



Sales Quote  
Quote Q12808

Invoice Amount: \$104,459.59

41105 RAINTREE CT., MURRIETA, CA 92562  
TEMECULA Ph: 951-696-1063 Fax: 951-696-9463

Invoice Date: 07/12/2019 Fri 05:51 PM

Bill to: Customer: 0052746  
CITY OF LAKE ELSINORE  
Attention: Account Payable  
130 S MAIN STREET  
LAKE ELSINORE, CA 92530-4109

Jobsite: 10- CITY OF LAKE  
Contact: FRANCISCO DIAZ  
Phone: 951 453 7901  
521 N. LANGSTAFF  
LAKE ELSINORE CA 92530  
FRANCISCO 951-830-0406

Signed By:  
Order By: DAN CHADD

Written By: TOM CALLUS  
Sales Rep: TOM CALLUS  
PO #: QUOTE

QTY	DESCRIPTION	PRICE	EXTENDED
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Sale Items

2.0	999-1111 QUOTE ITEM SOURCE WELL CONTRACT # 041719-TER. PRICING GENIE TZ-50 HYBRID W/ HONDA 5.5 CHARGING SYSTEM ***** WHEN OPERATED IN CALIFORNIA, ANY OFF-ROAD HEAVY- DUTY DIESEL VEHICLE,ALTERNATIVE-DIESEL VEHICLE, OFF-ROAD DIESEL VEHICLE, OR PORTABLE DIESEL ENGINE MAY BE SUBJECT TO THE CALIFORNIA AIR RESOURCES BOARD'S REGULATION TO REDUCE PARTICULATE MATTER AND CRITERIA POLLUTANT EMISSIONS FROM IN-USE HEAVY-DUTY DIESEL VEHICLES, IN-USE OFF-ROAD DIESEL VEHICLE REGULATION, OR AIRBORNE TOXIC CONTROL MEASURE FOR DIESEL PARTICULATE MATTER FROM PORTABLE ENGINES RATED AT 50 HORSEPOWER AND GREATER. IT THEREFORE COULD BE SUBJECT TO RETROFIT, EXHAUST RETROFIT, OR ACCELERATED TURNOVER REQUIREMENTS TO REDUCE EMISSIONS OF AIR POLLUTANTS. FOR MORE INFORMATION, PLEASE VISIT THE CALIFORNIA AIR RESOURCES BOARD WEBSITES AT <a href="https://www.arb.ca.gov/dieseltruck">HTTPS://WWW.ARB.CA.GOV/DIESELTRUCK</a> , <a href="https://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm">HTTPS://WWW.ARB.CA.GOV/MSPROG/ORDIESEL/ORDIESEL.HT</a> M *****	43,739.95	87,479.90
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Miscellaneous Items



# Sales Quote

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QTY	DESCRIPTION	PRICE	EXTENDED
<b>Miscellaneous Items</b>			
2	FREIGHT	5,100.00 each	10,200.00
State 7.25% County 0.5% Total Tax: 7.75%			6,779.69
<b>Total:</b>			<b>104,459.59</b>

QUOTE

### AGREEMENT AND ACKNOWLEDGEMENT

**CARB REGULATIONS** When operated in California, any on-road heavy-duty diesel vehicle, alternative-diesel vehicle, off-road diesel vehicle, or portable diesel engine may be subject to the California Air Resources Board's Regulation to Reduce Particulate Matter and Criteria Pollutant Emissions from In-Use Heavy-Duty Diesel Vehicles, In-Use Off-Road Diesel Vehicle Regulation, or Airborne Toxic Control Measure For Diesel Particulate Matter From Portable Engines Rated At 50 Horsepower And Greater. It therefore could be subject to retrofit, exhaust retrofit, or accelerated turnover requirements to reduce emissions of air pollutants. For more information, please visit the California Air Resources Board websites at <https://www.arb.ca.gov/dieseltruck>, <https://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>, or <https://www.arb.ca.gov/portable/portable.htm>.

