

2015 CRF450R

COMPETITION SERIES



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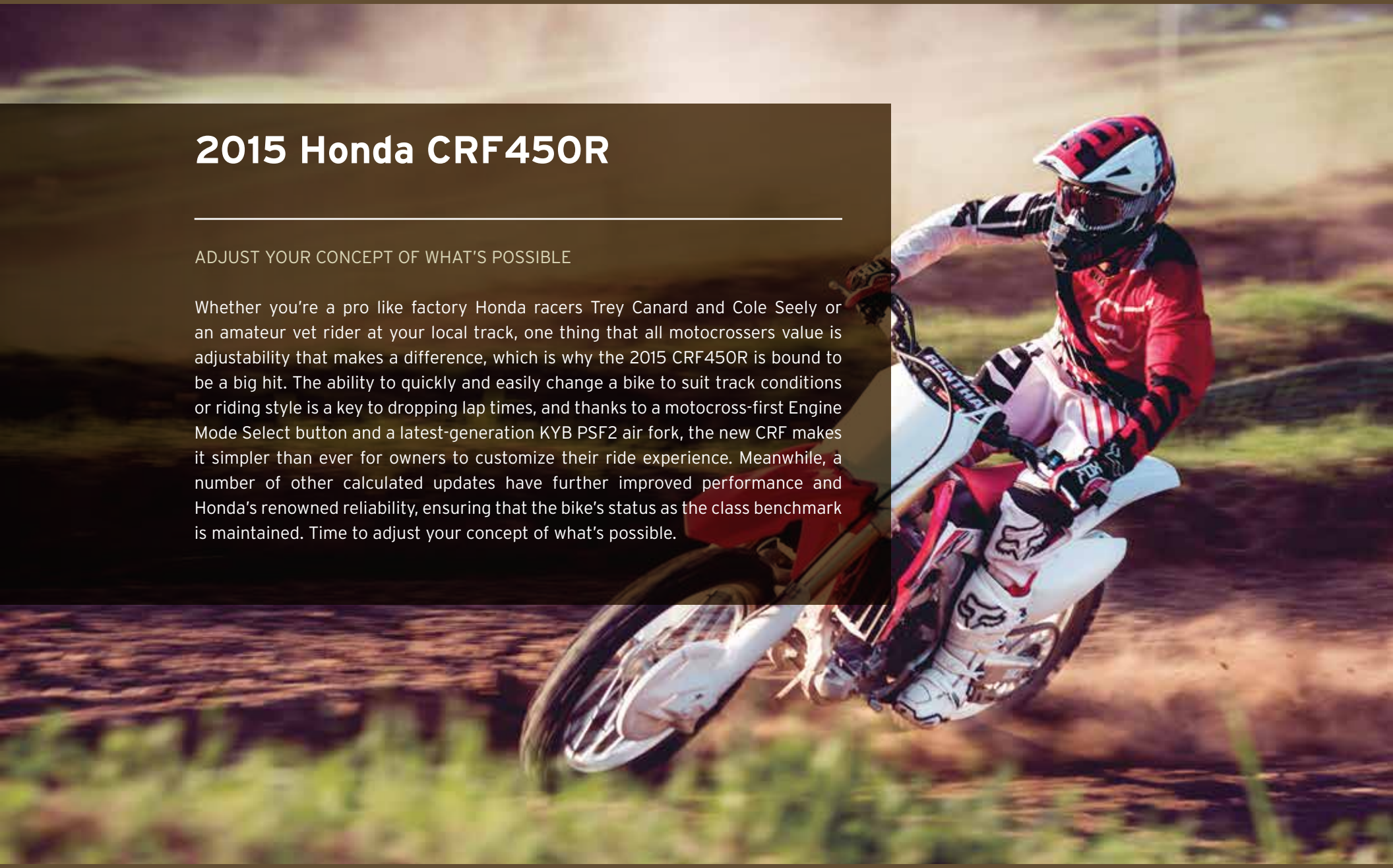
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2015 Honda CRF450R

