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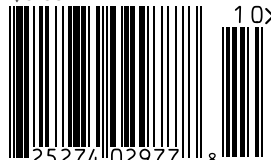


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## MORE 2021s!

### 38 HONDA, 2021

Honda couldn't decide if they should redesign the CRF450R or keep the existing version around for another year. So, they did both. The 450 is new for '21, and the 2020 is still available.

### 44 KAWASAKI, 2021

If you like what Kawasaki engineers did to the KX450 in 2019, you'll love what they did to the KX250 for 2021. And, off-road riders will have something green for the year to come.

### 48 YAMAHA, 2021

Yamaha keeps doing what Yamaha does best. The YZ450F is back, the YZ250F has received attention and the company continues with the largest off-road line from Japan.

### 52 BETA GOES MOTO!

Ever wonder why Beta offered only dual-sport bikes and off-road two-strokes? So did we! Now, the Italian company has a motocross model as well.

## BIKES

### 56 TM EN250i 2T

You would think the world's most sophisticated two-stroke off-road bike would come from some huge company with a huge budget. Not so. The TM EN250i 2T is as advanced as they come.

### 62 LONG-TERM BETA 300RR

We've been riding the wheels off of our 2020 Beta 300RR and finally gave it a work-over. How does it work with a SmartCarb and suspension attention?

### 72 ZACH BELL'S KX250

Two years ago, Zach Bell was crowned the fastest two-stroke rider in the world. Now, he's coming back to reclaim his title with an old friend.

### 92 SHERCO 300FST TRIALS

America's best trials rider must know a thing or two about the sport. Pat Smage has been riding the Sherco 300 for years, and it was high time we explored the bike for ourselves.

### 98 KTM SX-E 5 ELECTRIC

Eventually, electric motorcycles will probably go mainstream in our world. KTM is on board with that long-range plan, but for now, the concept is starting small.

## ADVENTURE

### 78 KTM 790 ADVENTURE R

It's been called the world's best adventure bike for off-road riders. Who called it that? We did, a little over a year ago. Now, we're just confirming our results.

### 84 THE GOODS

Things to do: Cross North America. Check. Keep riding until you hit an ocean. Check. Be well-equipped. Better check here.

**ON THE COVER:** The floodgates have opened on 2021! We have new bikes from five different makers inside, as well as the best of 2020 that you can buy right now.

**ON THIS PAGE:** Ryan Koch allows the Beta 300RR to do what it likes best. Photo by Tom Webb.



## FEATURES

### 68 THE HUSKY AUTO LIVES!

In the late '80s one of the greatest technological achievements in the motorcycle world was abandoned. At least one enthusiast couldn't let the Husky Auto die.

### 86 THE FIRST SHOOTOUT

If you look back at the first issue of Dirt Bike magazine, you'll find there was an unanswered question. It only took us half a century to declare a winner in the first shootout.

## DEPARTMENTS

### 8 SADDLE

### 10 WEBSITE

### 22 ROOST

### 32 RAW FILES

### 34 RIDERS WRITE

### 66 SUBSCRIPTION INFO

### 102 PRODUCT TEST: SMARTCARB SC2

### 105 PRODUCT TEST: JUST1 GOGGLES

### 106 NEW PRODUCTS

### 108 MR. KNOW-IT-ALL

### 114 BACK IN THE DAY

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**FIRST LOOK**  
**2021**  
**BETA**  
**MX &**  
**DUAL-SPORT**  
**MODELS**

Beta makes some  
bold moves  
for the future

➤ Yes, Beta has entered the motocross market, and it is getting a lot of attention with its introduction of the brand-new 300RX. The first thing that jumps out at you is the difference in styling compared to the off-road models. Neon-red plastics, blue-and-white graphics, blue Excel rims, Kenda Washougal tires, and anodized-black aluminum hubs and triple clamps make the 300RX stand out. This machine has been tailored specifically for motocross use and is powered by an electric-start, liquid-cooled, single-cylinder, 293.1cc motor, with a six-speed transmission which is fed by a Keihin PWK 38mm carburetor. The new 300RX is not oil injected like the 300RR off-road model.

The 300RX has a suggested retail cost of \$9199.





