

## HONDA CRF250RX ENDURO 2021



Press release date: November 2020

Model updates: the new 2021 CRF250RX combines its incredible ride at high revs with an all new middle range grunt. The aluminium frame and the Showa suspensions with dedicated setting are the base of the bike.

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**

Our decision to expand the CRF platform in 2019, with the introduction of the new CRF250RX is confirmed by the launch of the new CRF250RX Enduro 2020 that is the base for the 2021 model.



Based on the CRF250R, the CRF 250RX Enduro 2021, is equipped with 18" rear wheel, a slightly bigger fuel tank, dedicated engine maps and a specific suspension set up. Fast, light and nimble, the CRF 250RX Enduro is a race bike ready to win races, but also a great enduro bike for all hobby riders.

The CRF 250RX Enduro 2021 further enhances its strengths and improves in all areas. The engine has great torque at low revs. The aluminum chassis and the suspensions with a dedicated setup to exploit its full potential.

As usual the street legal versions both for the Italian and the European market are made by Redmoto S.r.l, official partner of Honda Motor Europe Ltd. for the distribution of the CRF off-road range.

## **2. Model Highlights**

The CRF250RX exploits the renowned base of its MX brother, but with some important modifications necessary for enduro riding. It has a 7.3 litre tank, an 18" rear wheel and a dedicated suspension set up. Its switchable engine maps are designed to guarantee a softer engine output than an MX bike. The bike has a forged aluminium side stand.

Already for the 2020, the development of the twin-cam 250cc engine was aimed at the improvement of torque at low and mid-range rpm. Honda's engineers hit the mark. Thanks to a radically new design of the combustion chamber, the new twin-cam engine can claim both a higher midrange torque and more power at high revs. Second gear ratio is now closer to third gear to reduce the natural rev drop during gear change. Clutch performance has been improved as well.

Furthermore, optimized intake and exhaust flows and updated engine maps make riding even more effective.

Frame and swingarm on the CRF250RX are lighter but most of all they have an optimized rigidity. The new chassis takes full advantage of the new dedicated suspension set up, and improves stability, the feeling of control, and driving precision through high speed turns on rough terrains.

## **3. Main Features**

### **3.1 Engine**

- **Great torque at midrange, higher power at high rpm**
- **Ignition timing and gear by gear Honda PGM-FI maps**
- **Narrower second gear ratio to reduce rpm drop on gear change**

The CRF250RX shares the power plant with its 2020 MX brother, with different power maps and a different fuelling, for a softer power delivery to better manage power during the typical enduro ride. Main goal of the development is an increase in both power and torque between 6 and 10.000rpm. Knocking, that reduces the overall engine performance at mid-rpm with gas fully opened, is also reduced.

Max power is at 12,000rpm and maximum torque is at 10,000rpm. The rev limiter is at 14,300rpm, in order to let the rider use the same gear beyond max power, a very useful feature for the enduro racer.

The improvements have been achieved already from the 2020 model, through revised shaping of the inlet/exhaust ports, piston and combustion chamber, and a new cam profile which keep the exhaust valves open for longer with more overlap with the opening of the intake valves. The





internal volume of the exhaust ports goes from 12cm<sup>3</sup> to 12.7cm<sup>3</sup>, while the piston crown's cutaways are re-shaped, increasing volume from 21.7cm<sup>3</sup> to 22.2cm<sup>3</sup>. And to cope with the extra heat generated by the harder-working engine the radiator volume has been increased.

To maintain engine rpm when shifting from 2nd to 3rd the gap between the two gears is closer; 2nd is now 16 main/28 counter giving a 1.75 ratio (from 15/27, 1.8) while 3rd remains 17/25 and 1.47.

To improve durability 3rd and 4th gear gain a new surface treatment; and, like the CRF450RX, the addition of a gear position sensor allows the use of three specific ignition maps for 1st and 2nd, 3rd and 4th, and 5th. The clutch spring rate has also been increased, giving an 18% increase in performance.

