

**HONDA**

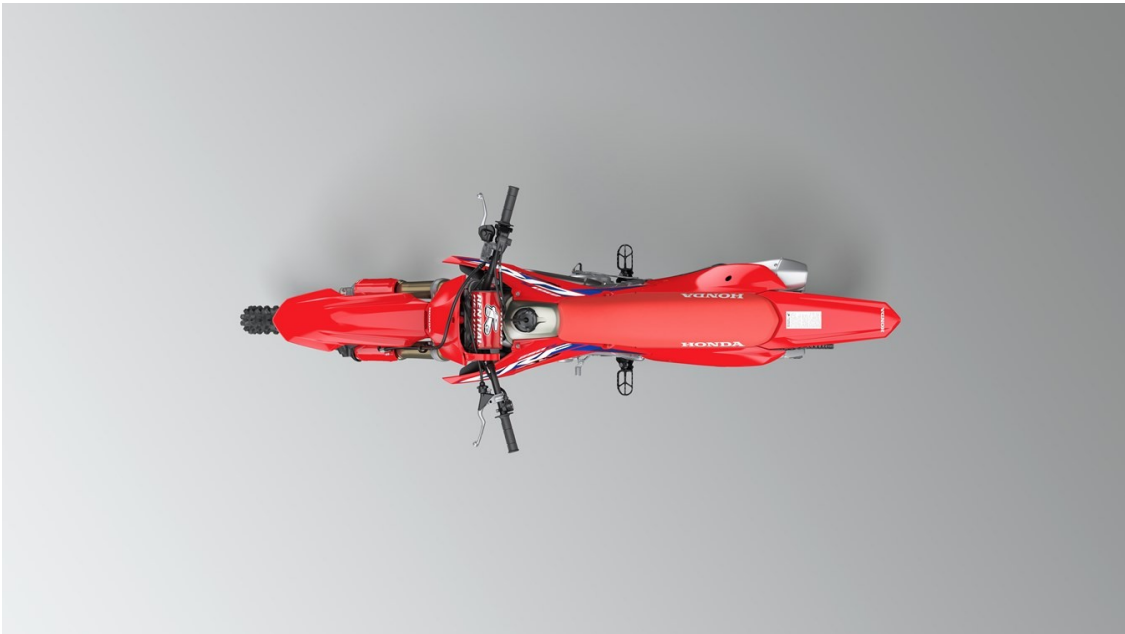
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# Press Information

**FOR IMMEDIATE RELEASE**

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**2023 HONDA CRF250R**



*Model updates: Mechanically unchanged for 23YM the CRF250R is still the strongest it's ever been; in 22YM it got the MXGP championship-winning chassis of the CRF450R plus extensive cylinder head development for a considerable low-rpm torque boost. Cooling efficiency was also improved, while a strengthened gearbox got revised ratios and nine-plate clutch. A new graphic treatment marks out the 23YM machine and features a brand new redesign of the iconic HRC logos.*

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## 1. Introduction

The MX2 class is a relentless, close-quarter battle. And Honda's CRF250R has proved itself a worthy weapon for the fight. Competition has led its evolution over time, through increments and steps, into a platform that the amateur MX enthusiast – as well as pro-racer – can extract the utmost out of, every metre of every lap.

Over the last 5 years it's been on a massive development journey. In 18YM the CRF250R underwent a ground-up redesign that inherited the '*Absolute Holeshoot*' philosophy of the 17YM CRF450R, sharing its seventh-generation frame, revised geometry and Showa suspension. It was also armed with a brand-new DOHC engine and switchable engine mapping; rider-focused ergonomics ensured it remained an MX machine that the hobby rider could exploit to *their* individual level of ability.

The 19YM CRF250R received a boost to low-rpm torque, through extensive intake and exhaust development plus HRC launch control, revised front brake caliper and adjustable-position Renthal Fatbars. In 20YM it moved forward once again, with the frame and swingarm of the 19YM CRF450R and more mid-range for the engine.

For 22YM it made a significant performance leap to make it '*The Strongest Ever*' including major chassis upgrades inherited from the 21YM CRF450R, improving both ability and agility. It also received stronger low-rpm torque to make best use of the new chassis, with improved toughness and durability.

