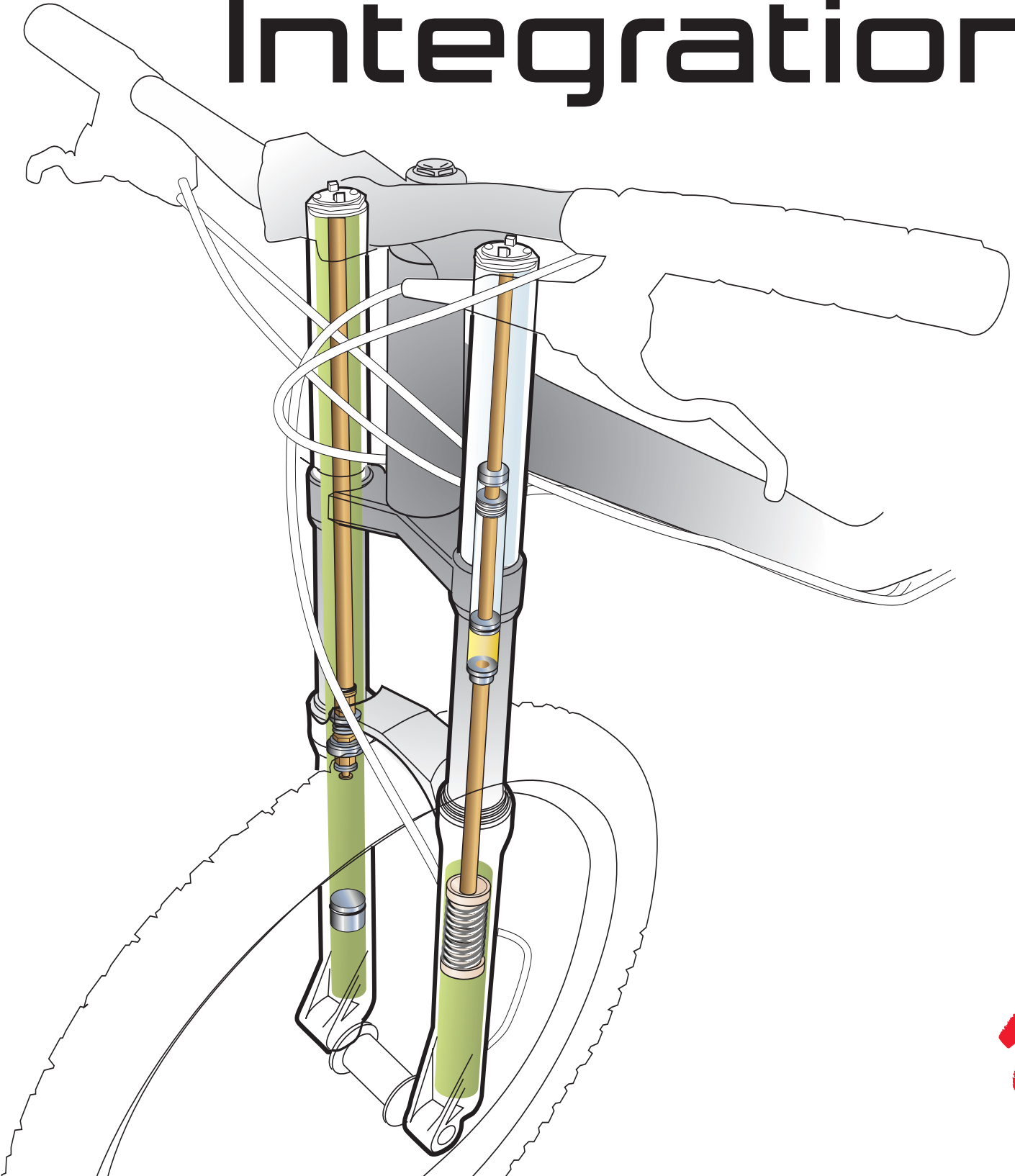


Total Suspension Integration



THE BRAIN BEHIND OUR BRAIN

A Word from Mike McAndrews (a.k.a 'Mick'), the Man Behind our Line of Integrated Suspension Components Including the FlowControl Brain.

The simple way to explain the benefits of the FutureShock fork and AFR shocks my team and I have developed is to tell you straight that these suspension components, when ridden in the frames they were designed in conjunction with, will provide you with more control and efficiency than anything else on the market. You'll steer more precisely, ride through rough terrain with more control and pedal more efficiently. We accomplished this by tirelessly innovating the chassis, springs and dampers of the fork and shocks and by developing them in conjunction with the frames that they're a part of.

