
SHOEI

HONDA/CT RACING 350R

Bringing back an old favorite

By the staff of *Dirt Wheels*
Photos by Pat Carrigan

❑ It's been well over two decades since the last Honda 250R rolled off the assembly line in Japan. It has been almost 10 years since the 250R saw a major racing win in the U.S. However, the used ATV market is full of fairly clean 250Rs for sale. The legendary two-stroke is a do-it-all high-performance machine. Its lightweight and strong two-stroke power makes it a great duner or solid trail machine. Its precise cornering ability and reliability reputation made it a great racer on any type of track.

In the 10 to 15 years from when Honda stopped building the 250 to when four-strokes became commonplace, the ATV aftermarket thrived, building replacement parts and reinventing components to keep this machine alive. Those parts and companies are still around. Although their focus may be on modern technology, you can still find them selling parts and maintaining 250Rs for generations to come.

That leads us to our current project machine, a complete restoration of an old 250R that some of the *Dirt Wheels* crew used to take to the races. This former race quad has been stored for over five years and now returns as an awesome trail and dune quad.

CT RACING MOTOR

In the early 1990s, CT Racing designed and developed the ProX cylinder. This product, along with the rest of the aftermarket, kept the 250R as a competitive race machine. The ProX cylinder has proven itself as a reliable addition to the 250R. The race wins and championship totals of racers using a ProX Cylinder around the world are endless. To date, there have been over 6000 ProX cylinders produced. Not only is the ProX cylinder CT Racing developed a good replacement for hard-to-find stock cylinders, it was built with some of the same performance aspects Honda was putting into their top-of-the-line dirt bike engines, such as boost ports, O-ring heads, triple exhaust passages and increased water capacity. In 1995 the interchangeable dome head was developed to go along with the ProX cylinder, and in 2012, a complete billet head was added.

CT Racing offers seven versions of the ProX cylinder: 250cc, 310cc, 330cc, 350cc, 370cc, 350cc Power Valve and 370cc Power Valve. The 310 is the bolt-on package if your bottom end is solid and you just want to kick the horsepower—that's a great way to go. The 250 and 310 are the only packages that don't need the cases modified to accept the larger cylinder sleeve.

The 330 is the do-everything motor, for MX, XC, trail and sand. The 350cc package we used is a little more aggressive while still having an MX-style power curve, which is also great for sand use. This surgery cost us $1995. The good thing about older two-stroke engines like this is, if all you needed to do is freshen up the motor, you could do it for under $500 for piston rings and a cylinder bore.

The 370 is a 350 on steroids. It's basically the 350 with a 4mm stroker crank added. The Power Valve version adds a valve that blocks off the top of the port at low rpm, and then pops open as throttle and rpm are added; this simply widens the power curve.

CT offers packages that include splitting the cases, rebuilding or replacing the cranks, main bearings and seals, along with a full bottom-end inspection. They will sell any of the parts separately, even top ends unported for the do-it-yourself builder.

For our build, being a West Coast quad with lots of sand areas to ride, we went with the 350 motor (non-Power Valve) package. To get the motor built, all we had to do was remove it from the frame and ship it off for our complete motor. (They have shipping instructions with photos showing you how to package and ship on *www.ctracing.com*.) The complete motor package includes the motor work, a CT Racing pipe and silencer, Delta V-Force 3 reed cage, intake manifold, Keihin carburetor

Most two-stoke ATVs were way easier to work on than modern quads. A basic set of tools and a little common sense would help you completely tear apart a machine in hours. Top-end rebuilds are simple and a lot less expensive.

CT Racing still offers motor packages for the legendary Honda 250R in sizes ranging from 250cc to 370cc. At CTRacing.com, you can find exact details on how to ship your old motor to them in California for any service.

No electric starter here or dead-battery fears. A solid kick will get this machine up and running easily with significant weight savings.

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and a throttle cable. CT offers many upgrades to the package, such as painting or polishing the motor, and has many add-on trinkets for bling, like billet water-pump covers, ignition covers, case savers and Hinson quick-change clutch covers. CT also supplied the CFM Performance ATV airbox ($109.95) and Twin Air foam air filter ($65) for this project.