ADJUST YOUR CONCEPT OF WHAT'S POSSIBLE

Whether you're a pro like factory Honda racers Trey Canard and Cole Seely or an amateur vet rider at your local track, one thing that all motocrossers value is adjustability that makes a difference, which is why the 2015 CRF450R is bound to be a big hit. The ability to quickly and easily change a bike to suit track conditions or riding style is a key to dropping lap times, and thanks to a motocross-first Engine Mode Select button and a latest-generation KYB PSF2 air fork, the new CRF makes it simpler than ever for owners to customize their ride experience. Meanwhile, a number of other calculated updates have further improved performance and Honda's renowned reliability, ensuring that the bike's status as the class benchmark is maintained. Time to adjust your concept of what's possible.



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Engineering Spotlight

WITH THE 2015 HONDA CRF450R, CHANGING POWER CURVES IS ACCOMPLISHED WITH THE PRESS OF A BUTTON

Simultaneous with the advent of electronic fuel injected motocross bikes (2009, in the case of the Honda CRF450R) was the possibility for tuners to change the engine's power curve. Until now, such adjustments necessitated connecting a computer via a special adapter, but with the 2015 CRF450R, actuating different power curves is as simple as pressing a handlebar-mounted, three-way Engine Mode Select button (EMS)—an industry first for motocross machines.



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IN STOCK FORM, THE CRF COMES WITH THREE DIFFERENT EFI/IGNITION MAPS: STANDARD (MODE 1), SMOOTH (MODE 2) AND AGGRESSIVE (MODE 3).

The most common situation for selecting mode 2 would be when traction is limited and superior throttle control is most useful, while mode 3 could be chosen if soil is loamy and traction plentiful. To switch between modes, press the EMS button (located next to the throttle) and hold for about a second (throttle must be closed and the engine idling). The number of flashes emitted by the button's blue LED corresponds to the selected mode, so getting a reminder is as simple as giving the button a quick push.

For many riders, the three basic ECU map options will be plenty, but there are some who will want further customization. "You can change the fuel map and also the ignition-timing map," says HRA Senior Engineer Hide Hanawa. "If a customer buys an aftermarket exhaust, it's easy to adjust for that." While the standard mode can't be altered, modes 2 and 3 can be reworked via laptop computer and an available HRC® fuel-injection setting tool (customers who own last year's tool only need update their software). And of course once the modes have been modified, actuating them is easy with the EMS button. Never before has experimenting with EFI mapping been so user-friendly.



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Editorial Narratives & Assets

STORYLINES AND TOOLS

SOMETHING IN THE AIR: IMPROVEMENTS TO KYB'S PNEUMATIC FORK, SIMPLIFIED ADJUSTMENT HEADLINE THE CRF450R'S SUSPENSION UPDATES

Ever since outfitting the 2013 CRF450R with KYB's Pneumatic Spring Fork (PSF), Honda has been at the forefront of the current air-suspension wave. For 2015, that trend continues, with the 450 coming standard with KYB's latest-generation 48mm PSF2, which offers more suspension-adjustment options (including four-way independent damping adjustment) that are simple to engage. "The internal structure is completely different for 2015," explains KYB technician Kaz Chiba. "Now the fork has a self-lubricating, open-bath system, which makes damping action smoother. In addition, the fork is even lighter than on the 2014 bike."

One of the main advantages of air-sprung suspension has always been reduced mass, thanks to the elimination of metal coil springs. That means less weight for the damping system to contend with whenever the stanchions change direction (frequent on rough motocross tracks!). With less unsprung weight, the front tire is on the ground more often, increasing rider control.
Another important attribute of the PSF is increased (and easier) adjustability. "With an air spring, it's possible to change spring rates without changing any parts," Chiba says. Of course, it has always been feasible to compensate for rider weight and track conditions by swapping out coil springs or adjusting preload, but in practice, some owners were dissuaded by the expense and complexity. With the CRF450R, changing the fork's spring rate is as simple as altering the unit's air pressure, and since a standard Schrader valve is used, the operation can be done with a basic air pump and pressure gauge—as straightforward (and affordable) as changing tire pressure.