# BETA, 2021

Beta's 2021 dual-sport lineup includes the 500RR-S, 430RR-S, 390RR-S and 350RR-S.



*Fuel injection, hydraulic clutch, electric start with kick-start backup, black rims, Sachs suspension components and DOT-approved Michelin Enduro tires also come standard on the RR-S models.*



*The entire line received a number of updates for 2021, surprisingly with no price increases.*



Chassis-wise, the 300RX features the same steel frame as the off-road models, but has a 19-inch rear wheel, 48mm Kayaba AOS closed-cartridge fork up front, and an aluminum-body Sachs shock out back. Overall, the suspension spring rate and valving are set up stiffer than the off-road models. Beta's off-road two-strokes were announced earlier in the season and can be seen at [www.dirtbikemagazine.com](http://www.dirtbikemagazine.com). □



*Multifunction Voyager GPS systems are standard on all dual-sport models.*





OFF-ROAD TEST

# BETA 300RR LONG-HAUL REPORT

> It is a fact that the 300cc two-stroke off-road machine is the most popular displacement for enduro, hard enduro and riders looking for a versatile trail machine. Beta came out of the blocks with an all-new 300RR machine for 2020. The carbureted, oil-injected and counterbalanced engine mates to a chassis, and handling updates have it mentioned in the same breath as the potent KTM and Husqvarna 300s. At this point we have over 125 hours on our 300RR. The following is a long-term report from the test team that has been trying to beat it up and a list of the mods we have installed on the bike.

## ENGINE

The powerplant is all new this year and now features a counterbalanced engine to fight off vibration. This motor has always been a short-shifting, low-end torque type of powerband since the bike was introduced in 2013. It craves extreme enduro conditions. It's tough to stall this bike, and it's evident that the 300RR borrows some of its

traits from its trials siblings. For faster desert conditions, the motor lacks over-rev and top-end hit.

The transmission and the overall gear ratios inside of the 300RR are well-spaced, with a first gear that's plenty low for trials-like situations. Second through fifth gears are spread out nicely with no major gaps, which makes using third or fourth gear on the trail common. Sixth gear is like an

overdrive and lets your inner desert racer come to life.

Jetting came well-suited for our 2,500–6,000-foot riding zones. Not once has the carburetor been removed from the bike. Only minor adjustments to the air screw were needed for elevation changes. Fuel consumption was the only downside of the carburetor. If we were lugging around in the woods, we could get 50–60 miles before we hit the reserve. In our desert zones

with sand, that went down to about 30–40 miles before hitting reserve.

We continue to love the oil injection on these new two-strokes. The electronic oil pump metering how much oil the bike is consuming based on the throttle position makes a huge difference in how clean the bike runs at low rpm. It remains very crisp, and there is no "loading up." The oil tank is accessed by removing the push-button seat, which we love for its ease of removal and installation. One thing that could use improvement is the seat

cover, as it's slippery, making it quite difficult trying to stay put on the seat on hill-climbs.

The cooling system has performed flawlessly on our hard enduro days. We never installed a fan on the bike and have put it through its paces in technical terrain. Not once has this bike boiled over. After all the riding, this bike never lost a drop of coolant. Another nice feature is the radiator cap. It is a screw-on-type cap normally seen on the trials line of Betas. Not having to do the normal push-down-and-twist makes removal and installation very simple.

Maintenance on the bike is pedestrian. Air-filter access is easy and quick, which is a big improvement over previous years. Still, you have to take the time to make sure it is completely lined up in the air boot. As much as we love the quick-access filter, the airbox itself is on the tight side. This makes it difficult to clean the airbox. Changing the oil on the bike is simple, and we love the transmission oil-drain-plug location. It's situated just under the clutch cover on the right side of the bike.

The digital trip meter displays the time, speed, miles, hours and even includes a screen that shows the bike's voltage so you can make sure the

*We have well over 100-hours on our Beta 300 and it's been strong and durable. With the Beta Factory Suspension services suspension and some performance mods we made her better! Ryan Koch is at the wheel.*





**BETA 300RR**

charging system is working properly. With the bike being electric start only, this is a nice feature to ensure the battery isn't losing its charge during riding.

