

# 2021 MODEL INFORMATION



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MODEL NAME **KX250**

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Photos used in this Model Information generally depict the USA model.



## CONCEPT

# EVEN MORE POWERFUL KX250: STRONGEST 4-STROKE 250 ON THE RACETRACK

The KX design philosophy – to put mid-level to expert riders on the top step of the podium – has not changed since the brand was launched over 40 years ago. Designed to continue its history of winning – in the extremely competitive 4-stroke 250cc class Kawasaki race machines have the most AMA Supercross and Motocross titles – the 2021 model KX250 builds on the engine changes from the previous year to deliver even greater power and an even higher rev limit, plus electric start and a hydraulic clutch. A new frame based on that of the KX450 contributes to improved handling that enables even quicker lap times, making the KX250 even more potent on the track.

## POINTS TO PUSH

ADVANTAGE  
01

### FACTORY-STYLE ENGINE COMPONENTS AND TUNING

The KX250's engine has long been one of its greatest strengths. Already benefitting from finger-follower valve actuation like the KX450, plus dual injectors, downdraft-style intake, and race-inspired performance, further changes in 2021 see the highly acclaimed KX250 engine become even more powerful. Electric start and a hydraulic clutch complete the KX450-style updates, ensuring the KX250 engine will continue to be a benchmark for its class.

#### Adjustable Ergonomics - P.11

A choice of four handlebar positions and two footpeg positions allows riders to tailor their riding position to suit body size and preference.

#### NEW Slim, Ergonomic Bodywork - P.11

All-new KX450-style bodywork features long, smooth surfaces and a flatter tank-seat line designed to facilitate rider movement and control.

#### NEW Lightweight Aluminium Perimeter Frame - P.9

KX450-based frame (an evolution of the current design) and KX450 swingarm offer improved handling and increased rear wheel traction.

#### NEW Fine-Tuned Suspension and Brake Components - P.10

Updated suspension settings contribute to increased bump absorption and traction, while minor brake component revisions enhance controllability.

ADVANTAGE  
02

### FACTORY-STYLE CHASSIS COMPONENTS AND TUNING

Following the suspension and other chassis updates made for 2020, the new KX250 benefits from a new KX450-based frame that delivers improved handling – a key update that will help riders turn quicker lap times. All-new KX450-style bodywork designed to facilitate rider movement and control, and fine-tuned suspension and brake components further contribute to the KX250's light, agile handling.

#### Electric Start - P.6 **NEW**

Electric start makes restarting the engine as easy as pushing a button.

#### Hydraulic Clutch - P.6 **NEW**

Like the KX450, a hydraulic clutch offers more direct feel and lighter lever action. Less play as the clutch heats up during heavy use results in more consistent feeling.

#### Setting-Adjustable Motocross ECU

Lightweight and designed for the rigours of off-road riding, the ECU contains multiple programmable engine maps to offer riders an advantage on the race course.

■ DFI Setting Data Selection – P.7

■ KX FI Calibration Kit (Accessory) – P.8

#### Holeshot advantage: Launch Control Mode - P.7

Factory-style launch control system increases the chance of getting a good start by helping riders maximise grip when starting on a low-traction surface.

#### NEW Even More Powerful Engine - P.4

Additional engine updates increase peak power of the already powerful engine by approximately 1.0 kW (1.4 PS). Rev limit increases a further 350 min<sup>-1</sup>.



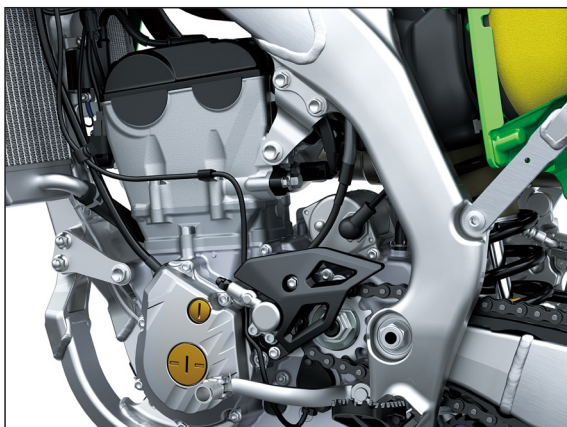


## TECHNICAL DETAILS

## ENGINE

## Powerful, high-revving 249 cm<sup>3</sup> liquid-cooled, 4-stroke Single with factory-racer engine tuning

Despite the 2020 KX250 already benefitting from a significant power increase thanks to its adoption of finger-follower valve actuation like the KX450, additional changes for 2021 raise peak power even further and enable an even higher rev limit, while significantly increasing low-mid rpm performance. As before, dual injectors, downdraft-style intake, and race-inspired tuning and parts add to performance.



