
856H

WHEEL LOADER

Engine

Cummins QSB6.7 Tier 4 Final

Gross Power

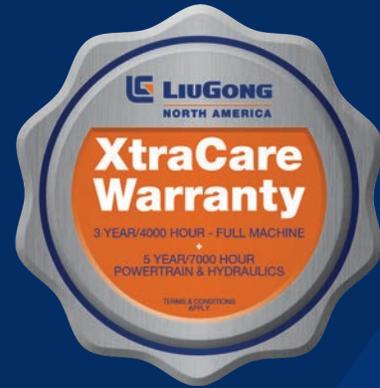
225 hp (168 kW)

Operating Weight

42,540 lb (19,296 kg)

Bucket Capacity

4.2 yd³ (3.2 m³)



TOUGH WORLD. TOUGH EQUIPMENT.

MAXIMIZE YOUR RETURN ON INVESTMENT

CUMMINS ENGINE

Unmatched performance driven by the Cummins QSB6.7 Tier 4 Final engine, maximizing torque output and more power and breakout force at lower engine speeds.

TRANSMISSION

The ZF powershift transmission, including torque converter, provides maximum transfer of power to improve performance and fuel efficiency.

ADVANCED HYDRAULIC SYSTEM

LiuGong's new generation advanced hydraulic system organizes the mechanical, electrical and hydraulic systems to work in perfect harmony. Power is supplied only as needed, achieving optimum operation.

CONTROLS

Kick-down and Forward/Reverse buttons are conveniently located on the loader joystick for efficient operator use, reducing cycle times and improving production and efficiency.

AUTO-IDLE SPEED FUNCTION

Optimizing and controlling engine speed is key to reducing fuel consumption. The Auto-Idle Speed function provides optimal control in allocating the required RPM for the work required.



Z-BAR LINKAGE

Our optimized Z-Bar geometry positions the bucket closer to the tires, achieving high bucket breakout forces and stable transport of materials with minimal spillage.

AXLES

The limited-slip differential axles automatically deliver power to the tires, increasing traction for maximized bucket-filling performance even in the toughest terrain.

VERSATILITY

The quick coupler helps you to get the most out of your machine by easily and quickly switching between a range of attachments to accommodate your needs.

EXTENSIVE VISIBILITY

The panoramic view with curved front glass, along with well positioned lift arms, allow the operator easy line of sight to the bucket edge at ground level.



AFTER SALES SERVICE

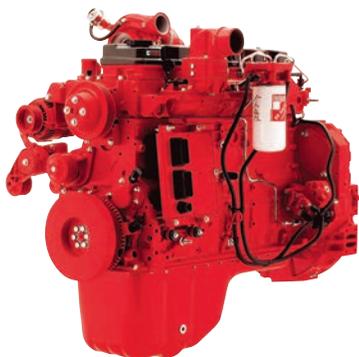
As a customer of LiuGong you can feel confident that our dealer and regional offices will be there to support you with training, service and maintenance needs throughout the life of your machine.

PARTS

LiuGong supports you long after your purchase. You can be confident we will provide the support you need to maximize your machine's uptime. A worldwide parts network will help make maintenance easy and make sure parts are available where and when you need them.

MORE POWER LESS CONSUMPTION

The new 856H wheel loader has much more to offer than high power and great productivity. In terms of **efficiency** and fuel consumption, the new LiuGong 856H integrates the strongest technologies, including a powershift transmission and advanced load sensing hydraulic system, allowing you to be far **more productive**.



INTEGRATED CUMMINS ENGINES FOR HIGHER CONTINUOUS POWER

The new 856H comes equipped with a fuel efficient world-class Cummins QSB6.7 engine that maximizes torque output and delivers more power at lower engine speeds while also optimized for fast throttle response. The integrated exhaust system provides maximum fuel efficiency over the working cycles. Optimized NOx Dual Reduction Technology (EGR+SCR) achieves the Tier 4F/Stage IV emissions regulations with the unique combination of high performance and low fuel consumption.