We have done a few nighttime expeditions on the bike, and while the light will get you home, where it aims is a bit frustrating. It has a high- and low-beam switch, and the high beam is pointed at the sky, while the low beam is aimed at the front fender. It is quite difficult to do any real night riding with this light. It would be nice to be able to adjust where the light aims.

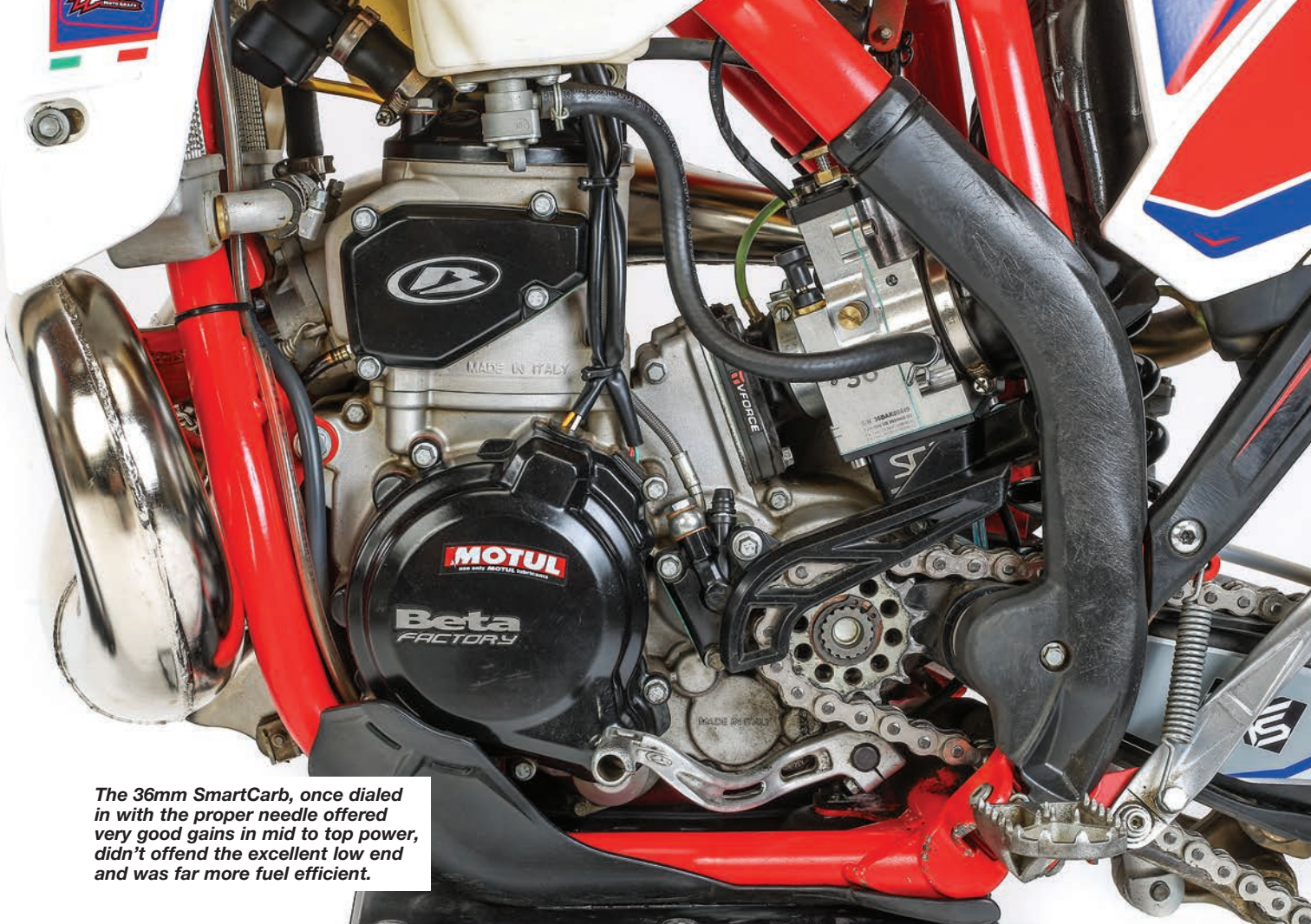
The Sachs suspension targets slower and more technical riding. During the break-in period on the bike, it was a shade stiff. Most of that vanished once the bike got more time on it. It's not really a high-speed, desert-friendly bike and lacks the range to adjust it to stay up in the stroke as the speeds increase and the terrain gets whooped out. Also, it could be plusher for the technical areas we like to ride.

