Kawasaki
Let the good times roll.

Version: 1 Jun 2002

2003 Model Information

MARKETING CODE: **KX250-M**

MODEL NAME: **KX250**

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MODEL CONCEPT

Already one of the most competitive 250 motocrossers on the track, for 2003 the KX250 gets an entirely new chassis, significant engine upgrades and the first comprehensive exterior redesign since 1999. These improvements dramatically enhance the bike's competitiveness and its appearance.

One of the primary design aims was to create a 250-class machine that would appeal more to average riders. "Race ready, right out of the crate," was the motto in designing the new KX250. The new chassis, a re-tuned and uprated engine, and an improved riding position all contribute to making this bike an ideal choice for a wide range of riders.

The tuning of the new engine plays a major role in this. The engine's very low and low-rpm response, torque feeling and over-rev have all been improved, resulting in a more linear and wider powerband. The cylinder is new and features chrome-composite plating (a first for the KX series) and new porting. Modifications to the KIPS, combustion chamber, reed valve, airbox, and expansion chamber all contribute to improved power characteristics. To make the best use of this power, 2nd and 3rd gear ratios have been changed and a new ratchet-type shift mechanism is used. A variety of other improvements complete this extensive package of modifications and make the engine not only very potent but extremely rider friendly.

The highlight of the new chassis is a reconfigured perimeter frame which, with increased stiffness, revised steering geometry and lower centre of gravity, further sharpens the KX250's already impressive handling performance. Operating a revised rear suspension system is a new tapered aluminium swingarm with an improved stiffness balance. The 48 mm fork has also been completely revamped, as have the wheels, brakes, riding position and many other items. These improvements deliver enhanced cornering performance with a plusher ride, reduced chassis weight and a better overall ride quality.

Although the smoother exterior design and radical graphics package give the KX250 an exciting new look, there will be no mistaking it for anything other than a Kawasaki. On the track or in the pits, everyone will know that the new KX250 is a whole different machine — one with more winning attitude than ever.

KEY POINTS

- **Uprated engine has more power & a wider powerband**
- **New ratchet-type shift mechanism for sharper shifting**
- **New perimeter frame is stiffer for brilliant cornering**
- **Uprated suspension performance**
- **New hydroformed tapered swingarm**
- **New styling and bodywork**

MAIN FEATURES

Engine/Transmission

* 249 cm^3 liquid-cooled, two-stroke Single with carbon-fibre piston reed valve induction.
* Although the crankcases appear unchanged externally, they are in fact new. The left case has an oil groove added to improve lubrication of the clutch release mechanism. The right case has been modified to accept the new ratchet-type shift mechanism. And both cases mount new crank bearings with thicker inner races for improved durability.

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* In a first for the KX models, the KX250 cylinder features a special chrome composite plating. This high quality plating process results in improved surface quality of the bore surface, particularly at the all-important port chamfers. This allows a straighter top edge for the exhaust port, contributing to the engine's improved power characteristics and extending piston ring life. The new plating also improves the surface of the chamfer area at the top edge of the cylinder, preventing localised hot spots that can result in pre-ignition and other abnormal combustion events.

02MY **03MY**

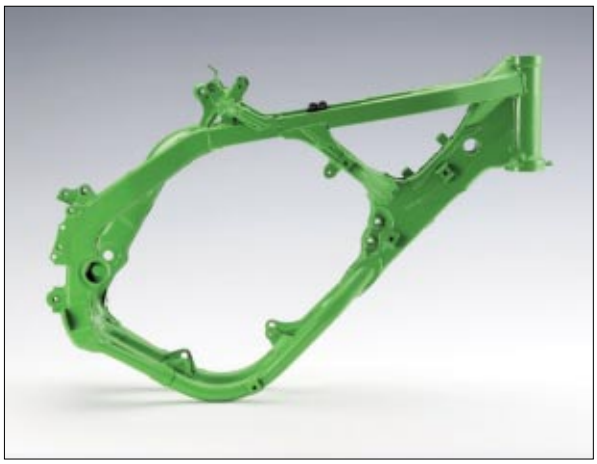
* The combustion chamber shape has been modified for more power at high rpm and an improved over-rev.
* The upper engine mount has been moved from the front of the head to the rear of the head for more compactness, reduced vibration and improved chassis rigidity.
* The 2-stage 3-way KIPS has been further improved. The new straight top edge of the exhaust port delivers smoother flow of the exhaust gas, so the valve shape was modified accordingly. Also, changes to the governor allow a greater range of KIPS valve motion, improving low and mid-range power characteristics and smoothing out the powerband. The earlier model operated in an approximately 500 rpm range between about 6,000 and 6,500 rpm; the new unit operates between 6,000 and 7,000 rpm.
* New expansion chamber dimensions contribute to improved power in the mid-range and at high rpm, and a new extruded aluminium muffler bracket is integral with the muffler.
* For improved reed durability, new horizontal and vertical air guide plates deliver more equalised air flow. Reed life has also been extended.

