

**BREAKING DOWN THE FASTEST 250 FOUR-STROKES!
7 BIKES, 18 PAGES, 8 DYNO CHARTS & 1 WINNER**

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The 2021 TM 250X is a mix between the motocross and enduro models with an 18-inch rear wheel, oversized tank and electric starter.

THE GEAR
Jersey: Thor MX Prime Pro
Pants: Thor MX Prime Pro
Helmet: Thor MX Reflex
Goggles: Scott Prospect
Boots: Sidi Crossfire 3SR

MXA RACE TEST 2021 TM 250X TWO-STROKE

Q: FIRST AND FOREMOST, IS THE 2021 TM 250X BETTER THAN THE 2020 TM 250X?

A: The base-model 2021 TM 250X cross-country two-stroke is exactly the same as it was last year; however, if you know TM, you know that the company offers its riders lots of options when ordering motorcycles. In fact, 80 percent of TM USA's motorcycle sales are custom-ordered bikes with parts specific to the rider. The 2021 TM 250X model has one big upgrade option that's new for 2021—a six-speed transmission. TM has never had a six-speed transmission for its 250 or 300 two-strokes. It's so new, it's not even homologated yet in Europe. It was specifically introduced for off-road racing in America for 2021, and the Europeans will be able to order this option in 2022.

Q: WHAT IS THE 2021 TM 250X DESIGNED FOR?

A: The TM 250X is a purpose-built cross-country 250 two-stroke, but it doesn't come straight from the factory that way. Technically, TM makes a few different versions of its 250 two-stroke; TM makes a motocross version and an enduro version with the option of fuel injection or a carburetor. So, how did we get a cross-country version? Great question! We combined the two. And, since TM is a specialty brand that encourages its buyers to custom-order bikes, we had our TM 250X custom-made to meet our needs for off-road racing on the West Coast.

Q: HOW DID WE CROSS-BREED THE ENDURO AND MOTOCROSS BIKES?

A: Well, we started off with an enduro version, the TM 250EN, and had TM USA importer Ralf Schmidt strip off all the parts that we wouldn't need and add all the options that would make this bike into a Grand Prix racing machine. The TM 250EN enduro two-stroke is actually street-legal in many states (not California), but we didn't need the lights or speedometer. TM USA switched out the wiring harness for a motocross one and removed the speedometer, headlight, taillight and bulky light switch. TM added a standard front number plate and a kick-starter for the guys who don't like the idea of an electric-starting two-stroke (disclaimer: we never kicked it).

Then, we had two upgrades built into the bike straight from the factory: **(1)** The new six-speed transmission. **(2)** A radiator fan kit. The reason we started with a TM 250 enduro bike was because we wanted to utilize the 18-inch rear wheel, the off-road-specific suspension settings, the oversized fuel tank and the kickstand. Additionally, TM USA put Bridgestone Battlencross X30 tires on our test bike; however, they come stock with FIM-homologated Mitas tires. We also put on Neken handlebars and removed the hand guards, although both the enduro and motocross versions come stock with Reikon handlebars and C84 hand guards.

Q: HOW WAS THE POWER?

A: It was weird. With the new six-speed tranny, TM decided to use ECU mapping to detune first and second gear so that they would be ideal for tight

TM 250X TWO-STROKE

and technical trails. Second gear isn't as bad as first, but they were both toned down and not meant for motocross or Grand Prix-style tracks. Once you exit the corner and short-shift into third, the governor is lifted and the TM 250X takes off. Third and fourth are fast, and that's where we tried to stay as much as possible. Second gear was used to get through corners before shifting as fast as we could, and sixth gear was used for drag racing through the desert. We never used sixth gear on the motocross track, but it works great for long straightaways

if you're courageous enough to go that fast.

Q: HOW WAS THE NEW SIX-SPEED TRANSMISSION?

A: The transmission shouldn't take the blame for the TM 250X's unconventional power. Besides the fact that first and second gear are detuned, they are also really tall. This contributes to the ability to ride through creeks or ultra-tight rocky sections but hinders the bike's ability to get up and go. When you consid-

er that sixth gear can only be used on the fastest of fast straightaways (like 90 to 100 mph straights), the good gears (third, fourth and fifth) are bracketed by the specialty gears of first, second and sixth. In most off-road races, you're either racing an enduro-style course with an abundance of technical sections where the detuned first and second gear are nice, or you're racing on a wide-open course with fast straightaways where

sixth gear could actually be engaged. Typically, East Coast GNCC courses will be tighter and more technical and West Coast Grand Prix courses will be faster and more motocross-like. The TM 250X gearbox was designed to satisfy both styles of racing.

