

90 Z5

WHEEL LOADER

Direct-injection, turbocharged 192kW(257hp) engine

Operating weight 24ton, Bucket capacity 3.4-4.6m³

Strong and robust main structures

Tough and proven hydraulic components

Productive and dependable performance



T
THE ADVANCED TRADITION
SIMPLE
DURABLE
DEPENDABLE



The machines in the pictures may include optional items.
Please consult your local Kawasaki dealer for the available optional items.



The outstanding performance of Kawasaki wheel loaders has been proven all over the world.

Continuous improvement in quality since its release, the Kawasaki wheel loaders offer long service life and outstanding productivity.

Kawasaki, a major Japanese manufacturer of wheel loaders for over half of a century combines innovative technologies and real world experience to produce the finest wheel loader in the industry.

Simple and straight forward, Kawasaki eliminates excessive functions to enhance productivity, durability, reliability, and lower operating costs.

Overall simple design makes maintenance easier and reduces costs.

Kawasaki focuses on simple design to offer the highest reliability and the easiest maintenance with minimum down time.

"Kawasaki Made" major components such as the transmission, axle and hydraulic valve are developed and manufactured by experienced personnel that concentrate their knowledge and technologies to produce the best components for Kawasaki wheel loaders.

SOPHISTICATED PERFORMANCE

COMPUTER CONTROLLED ENGINE

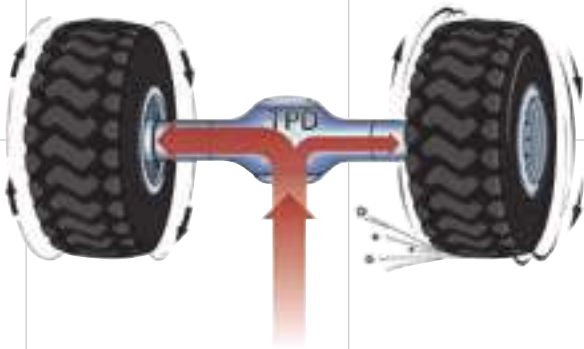
The Engine Control Module (ECM) allows the engine performance to be modified to fit the application requirements. It also provides a wide range of operating data and fault codes to assist in diagnostic and troubleshooting. Cummins provides diagnostic tools to allow technicians to quickly recover engine information for fast, accurate analysis.

*For the range of fuel, please consult your local Kawasaki dealer.



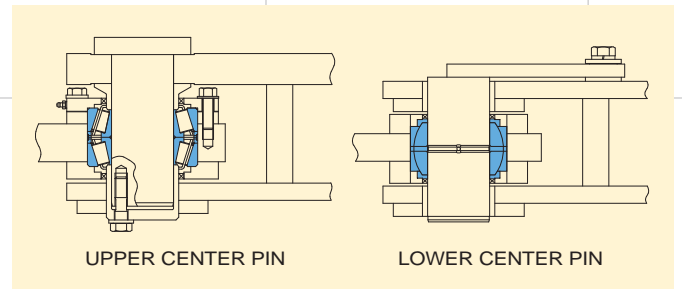
TPD

Standard Torque Proportioning Differentials (TPD) improve traction in slippery conditions.



CENTER PIN

Kawasaki center pin design is rugged and durable, providing thousands of hours of trouble free operation. The spherical bearing mounted on the lower center pin area absorbs heavy stresses caused by digging.



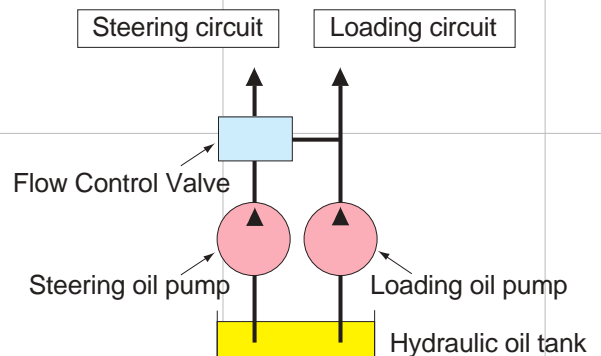
LSD (OPT)

For applications with extreme traction requirements, the optional Limited Slip Differential (LSD) provides additional traction capability.