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For 2015, that ease of adjustability has been extended beyond the spring rate to the damping. "Because the cylinder is larger, there's more damping control," Chiba says. In addition, the newest PSF has clickers for no fewer than four damping adjustments: high- and low-speed for both compression and rebound. For simplicity's sake, both compression adjustments are on the left side, while the rebound clickers are on the right, and all are conveniently located at the top of the fork legs.



OTHER CHARACTERISTICS OF THE KYB PSF2 SYSTEM:

- Redesigned 32mm cartridge is in the conventional, upright position, resulting in half-pound weight savings over previous KYB PSF
- Self-lubricating system utilizes a check valve that distributes working fluid between the inner and outer sections during the compression stroke, keeping the bearing well-lubricated and reducing the risk of air leakage
- Friction is reduced by approximately 10% and operability improved through a design that uses internal-charged pressure, eliminating the sealing material

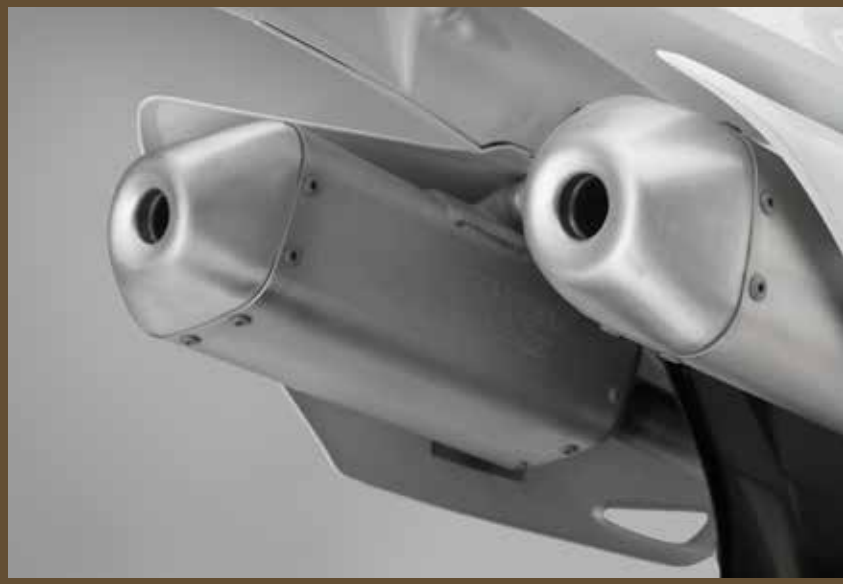
Meanwhile, the rear suspension has been upgraded as well, with the KYB shock now featuring both high- and low-speed compression damping for 2015 (in addition to the single rebound-damping adjustment). All adjustment clickers are located at the top of the shock body and are easily accessed via a cutout in the right side panel.

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THE COMPLETE PACKAGE: UPDATES ABOUND ON HONDA'S CRF450R

While the big news for the 2015 Honda CRF450R is the EMS switch and updated suspension, Honda didn't stop there. Several other updates improve the ride experience in ways that are easily overlooked:





POWER PLANT

The 449cc engine offers improved performance throughout its expanded power spectrum. There's a new four-valve Unicam cylinder head and exhaust routing (the header pipe now exits to the right and no longer winds around the frame's down tube), along with a larger internal diameter for the twin tail pipes. As a result, the engine delivers more top-end power and over-rev, while an increase in flywheel mass helps to maintain predictable low-end torque and make the engine less prone to stalling. Fuel-injection settings have been updated as well, while new radiators boost engine cooling. A new heat treatment of the piston increases strength and durability, and new Nickel Chrome Molybdenum transmission gears (10% stronger than the Steel Chrome Molybdenum parts they replace, with no weight penalty) add to Honda's legendary reliability.