02MY **03MY**

* Relocating the igniter unit from inside the airbox to the front of the steering head results in increased airbox capacity, a more idealised airbox shape and improved intake flow, all of which contribute to improved power characteristics.
* For better starts, and to let riders make the most of the improved power characteristics, 2nd and 3rd gear ratios have been changed.
* Improvements to the 5-speed transmission include a new ratchet-type shift mechanism for more direct operation and greatly improved shift quality. The shift drum, forks, rods and shift shaft have also been changed to suit the new mechanism. Clearance between the gears and splines has also been reduced for smoother shifting.
* A new clutch basket, pressure plate and other components complement the new shift mechanism and give improved clutch action and better feel.
* The ignition has been changed from a dual-spark type to a single-spark type. An acceleration compensator with more accurate rpm and crank position sensing is used, obviating the need for a dual-spark system. A new ignition map matches the revised power characteristics, and a lighter ignition rotor is fitted for quicker throttle response.
* New settings for the carburettor's pilot circuit and powerjet improve response in the very low to low-rpm range. A new carb manifold gives more clearance between the carb and the engine cases.
* Radiator capacity has been increased for more cooling, and the areas around the water outlets and the radiator mounting plates have been strengthened for improved durability.
* Input from the TPS sensor to the power jet carb ensures accurate fuel metering across the rev range for sharp throttle response.
* Low-friction oil seals on the crank and sprocket shaft minimise mechanical losses and contribute to the engine's quick response.
* Water pump gear drilled for lightness.

Chassis

* An all new steel perimeter frame with larger backbone tubes (from 30 x 20 to 40 x 25 mm) significantly increases frame rigidity. The head pipe is 6 mm longer and its rake angle was increased by 1°. Also, the top engine mount has been moved from the front of the cylinder head to the rear. The increased rigidity gives enhanced cornering performance with no detriment to the KX's excellent straight-line stability.



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* For easier maintenance and reduced weight, the sub-frame has been modified to use pressed-in nuts for mounting the side covers and now uses a single, larger diameter (8 mm) mounting bolt at its top mount.
* Another maintenance improvement is the relocation of the igniter unit from inside the airbox to the front of the steering head, where a special bracket is used to mount the unit.

* Complementing the new frame is a new tapered aluminium swingarm made by hydroforming. The new swingarm is lighter by 100 g and has an improved stiffness balance. Additionally, the smaller ends of the swingarm allow use of lighter axle holders.

* Axle diameter is increased from 20 to 25 mm and wall thickness reduced from 3.5 to 2.5 mm, for reduced axle weight and high strength.
* The new chain guide is also lighter.
* Revised linkage ratios for the rear suspension reduce ride height by 10 mm for a lower centre of gravity and improved suspension action. (The fork tubes are pushed also up 10 mm in the triple clamps.) Rear wheel travel is slightly reduced.
* The new pull rod is an aluminium extrusion, its width increased from 10 mm to 12 mm. In addition to an improvement in suspension action, the number of parts has been reduced and the total system weight has been reduced.
* For increased load capacity, tapered roller bearings are used at the upper and lower shock mounts in place of the earlier needle bearings.
* A dimensional change to the lower shock sleeve reduces free play at the shock mount for smoother operation.
* New handlebars with slightly higher, more pulled-back bend match the improved ergonomics of the new bike and improve the riding position.
* New handlebar grips give longer wear and a more solid feel.

Front Fork, Wheels & Brakes

* Fork offset increased from 22 to 25 mm for sharper cornering performance.
* The bladders have been removed from the 48 mm inverted fork and a new damping mechanism has been fitted. Additionally, bump rubbers replace the oil-lock method for improved bottoming characteristics.
* New fork settings include raising the tubes 10 mm in the triple clamps, new oil level and new adjuster location. These changes result in improved fork action, better ground-following ability and a plusher ride.

* Thinner wall thickness for the triple clamps reduces weight and steering inertia. Additionally, a 6 mm longer steering shaft is used to match the longer steering head pipe. For easier maintenance, the top triple clamp pinch bolts enter from the rear, rather than from the front, eliminating interference with the number plate.
* Aluminium steering stem is tapered for low weight.
* Front hub has revised brake disc mounting to suit the new brake disc mounting bolts. The new M6 stepped bolts replace the dished head bolts for improved maintenance and high durability.
* Dual-piston front brake caliper uses 27 mm pistons and is operated by a master cylinder with 11 mm piston.

* The front brake rotor cover is no longer fitted standard but is available as an option. A cover is fitted to the rear brake rotor as standard equipment.