## NEW

\* The new engine boasts an increase in peak power of approximately 1.0 kW (1.4 PS), and the rev limit increases a further 350 min<sup>-1</sup> to 14,500 min<sup>-1</sup>. A significantly more robust low-mid range is complemented by strong high-rpm performance that gives riders an advantage on the straights, and, when combined with a higher rev limit, makes it easier to tie corners together for quicker lap times.

\* Like the KX450, the KX250 features a valve train designed by Kawasaki's World Superbike engineers. Finger-follower valve actuation enables a higher rev limit and more aggressive cam profiles – both contributing to high-rpm performance. (Illustration A)



\* Complementing the aggressive cams, large-diameter intake (ø32 mm) and exhaust valves (ø26.5 mm) with high lift (IN: 10.3 mm; EX: 9.1 mm) flow a high volume of air, contributing to high-rpm power.

## NEW

\* Revised processing for the throats of the intake and exhaust ports (IN: revised angle, larger diameter; EX: larger diameter) contributes to the increased performance.

\* Finger-follower valve actuation also enables a lighter valve train mass (IN is 3.5% lighter; EX is 4.3% lighter) compared to a tappet-style valve actuation (even taking into account larger-diameter valves that finger-follower valve actuation allows).

\* DLC (Diamond-Like Carbon) coating on the finger followers helps protect against wear.

- NEW** \* Revised exhaust cam timing (retarded 3°) contributes to the engine's increased performance.
- \* The camshafts benefit from a thin and highly durable gas soft-nitriding treatment for long wear and high-rpm reliability.
- \* Valves are formed from lightweight titanium, reducing reciprocating weight and offering high-rpm reliability.
- NEW** \* Valve springs feature a higher spring rate to match the higher rev limit.
- \* Downdraft-style intake routing allows a straight approach for intake air into the cylinder. The 32.5° approach angle contributes to cylinder-filling efficiency and overall engine power.
- \* Large-diameter ø44 mm throttle flows a great volume of air, contributing to high-rpm performance.
- \* The KX250 was the first production motocrosser equipped with dual injectors (a feature since 2012): an injector downstream of the throttle valve (where injectors are located on standard FI systems), tasked with delivering smooth, instant response; and a second, upstream injector located close to the airbox, which makes a significant contribution to engine output at high rpm.
- \* Unlike the dual injection found on supersport models (where the upper injector operates only part-time, providing additional fuel when necessary), the two injectors in the KX250 fuel injection system have different roles. The downstream injector is used to ensure smooth, instant response while the upstream injector is charged with providing power. As rpm and throttle position increase, primary operation switches from the downstream injector to the upstream injector.
- NEW** \* Revised combustion chamber design and a flatter piston crown contribute to the increased performance.

- \* High-performance piston, featuring the same design used on our factory racers, contributes to strong performance at all rpm. A short skirt, reinforced external ribs and the use of a bridged-box bottom, featuring internal bracing, contributes to a light, strong piston design. A dry film lubricant coating on the piston skirts reduces friction at low rpm and helps with the piston bedding-in process. (Photo 1)
- NEW** \* Connecting rod is 3 mm longer. The decreased lateral force on the cylinder walls as the piston moves up and down helps to reduced mechanical loss. (Cylinder height increased accordingly.)
- \* Cylinder is offset 3 mm (forward), reducing mechanical loss, which also contributes to stronger engine performance.
- \* Plateau honing on the cylinder bore results in a smooth surface with good oil-retention. The smooth surface helps reduce mechanical loss, contributing to engine power.
- NEW** \* Revised crankshaft web design offers reduced weight.
- NEW** \* Revised pressure balance inside the crankcase contributes to the increased performance.



