
2004 Model Information

MARKETING CODE: **KX250N**

MODEL NAME: **KX250F**



Note: While material contained herein may be used in the preparation of press releases, technical service material and other SP and marketing material, please keep in mind that this information is intended for internal use only.
All data reflect factory tests. All data subject to change without notice.

OVERALL CONCEPT

With the release of the stunning new KX250F, Kawasaki proudly enters the high-revving world of 4-stroke motocrossers. Kawasaki's first 4-stroke motocross racer was designed for only one purpose: victory in the 125 class. Since it was developed after its competitors, the KX250F is loaded with the latest engine and chassis technology. The result is a very lightweight, easy-to-ride machine.



Designed to be both more powerful and lighter than the leading 250 4-stroke, the DOHC, 4-valve powerplant is loaded with lightweight materials and unconventional design techniques. The chassis, based on a race-proven perimeter frame, benefits from a new linkage system for the Uni-Trak rear suspension that both improves suspension action and allows a lighter frame construction. Newly designed bodywork features a slim design and new seat for improved rider mobility.

The KX250F's key sales features can be summarised as follows:

- **Lightweight** – semi-dry sump design, lightweight engine materials, new-link Uni-Trak that allows lighter frame construction, special lightweight rims and tyres
- **Easy starting, hot or cold** – FCR carburettor with hot starter, automatic decompression system
- **Racer-friendly 4-stroke engine characteristics** – idealised engine braking characteristics care of a 3D ignition map and idealised crankshaft/rotor inertia
- **Superlative handling and improved rider position** – great handling care of new front fork, high traction from the new-link Uni-Trak system, improved rider position from slim bodywork (possible thanks to new D-section tubing on perimeter frame) and revised footpeg position

KEY SALES FEATURES

LIGHTWEIGHT

Engine

- * Thin-wall cylinder head casting results in a very lightweight and very compact design. (Photo 1)



- * Lightweight titanium valves (IN: 31 mm; EX: 25 mm) for high-rpm reliability. Oxidising treatment to valves reduces wear. (Photo 2)
- * Lightweight exhaust system features a titanium exhaust pipe “stepped” to a slightly larger diameter stainless steel pipe. Lightweight silencer has aluminium body and stainless steel interior. End cap resists mud plugging. (Photos 3,4)



- * Semi-dry-sump design keeps oil away from the crankshaft to reduce windage loss and contributes to a lower centre of gravity and reduced weight.
- * Oil feed to top end is internal, via the bolt passageways. This design eliminates the weight and complexity of external oil lines.

- * One-piece water pump/oil filter cover saves weight and adds to compactness.
- * Thin-walled crankcase construction and magnesium head, generator and outer clutch covers contribute to the engine's impressively light weight. (Photos 5-7)



Chassis

- * The new-link Uni-Trak rear suspension system (also refer to note in the Handling / Riding Position – Rear Suspension section) allows a lighter frame construction. Since the link pivots on the swingarm (unlike in the previous set-up, where it pivoted on the frame), the suspension loads are no longer transmitted to the frame directly, eliminating the need for extra gussets and thicker lower frame tubing to absorb these loads.
- * New front and rear rims feature an extremely lightweight design.
- * The front spokes are stepped both at the nipple and at the hub for lighter weight.
- * Specially designed lightweight rear tyre contributes to low unsprung weight.

EASE OF STARTING

Engine

- * Automatic centrifugal decompression system fitted to exhaust cam lifts one exhaust valve to ease starting. The system's simple construction ensures light weight and high reliability. (Photo 8)



- * A hot start system gives quick starts when the engine is hot. The hot start lever is unitised with the clutch lever. (Photos 9,10)



- * FCR carburettor equipped with hot start circuit.
- * An optional cable set-up will allow manual operation of the decompressor (via a lever on the right handle grip). This makes it easier to clear a "flooded" engine. (Photo 11)