KEEP COOL AND EFFICIENT

The cooling system has been totally redesigned on the new 856H for better efficiency and lower fuel consumption. The air flow from radiator to fan together with the newly developed hexagon grill considerably improves ventilation. The variable hydraulic fan drive reduces nominal power needs from the cooling system. Operator has the ability to periodically reverse airflow to increase radiator clean-out intervals.

AUTO-IDLE SPEED FUNCTION

Optimizing and controlling engine speed is key to reducing fuel consumption. The Auto-Idle Speed function on the new 856H allows optimal control to allocate the appropriate RPM for your job. If no activity is detected in 10 minutes, engine speed will reduce to idle speed. When the system detects commanded work, the engine immediately returns to the current throttle setting speed.

TRANSMISSION

The new 856H integrates ZF Powershift transmissions available in 2 types of 4F/3R. The torque converter has been optimized for maximum transfer of power to the transmission for optimum performance and fuel efficiency. Optimized gear ratios and auto-shift functionality provide faster acceleration and faster cycle times, regardless of the application. Kick-down and Forward/Reverse buttons are conveniently located on the loader joystick for efficient operator/machine interface, further reducing cycle times and improving production and efficiency. With the kick-down function, the operator can lower the gear with the tip of a finger and thus increase the torque generated by the engine for more breakout force and loading capacity. Convenient location of controls provides the operator full control of loader and transmission functions - efficiently connecting the machine to the worksite.

AXLES

The 856H utilizes limited-slip differential axles that automatically deliver power to the tires, creating the best traction for maximized bucket-filling performance in even the toughest terrain. LiuGong axles ensure all four wheels remain on the ground even over irregular terrain, with stability and traction further enhanced by rigidly mounting the front axle to the frame to support the entire weight of the wheel loader. This added support also aids in resistance to internal torque loads as well as external forces encountered throughout operation. The rear axle is designed to allow $\pm 12^\circ$ oscillation.

ADVANCED LOAD SENSING HYDRAULIC SYSTEM

LiuGong's new-generation advanced hydraulic system ensures the mechanical, electrical, and hydraulic systems work in perfect harmony. This technology perfectly matches the hydraulic flow with the operation. Power is supplied only as needed, achieving optimum operational efficiency. LiuGong's load-sensing hydraulic system allocates power to the work and steering functions according to demand, ensuring fast response and excellent efficiency. Smooth, coordinated operation through superior control of both the boom and the attachment is easily achieved. Power is distributed efficiently based upon the operator's command and need of the job.

DESIGNED TO GET MORE DONE

There is a **redesigned** Z-Bar and bucket that gives you **maximum production** on the job-site.

Z-BAR LINKAGE TO SUPPORT PAYLOAD PERFORMANCE

Our optimized Z-Bar geometry positions the bucket closer to the tires, achieving high bucket breakout forces with maximum rollback. Stable transport of materials with minimal spillage is easily achieved. The option of hydraulic quick coupler attachment adds versatility to Z-Bar machines, allowing use of multiple tools to suit the job-site needs.

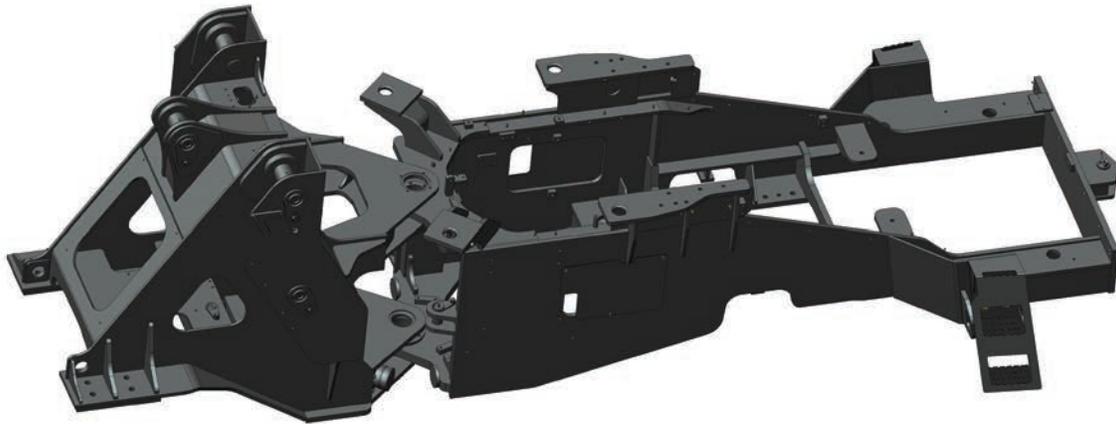
NEW BUCKET DESIGNED FOR BETTER PAYLOAD

The bucket of the newly designed 856H wheel loader has increased fill factor and material retention. The 856H loads more easily and carries more, which significantly increases productivity.