The FutureShock Fork and AFR shocks will provide you with more control and efficiency than anything else on the market.

I've spent the better part of my life working hard to enable riders on two wheels (Motocross and mountain bikes) to ride with more control through tuning and advancing suspension technology. After being a Motocross race tuner for top pros like Jeff Ward & Bob Hannah, I started my own motorcycle suspension tuning company. My vision was to give privateers the same sweet, custom tuned performance as the pros. My childhood friend, Paul Turner would often talk about bicycle suspension and eventually started the pioneering company RockShox. I was still in the Motocross world when Paul got his start, but I later joined RockShox working for 6 years as the head of R&D. Eventually I came to Specialized, headed up the engineering department and initiated Brain Technology. I moved around a little after that, working for Fox Racing Shox and teaming back up with Turner at Maverick, but now I'm back with a good crew at Specialized.

Whether it was helping Ward win a championship or my neighbor get to the bottom of our local singletrack faster,

I've always felt a fundamental calling to help all types of riders get more out of every ride. That's why I came back to Specialized. Here I can work with the best people in the world, a group with a proven track record of taking dreams and turning them into reality.

My guys and I are focused on suspension and we work closely with the bike engineers and designers at Specialized on a common goal: to advance a specific kind of riding through appropriate technology. No bike brand in the world other than Specialized can properly develop all the elements of a suspension bike. By developing the chassis and suspension together, Specialized can control the entire ride. That's why I came back: here my suspension work will make the biggest difference in the ride and the life of a rider.

When I came back to Specialized I told Founder and President Mike Sinyard that I was going to make this chapter of my career the very best ever. I've been around for a long time, but I'm more motivated than ever and have the team and tools to do my best work ever.

At Specialized I am culminating all my experience into the development of forks and shocks that are integrated into frames as a part of a whole so that riders like you can have the best ride of your life.

So go take one for a ride, and let us know if we have succeeded!



Mike McAndrews,
Engineer, Specialized Bicycles



Mick today in the Specialized Suspension Lab; with Champion Moto-Cross racer Jeff Ward (middle photo); with other Kawasaki factory mechanics (right photo).

Mick's work paying off: Sauser and Killeen take #1 and #2 at the 2006 World Cup at Mont Ste. Anne using Mick's new rear shock!

Specialized Suspension 2007: Total Integration

Adding proprietary forks and shocks to our time-tested FSR suspension makes for the most integrated, most controlled ride available. Pursuing our vision to be the Best Cycling Brand in the World means that we must strive to make each rider's time on a bike better. To do that we must continue to innovate and develop bikes and equipment that better enable riders to have the experience they want. The more control we have over the design and development of

each part of a bike, the greater the impact we can have on each person's ride. This desire to deliver the best, most purpose-specific ride is what led us to develop our own, fully integrated suspension components. By developing custom suspension as an integral part of a complete bike, our 2007 Enduro SL, Stumpjumper FSR and Epic bikes, serve their intended experiences better than any other bikes in the world.

Our FutureShock Fork and AFR Shock (Active Functional Response) Rear Shocks Provide:

MAXIMUM CONTROL

- Optimal Bump Force Management
- Travel and Impact Matching
- Unsurpassed Steering Precision
- Terrain Specific Damping

UNSURPASSED EFFICIENCY

- Light Weight
- Terrain Specific Damping
- No Pedal Interference

2007 Enduro SL Pro with
FutureShock E150 fork and AFR
rear shock





UNDERSTANDING THE RIDE

Acute Rider Insight is the First Step in the Creation of Everything We Do

The frame, suspension and critical components of the Enduro SL, Stumpjumper FSR and Epic are developed together to provide the rider with the best experience possible. This integration of development ensures a balanced, experience-optimized bike, one that has been perfectly designed and manufactured for its intended application.

Different types of riding demand different attributes from a fork or shock. Before we begin to work on any project, our design and engineering team develops a complete understanding of the experience that a particular bike is being created to fulfill. That understanding allows them to tune critical components (including the frame, fork chassis, spring and damper) for an optimized experience-centric ride.

