

CRF

COMPETITION MODELS 2021



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CRF150R EXPERT

EXCELLENT MASS CENTRALIZATION

The 149 cc engine boasts an ultra-high RPM and its unique 4-valve Unicam design gives it very compact dimensions and excellent mass centralization for effortless direction changes on the ground or altitude changes in the air. Rail it or whip it with confidence.

POWER WHEN YOU WANT IT

Short-skirted piston and light flywheel mean the CRF's willing engine builds revs very quickly—no waiting for the power to "hit".

CONSISTENT ENGINE OPERATING TEMPERATURE

Liquid cooling and a Nikasil cylinder liner help to extend engine life. The cooling system's lightweight aluminum radiator reduces weight to help ensure consistent engine operating temperature no matter how hard you push.

MORE IMMEDIATE THROTTLE

Flat-slide, FCR 32 mm carburetor is fitted with an accelerator pump for more immediate throttle response. Go ahead, use the 4-stroke advantage to grab the holeshot.

LESS SHIFTING MORE ENJOYMENT

Broad 4-stroke power characteristics allow the CRF150R Expert to use a five-speed gearbox for less shifting so you can concentrate on your riding.

EASY START FROM HOT OR COLD

Although the 4-stroke engine is hard to stall, it's nice to know that an automatic decompression system makes starting easy, hot or cold.

MAXIMUM POWER OUTPUT

Maintenance-free digital CD ignition system includes a throttle angle sensor so it can tailor the ignition curve to provide maximum power output whenever you grab that throttle.

EXCELLENT PERFORMANCE

Lightweight high-tensile steel frame with large-diameter tubing provides excellent turning performance and helps to keep you tracking straight through the whoops.

RIDING COMFORT & TRACTION

37 mm, inverted, Showa cartridge front fork features adjustable compression and rebound settings. The fork's low-friction design will be especially appreciated when it's helping the front wheel to follow small surface irregularities without breaking traction.

IMPROVED TURNING PRECISION

Wide-section aluminum top and bottom triple-clamps hold the inverted forks rigidly and position the fork tubes far apart giving you improved turning precision and control.

COMFORT ON ANY TERRAIN

Pro-Link® rear suspension system features a fully adjustable Showa shock that effectively help to soak up whatever the track or trail can throw at it.



CRF 250R SERIES FEATURES

HRC LAUNCH CONTROL

We're talking about a special ECU program here: push the button to select the mode, hold the throttle open, release the clutch, and the bike will do the rest, launching you into the first turn with a big advantage. It turns your bike into a holeshoot-seeking machine!

ELECTRIC START

Equipped with an effortless electric starter. Convenient and lightweight, it's a huge deal if you need to restart the bike in the heat of battle.

GEAR-POSITION ENGINE MAPPING

Talk about smart: This model features an ECU with special engine mapping for each gear. You can't give an inch in this class, so we designed our engines to deliver optimal power for each gear choice.

ENGINE MODE SELECT

This simple handlebar-mounted button lets you dial in engine power delivery character with a push of your thumb. Choose between Standard, Smooth and Aggressive, depending on track conditions.

DOHC ENGINE LAYOUT

The dual-overhead-cam (DOHC) engine layout has a unique finger-follower rocker design. Together with the rest of the engine's architecture (bore and stroke, intake tract, piston, and more), you get more power and a higher redline.

TITANIUM INTAKE AND EXHAUST VALVES

Light is right when it comes to a high-revving engine's reciprocating masses. That's why it uses titanium intake and exhaust valves. Plus, the valve angle is a super-narrow 20.5 degrees (included). Ovalized valve springs and long-wearing Diamond-Like Carbon (DLC) treated finger rockers complete the package.

DOWNDRAFT INTAKE AND EXHAUST LAYOUT

The DOHC cylinder-head design lets our engineers straighten out the bike's intake and exhaust tracts that have been optimized to improve power and response. The intake is shorter and just about arrow straight, and the exhaust flows more efficiently too. No athlete's going to win a sprint if they try to run while holding their breath, and it's no different with your bike's engine. You'll experience both, more power and better throttle response.

BIG BORE/SHORT STROKE

The 79 mm bore and short 50.9 mm stroke let our engineers create a high-revving engine with plenty of room for large valves. The engine breathes and revs—the two keys to making power.

DUAL-EXHAUST SYSTEM

The dual-exhaust system is light, compact, and positioned close and low in the frame to take weight off the rear end and bring more mass to the bike's center for improved handling. It also allows for more airflow, and that equals added power.