PACKAGING

The exhaust system is now shorter and closer to the bike's center of mass, resulting in improved handling.

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BRAKES

To slow the CRF450R, Honda added wave-style brake rotors front and rear. The front rotor is also 20 millimeters larger (260mm) for better stopping power and Honda's signature linear feel.

CONTROLS

Updated clutch-cable routing minimizes engine heat on the cable and decreases the force required to pull the lever, something that every rider will appreciate lap in, lap out. A new throttle-return spring also has a lighter pull.

TIRES

Derived from AMA Supercross experience, Dunlop's new-generation Geomax MX52 tires come stock on the CRF450R. The rear features patented block-on-block technology that offers improved traction, while the front also boasts better cornering feel.

STYLING

Accompanying the CRF450R's technical improvements are aesthetic updates, including a Renthal handlebar pad, new CRF graphics on the radiator shrouds and a number of blacked-out accents, including the rear-brake disc guard, rear-caliper guard and radiator grills.

Often it's the small things that can make or break a rider's experience, and the new CRF450R is more than the sum of its parts. It offers better out-of-the-crate performance and more trackside adjustment than ever before. Better power, shifting and braking culminate in an unrivaled ride experience.









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Building Character

PROFILE: HONDA R&D TEST RIDER TIMMY WEIGAND



During his 14-year career as a professional racer, Timmy Weigand has done it all, competing in various disciplines in both the U.S. and Australia. Apart from his two years Down Under, the Southern California native has ridden Hondas his entire career, whether as a privateer supercross/motocrosser, a member of the Moto XXX motocross team, or with the Johnny Campbell Racing off-road squad, which dominated Baja for years. "I've been with Honda forever," says Weigand, who often purchased his bikes through the manufacturer's race-support program.

"I NEVER REALLY TRIED TO GO FIND ANYTHING ELSE. HONDAS ARE GREAT FOR PRIVATEERS BECAUSE THEY LAST FOREVER!"

That loyalty paid off after Weigand finally decided to retire from racing at the end of last season. "I made a list of companies that I had longtime relationships with and thought it might be nice to work for," Weigand says.

Weigand was hired on a contractual basis as a test rider for Honda R&D, where he works with HRA Senior Engineer Hidenori Hanawa. In the case of the 2015 CRF motocrossers, that meant putting in long hours at motocross tracks across Southern California, helping to determine the final suspension and power-curve settings. For future CRF year models, he'll be involved earlier in the development process as well.

