

25YM HONDA CRF250RX

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New Model: Improved cornering stability on rough circuit conditions – with no loss of steering agility – is the outcome of development for the off-road ready 25YM CRF250RX, thanks largely to a 70% new mainframe, a variety of cycle part updates, completely new Showa suspension and a two-piston Nissin front brake caliper. The engine builds increased drive, traction and power past peak via revised intake/exhaust and PGM-FI settings. Specification now includes new 3-level Honda Selectable Torque Control (HSTC) in addition to Launch Control and Engine Mode Select Button (EMSB). New radiator shrouds and updated CRF family graphics treatment signify the model change while a Honda wing on the front mudguard is the finishing touch.



Contents:

- 1 Introduction
- 2 Model overview
- 3 Key features
- 4 Technical specifications

1. Introduction

In 19YM Honda's stable of competition machines grew with an enduro option in the form of the CRF250RX, based on the CRF250R and with off-road specific modifications including larger fuel tank, 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 race times.

For 20YM it followed development of the CRF250R and gained a major low to mid-range power and torque boost, plus the frame and swingarm of the 19YM CRF450RX. 22YM saw a further major step forward for the CRF250RX, including chassis upgrades inherited from

the CRF450RX improving both ability and agility plus a boost in low-rpm torque for the engine.

Unchanged since then, for 25YM the CRF250RX launches hard and, just like the 25YM CRF450RX, has a brand-new chassis plus harder hitting engine and plastics.

2. Model Overview

Enhanced stability and control – especially over the roughest track conditions – were goals for the 25YM CRF250RX. The aluminium twin-spar frame is 70% new, with a completely revised rigidity balance alongside new subframe attachment points, top/bottom yokes and stem, front wheel axle/clamp and Pro-Link ratio.

The Showa suspension has been completely remade (with 250-specific settings) and aims to deliver consistent damping and suspension reaction from bottom to top stroke. Both 49mm front fork and rear shock feature new settings; the shock is also now much easier to remove. HRC provided the blueprint for the new front brake caliper, which now features new machining for the body, plus new pistons and seal grooves to resist heat fade over race distance.

For enhanced throttle control, drive and power past peak output the DOHC 4V engine employs a straighter path for airflow on the intake side, straighter exhaust pipe route and revised PGM-FI settings. The muffler meets new FIM noise regulations.

Crisply redesigned radiator shrouds and CRF family graphics mark out the 25YM CRF250RX, alongside a Honda Wing on the front mudguard.

3. Key Features

3.1 Chassis

- ***70% redesign of aluminium twin-spar frame improves overall stability***
- ***New top/bottom yokes and front wheel axle clamp and spindle***
- ***Brand new Showa front/rear suspension delivers smooth, consistent damping control***
- ***Revised Pro-Link shock linkage structure and ratio***
- ***New HRC-design front brake caliper resists heat fade***
- ***RX spec. includes 7,7L fuel tank, 21/18inch front and rear wheel combination, aluminium sidestand, knuckle guards and radiator cover with an enduro special design.***

The 25YM CRF250RX - well established as a fast-steering, lightweight tool, with the exact same chassis as the 25YM CRF450RX - pushes handling ability further and brings increased straight line and cornering stability, bump absorption, and feel for front and rear grip.

The twin-spar aluminium main frame features a 70% redesign, with the aim of enhanced overall chassis stability on the roughest of track conditions. A redesigned front down tube, stiffener spars and side gusset stiffener combine with new pivot plates, upper shock mount and tension bracket to generate 8% more torsional rigidity - improving stability. The torsional/lateral rigidity ratio is 5% greater, elevating cornering performance.

Vertical torsional rigidity increases 4%, suppressing deformation and enhancing high-speed; the rear subframe now mounts on the high-rigidity pivot plates (rather than the frame spars). This change reduces the transmission of energy (and subsequent movement) from the back of the machine to the rear head pipe section by 27%.