RELIABLE AND SUSTAINABLE STRUCTURES

At every stage, LiuGong is committed to the design philosophy of **'Reliability and Durability'**. This principle has led to the creation of the 856H, making this new wheel loader a **smart choice** for companies looking for high profitability and peace of mind.



ENHANCED STRUCTURE

The chassis frame is the wheel loader's backbone. Particular care has been given to the design of this crucial structural component. Advanced analysis tools including dynamics and durability simulations have been utilized to ensure strong structure and extended machine life.

Z-BAR LINKAGE REINVENTED

The newly designed Z-Bar is the main structure to support the payload. It is not only about strength and visibility but is also essential for durability and reliability. On the 856H, the Z-Bar linkage has been reinvented by LiuGong engineers. The structure has been optimized for improved distribution of stress. Key components such as hinge pins and lift arms mounting plates are made from optimized materials, which have gone through a special heat treatment process for increased strength.

The use of world-class components is our commitment for extensive reliability and durability of every machine.

AN OPERATOR-FRIENDLY ENVIRONMENT DESIGNED FOR WORK

Ergonomically designed controls, increased **visibility** and convenient features all contribute to operator comfort and **overall productivity** on the jobsite.

EXTENSIVE VISIBILITY

The new 856H has been designed to offer optimized visibility. A panoramic view cab with curved front glass and with well-positioned lift arms allow the operator a clear line of sight to the bucket at ground level. The view to machine corners is optimized and can be further enhanced with selection of the rear-view camera for an extra eye on the jobsite.

COMFORTABLE ENVIRONMENT

Cab design maximizes the space available in the cabin for the operator. The vertically and horizontally adjustable air suspension seat provides the operator benefits of maximum comfort and less fatigue. Thanks to the optimized design of the front glass, the new electric system, high quality sealing and the efficient cooling compartment, the sound level inside the cabin is minimized to: 73dB (A).

EASE OF OPERATOR

On the 856H, a choice between joystick and finger control levers gives the operator simultaneous and precise control of the hydraulic system. Forward and reverse shifting button and kick-down functions are positioned for optimum operator use, improving productivity and efficiency and reducing operator fatigue.

FRESH AIR ALWAYS

The new 856H cab is designed with balanced air recycling ventilation to achieve positive pressure and continuous fresh air inside. AC is equipped with eight all-around outlets to keep the cabin at a comfortable temperature at all times. The easy-to-replace air filter restricts dust and particles from entering the cab.



SAFETY WITHOUT COMPROMISE

LiuGong is **committed to safety** on the job site and the 856H wheel loader is equipped with all the necessary safety features for peace of mind so you can **focus** on the job at hand.



All-around visibility is supported by a rear-view camera acting as an extra eye on the jobsite.

SAFETY WITHOUT COMPROMISE

All LiuGong wheel loader cabs are ROPS and FOPS certified. Slip resistant tread plate and walkway handles provide a safe access environment for the operator and service person.

ROPS/FOPS CAB

Rollover Protective System on the cab (ROPS) is standard to ensure operator protection in the unlikely event of the machine rolling over. Falling Object Protective Structure (FOPS) is standard to guarantee extra peace of mind.



SAFE ACCESS

The 4-bar steps are widely spaced to allow debris to fall through. Welded anti-slip bars help keep the steps clear and safe. The spacing between the steps and the distance from the ground to the ladder meet ISO standards. Well-positioned grab handles make access to the cab safer.



Access to the front of the cab by the operator or service person is a new feature. The same anti-slip bars used on the egress steps are used here for maximum anti-slip protection.

