

938H/IT38H

Wheel Loader



Cat® C6.6 Diesel Engine with ACERT™ Technology

Net Power - ISO 9249 134 kW/182 hp

EU Stage IIIA Compliant

Bucket capacities 2.3-3.0 m³

Operating Weights

938H 15 476 kg

For Universal 2.8 m³ bucket with BOCE

IT38H 16 334 kg

For 2.5 m³ QC material handling bucket with BOCE

938H/IT38H Wheel Loaders

Key Features & Benefits

Load Sensing Hydraulics

- Load sensing hydraulics provides maximum force at any engine rpm.
- Implement and steering flow are only initiated upon demand making the loader more efficient.
- S3PC valve allows simultaneously lift & tilt functionality producing faster cycle times.
- Increased lift (16%) and tilt (11%) forces over previous G-Series II model provide improved break-out force and machine performance.
- Modular valve design improves field retro-fit capabilities allowing 3rd and 4th functions or ride control installations.
- 3rd & 4th hydraulic functions are available for special work tools.

C6.6 ACERT Engine

- C6.6 provides constant Net Hp at full parasitic load and high torque at low engine rpm for enhanced productivity.
- Meets EU Stage IIIA emission regulations.
- Durability proven across numerous models in the Caterpillar product line-up.
- Engine Idle Management System (EIMS) maximizes fuel efficiency and provides flexibility in managing idle speeds for specific application requirements.

Transmission

- Countershaft transmission offers automatic or manual shift modes.
- Transmission neutralizer settings can be selected and adjusted by the operator in the cab using Caterpillar's Messenger interface.
- Operators can match transmission shift points to the requirements of the application using the Fuel Economy Mode function in Messenger.

Axles

- Standard manual front differential lock maximizes machine capability in poor underfoot conditions with 'on the fly' engagement.
- Optional front and rear automatic differential lock provides seamless engagement when maneuvering in varying underfoot conditions.
- Outboard final drives and brakes provide easy access when service is required.
- Standard axle oil sensors allow operators to monitor fluid temperature in extreme service applications.
- Brake wear indicators are easy to access during routine service checks
- Axle oil cooler ready design improves field retro-fit capabilities.

Linkage

- Z-bar lift arrangement is optimized for bucket applications, providing excellent break-out force when the work tool is positioned close to ground level.
- Integrated Toolcarrier (IT) linkage provides excellent bucket performance combined with parallel lift capability and is ideally suited for applications where a variety of jobs are performed with one machine and multiple work tools. Such applications include material handling and pallet fork operation.



Cooling Arrangement

- Radiator standard 6 fins per inch core spacing allows debris to pass through the arrangement and reduces the likelihood of plugging.
- Full width AC condenser and oil cooler cores swing out to allow easy cleaning of the radiator and ATAAC cores.
- Access panel on the right side of the cooling arrangement allows for easy access to the front side of both the radiator and ATAAC cores.

Hood

- One piece tilting hood provides excellent access to the engine and cooling compartments.
- Redesigned and restyled hood provides superior rear visibility.

Work Tools*

- A wide variety of work tools are offered by Caterpillar, making this machine extremely versatile.
- Work tools can be changed quickly and easily with the machine's quick coupler system.

* Work tool range varies by region



Cab

- Messenger display provides real-time machine performance, engine and diagnostic data thus maximizing productivity and component life.
- Adjustable neutralizer pedal optimizes machine performance to meet customer applications.
- FNR, horn and transmission kick-down switches are all conveniently located on the implement control pod for efficient operation.
- Easy to adjust armrests provide operators with maximum comfort.
- Optional joystick with integrated FNR switch, transmission kick-down button and horn improve operator efficiency.
- Optional high back air-suspension seat provides operator with multiple adjustments.
- Optional heated seat and external mirrors are available for colder climates.
- Ride control dampens lift arm movement over rough terrain, thus reducing shock loads into operator environment.