### BETA FACTORY SUSPENSION

After 110 hours on the machine, we opted to use Beta's Factory Suspension Service to give the Sachs suspension a rebuild and get both ends working better. This is a great option for Beta owners. Since these

are technicians who massage the factory team riders' dampers, it just makes sense. The process is simple. Go to Beta USA's website and click on its Factory Suspension Service link. It will walk you through, step by step, and list all the options you have—from a simple suspension service to a complete re-valve and overhaul. You can purchase different springs and even complete suspension packages all together. We wanted a service and a lower spring rate for our lighter test rider. You will have boxes to check on the website for the type of riding you do—from hard enduro all the way to motocross and the conditions, dry or wet. Once you complete the suspension application, Beta will send a special suspension shipping box and return label to your home address. Expect a call from the technician to better understand your type of riding.

Beta Factory Suspension went down one spring rate both front and rear (our test rider is under 150 pounds). Beta converted the fork to have the rebound adjusters on the top and compression on the bottom, with the preload adjuster on top of the right fork. They claim a 50-percent increase in fine-tuning this way. We have to agree, as the forks feel plusher and more balanced. We set



*The 36mm SmartCarb, once dialed in with the proper needle offered very good gains in mid to top power, didn't offend the excellent low end and was far more fuel efficient.*

our bike up more for singletrack and hard enduro, and we feel a huge difference. The bike was much more planted in the rocks and in rough braking bumps. Also, the adjustment range improved hugely, as we could set it up for fast desert and endless whoops. This was a big success.

### THE SMARTCARB

During our long-term testing, we received a 36mm SC2 SmartCarb to evaluate on the 300RR. This carburetor is designed to be more efficient, much easier to tune and offers substantial performance gains. It bolted up easily, though it seemed spooky with the TPS and oil-injection ramifications, and actually made the machine hit too hard. We eventually installed a new richer needle, which smoothed out the stronger hit, was far better at dealing with elevation changes, and improved the fuel economy on the machine. For an in-depth look we have a full test on the SmartCarb on page 102.

### ODDS AND ENDS

Our compact test rider complained that the large grips prematurely fatigued his hands. We fit on Neken SFH (smooth-feeling) handlebars, which taper down on each side and use a special Neken grip. These come in varying sizes, and we choose the smallest set of SFHs. The set of grips comes with a smaller throttle tube and throttle cams for your specific bike. The grips are amazing for smaller riders. They are glue-on grips, not lock-on. It's amazing how much thinner the feel is on the handlebars. If you have small hands, this is a must-have setup. It really allows you to comfortably grip the bars and reduces arm pump significantly, since you can wrap your hands all the way around the grips. We're very happy to have tried these products and highly recommend them.

The TM Designworks products have always been favorites of ours. The rear disc guard is an easy install and does a nice job of protecting the rotor. It allows you to replace the plastic guard part if it ever gets too

beat up. The chainguides are incredibly durable and even quieted down the chain-slap noise quite a bit.

Once we gorked the stock expansion chamber, we fit on an FMF Gnarly pipe. It is thicker-gauge steel and added just a shade more bottom power in conjunction with the FMF Turbine Core 2.1 spark arrestor muffler. Stock, it's not spark legal, and for us this is a necessity. The Turbine Core 2.1 is a superb muffler. It is quiet and makes broad power.

### THE LONG-WINDING ROAD

Living with the Beta 300RR hasn't been a burden whatsoever. It seems in a garage full of bikes, this is one of the chosen few that always gets picked, regardless of the terrain we're riding. After 125 hours, the bike still feels tight. It has rewarded us with nary a mechanical belch, and with some focused mods, we have improved the handling. Overall, it is a very strong and durable machine with a penchant for tough, tight enduro work. □



*(Above) The Beta makes great trail power. The SmartCarb gave it some good increases from mid to top.*

*The Neken SFH handlebar allowed us to run smaller grips which worked for our test riders tiny digits. Acerbis hand guards offer roost protection, but little more.*