</td>
<td>900 N·m</td>
<td></td>
</tr>
<tr>
<td>SAE J1349</td>
<td>664 lbf-ft</td>
<td></td>
</tr>
<tr>
<td>ISO 9249:2007</td>
<td>850 N·m</td>
<td></td>
</tr>
<tr>
<td>Displacement</td>
<td>627 lbf-ft</td>
<td></td>
</tr>
<tr>
<td>ISO 9249:2007</td>
<td>880 N·m</td>
<td></td>
</tr>
<tr>
<td>7.01 L</td>
<td>650 lbf-ft</td>
<td></td>
</tr>
<tr>
<td>2 in³</td>
<td>628 lbf-ft</td>
<td></td>
</tr>
</tbody>
</table>

- Net power ratings are tested at the reference conditions for the specified standard and denote power available at the flywheel when the engine is equipped with alternator, air cleaner, emission components and fan at specified speed.
- Range 4 power and torque is equal to Performance Mode with Caterpillar Power by Range technology.
- **The Cat C7.1 ACERT engine meets Tier 4 Final/Stage V off-highway emission standards.**
938M Wheel Loader

**Buckets**
- Bucket Capacities – General Purpose: 2.5-3.2 m³, 3.2-4.2 yd³
- Bucket Capacities – Light Material: 3.1-5.0 m³, 4.0-6.5 yd³

**Steering**
- Steering Articulation Angle (each direction): 40°
- Maximum Flow – Steering Pump: 130 L/min, 34 gal/min
- Maximum Working Pressure – Steering Pump: 24 130 kPa, 3,500 psi
- Maximum Steering Torque:
  - 0 degrees (straight machine): 57 630 N·m, 42,506 lbf·ft
  - 40 degrees (full turn): 42 570 N·m, 31,398 lbf·ft
- Steering Cycle Times (full left to full right):
  - At 1,800 rpm: 90 rpm steering wheel speed, 2.3 seconds
  - Number of Steering Wheel Turns – full left to full right or full right to full left: 3.3 turns

**Loader Hydraulic System**
- Maximum Flow – Implement Pump: 190 L/min, 50 gal/min
- Maximum Flow – Implement Pump (3rd Function Maximum Flow*): 190 L/min, 50 gal/min
- Maximum Flow – Implement Pump (4th Function Maximum Flow*): 160 L/min, 42 gal/min
- Maximum Working Pressure – Implement Pump: 28 000 kPa, 4,061 psi
- Relief Pressure – Tilt Cylinder: 30 000 kPa, 4,351 psi
- 3rd and 4th Function Maximum Working Pressure: 28 000 kPa, 4,061 psi
- 3rd and 4th Function Relief Pressure: 30 000 kPa, 4,351 psi
- Hydraulic Cycle Times:
  - Standard Mode: Raise (ground level to maximum lift) 6.2 seconds, Dump (at maximum lift height) 1.7 seconds, Float Down (maximum lift to ground level) 2.7 seconds, Total Cycle Time 10.6 seconds
  - Performance Mode: Raise (ground level to maximum lift) 5.5 seconds, Dump (at maximum lift height) 1.5 seconds, Float Down (maximum lift to ground level) 2.7 seconds, Total Cycle Time 9.7 seconds

*3rd and 4th function flow is fully adjustable from 20% to 100% of maximum flow through the secondary display, when equipped.

**Service Refill Capacities**
- Fuel Tank: 195 L, 51.5 gal
- Cooling System: 32 L, 7.9 gal
- Engine Crankcase: 20 L, 5.3 gal
- Transmission (gearbox): 11 L, 2.9 gal
- Axles:
  - Front: 35 L, 9.2 gal
  - Rear: 35 L, 9.2 gal
- Hydraulic System (including tank): 170 L, 44.9 gal
- Hydraulic Tank: 90 L, 23.8 gal
- Diesel Exhaust Fluid (DEF) Tank: 19 L, 5 gal

- DEF used in Cat SCR systems must meet the requirements outlined in the International Organization for Standardization (ISO) standard 22241-1.

**Transmission**
- Forward and Reverse:
  - Range 1*: 1-13 km/h, 0.6-8 mph
  - Range 2: 13 km/h, 8 mph
  - Range 3: 27 km/h, 17 mph
  - Range 4: 40 km/h, 25 mph

*Creep control allows maximum speed range adjustability from 1 km/h (0.6 mph) to 13 km/h (8 mph) in Range 1 through the secondary display, when equipped. Factory default is 7 km/h (4.4 mph).

**Tires**
- Standard Size: 20.5 R25, radial (L-3)
- Other Choices Include:
  - 20.5 R25, radial (L-2)
  - 20.5 R25, radial (L-5)
  - 20.5-25 12PR (L-2)
  - 20.5-25 12PR (L-3)
  - 20.5-25 16PR (L-5)

- European Union Directive “2000/14/EC”

**Cab**
- ROPS: ISO 3471:2008
- FOPS: ISO 3449:2008 Level II

- Cab and Rollover Protective Structures (ROPS) are standard in North America and Europe.
- The declared dynamic operator sound pressure levels per ISO 6396:2008*, when properly installed and maintained, are:
  - Standard cab: 68 ±3 dB(A)
  - Deluxe cab: 66 ±2 dB(A)

*The measurements were conducted with the cab doors and windows closed and at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.