PART OF YOUR PERFORMANCE

No matter where you are **in the world**, if you can get your LiuGong machine there, then we can get the parts there.



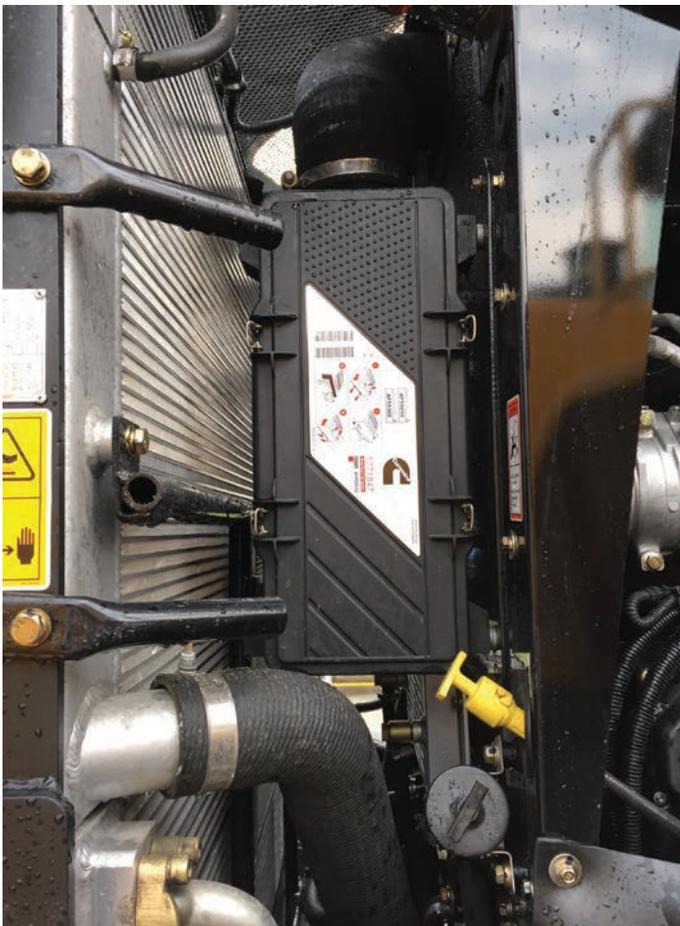
At LiuGong, we know that what you want is to be confident in your machinery. We make sure we can always get you what you need without delay, without fail, without excuses. Anywhere, and at any time. That is more than our goal. That's our pledge.

MASTER YOUR ROUTINE

The 856H benefits from several **innovations** implemented to make your life easier when it comes to maintenance and serviceability. The 856H gives you peace of mind to focus on your business and **maximize your profitability**.

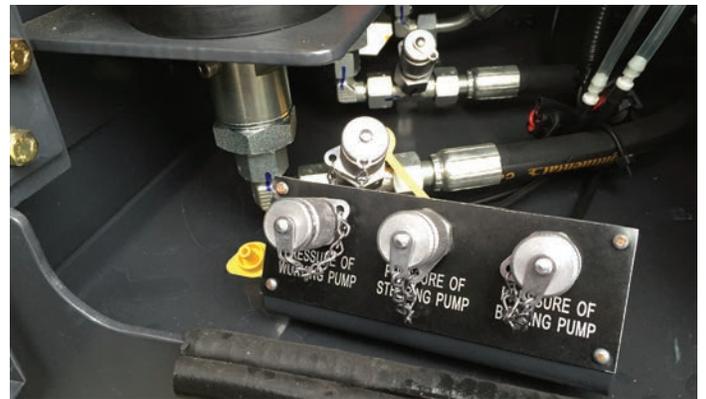
ACCESSIBILITY

The rear full fenders swing out for easy access to the engine compartment. The electrically actuated, wide opening fiberglass hood of the new 856H gives you easy access to the engine and its easy-to-reach service points. The cab filter has been relocated to the left side of the cab exterior for improved serviceability. Replacement of the primary filter is easy, and the steel frame secures it in place. The engine air filter is also easy to replace which adds to service efficiency.