1

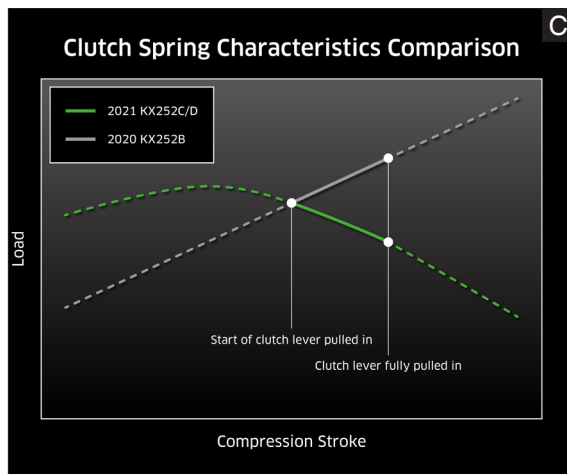
**NEW** \* Like the KX450, a hydraulic clutch offers direct feel and light lever action. Less play as the clutch heats up during heavy use results in more consistent feeling. The use of coned-disc springs contributes to lighter clutch actuation when the lever has been pulled in, and a wider clutch engagement range, which facilitates control (especially when half-clutching). Friction plates with offset (slightly rotated) segments promote clean separation of the discs and help to reduce drag when the clutch is pulled in. The clutch's slave cylinder is common with that of the KX450. (Photo 2, Illustrations B-C)



2



B



C

**NEW** \* Axle spacing revised in order to strengthen the transmission to match the increased engine output. Along with matching the revised axle spacing, shape-optimised gears contribute to weight reduction.

## Electric Start

Being able to restart an engine quickly during a race can mean the difference between keeping your lead, or having to fight your way back through the pack. Electric start makes restarting the engine as easy as pushing a button.

**NEW** \* Starting is electric only, via a button located at the right grip. (Photo 4)



3

**NEW** \* Lightweight, compact Li-ion battery helps keep weight to a minimum. (Photo 4)

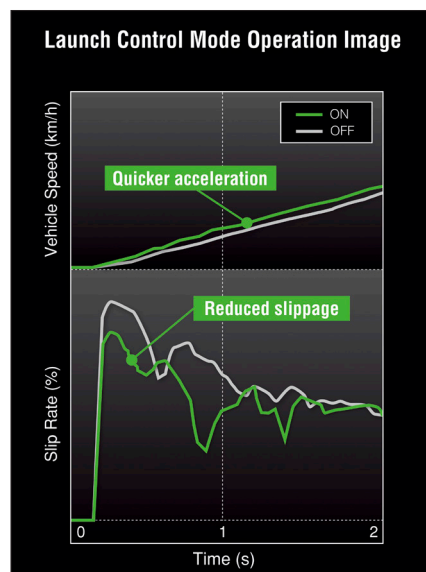


4

- \* An automatic centrifugal decompression system fitted to the exhaust cam lifts one exhaust valve to facilitate starting. The system's simple construction ensures light weight and high reliability.

## The holeshot advantage: Launch Control Mode

KX motocrossers have long drawn on works technology to offer riders the best possible performance right out of the box. Launch Control Mode is just one of the factory features that give riders an edge when lining up at the start gate.



- \* Launch control system is designed to the same specifications as that of our AMA factory racers. With the simple press of a button, riders can activate a separate engine map designed to ensure efficient race starts in low-traction conditions. (The Launch Control Mode map retards ignition timing, allowing tyres to gain grip, and allowing riders to focus on their lines.)

- \* Launch Control Mode has the greatest effect within the first few seconds of releasing the clutch off the start. This is the most crucial time for riders to get ahead of their rivals so they are better positioned going into the first corner.

## Easy engine tuning: DFI Setting Data Selection (3 map choices)

Adjusting engine settings to suit conditions is simple with the KX-style DFI couplers. Plug-and-play style system is quick, easy and stress-free.



- \* Instead of a single engine map, the ECU features three (excluding the Launch Control Mode map).
- \* Initial settings for the three maps are: Standard, Hard (conditions) and Soft (conditions). Using provided DFI couplers, riders are able to easily switch from one to another of the three maps to suit riding conditions. Plugging in each of the 4-pin couplers activates the corresponding engine map. (Plug is conveniently located on the right side of the head pipe for easy access without having to remove any parts.)
- \* Each of the three maps can be reprogrammed using the optional KX FI Calibration Kit. (Please see below.)

## Precision engine tuning: KX FI Calibration Kit (Accessory)

The KX FI Calibration Kit features the handheld KX FI Calibration Controller, which enables riders to adjust engine characteristics (by rewriting actual data maps) to suit their preference. This convenient tool can be used without a PC, simply by plugging into the engine's ECU.



**For more detailed information on use and functions of the KX FI Calibration Controller, please refer to the *KX FI Calibration Controller User Manual*.**



# CHASSIS

## Lightweight aluminium perimeter frame

New KX450-based frame contributes to the KX250's light weight, light handling, and slim ergonomics. Along with the new swingarm (also from the KX450), the new frame offers improved handling and increased rear wheel traction.



\* Slim aluminium perimeter frame is a lightweight construction composed of forged, extruded and cast parts.