A great deal of work has gone into the top/bottom and steering stem to get a more consistent and stable suspension stroke. Alongside revised fork outer tubes and new front axle bolt the 25YM setup is more rigid, equalling a reduction of 6% in rigidity change during the stroke. The 585.2mm aluminium swingarm is unchanged.

Rake and trail are specific to the RX and set at 27°26'/116mm with 1,478mm wheelbase and 331mm ground clearance. Dry weight is 104kg with a 49.1/50.9% front/rear balance (wet).

Even more development has gone into the suspension. The aim has been to make fork stroke smoother, by removing any obstructions, while adding appropriate friction – 200% more friction force – throughout the entire stroke, with consistent damping force from top to bottom.

The Showa 49mm USD coil spring forks are effectively brand new with each component part – from outer rigidity to all internals – remade to deliver enhanced control from the initial movement all the way through. It employs a 310mm stroke and the oil specification is also new, to enhance low-speed damping. There are 16 adjustment positions for both of rebound and compression; all settings are unique for the RX and have been revised for 25YM.

Matching the forks the Showa rear shock has been remade to deliver consistent, uniform control anywhere in the stroke, with friction reduced in the bottom. There are 17 adjustment positions for rebound and 3.5 turns for high and 13 adjustment positions for low-speed compression, all revised for 25YM. A revised Pro-Link structure is 11% more rigid, with a ratio and axle travel optimised to deliver smoother bump control.

The 25YM CRF250RX has also been designed to make shock removal/replacement quicker, with only four parts needing removal, cutting time in half.

Drawing from parts employed by HRC's factory race bikes the re-machined, two piston front brake caliper uses new pistons and piston seal grooves. The new design reduces lever play by 57% when caliper temperature is high, while the caliper itself reduces rigidity change when hot by 25%, improving brake lever linearity and reducing rider fatigue. The 260mm wave-pattern disc is unchanged; a 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 ensure no interference while riding. 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 and mount Metzeler Six Days Extreme.

Minimal bodywork aids rider movement around the machine. The radiator shrouds specifically designed for enduro use have been updated for 25YM, using the consistent CRF design philosophy focussed around weight reduction, mass centralisation and rider-friendly ergonomics. A flat knee trajectory, front to back of the machine, has been maintained.

All the 25YM CRF family members feature new family graphics that denote the model change, and a Honda Wing makes an appearance on the front mudguard. Radiators are protected by sturdy steel guards. The RedMoto redesigned plastic fuel tank holds 7.7L.

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.

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.

3.2 Engine

- ***More direct airflow intake route improves throttle connection and torque feel***
- ***Smoother, straighter exhaust downpipe boosts mid- to top-end acceleration range***
- ***New crankshaft is more rigid around crank pin with improved moment of inertia***
- ***Power UP past peak output***
- ***Efficient radiator cooling with fan***

The CRF250RX's 249.4cc 4V DOHC engine has long established a top-end that's one of the best on track, but it also builds torque and power from low rpm. The aim for 25YM was to improve power output *past* peak rpm, generate more mid to high-rpm torque – thus acceleration – and smooth the throttle connection.

A newly redesigned crankshaft features increased rigidity around the crank pin and an improvement in the moment of inertia allowing it to spin up faster. In conjunction the airflow route – through intake, airbox, intake funnel and throttle body – is more direct than the previous design, reducing resistance and improving throttle control.

A redesigned exhaust downpipe also uses a straighter, smoother path for gas flow than the previous model which improves acceleration in the mid- to high-rpm range. The muffler is constructed from heat-treated aluminium to better stand up to the rider's boot; it meets the new FIM 109dB noise regulation.

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 are 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.

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 CRF 250RX is also equipped with cooling fan to maintain a constant temperature even on the slowest trail.

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 1.25L.

3.3 Electronics

- ***Now equipped with Honda Selectable Torque Control (HSTC) featuring 3 riding Modes (plus OFF)***
- ***3-Mode HRC Launch Control***
- ***Engine Mode Select Button (EMSB)***
- ***HRC Setting tool tailors Aggressive and Smooth modes***

The HSTC – as fitted to the CRF450RX – works to minimise rear wheel spin (thus reducing wasted forward drive) and maximise traction. It doesn't use a wheel speed sensor, and critically maintains feel at the throttle while managing power; ignition timing is retarded, and the PGM-FI controlled when the *rate* of change of rpm is detected to have gone over a set amount.