MASTER YOUR ROUTINE

There is great serviceability all around the 856H. The **Autolube is standard** feature on all LiuGong wheel loaders which contributes to your machine's uptime. **Telematics is standard** on the 856H. Positioning and engine hours history allow you to track your machine and its service intervals as part of managing your LiuGong fleet.



All pressure taps and sight gauges are easily accessible. Fluid drains provide environmentally friendly drainage capability and are grouped together for convenient serviceability.

SPECIFICATIONS

ENGINE

Description	
Cummins Tier 4F/Stage IV-approved, 6.7 liter, 6-cylinder straight turbocharged diesel engine with Common Rail fuel injection system and Cooled Exhaust Gas Recirculation (EGR).	
Cummins Variable Geometry Turbocharger (VGT) improves engine response at both low and high-speed RPM.	
Cummins CM2350 (improved microprocessor and memory) ECM lever latch connectors. Integrated DEF controller.	
Hibernate - saves fuel, idle time is 10 minutes, idle speed at 700 rpm.	
Air cleaning: Cummins direct flow air filter.	
Cooling system: Air-to-air intercooler, hydraulic motor drive and temperature controlled fan.	
Emissions regulation	Tier 4 Final / Stage IV
Make	Cummins
Model	QSB6.7
Gross power	168 kW (225 hp) @ 2,100 rpm
Net power	160 kW (215 hp) @ 2,100 rpm
Peak torque	1500 N-m (1,106 lb-ft) @ 1,400 rpm
Displacement	6.7 L (409 in ³)
Number of cylinders	6
Aspiration	Turbocharged & air-to-air intercooled

HYDRAULIC SYSTEM

Description	
System supply: Two load-sensing axial piston pump with variable displacement, with priority to the steering function. Valves: double-acting 3-spool valve.	
Main valve controlled by a 3-spool pilot valve.	
Lift function: The valve has four positions: lift, hold, lower, and float. Inductive/magnetic automatic boom kick-out can be switched on and off and is adjustable to two positions: bucket at ground level and maximum reach full lifting height.	
Tilt function: The valve has three functions: rollback, hold and dump.	
Cylinders: Double-acting cylinders for all functions.	
Filter: Full-flow filtration through 12 micron (absolute) filter cartridge.	
Main pump type	Piston
System pressure	22 MPa (3,191 psi)
Raise	5.7 s
Dump time	1.3 s
Float down time	3.0 s
Total cycle time	10.0 s
Controls	Joystick or 3 levers

AXLES

Model	AP3000 (Wet Type)
Differential front type	Limited slip
Differential rear type	Limited slip
Axle oscillation	±12°

TRANSMISSION STANDARD

Description	
Torque converter: single-stage, three-element.	
Transmission: ZF countershaft transmission, integrated pilot single joystick with FNR, KD & horn.	
Gear shifting system: ZF Automatic Power Shift with auto modes (1~4/2~4) all start in gear 2, faster and better for long distance material transportation.	
Transmission type	Countershaft, power shift
Torque converter	Single-stage, three-element
Maximum travel speed, fwd	38.1 km/h (23.7 mph)
Maximum travel speed, rev	23.9 km/h (14.9 mph)
Number of speeds, fwd.	4
Number of speeds, rev	3

TRANSMISSION OPTIONAL

Description	
Torque converter: single-stage, three-element.	
Transmission: ZF 4BP210 countershaft transmission, integrated pilot single joystick with FNR, KD & horn.	
Gear shifting system: ZF Automatic Power Shift with auto modes start in gear 2, faster and better for long distance material transportation.	
Transmission type	Countershaft, power shift
Torque converter	Single-stage, three-element
Maximum travel speed, fwd	38.1 km/h (23.7 mph)
Maximum travel speed, rev	23.9 km/h (14.9 mph)
Number of speeds, fwd	4
Number of speeds, rev	3

STEERING

Description	
Steering system: Load-sensing hydraulic articulated steering.	
System supply: The steering system has priority feed from a load-sensing axial piston pump with variable displacement, dual-pump confluence & steering priority.	
Steering cylinders: Two double-acting cylinders.	
Steering configuration	Articulated
Steering pressure	19 MPa (2,756 psi)
Steering cylinders	2
Cylinder bore	90 mm (3.54 in)
Rod diameter	50 mm (1.97 in)
Stroke	465 mm (18.31 in)
Maximum flow	140 L/min (37 gal/min)
Maximum articulation	±38°
Smallest turn (over tire)	6,205 mm (20 ft 4 in)

