

Santa Cruz Blur



Like most other high end suspension bike manufacturers, Santa Cruz is trying to strike a balance. Mountain bike riders want a suspension system that absorbs bumps without sacrificing pedalling efficiency. In an effort to achieve this balance between pedalling and suspension Santa Cruz went out and bought the patent for the 'Virtual Pivot Point' (VPP) from a company called Outland. Since then they have applied this design to their V10 downhill bike and more recently the Blur. The Blur is designed for trail riding and cross country racing and has 114mm (4.5inches) of wheel travel.

Tricky Links

The VPP has a triangulated rear swing arm that is attached to the main frame via two swinging linkages—one at the bottom bracket and one on the seat tube where the shock is mounted. These linkages control the path that the rear axle travels. This axle path is the key to the VPP design. As the axle moves up through the first quarter of its travel, it arcs in towards the main frame of the bike. Deeper into the travel the axle path curves back away from the main frame and continues to follow a relatively linear upward path. Overall this movement on the axle path is quite subtle, but seems to be enough to achieve the desired result.

The correct suspension set up is critical to the function of the VPP. Under the weight of the rider the suspension should sag into the first quarter of its travel. This places the wheel in the middle of the inward curve on the VPP's axle path. When the axle sits in this 'sweet spot', high pedalling torque applied through the chain will try and hold the suspension still. This aims to stop the suspension from bobbing under high pedalling loads—like when you are out of the saddle sprinting uphill.

It looks and sounds complicated and initially I was sceptical. I felt that this could be yet another design claiming to sprint like a hard tail and descend like a downhill bike. After two months of riding I have come away very impressed.

High Activity

On the trail the Blur feels like a very supple fully active suspension bike. When pedalling along in a relaxed manner, the rear Fox air shock is constantly working and absorbing the smallest of bumps. It does this regardless of your gear selection—in the saddle or out.

The tricky bit comes when you climb or sprint out of the saddle. When you sprint hard the suspension doesn't mush up and down anywhere as much as you would expect. The VPP stiffens under high pedalling loads—the harder you pedal, the stiffer it gets. On a super steep climb with good traction you can hammer on the pedals and almost believe you are on a hardtail.

This stiffening under high pedalling loads is very subtle and the suspension never locks out completely. Any significant bump will override the stiffening effect that hard pedalling has. The balance that has been achieved with the VPP is impressive. Where some other 'anti-bob' systems feel like a hardtail until you hit a bump,