LOAD SENSING HYDRAULIC SYSTEM FOR STEERING LINE

An energy efficient design of the hydraulic system provides for steering flow to supplement the main circuit once steering demand is met. This allows for full utilization of the pump capacity for efficient operation in all conditions.



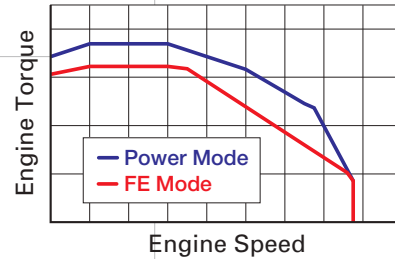
WET DISC BRAKE

Outboard mounted wet disc service brake can minimize maintenance time since the brakes are accessible without removing the axle.



POWER/FUEL EFFICIENT MODE SELECTION

The engine mode switch allows the operator to select either the power mode for maximum power in extreme applications or the fuel efficient mode, for most applications, which provides better fuel economy.



PARKING BRAKE

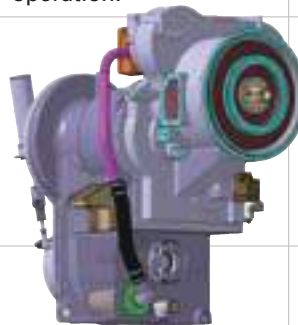
The parking brake is a spring-applied, oil pressure-released, drum type. Based on this proven design, parking brake maintenance and adjustment can be easily done.

TRANSMISSION

Fewer parts and the simple structure of the counter shaft transmission minimizes maintenance time and cost. Transmission control can be done by using simple, twist grip, single lever which helps an operator to focus on bucket operation.

IDLE MANAGEMENT SYSTEM

The idle management system allows for lower idle speed when idling for extended periods to conserve fuel. It also increases idle speed and reduces fan speed when the engine is cold to reduce warm up time, for better productivity.



The machines in the pictures may include optional items. Please consult your local Kawasaki dealer for the available optional items.

BEST OF BOTH WORLDS, PRODUCTIVE AND DEPENDABLE

HOIST ARM & BUCKET

With strong and robust hoist arms and linkage, Kawasaki loaders perform well in a wide variety of applications. High breakout force and excellent bucket rollback mean bigger loads and better load retention. Buckets are designed for easy loading and are equipped with bolt-on cutting edges or teeth for easy changing. The bucket leveler and boom kickout are standard.



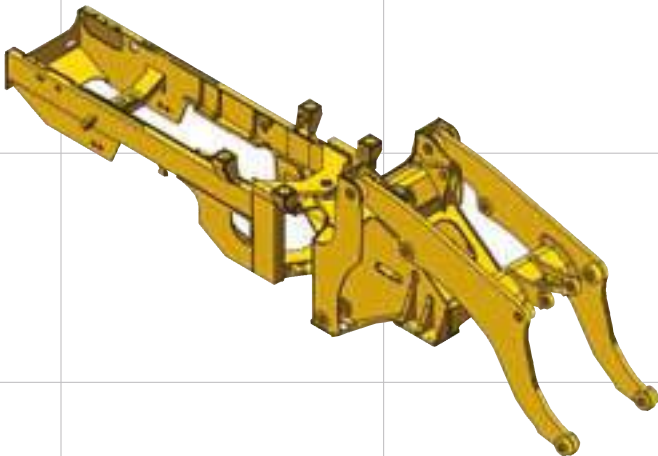
SEALED BUCKET HINGE PIN

The special seal in the bucket hinge pin provides excellent sealing and grease retention which extends pin life.



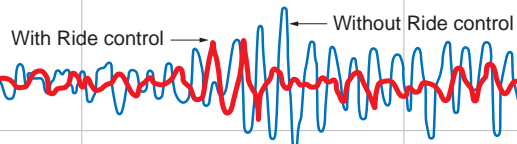
FULL BOX FRAME CHASSIS

Full box section frame is the strongest in the industry and resists twisting loads better than plate frames.