TOTAL AIR MANAGEMENT

Total air management means complete attention to how efficiently air gets through the intake, through the head, and out the exhaust. Eliminate losses here, and you make more power everywhere. And the best part? It's free power—you just need a bike with smart design.

BRIDGED-BOX PISTON

Coordinated to work with the new cam profile and combustion-chamber shape, it's the final piece to the engine's performance package. The bridged-box design features a reinforcing structure between the skirts and the wrist-pin bosses that helps enable the high redline.

GRADUAL PIPE-BEND RADIUS

Notice how the dual exhaust pipes make gradual, large-radius bends out of the head, then flow straight back to the mufflers with no abrupt angle changes. Getting the exhaust out of the engine—while still maintaining a tuned exhaust length, is the key to power, while the pipes' low mass and twin-silencer design optimize the center of mass for enhanced handling.

CLUTCH DESIGN AND MATERIALS

The clutch uses two different types of friction material. Why? The clutch can handle the increased power of the engine without being any larger. The lighter rotating weight is directly related to how fast the engine revs.

LITHIUM-IRON-PHOSPHATE BATTERY

Like the rest of the bike, the Lithium-Ion battery is both super light and high performing, weighing in at less than half the weight of a conventional lead-acid battery.

ENGINE OIL SCAVENGE PUMP

Deep in the engine, there's a special oil scavenge pump. While you may never see it, it helps keep the overall design compact.

SHARED ENGINE/GEARBOX LUBRICATION

The bike uses a shared engine/transmission oiling design. Why? Combining the two systems shaves weight and helps make the engine more compact, especially when it comes to placing the right-side cam drive and the clutch so close together.

DOUBLE-SPRAY INJECTOR SETTINGS

The bike's fuel-injection system sprays twice per intake cycle. That helps increase fuel atomization without adding the weight or complexity of a second injector. The better fuel atomization means more power in the midrange and on over rev—you'll feel it the first time you ride.

CAM PROFILES

With input directly from our HRC factory team, we've changed the intake cam profiles to work with the new valves. You should feel better bottom end torque and power, while still retaining the bike's screaming peak.

THROTTLE BODY

With a 44 mm venturi designed to speed up airflow, the bike's throttle body really reaps benefits at low engine operating speeds. You get power and snap, right now.

HIGH REDLINE

With our DOHC design and the big-bore/short-stroke engine, the rev limit is very impressive. The same goes for peak power and peak torque.

SHOWA SPRING FORK

The 49 mm Showa fork features a conventional spring design that helps increase the front-suspension precision, handling and feel. The 39 mm piston diameter and 25 mm rod diameter helps to ensure a plush feel and supple action.

LOW REAR SHOCK MOUNT

With its low rear shock mount on the frame, the bike benefits from both a lower center of gravity as well as chassis stability.

SHORT SWINGARM

The short swingarm helps make it light, and also helps give the bike better rear-wheel traction, important considering how much power you have on tap. The swingarms design focuses on improved stability and handling, while still reducing the bike's unsprung mass.

260 MM FRONT BRAKE

The large front-brake disc measures a whopping 260 mm, with improved rear brakes that perform like never before. You get great brake feel and a pattern that cuts down on weight. Front and rear brake-disc guards are part of the package too.

SMOOTH STYLING

Blending the body panels does more than just make the bike look smooth, fast, and stylish. It also helps you move around on the bike while riding. Nothing wrong with smooth, fast, and stylish, though.

REAR SUBFRAME

The subframe uses extruded rear members that produce a 20-percent reduction in weight versus the previous generation. Since that weight comes off the top of the bike, it also contributes to the low center of gravity.

TITANIUM FUEL TANK

Every gram counts on a bike in the 250 class, which is why the CRF250R has a titanium fuel tank. Light and strong, it's also thinner than our previous plastic unit, freeing up more space and helping to centralize fuel mass.†

DUNLOP® MX3S TIRES

Developed using the latest Dunlop® "block-on-block" design technology, the CRF250R's MX3S tires give excellent feedback and are a perfect complement to the CRF250R's frame and suspension.†

FLAT SEAT/TANK JUNCTION

The bike features a flat seat/tank junction, including a titanium fuel tank. The exceptional ergonomics make it easier to move forward and back on the bike, increasing your control.†

BLACK RIMS

They may not help you go faster, but the black D.I.D® rims sure look good.

