



# Cat<sup>®</sup> 938K

## WHEEL LOADER

### K SERIES – MAKING YOUR CHOICE EASY:

- Enjoy All Day Comfort** – Have a seat in the updated K Series Small Wheel Loader and enjoy 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 K 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 3/EU Stage IIIA/Brazil MAR-1 equivalent emission standards with a Cat<sup>®</sup> C7.1 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

### Engine

Engine Model	Cat C7.1	
Power Mode	Standard Mode	Performance Mode
Speed Range	Range 1-3*	Range 1-4
Maximum Gross Power		
Maximum Engine Speed	1,600 rpm	1,800 rpm
ISO 14396	129 kW 173 hp	140 kW 188 hp
ISO 14396 (metric)	175 hp	190 hp
Net Power	1,600 rpm	1,800 rpm
SAE J1349	126 kW 169 hp	136 kW 182 hp
ISO 9249 (metric)	173 hp	188 hp

### Engine (continued)

	Standard Mode	Performance Mode
Maximum Gross Torque		
ISO 14396	896 N-m 660 lbf-ft	912 N-m 672 lbf-ft
Maximum Net Torque		
SAE J1349	860 N-m 634 lbf-ft	876 N-m 646 lbf-ft
ISO 9249 (1977)/EEC 80/1269	870 N-m 641 lbf-ft	886 N-m 653 lbf-ft
Displacement	7.01 L 427 in <sup>3</sup>	7.01 L 427 in <sup>3</sup>

- Engine meets U.S. EPA Tier 3/EU Stage IIIA/Brazil MAR-1 equivalent emission standards.
- Net power shown is the power available at the flywheel when the engine is equipped with alternator and air cleaner.

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



# 938K Wheel Loader

## Buckets

Bucket Capacities – General Purpose	2.5-3.2 m <sup>3</sup>	3.2-4.2 yd <sup>3</sup>
Bucket Capacities – Light Material	3.1-5.0 m <sup>3</sup>	4.0-6.5 yd <sup>3</sup>

## 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	2.2 seconds	
Number of Steering Wheel Turns – full left to full right or full right to full left	3.1 turns	

## 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*	150 L/min	40 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	Performance Mode
	At 1,600 rpm	At 1,800 rpm
Raise (ground level to maximum lift)	6.2 seconds	5.5 seconds
Dump (at maximum lift height)	1.7 seconds	1.5 seconds
Float Down (maximum lift to ground level)	2.7 seconds	2.7 seconds
Total Cycle Time	10.6 seconds	9.7 seconds

\*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	8.5 gal
Engine Crankcase	19.5 L	5.2 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

## 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 Choice Varies by Region:

20.5-25 16 PR (L-3)

- 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 SAE J/ISO 3449 APR98, Level II, ISO 3449 1992 Level II

- Cab and Rollover Protective Structures (ROPS) are standard.
- A semi-cab option is available.

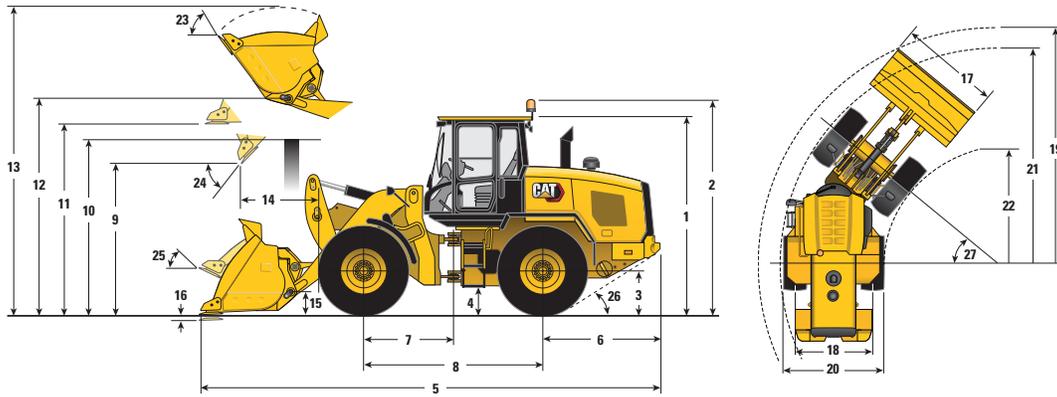
## Sound

- The declared dynamic operator sound pressure level is 72 dB(A) when "ISO 6396:2008" is used to measure the value for an enclosed cab.
- The measurement was conducted at 70% of the maximum engine cooling fan speed, with the cab doors and cab windows closed. The cab was properly installed and maintained. The sound level may vary at different engine cooling fan speeds.
- The declared exterior sound power level is 104 dB(A) when the value is measured according to the dynamic test procedures and the conditions that are specified in "ISO 6395:2008."