The undersigned warrants, represents, and agrees on behalf of the customer ("Customer"): (1) that the undersigned has authority to contract for Customer; (2) that the lease of the equipment listed above ("Equipment") by Quinn Company, Quinn Company dba Quinn Power Systems and Quinn Rental Services or by Quinn Lift (collectively, "Quinn") to Customer shall be subject to all of the terms and conditions set forth in this Rental Agreement (this "Agreement"); (3) that I have read and understand all said terms and conditions; (4) that I have the right to make a pre-delivery inspection and have informed Quinn of any damage or deficiency that may exist; (5) that I understand that air quality regulations may affect the operation and use of Equipment and I agree to all requirements stated in Additional Terms and Conditions, paragraph entitled "Air Quality Requirements for Equipment", and (6) that by executing this Agreement I specifically agree to all of the terms and conditions of this Agreement, including the Additional Terms and Conditions attached hereto.

**AN ADDITIONAL 14% FEE WILL APPEAR ON FINAL INVOICE UNLESS FIRE, THEFT, VANDALISM WAIVER IS REJECTED. REJECTION OF THIS WAIVER REQUIRES CUSTOMER TO INITIAL BELOW AND PROVIDE PROOF OF APPLICABLE INSURANCE**

( ) REJECT - INITIAL AND PROVIDE INSURANCE CERTIFICATE

AGREED TO: \_\_\_\_\_ DATE: \_\_\_\_\_  
(Signature) (Printed Name) (Title)

DATE OUT: \_\_\_\_\_ HRS OUT: \_\_\_\_\_ DATE IN: \_\_\_\_\_ HRS IN: \_\_\_\_\_ RETURNED BY: \_\_\_\_\_

**IMPORTANT! PLEASE READ THE ADDITIONAL TERMS AND CONDITIONS ATTACHED HERETO BEFORE SIGNING**

### Specifications

MODEL	TZ-50	
Measurements	US	Metric
Working height*	55 ft 6 in	16.92 m
Platform height	49 ft 6 in	15.09 m
Entry height	1 ft 8 in	.51 m
Horizontal reach	29 ft 2 in	8.89 m
Clear outreach	23 ft 1 in	7.04 m
Up and over clearance	22 ft	6.71 m
<b>A</b> Platform length	2 ft 2.8 in	.68 m
<b>B</b> Platform width	3 ft 8 in	1.12 m
<b>C</b> Height - stowed	6 ft 10 in	2.08 m
<b>D</b> Length - stowed	23 ft 6 in	7.16 m
<b>E</b> Width - stowed	5 ft 6 in	1.68 m
<b>F</b> Ground clearance - center	10 in	.25 m
<b>G</b> Length - outrigger footprint	14 ft 4 in	4.37 m
<b>H</b> Width - outrigger footprint	14 ft 4 in	4.37 m

### Productivity

Lift capacity (ANSI, CSA) - standard	500 lbs	227 kg
Lift capacity (ANSI, CSA) - rotating platform	500 lbs	227 kg
Lift capacity (CE/AUS) - standard	440 lbs	200 kg
Lift capacity (CE/AUS) - rotating platform	440 lbs	200 kg
Jib boom	4 ft 1 in	1.25 m
Jib working range	135°	
Self leveling platform	2.5° standard	
Platform rotation option	160° hydraulic	
AC power to platform	standard	
Turntable rotation	359° non-continuous	
Outrigger leveling capability	11°	
Drive speed	0.85 mph	1.37 km/h
Gradeability**	20%	
Towing speed rate	60 mph	97 km/h
Tongue weight - ANSI, CSA	400 lbs	181 kg
Tongue weight - CE	220 lbs	100 kg
Surge and parking brakes	standard	
Controls	variable speed system	
Tires - ANSI, CSA	ST 225/75 R15	
Tires - CE	215 R14C	
Coupler	combination hitch	