**NEW** \* An evolution of the current design, the new frame offers a better overall rigidity balance. While many parts are common with the KX450's frame, the cast parts (like the shock tower mount and engine hangers) were designed specifically for the needs of the KX250. (Illustration D)



**NEW** \* Engine is used as a stressed member, contributing to the frame's rigidity balance.

**NEW** \* Steering head area with optimised rigidity, main frame rails with revised cross-sections, and a revised line for the swingarm brackets contribute to the overall rigidity balance. Wider lower frame rails also contribute to overall rigidity balance.

**NEW** \* KX450 swingarm delivers the rigidity to match the frame, and contributes to increased rear traction. (Photo 5)



\* Chassis balance and settings were all set to suit race-experienced riders.

\* The centre of gravity and key dimensions (swingarm pivot, output sprocket and rear axle locations) were chosen so that the rear tyre would drive the bike forward (instead of causing it to squat).

## Race-ready suspension

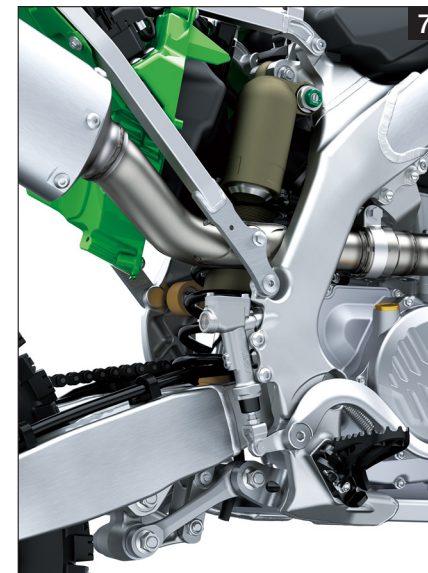
\* High-performance KYB  $\varnothing 48$  mm inverted coil-spring fork handles suspension duties up front. Its large-diameter inner tubes enable the use of large  $\varnothing 25$  mm damping pistons, delivering smooth action and firm damping. (Photo 6)



\* Kashima Coat creates a hard, low-friction surface on the fork outer tubes. The hard coating helps prevent wear abrasion on the inside of the tubes, ensuring the sliding surfaces remain smooth for a long time, while the outside is protected against corrosion. The lubricating material in the coat contributes to smoother suspension action (especially at the initial part of the stroke) and a better ride feel.

**NEW** \* Lower triple-clamp with revised rigidity reduces weight while contributing to the front's ability to absorb bumps.

\* The New Uni Trak rear suspension system mounts the suspension arm below the swingarm, allowing a longer rear suspension stroke. The longer stroke in turn allows more precise rear suspension tuning. (Photo 7)



**NEW** \* Revised linkage ratios (same as those used on the KX450) contribute to both increased absorption and damping performance.

\* The KYB rear shock features dual compression adjustability, allowing high-speed and low-speed damping to be tuned separately.

\* Kashima Coat on the tank cylinder helps prevent wear abrasion, and reduces friction for smoother suspension action.

**NEW** \* Front and rear suspension settings fine-tuned to match the new frame contribute to increased bump absorption performance as well as increased traction.

## Strong brakes

\* Petal disc brakes are among the KX250's numerous factory-style components. The stylish discs contribute to both sporty looks and a high-quality appearance.

\* Oversized semi-floating  $\varnothing 270$  mm front disc contributes to strong front brake force, as well as superb controllability. (Photo 8)



**NEW** \* KX450 front master cylinder adds to the high level of control and overall feedback from front brake.

**NEW** \* A smaller-diameter rear disc ( $\varnothing 250$  mm >>  $\varnothing 240$  mm) offers performance optimised for the KX250, contributing to controllability. (Photo 9)



## Racer-Friendly Ergonomics

The narrow frame and minimalistic bodywork offer a slim riding position that facilitates control. Complemented by a new Renthal aluminium Fatbar and Kawasaki's ERGO-FIT adjustable handle and footpeg positions, the smoother, flatter rider interface further improves the racer-friendly ergonomics.



**NEW** \* Factory-style  $\varnothing 28.6$  mm (1-1/8") Renthal aluminium Fatbar, a popular aftermarket part, is now a standard feature. The thicker handlebar helps reduce vibration and shocks transmitted to the rider, while the new grip position (19 mm lower, 8 mm closer) helps put the rider in a position that makes it easier to weight the front wheel. (Photo 10)





- \* Upper triple clamp with two sets of handle mount slots and reversible handle mounts offers riders a choice of four handle positions: 25 mm forward, 15 mm forward, STD and 10 mm back.