SKELETON

Back when we first built this 1989 250R racer, we sourced an Arens chassis. At that time, Arens frames were considered the strongest out there. They were just as sought after as a Roll Lobo or Leagers Pro Trax frame.

The Arens product is a robotic Mig-welded, tubular, chromoly frame with a removable subframe. According to Arens, robotic Mig welding offers a stronger weld than Tig, with better control over heat and penetration. The frame utilizes almost all of the stock components, with the exception of the rear brake pedal. It takes an aluminum CR250 bike brake lever. CT has 20 of the frames on order, and they should be available not long after you read this. These days the frame and subframe sell for $1795.

For suspension, our project machine utilizes a set of JB Racing fully adjustable A-arms and a steel tubular swingarm. The stock Honda frame and swingarm are constructed entirely of square tubing, which was okay for general trail riding and the sand dunes, but it would not hold up to racing abuse. Our racer featured top-of-the-line Elka shocks, which may not have been as good as the Ohlins, Custom Axis and PEP shocks of the day that the top pros were using. They were half the price, though, and performed great for us. This set of eight-year-old shocks is still holding up well today. Originally these shocks set us back about $1700. Rebuilding an older set like this now can range from $250–$400.

Out back, a Dura Blue X33 axle slides into a stock-replacement bearing carrier ($180) provided by Lonestar Racing. This is the strongest axle Dura Blue makes, and the hubs are included and bolt in place providing two different-width options. Price for this drive package is $795. The axle was also equipped with Dura Blue's anti-fade brake-hub assembly. To actually turn the axle, a pair of Renthal sprockets

With new ITP tires, the CT motor and Arens chassis, we transformed this classic into a perfect-working machine that would keep up with any stock machine built today.

were installed (fronts are $29.95 and rears are $64.95) and a brand-new ATV Z-ring chain for $96.18. All four corners of this Honda were equipped with ITP Holeshot tires and aluminum wheels.

When we first built this Honda, we equipped it with a host of brand-new 400EX components, like front hubs, spindles ($100), front-brake master cylinder ($300) and calipers ($250). For top-of-the-line pads, rotors and steel-braided lines, we went with all-Galfer equipment, front and rear.

NEW BODYWORK

Every time we see a used 250R, the first thing we focus on is the bodywork. If you can find one with the white or red plastics in mint condition, you can bet that the rest of the machine is next to perfect. The stock bodywork got brittle and was the first item to show its age. Luckily, replacement plastic is one of those items readily available back then and still today. For this project we installed a set of Maier Manufacturing front and rear fenders in a deep red. They are made with modern-day plastic, so they look and hold up better than the old stock equipment.

Our old seat base and foam were still in good shape, but in dire need of a cover. Quad Tech did the stitching for $155 and brought a little modern styling to the old saddle. Quad Tech can re-cover and re-foam almost any sport quad seat, with a ton of colors to choose from. The seat and rear fenders are held on by an aluminum OMF quick-release seat latch. The $54.95 OMF product and rear ($198.82) and front ($217.36) Maier bodywork can all be sourced through James Lucky ([800] 233-2637), another company who is instrumental in keeping every 250R alive.

Up front, Carbon Works outfitted the nosepiece with carbon fiber, as well as the radiator scoops. Remember, this older machine does not use an electric fan, so getting as much airflow as possible directed toward the radiator is crucial. The Carbon Works stuff is light, strong, fits well and is cosmetically correct. Carbon Works offers other carbon fiber trinkets for select classic and modern-day sport quads.

CONTROLS

Finally, we had to make sure the controls on this restoration were updated and working well. To do that, we installed a set of Renthal R4 Fat Bars ($90) front and center. On the bars we clamped ASV Pro-series F3 folding levers, which are trick and operate better than original equipment. The clutch lever sells for $115, and the brake goes for $75. For the throttle assembly, this duner received a twist setup from Motion Pro, which included grips, for a total cost of $65.

RETRO-RIDE REVIEW

To get this ride fired up, you have to do some old-fashion legwork. It has a forward-operating kickstarter; it only takes a couple of kicks to get it running. The good thing about this CT engine is that you can change dome heads if you want to lower or raise the compression for certain performance applications or increased reliability.