RIDE CONTROL (OPT)

Ride Control provides stable load handling during load and carry operation. It reduces bouncing of the equipment while traveling, improves safety, productivity and operator comfort. The system comes with speed sensitive, automatic on/off feature.



KAWASAKI MADE HYDRAULIC VALVES

As a leading manufacturer of precision hydraulic components, Kawasaki offers high quality control valves for precise operation. Pilot assisted controls offer fingertip operation.

BUFFER RINGS IN HYDRAULIC CYLINDER

The hydraulic cylinders utilize a buffer ring to improve sealing capability to reduce leakage.

INCREASED GREASING INTERVALS FOR UNIVERSAL JOINTS

Sealed universal joints only require greasing every 12000hours. This reduces maintenance costs significantly and provides greater durability.



EASY ACCESS SIMPLIFIES SERVICING



EASY ACCESS SIMPLIFIES SERVICING

Maintenance is enhanced with the engine access panels that can be opened wide for better access. Filters are conveniently located for easy change and the grease fittings are grouped to reduce maintenance time and insure proper lubrication.



HALOGEN HEAD LAMPS

Front and rear working lights are bright, halogen lamps for improved safety and visibility.

LED REAR LAMPS (OPT)

Long life, LED lamps are available as an option for the rear tail lights. These lights are very bright and durable.

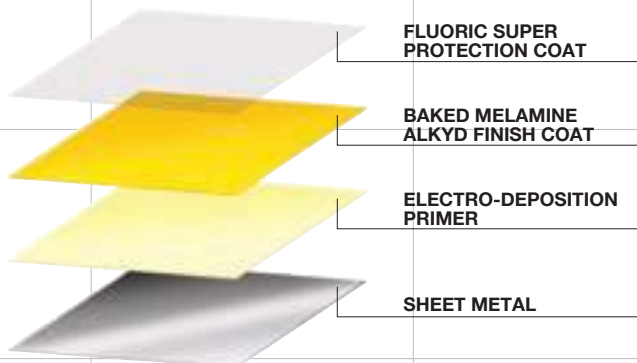


DT CONNECTORS

Sealed Deutsch DT electrical connectors are used throughout the system to reduce corrosion and provide a positive connection.

HIGH QUALITY FINISH PAINT FOR SHEET METAL PARTS

Kawasaki's sophisticated painting process utilizes ED (Electro-deposition) primer, a baked Melamine Alkyd finish coat as well as a fluoroc super protection coat for a durable and attractive finish.



The machines in the pictures may include optional items. Please consult your local Kawasaki dealer for the available optional items.

***T* THE COMFORT ZONE "NO OTHER PLACE LIKE THIS CAB"**

CAB (OPT)

Excellent visibility in all directions is enhanced with both inside and outside mirrors. The front windshield is flat glass mounted in rubber gaskets that make windshield replacement fast and easy. Viscous mounting of the cab reduces vibration and noise.



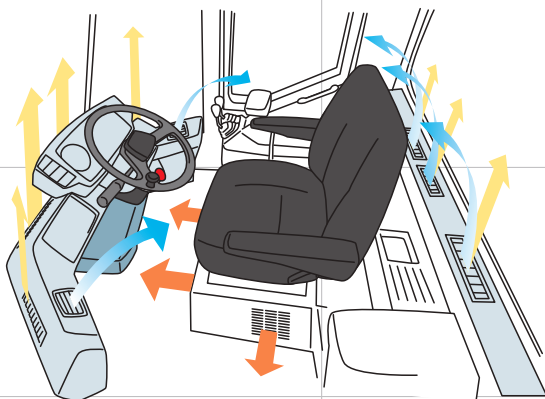
ROPS/FOPS CAPABILITY (OPT)

The operator's cab is fully certified to meet all ROPS (Rollover Protective Structure) and FOPS (Falling Object Protective Structure) regulations.