RACER-FRIENDLY 4-STROKE POWER CHARACTERISTICS

Engine

- * 249 cm³ liquid-cooled, 4-stroke Single with DOHC 4-valve head pumps out a wide spread of power. (Photos 12,13)



- * Using just the right amount of crankshaft/rotor inertia contributes to reduced engine braking characteristics.
- * AC-CDI ignition uses TPS (Throttle Position Sensor) and a 3D ignition map to provide ideal ignition timing for various engine conditions. During acceleration and deceleration, the system makes adjustments to the 3D ignition map, resulting in improved acceleration performance and smooth engine braking.
- * Quick-shifting 5-speed transmission uses a ratchet shift mechanism for a light shift touch. The ratchet mechanism uses a “phased” shift holder to compensate for the different shift effort riders tend to use when up-shifting and down-shifting.
- * Optional rotors will be available to allow riders to alter the amount of engine inertia to suit riding style and track conditions.

SUPERLATIVE HANDLING & IMPROVED RIDING POSITION

Frame



- * The KX250F chassis, based on a race-proven perimeter frame, now has new D-section tubes for the upper frame rails (43 x 25 mm). The curved outer edges of the frame rails allow the bodywork to hug the frame more tightly, for a slimmer design and an improved riding position.
- * Steep castor angle enhances cornering performance.
- * The footpegs are located higher and closer together, allowing more bank angle when turning.

Front Suspension

- * New Kayaba bladder fork features check valves on the bladders to control their internal pressure. The result is improved damping and better fork action throughout the stroke.

Rear Suspension

- * The most important chassis change from the previous KX models is the new-link Uni-Trak rear suspension system. Unlike the previous system in which the link pivoted on the frame, in the new system the link pivots on the swingarm. In addition to the lighter frame construction possible due to the brunt of suspension loads being absorbed by the swingarm instead of the frame, a second benefit is that the shock absorber now moves in an outward arc as it compresses, rather than moving out and back in. This smoother, more stable action significantly improves traction at the rear wheel, particularly when accelerating. (Photo 14)



Styling/Bodywork

- * Slim exterior design contributes to improved rider mobility and a better riding position. (Photo 15)



- * The reshaped seat is flatter and uses a new seat cover texture that resists slipping.

ADDITIONAL FEATURES

Engine

- * Very oversquare bore/stroke ratio of 77.0 x 53.6 mm ensures high reliability at high rpm. Rev limiter prevents over-revving.
- * Composite plated aluminium cylinder is extremely short to prevent over-cooling of crankcase and subsequent power loss. (Photo 16)



- * Forged 2-ring piston is tin plated to reduce wear and the piston skirts have microscopic grooves to ensure oil retention and low friction. (Photo 17)
- * Billet camshafts are carburised for durability and operate alloy tool steel tappets. Cam profiles designed for wide powerband and high peak power.
- * 37 mm Keihin FCR flat-slide carburettor is equipped with TPS. Accelerator pump contributes to quick throttle response. Handle grip and throttle cables changed to suit the push-pull style carb. (Photos 18,19)



- * Silencer's outer cover is screw mounted to allow easy replacement of silencer packing material.
- * Reed valve located between the crankcase and the transmission case reduces pumping loss for high output and quick response.
- * Oil pump uses a 29 x 4 mm feed rotor and a 29 x 10 mm scavenge rotor. (Photo 20)



- * The shaft on which the kickstart idler gear spins also functions as a crankcase breather. Holes in the shaft and gear create a centrifugal breather that evacuates air from the transmission cavity. (Photo 21)



- * Crankshaft big-end roller bearing features a "loose-fit" cage for high-rpm durability. (Photo 22)
- * Transmission gears are made of tough DSG-2 (Daido Super Steel for Gears #2).

Chassis

- * An aluminium skid plate and two plastic side guards protect the engine.
- * Aluminium front and upper engine mounting plates are used.
- * The swingarm is new, and features a new cast bracket just aft of the shock to suit the new link, new forged axle holders and light 8 mm chain adjuster bolts. The new swingarm also features tapered, hydroformed beams.
- * The top clamp uses a lightweight aluminium steering stem nut and a thin 1 mm stainless steel washer. Aluminium steering stem is tapered for low weight.

