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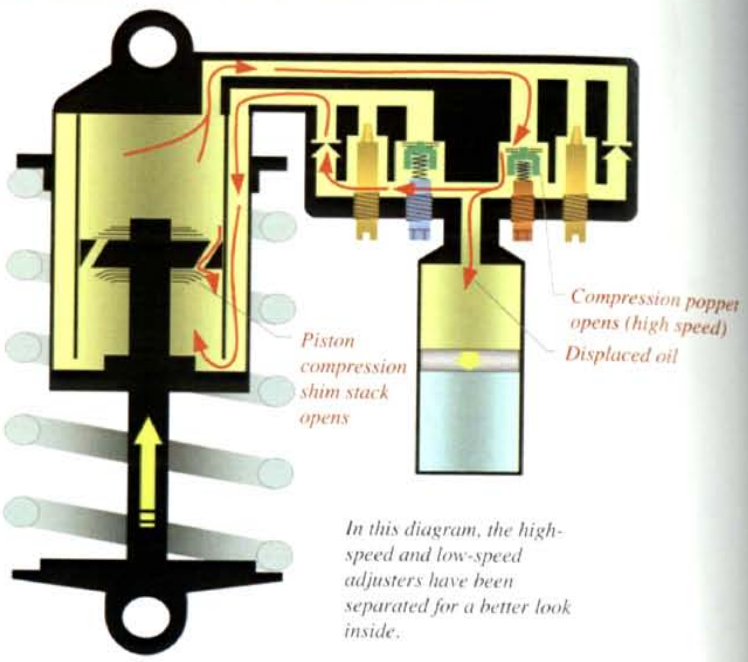
BY **MARK JORDAN**

CANE CREEK HAS TEAMED UP WITH HIGHLY REGARDED SUSPENSION PIONEER, ÖHLINS RACING AB, TO PRODUCE A REAR SHOCK THAT MAY RESET THE PERFORMANCE LEVELS IN THE DOWNHILL AND FREERIDE MARKET. CALLED THE DOUBLE BARREL DUE TO ITS TWIN TUBE DESIGN, THE SHOCK BORROWS TECHNOLOGY FROM ÖHLINS TOP-OF-THE-LINE RACING SHOCK, OFFERING EXCEPTIONAL ADJUSTABILITY AND CONTROL.



Cane Creek's Double Barrel uses technology from Öhlins Racing AB and has separate high-speed and low-speed compression and rebound damping adjustments.

High-Speed Compression Stroke (arrows dictate oil flow)



In this diagram, the high-speed and low-speed adjusters have been separated for a better look inside.

THE DESIGN

The Double Barrel shock uses a twin tube design that circulates oil between the inner and outer tubes through adjustable compression and rebound circuits. Cane Creek's damping system is unique because the twin tube design circulates oil continuously through the valving in a looped circuit, as opposed to a conventional shock's design where oil only circulates back and forth through the main piston. The main piston in the Double Barrel is heavily shimmed and will only open to compensate for hard impacts. Since this design forces a large amount of oil through the circuits, it creates an extremely wide range of adjustment. In Öhlins' original design that is used in many types of high-end auto and motorcycle racing, the piston is solid so that it pushes all of the oil through the circuits, allowing for the maximum damping control with the adjusters. Noting that shaft speeds are significantly higher for mountain bike shocks than auto racing, Cane Creek decided to use a shim stack design on the main piston for performance and safety issues.

The Double Barrel offers four types of adjustments that are fully independent: Low- and high-speed rebound and low- and high-speed compression. One-way check valves regulate the oil movement so that it routes through the proper circuit, effectively separating the compression and rebound adjustments to only affect the damping during the appropriate compression and rebound phases. While the compression and rebound circuits separately regulate opposing movements of the shock, they use the same adjuster design. Low-speed oil flow is controlled with bleed valves by opening and closing an orifice. Around the outside of the low-speed adjuster sits the high-speed adjuster. A spring-loaded valve called a poppet valve regulates the high-speed damping. Adjusting the spring preload will regulate the characteristics of the high-speed damping. This makes the high-speed adjustment "speed sensitive," meaning that it will open according to the velocity of oil flow.

THE RIDE

The Double Barrel has a feel unlike any other shock. While the parking lot test implies that the shock is extremely over damped, what it really reveals is the control that the shock has over oil flow. The low-speed damping rates are adjusted with bleed valves that regulate orifices to limit oil flow, making it easy to check on the low-speed damping. However, the high-speed poppet valves are almost entirely regulated by the movement of the oil, meaning the valves only bypass oil when they are forced open, which is something that is difficult to feel in a parking lot.

The Double Barrel has amazing damping control and an exceptionally large adjustment range. The shock is able to accommodate just about any compression or rebound setting just by turning the adjusters. The speed sensitive aspect of the damping provides a stable, controlled feel at all times that is supportive while cornering and picks up square-edged impacts extremely well. Although the transitions are seamless, the damping can be broken down into three main categories. The low-speed compression works with the low-speed rebound to reduce suspension movement generated from pedaling. The high-speed rebound and compression have a progressive feel that gobbles up medium to large impacts. The third aspect is the shim stack on the main piston that helps take the edge off extremely hard impacts, ensuring that the shock will never spike.

THE VERDICT

With Cane Creek borrowing proven technology from Öhlins, it is no surprise that the Double Barrel is a great performer. The four adjustments offer excellent control over the main phases of damping and the compression circuits provide incredible impact absorption. Although the Double Barrel carries a high price tag at $650 with a steel spring and $850 with a titanium spring, it has the ability to take suspension control to a level never seen before in mountain biking.

For more information go to ***canecreek.com***

