

PRODUCT SPECIFICATIONS FOR 938M WASTE HANDLER

US Metric

Maximum Gross Power 140 kW

Bore 105 mm

Stroke 135 mm

Displacement 7.01 l

**Maximum Gross Power -
Maximum Engine Speed
(Performance Power Mode:
Range 1-4)** 1800 r/min

Note (2) 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.

**Maximum Net Torque - SAE
J1349 (Performance [HP+]
Power Mode: Range 1-4)** 880 N·m

**Maximum Gross Torque - ISO
14396 (Performance Power
Mode: Range 1-4)** 900 N·m

**Maximum Gross Power -
Maximum Engine Speed
(Standard Power Mode: Range
1-3*)** 1600 r/min

**Maximum Gross Power - ISO
14396 (Standard Power Mode:
Range 1-3*)** 129 kW

Maximum Gross Torque - ISO 14396 (Standard Power Mode: Range 1-3*)

870 N·m

Engine Model

Cat® C7.1

Maximum Net Torque - SAE J1349 (Standard Power Mode: Range 1-3*)

850 N·m

Note (3)

No derating required up to 3000 m (10,000 ft) altitude. Auto derate protects hydraulic and transmission systems.

Maximum Gross Power - ISO 14396 (Performance Power Mode: Range 1-4)

140 kW

Emissions

The Cat C7.1 engine meets U.S. EPA Tier 4 Final/EU Stage V and Korea Tier 4 Final emission standards.

Note (1)

*Range 4 power and torque is equal to Performance Mode with Caterpillar Power by Range technology.

Maximum Net Torque - ISO 9249:2007 (Performance Power Mode: Range 1-4)

882 N·m

Maximum Net Torque - ISO 9249:2007 (Standard Power Mode: Range 1-3*)

852 N·m

Net Power - ISO 9249 (metric) at Minimum Fan Speed (Performance Power Mode: Range 1-4)

137 kW

Engine Power - ISO 14396

140 kW

Engine Power - ISO 14396 -

140 kW

Metric

Maximum Gross Power - ISO 14396 (metric) (Performance Power Mode: Range 1-4) 140 kW

Net Power - ISO 9249 at Minimum Fan Speed (Performance Power Mode: Range 1-4) 137 kW

Net Power - SAE J1349 at Minimum Fan Speed (Performance Power Mode: Range 1-4) 137 kW

Net Power (Standard Power Mode: Range 1-3*) 1600 r/min

Net Power (Performance Power Mode: Range 1-4) 1800 r/min

Maximum Gross Power - ISO 14396 (metric) (Standard Power Mode: Range 1-3*) 129 kW

Net Power - ISO 9249 at Minimum Fan Speed (Standard Power Mode: Range 1-3*) 127 kW

Net Power - SAE J1349 at Minimum Fan Speed (Standard Power Mode: Range 1-3*) 127 kW

Net Power - ISO 9249 (metric) at Minimum Fan Speed (Standard Power Mode: Range 1-3*) 127 kW

Bucket Capacities 3.0-5 m³ (3.9-6.5 yd³)

Declared Sound Levels - Exterior Sound Power Level (ISO 6395:2008)* 101 dB(A)

Note (1)

* Measurements were conducted at 70% of maximum engine cooling fan speed. Sound level may vary at different engine cooling fan speeds. The cab was properly installed and maintained. The measurements were conducted with the cab doors and the cab windows closed.
- The Blue Angel environmental label is an optional attachment for Europe only.

Declared Sound Levels - Operator Sound Pressure Level (ISO 6396:2008)* 68 dB(A)

Air Conditioning

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.

Maximum Flow - Implement Pump - 4th Function Maximum Flow* 160 l/min

Relief Pressure - Tilt Cylinder - 3rd and 4th Function Relief Pressure 30000 kPa

Relief Pressure - Tilt Cylinder 30000 kPa

Relief Pressure - Tilt Cylinder - 3rd and 4th Function Maximum Working Pressure 28000 kPa

Note (1)

Implement system uses a dedicated load sensing variable displacement pump with dual double acting lift cylinders and a single double acting tilt cylinder.

Maximum Flow - Implement Pump	190 l/min
Cycle Times - Performance (HP+) at 1,800 rpm/Standard Power Mode at 1,600 rpm - Raise (Ground Level to Maximum Lift)	5.5/6.2 seconds
Note (2)	Flow values listed are for a machine running in Performance Power Mode (1,800 rpm).
Cycle Times - Performance (HP+) at 1,800 rpm/Standard Power Mode at 1,600 rpm - Total Cycle Time	9.7/10.6 seconds
Maximum Working Pressure - Implement Pump	28000 kPa
Note (3)	* 3rd and 4th function flow is fully adjustable from 20% to 100% of maximum flow through the touch screen display when equipped.
Cycle Times - Performance (HP+) at 1,800 rpm/Standard Power Mode at 1,600 rpm - Float Down (Maximum Lift to Ground Level)	2.7/2.7 seconds
Cycle Times - Performance (HP+) at 1,800 rpm/Standard Power Mode at 1,600 rpm - Dump (at Maximum Lift Height)	1.5/1.7 seconds
Maximum Flow - Implement Pump - 3rd Function Maximum Flow*	190 l/min
Lift Cylinder: Standard Lift Linkage - Stroke	789 mm
Tilt Cylinder: Standard Lift Linkage - Rod Diameter	90 mm
Lift Cylinder: Standard Lift Linkage - Rod Diameter	65 mm
Tilt Cylinder: Standard Lift Linkage - Bore	150 mm