The CRF250R is mechanically unchanged for 23YM apart from a crisp new graphic treatment which features the new redesigned iconic HRC logos, representing the expansion of HRC's racing activities.

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## 2. Model Overview

It's worth recapping why 22YM was such a big advance for the CRF250R; to make going fast easier, the cumulative learnings of recent CRF450R developments have focused around reducing rider fatigue – which helps riders not only of world-class calibre but also MX enthusiasts of *all* ability levels to post constantly optimal lap times.

And what's good for the 450 is even better for the 250. A full 3kg lighter than the 21YM design, the CRF250R's frame and swingarm's rigidity balance – combined with tighter chassis geometry and heightened ground clearance – target peak cornering performance and ease of handling. In support, the Showa suspension received brand-new valving, improving bump absorption, traction and control.

Engine performance was not forgotten either. Riders have always loved the CRF250R's top-end power hit and to link up with the healthy mid-range, extensive revision to both intake and exhaust efficiency yielded much-improved low-rpm drive. Enhanced high-rpm cam timing accuracy was also a focus alongside long-term reliability, while a 9-plate clutch and strengthened gearbox (with optimised ratios) ensure none of the extra punch is wasted.

### 3. Key Features

#### 3.1 Chassis

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- ***HRC input running through frame, swingarm, rigidity balance and geometry for enhanced cornering ability and ease of use***
- ***49mm Showa front fork with optimised spring rate and compression/rebound damping front and rear***
- ***Compact seat design and plastics aid rider freedom; new 23YM graphics with a brand new HRC logo***

Where the CRF450R leads, the CRF250R follows. So, it is equipped with the same platform that debuted on the production 21YM CRF450R, after intense development from HRC. And it's a championship-winning base point – Tim Gajser secured two consecutive MXGP titles with it. Alongside the punchier engine, a 3kg weight saving, geometry changes and suspension upgrades cohere to create a package that's easier to ride fast, lap after lap.

The CRF250R's chassis dynamic was also new; while torsional rigidity was maintained *lateral* rigidity reduced 20% to increase corner speed, traction and steering accuracy. The swingarm pivot point features optimised rib placement while the aluminium swingarm has a rigidity balance tuned to match the frame.

Both top and bottom yokes use increased flex over the previous design, to give sharper,

more agile cornering and bump reaction. Up front are fully adjustable, 49mm Showa USD coil spring forks. For smooth cornering performance the forks use 310mm stroke with axle clamps designed to improve grip and rut ride-over ability. The Showa rear shock's main piston uses valving – with matching Pro-Link ratio – set for faster response and smoother bump absorption and rut ride-over.

Rake and trail are set at 27.32°/115mm with wheelbase of 1477mm. Ground clearance is 333mm; kerb weight is 104kg. The compact seat aids the rider's freedom of movement around the slimline machine. It's also simple to remove and install. Maintenance is easy, with just 4, 8mm bolts securing the minimal bodywork.

Designed with Computational Flow Dynamics (CFD) for maximum through-flow of air, the radiator shrouds are constructed from one piece of plastic and include a lower vent. The titanium fuel tank holds 6.3L.

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.

DID aluminium rims, with directly attached spoke pattern layout are finished in black; 80/100-21 Pirelli MX32 Midsoft front and 100/90-19 Pirelli MX32 Midsoft rear soft-terrain tyres are fitted as standard equipment.

For 23YM, complementing its aggressive lines, CRF250R features a striking all-new graphic treatment which includes the new redesigned iconic HRC logos, now italic, which represents HRC's racing expansion into 4W racing activities.

### **3.2 Engine**

- ***Last year's intake and cylinder head development plus straight exhaust port/downtube and single muffler yielded up to 10% more power and up to 15% extra torque.***

- ***High-rpm valve-timing accuracy and cylinder head oil delivery improved***
- ***9-plate clutch improves endurance with lighter lever feel***
- ***Gearbox ratios tailored for roll-on 'snap'***
- ***Highly efficient radiator cooling***

The CRF250R's 249.4cc DOHC engine has long established a top-end that's one of the best trackside and improved torque and power from low rpm – with zero loss at peak – drove development for the 22YM tune, which carries on into 23YM.

Picking up early 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 compared to the previous design, for fluid, same gear corner-to-corner over-rev. The result in your throttle hand is a big-hitting engine with an even heavier punch delivering strong, accessible drive from low down to make real use of the chassis' agility.

