

# 85 Z5

 **Kawasaki**

## WHEEL LOADER

*Direct-injection, turbocharged 163kW(218hp) engine*

*Operating weight 21ton, Bucket capacity 3.2-4.0m<sup>3</sup>*

*Strong and robust main structures*

*Tough and proven hydraulic components*

*Productive and dependable performance*





# ***T*HE 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.*



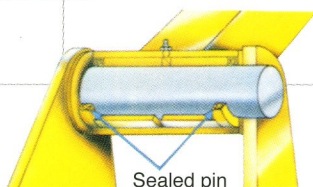
# **BEST OF BOTH WORLDS, PRODUCTIVE AND DEPENDABLE**

## **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.

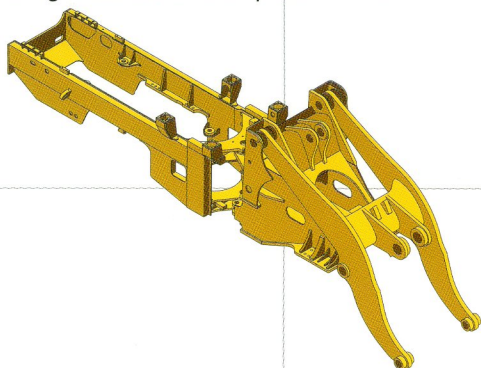
## **SEALED BUCKET HINGE PIN**

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.

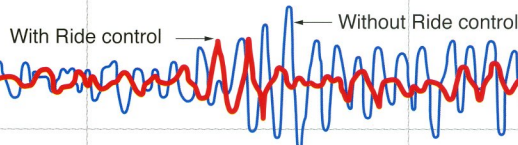
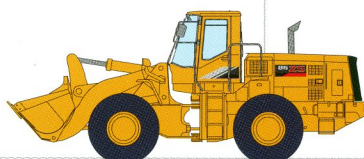


## **BUFFER RINGS IN HYDRAULIC CYLINDER**

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

## **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.

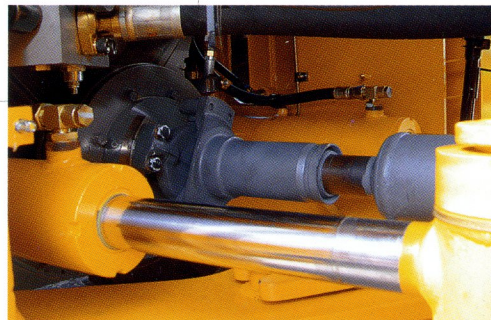


## **HYDRAULIC GEAR PUMP**

A proven gear pump is the heart of the hydraulic system. The durable and dependable design of this gear pump provides excellent performance. Gear pumps are dirt-tolerant and heat resistant even under extremely tough job conditions. Its simple structure makes maintenance cost low.

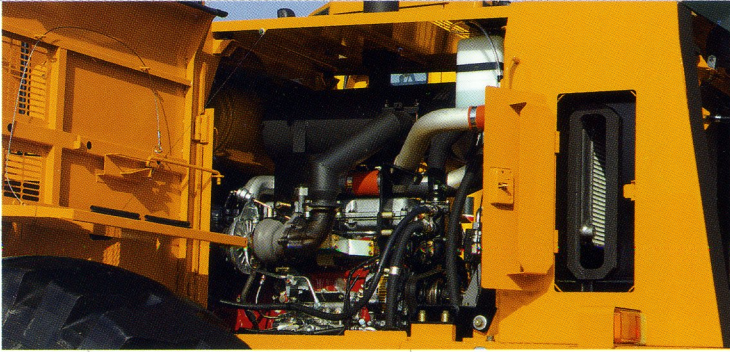
## **INCREASED GREASING INTERVALS FOR UNIVERSAL JOINTS**

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





# EASY ACCESS SIMPLIFIES SERVICING

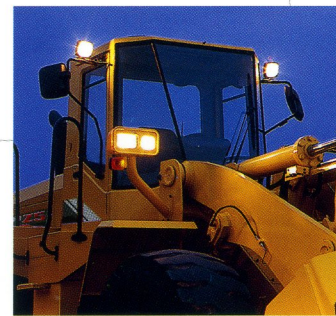


Maintenance is enhanced with the engine access panels that can be opened wide for better access.

Filters are conveniently located for easy change and the grease fittings are grouped to reduce maintenance time and insure proper lubrication.

## SIMPLE & EFFICIENT, ONE-TOUCH OPEN-TOP RADIATOR GRILLE

To facilitate cleaning the radiator, the radiator grille swings open with pneumatic support gas springs.