- * Compact axle brackets for the front fork use a new clamping method. (Photo 23)



- * New front fork guards look great.
- * The suspension arm is new and is an aluminium forging.
- * The swingarm's single-piece actuating rod is forged. The new design is both simple and strong.
- * Rear shock features a drain bolt to facilitate oil changes.
- * The upper shock mount is positioned to facilitate access to the carb.
- * New front brake hose routed directly to the front brake calliper. Thin brake line made of a single layer of Kevlar contributes to brake feel and reduced weight. (Photo 24)



- * Dual-piston front brake calliper uses 27 mm pistons and is operated by a master cylinder with 11 mm piston.
- * Lightweight rear brake calliper uses 25.4 mm diameter pistons. Compact calliper ensures adequate clearance for the muffler when the suspension is fully compressed.
- * New brake pedal is forged for high strength and light weight.
- * Stunning all-new bodywork graces the KX250F. It includes a new tank and seat, longer rear fender, restyled side covers and new radiator shrouds.
- * The right side cover has heat-shielding to deal with the higher temperatures from the larger silencer.
- * Fuel tank capacity is 7.5 litres. Although smaller than the 2-stroke KX tanks, the more fuel-efficient 4-stroke engine gives the KX250F an increased riding range.

Other

- * "Metafoam" gaskets used to ease maintenance chores.
- * Different engine sprockets and carb setting parts will be available as options.
- * Other optional parts include a 20" front wheel, different constant springs for the front fork and rear shock, and aluminium and steel rear sprockets sized +/-2 teeth from standard (48T).

COLOUR(S)

* Lime Green with aggressive new graphics.



SPECIFICATIONS

ENGINE	KX250-N1
Type	Liquid-cooled, 4-stroke Single
Displacement	249 cm ³
Bore and Stroke	77.0 x 53.6 mm
Compression ratio	12.6:1
Valve system	DOHC, 4 valves
Fuel system	Carburettor: Keihin FCR37
Ignition	Digital AC-CDI
Starting	Primary kick
Lubrication	Forced lubrication, semi-dry sump
DRIVETRAIN	
Transmission	5-speed, return
Final drive	Chain
Primary reduction ratio	3.350 (67/20)
Gear ratios: 1st	2.142 (30/14)
2nd	1.785 (25/14)
3rd	1.444 (26/18)
4th	1.200 (24/20)
5th	1.052 (20/19)
Final reduction ratio	3.692 (48/13)
Clutch	Wet multi-disc, manual
FRAME	
Type	Perimeter, high-tensile steel (D-section tubes for upper frame rails)
Wheel travel: front	300 mm
rear	310 mm
Tyre: front	80/100-21 51M
rear	100/90-19 57M
Caster (rake)	26.5°
Trail	110 mm
Steering angle (left/right)	42° / 42°

SUSPENSION	KX250-N1
Front: Type Compression damping Rebound damping	48 mm upside-down cartridge-type telescopic fork 16-way 16-way
Rear: Type Compression damping Rebound damping Spring preload	New Uni-Trak 16-way 16-way Fully adjustable
BRAKES	
Front: Type Calliper	Single semi-floating 250 mm disc Dual-piston
Rear: Type Calliper	Single 240 mm disc Single-piston
DIMENSIONS	
Overall length	2,170 mm
Overall width	840 mm
Overall height	1,270 mm
Wheelbase	1,475 mm
Ground clearance	340 mm
Seat height	960 mm
Dry weight	92.5 kg
Fuel capacity	7.5 litres
PERFORMANCE	
Maximum power	31.6 kW {43.0 PS}/ 11,000 rpm
Maximum torque	28.7 N·m {2.93 kgf·m}/ 8,500 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.