Low-rpm combustion stability and gas flow in, and out, of the chamber are the main drivers of improvement. The air intake funnel and cone tube feeds to an injector set at a 60° angle and out to a straight exhaust port. A 4.1L airbox ensures high intake efficiency and air intake cooling; the air filter's also easy to access.

The intake cam sprocket is press-fit, saving weight and increasing rigidity. Double springs for the intake valves give extra high-rpm control. The oil's pathway to the camshaft journals – and a rigid camshaft holder and head – reduce journal friction.

Precise alignment of the rocker arm shaft position aids high-rpm performance while the piston and connecting rod design maximise efficiency. Bore and stroke is set at 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.

A lightweight single muffler expels spent gases The downpipe allows a straight shot; optimised internal dimensions enhance combustion stability and exhaust efficiency. Its compact nature also allows a slim body. To cope with the extra heat generated by a harder-working engine cooling is improved, while the radiator shrouds generate extra airflow.

Extra levels of reliability are built in. The water pump gear design deals efficiently with high-temperature oil while pressure to the cylinder head ensures greater oil flow. A 5-hole piston oil jet maintains optimum piston cooling and ignition timing. The combined oil pump/drive gear is on the right-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.

To improve endurance, engagement feel and a lighter lever action the clutch employs 9 plates, spreading the load applied to the friction material. Also, an additional friction spring in the damper chamber, optimised lubrication, friction materials and primary ratio – plus more rigid clutch centre – contribute to higher performance and (compared to the previous design) 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 maximise drive from any rpm point, the gearbox – without adding weight – features a layout built for extra strength. The ratios too are carefully tailored: a tall 1<sup>st</sup>, short 2<sup>nd</sup>, tall 3<sup>rd</sup> and short 4<sup>th</sup>/5<sup>th</sup>.

The shift pattern uses one shift fork going up from 2<sup>nd</sup> to 3<sup>rd</sup> with two lead grooves and countershaft rigidity designed to reduce friction. The result is much better shifting feel between two critical gears. A gear position sensor allows the use of specific engine maps for different gears.

### **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 – 10,000rpm, muddy conditions/novice.

Level 2 – 11,750rpm, dry conditions/standard.

Level 1 – 13,000rpm, 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.

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#### 4. Technical Specifications

<b>ENGINE</b>	
Type	Liquid-cooled 4-stroke single DOHC
Displacement	249.4cc
Bore & Stroke	79mm x 50.9mm
Compression Ratio	13.9:1
Oil Capacity	1.35L
<b>FUEL SYSTEM</b>	
Carburation	Fuel injection
Fuel Tank Capacity	6.3L
<b>ELECTRICAL SYSTEM</b>	
Starter	Electric
<b>DRIVETRAIN</b>	
Clutch Type	Wet multiplate
Transmission Type	Constant mesh
Final Drive	Chain
<b>FRAME</b>	
Type	Aluminium twin tube

<b>CHASSIS</b>	
Dimensions (L'W'H)	2,177 x 827 x 1,265mm
Wheelbase	1,477mm
Caster Angle	27.32°
Trail	115mm
Seat Height	961mm
Ground Clearance	333mm
Kerb Weight	104kg
<b>SUSPENSION</b>	
Type Front	49mm Showa (Hitachi Astemo, Ltd) coil-spring USD fork
Type Rear	Showa (Hitachi Astemo, Ltd.) Mono shock with Honda Pro-Link
<b>WHEELS</b>	
Type Front	Aluminium spoke
Type Rear	Aluminium spoke
Tyres Front	80/100-21 PIRELLI MX32 MIDSOF
Tyres Rear	100/90-19 PIRELLI MX32 MIDSOF
<b>BRAKES</b>	
Front	260mm hydraulic wave disc
Rear	240mm hydraulic wave disc

All specifications are provisional and subject to change without notice

Please note that the figures provided are results obtained by Honda under standardised testing conditions prescribed by WMTTC. Tests are conducted on a rolling road using a standard version of the vehicle with only one rider and no additional optional equipment. Actual fuel consumption may vary depending on how you ride, how you maintain your vehicle, weather, road conditions, tire pressure, installation of accessories, cargo, rider and passenger weight, and other factors.