### Power

Power source - standard	24V DC (four 6V 225 Ah batteries)	
Power source - drive option	24V DC (four 6V 244 Ah batteries)	
Power source - option	Hybrid DC/Gas Honda 5.5 hp (4.1 kW)	
Fuel tank capacity	.95 gal	3.6 L
Hydraulic tank capacity	4.75 gal	18 L
Hydraulic system capacity	8.0 gal	30 L

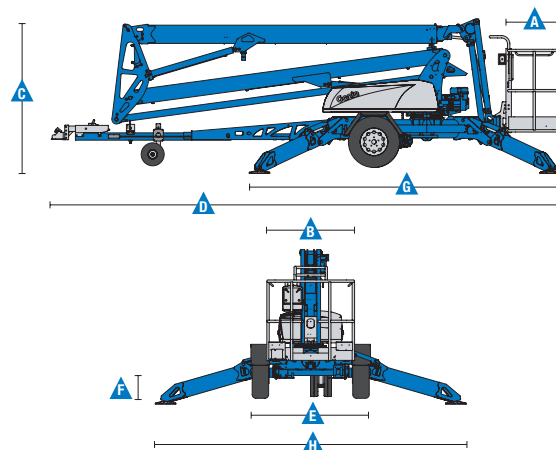
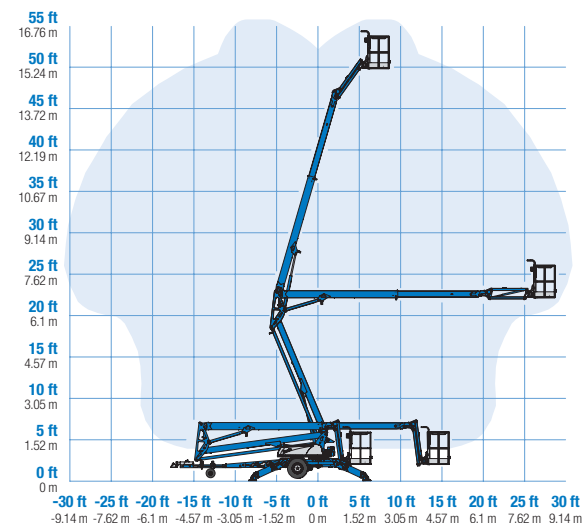
### Weight\*\*\*

ANSI, CSA, Australia	4,400 lbs	1,996 kg
CE	4,475 lbs	2,030 kg

### Standards Compliance

ANSI A92.2, CSA C225, EN 280, AS 1418.10

### Range Of Motion TZ-50



\* The metric equivalent of working height adds 2 m to platform height. U.S. adds 6 ft to platform height.

\*\* Gradeability applies to driving on slopes. See operator's manual for details regarding slope ratings.

\*\*\* Weight will vary depending on options and/or country standards.