FEELING THE FAHRWERK

The Germans Have a Word for the Essence or Feeling of All the Critical Attributes of a Vehicle. They Call it “Fahrwerk” (say “far-verk”)

On a full-suspension mountain bike, the critical categories that determine the bike’s fahrwerk are the fork, shock, rear suspension linkage and chassis. To truly improve every rider’s experience we integrate and focus all of those elements into a machine purpose-built to pursue a particular experience.

ALL MOUNTAIN



ENDURO SL

All Mountain riders have a desire to ride the whole mountain, and love every inch of it. Revolutionized for 2007, the Enduro SL redefines the boundaries of All Mountain riding. The E150 Fork, AFR Shock and 150mm of unparalleled FSR travel ensure quick climbs and shredding descents.

XC TRAIL



STUMPJUMPER FSR

For XC Trail riders it’s all about feeling the flow over rough terrain, finding thrills and adventure in new places while covering as much ground as possible. The Stumpjumper FSR models are most at home on rocky trails, buff berms and snaking singletrack. Because they balance a light chassis and efficient suspension with neutral geometry, the Stumpjumper family delivers a sweet combination of technical trail competence and cross country efficiency.

COMPETITIVE XC



EPIC

Winning a World Cup, smoking a friend to the top of a local mountain or trying to best a personal lap time, Competitive XC riders are driving to get from Point A to Point B as fast as possible. These riders seek a nimble bike that is extremely light and exceedingly efficient. Proven at every level of competition, the Epic with incredibly efficient FlowControl Brain, suspension technology, is the fastest suspension bike in the world.

RIDER BENEFIT Widest application All Mountain bike	RIDER BENEFIT Most efficient XC Trail bike	RIDER BENEFIT Fastest Competitive XC bike
RIDER MOTIVATION Adventure	RIDER MOTIVATION Fun/Adventure	RIDER MOTIVATION Competition
50% climb / 60%* descend	50% climb / 50% descend	80% climb / 20% descend
Stable geometry	Neutral geometry	Very nimble geometry
FORK CHASSIS Maximum steering precision at minimum weight	FORK CHASSIS Balanced weight and steering precision	FORK CHASSIS Light weight
SPRING RATE Optimized to handle big and small impacts	SPRING RATE Slightly rising for optimal travel to impact	SPRING RATE Progressive to avoid bottoming
SHOCK DAMPING Spike Valve tuned to minimize yaw in cornering, yet provide max travel in high velocity impacts	SHOCK DAMPING FlowControl Brain seamlessly shifts from firmly efficient to fully active depending on terrain	SHOCK DAMPING FlowControl Brain seamlessly shifts from hard-tail firm to fully active depending on terrain
FORK DAMPING Spike Valve tuned to minimize yaw in cornering, yet provide max travel in high velocity impacts	FORK DAMPING Supple	FORK DAMPING Taut and efficient
150mm Rear Travel	120mm Rear Travel	100mm Rear Travel

* 110%? Yup, the new Enduro SL climbs as well as an SJ FSR, yet descends more capably.

2007 ENDURO SL

MAXIMUM CONTROL • INCREDIBLE EFFICIENCY

1 AFR Shock

Proprietary Spike Valve enhances a rider's control in two ways:

- Increases stability in corners
- Allows maximum travel on large or high-speed impacts

L-VAS (Large Volume Air Spring) matches spring rate to bump force for optimized control

State of the Art seals ensure extremely low maintenance and high reliability

2 FSR

Fully active, fully independent system delivers maximum comfort, control and efficiency

3 LOW CG

The new Enduro SL features an extremely low center of gravity and centralized mass, to enhance maneuverability

4 ROCKER

Rocker design allows for optimal pivot placement and a water bottle inside the main triangle. The Rocker also allows maximum seat post adjustment.

5 FACT 10m Composite

The top-of-the line S-Works Enduro SL weighs about 27 lbs thanks in part to a proprietary FACT 10m carbon front triangle.



The Integration of All Mountain

The development of any suspension part or component always begins with the demands of the experience that it is being designed for. In the case of the 2007 Enduro SL, the suspension, like the rest of the bike delivers maximum control, incredible efficiency, unsurpassed strength and minimal weight.

