

race ready

Manitou's brand new Dorado

THE 2009 MANITOU DORADO IS THE THIRD ITERATION OF THE company's downhill fork, and it is the first significant new product from Manitou since Hayes acquired the brand in 2006.

The 203-millimeter air-sprung fork isn't your father's freeride Dorado, either. This beast is designed to do one thing: race. A more affordable aluminum Dorado is in the works, but right now the fork only comes in an exclusive carbon fiber version—there are fewer than 200 of the \$2,775 forks in existence, and each is hand-built in the United States.

Weight-wise, the 6.4-pound fork sits somewhere between the lightest-in-class RockShox Boxxer and the coil-sprung Fox 40. But with a carbon fiber chassis, TPC-Plus damping and the conspicuous absence of a brake arch, nothing on the market delivers the ride of the Dorado.



CHRIS LESSER

Although Dorado product manager **Nick Pye** earned his engineering degree in Florida and works for a company based in almost-as-flat Wisconsin, he cut his teeth developing suspension forks in the mountains of Southern California, where he now lives and works.

Lots of racers prefer coil springs. Why choose an air spring?

To bring the weight down, but we also feel there is an advantage compared to the coil. We're able to capture that coil-spring linearity in the first two-thirds of the fork, then get that nice ramp-up at the end.

What's the basic idea behind the TPC-Plus damper?

TPC-Plus is essentially two shimmed pistons. For the first half of the stroke, that high-speed shim stack is the only thing that's active. So for high-speed stutter bumps, you can either float through or make the damping a lot firmer so you don't fall into your travel as much. And when you displace enough oil, all your damping is forced through the TPC-Plus shim stack. But it's all based on shaft velocity. Without enough velocity, the oil will bypass the TPC-Plus—in a berm or with a big, slow g-out, for example. But if you took a big drop, you'd get a really high shaft velocity, and that's when the TPC-Plus kicks in.

What makes this a race-only fork?

In fore-aft rigidity, the Dorado is way up in stiffness. But without that brake arch, we lose a bit of torsional rigidity. But the fork is so push at the beginning, and so firm at that bottom-out, that it really sticks to the course no matter what.

Why go through the trouble of manufacturing in the United States?

We wanted this coming out of hands that are here to stay, and who understand it and ride it. It's a bigger commitment for our assemblers than just following a drawing and putting parts together. They're [also] the ones in the pits tuning the forks.

Why haven't we seen more carbon DH forks?

Carbon is a misunderstood material. Bend a paper clip and it becomes work-hardened and eventually gets so brittle it breaks. Carbon doesn't work-harden.... The ASTM [American Standard for Testing Materials] requires a fork to withstand 300 pounds in the fatigue test, and to go through 50,000 cycles. The Dorado goes to 3.5 million [cycles], and even then the failure mode we see is that the clamp bolts shear off. It's strong, it's light, it's robust—but you've got to pay for it. 