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. Lift is 10.5mm inlet and 9.5mm exhaust and the valve angle is set at 20.5°. The valve springs themselves are oval in section; the inlet valves are fed by symmetrical straight-shot downdraft intakes.

The piston is a Bridged Box design. Its rigidity converts combustion pressure into high output efficiency; a 5-hole piston oil jet maintains optimum piston cooling and ignition timing. A scavenge oil pump system reduces friction and 'pumping' losses at high rpm, by discharging oil and air in the crankcase and maintaining negative pressure. The oil also lubricates the clutch and gearbox, with a total oil capacity of 1.25L.

The combined oil pump/drive gear, oil filter and oil way are on the right side of the engine – the oil's path around the engine is short and straightforward. Valve train lubrication is routed through the cylinder head to the inside of both inlet and exhaust cam, directly feeding the sliding surface of cam and rocker arm. The 5-speed gearbox drives a sealed 520 chain.

### **3.2 Electronics**

- ***HRC 3 modes launch control***
- ***3 power modes EMSB (Engine Mode Select Button)***

HRC Launch Control, introduced on the 2019 model, offers the best stand still starting option in any situation. It has three modes:

- Mode 3: 8,250 rpm, mud / beginner;
- Mode 2: 8.500 rpm, dry surface / amateur;
- Mode 1: 9.500 rpm, dry surface / expert rider.

Launch control activation is easy: just pull the clutch lever and press ignition switch. LED light flashes once to indicate mode 1. Press the ignition switch once more for 5 seconds, LED light blinks twice to indicate mode 2 has been selected. Repeat the procedure and LED light flashes three time to indicate mode 3 has been selected.

The Engine Mode Select Button lets the pilot choose the engine character that best suits the track conditions. From a standing position, with the engine idling, pressing the button for less than 1 second will select the map in ascending order. Rapidly pressing the button, the integrated LED indicates the selected map flashing the corresponding number of times (1 flash, mode 1 etc). Every time a different map is selected, the integrated LED flashes the corresponding number of times.



Mode 1 (Standard) uses a default combination of ignition and fuel injection settings.

Mode 2 (Smooth) offers a soft and smooth, easy to handle power delivery, perfect for slippery surfaces.

Mode 3 (Aggressive) offers the perfect combination of power and torque for maximum responsiveness.

The switchgear with commands like engine stop, EFI indicator, EMSB button and LED indicator are on the left handlebar.

### **3.3 Chassis**

- ***Aluminium frame and swingarm 7th generation***
- ***Stability and riding precision through turns***
- ***Enduro Showa suspension setup for better effectiveness braking and accelerating***

The 2021 CRF250RX Enduro has the same seventh generation frame, a well-aimed evolution of the 2019 CRF 450RX model. Thanks to a thinner swingarm pivot area and it is designed to have greater torsional and lateral stiffness to increase agility and riding through turns, but also to have higher angular yaw rigidity to improve stability and grip while turning.

The aluminium swingarm is balanced to work as one with the frame. The 4 tie footrests help to better remove mud, and are also lighter. The battery is positioned lower to better centralize masses.

The caster angle is 27°18' and trail is 116mm. Wheelbase is 1,486mm. Curb weight is 111kg. The 49mm upside down Showa fork is just like the 'factory' one used for racing, with a 14mm rod, a 39mm piston and a 25mm diameter cylinder.

Starting from the 2020 model, in order to improve response during hard braking, the diameter of the main 'B' oil duct on the rod is decreased to 1.6mm from 2.4mm, to decrease low speed dumping. The same way the main hydraulics of the shock absorber are modified to increase control under acceleration.

The Renthal Fatbar handlebar reduces the overall weight of the steering system and is flexible enough to reduce riding stress. Bar risers can be mounted in two different positions 26mm apart (back and forth) on the top yoke. Turning the risers by 180° the handlebar moves 10 more millimetres. This way there are 4 different positions available. The central bumper is standard equipment.

