HONDA CRF250RX ENDURO 2022

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Model updates: *The new CRF250RX Enduro is the strongest it's ever been, inheriting the chassis of the 22YM CRF450RX, plus extensive cylinder head development producing a considerable low-rpm torque boost with enhanced reliability. New radiators improve efficiency, the clutch now has 9 plates and lighter lever feel, while the strengthened gearbox features revised ratios for improved 'roll-on' performance. The Showa suspension is re-valved for enhanced bump absorption, and knuckle guards are also standard fit.*

Road Homologation and fitting are by Redmoto S.r.l., official partner of Honda Motor Europe LTD for the distribution of the Honda CRF off-road range in Italy.

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1. Introduction

The battle in MX2 is close competition and generates rapid, constant evolution. For 19YM – and after 18YM's full redesign, with seventh-generation 17YM CRF450R frame and swingarm, new Showa suspension and brand-new DOHC engine – Honda gave their CRF250R much stronger bottom-end torque and HRC launch Control.

And for the same model year, a cross-country option in the form of the new CRF250RX was added to the range, with off-road specific modifications drawn from the CRF450RX including larger fuel tank,18-inch rear wheel plus off-road specific engine mapping and suspension changes to ensure it was equally at home speeding up a root-strewn climb, or slicing precious seconds off an Enduro special test.

For 20YM it followed development of the CRF250R and gained a major low to mid-range power and torque boost, plus frame and swingarm of the 19YM CRF450RX. 22YM sees a major step forward for the CRF250RX, including chassis upgrades inherited from the 21YM CRF450R improving both ability and agility plus a boost in low-rpm torque for the engine.

2. Model Overview

A full 3kg lighter the CRF250RX's new frame and swingarm's rigidity balance – combined with tighter chassis geometry and heightened ground clearance – target peak cornering performance in any riding situation. In support the Showa suspension gets a re-valve, improving bump absorption, traction and control.

Riders have always loved the top-end power hit of the CRF250RX Enduro. To link up with the healthy mid-range, extensive revision to both intake and exhaust efficiency yields much-improved low-rpm drive; the ECU mapping is also revised optimising air/fuel mixture and ignition timing.

A great deal of work has also gone into enhancing high-rpm cam timing accuracy and long-term reliability. A 9-plate clutch and new ratios for the strengthened gearbox ensure none of the extra punch is wasted. For 22YM the CRF250RX also wears standard-fit knuckle guards.

3. Key Features

3.1 Chassis

- ***3kg weight saving, with HRC input running through frame, swingarm, rigidity balance and geometry for amplified cornering ability and ease of use***
- ***49mm Showa front fork with 5mm extra travel and more rigid axle clamps***
- ***Optimised spring rate and compression/rebound damping front and rear***
- ***Compact new seat design and plastics aid rider freedom***

For 22YM the CRF 250RX Enduro is equipped with the same chassis that debuted on the 21YM CRF450RX Enduro. Alongside the punchier engine a 3kg weight saving, geometry changes and suspension upgrades cohere to create a package that's easier to ride faster for longer.

Thanks to narrower main spars, the frame weighs 700g less than the previous design, while a redesigned subframe also saves 320g. The chassis dynamic is also new: while torsional rigidity is maintained, lateral rigidity has been reduced by 20% to increase corner speed, traction and steering accuracy. The swingarm pivot point has rib placement optimized; the aluminium swingarm has a new rigidity balance tuned to match the frame.

Both top and bottom yokes feature increased flex, to give sharper, more agile cornering and bump reaction. The CRF 250RX Enduro's suspension uses specific settings, with a broader performance range than the CRF250R. Fully adjustable, the 49mm Showa USD coil spring fork is a version of the Showa 'factory' fork supplied to the race teams in the Japanese championship. With the target of smooth all-round action, the forks use have been re-valved, the stroke lengthened by 5mm to 310mm and the axle clamps' rigidity increased to improve grip and rut ride-over ability.

The Showa rear shock's main piston valving is enlarged for faster response and smoother bump absorption and rut ride-over. Its spring uses lightweight steel, saving 120g. The Pro-Link ratio is also new.

The seat is now shorter, lighter and 10mm lower at the rear, to aid the rider's freedom of movement. It's also much easier to remove and install. Maintenance is also easier, as the number of 8mm bolts securing the minimal bodywork goes from 6 to 4 each side. The new machine is also slimmer by 70mm (50mm on the left, 20mm on the exhaust side), and the plastics thinner, while the tank cover has been removed.