## Axles

Front	Fixed
	Open differential (standard)
	Locking differential (optional)
Rear	Oscillating ±11 degrees
	Open differential (standard)
	Limited slip differential (optional in some regions)

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



Counterweight Configuration	Standard Lift		High Lift – Standard Counterweight	
	Standard	Heavy	Standard	Heavy
** 1 Height: Ground to Cab	3340 mm	10'11"	3340 mm	10'11"
** 2 Height: Ground to Beacon	3707 mm	12'2"	3707 mm	12'2"
** 3 Height: Ground to Axle Center	685 mm	2'3"	685 mm	2'3"
** 4 Height: Ground Clearance	386 mm	1'3"	386 mm	1'3"
* 5 Length: Overall	7666 mm	25'2"	8406 mm	27'7"
6 Length: Rear Axle to Bumper	1968 mm	6'5"	1968 mm	6'5"
7 Length: Hitch to Front Axle	1525 mm	5'0"	1525 mm	5'0"
8 Length: Wheel Base	3050 mm	10'0"	3050 mm	10'0"
* 9 Clearance: Bucket at 45 degrees	2822 mm	9'3"	3403 mm	11'2"
** 10 Clearance: Load Over Height	3354 mm	11'0"	3561 mm	11'8"
** 11 Clearance: Level Bucket	3642 mm	11'11"	4223 mm	13'10"
** 12 Height: Bucket Pin	3969 mm	13'0"	4550 mm	14'11"
** 13 Height: Overall	5301 mm	17'5"	5881 mm	19'4"
* 14 Reach: Bucket at 45 degrees	1146 mm	3'9"	1413 mm	4'8"
15 Carry Height: Bucket Pin	418 mm	1'4"	633 mm	2'1"
** 16 Dig Depth	100 mm	3.9"	135 mm	5.3"
17 Width: Bucket	2750 mm	9'0"	2750 mm	9'0"
18 Width: Tread Center	2083 mm	6'10"	2083 mm	6'10"
19 Turning Radius: Over Bucket	6127 mm	20'1"	6488 mm	21'3"
20 Width: Over Tires	2693 mm	8'10"	2693 mm	8'10"
21 Turning Radius: Outside of Tires	5546 mm	18'2"	5546 mm	18'2"
22 Turning Radius: Inside of Tires	2843 mm	9'4"	2843 mm	9'4"
23 Rack Angle at Full Lift	54 degrees		53 degrees	
24 Dump Angle at Full Lift	49 degrees		47 degrees	
25 Rack Angle at Carry	44 degrees		49 degrees	
26 Departure Angle	33 degrees		33 degrees	
27 Articulation Angle	40 degrees		40 degrees	
* Tipping Load – Straight (ISO 14397-1)	11 312 kg	24,938 lb	8763 kg	19,319 lb
* Tipping Load – Full Turn (ISO 14397-1)	9633 kg	21,236 lb	7397 kg	16,307 lb
* Nominal Material Density 110% Fill Factor	1622 kg/m <sup>3</sup>	2,733 lb/yd <sup>3</sup>	1245 kg/m <sup>3</sup>	2,099 lb/yd <sup>3</sup>
* Breakout	13 082 kg	28,841 lb	12 580 kg	27,733 lb
* Operating Weight	15 282 kg	33,689 lb	15 798 kg	34,828 lb

\*Vary with bucket.

\*\*Vary with tire.

Dimensions listed are for a machine configured with specified counterweights, Michelin 20.5 R25 (L-3) XHA2 tires, 80 kg (176 lb) operator, and power train guard. Values are listed for a 2.7 m<sup>3</sup> (3.5 yd<sup>3</sup>) general purpose performance series pin on bucket with bolt-on cutting edge.

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## STANDARD EQUIPMENT

### POWER TRAIN

- 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
  - Filtered crankcase breather
- Coded start (requires secondary display)
- Coolant protection to  $-34^{\circ}\text{C}$  ( $-29^{\circ}\text{F}$ )
- 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<sup>SM</sup> 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
- 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 mirrors with lower parabolic
- Hydraulic control lockout
- Interior cab lighting, door and dome
- Interior rear view mirrors (2)
- Lunch box storage
- Radio ready speakers
- Seat-mounted electronic implement controls, adjustable
- Column mounted multi function control – lights, wipers, turn signal
- Tilt and telescopic steering wheel
- Tinted front glass

### OTHER STANDARD EQUIPMENT

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

## OPTIONAL EQUIPMENT

- Auto lube, integrated in secondary display
- Auxiliary flow, third and fourth function, adjustable through secondary display
- Beacon light, strobe
- Cab, deluxe
  - Camera, roof mounted, front view with separate display\*
  - Rear window defroster (standard in Europe)
  - Secondary display to adjust settings (standard in Europe)
  - Sunscreen, front and rear
  - Wet arm wiper/washer, front and rear
- Camera, rear view (standard in Europe)
- Cold start package
- Corrosion protection package
- Counterweight, (heavy and logger)
- Coupler, (Fusion™ and ISO 23727)
- Debris packages (low, medium, high)
- Differential lock, front axle
- Fenders (extended cover and full coverage)
- Guarding (machine and operator)
- Linkage, high lift
- Lights, auxiliary, halogen or LED with engine compartment lights
- Lights, LED front roading
- Load check valves
- Object Detection
- Product Link™ PRO and ELITE with capabilities for software push, data logging, histogram and trend mapping
- Radio packages
- Rear wiper
- 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
- CE Certification (standard in Europe)
- NOTE: Not all features are available in all regions.

\*Forward facing camera system may be required for local EU requirements.

Consult your local Cat dealer for additional information.



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