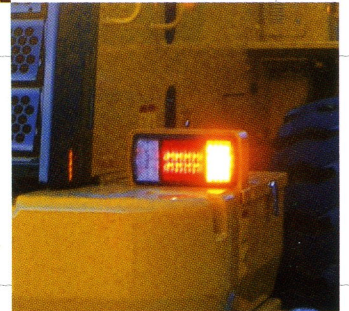


## HALOGEN HEAD LAMPS

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

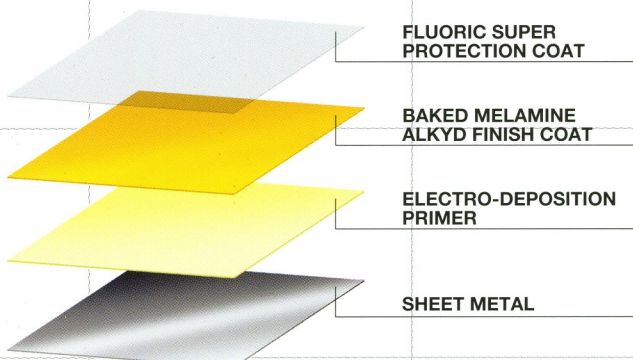
## LED REAR LAMPS (OPT)

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



## 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.



# **THE COMFORT ZONE**

## **"NO OTHER PLACE LIKE THIS CAB"**

### **CAB (OPT)**

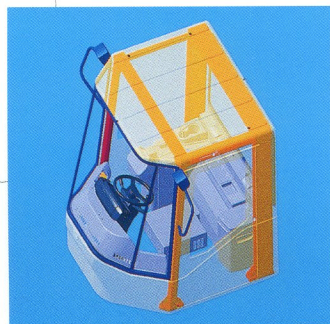
Excellent visibility in all directions is enhanced with both inside and outside mirrors.

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.

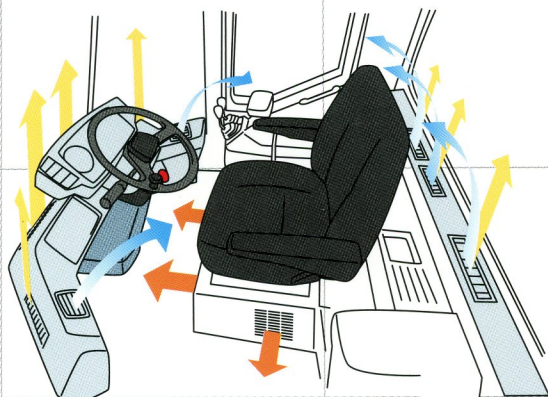


### **FULLY AUTOMATIC HEATER AND AIR CONDITIONER (OPT)**

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.







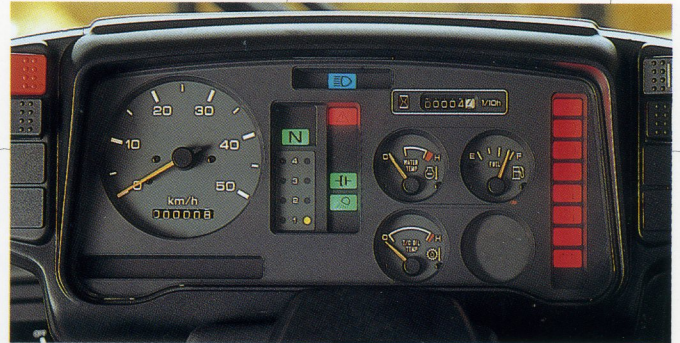
## TILT AND TELESCOPIC STEERING

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



## AT-A-GLANCE METERS AND GAUGES

The exact conditions of the machine can be instantly checked from the gauges and indicator lights on the instrument panel; speedometer, engine water temp. gauge, transmission oil temp. gauge, fuel indicator, engine hour meter, and various other warning and indicator lights.



## BOOM AND BUCKET CONTROL LEVERS

The pilot operated hydraulic control levers with wrist rest give the operator better control. Downtime can be minimized, thanks to the simplified mechanical structure.

## DOWNSHIFT BUTTON

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



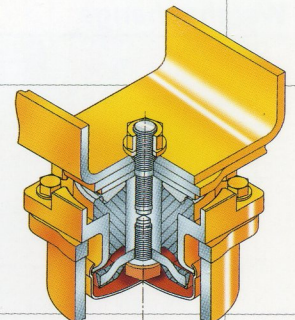
## CUP HOLDERS

Cup holders are available on the console box.



## VISCOUS MOUNT

Viscous mounting of the cab effectively reduces noise and vibration that provides greater comfort for an operator.