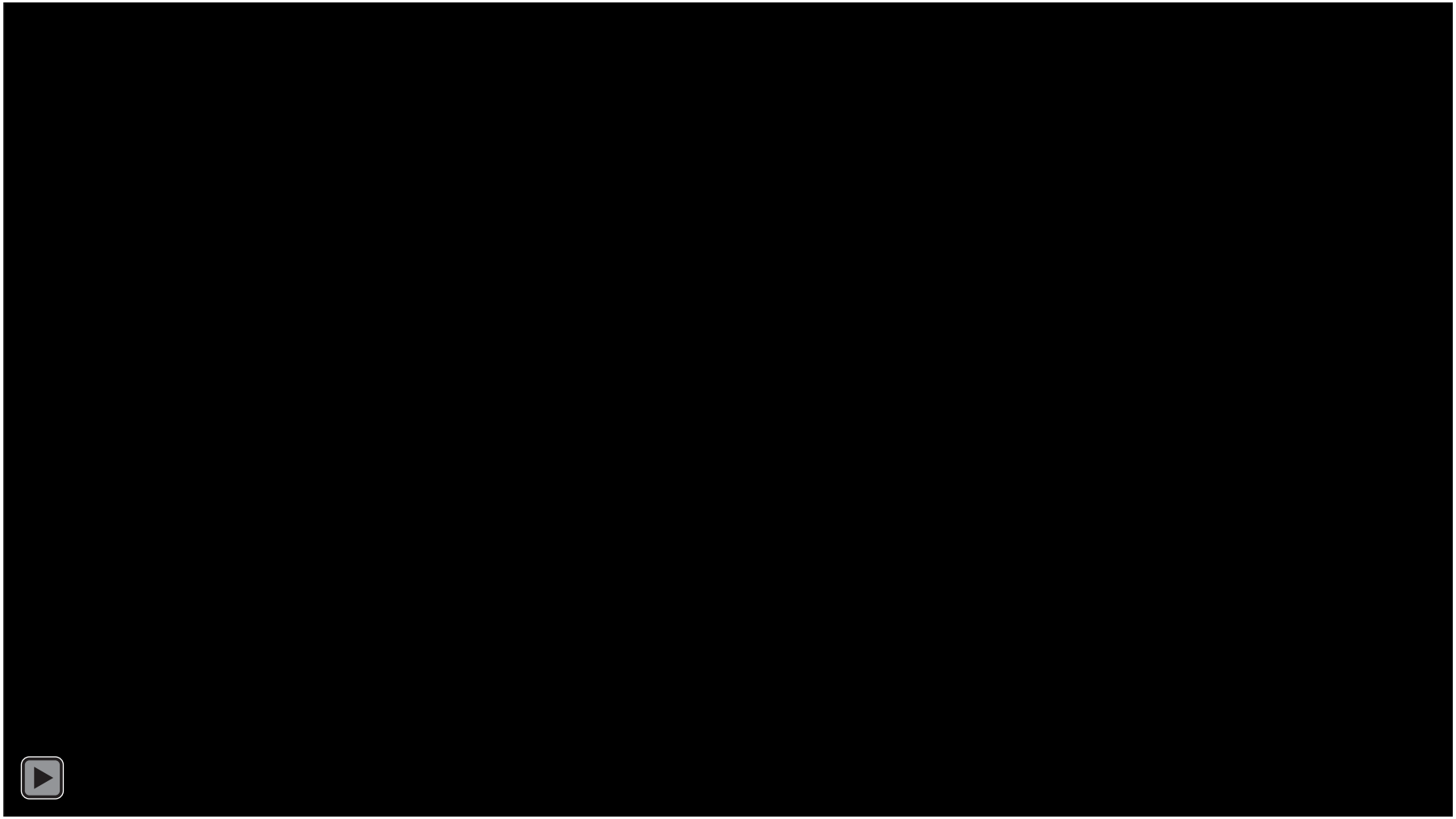
Weigand's new position means he's one of the first riders to try new Honda models, and he liked the CRF450R immediately. "The first thing I noticed was that the motor is stronger—you feel it right away," he says.

"THE CHANGES TO THE POWER CURVE LET YOU GET TO THE TOP OF THE POWER RANGE QUICKER. THAT'S BETTER FOR AVERAGE RIDERS BECAUSE THEY'RE NOT ALWAYS ABLE TO MAINTAIN MOMENTUM IN THE CORNERS, SO THEY TEND TO ACCELERATE FROM THE BOTTOM QUITE OFTEN. I ALSO THINK HAVING THE DIFFERENT POWER MODES IS COOL BECAUSE THE BIKE OFFERS SOMETHING FOR EVERYBODY. BEYOND THE ENGINE, I LIKE THAT THE SUSPENSION ADJUSTERS ARE MORE SENSITIVE, SO CUSTOMERS WILL DEFINITELY BE ABLE TO FEEL IT EVEN IF THEY JUST MOVE THEM A CLICK OR TWO. THE OVERSIZE FRONT DISC ADDS STOPPING POWER AND BETTER FEEL TO THE BRAKE."

Weigand's new stint as a Honda employee is off to a good start, with early signs indicating it could last even longer than his stretch as a Honda racer.

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Video TECH TALK



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