

CHRISTINI AWD

If we weren't convinced before, this second prototype nails it

It has only been about a year since we first slung a leg over the first Christini AWD (All Wheel Drive) prototype. The bike was, and is, a Honda CRF 450X with a heavily modified frame and a “transfer case” chain-driven off the countershaft sprocket that mechanically drives the front wheel. We rode that original bike on a rainy, muddy day in a small patch of woods in Delaware and came away mightily impressed with what the bike would do. The only trouble was, we didn't get enough time on the bike.

You know how you can really learn what a bike feels like if you can spend time on it? Especially on a long trail ride or in an enduro, where you have to cover unfamiliar terrain quickly and rely on automatic response to get you over whatever obstacles are thrown your way. Well, that's what we needed to do with the Christini bike, but there was no time for anything like that, and besides, it was their only prototype. Still, in that brief ride we could see that they were on to something. The only question remaining was what would the bike feel like on a long ride? Would the AWD system be transparent to the rider, or would there be situations where it would actually get in the way?

For 12 months, those questions chewed away at our psyche, until the news came down that Christini was building another prototype, this one a Honda 250X. Now we were excited. The 450 was a fine test-bed, but in truth a big-displacement bike is easier to ride in marginal conditions—you have actual horsepower to get you out of trouble, if you know how to use it. Putting the AWD system on a 250 would be the acid test, because on a 250 you have to rely on wheelspin and momentum in places that a 450 will walk right up. Serious hillclimbs come to mind, but would that prove to be the only AWD advantage?

Our great fortune here at Trail Rider is that Christini AWD is only about 20 miles away from here, in Philadelphia. Their offices are very accessible to us, and our riding terrain is very close for them. So when the 250X was finally done, they brought it out here for an hour or two spin on the secret test track across the street, just to make sure everything worked. And of course we got to ride it.

The cool thing about the new 250 AWD is that they built it with an engage/disengage switch on the handlebars, identical to their bicycles. So, with the switch, you can turn the system off, practically one turn to the next. Doing so graphically illustrates the difference between having the front wheel driving or not, so we played around with that for a while on the grass track. Of course it worked better with the front wheel driving, but we still wanted more time. Little did we know it was to become available.

Christini felt confident enough in their system that they were ready to move on to “destructive testing,” in other words releasing the bike to knuckleheads like us to see if anything would break under continuous abuse. Unfortunately we weren't first on the list, but Jeff Botsford from Moto Jockey had been helping them out all along, and he was scheduled to ride it at the Foggy Mountain enduro in Blain, PA. After that, if all worked well, he'd be riding it in the two-day Quarry Run dual sport, and at that event we were promised saddle time.

Jeff did good at the Foggy Mountain, as a matter of fact he did great, bettering his usual finishing position in the A Four-Stroke class. More importantly, Jeff reported that the bike worked flawlessly, and would be ready to go for the Quarry Run the next weekend.

Now on Saturday we didn't manage to hook up. Too much fun riding and no real concrete plan; but on Sunday we pledged to start out together and get the “work” part of the day over with right off. As if you could call this work.



Steve Christini digs a couple small trenches in the driveway with the new 250X AWD prototype. This one we actually got to log some real trail time on, and we left the experience very impressed. Below: Carving a trail at the Quarry Run.



One thing I noticed immediately with the AWD bike was the great difference between having the system on and off. With the AWD disengaged, the Christini bike felt like a stock Honda 250X, which is a good thing. And, at first the AWD bike felt no different on the smooth dirt roads we started out on. That is also a good thing, because what that means to us is that there is no discernable power loss from having the AWD system engaged. Christini told us that he had booked dyno time with Fast by Ferraci, and in testing the bike engaged and disengaged they had calculated that the sum total of power loss from the AWD system was only one tenth of one horsepower. No wonder the system felt “transparent” on the bike!

However, from the smooth roads we graduated to the trails, with the AWD system engaged, and made discovery number two: Normal one-wheel-drive bikes spend all their time pushing the front wheel around. There may be times, especially on a marbly-hill startup, where you can feel this phenomenon on your normal bike and recognize it for what

it is—you just can't get going until the drive from the rear wheel succeeds in getting the front wheel to start turning and running in the right line. Until you get both wheels rolling at a compatible speed, you're just pushing the front wheel against everything in its way, and in that mode the normal bike wants to push the front tire out of line, making steering really difficult. That's why we all start out so awkwardly in slippery conditions.

The AWD bike, on the other hand, just bites and moves forward immediately. We got stopped on a small uphill when someone ahead of us bailed and blocked the

250

line, stopping about ten guys on the slope. You know the situation. When the hill finally started clearing everybody started spinning the rear wheel and dog paddling to get the front end turning and the bike moving forward. Some guys simply couldn't get going, and either sat and dug a hole or got off and pushed, or worked on turning the bike around and heading back down the hill to take another clean shot at it.