Diameter

Lift Cylinder: Standard Lift Linkage - Bore Diameter 120 mm

Tilt Cylinder: Standard Lift Linkage - Stroke 555 mm

Maximum Steering Torque - 0° (Straight Machine) 57630 N·m

Maximum Steering Torque - 40° (Full Turn) 42570 N·m

Maximum Working Pressure - Steering Pump 24130 kPa

Steering Cycle Times - Full Left to Full Right - Maximum RPM: 90 rpm Steering Wheel Speed 2.3 s

Steering Cylinder, Double Acting - Bore Diameter 80 mm

Steering Cylinder, Double Acting - Stroke 399 mm

Steering Cycle Times - Full Left to Full Right - Minimum RPM: Pump Flow Limited 3.1 s

Note (1) Steering system uses a dedicated load sensing variable displacement pump with dual double acting cylinders.

Steering Cylinder, Double Acting - Rod Diameter 50 mm

Maximum Flow - Steering Pump 130 l/min

Note (2) Flow values listed are for a machine running in

Performance Power Mode (1,800 rpm).

Forward and Reverse - Range 2 13 km/h

Forward and Reverse - Range 4 40 km/h

Note *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 touch screen display when equipped. Factory default is 7 km/h (4.4 mph).

Forward and Reverse - Range 3 27 km/h

Forward and Reverse - Range 1* 1-13 km/h (0.6-8 mph)

Front Axle - Traction Aid Locking differential

Note (1) Power train is governed by the Caterpillar exclusive Intelligent Power Management system to deliver peak performance and efficiency.

Rear Axle Oscillating

Note (3) Differential front locking axle can be engaged on the go at full torque up to 20 km/h (12.4 mph) on the 938M.

Rear Axle - Oscillation Angle by Tire Size - 20.5 R25, 550/65, 600/65, 650/65 ± 10.5 degrees

Rear Axle - Traction Aid - Optional Limited slip differential

Rear Axle - Oscillation Angle by Tire Size - 23.5 R25 ± 7 degrees

Brakes - Service Inboard wet disc

Note (2) Offset rims available to meet European roading requirements.

Brakes - Parking Spring applied hydraulically released

Front Axle Fixed

Rear Axle - Oscillation Angle by Tire Size - Solid Tires, 750/65, 620/65, Skidder ± 7 degrees

Axles - Rear 35 l

Fuel Tank 195 l

Axles - Front 35 l

Transmission - Gear Box 11 l

Hydraulic System - Including Tank 170 l

Engine Crankcase 20 l

Diesel Exhaust Fluid (DEF) Tank 19 l

Cooling System 32 l

Hydraulic Tank 90 l

938M WASTE HANDLER STANDARD EQUIPMENT

POWER TRAIN

Axle Duo-Cone™ seal guards

Auto idle shut down feature

Cat C7.1 engine

- Power modes (Standard and Performance)
- Power by range (High Power in Range 4)
- Turbocharged and aftercooled
- Diesel particulate filter (Fit for Life)

Coded start (requires secondary display)

Differential lock in front axle

Enclosed wet disc full hydraulic brakes

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

Oil sampling ports

Throttle lock and max speed limiter

HYDRAULICS

Automatic lift lower and tilt 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)

Time mode control (fast, medium, slow)

Hydraulic response setting (fast, medium, slow)

Load sensing hydraulics and steering

Seat-mounted hydraulic joystick controls

ELECTRICAL

Alternator, 115 amp, heavy duty

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) High-Vis retractable seat belt, with audible alarm and indicator

Automatic temperature control

Cab, pressurized

Camera, rearview

External heated mirrors with lower parabolic

Ground level cab door release

Hydraulic control lockout

Mirror, single

Lunch box storage

Radio ready speakers

Rear window defrost, electric

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, lights, wipers, turn signal

Suspension seat, fabric

OTHER STANDARD EQUIPMENT

Large-access enclosure doors with adjustable close/open force

Cat optimized Z-bar linkage with parallel lift

Recovery hitch, with pin

Remote mounted lubrication points

Lockable compartments and enclosures

938M WASTE HANDLER OPTIONAL EQUIPMENT

OPTIONAL EQUIPMENT

Autolube, integrated in secondary display

Auxiliary flow, third and fourth function

Differential, limited slip, rear

Beacon light, strobe

Cab, deluxe (standard in Europe)

- Camera, rearview integrated into advanced display
- Electrically adjustable external heated mirrors (2)
- Secondary display to enable features and adjust parameters
- LED interior lighting
- Sunscreen, front and rear
- Touchscreen secondary display
- Ride control adjustable speed activation
- Preventative maintenance reminders
- Integrated help function (26 languages)

Camera, roof mounted, front view with separate display

Cold start package

- Ether starting aid, block heater and additional batteries, 1,000 CCA (4 total)

Counterweight, additional options

Coupler, (Fusion and ISO 23727)

Debris packages (low, medium, high)

Fenders (extended cover and full coverage)

Guarding packages

Linkage, high lift

Lights, auxiliary, halogen or LED with engine and DEF compartment lights

Payload Technology

- Cat Production Measurement (CPM)
- CPM Printer

Product Link ELITE with capabilities for software push, data logging, histogram and trend mapping

Radio packages

Rear Object Detection

Ride Control System, adjustable through secondary display

Seats

- Deluxe seat – fully adjustable fabric air suspension seat with mid seat backrest

- 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

Tire Pressure Monitoring (TPM)