• UNSURPASSED STRENGTH

• MINIMAL WEIGHT

FutureShock E150 Fork

Highest performance 150mm travel fork in the world. At around 4.5 pounds it boasts precise handling and the most effective bump-force management available

6

Integrated lowers and thru-axle for incredible torsional rigidity and steering precision

7

Double triple-clamp design with integrated stem to decrease weight and improve steering precision

8

Attitude Adjustment travel adjust system quickly lowers the front end of the bike by 40mm for optimized climbing performance

9

Proprietary Spike Valve enhances a rider's control in two ways:

- Increases stability in corners
- Allows maximum travel on large or high-speed impacts

10

State of the Art Seals ensure extremely low maintenance and high reliability

11

Dual Geometry Settings



FutureShock E150

The Details On The Most High Performance 6-Inch Travel Fork Available

Dual Triple-Clamp Design with Integrated Top Crown/Stem

By employing a dual triple-clamp design, the E150 can be both lighter and stiffer than a single crown. A dual triple-clamp design changes the force on the steerer tube at the lower crown from primarily a bending load to primarily a shear load. Far less material is required to handle the shear load, so the fork can be much lighter. We reduced weight even more by integrating the stem into the top crown.

Integrated Fork Chassis and Axle

- An integrated approach to design results in a torsionally rigid, but light weight fork chassis and 25mm thin-wall axle for increased stiffness and to minimize weight.
- The gossamer in-line arch reduces weight while minimizing torsional flex. The svelte design is possible because the axle handles load differentials between the legs, not the arch as in other designs.



L-VAS

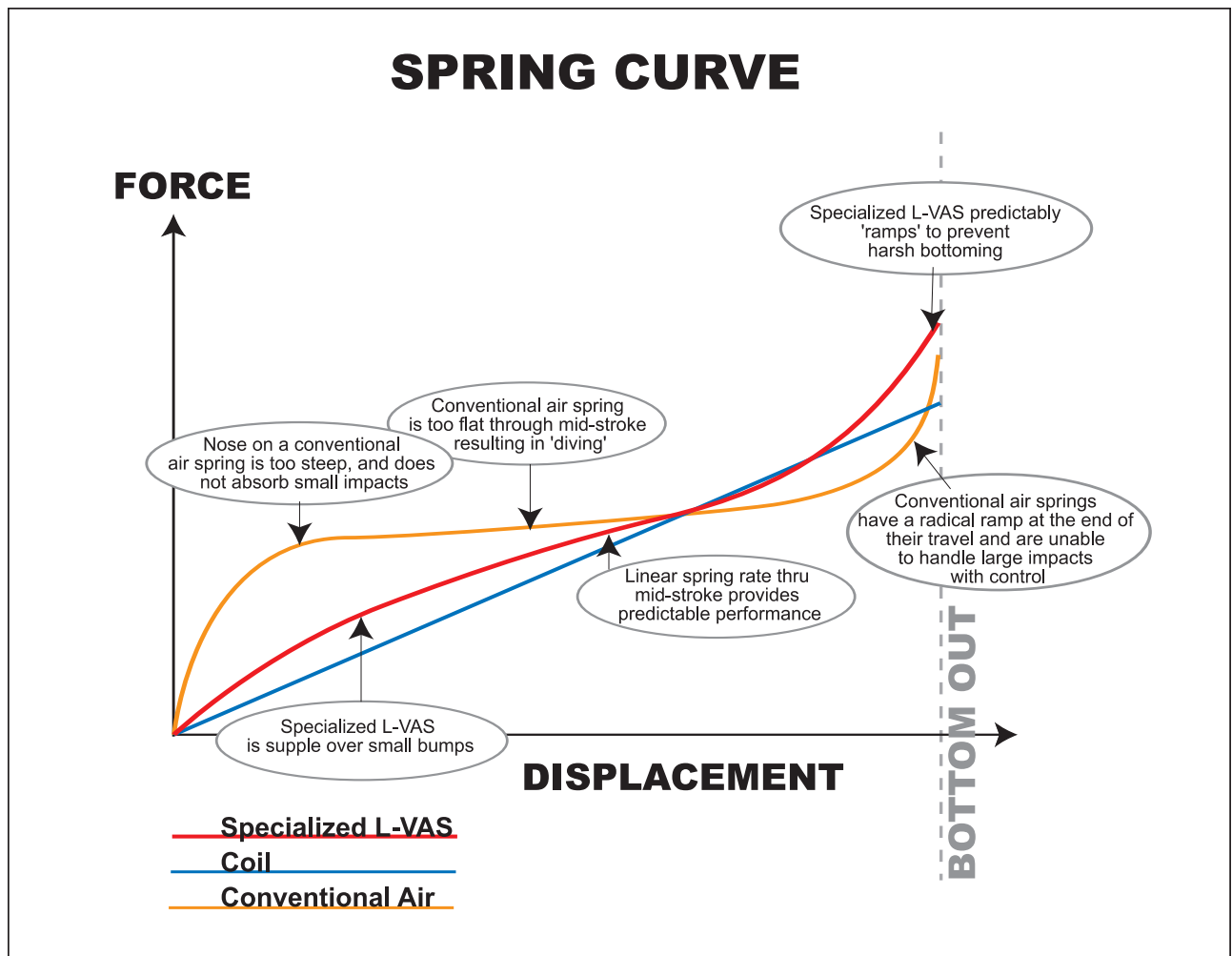
(Large Volume Air Spring)