Rake and trail are now tighter, 27.9°/114mm (from 27.4°/115mm), and wheelbase shorter 1477mm (1486mm). Ground clearance goes up 8mm to 335mm, and the bottom yoke now sits 6.1mm higher at 928mm. Kerb weight is 108kg, a full 3kg lighter than the previous model.

Designed with Computational Flow Dynamics (CFD) for maximum through-flow of air, the radiator shrouds are now constructed from one piece of plastic, rather than two and include a lower vent while the radiator grills are optimised for airflow. They're also 17mm narrower in width compared to the 21YM machine. The plastic fuel tank developed by RedMoto holds 7,3L.

Standard-fit, lightweight Renthal Fatbar flex for optimal comfort; the top yoke features two handlebar-holder locations for moving the handlebar rearward and forward by 26mm. When the holder is turned 180°, the handlebar can be moved an additional 10mm from the base position, resulting in four unique riding positions.

Up front, the twin-piston brake caliper employs 30 and 27mm diameter pistons and 260mm wave-pattern disc; along with low-expansion rate brake hose it gives both a strong feel and consistent staying power. The single-piston rear caliper is matched to a 240mm wave-pattern disc. Knuckle guards protect hands and levers while the forged aluminium sidestand tucks away neatly to minimise interference while riding. The new side stand elastic band support perfectly integrates with the bike's ergonomics.

DID aluminium rims, with directly attached spoke pattern layout are finished in black; the front is a 21 x 1.6in, the rear an 18 x 2.15in. The rear wheel was made both stronger and lighter for 21YM and tyres are Metzeler Six Days Extreme 90/90-21 front and 140/80-18 rear.

The full led headlight perfectly integrates with the streamlined CRF design.

Sturdy back mudguard with integrated support for the registration plate, that also increases the resistance to the hits, typical of heavy off-road use.

A striking red-blue graphic complements the 22YM CRF250RX's aggressive lines.

3.2 Engine

- ***Intake and cylinder head development plus straight exhaust port/downtube and single muffler yield up to 10% more power and up to 15% extra torque.***
- ***High-rpm valve-timing accuracy and cylinder head oil delivery also improved***
- ***9-plate clutch improves endurance with lighter lever feel***
- ***Gearbox ratios revised for roll-on snap, shift drum for smoother changes***
- ***ECU remapped specifically for the CRF 250RX Enduro for smoother off-road delivery***
- ***More efficient radiator cooling***

The CRF 250RX Enduro shares the 22YM engine of its motocross sibling for a fully-rounded performance throughout the rev-range – with the same peak power and low-rpm torque upgrade – but has new fuelling and ignition mapping to soften the power delivery for the wide-ranging conditions off-road riding presents.

Picking up earlier in the rev-range, power output is smooth and linear, while torque bulges at significantly lower rpm. Overall, there's up to 10% more power and 15% torque across the rev range for fluid, same gear corner-to-corner over-rev.

The overall result? A big-hitting engine just got an even heavier hit, delivering strong, accessible drive from low down to make real use of the new chassis' agility. And it's the culmination of many improvements – some large, some small – that have upped performance.

Low-rpm combustion stability and gas flow in, and out, of the chamber served as main focus. Headlines are a revised air intake funnel and cone tube, fed by a 78% larger-capacity airbox, now 4.1L, an injector angle now set at 60° (rather than 30°) and a straight exhaust port. Air intake efficiency is improved, alongside air intake cooling. The air filter's also easier to access.

A myriad of detailed improvements have gone into the top-end of the engine; the intake cam sprocket is now press-fit, saving weight with more accurate timing accuracy. Double springs for the intake valves (rather than single) give extra high-rpm control. The oil's pathway to the camshaft journals has been modified, alongside a more rigid camshaft holder and head to reduce journal friction.

Valve timing has been optimized; precise re-alignment of the rocker arm shaft position aids high-rpm performance while the piston and connecting rod design maximize efficiency. Bore and stroke remains 79 x 50.9mm, with a 4.5mm cylinder offset to reduce friction and compression ratio of 13.9:1. The valves are titanium; 33mm inlet and 26mm exhaust. For greater off-road enduro riding performance, the FI settings have been remapped for enduro specific power delivery.