FULLY AUTOMATIC HEATER AND AIR CONDITIONER (OPT)

The thermostatically controlled air conditioner/heater provides automatic adjustment to keep the operator comfortable in any environment. The high capacity vents provide adequate airflow for efficient defrosting and an even temperature distribution. By pressurizing the cab, the climate control system keeps dust out of the cab.



MULTI ADJUSTABLE FUNCTION OPERATOR'S SEAT

The fully adjustable suspension seat offers excellent comfort to reduce operator fatigue and increase productivity.





SINGLE SHIFT CHANGE LEVER

Single, twist grip transmission shift lever is conveniently mounted on the steering column.

MODM

The MODM, Machine Operation Diagnostic Module, offers information to make the operation, maintenance and troubleshooting more efficient. With this information operators, maintenance and technical personnel can quickly determine key operating data.



RADIO (OPT) AND UTILITY BOXES (OPT)

Operators appreciate the convenience of the radio, glove box, cup holder and climate controlled storage box.

CUP HOLDERS

Cup holders are available on the console box.



TILT AND TELESCOPIC STEERING

The tilt and telescopic steering column adjusts to fit a variety of operator needs and offers greater comfort and efficiency.

ADJUSTABLE DECLUTCH PRESET SWITCH

The adjustable declutch system allows the operator to select the location of the left brake pedal where the declutch engages. This allows the operator to adjust for varying operating conditions easily.



SHIFT HOLD SWITCH (OPT)

The shift hold switch allows the operator to hold the transmission in the current range with a convenient button located on the hydraulic control lever when the transmission is in the automatic mode.

ADDITIONAL DIRECTIONAL SWITCH (OPT)

The directional switch located near the hydraulic control levers allows the operator to easily make directional shifts without removing his left hand from the steering wheel.



DOWNSHIFT BUTTON

The downshift button located on the boom control lever provides for quick, convenient downshifting from 2nd gear to 1st gear.

The machines in the pictures may include optional items. Please consult your local Kawasaki dealer for the available optional items.

OPERATING SPECIFICATIONS

Engine

Make & model	CUMMINS "QSM11" diesel engine	
Type	4-cycle, water-cooled, direct injection, with turbocharged and air cooled intercooler	
Rated power	Gross - SAE J1995	216 kW (290 hp)/2,100 rpm
	Net - ISO 9249 SAE J1349 80/1269/EEC	192 kW (257 hp)/2,100 rpm
Maximum torque	Gross	1,478 N·m (151 kgf·m)/1,400 rpm
	Net	1,417 N·m (144 kgf·m)/1,000 rpm
Number of cylinders	6	
(bore × stroke)	125 mm × 147 mm	
Total displacement	10,823 cc	
Cooling type	Hydraulic drive pusher type fan Pressurized radiator	
Fuel injection pump	Cummins high pressure injection	
Governor	All-speed electrical type	
Air cleaner	Dry type (Double element)	
Generator	AC 24V 1.8 kW (75 ampere)	
Starter motor	DC 24V 7.2 kW (9.6 hp)	
Batteries	DC 12V 108 Ah × 2	

Torque converter & Transmission

Torque converter	Make & model	Kawasaki 3-element, 1-stage, 1-phase	
	Stall torque ratio	3.16	
Transmission	Make & model	Kawasaki, Full power shift Countershaft type	
	Clutch type	Wet hydraulic, multi disc	
Traveling speed		Forward	Reverse
	1st	6.9 km/h	7.6 km/h
	2nd	12.1 km/h	13.2 km/h
	3rd	21.5 km/h	23.3 km/h
	4th	35.3 km/h	37.4 km/h
Reduction gear ratio		Forward	Reverse
	1st	4.328	3.946
	2nd	2.429	2.214
	3rd	1.296	1.182
	4th	0.693	0.632

Axles & Final drives

Type	4-wheel drive
Axle make & type	Kawasaki Full floating type
Differential gear	Spiral bevel gear, torque proportioning, single stage reduction gear ratio 4.333
Final reduction gear	Outboard mounted, Internal planetary gear gear ratio 5.333
Rear axle oscillation angle	± 12°
Tire (standard)	26.5 (L3) Tubeless
Wheel rim	22.00 × 25