* 1-piece aluminium front and rear wheel spacers take the place of the earlier 3-piece steel cap types for reduced weight and fewer parts.
* The rear brake disc now uses 4 disc mounting bolts (with 8 mm thread) instead of 6 bolts (with 6 mm thread), for reduced weight and fewer parts.
* The rear axle collar has also been changed from steel to aluminium to reduce weight.
* New one-piece rear brake master cylinder is compact and lightweight.

* For more braking action and reduced weight, the rear brake disc size has been changed from 220 x 4.5 to 240 x 4.0 mm.

* New pad material for the front and rear brakes gives improved action and a better feel.
* New front tyre enhances cornering performance, and a new rear tyre gives improved traction and lighter cornering characteristics.
* New front and rear rims are fitted.

Styling & Bodywork

* All-new styling and bodywork includes new front and rear fenders, tank, seat, side covers and front number plate.
* The new exterior design is smoother for improved rider mobility.
* Reshaped radiator shrouds make it easier for the rider to move about on the bike.
* Thicker clear coating for the new graphics increases their durability.
* Fuel tank capacity reduced from 8.6 to 8.2 litres to give a flatter tank and easier rider mobility. The new petcock is lighter.
* The seat features a new shape for improved seating, thicker padding and the seat mounting bracket has been improved for more durability.
* Optional 20” front wheel available.

COLOUR(S)

* Lime Green with new graphics. Improved decals are more scuff-resistant for longer wear.

SPECIFICATIONS

ENGINE	KX250-M1
Type	2-stroke Single
Displacement	249 cm^3
Bore and Stroke	66.4 x 72.0 mm
Compression Ratio	10.1:1 (low speed); 8.6:1 (high speed)
Carburettor	Keihin PWK 38S
Induction	4-petal carbon-fibre piston reed valve
Ignition	Digital CDI
Starting	Primary kick
Cooling	Liquid, twin radiators
Lubrication	Pre-mix (32:1)
Engine Oil	2-stroke racing oil
Spark plug	BR8EIX
Valve timing: Inlet	Full open
Exhaust	Low speed: Open: 78.1° BBDC; Close: 78.1° ABDC High speed: Open: 91.4° BBDC; Close: 91.4° ABDC
Scavenging	Open: 57.6° BBDC; Close: 57.6° ABDC
Piston clearance	0.059 ~ 0.069 mm
Cylinder pressure	1,128 kPa {11.5 kgf/cm^2} @ kick 5 times for EUR 1,177 kPa {12.0 kgf/cm^2} @ kick 5 times for USA/CAN/AUS

DRIVETRAIN	
Transmission	5-speed, return
Transmission oil capacity	0.85 litres
Primary drive	Gear
Final drive	Chain
Primary reduction ratio	3.000 (63/21)
Gear ratios: 1st	1.800 (27/15)
2nd	1.437 (23/16)
3rd	1.176 (20/17)
4th	1.000 (21/21)
5th	0.869 (20/23)
Final reduction ratio	3.769 (49/13)
Overall drive ratio	9.832 @ top gear
Clutch	Wet multi-disc, manual

FRAME	KX250-M1
Type	High-tensile steel perimeter with bolt-on aluminium rear section
Suspension: front	48 mm upside-down dual air-chamber telescopic fork with 18-way compression and 18-way rebound damping
rear	Bottom-Link Uni-Trak with adjustable preload, 18-way compression and 20-way rebound damping
Wheel travel: front	300 mm
rear	310 mm
Tyre: front	80/100-21 51M
rear	110/90-19 62M
Inflation: front	100 kPa {1.0 kgf/cm^2}
rear	100 kPa {1.0 kgf/cm^2}
Caster (rake)	27°
Trail	97 mm
Steering angle (left/right)	45° / 45°
BRAKES	
Front	Single 250 mm disc
Front caliper	Dual-piston
Rear	Single 240 mm disc
Rear caliper	Single-piston
DIMENSIONS	
Overall length	2,175 mm
Overall width	825 mm
Overall height	1,205 mm
Wheelbase	1,480 mm
Ground clearance	355 mm
Seat height	945 mm
Dry weight	97 kg
Fuel capacity	8.2 litres
PERFORMANCE	
Max. power	41.5 kW {56.5 PS}/ 8,500 rpm
Max. torque	51.0 N·m {5.2 kgf·m}/ 7,500 rpm

The specifications mentioned here apply to and have been achieved by production models under standard operating conditions. We intend only to give a fair description of the vehicle and its performance capabilities but these specifications may not apply to every machine supplied for sale. Kawasaki Heavy Industries, Ltd. reserves the right to alter specifications without prior notice. Equipment illustrated and specifications may vary to meet individual markets.