On the AWD bike, this hill was akin to a religious experience. Here was the drill: Thumb the starter and get the bike running, drop it in first and ease the clutch out. With both wheels driving the bike bolted forward and walked right up the hill. Didn't matter if we wanted to lug it or spin it, either way the two-wheel drive



The new 250 uses the same fairly uncomplicated mechanical system to drive the front wheel. It only robs 1/10 of one horsepower, and appears to only add just a few pounds to the bike.

Honda clawed up that hill like it wasn't there. Better yet, if there was stopped traffic on the hill all we had to do was steer around them. It didn't matter if they were in the best line and we had to settle for an awkward line on the edge, the bike simply tracked right around anything in the way.

Whoa. Not only didn't it matter if there was a hill in the way, it didn't matter what line you took up the hill. Thinking back to it now, it may not have even mattered if we were on the hill or not—chances are the bike would climb up through the untracked woods around the bottleneck just as easy as threading its way through. We never took the chance to test it truly off road because it just isn't right to "make a new trail," but we'll bet with a good rider on board this bike would go just about anywhere.

The other revelation came in rutted, slippery terrain

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deep in the woods. With the AWD engaged the bike tracked as sure-footed as you could imagine. It seemed impossible to get cross-rutted on the bike, because the front wheel would pull through any little problem. Then crank on the little lever to shut the system off and there it was, a return of the feeling of pushing the front wheel around, and having to constantly correct between where you wanted the front end to point and where the rear wheel wanted to point it. This is the way we always ride, but until now, until we've ridden a bike with power to the front wheel, we've never really been aware of it.

We could only come to one conclusion at the end of our hour and a half on the Christini AWD: We need to own one of these bikes. This is it. This is the wave of the future. Once AWD bikes become available off road riding will never be the same. The AWD system makes all the difficult riding easier, and makes the marginal riding safer and more sure-footed. And the fact that it can do this without robbing a ton of horsepower is incredible.

There are differences in the AWD riding style that some will call a negative at first. Manly, with the front wheel being driven, riding by "steering the rear wheel" isn't really possible, at least not in the way we're used to. Because every time you spin the rear wheel the front wheel bites hard and tugs you wherever it's pointed. In practical terms, what this means is you aim the front wheel for the base of a tree, say, and then gas it to kick the back end in line and scoot between the trees. Normally what happens is you spin the back end over, which actually pushes the front wheel up against the base of the tree, and then you



Playing around in the woods and forcing the AWD to hang up on a log. In actual use, the bike is over the log and gone before you think about it.

berm off and the back end follows. With the AWD system as soon as you gas it the front end bites and claws forward, so now your intended line is all wrong, and you hit the inside tree with your handlebars. The thing is, though, that we adapted to this in the first couple of miles on the bike. All it demands is a slight change in your technique to allow for the front wheel traction, which you've never had before. In our minds it's a small trade-off. The next bike we own just has to be all wheel drive.

So what happens from here? Well, Steve Christini and his crew have tried for the past two years to license the system to existing manufacturers, with no

real success. So, it appears now that Christini will begin offering kits to convert your existing bike to AWD. It seems a given that the Honda 450 and 250 four-strokes will be among the first kits to be available, since that's what exists now in prototype form, but don't be surprised to see KTM frame kits available next, since there are so many KTMs out in the woods.

The way the Christini AWD system works will demand a modified frame, and how they are going to handle that hasn't been decided yet. Very probably there will be an "exchange" of your frame for the AWD-modified frame, or a straight conversion of your existing frame. The perimeter-framed Hondas will demand a new specially-built fuel tank as well, possibly not an issue on center-backbone frames like the KTM. Either way, here's the bottom line: don't expect a Christini AWD kit to be cheap. This is going to be an exclusive item that only the dedicated and deep-of-pocket are going to go

for at first. If and when a major manufacturer starts offering a production version of this system we expect it to be much more reasonable in cost, since the actual elements of the system are common and relatively inexpensive. We'll tell you one more thing: Ride it and you will want it.

To learn more about the Christini AWD project, see their web site at www.christini.com, or contact them at info@christini.com. Their phone number is 215-351-9895 but we'll warn you right now—don't expect them to be ready to build you a kit for a little while yet. But if you're really interested, get in touch with them. And you'll get in line right behind us. ↑

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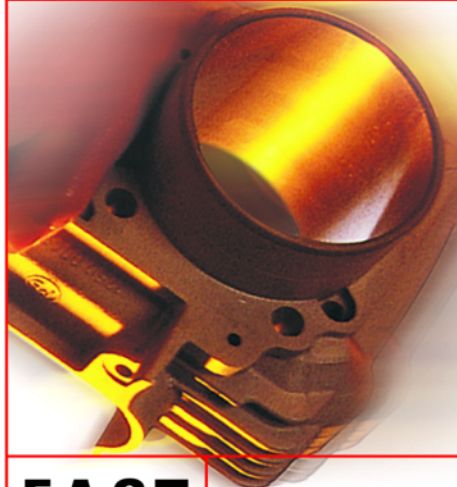


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