## Features

Standard Features	Configurations	Options & Accessories
<b>Measurements</b> <ul style="list-style-type: none"> <li>• 55 ft 6 in (17.09 m) working height</li> <li>• 29 ft 2 in (8.89 m) horizontal reach</li> <li>• Up to 500 lbs (227 kg) lift capacity</li> </ul> <b>Productivity</b> <ul style="list-style-type: none"> <li>• Industry leading working envelope</li> <li>• Extension boom</li> <li>• Self-leveling platform</li> <li>• 4 ft jib with 135° working range</li> <li>• AC wiring to platform</li> <li>• Hydraulic outriggers</li> <li>• Automatic 11° leveling system</li> <li>• Outrigger interlocks</li> <li>• Mechanical parking brake</li> <li>• Hydraulic surge brakes</li> <li>• Adjustable hitch with coupler lever lock</li> <li>• Dual jockey wheels</li> <li>• 359° non-continuous turntable rotation</li> <li>• Easy to access batteries</li> <li>• Hour meter</li> <li>• Tilt alarm / sensor</li> <li>• Illuminated outrigger indicators</li> <li>• Highway safety chains with snap hook</li> <li>• LED brake lights (ANSI, CSA)</li> </ul> <b>Power</b> <ul style="list-style-type: none"> <li>• 24V DC power source (four 6V 225 Ah batteries)</li> </ul>	<b>Platform Options</b> <ul style="list-style-type: none"> <li>• Aluminum 26.8 x 44 in (.68 x 1.12 m)</li> <li>• 160° hydraulic platform rotation</li> </ul> <b>Power Options</b> <ul style="list-style-type: none"> <li>• 24V DC power source</li> <li>• Hybrid Honda 5.5 Hp (4.1 Kw) 45 amp charging system</li> </ul> <b>Drive</b> <ul style="list-style-type: none"> <li>• Drive and set option (ANSI, CSA, AUS)</li> <li>• Drive only (CE)</li> </ul> <b>Coupler Options</b> <p>Adjustable hitch</p> <ul style="list-style-type: none"> <li>- 2 in (5.08 cm) ball coupler</li> <li>- 2 5/16 in (5.87 cm) ball coupler</li> <li>- 2 1/2 in (6.53 cm) I.D. pintle ring coupler</li> <li>- Clevis coupler</li> </ul> <b>Tire Options</b> <ul style="list-style-type: none"> <li>• ST 225/75 R15 tires (ANSI, CSA)</li> <li>• 215 R14C tires (CE)</li> </ul>	<b>Productivity</b> <ul style="list-style-type: none"> <li>• 160° hydraulic platform rotation</li> <li>• Drive and set option</li> <li>• Wheel chocks</li> <li>• Fluorescent tube caddy</li> <li>• Full size spare tire</li> <li>• Flashing beacon</li> <li>• Non-marking outrigger footpads</li> <li>• Battery charge indicator (BCI)</li> <li>• Tool tray</li> <li>• Horn</li> <li>• High capacity battery</li> <li>• Ladder option (CE and AUS only)</li> </ul> <b>Power</b> <ul style="list-style-type: none"> <li>• Hybrid Honda 5.5 Hp (4.1 Kw) 45 amp charging system option</li> </ul>



### Genie United States

6464 185th Ave. NE  
Redmond, WA 98052  
Telephone +1 (425) 881-1800  
Toll Free in USA/Canada +1 (800)-536-1800  
Fax +1 (425) 883-3475

### Distributed By:



Effective Date: January, 2017. Product specifications and prices are subject to change without notice or obligation. The photographs and/or drawings in this document are for illustrative purposes only. Refer to the appropriate Operator's Manual for instructions on the proper use of this equipment. Failure to follow the appropriate Operator's Manual when using our equipment or to otherwise act irresponsibly may result in serious injury or death. The only warranty applicable to our equipment is the standard written warranty applicable to the particular product and sale and we make no other warranty, express or implied. Products and services listed may be trademarks, service marks or trade names of Terex Corporation and/or their subsidiaries in the USA and many other countries. Terex, Genie and AWP are registered trademarks of Terex Corporation or its subsidiaries. © 2017 Terex Corporation.



Quote 134468-01

July 10, 2019

CITY OF LAKE ELSINORE  
130 S MAIN STREET  
LAKE ELSINORE  
California  
92530-4109

Attention: Francisco

Dear Sir,

We would like to thank you for your interest in our company and our products, and are pleased to quote the following for your consideration.

## **SOURCEWELL #032515-CAT**

**CATERPILLAR INC. Model: 938M Wheel Loader**

**STOCK NUMBER: NS0012264**

**SERIAL NUMBER: 0J3R07716**

**YEAR: 2019**

We wish to thank you for the opportunity of quoting on your equipment needs. This quotation is valid for 30 days, after which time we reserve the right to re-quote. If there are any questions, please do not hesitate to contact me.

