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 exclusive 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 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 safely and 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 IV 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.

Specifications

<table>
<thead>
<tr>
<th>Engine</th>
<th>Standard</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Model</td>
<td>Cat C7.1 ACERT</td>
<td>Cat C7.1 ACERT</td>
</tr>
<tr>
<td>Power Mode</td>
<td>Standard Mode</td>
<td>Performance Mode</td>
</tr>
<tr>
<td>Speed Range</td>
<td>Range 1-3*</td>
<td>Range 1-4</td>
</tr>
<tr>
<td>Maximum Engine Speed</td>
<td>1,600 rpm</td>
<td>1,800 rpm</td>
</tr>
<tr>
<td>ISO 14396</td>
<td>129 kW 173 hp</td>
<td>140 kW 188 hp</td>
</tr>
<tr>
<td>ISO 14396 (DIN)</td>
<td>129 kW 175 hp</td>
<td>140 kW 190 hp</td>
</tr>
<tr>
<td>Rated Net Power</td>
<td>1,600 rpm</td>
<td>1,800 rpm</td>
</tr>
<tr>
<td>SAE J1349</td>
<td>125 kW 168 hp</td>
<td>136 kW 182 hp</td>
</tr>
<tr>
<td>SAE J1349 at Maximum Fan Speed</td>
<td>114 kW 153 hp</td>
<td>125 kW 168 hp</td>
</tr>
<tr>
<td>ISO 9249 (DIN)</td>
<td>126 kW 171 hp</td>
<td>137 kW 186 hp</td>
</tr>
</tbody>
</table>

Engine (continued)

<table>
<thead>
<tr>
<th>Standard Mode</th>
<th>Performance Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Gross Torque</td>
<td>879 N·m 648 lbf-ft</td>
</tr>
<tr>
<td>Maximum Net Torque</td>
<td>843 N·m 621 lbf-ft</td>
</tr>
<tr>
<td>ISO 9249 (1977)/EEC 80/1269</td>
<td>852 N·m 628 lbf-ft</td>
</tr>
<tr>
<td>Displacement</td>
<td>7.01 L 427 in³</td>
</tr>
</tbody>
</table>

• Engine meets Tier 4 Final/Stage IV emission standards.
• Net power shown is the power available at the flywheel when the engine is equipped with alternator, air cleaner and diesel exhaust filter.

*Range 4 power is boosted to be the same as Performance Mode.
### 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

### Loader Hydraulic System

- **Maximum Flow – Implement Pump** 190 L/min / 50 gal/min
- **3rd Function Maximum Flow*** 190 L/min / 50 gal/min
- **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 Function Maximum Working Pressure** 28 000 kPa / 4,061 psi
- **4th Function Maximum Working Pressure** 28 000 kPa / 4,061 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**
  - At 1,600 rpm
  - At 1,800 rpm
  - 5.5 seconds
  - 1.5 seconds
  - 2.7 seconds
  - 9.7 seconds

* *Adjustable from 20% to 100% of maximum flow through the secondary display, when equipped.

### 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

*Creeper 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) 23.5 R25, radial (L-3)
  - 20.5 R25, radial (L-5) 650/65 R25 radial (L-3)
  - 20.5-25 12PR (L-2) Skidder/Agriculture
  - 20.5-25 12PR (L-3) Flexports Gen II
  - 20.5-25 16PR (L-5)

* Other tire choices are available. Contact your Cat dealer for details.

* In certain applications, the loader’s productive capabilities may exceed the tire’s tonnes-km/h (ton-mph) capabilities.

* Caterpillar recommends that you consult a tire supplier to evaluate all conditions before selecting a tire model.

### Cab

- **ROPS**
  - SAE J1040 MAY94, ISO 3471-1994
- **FOPS**

* 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.

### Axles

- **Front**
  - Locking differential (standard)
- **Rear**
  - Oscillating ±11 degrees
  - Open differential (standard)
  - Limited slip differential (optional)

### 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.
Dimensions and Operating Specifications (All dimensions are approximate. Dimensions vary with bucket and tire choice.)