† 250R specific feature

250RX

HIGH-CAPACITY RESIN FUEL TANK

For longer cross country loops, the CRF250RX features a bigger fuel tank that holds a full 8.5 litres.

DUNLOP® GEOMAX TIRES

The CRF250RX's Dunlop® Geomax tires are specially designed for cross country use. The AT81 tires are spec'd at 90/90-21 for the front and 110/100-18 for the rear. You read that right: the CRF250RX rolls on an 18-inch rear wheel.

SIDESTAND

Real cross country bikes need a sidestand, and we've given the CRF250RX a great one. Tucked up high and out of the way, this forged alloy piece is just another example of how the CRF250RX gets it right.

CRF450R SERIES FEATURES

CHAMPIONSHIP PEDIGREE

Re-imagined, re-engineered, re-energized. Making the 2020 MX1 Triple Crown winning 450 even better required major changes to just about every component, with the result being a bike that's now lighter, more powerful, better handling, and even easier to ride fast.

FEEL THE POWER

A significant increase in peak power above 5,000 RPM is accompanied by stronger low-RPM torque feel, thanks to a larger airbox feeding a new 46 mm throttle body that improves intake efficiency and makes active use of latent vaporization in the inlet ports. The injector angle has been radically changed—to 60 degrees from 30 degrees—spraying fuel all the way back to the butterfly valve, which improves intake efficiency, throttle feel, and cooling of the charge.

HYDRAULIC CLUTCH

Big power requires a strong clutch, and for 2021 this bike delivers with a smooth-operating hydraulic clutch. Ditching the cable improves consistency, control and feel at the lever (lever pull is now 10% lighter). Clutch capacity has been increased by 27% with an extra plate and spring to help maximize power transfer and durability. To top it off, clutch slip has been reduced by 85% at peak power.

ELECTRIC START

Kickstarting? Maybe if you're riding in the vintage class, but not here. By ditching the kickstarter entirely, our engineers were able to make a light bike even lighter. Electric starters and lithium-ion batteries are so light and so good that putting them on a bike like this is a win/win combination. And winning is what a CRF450R-series bike is all about.

HONDA SELECTABLE TORQUE CONTROL (HSTC)

Honda Selectable Torque Control (HSTC) works to minimize rear wheel spin (thus wasted forward drive) and maximize traction. It maintains feel at the throttle while managing power — ignition timing and the PGM-FI system are adjusted when the rate of change of RPM goes over a set amount. With three settings plus off to choose from, you can have your bike dialed no matter how much traction there is.

HRC LAUNCH CONTROL

We're talking about a special ECU program here: push the button to select the mode, hold the throttle open, release the clutch, and the bike will do the rest, launching you into the first turn with a big advantage.

ENGINE MODE SELECT BUTTON

This simple handlebar-mounted button lets you dial in engine power delivery character with a push of your thumb. Choose between Standard, Smooth and Aggressive, depending on track conditions.

STRONG, LIGHTWEIGHT FRAME

With direct input from the HRC race team, the twin-spar aluminium frame has been thoroughly revised for 2021 to reduce weight and to elevate every aspect of its cornering ability. Thanks to narrower main spars and a redesigned subframe, it is significantly lighter than its predecessor. Chassis dynamics are also new — while torsional rigidity is maintained, lateral rigidity has been reduced by 20% to help increase corner speed, traction, and steering accuracy. The aluminium swingarm has a new rigidity balance tuned to match the frame, with narrower arms and pivot point, plus a revised Pro-Link® ratio.

OVAL EXHAUST PORTS

Big changes to the 450 cc Unicam engine's exhaust ports. As with the CBR1000RR-R Fireblade, their exit is oval rather than round in shape for improved efficiency, and the twin exhaust design of the previous model has been replaced by a single downpipe and muffler, saving a full 1.24 kg (2.7 lb.). The downpipe also tucks in 74 mm closer to the centre line, improving rider ergonomics.

RACE-PROVEN SUSPENSION

Fully adjustable, the 49 mm Showa USD coil-spring fork is a version of the Showa 'factory' fork supplied to race teams in the Japanese championship. For smoother cornering performance, the fork has been revalved, stroke lengthened by 5 mm, and the axle clamps' rigidity increased. The Showa rear shock's main piston valve has been enlarged for faster response and improved bump absorption; its spring also uses one of the world's lightest steels, saving 200 grams.

LIGHT AND ERGONOMIC

The seat is now shorter, lighter, and 10 mm lower at the rear to aid freedom of movement. It's also much easier to remove and install. Overall, the bike is slimmer by 70 mm to make it feel and act even more nimble.

