

# 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 equivalent emission standards with a Cat<sup>®</sup> C7.1 ACERT<sup>™</sup> 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<sup>™</sup> 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 ACERT			
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 (DIN)	129 kW	175 hp	140 kW	190 hp
Rated Net Power	1,600 rpm		1,800 rpm	
SAE J1349	126 kW	169 hp	136 kW	182 hp
ISO 9249 (DIN)	127 kW	173 hp	138 kW	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 Tier 3/Stage IIIA 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 Choices	20.5 R25, radial (L-2)	20.5-25 16PR (L-5)
Vary by Region:	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)	Flexport™ Gen II

- 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.

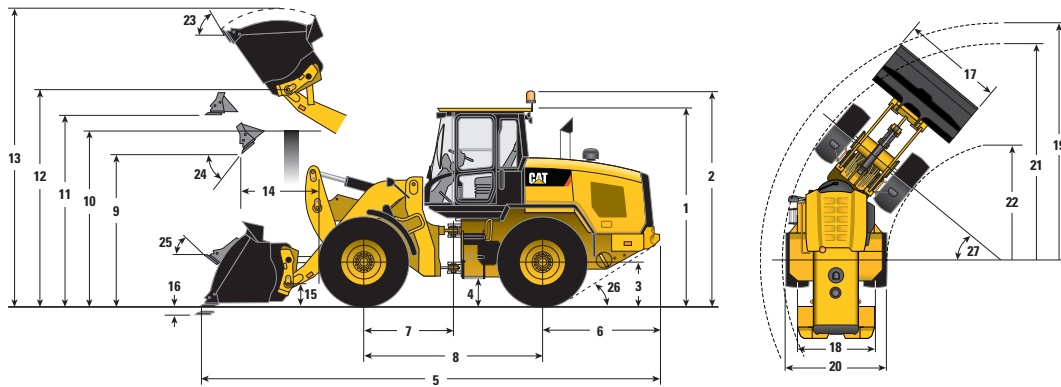
## Sound

- 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.)



	Standard Lift		High Lift – Standard Counterweight	
** 1 Height: Ground to Cab	3340 mm	10'11"	3340 mm	10'11"
** 2 Height: Ground to Beacon	3707 mm	12'1"	3707 mm	12'1"
** 3 Height: Ground Axle Center	685 mm	2'2"	685 mm	2'2"
** 4 Height: Ground Clearance	386 mm	1'3"	386 mm	1'3"
* 5 Length: Overall	7604 mm	24'11"	8344 mm	27'4"
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	2869 mm	9'4"	3450 mm	11'3"
** 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	5242 mm	17'2"	5823 mm	19'1"
* 14 Reach: Bucket at 45 degrees	1108 mm	3'7"	1374 mm	4'6"
15 Carry Height: Bucket Pin	467 mm	1'6"	686 mm	2'2"
** 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	6117 mm	20'0"	6472 mm	21'2"
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	9'3"	2843 mm	9'3"
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	45 degrees		50 degrees	
26 Departure Angle	33 degrees		33 degrees	
27 Articulation Angle	40 degrees		40 degrees	
* Tipping Load – Straight (ISO 14397-1)	11 746 kg	25,888 lb	8250 kg	18,183 lb
* Tipping Load – Full Turn (ISO 14397-1)	10 110 kg	22,283 lb	7048 kg	15,533 lb
* Nominal Material Density 110% Fill Factor	1838 kg	4,051 lb	1281 kg	2,824 lb
* Breakout	13 813 kg	30,442 lb	13 284 kg	29,278 lb
* Operating Weight	15 485 kg	34,129 lb	15 414 kg	33,972 lb

\*Vary with bucket.

\*\*Vary with tire.

Dimensions listed are for a machine configured with heavy counterweights, 80 kg (176 lb) operator, and Michelin 20.5 R25 (L-3) XHA2. Bucket volumes are each with bolt-on cutting edges on a 2.5 m<sup>3</sup> (3.2 yd<sup>3</sup>) Performance Series Pin-On bucket.

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## 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
- 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 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

## OPTIONAL EQUIPMENT

- Auto lube, integrated in secondary display
- Auxiliary flow, third and fourth function, adjustable through secondary display
- Beacon light, strobe
- Cab, deluxe
  - Electrically adjustable external heated mirrors (2)
  - Secondary display to enable features and adjust parameters
  - Sunscreen, front and rear
- Camera, rearview
- Cold start package
- Corrosion protection package
- Counterweight, (heavy and logger)
- Coupler, (Fusion<sup>TM</sup> 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
- Object Detection
- Product Link<sup>TM</sup> 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
- NOTE: Not all features are available in all regions.

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AEHQ7682 (11-2015)

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