The six-speed gearbox is great for racers who encounter super tight and fast sections, but it's not ideal for motocross tracks or faster Grand Prix

courses. If you like to ride more motocross-style terrain, order a TM 250X with a five-speed gearbox.

Q: HOW CAN YOU IMPROVE THE POWER?

A: For faster Grand Prix off-road racing, *MXA* wanted to liven up the power so we could utilize third gear sooner. Here are three things we did to give the TM 250X a little more pep in its step:

(1) Slide. We exchanged the 6.5 slide for a 7.0 cutaway. This slide allows air to flow through quicker at the crack of the throttle. It doesn't make a difference once the throttle is wide open, but it does help when the throttle is partially cracked, allowing more air into the carburetor.

(2) Gearing. We gear it down by going from a 50-tooth rear sprocket to a 51.

(3) Silencer. We added a Pro Circuit 304 silencer (not the Pro Circuit 304R shorty silencer). It helped, too.

The power adjustments we made helped us use third gear through some corners, but not as much as you'd think. We still had to ride second through most corners and short-shift into third. Before the changes, we had a smaller window to work with, but with extra air in the carburetor, an extra tooth at the rear wheel and a new silencer boosting power, our test riders could access third easier.

Q: HOW WERE THE KYB FORKS?

A: Another cool aspect of custom-ordering your TM is it's no extra charge for TM to install the spring rate of your choice. We chose a 4.3 N/mm spring rate for the KYB forks. It was too heavy for our lighter test riders, held the forks too high in the stroke and delivered a harsh sensation. They were just the wrong spring rates for guys in the 165-pound range.

Luckily, the *MXA* wrecking crew has a wide range of test riders, and after throwing a 200-pound Vet Intermediate on the bike, we confirmed that the suspension was fine and it was only the spring rate that caused issues for the lighter guys. With the correct rider on the bike, the KYB forks were predictable but a little soft. We went four clicks in on compression and left the rebound at its stock 12-clicks-out setting.

Q: HOW WAS THE TM SHOCK?

A: The 2021 TM 250X has KYB fork components and, as with the rest

of the production models, the shock is an Italian TM component that they build themselves. Our TM 250X shock had a 46 N/mm spring rate, but, like the forks, it was too stiff for our lighter riders. Our heavier 200-pound tester was, however, able to feel comfortable right away. The off-road setting on the TM shock was plush, which is to be expected when using softer off-road valving. After testing, we ended up going firmer on the compression, and we slowed down the rebound by two clicks each to give the rear end a little more hold up. We also went in on the high-speed adjuster by a 1/4 turn to balance out the bike.

Q: HOW WAS THE ELECTRONIC POWER VALVE?

A: It was good, but the coolest aspect was learning how to reset it. Since the TM 250X has specific mapping for each gear, the servo motor is in charge of receiving data from the ECU and telling the power valve how to operate for each gear and rpm. Engine tuners can adjust the electronic power valve on the TM 250X to get more performance out of the engine, but, from time to time, the power valve needs to be reset to ensure it's working properly. The electronic servo motor pushes and pulls to open and close the power valve, but it's not an intelligent device, and it won't self-correct if it's not opening or closing all the way. The best part about resetting the electronic power valve is that you don't need a computer or any external pieces. The different plugs needed are already on the bike. Check out the TM-RacingUSA.com website for instructions.

Q: WHAT DID WE HATE?

A: The hate list.

(1) Detuned. We wish we could adjust the ECU so that first and second gear weren't detuned. For 2021, the ECU is locked.

(2) Gearing. If the first two gears are going to be detuned, third gear needs to be a little easier to access when short shifting.

(3) Fuel cap. The fuel opening is really small.

(4) Rear fender. The rear fender had a bracket underneath it to support the taillight, but it was unnecessary for our style of riding.

(5) Sprocket bolts. Why does TM need nine bolts on its rear sprocket?