Good-running two-stroke engines rev quick and have a crisp tone. The CT engine is no different. With a twist of the Motion Pro throttle, the revs reach peak performance instantly and drop just as quick when you let go.

In only a few feet we were reminded of how good the old Honda 250R works. First of all, it's light and you

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The stock suspension on the Honda 250R was better than the competition, but by 1990, the top racers were all using aftermarket equipment to get an advantage. The JB Racing/Elka combo installed on this project is still better than some stock front ends found today.

Back in the day the trick was to get the suspension to work well enough to soften the ride and not destroy the frame and swingarm. Arens and JB Racing came up with super-strong components that could hold up to any abuse.

can feel it. It floats across the sand or skates over dirt with ease. Wheelspin is wild. If you like to fishtail and throw roost all over your riding buddies, nothing does it better than a strong 250R. And if you want the rear end to hook up and race down the trail or

CONTACTS

CT Racing.....*www.ctracing.com*
Twin Air.....*www.twinair.com*
CFM ..*www.cfmperformanceatv.com*
James Lucky *www.jlatvproducts.com*, 800-233-2637
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ITP.....*www.itptires.com*
ASV .....*www.asvinventions.com*
Motion Pro .....*www.motionpro.com*
Dura Blue .....*www.durablue.com*, 949-770-5533
Renthal .....*www.renthal.com*, 877-736-8425
Lonestar Racing ..*www.lsracing.com*

Maier Manufacturing still makes bodywork for old Hondas, Suzukis and Yamahas. For this project we trimmed the front fenders a little to give the machine a racier look.

ride an incredible wheelie, this machine can do that too. The 350cc powerplant is not only nearly 50 percent more powerful than stock, it has a broader, more usable powerband than before.

Recently we rode this quad in the hardpacked desert and in the dunes. It performs great in both terrains. On the trails, the package is quick and a blast to ride. Its light weight helps it ride over the rough stuff like it's not even there. We can see why Chris Borich was so resistant to make the switch to four-strokes in the GNCC series. He could probably still win on a machine this good. You do a little more shifting on this machine than you would on a four-stroke, but going through the gears is fun, and it keeps you on your toes.

In the dunes the CT motor had no problem hooking up with paddles or knobbies. We could smoke any stock 450 four-stroke in a straight-line drag race. The 250 would hook up and rocket forward if you were hard on the throttle. Over the bumps it was no contest, either. Its light weight (around 335 pounds) allowed you to skip over the whoops or float over the choppy ruts. The Elka shocks contributed to the smooth ride as well.

If you wanted to launch the machine, more fun was in store. As light as the two-stroke feels on the ground, it's even more so in the air. Manipulating it in the air was a matter of thinking about where you wanted it to go and it would. There's nothing we couldn't do on this machine. It would wheelie, carve bowls and throw a roost upon request.

We once again discovered the fun you can have on a properly running two-stroke. While we have tested a Suzuki Quadzilla 500, an LT250 and a Yamaha Banshee recently, the Honda 250R is still the best. The fresh big-bore motor from CT Racing made this machine just as fast as any modern four-stroke. The ITP tires provided traction for all types of terrain, and

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On the new Renthal handlebars we installed a Motion Pro twist throttle and a pair of Pro-series F3 folding levers from ASV Inventions.

Quad Tech makes custom covers for all modern and some classic sport quads. They have a gripper top and strong side panels that will hold up to aggressive riding and the test of time.

For this project we replaced an old stock plastic airbox with a clean aluminum unit from CM Performance. Inside a Twin Air foam filter replaced an older single-layer foam unit.

the Elka and JB suspension provided a very plush and controllable ride.

If you can acquire a used 250R that was an old racer, or maybe something closer to original condition, it is pretty easy to make it as good as our project machine. About the only extra effort you have to give a machine like this is, you have to mix the oil and gas. You can have just as much fun on a 20-year-old machine with only a small investment. We love modern technology too, but for as long as we can, we will hang on to a little bit of the past. ❑