RAZOR-SHARP CORNERING

Under the development theme of Razor-Sharp Cornering, the CRF450R is 3 lb. lighter thanks mainly to a revised frame and subframe. The new frame and swingarm's rigidity balance, combined with tighter chassis geometry and suspension changes, all help to create optimal cornering performance. And that leads to faster lap times for the CRF450R/CRF450RWE.

CRF 450R

WORKS EDITION 450RWE



IMPROVED PERFORMANCE

Want improved motorcross performance and exclusivity? The CRF450RWE gives you all the awesome power and handling of the CRF450R, plus a whole bunch of top-shelf upgrades such as a special hand-ported cylinder head, black D.I.D.® DirtStar LT-X rims, a new, exclusive Yoshimura® exhaust system with titanium header, a Hinson clutch, Twin Air air filter, titanium nitride-coated lower fork legs and shock shaft, an RK gold chain, special ECU settings, a factory-spec gripper seat, and more.

HAND-PORTED CYLINDER HEAD

To help squeeze out maximum power, the CRF450RWE's cylinder head is hand ported — just like the factory race engines. An exclusive Yoshimura® exhaust system including a titanium header designed specifically for the CRF450RWE works in tandem with the porting to help maximize power.

SPECIAL ECU SETTINGS

The ECU is the brains of a race bike, and the CRF450RWE has special ECU settings that give it an additional edge over the competition.

FACTORY REPLICA

Titanium nitride-coated lower fork legs, black D.I.D.® LT-X rims, HRC graphics, factory-spec gripper seat... The CRF450RWE is built for speed, and for looking good on the podium.

CRF 450RX



ULTIMATE OFF-ROAD DESIGN

Under the development theme of The Ultimate Off-Road Weapon, the CRF450RX is 5 lb. lighter thanks mainly to a revised frame and subframe. The new frame and swingarm's rigidity balance, combined with tighter chassis geometry and suspension changes, all help to create optimal cornering performance.

IMPROVED HANDLING

To suit a wider range of conditions and help with comfort over longer rides, damping and spring rates of both front and rear suspension have been improved for 2021, and are unique to the CRF450RX.

HIGH-CAPACITY RESIN FUEL TANK

For longer cross-country loops, the CRF450RX features a bigger fuel tank that holds a full 8 litres.

NEW HAND GUARDS

When the going gets extra tough, you'll appreciate the new hand guards added to the CRF450RX.