- NEW** \* Bodywork designed to facilitate rider movement features long, smooth surfaces that make it easy to slide back and forth.
- \* Seams between the shrouds, seat and side covers are very flush, which facilitates control as well as moving around on the bike.

- NEW** \* Revised design for the top of the fuel tank top allows an even flatter progression from the seat to the tank. The flatter design gives the rider greater freedom of movement when changing riding position, and facilitates sitting farther forward. (Photo 11)



- \* The seat uses a slip-resistant top surface for good grip when seated and smooth sides for excellent rider mobility. Seat urethane helps maintain the original shape longer.
- NEW** \* Slimmer shrouds are positioned closer to the frame. Designed to be slim where they come in contact with the rider's legs, the new single-piece shrouds facilitate grip.
- \* The frame widens at the ankles to offer the rider better grip and narrows near the bend below the seat to allow a slim riding position.
- NEW** \* Smooth engine covers were also designed not to impede rider movement.
- \* Adjustable footpeg brackets enable riders to lower their footpeg position 5 mm. In the lower position, centre of gravity is lowered as is the rider's point of view.

## Factory styling

Complementing the KX250's sleek new bodywork, factory-style graphics ensure it is the sharpest looking bike in the paddock and further reflect its highly-tuned performance. Coloured (green or gold) highlights on the suspension adjusters and engine oil cap and generator cover plugs contribute to a distinctive Kawasaki look.



- \* In-mould graphics used on the shrouds result in an ultra-smooth surface and ensure the race-style graphics are not easily damaged.
- \* Rims are coated in black alumite – just like our factory racers.
- \* Fork and rear shock adjusters have a high-quality green alumite finish.
- NEW** \* Gold finish on the oil cap and the two plugs on the generator cover further contribute to factory-racer looks.



## Option Parts

\* Optional engine parts include magneto rotors with different inertias (8.5, 9.5 kg·cm<sup>2</sup>; STD: 9.0 kg·cm<sup>2</sup>) and a 12T output sprocket (STD: 13T).

**NEW** \* Optional chassis parts include handlebar holders for a ø22.2 mm bar (STD: ø28.6 mm), aluminium and steel rear sprockets (49-51T; STD: 50T), different springs for the front fork (4.8, 5.2 N/mm; STD: 5.0 N/mm) and rear shock (52, 56 N/mm; STD: 54 N/mm), plain shrouds (without graphics), and a skid plate.

## COLOUR(S)

\* Lime Green



## SPECIFICATIONS

DIMENSIONS	
Overall length	2,180 mm
Overall width	820 mm
Overall height	1,265 mm
Wheelbase	1,485 mm
Road clearance	335 mm
Seat height	950 mm
Curb mass	107.5 kg
Weight without fuel	102.9 kg
Fuel tank capacity	6.2 litres
ENGINE	
Type	Liquid-cooled, 4-stroke Single
Valve system	DOHC, 4 valves
Bore x Stroke	78.0 x 52.2 mm
Displacement	249 cm <sup>3</sup>
Compression ratio	14.1:1
Fuel supply	Fuel injection (ø44 x 1)
Lubrication system	Forced lubrication, semi-dry sump
Starting system	Electric
Ignition system	Digital DC-CDI

DRIVETRAIN	
Driving system	Chain
Transmission	5-speed, return
Gear ratios:	1st 2.154 (28/13)
	2nd 1.733 (26/15)
	3rd 1.438 (23/16)
	4th 1.235 (21/17)
	5th 1.045 (23/22)
Primary reduction ratio	3.350 (67/20)
Final reduction ratio	3.846 (50/13)
Clutch type (Primary)	Wet multi-disc, manual

**FRAME**

Type	Perimeter, aluminium
Suspension:	
Front	ø48 mm inverted telescopic fork with adjustable compression and rebound damping
Rear	New Uni Trak with adjustable dual-range (high/low-speed) compression damping, adjustable rebound damping and adjustable preload
Wheel travel:	
Front	314 mm
Rear	316 mm
Caster (Rake angle)	28.0°
Trail	118 mm
Steering angle (left/right)	42° / 42°
Tyre:	
Front	80/100-21 51M
Rear	100/90-19 57M
Brake:	
Front Type	Single semi-floating ø270 mm petal disc (Effective diameter: ø241 mm)
Caliper	Dual-piston
Rear Type	Single ø240 mm petal disc (Effective diameter: ø215 mm)
Caliper	Single-piston

**KAWASAKI TECHNOLOGY**

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. Available colours may vary by market.