# OPERATING SPECIFICATIONS

## Engine

Make & model	HINO "J08C-TI" diesel engine	
Type	4-cycle, water-cooled, direct injection, with turbocharged and air cooled intercooler	
Rated power	Gross - SAE J1995	184 kW (246 hp)/2,200 rpm
	Net - ISO 9249 SAE J1349 80/1269/EEC	163 kW (218 hp)/2,200 rpm
Maximum torque	Gross	970 N·m (99 kgf·m)/1,400 rpm
	Net	912 N·m (93 kgf·m)/1,200 rpm
Number of cylinders (bore × stroke)	6 114 mm × 130 mm	
Total displacement	7961 cc	
Cooling type	Hydraulic drive pusher type fan Pressurized radiator	
Fuel injection pump	Bosch type	
Governor	All-speed mechanical type	
Air cleaner	Dry type (Double element)	
Generator	AC 24V 1.2 kW (50 ampere)	
Starter motor	DC 24V 4.5 kW (6.0 hp)	
Batteries	DC 12V 108 Ah × 2	

## Torque converter & Transmission

Torque converter	Make & model	Kawasaki 3-element, 1-stage, 1-phase	
	Stall torque ratio	3.42	
Transmission	Make & model	Kawasaki, Full power shift Countershaft type	
	Clutch type	Wet hydraulic, multi disc	
Traveling speed		Forward	Reverse
	1st	7.5 km/h	7.7 km/h
	2nd	12.6 km/h	13.0 km/h
	3rd	21.2 km/h	21.8 km/h
	4th	35.7 km/h	36.5 km/h
Reduction gear ratio		Forward	Reverse
	1st	3.910	3.792
	2nd	2.283	2.214
	3rd	1.296	1.257
	4th	0.693	0.672

## 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	± 14°
Tire (standard)	23.5 (L3) Tubeless
Wheel rim	19.50 × 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	-430	-370	—	-65	—
Soft cab (instead of ROPS cab)	-230	-220	-190	—	—	—
Removal ROPS cab	-520	-505	-430	—	-270	—
Tires	23.5R25(L3)	±0	±0	±0	±0	±0
	23.5R25(L4)	+420	+310	+270	±0	±0
	23.5R25(L5)	+560	+415	+360	±0	±0
	26.5R25(L3)	+560	+415	+360	+60	-50
	26.5R25(L4)	+960	+710	+620	+75	+60
	23.5-25-16PR(L3)	±0	±0	±0	±0	±0
	23.5-25-16PR(L5)	+780	+565	+485	—	—
	26.5-25-20PR(L3)	+660	+475	+410	+85	+60
Belly guard	+165	+235	+205	—	—	—

## 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)	6.5 sec
	Lowering (empty)	4.2 sec
	Dumping	1.4 sec
	Total cycle time	12.1 sec

## Hydraulic system








Oil pump	Steering oil pump	Gear type, 238 lit/min 6.9 Mpa (70 kgf/cm²) @2,200 rpm
	Main oil pump	Gear type, 108 lit/min, 6.9 Mpa (70 kgf/cm²) @2,200 rpm
	Pilot oil pump	Gear type, 76.2 lit/min, 6.9 Mpa (70 kgf/cm²) @2,200 rpm
Control valve	Loading	Multiple control valve
	Steering	Kawasaki, Orbitroll and spool type
Lift cylinder	Type	Double acting piston
	Number, bore × stroke	2 × 160 mm bore × 860 mm stroke
Tilt cylinder	Type	Double acting piston
	Number, bore × stroke	1 × 190mm bore × 544 mm stroke
Steering cylinder	Type	Double acting piston
	Number, bore × stroke	2 × 90mm bore × 440 mm stroke
Relief set pressure	Control valve	20.6 Mpa (210 kgf/cm²)
	Steering valve	20.6 Mpa (210 kgf/cm²)

## Service refill

Fuel tank	300 lit
Engine lubricant (including oil pan)	23 lit
Engine cooling water	33 lit
T/M & T/C	53 lit
Axle front/rear	154 lit
Hydraulic oil tank	120 lit
Hydraulic system (including oil tank)	210 lit

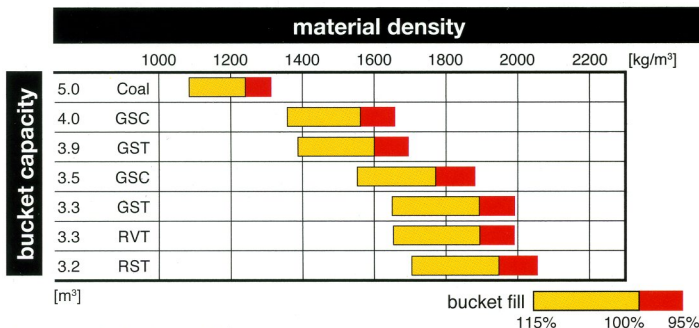


## Bucket

			Standard boom						
			General purpose				Rock Straight-edge	Rock V-edge	Coal Straight-edge
			Bolt-on edges	Teeth	Bolt-on edges	Teeth	Teeth	Teeth	Bolt-on edges
			GSC	GST	GSC	GST	RST	RVT	
									