Caterpillar Autolube*

- Reduces downtime through timed greasing of key pins and joints.
- Quick and easy refill of grease reservoir.

* Available only on the 938H

Service Centers

Hydraulic Service Center

Hydraulic and transmission filters carrying the same change interval are conveniently located in one ground level location for quick and easy service.

Electrical Service Center

Hood actuator, battery box, electrical disconnect switch, remote starting receptacle and electrical relay panel are all grouped in one ground level location for easy access.

Caterpillar Designed and Manufactured Components

- In house design, manufacture and assembly of key components such as engines, transmission, structures, axles, valves ensure complete and efficient system integration.



Engine

Cat® C6.6 with ACERT™ Technology

Net Power with 2100 rpm

ISO 9249	134 kW/182 hp
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80/1269/EEC	134 kW/182 hp
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Peak Torque (Net)

at 1400 rpm	840 Nm
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Bore	105 mm
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Stroke	127 mm
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Displacement	6.6 L
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- All engine horsepower (hp) are metric including front page
- Caterpillar engine with ACERT™ Technology – EU Stage IIIA Compliant.
- Rating for net power advertised based on power available when the engine is equipped with alternator, air cleaner, muffler and on-demand hydraulic fan drive at maximum fan speed.

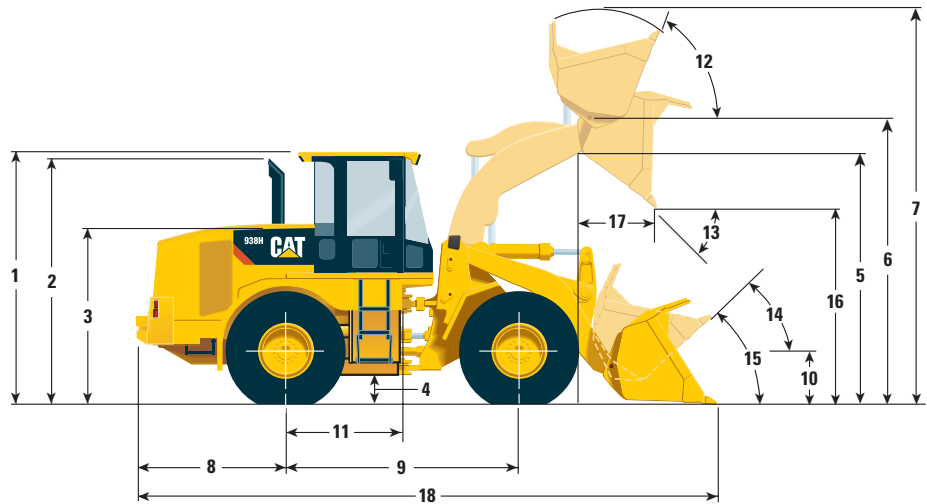
Buckets

Bucket Capacities	2.3-3.0 m ³
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Dimensions - 938H*

All dimensions are approximate.



1 Height to top of ROPS	3356 mm
2 Height to top of exhaust pipe	3099 mm
3 Height to top of hood	2415 mm
4 Ground clearance with Michelin XHA L3 radial tires	397 mm
5 Lift arm clearance at maximum lift	3435 mm
6 Bucket Pin height at maximum lift	3843 mm
Bucket Pin height, optional high lift	4266 mm
7 Overall height - bucket raised	5080 mm
8 Center line of rear axle to edge of counterweight	1869 mm
9 Wheelbase	3020 mm
10 Height to center line of axle	688 mm
11 Center line of rear axle to hitch	1510 mm
12 Rack back at maximum lift	65°
13 Dump angle at maximum lift	46°
14 Rack back at carry	50°
15 Rack back at ground	43°
16 Dump clearance at maximum lift and 45° dump	2696 mm
17 Reach at full lift and 45° dump	977 mm
18 Overall length	7372 mm

* Static tipping loads and operating weights shown are based on standard machine configuration with Michelin XHA L3 radial tires, full fuel tank, full fluids/lubricants/coolants, air conditioning, ride control, powertrain guard, sound suppression cab, Heavy Duty ROPS, secondary steering, lights roading, Universal 2.8 m³ bucket with BOCE and operator.