**Sound**
- Operator Sound Pressure (ISO 6396:2008): 72 dB(A)
- Average Exterior Sound Pressure (ISO 6959:2008): 101 dB(A)

- European Union Directive “2000/14/EC”

**Axles**
- Front: Locking differential (standard)
- Rear: Open differential (standard)

**Air Conditioning System**
- The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.9 kg of refrigerant which has a CO₂ equivalent of 2.717 metric tonnes.
**Dimensions and Operating Specifications** (All dimensions are approximate. Dimensions vary with bucket and tire choice.)

<table>
<thead>
<tr>
<th><strong>Height</strong></th>
<th><strong>Standard Lift</strong></th>
<th><strong>High Lift</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Height: Ground to Cab</td>
<td>3340 mm 10’11”</td>
<td>3340 mm 10’11”</td>
</tr>
<tr>
<td>2 Height: Ground to Beacon</td>
<td>3707 mm 12’2”</td>
<td>3707 mm 12’2”</td>
</tr>
<tr>
<td>3 Height: Ground Axle Center</td>
<td>685 mm 2’3”</td>
<td>685 mm 2’3”</td>
</tr>
<tr>
<td>4 Height: Ground Clearance</td>
<td>386 mm 1’3”</td>
<td>386 mm 1’3”</td>
</tr>
<tr>
<td>5 Length: Overall</td>
<td>7656 mm 25’7”</td>
<td>8397 mm 27’7”</td>
</tr>
<tr>
<td>6 Length: Rear Axle to Bumper</td>
<td>1966 mm 6’5”</td>
<td>1966 mm 6’5”</td>
</tr>
<tr>
<td>7 Length: Hitch to Front Axle</td>
<td>1525 mm 5’0”</td>
<td>1525 mm 5’0”</td>
</tr>
<tr>
<td>8 Length: Wheel Base</td>
<td>3050 mm 10’0”</td>
<td>3050 mm 10’0”</td>
</tr>
<tr>
<td>9 Clearance: Bucket at 45 degrees</td>
<td>2834 mm 9’4”</td>
<td>3415 mm 11’2”</td>
</tr>
<tr>
<td>10 Clearance: Load Over Height</td>
<td>3354 mm 11’0”</td>
<td>3561 mm 11’8”</td>
</tr>
<tr>
<td>11 Clearance: Level Bucket</td>
<td>3641 mm 11’11”</td>
<td>4222 mm 13’10”</td>
</tr>
<tr>
<td>12 Height: Bucket Pin</td>
<td>3969 mm 13’0”</td>
<td>4550 mm 14’11”</td>
</tr>
<tr>
<td>13 Height: Overall</td>
<td>5273 mm 17’4”</td>
<td>5853 mm 19’2”</td>
</tr>
<tr>
<td>14 Reach: Bucket at 45 degrees</td>
<td>1146 mm 3’9”</td>
<td>1413 mm 4’8”</td>
</tr>
<tr>
<td>15 Carry Height: Bucket Pin</td>
<td>394 mm 1’4”</td>
<td>612 mm 2’0”</td>
</tr>
<tr>
<td>16 Dig Depth</td>
<td>101 mm 4’0”</td>
<td>135 mm 5’3”</td>
</tr>
<tr>
<td>17 Width: Bucket</td>
<td>2750 mm 9’0”</td>
<td>2750 mm 9’0”</td>
</tr>
<tr>
<td>18 Width: Tread Center</td>
<td>2083 mm 6’10”</td>
<td>2083 mm 6’10”</td>
</tr>
<tr>
<td>19 Turning Radius: Over Bucket</td>
<td>6120 mm 20’1”</td>
<td>6483 mm 21’3”</td>
</tr>
<tr>
<td>20 Width: Over Tires</td>
<td>2693 mm 8’10”</td>
<td>2693 mm 8’10”</td>
</tr>
<tr>
<td>21 Turning Radius: Outside of Tires</td>
<td>5546 mm 18’2”</td>
<td>5546 mm 18’2”</td>
</tr>
<tr>
<td>22 Turning Radius: Inside of Tires</td>
<td>2843 mm 9’4”</td>
<td>2843 mm 9’4”</td>
</tr>
<tr>
<td>23 Rack Angle at Full Lift</td>
<td>54 degrees</td>
<td>53 degrees</td>
</tr>
<tr>
<td>24 Dump Angle at Full Lift</td>
<td>49 degrees</td>
<td>47 degrees</td>
</tr>
<tr>
<td>25 Rack Angle at Carry</td>
<td>43 degrees</td>
<td>48 degrees</td>
</tr>
<tr>
<td>26 Departure Angle</td>
<td>33 degrees</td>
<td>33 degrees</td>
</tr>
<tr>
<td>27 Articulation Angle</td>
<td>40 degrees</td>
<td>40 degrees</td>
</tr>
<tr>
<td>* Tipping Load – Straight (ISO 14397-1)</td>
<td>11 729 kg 25,857 lb</td>
<td>8660 kg 19,091 lb</td>
</tr>
<tr>
<td>* Tipping Load – Full Turn (ISO 14397-1)</td>
<td>9949 kg 21,934 lb</td>
<td>7271 kg 16,030 lb</td>
</tr>
<tr>
<td>* Breakout</td>
<td>13 167 kg 29,028 lb</td>
<td>12 660 kg 27,910 lb</td>
</tr>
<tr>
<td>* Operating Weight</td>
<td>16 229 kg 35,778 lb</td>
<td>16 556 kg 36,499 lb</td>
</tr>
</tbody>
</table>