Sincerely,

Justin Usary  
Machine Sales Representative

**CATERPILLAR INC. Model: 938M Wheel Loader****STANDARD EQUIPMENT****POWERTRAIN**

Axle seal guards  
Auto Idle shut down feature  
Cat C7.1ACERT engine  
-Power Modes (Standard and Performance)  
-Power by Range (High Power in Range 4)  
-Tier 4 Final/Stage IV compliant  
-Turbocharged and aftercooled  
-Filtered crankcase breather  
-Diesel particulate filter  
-Selective Catalyst Reduction  
Coolant protection to -34C (-29F)  
Differential lock in front axle  
Dry type air cleaner  
Enclosed wet disc full hydraulic brakes  
Fuel priming pump, automatic  
Fuel water separator

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  
Lubed for life driveshafts  
Parking brake, electric  
Single plane cooling package wide 6 fins per inch density  
S-O-S port, engine, coolant, transmission oil

**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  
Hydraulic sight gauge, visible  
Load sensing hydraulics and steering  
Seat mounted hydraulic joystick controls

**ELECTRICAL**

Alternator, 115-amp, heavy duty  
12V power supply in cab (2)  
Batteries, 1,000 CCA (2) 24 volt system, disconnect switch  
Back up alarm  
Emergency shutdown switch  
Halogen work lights front and rear, LED

rear stop and turn lights  
Heavy duty gear reduction starter  
Product Link PRO w/3 year subscription  
Remote jump start post  
Resettable main and critical function breakers  
Roading lights front and rear

**OPERATOR ENVIRONMENT**

75 mm (3 in) retractable seatbelt  
Automatic temperature control  
Cab, enclosed ROPS/FOPS pressurized

Interior cab lighting, door and dome  
Interior rearview mirrors (2)  
Lunch box storage

and sound suppressed  
Cup holders  
External heated mirrors with lower  
parabolic  
Ground level cab door release  
Gauges  
-Digital hour meter, odometer and  
tachometer  
-Digital ground speedometer and  
direction indicator  
-Engine coolant temperature gauge  
-Fuel and Diesel Exhaust Fluid level  
indicator  
-Hydraulic oil temperature gauge  
Hydraulic control lockout

**OTHER STANDARD EQUIPMENT**

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

Operator warning system indicators  
Radio ready speakers  
Rear window defrost, electric  
Seat mounted electronic implement  
controls, adjustable  
Sliding glass on the side windows  
Column mounted multi function control  
-lights, wipers, turn signal  
Suspension seat, fabric  
Tilt and telescope steering wheel  
Tinted front glass  
Wet arm wiper/washer, 2-speed and  
intermittent, front  
Wet arm wiper washer, rear

Remote mounted lubrication points  
Vandalism protection-  
lockable compartments

Customer  
City of Lake Elsinore

Sourcewell#032515-CAT

Date  
07-10-19

**MACHINE SPECIFICATIONS**

Description	Reference No
938M WHEEL LOADER	536-5303
LANE 2 ORDER	0P-9002
PREP PACK, UNITED STATES	430-2943
STEERING, STANDARD	333-6858
DIFFERENTIAL, OPEN REAR	349-8014
ENVIRONMENT, STANDARD	536-5320
WEATHER, STANDARD	454-0612
ENGINE, 938	536-5268
HYDRAULICS, 3V, CPLR READY, SL	536-5343
HYDRAULICS, STANDARD	536-5284
LINES, AUX 3RD, STD LIFT	530-1628
JUMPER LINES, AUX 3RD, FUSION	445-4725
LIGHTS, STD HALOGEN	488-1112
LIGHTS, ROADING, HALOGEN, RH	541-3066
CAB, DELUXE	536-5309
SEAT, DELUXE	563-5967
RADIO READY, BLUETOOTH,MIC,AUX	378-0951
PRODUCT LINK, CELLULAR PL641	454-0589
TIRES, 20.5R25 TI MXL * L3	376-0830
FENDERS, STANDARD	366-8150
COUNTERWEIGHT, LOGGER/AGG	467-7991
TOOLBOX AUX	491-7922
RIDE CONTROL	430-2860
KIT,SERIALIZED TECHNICAL MEDIA	0P-2491
CAMERA, REAR VIEW	377-5635
SIDE MIRROR, RH	482-5167
GUARD, POWERTRAIN, LOWER	349-8165
GUARD, POWERTRAIN, SIDE	425-1425
GUARD, CRANKCASE	349-8163
QUICK COUPLER, FUSION	536-5314
BUCKET, GP, 3.8 YD3, FUS	345-2428
CUTTING EDGE, BOLT ON, 4 PIECE	345-2758
PACK, DOMESTIC TRUCK	0P-0210
CERTIFICATE OF ORIGIN, ENGLISH	0G-6022
EMA	0P-5203