Loader Hydraulic System

Bucket/Work Tool System –
Pump Output 295 L/min

Steering System Pump Type Piston

	Hydraulic cycle time	
	938H seconds	IT38H seconds
Raise	6.1	5.6
Dump	1.4	2.0
Lower, empty, float down	2.8	2.8
Total	10.3	10.4

- Implement System (Standard), Piston Pump - Rated at 2100 rpm and 69 bar.
- Cycle time with rated payload.

Brakes

Meet ISO 3450-1996 standards.

Service Refill Capacities

	Liters
Fuel tank	247
Cooling system	36
Crankcase	17
Differentials and Final Drives	43
Front	42
Rear	42
Hydraulic tank	89

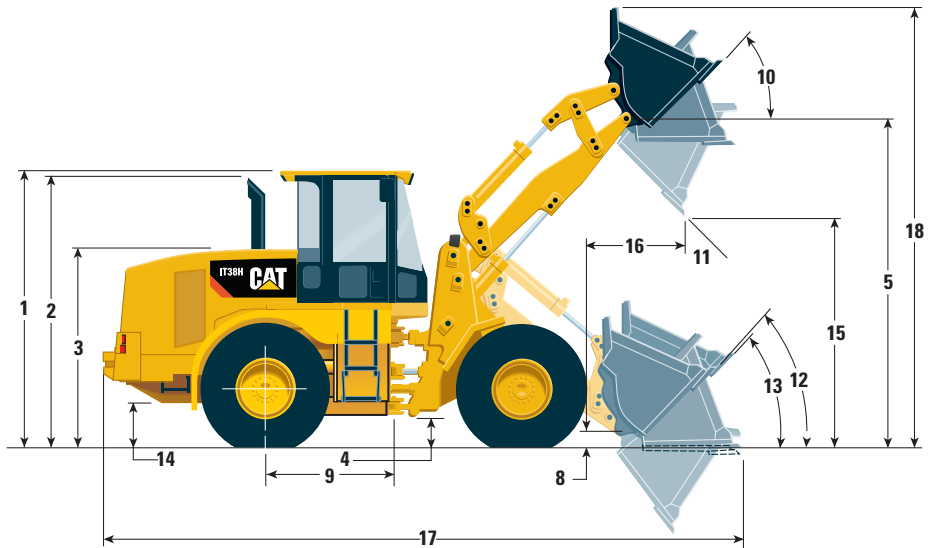
Transmission

Forward	km/h
1	8.1
2	14.6
3	25.5
4	43.2
Reverse	
1	8.1
2	14.6
3	25.5

Maximum travel speeds (20.5R25 tires)

Dimensions - IT38H (Material Handling Buckets)*

All dimensions are approximate.



1 Height to top of ROPS	3356 mm
2 Height to top of exhaust pipe	3099 mm
3 Height to top of hood	2415 mm
4 Ground clearance with Michelin XHA L3 radial tires	397 mm
5 B-Pin height - standard	3933 mm
6 Center line of rear axle to edge of counterweight	1954 mm
7 Wheelbase	3020 mm
8 B-Pin height at carry - standard	235 mm
9 Center line of rear axle to hitch	1510 mm
10 Rack back at maximum lift	45°
11 Dump angle at maximum lift	45°
12 Rack back at carry	46°
13 Rack back at ground	48°
14 Height to center line of axle	688 mm
15 Dump clearance at maximum lift and 45° dump	2804 mm
16 Reach at full lift and 45° dump	1149 mm
17 Overall length	7543 mm
18 Overall height - bucket raised	5235 mm

Static tipping loads and operating weights shown are based on standard machine configuration with Michelin XHA L3 radial tires, full fuel tank, full fluids/lubricants/coolants, air conditioning, ride control, powertrain guard, sound suppression cab, Heavy Duty ROPS, secondary steering, lights roading, quick coupler, 2.5 m quick coupler material handling bucket with BOCE and operator.