Bucket capacity	heaped	m³	4.0	3.9	3.5	3.3	3.2	3.3	5.0
	struck	m³	3.5	3.3	3.0	2.8	2.7	2.8	4.2
Max. dumping clearance		a mm	3,035	2,945	3,105	3,015	2,945	2,840	3,060
Max. dumping reach		b mm	1,190	1,250	1,120	1,180	1,235	1,355	1,170
Max. hinge pin height		mm				4,250			
Digging depth (with bucket level)		c mm	130	145	130	145	155	155	120
Breakout force		kN	164	178	177	193	185	167	125
Bucket tilt-back angle	at carry position	deg				50°			
Overall length		d mm	8,330	8,445	8,230	8,345	8,420	8,575	8,300
Overall height	up to cab top	mm				3,475			
	bucket full raise	e mm	5,820	5,820	5,700	5,700	5,570	5,570	5,810
Overall width	outside tire	mm				2,845			
	outside bucket	f mm	3,100	3,120	3,100	3,120	3,115	3,115	3,800
Tread		mm				2,230			
Wheel base		mm				3,300			
Min. turning radius (bucket carry position)	at outside bucket	g mm	7,035	7,070	7,015	7,055	7,075	7,075	7,060
	at center of outside tire	mm				6,045			
Min. ground clearance		mm				475			
Full articulation angle		deg				37°			
Operating weight	with ROPS CAB	kg	20,050	19,860	19,930	19,750	20,095	20,195	20,185
Static tipping load	straight	kg	14,910	15,165	15,095	15,330	14,495	14,085	14,345
	full turn	kg	13,010	13,230	13,165	13,375	12,645	12,290	12,515

The weight and load figure includes 23.5 (L3) tubeless tire, ROPS cab, lubricant, coolant, full fuel tank and operator (75kg).

## Bucket selection charts



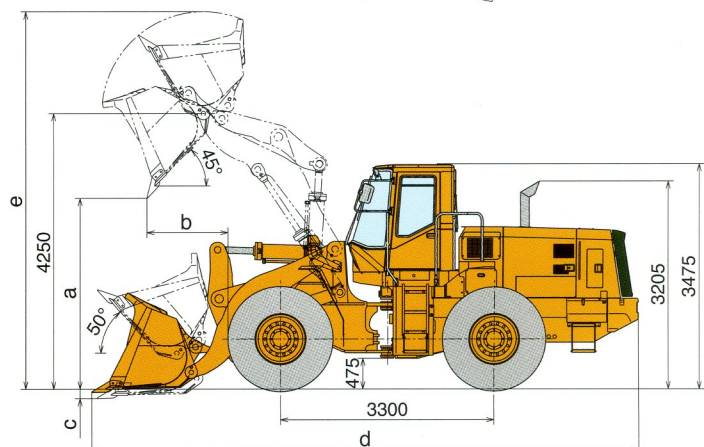
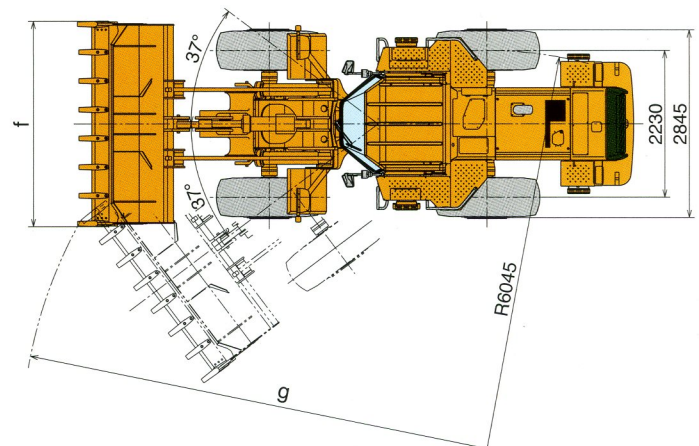
## Material density

Approx. material weights per cubic meter

Basalt, granite, piled	1537 kg/m³
Clay and gravel, dry	1601 kg/m³
Earth, mud, wet	1729 kg/m³
Granite, broken	1537 kg/m³
Gravel	1761 kg/m³
Gypsum	2268 kg/m³
Limestone, coarse, sized	1569 kg/m³
Sand, dry	1681 kg/m³
Sandstone, quarried	1313 kg/m³
Stone or gravel. 3/4" size	1569 kg/m³

## 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 in accordance 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 you require.



Equipped with GST bucket, 23.5 (L3) tubeless tire and ROPS cab.



## STANDARD EQUIPMENT

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

### Electrical

50 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  
Telescopic and tilt steering wheel

### Power train

Air cleaner, double elements dry type  
HINO J08C-TI 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, 23.5 (L3) tubeless

### Others

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

## OPTIONAL ITEMS

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  
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