A single muffler replaces the dual mufflers of the 21YM design. The downpipe allows a straight shot for the spent gases; optimized internal dimensions enhance combustion stability and exhaust efficiency. Its compact nature also allows a slimmer body and saves 1.7kg over the previous design.

To cope with the extra heat generated by a harder-working engine the mounting angle and number of fins in the radiators have been adjusted, through fluid analysis, increasing the surface area by 2% and heat radiation by 6%. Redesigned shrouds generate extra airflow

Other 22YM developments build-in extra levels of reliability. The water pump gear is thicker to better deal with high-temperature oil. And to increase the flow of oil, the pressure to the cylinder head has been modified. A 5-hole piston oil jet maintains optimum piston cooling and ignition

timing. The combined oil pump/drive gear is on the left-hand side of the engine, with the oil filter and oil way on the right side – the oil's path around the engine is short and straightforward and the oil also lubricates the clutch and transmission, with a total oil capacity of 1.35L.

The drivetrain has also received attention. To improve endurance, engagement feel and a lighter lever action the clutch gets an extra disc, to 9, spreading the load applied to the friction material. Also, an additional friction spring in the damper chamber, optimized lubrication, friction materials and primary ratio – plus more rigid clutch centre – contribute to higher performance and a 21% increase in endurance. The operational load on the clutch lever is reduced by 4%.

To deal with the load applied by the new clutch, as well as maximize drive from any rpm point the gearbox – without adding weight – features a layout revised for extra strength. The ratios too are adjusted with 1st taller, 2nd a little shorter, 3rd taller and 4th/5th shorter.

A new shift pattern uses one shift fork going up from 2nd to 3rd (rather than two) with two lead grooves rather than 3 and improved countershaft rigidity reduce friction. The result is a much better shifting feel between two critical gears; the shift drum is also 17% lighter. A gear position sensor allows the use of three specific ignition maps for 1st and 2nd, 3rd and 4th, and 5th.

3.3 Electronics

- ***HRC Launch Control offers 3 start options***
- ***Engine Mode Select Button (EMSB) features 3 maps to adjust output character***

HRC's Launch Control system gives any rider the best option for a strong start and has 3 modes to choose from:

Level 3 – 8,250rpm, muddy conditions/novice.

Level 2 – 8,500rpm, dry conditions/standard.

Level 1 – 9,500rpm, dry conditions/expert.

Activating HRC Launch Control is easy – to turn on, pull in the clutch and push the Start button on the right. The LED will blink once for Level 1 selection. Push the Start button again, for 0.5s or longer, and the LED will blink twice for Level 2. Repeat the process and the LED will blink 3 times, indicating that Level 3 has been chosen.

The Engine Mode Select Button (EMSB) alters the engine's characteristics, and three maps are available to suit riding conditions or rider preference: Mode 1 (Standard), Mode 2 (Smooth) and Mode 3 (Aggressive). The LED also displays Mode selected.

The rider controls and displays – engine stop button, EFI warning, EMSB mode button and LED indicator – are all sited on the left handlebar.

4. Technical Specifications CRF 250RX Enduro 2022

ENGINE	
Type	Liquid-cooled 4-stroke single DOHC
Displacement	249.4cc
Bore x Stroke	79mm x 50.9mm
Compression Ratio	13.9:1
Oil Capacity	1.35L
FUEL SYSTEM	
Carburation	Fuel injection
Fuel Tank Capacity	7,3 litres
ELECTRICAL SYSTEM	
Starter	Electric
DRIVETRAIN	
Clutch Type	Wet multiplate
Transmission Type	5 gear, Constant mesh
Final Drive	Chain
FRAME	
Type	Aluminium twin tube
CHASSIS	
Dimensions (L´W´H)	2.176 x 839 x 1.281mm
Wheelbase	1.477mm
Caster Angle	27.15°
Trail	114mm
Seat Height	964mm
Ground Clearance	335mm

Kerb Weight	108kg
SUSPENSION	
Type Front	49mm Showa coil-spring USD fork
Type Rear	Showa Mono shock with Honda Pro-Link
WHEELS	
Type Front	Aluminium spoke
Type Rear	Aluminium spoke
Tyres Front	90/90-21” Metzeler Six Days Extreme
Tyres Rear	140/80-18 Metzeler Six Days Extreme
BRAKES	
Front	260mm hydraulic wave disc
Rear	240mm hydraulic wave disc

All specifications are provisional and subject to change without notice