BRAKES

Description	
Service brake type	Wet discs, two independent circuits
Service brake actuation	Hydraulic
Parking brake type	Manual electronic control
Parking brake actuation	Hydraulic

SPECIFICATIONS

ELECTRICAL SYSTEM

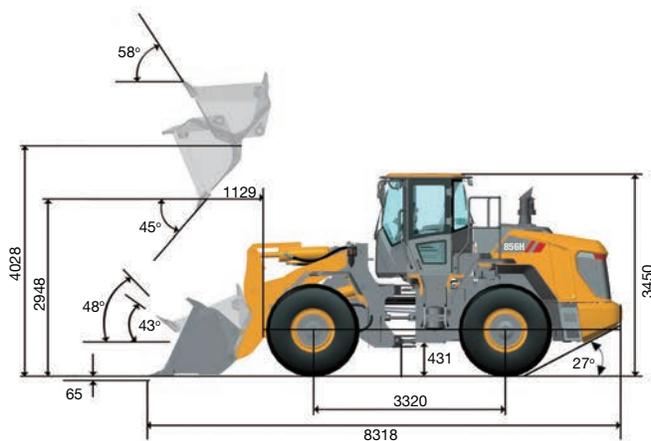
Voltage	24 V
Batteries	2 x 12 V
Battery capacity	2 x 120 Ah
Cold cranking capacity	850 CCA
Reserve capacity	230 min
Alternator rating	1,960 W / 70 A
Starter motor output	7.8 kW (10.4 hp)

SERVICE REFILL CAPACITIES

Fuel tank	300 L (79.2 gal)
Engine oil	18 L (4.7 gal)
Cooling system	44 L (11.6 gal)
Hydraulic system	236 L (62.3 gal)
Transmission	45 L (11.8 gal)
Axles, each	44 L (11.6 gal)
DEF tank	19 L (5.0 gal)

LOADER ARM PERFORMANCE WITH ATTACHMENT

Tipping load - straight	12,700 kg (28,219 lb)
Tipping load - full turn	11,000 kg (24,250 lb)
Bucket breakout force	179 kN (40,275 lbf)
Maximum dump angle at full height	45°
Dump clearance at full height discharge	2,948 mm (9 ft 8 in)
Dump reach at full height discharge	1,129 mm (3 ft 8 in)
Maximum hinge pin height	4,028 mm (13 ft 2 in)
Maximum digging depth, bucket level	85 mm (3 in)
Bucket rollback at ground level	43°
Bucket rollback at carry	48°
Bucket rollback at maximum height	58°



SOUND & ENVIRONMENT

Sound level in cab according to ISO 6396-2008/EN ISO 3744-1995	73 dB(A)--Stationary Work cycle mode
External sound level according to ISO 6395-2008	106 dB(A)--Stationary Work cycle mode
Ventilation	9.2 m ³ (12.0 yd ³)
Heating capacity	5.8 kW (7.7 hp)
Air conditioning	6.0 kW (8.0 hp)

CAB

Description

Instrumentation: All important information is centrally located in the central instrument panel and operator's field of vision.

Large curved front glass, rear-view camera and mirrors ensure great visibility.

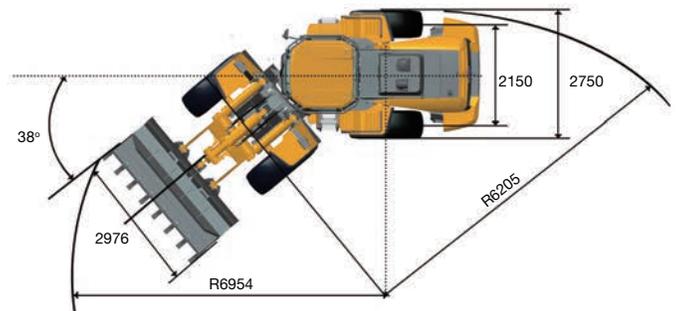
Adjustable steering column, air suspension seat, armrest box, and AC with all-around air outlets.