Weight change

Option item	Operating weight(kg)	Tipping load(kg)		Overall width(mm) (outside tire)	Vertical dimensions (mm)	Overall length(mm)
		Straight	Full turn			
Canopy (instead of ROPS cab)	-450	-440	-380	—	-65	—
Soft cab (instead of ROPS cab)	-230	-220	-190	—	—	—
Removal ROPS cab	-520	-510	-440	—	-175	—
Tires	26.5R25(L3)	±0	±0	±0	±0	±0
	26.5R25(L4)	+400	+300	+260	+15	+30
	26.5R25(L5)	+740	+555	+485	+15	+30
	26.5-25-20PR(L3)	±0	±0	±0	±0	±0
	26.5-25-20PR(L4)	+480	+360	+310	±0	±0
	26.5-25-20PR(L5)	+840	+625	+545	±0	±0
Belly guard	+115	+175	+150	—	—	—

Brake system

Service brake	4-wheel wet-disc Controlled by fully hydraulic system Dual circuits
Parking brake	Spring applied oil pressure released type located on front driveline
Emergency brake	Same as parking, applied on failure in brake line

Steering system

Type	Articulated frame steering, hydraulic power steering unit, pilot operated type
Steering valve	Kawasaki, Orbitroll and spool type
Full articulation angle	37° to each side

Loading system

Type	Front end loading, Z bar linkage system	
Bucket dumping angle at fully raised	45°	
Hydraulic cycle time	Lifting (at full load)	6.1 sec
	Lowering (empty)	3.0 sec
	Dumping	1.3 sec
	Total cycle time	10.4 sec








Hydraulic system

Oil pump	Steering oil pump	Gear type, 227 lit/min 6.9 MPa (70 kgf/cm ²) @2,100 rpm
	Main oil pump	Gear type, 143 lit/min, 6.9 MPa (70 kgf/cm ²) @2,100 rpm
	Pilot oil pump	Gear type, 103 lit/min, 6.9 MPa (70 kgf/cm ²) @2,100 rpm
Control valve	Loading	Multiple control valve
	Steering	Kawasaki, Orbitrol and spool type
Lift cylinder	Type	Double acting piston
	Number,bore x stroke	2 × 170 mm bore × 864 mm stroke
Tilt cylinder	Type	Double acting piston
	Number,bore x stroke	2 × 140mm bore × 624 mm stroke
Steering cylinder	Type	Double acting piston
	Number,bore x stroke	2 × 100mm bore × 450 mm stroke
Relief set pressure	Control valve	20.6 MPa (210 kgf/cm ²)
	Steering valve	20.6 MPa (210 kgf/cm ²)

Service refill

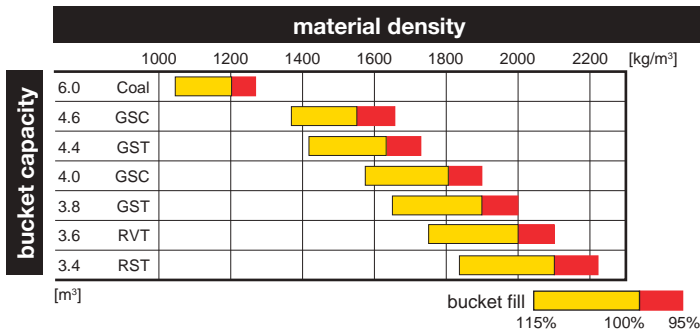
Fuel tank	370 lit
Engine lubricant (including oil pan)	37 lit
Engine cooling water	40 lit
T/M & T/C	60 lit
Axle front/rear	154 lit
Hydraulic oil tank	155 lit
Hydraulic system (including oil tank)	260 lit

Bucket

			Standard boom						
			General purpose				Rock	Rock	Coal
			Bolt-on edges	Teeth	Bolt-on edges	Teeth	Straight-edge	V-edge	Straight-edge
			GSC	GST	GSC	GST	RST	RVT	Bolt-on edges
									