	CRF150R EXPERT	CRF250R	CRF450R	CRF450RWE	CRF250RX	CRF450RX
ENGINE TYPE	Liquid-cooled single-cylinder 4-stroke	Liquid-cooled single-cylinder 4-stroke	Liquid-cooled single-cylinder 4-stroke	Liquid-cooled single-cylinder 4-stroke	Liquid-cooled single-cylinder 4-stroke	Liquid-cooled single-cylinder 4-stroke
DISPLACEMENT	150 cc	249 cc	450 cc	450 cc	249 cc	450 cc
BORE & STROKE	66 mm x 43.7 mm	79.0 mm x 50.9 mm	96 mm x 62.1 mm	96 mm x 62.1 mm	79.0 mm x 50.9 mm	96 mm x 62.1 mm
COMPRESSION RATIO	11.7:1	13.9:1	13.5:1	13.5:1	13.9:1	13.5:1
VALVE TRAIN	Unicam, four-valves	DOHC, four-valves	Unicam, four-valves	Unicam, four-valves	DOHC, four-valves	Unicam, four-valves
FUEL DELIVERY	Keihin 32 mm flat-slide carb with throttle position sensor	PGM-FI electronic fuel injection with 44 mm throttle body	PGM-FI electronic fuel injection with 46 mm throttle body	PGM-FI electronic fuel injection with 46 mm throttle body	PGM-FI electronic fuel injection with 44 mm throttle body	PGM-FI electronic fuel injection with 46 mm throttle body
TRANSMISSION	Close-ratio five-speed	Close-ratio five-speed	Close-ratio five-speed	Close-ratio five-speed	Close-ratio five-speed	Close-ratio five-speed
FINAL DRIVE	#420 O-ring-sealed chain; 15T/56T	#520 sealed chain; 13T/48T	#520 sealed chain; 13T/49T	#520 sealed chain; 13/49T	#520 sealed chain; 13T/48T	#520 sealed chain; 13/50T
FRONT SUSPENSION	37 mm inverted Showa leading-axle telescopic fork with adjustable compression and rebound damping; 241 mm (9.5 in.) travel	49 mm fully adjustable leading-axle inverted telescopic Showa SPG coil spring fork; 268 mm (10.6 in.) travel	Showa 49mm telescopic inverted coil spring with rebound and compression damping adjustability. 310 mm (12.2 in.) travel.	Showa 49mm telescopic inverted coil spring with rebound and compression damping adjustability. 310 mm (12.2 in.) travel. (Titanium Nitride-coated lower fork legs)	49 mm fully adjustable leading-axle inverted telescopic Showa SPG coil spring fork; 268 mm (10.6 in.) travel	Showa 49mm telescopic inverted coil spring with rebound and compression damping adjustability. 310 mm (12.2 in.) travel.
REAR SUSPENSION	Pro-Link® fully adjustable Showa single shock; 282 mm (11.1 in.) travel	Pro-Link® Showa single shock with adjustable spring preload, rebound and compression damping adjustability; 317 mm (12.5 in.) travel	Pro-Link® Showa single shock with adjustable spring preload, rebound damping adjustability, and compression damping adjustment separated into low-speed and high-speed; 315 mm (12.4 in.) travel	Pro-Link® Showa single shock with adjustable spring preload, rebound damping adjustability, and compression damping adjustment separated into low-speed and high-speed; 315 mm (12.4 in.) travel. (Titanium Nitride-coated shock shaft)	Pro-Link® Showa single shock with adjustable spring preload, rebound and compression damping adjustability; 317 mm (12.5 in.) travel	Pro-Link® Showa single shock with adjustable spring preload, rebound damping adjustability, and compression damping adjustment separated into low-speed and high-speed; 313 mm (12.3 in.) travel
TIRES	Front: 70/100-19 Rear: 90/100-16	Front: 80/100-21 Rear: 100/90-19	Front: 80/100-21 Rear: 120/80-19	Front: 80/100-21 Rear: 120/80-19	Front: 90/90-21 Rear: 110/100-18	Front: 90/90-21 Rear: 120/90-18
BRAKES	Front: 220 mm disc with single-piston caliper Rear: 190 mm disc with single-piston caliper	Front: 260 mm disc with dual-piston caliper Rear: 240 mm disc with single-piston caliper	Front: 260 mm disc with dual-piston caliper Rear: 240 mm disc	Front: 260 mm disc with dual-piston caliper Rear: 240 mm disc with single piston caliper	Front: 260 mm disc with dual-piston caliper Rear: 240 mm disc with single-piston caliper	Front: 260 mm disc with dual-piston caliper Rear: 240 mm disc with single piston caliper
GROUND CLEARANCE	336 mm (13.2 in.)	327 mm (12.9 in.)	336 mm (13.2 in.)	336 mm (13.2 in.)	329 mm (13.0 in.)	336 mm (13.2 in.)
SEAT HEIGHT	866 mm (34.1 in.)	957 mm (37.7 in.)	965 mm (38 in.)	965 mm (38 in.)	961 mm (37.8 in.)	965 mm (38 in.)
WHEELBASE	1,285 mm (50.6 in.)	1,486 mm (58.5 in.)	1,481 mm (58.3 in.)	1,481 mm (58.3 in.)	1,486 mm (58.5 in.)	1,481mm (58.3 in.)
CURB WEIGHT*	84.4 kg (186 lb.)	108 kg (238 lb.)	111kg (244 lb.)	111 kg (244 lb.)	111 kg (245 lb.)	114 kg (251 lb.)
FUEL CAPACITY	4.3 litres	6.3 litres	6.3 litres	6.3 litres	8.5 litres	8 litres
COLOUR	Extreme Red					

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*including required fluids and full tank of gas—ready to ride

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Why Honda?

Our nature is to move forward. It's what drives us to pursue new ideas; always striving to remain at the forefront of innovation and performance. True craftsmanship is the result of expertise and passion coming together to create something that looks, feels and functions in a way that showcases uncompromising attention to detail. Extensive testing and fine-tuning drives every stage of our engineering process so the end result is optimized for the most thrilling and comfortable experience possible. Honda strives to offer optimal performance through every product we develop, from grassroots to pinnacle; from the track to the street; from dirt to concrete. We build products for those who truly desire proven performance without sacrificing the reliability that comes with the Honda name.

A dirt road winding through a landscape with mountains in the background, marked by a red and white striped banner.

FPO FSC