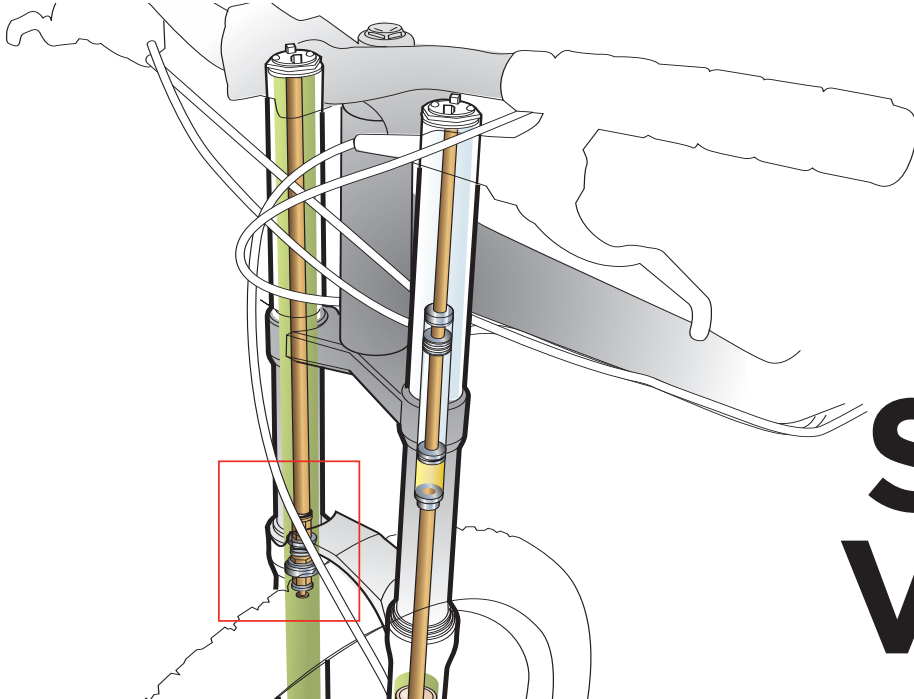
Our Proprietary L-VAS Spring Ensures Optimal Performance for Any Impact

Air springs are light. Coil springs are supple and linear. By relying on a large volume, low-pressure air spring, assisted by a negative coil spring, we've achieved an optimal spring curve with very light weight.

The L-VAS exhibits an optimal spring curve including:

- Reduced "nose," so small bumps are absorbed.
- Eliminated "hammock" for a consistent feel through the mid-stroke.
- Progressive "ramp" easily handles large impacts without premature bottoming or excessive ramping.