<table>
<thead>
<tr>
<th></th>
<th>Standard Lift</th>
<th>High Lift</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Height: Ground to Cab</td>
<td>3340 mm (10’11”)</td>
<td>3340 mm (10’11”)</td>
</tr>
<tr>
<td><strong>2</strong> Height: Ground to Beacon</td>
<td>3669 mm (12’0”)</td>
<td>3669 mm (12’0”)</td>
</tr>
<tr>
<td><strong>3</strong> Height: Ground Axle Center</td>
<td>685 mm (2’2”)</td>
<td>685 mm (2’2”)</td>
</tr>
<tr>
<td><strong>4</strong> Height: Ground Clearance</td>
<td>386 mm (1’3”)</td>
<td>386 mm (1’3”)</td>
</tr>
<tr>
<td><strong>5</strong> Length: Overall</td>
<td>7656 mm (25’1”)</td>
<td>8397 mm (27’6”)</td>
</tr>
<tr>
<td><strong>6</strong> Length: Rear Axle to Bumper</td>
<td>1963 mm (6’5”)</td>
<td>1968 mm (6’5”)</td>
</tr>
<tr>
<td><strong>7</strong> Length: Hitch to Front Axle</td>
<td>1525 mm (5’0”)</td>
<td>1525 mm (5’0”)</td>
</tr>
<tr>
<td><strong>8</strong> Length: Wheel Base</td>
<td>3050 mm (10’0”)</td>
<td>3050 mm (10’0”)</td>
</tr>
<tr>
<td><strong>9</strong> Clearance: Bucket at 45 degrees</td>
<td>2834 mm (9’3”)</td>
<td>3415 mm (11’2”)</td>
</tr>
<tr>
<td><strong>10</strong> Clearance: Loadover Height</td>
<td>3354 mm (11’0”)</td>
<td>3561 mm (11’8”)</td>
</tr>
<tr>
<td><strong>11</strong> Clearance: Level Bucket</td>
<td>3641 mm (11’11”)</td>
<td>4222 mm (13’10”)</td>
</tr>
<tr>
<td><strong>12</strong> Height: Bucket Pin</td>
<td>3969 mm (13’0”)</td>
<td>4550 mm (14’11”)</td>
</tr>
<tr>
<td><strong>13</strong> Height: Overall</td>
<td>5273 mm (17’3”)</td>
<td>5853 mm (19’2”)</td>
</tr>
<tr>
<td><strong>14</strong> Reach: Bucket at 45 degrees</td>
<td>1146 mm (3’9”)</td>
<td>1413 mm (4’7”)</td>
</tr>
<tr>
<td><strong>15</strong> Carry Height: Bucket Pin</td>
<td>467 mm (1’6”)</td>
<td>686 mm (2’2”)</td>
</tr>
<tr>
<td><strong>16</strong> Dig Depth</td>
<td>101 mm (3’9”)</td>
<td>135 mm (5’3”)</td>
</tr>
<tr>
<td><strong>17</strong> Width: Bucket</td>
<td>2750 mm (9’0”)</td>
<td>2750 mm (9’0”)</td>
</tr>
<tr>
<td><strong>18</strong> Width: Tread Center</td>
<td>2065 mm (6’9”)</td>
<td>2065 mm (6’9”)</td>
</tr>
<tr>
<td><strong>19</strong> Turning Radius: Over Bucket</td>
<td>6133 mm (20’1”)</td>
<td>6490 mm (21’3”)</td>
</tr>
<tr>
<td><strong>20</strong> Width: Over Tires</td>
<td>2675 mm (8’9”)</td>
<td>2675 mm (8’9”)</td>
</tr>
<tr>
<td><strong>21</strong> Turning Radius: Outside of Tires</td>
<td>5537 mm (18’1”)</td>
<td>5537 mm (18’1”)</td>
</tr>
<tr>
<td><strong>22</strong> Turning Radius: Inside of Tires</td>
<td>2852 mm (9’4”)</td>
<td>2852 mm (9’4”)</td>
</tr>
<tr>
<td><strong>23</strong> Rack Angle at Full Lift</td>
<td>54 degrees</td>
<td>53 degrees</td>
</tr>
<tr>
<td><strong>24</strong> Dump Angle at Full Lift</td>
<td>49 degrees</td>
<td>47 degrees</td>
</tr>
<tr>
<td><strong>25</strong> Rack Angle at Carry</td>
<td>45 degrees</td>
<td>50 degrees</td>
</tr>
<tr>
<td><strong>26</strong> Departure Angle</td>
<td>33 degrees</td>
<td>33 degrees</td>
</tr>
<tr>
<td><strong>27</strong> Articulation Angle</td>
<td>40 degrees</td>
<td>40 degrees</td>
</tr>
<tr>
<td><strong>Tipping Load – Straight (ISO 14397-1)</strong></td>
<td>11 837 kg 26,097 lb</td>
<td>8362 kg 18,435 lb</td>
</tr>
<tr>
<td><strong>Tipping Load – Full Turn (ISO 14397-1)</strong></td>
<td>10 045 kg 22,146 lb</td>
<td>7021 kg 15,480 lb</td>
</tr>
<tr>
<td><strong>Breakout</strong></td>
<td>13 170 kg 29,035 lb</td>
<td>12 663 kg 27,917 lb</td>
</tr>
<tr>
<td><strong>Operating Weight</strong></td>
<td>16 400 kg 36,156 lb</td>
<td>16 326 kg 35,933 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·S™ 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

OPTIONAL EQUIPMENT

HYDRAULICS
- 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 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

ELECTRICAL
- 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.

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

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