Pressurized cab with lower interior sound level.

The cab is tested and approved according to ROPS (ISO 3471), FOPS (ISO 3449).

DIMENSIONS

Length with bucket down	8,318 mm (27 ft 3 in)
Width over tires	2,750 mm (9 ft 0 in)
Cab height	3,450 mm (11 ft 3 in)
Wheelbase	3,320 mm (10 ft 10 in)
Wheel tread	2,150 mm (7 ft 0 in)
Ground clearance	431 mm (17 in)
Turn angle, either side	38°
Rear angle of departure	27°
Turning radius, outside of tire	6,205 mm (20 ft 4 in)
Turning radius, center of tire	5,896 mm (19 ft 4 in)
Turning radius, bucket carry	6,954 mm (22 ft 9 in)
Width over bucket	2,976 mm (9 ft 10 in)





STANDARD EQUIPMENT

ENGINE

- Cummins QSB6.7, Tier 4 Final/Stage IV, air-to-air intercooled, 6 cylinders, 4 stroke, reversing fan cooling
- High pressure common rail
- Exhaust emission control
- DC air filter, fuel filter
- Intelligent Power Control (IPC)

TRANSMISSION

- ZF 4WG200 power shift transmission
- Kick-down function, FNR, F4/R3
- Transmission oil level sight gauge
- Secondary oil filter, oil dipstick
- Remote pressure taps for diagnostics
- Auto shifting mode by speed

AXLE

- ZF wet axle with limited slip differentials
- Wet disc service brake system

HYDRAULIC SYSTEM

- Two piston pumps with variable displacement. Hydraulic load-sensing according to demand.
- Third valve and multipurpose lines
- Single joystick control
- Ride control system
- Boom kick-out, automatic
- Bucket positioner, automatic
- Plug at the port of bucket and boom cylinder for pressure check
- Emergency boom lower via pilot accumulator

STEERING SYSTEM

- Load sensing system with flow amplification and steering priority
- Emergency steering system

TIRE & RIM

- 23.5R25 L3 tire

CHASSIS FRAME

- Autolube
- Articulation locking bar
- Tow hitch
- Rubber cushion articulation stops
- Full rear fender

ELECTRIC SYSTEM

- Two front lights with high/low beam
- Two front lights on top of cab
- Two rear lights on top of the cab
- Turn signals with flasher
- Batteries, free of maintenance
- Electric horn
- Front and rear windshield wiper
- Alarm, back-up
- Radio/player with USB port
- Reversing warning light, automatic

LINKAGE & ATTACHMENTS

- Z-Bar linkage
- 4.2 yd³ (3.2 m³) General Purpose (GP) bucket with bolt-on cutting edge (BOCE)
- Quick coupler
- Pallet fork

GAUGE GROUP

- Engine coolant temperature
- Low coolant level
- Transmission oil temperature
- Engine oil temperature
- Engine oil pressure
- Hydraulic oil temperature
- Fuel level
- Hour meter
- Voltage
- Brake oil pressure
- Engine fault
- DEF level

CAB

- Certified ROPS/FOPS cab
- Grammer air suspension seat, armrest
- 4-way adjustable steering column
- Large curved front glass
- Rubber cab mounts
- Cab fresh air filter
- One interior & dual exterior rear-view mirrors
- Rear-view camera display
- Air conditioner
- Lunch-box/cooler holder
- Beverage holder
- Cab rear windshield defroster
- Sun visor
- Fire extinguisher system
- Cigarette lighter

TELEMATICS

- 36 months service from initial sale
- Positioning and engine on/off history

OPTIONAL EQUIPMENT

CAB

- Heated air suspension seat
- Heated external rear-view mirrors

TRANSMISSION

- ZF 4BP210

LINKAGE & ATTACHMENTS

- Pin-on 4.5 yd³ (3.5 m³) General Purpose (GP) bucket with bolt-on cutting edge (BOCE)

HYDRAULIC SYSTEM

- Fingertip levers control (electrical proportion valve)



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