SPIKE VALVE

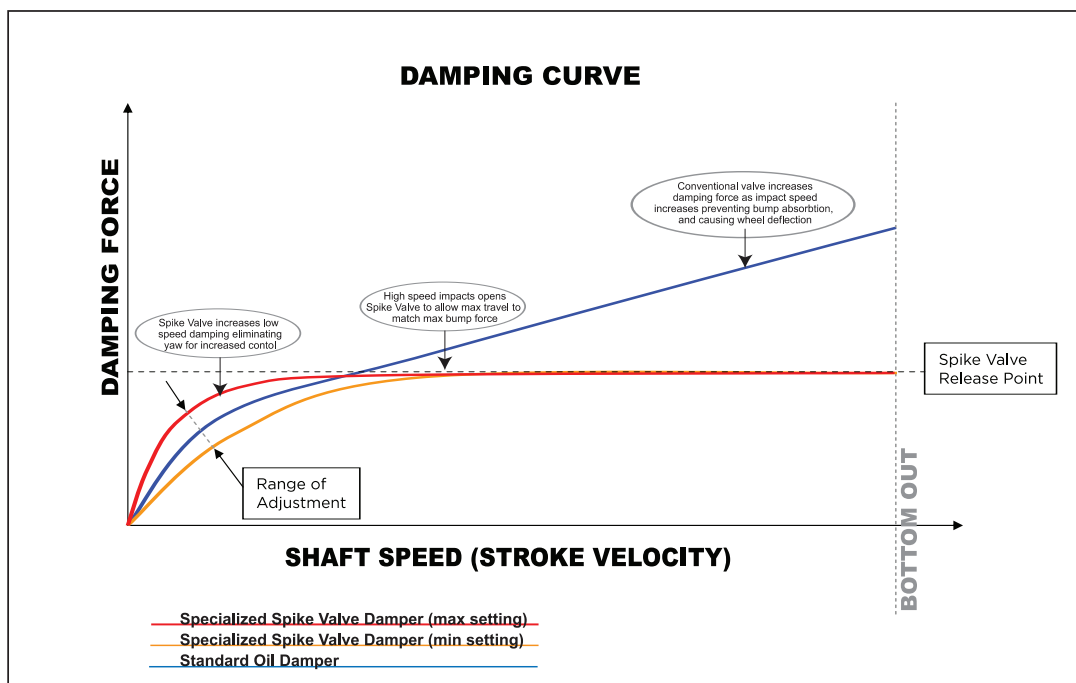
Patents Pending

Proprietary Spike Valve Increases Control Over the Full Range of Impacts.

Found in the E150 fork and all AFR rear shocks the Spike Valve (a reference to Mike McAndrew's old motocross nickname "Spike") is a breakthrough that enhances control in two ways:

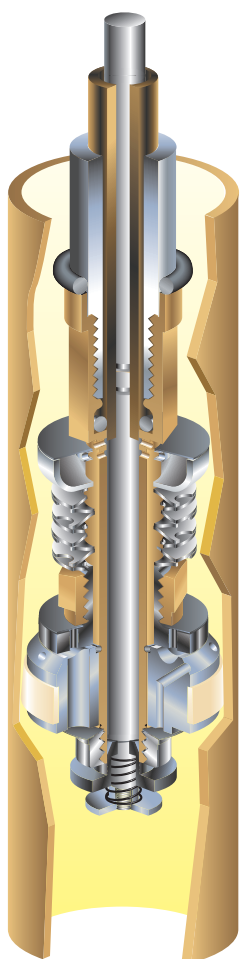
1. **Slow speed forces** (pedaling, turning yaw), do not overly compress the fork. The benefit is enhanced stability.
2. **High speed impacts** (like drop-offs or high-speed bumps) that "spike" the compression loads open the Spike Valve which immediately dumps oil so that maximum travel can be immediately utilized.

The Spike Valve is a combination of a traditional shim stack and a revolutionary "pop-off" valve that work in harmony to minimize compression under slow speed forces, yet allow significant flow to cope with high-speed impacts.



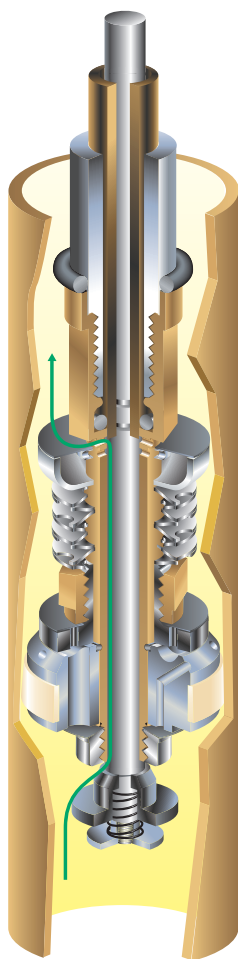
CONSTANT CONTROL

How the Spike Valve Responds To Different Types of Impacts



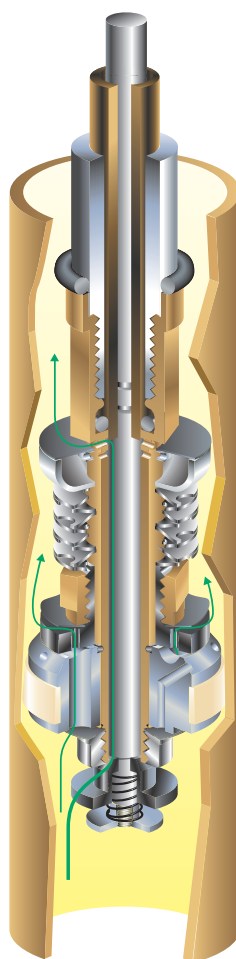
**RIDER OSCILLATION/
SMALL HIT**
Low-speed port closed