Operating Specifications

938H

Operating Weight	15 476 kg
Static Tipping Load, Full Turn	10 167 kg
Breakout Force	123 kN

Static tipping loads and operating weights shown are based on standard machine configuration with Michelin XHA L3 radial tires, full fuel tank, full fluids/lubricants/coolants, air conditioning, ride control, powertrain guard, sound suppression cab, Heavy Duty ROPS, secondary steering, lights roading, Universal 2.8 m³ bucket with BOCE and operator.

IT38H

Operating Weight	16 334 kg
Static Tipping Load, Full Turn	9646 kg
Breakout Force	126 kN

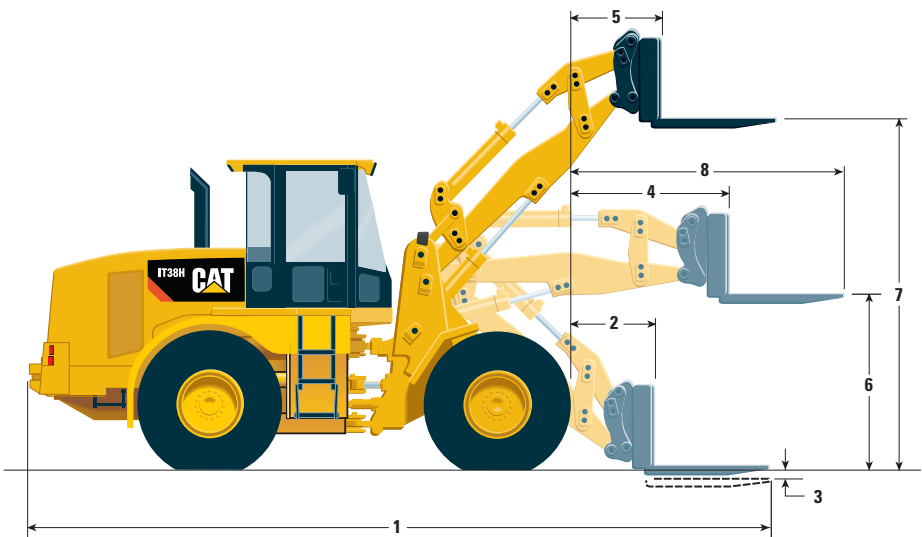
Static tipping loads and operating weights shown are based on standard machine configuration with Michelin XHA L3 radial tires, full fuel tank, full fluids/lubricants/coolants, air conditioning, ride control, powertrain guard, sound suppression cab, Heavy Duty ROPS, secondary steering, lights roading, quick coupler, 2.5 m³ quick coupler material handling bucket with BOCE and operator.

Axles

Fixed front	
Oscillating rear	±12°
Maximum Single-Wheel Rise and Fall	420 mm

Dimensions - IT38H (Forks)*

All dimensions are approximate.



Fork tine length	1524 mm
Fork width	2184 mm
1 Overall length, fork level on ground	8345 mm
2 Carriage reach, fork level on ground	1097 mm
3 Tine height, minimum lift, fork level	148 mm
4 Carriage reach, lift arm and fork level	1632 mm
5 Carriage reach, maximum lift, fork level	903 mm
6 Tine height, lift arm and fork level	1692 mm
7 Tine height, maximum lift, fork level	3547 mm
8 Overall reach, lift arm and fork level	3156 mm
Static tipping load, straight with lift arm and forks level	8709 kg
Static tipping load, full 40 degree turn with lift arm and forks level	7561 kg
Operating weight*	16 070 kg

Static tipping loads and operating weights shown are based on standard machine configuration with Michelin XHA L3 radial tires, full fuel tank, full fluids/lubricants/coolants, air conditioning, ride control, powertrain guard, sound suppression cab, Heavy Duty ROPS, secondary steering, lights roading, quick coupler, 60 in. tine length forks and operator.