Bucket capacity	heaped	m ³	4.6	4.4	4.0	3.8	3.4	3.6	6.0
	struck	m ³	3.9	3.7	3.4	3.2	2.9	3.0	5.3
Max. dumping clearance		a mm	3,045	2,920	3,130	3,005	3,005	2,895	3,140
Max. dumping reach		b mm	1,260	1,340	1,180	1,260	1,260	1,370	1,160
Max. hinge pin height		mm	4,360						
Digging depth (with bucket level)		c mm	65	95	65	95	95	95	65
Breakout force		kN	190	204	206	223	223	192	152
Bucket tilt-back angle	at carry position	deg	50°						
Overall length		d mm	8,815	8,960	8,700	8,845	8,845	9,000	8,680
Overall height	up to cab top	mm	3,535						
	bucket full raise	e mm	6,055	6,055	5,935	5,935	5,755	5,755	6,155
Overall width	outside tire	mm	2,930						
	outside bucket	f mm	3,100	3,120	3,100	3,120	3,120	3,120	4,000
Tread		mm	2,230						
Wheel base		mm	3,400						
Min. turning radius (bucket carry position)	at outside bucket	g mm	7,245	7,290	7,220	7,270	7,270	7,270	7,215
	at center of outside tire	mm	6,195						
Min. ground clearance		mm	515						
Full articulation angle		deg	37°						
Operating weight	with ROPS CAB	kg	23,485	23,345	23,285	23,145	23,465	23,510	23,795
Static tipping load	straight	kg	17,740	17,920	18,055	18,240	18,155	17,675	16,095
	full turn	kg	15,470	15,620	15,740	15,900	15,840	15,410	14,030

The weight and load figure includes 26.5 (L3) tubeless tire, ROPS cab, lubricant, coolant, full fuel tank and operator (75kg).

Bucket selection charts



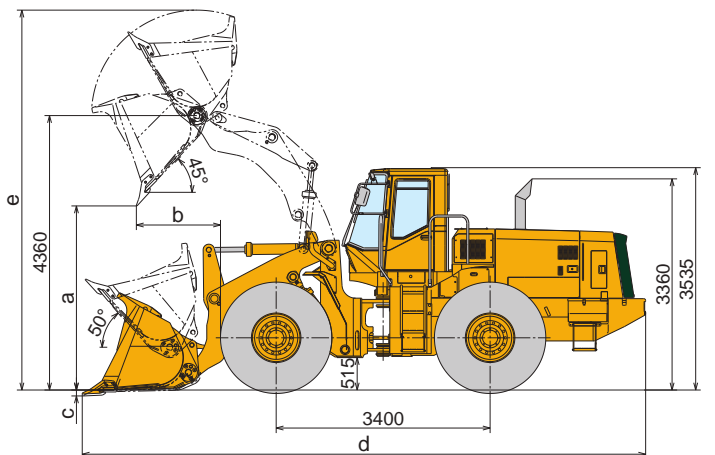
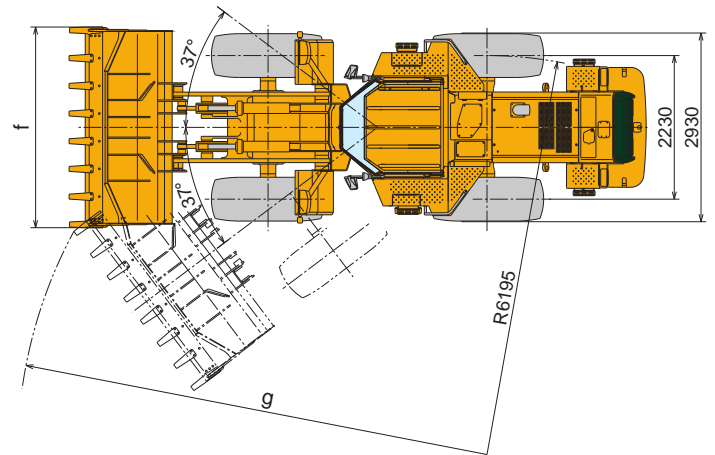
Material density