Three Modes differ in drive management level for different riding conditions:

Mode 1 intervenes most lightly, and after the longest time – useful for reducing wheelspin.

Mode 2 naturally offers a mid-point between 1 and 3 in terms of speed and strength of intervention and maintaining control in tight corners.

Mode 3 has the system intervene more quickly and strongly, and is therefore useful in more slippery, muddy conditions.

HSTC can also be switched off completely. When the engine is turned on, the system uses the last-selected setting.

The Launch Control also has 3 Modes: Mode 1 has a high rev limit, 2 (the factory setting) uses a middle point with 3 set low. There are 3 Modes available via the Engine Mode Select Button (EMSB) to alter engine character. Mode 1 is the factory setting, 2 smooth and 3 aggressive.

The Launch Control indicator, EFI warning, HSTC and EMSB mode button, and LED indicator are sited on the left handlebar. Pressing and holding the HSTC button for 0.5s will cycle the system to the next mode, with a green LED indication – 1 blink for Mode 1, 2 for Mode 2 and 3 for Mode 3 – to confirm selection.

CRF250RX SPECIAL



Once again in 2025, 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 AXP with link protection
- Twin metal rear sprocket, aluminium red core, steel teeth
- Red anodized, machined aluminium X-Trig Rock triple clamp
- X-Trig aluminium handlebar riser
- Blackbird seat cover HRC style
- Blue silicon radiator hoses
- Red anodized, machined aluminium rear brake caliper mounting bracket
- Red anodized wheel hub puller
- Red anodized, machined aluminium front brake master cylinder cover
- Red anodized, machined aluminium rear brake master cylinder cover
- Increased capacity, machined aluminium rear brake oil reservoir
- Machined rear brake linkage bush
- Security cable for rear brake
- Simplified racing wiring
- Red anodized aluminium engine caps kit
- Magura hydraulic clutch master cylinder
- Rekluse clutch cover
- Vibram frame protections with super grip effect

Upon request the bike can also be equipped with optionals:

- Reinforced Rekluse Core Manual clutch
- Rekluse Radius CX automatic clutch
- Akrapovič exhaust system

- Carbon fibre fuel tank
- Hydraulic clutch system by Honda Enduro Team with machined cover

4. Technical Specifications

ENGINE	
Type	Liquid-cooled 4-stroke single cylinder DOHC
Displacement	249.4cc
Bore & Stroke	79mm x 50.9mm
Compression Ratio	13.9:1
Oil Capacity	1.25L
FUEL SYSTEM	
Carburation	Fuel injection
Fuel Tank Capacity	7,7L
ELECTRICAL SYSTEM	
Starter	Electric
DRIVETRAIN	
Clutch Type	Wet multiplate
Transmission Type	Constant mesh
Final Drive	Chain
FRAME	
Type	Aluminium twin tube
CHASSIS	
Dimensions (L`W`H)	2,178 x 839 x 1,278mm
Wheelbase	1,478mm
Caster Angle	27°26'
Trail	116mm

Seat Height	958mm
Ground Clearance	331mm
Kerb Weight	104kg
SUSPENSION	
Type Front	49mm Showa (Hitachi Astemo, Ltd) coil-spring USD fork. 310mm stroke
Type Rear	Showa (Hitachi Astemo, Ltd.) Mono shock with Honda Pro-Link 308mm axle travel
WHEELS	
Type Front	21 x 1.6in Aluminium spoke nipple
Type Rear	18 x 2.15in Aluminium spoke nipple
Tyres Front	90/90-21 Metzeler Six Days Extreme (Michelin Enduro II)
Tyres Rear	140/80-18 Metzeler Six Days Extreme (Michelin Enduro II)
BRAKES	
Front	260mm hydraulic wave disc
Rear	240mm hydraulic wave disc