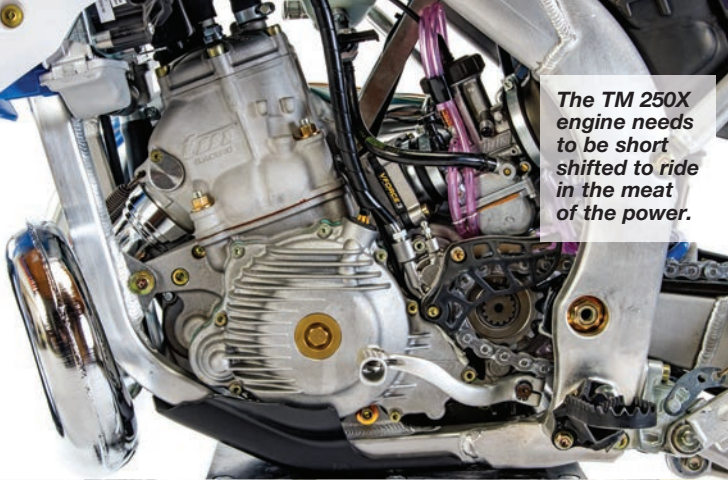
Q: WHAT DID WE LIKE?

A: The like list.

(1) Electric starting. It has the



The six-speed transmission doesn't come on the base-model TM 250; it's an upgrade that you can order when buying a bike from TM Racing.



The TM 250X engine needs to be short shifted to ride in the meat of the power.



The radiator fan kit can be added on as a pre-installed upgrade for \$264.50.



The ECU on the TM 250X is locked and cannot adjust the traction control settings for map 1 and 2.

(7) **Skid plate.** Each TM motocross and off-road model comes with a skid plate.

(8) **Air filter.** It comes stock with a Twin Air filter.

Q: WHAT DO WE REALLY THINK?

A: The MXA wrecking crew likes to test cross-country models because we hope they will enable us to race motocross one weekend and off-road the next. The 2021 TM 250X would have been a good bike for both if we had not spec'ed the six-speed gearbox. With the first two gears being detuned, the TM 250X is tailor-made to climb the steepest and slipperiest trails without stalling. And, sixth gear is configured for flying across long straightaways at supersonic speeds. The 2021 TM 250X is good for off-roading, but the six-speed tranny doesn't transition well onto the motocross track.

MXA'S 2021 TM 250X CROSS-COUNTRY TWO-STROKE SETUP SPECS

This is how we set up our 2021 TM 250X for racing. We offer it as a guide to help you find your own sweet spot.

KAYABA FORK SETTINGS

As with all TM motorcycles, you can custom-order your new bike with spring rates specific to your weight. Since the TM 250X utilizes the suspension off the TM 250 enduro model, it has softer off-road valving. For hardcore racing, we recommend this fork setup for an average rider on the 2021 TM 250X (stock clickers are in parentheses).

Spring rate: 4.3 N/mm

Compression: 8 clicks out (12 clicks out)

Rebound: 12 clicks out

Notes: We felt like the forks needed a little more hold up, so we ran 8 clicks out on compression.

TM SHOCK SETTINGS

TM motorcycles are known for riding tall in the rear, but with the softer enduro valving, we actually raised the rear end slightly. For hardcore racing, we recommend this shock setup for the 2021 TM 250X (stock clickers are in parentheses):

Spring rate: 46 N/mm

Race sag: 105mm

Hi-compression: 1 turn out (1-1/4 turns out)

Lo-compression: 10 clicks out (12 clicks out)

Rebound: 10 clicks out (12 clicks out)

Notes: We went in on the high-speed compression to balance out the bike, and we went two clicks stiffer on compression and two clicks slower on rebound to give the rear end more hold up.

2021 TM 250X JETTING

Here are MXA's recommended jetting specs (stock specs are in parentheses).

Main: 180

Pilot: 45

Needle: NOZH

Slide: 7.0 (6.5)

Clip: 2nd from top (3rd from top)

Air screw: 2 turns out

Notes: We went from a 6.5 slide to a 7.0 to get more responsive throttle coming out of the corners. It helped us get into third gear easier. □

TM 250X

option to kick it or push a button. We never kicked.

(2) **Versatile.** This bike is ready to tackle the slow, tip-toe-style trails up in the mountains, and it pulls away from the pack on long straightaways.

(3) **Customization.** This wouldn't be a TM test if we didn't mention how cool it is that you can custom-order factory edition-style motorcycles with the parts you want straight from TM in Italy.

(4) **Rear wheel.** Without having to explain ourselves, we love 18-inch rear wheels.

(5) **Fuel tank.** We're glad the 3-gallon fuel tank is translucent so we can see our fuel.

(6) **Radiator fan.** The radiator fan kit kicks on when the bike gets hot.