**SOURCEWELL MEMBER DISCOUNT  
DEALER DISCOUNT**

\$236,031.17  
-\$31,900.00  
-\$2,051.00

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<b>Sell Price</b>	<b>\$202,081.17</b>
<b>Net Balance Due</b>	<b>\$202,081.17</b>
CA Tax (7.75%)	\$15,661.29
<b>After Tax Balance</b>	<b>\$217,742.46</b>

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**WARRANTY**

Standard Warranty: 12 Months Full Machine

Extended Warranty: 60 Month / 3000 Hour Powertrain + Hydraulic Warranty

**F.O.B/TERMS**

Riverside Machine

**FINANCING**

Finance terms and conditions subject to credit approval by Caterpillar Financial Services Inc.(CFSC). Payment amounts, down payments, and terms are estimates only, final amounts must be determined by CFSC.

Accepted by \_\_\_\_\_ on \_\_\_\_\_

\_\_\_\_\_  
Signature



# Cat<sup>®</sup> 938M

## WHEEL LOADER

### 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<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	125 kW	168 hp	136 kW	182 hp
SAE J1349 at				
Maximum Fan Speed	114 kW	153 hp	125 kW	168 hp
ISO 9249 (DIN)	126 kW	171 hp	137 kW	186 hp

### Engine (continued)

	Standard Mode		Performance Mode	
Maximum Gross Torque				
ISO 14396	879 N·m	648 lbf·ft	879 N·m	648 lbf·ft
Maximum Net Torque				
SAE J1349	843 N·m	621 lbf·ft	843 N·m	621 lbf·ft
ISO 9249 (1977)/EEC 80/1269	852 N·m	628 lbf·ft	852 N·m	628 lbf·ft
Displacement	7.01 L	427 in³	7.01 L	427 in³

- 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.



# 938M 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	2.3 seconds	
Number of Steering Wheel Turns – full left to full right or full right to full left	3.3 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*	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	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	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.

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

- 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)

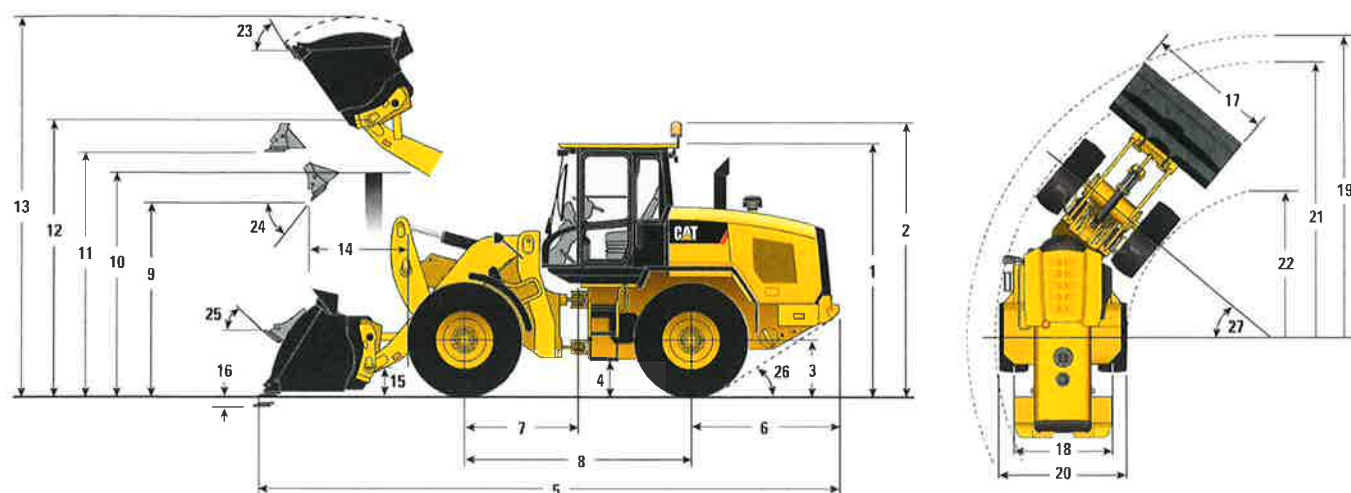
\*The measurements were conducted with the cab doors and windows closed and at 70% of the maximum engine cooling fan speed. The sound level may vary at different engine cooling fan speeds.