*Vary with bucket.
**Vary with tire.

Dimensions listed are for a machine configured with 2.5 m³ (3.2 yd³) general purpose Fusion™ bucket, bolt-on cutting edge, heavy counterweights, additional guarding, 80 kg (176 lb) operator and Michelin 20.5 R25 (L-3) XHA2 tires.
938M Wheel Loader

STANDARD EQUIPMENT

POWER TRAIN
- Auto idle shut down feature
- Cat C7.1 ACERT engine
  - Power modes (Standard and Performance)
  - Power by range (High Power in Range 4)
  - Turbocharged and aftercooled
  - Filtered crankcase breather
  - Diesel particulate filter
  - Selective Catalyst Reduction
- Coded start (requires secondary display)
- Coolant protection to –34° C (–29° F)
- Enclosed wet disc full hydraulic brakes
- Fuel priming pump, automatic
- Hydraulically driven demand cooling fan
- Hydrostatic transmission with electronic control
  - Operator modes (Default, TC, Hystat, and Ice)
  - Directional Shift Aggressiveness (fast, medium, slow)
  - Rimpull control, adjust wheel torque
  - Creeper control, adjust ground speed
- Parking brake, electric
- Single plane cooling package wide six fins per inch density
- Throttle lock and max speed limiter

HYDRAULICS
- Automatic lift and bucket kickouts, adjustable in-cab
- Bucket and fork modes, adjustable in-cab
- Cylinder damping at kickout and mechanical end stops
- Fine mode control (fast, medium, slow) in fork mode
- Hydraulic response setting (fast, medium, slow)
- Hydraulic diagnostic connectors and S·O·SS™ ports
- Load sensing hydraulics and steering

ELECTRICAL
- Alternator, 115 amp, heavy duty
- 12V power supply in cab (2)
- Batteries, 1,000 CCA (2) 24V system, disconnect switch
- Back-up alarm
- Emergency shutdown switch
- Halogen work and roading lights, LED rear tail lights
- Product Link™ PRO with three year subscription
- Remote jump start post
- Resettable main and critical function breakers

OPERATOR ENVIRONMENT
- 75 mm (3 in) retractable seat belt, with audible alarm and indicator
- Automatic temperature control
- External heated mirrors with lower parabolic
- Hydraulic control lockout
- Interior cab lighting, door and dome
- Interior rearview mirrors (2)
- Lunch box storage
- Radio ready speakers
- Rear window defrost, electric
- Seat-mounted electronic implement controls, adjustable
- Column mounted multi function control – lights, wipers, turn signal
- Tilt and telescopic steering wheel
- Tinted front glass
- Wet arm wiper/washer, 2-speed and intermittent, front

OTHER STANDARD EQUIPMENT
- Large-access enclosure doors with adjustable close/open force
- Parallel lift loader linkage

EU STANDARD EQUIPMENT
- Deluxe cab
- Secondary display
- Rearview camera

OPTIONAL EQUIPMENT
- Autolube, integrated in secondary display
- Auxiliary flow, third and fourth function, adjustable through secondary display
- Beacon light, strobe
- Cab, deluxe (standard in Europe, optional in North America)
  - Electrically adjustable external heated mirrors (2)
  - Secondary display to enable features and adjust parameters
  - Sunscreen, front and rear
- Camera, rearview (standard in Europe)
- Cold start package
- Counterweight, (heavy and logger)
- Coupler, (Fusion and ISO 23727)
- Debris packages (low, medium, high)
- Fenders (extended cover and full coverage)
- Guarding (machine and operator)
- Linkage, high lift
- Lights, auxiliary, halogen or LED with engine and DEF compartment lights
- Object Detection
- Product Link ELITE with capabilities for software push, data logging, histogram and trend mapping
- Radio packages
- Ride Control System, adjustable through secondary display
- Seats
  - Deluxe seat – fully adjustable fabric air suspension seat with mid backrest and mechanical lumbar support
  - Premium seat – fully adjustable leather and fabric air suspension with high backrest and air lumbar support. Seat is heated and ventilated on bottom cushion and backrest.
- Steering
  - Dual mode and secondary

NOTE: Not all features are available in all regions.

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