Approx. material weights per cubic meter

Basalt, granite, piled	1537 kg/m ³
Clay and gravel, dry	1601 kg/m ³
Earth, mud, wet	1729 kg/m ³
Granite, broken	1537 kg/m ³
Gravel	1761 kg/m ³
Gypsum	2268 kg/m ³
Limestone, coarse, sized	1569 kg/m ³
Sand, dry	1681 kg/m ³
Sandstone, quarried	1313 kg/m ³
Stone or gravel. 3/4" size	1569 kg/m ³

Remarks

- * Materials and specifications are subject to change without notice and without any obligation on the part of the manufacturer.
- * This information, while believed to be completely reliable, is not to be taken as warranty for which we assume legal responsibility.
- * Dumping clearance and reach are measured from bucket edge with SAE J732C.
- * Color for model shown in this brochure is a standard Kawasaki yellow.
- * Counterweight(option) should not be used with tire ballast.
- * This specification sheet may contain attachments and optional equipment which are not available in your area. Please contact your local Kawasaki dealer for those items which your require.



Equipped with GST bucket, 26.5 (L3) tubeless tire and ROPS cab.

90Z5

STANDARD EQUIPMENT

*Standard specifications may vary. Please consult your Kawasaki dealer for more information.

Electrical

75 ampere generator
Back up alarm
Brake and tail lights
Electric starter
Halogen headlights with high and low beams (2 front)
Halogen working lights (2 front and 2 rear)
Turn signals with four-way flasher

Gauges and indicators

Air cleaner warning lamp
Auto shift indicator lamp
Battery charge lamp
Brake pressure warning lamp
Engine coolant temperature gauge and warning lamp
Engine oil pressure warning lamp
Fuel level gauge
High beam indicator lamp
Hour meter
Neutral indicator lamp
Parking brake indicator lamp
Speedometer

Torque convertor oil temperature gauge and warning lamp
Transmission control warning lamp
Transmission declutch lamp
Transmission status monitor
Working light indicator lamp

Operator environment

Adjustable operator seat with suspension
Ashtray
Cup holder
Boom/bucket control dual levers
Electric dual horns
Down shift button
Machine Operation Diagnostic Module (MODM)
Telescopic and tilt steering wheel
Transmission declutch adjust switch

Power train

Air cleaner, double elements dry type
Cummins QSM11 diesel engine
Full hydraulic enclosed wet multi-disc brakes

Hydraulic engine radiator cooling fan
Kawasaki auto shift transmission
Kawasaki axles, torque proportioning differentials (front/rear)
Kawasaki torque converter
Low maintenance drive shafts
Tires, 26.5 (L3) tubeless

Others

Bucket leveler
Drawbar hitch with pin
Handrails
Kickout device
Ladders, left and right
Loading linkage, sealed Z-bar type dual cylinders
Secondary brake

OPTIONAL ITEMS

Additional F-R directional switch
Automatic reversible cooling fan
Cab (non ROPS/FOPS)
(left and right doors open, walk-through design)
Cab (ROPS/FOPS)
(left and right doors open, walk-through design)
Canopy (two pillar with plastic roof)
Canopy (with ROPS/FOPS)
CD player with radio (AM/FM stereo)
Emergency steering
Front and rear wide fenders
Full automatic air conditioner
High lift boom arm
Hydraulic circuit for quick coupler pins
Hydraulic three spool valve system
LED rear lamps
Limited slip differential
Mudflaps
Pre cleaner
Quick coupler
Radio-ready kit
(12V convertor, antenna and wiring, stereo speakers)
Ride control (speed sensitive automatic)
Seat belt
Several bucket and tire options are available
Shift hold switch
Transmission belly guard
Vandalism protection kit

Cab specifications

Cigarette lighter
Coat hook
Floor mat
Front wiper and washers
Lockable doors with sliding windows by regulator handles (left and right)
Rearview mirrors (interior and exterior)
Rear wiper and washers (option)
Storage compartment
Sun visor
Tinted safety glass (tempered glass)



Designed and Manufactured by Kawasaki