## Axles

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

# 938M Wheel Loader

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



	Standard Lift		High Lift	
** 1 Height: Ground to Cab	3340 mm	(10'11")	3340 mm	(10'11")
** 2 Height: Ground to Beacon	3669 mm	(12'0")	3669 mm	(12'0")
** 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	7656 mm	(25'1")	8397 mm	(27'6")
6 Length: Rear Axle to Bumper	1963 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	2834 mm	(9'3")	3415 mm	(11'2")
** 10 Clearance: Loadover Height	3354 mm	(11'0")	3561 mm	(11'8")
** 11 Clearance: Level Bucket	3641 mm	(11'11")	4222 mm	(13'10")
** 12 Height: Bucket Pin	3969 mm	(13'0")	4550 mm	(14'11")
** 13 Height: Overall	5273 mm	(17'3")	5853 mm	(19'2")
* 14 Reach: Bucket at 45 degrees	1146 mm	(3'9")	1413 mm	(4'7")
15 Carry Height: Bucket Pin	467 mm	(1'6")	686 mm	(2'2")
** 16 Dig Depth	101 mm	(3.9")	135 mm	(5.3")
17 Width: Bucket	2750 mm	(9'0")	2750 mm	(9'0")
18 Width: Tread Center	2065 mm	(6'9")	2065 mm	(6'9")
19 Turning Radius: Over Bucket	6133 mm	(20'1")	6490 mm	(21'3")
20 Width: Over Tires	2675 mm	(8'9")	2675 mm	(8'9")
21 Turning Radius: Outside of Tires	5537 mm	(18'1")	5537 mm	(18'1")
22 Turning Radius: Inside of Tires	2852 mm	(9'4")	2852 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	45 degrees		50 degrees	
26 Departure Angle	33 degrees		33 degrees	
27 Articulation Angle	40 degrees		40 degrees	
* Tipping Load – Straight (ISO 14397-1)	11 837 kg	26,097 lb	8362 kg	18,435 lb
* Tipping Load – Full Turn (ISO 14397-1)	10 045 kg	22,146 lb	7021 kg	15,480 lb
* Breakout	13 170 kg	29,035 lb	12 663 kg	27,917 lb
* Operating Weight	16 400 kg	36,156 lb	16 326 kg	35,993 lb

\*Vary with bucket.

\*\*Vary with tire.

Dimensions listed are for a machine configured with 2.5 m<sup>3</sup> (3.2 yd<sup>3</sup>) 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<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
- Product Link<sup>TM</sup> 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

### 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

## OPTIONAL EQUIPMENT

- Auto lube, integrated in secondary display
- Auxiliary flow, third and fourth function, adjustable through secondary display
- Beacon light, strobe
- Cab, deluxe (standard in Europe, optional in North America)
  - Electrically adjustable external heated mirrors (2)
  - Secondary display to enable features and adjust parameters
  - Sunscreen, front and rear
- Camera, rearview (standard in Europe)
- Cold start package
- Counterweight, (heavy and logger)

- 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

- 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.

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