Standard Equipment

Standard equipment may vary. Consult your Caterpillar dealer for specifics.

Electrical

ELECTRICAL

Alarm, back-up, adjustable
Alternator, 24V/65A
Battery disconnect with removable key
Lighting system, halogen (6 total)
Lights, Roading/W Signals
Main disconnect switch
Starting and charging system (24-volt)

Operator environment

Air conditioning (optional in some regions)
Bucket/Work tool lever lockout
Cab, pressurized and sound suppressed, (ROPS/FOPS) Radio ready (entertainment)
Radio ready for (entertainment) includes antenna, speakers, and converter (12-volt 5-amp)
Cigar lighter and ashtray
Coat hook
Controls, lift and tilt functions
Computerized Monitoring System
Instrumentation, Gauges:
Engine coolant temperature
Fuel level
Hydraulic oil temperature
Messenger System
Product Link (optional in some regions)
Speedometer/Gear range
Tachometer
Transmission oil temperature
Instrumentation, Warning Indicators:
Glow Plugs
Electrical, alternator output
Engine inlet manifold temperature
Engine oil pressure
Fuel pressure
Hydraulic oil temperature
Parking brake
Primary steering oil pressure
Service brake oil pressure
Transmission filter bypass

Heater and defroster
Horn, electric, (steering wheel mounted)
Light, dome (cab)
Lunch box, bev holders and storage box
Dual interior rearview mirrors
Dual exterior rearview mirrors
Seat KAB (cloth) with mechanical suspension
Seat belt, retractable, 51 mm wide
Steering column, adjustable (angle)
Sun Visor, Front
Switch, F-N-R
Window, Sliding (Left & Right Side).
Wet-Arm Wipers/Washers (front and rear)
Intermittent front wiper

Power Train

Brakes, full hydraulic enclosed wet-disc
Brake wear indicators with Integrated Braking System (IBS)
Differential Lock, Front Manual.
Drive line, extreme service
Engine, Cat C6.6 ACERT and ATAAC technology, electronically controlled.
Fan, radiator, electronically controlled, hydraulically driven, temperature sensing, on demand.
Filters, fuel, primary/secondary
Fuel priming pump (Electric)
Fuel/Water separator
Monitoring System, Axle Oil Temp.
Muffler, sound suppressed
Radiator, unit core (6 fpi) with ATAAC
Starting aid (Glow Plugs)
Trans, neutralizer lockout in messenger
Torque converter
Transmission, countershaft, automatic power shift (4F/3R)
Variable Shift Control (VSC), messenger

Other standard equipment

Automatic bucket positioner
Counterweight
Couplings, Caterpillar O-ring face seal
Fenders, Extension, Platform, Rear
Guards, (bottom crankcase and fuel tank)
Hitch, drawbar with pin
Hood, non-metallic power tilting
Hoses, Caterpillar XT
Hydraulics, Load Sensing
Kickout, lift, automatic
Kickout, tilt, adjustable
Linkage, Z-Bar, cast cross tube/tilt lever
Oil sampling valves
Remote Diagnostic Pressure Taps.
Sight Gauges: Engine coolant, hydraulic oil and transmission oil level.
Steering, load sensing
Vandalism protection caplocks

Tires, Rims and Wheels

A tire must be selected from the mandatory attachments section. Base machine price includes an allowance based on a premium radial tire.

Antifreeze

Premixed 50% concentration of extended life coolant with freeze protection to -34°C

938H/IT38H Wheel Loaders

For more complete information on Cat products, dealer services, and industry solutions, visit us on the web at www.cat.com

Materials and specifications are subject to change without notice. Featured machines in photos may include additional equipment. See your Caterpillar dealer for available options.

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