The front brake calliper, biting on a 260mm wave disk, has two pistons of different diameter, 30mm and 27mm to be lighter and to have a reduced fading under heavy breaking. It guarantees power and feel. At the back a single piston calliper bite on a 240mm disk. The 2021 CRF250RX Enduro uses rear brake pads that increase power and duration thus allowing to remove the read disc cover.

The light full black DID DIRT STAR aluminium wheels have direct-mount spokes to reduce unsprung masses. The front wheel size is 21x1,6" and the back-wheel size is 18x2,15. The Metzeler Six Days Extreme tyres size is respectively 90/90-21 and 140/80-18.

The 7,3 litres white fuel tank allows to check fuel level at a glance. The streamlined lines of the CRF design help the rider to move freely while the tight front area and the front conveyors help funneling air to the radiator. The CRF250RX Enduro has a sturdy finish with resistant HRC style stickers.

The front fender for 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.

The new side stand elastic band support perfectly integrates with the bike's ergonomics.

#### **4. 2021 CRF250RX Enduro Technical Specifications**

<b>ENGINE</b>	
Type	Liquid-cooled 4-stroke single DOHC
Displacement	249.4 cc
Bore x Stroke	79 x 50.9 mm
Compression ratio	13.9 : 1
Total Oil capacity	1,250 cc
<b>FUELLING</b>	
Type	Electronic Fuel injection with ESMB map selection
Fuel tank capacity	7,3 litres
<b>ELECTRICAL SYSTEM</b>	
Ignition	Digital CDI
Starter	Electric
<b>TRANSMISSION</b>	
Clutch	Wet Multiplate
Primary Transmission	5 gears

Final Transmission	Chain
<b>FRAME</b>	
Type	Aluminum Twin Spar
<b>CHASSIS</b>	
Dimensions (LxWxH)	2,181 x 827 x 1,260 mm
Wheelbase	1.486 mm
Caster Angle	27°18'
Trail	116 mm
Seat Height	957 mm
Height	327 mm
Kerb Weight	111 kg
<b>SUSPENSION</b>	
Front	49 mm Showa coil-sprung USD fork
Back	Showa monoshock using Honda Pro-Link system
<b>WHEELS</b>	
Front	Aluminium spoke, 21"x 1.6
Back	Aluminium spoke, 18"x 2.15
<b>TYRES</b>	
Anteriore	90/90-21" Metzeler Six Days Extreme
Posteriore	140/80-18" Metzeler Six Days Extreme
<b>FRENI</b>	
Front	260 mm hydraulic wave disc, dual piston caliper
Back	240 mm hydraulic wave disc, single piston caliper

## 5. Special Version



Once again in 2021, Honda RedMoto offers a Special Version embellished with captivating racing details such as:

- Kite front wheel with red anodized machined hub and black anodized Excel rim
- Kite back wheel with red anodized machined hub and black anodized Excel rim
- High density polyethylene skid plate with AXP link
- Twin metal Supersprox Stealth rear sprocket, aluminum core, steel teeth
- Red anodized, machined aluminum X-Trig Rock yoke
- X-Trig aluminum bar riser
- Blackbird anti-skid seat cover
- Blue silicon radiator pipes
- Red anodized, machined aluminum rear brake caliper mounting bracket
- Red anodized wheel hub puller
- Red anodized, machined aluminum front brake master cylinder cover
- Red anodized, machined aluminum rear brake master cylinder cover
- Increased capacity, machined aluminum rear brake oil reservoir
- Machined rear brake linkage bush
- Security cable plate for rear brake
- Simplified wire loom
- Magura hydraulic clutch pump
- Red anodized aluminum engine caps kit



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- Rekluse clutch cover
  - Vibram frame protections with super grip effect

Upon request the bike can also be equipped with:

- Reinforced Rekluse Core Manual clutch with machined clutch drum
- Rekluse Radius Cx automatic clutch with machined clutch drum
- Steel Termignoni exhaust system with titanium mufflers and carbon fibre mu