Under Super low-speed compression the Spike Valve prevents unwanted suspension movement



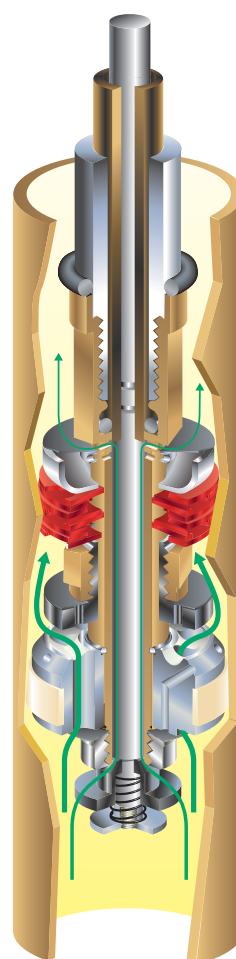
**RIDER OSCILLATION/
SMALL HIT**
Low-speed port open

By opening the low speed port, a small amount of oil can flow freely through the damper. By adjusting this port the rider can adjust damping force to decrease 'wallow', thereby increasing control.



INTERMEDIATE HIT
Low-speed port open
Shim stack open

In addition to low speed oil flow, intermediate impacts deflect the speed-sensitive compression valve shim stack, matching compression to bump force.



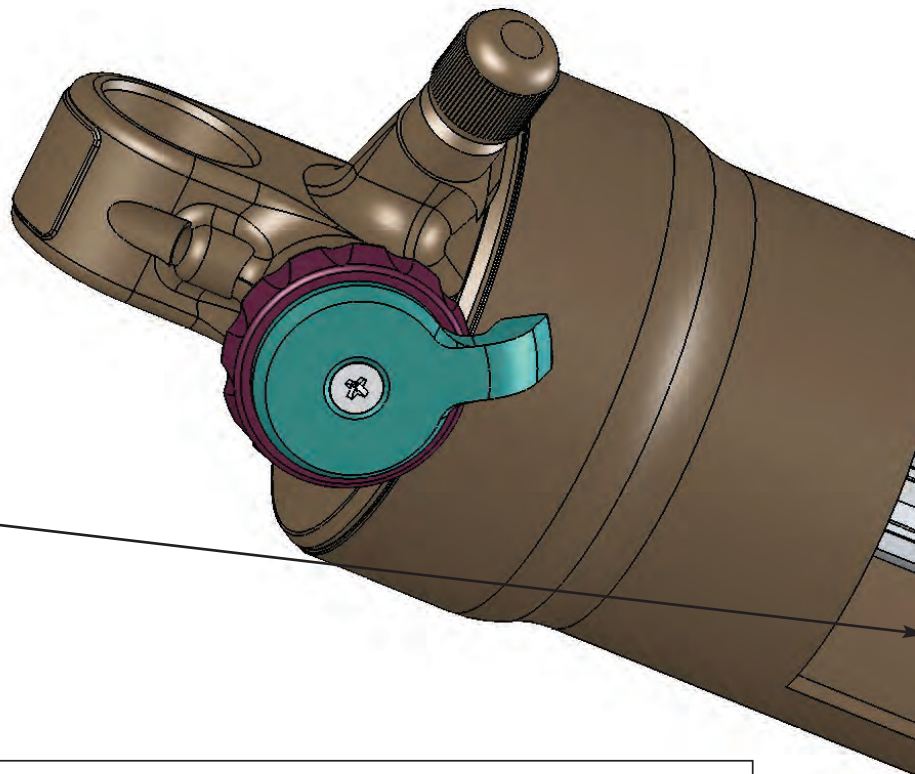
LARGE HIT
Low-speed port open
Shim stack open
Spike valve open

High-speed impacts release the Spike valve and it immediately dumps oil to allow maximum travel. Again, bump force is matched by damper performance.



The L-VAS (Large Volume Air Spring) exhibits an optimal spring curve including:

- Reduced “nose,” so small bumps are absorbed.
- Eliminated “hammock” for a consistent feel through the mid-stroke.
- Progressive “ramp” easily handles large impacts without premature bottoming or excessive ramping.

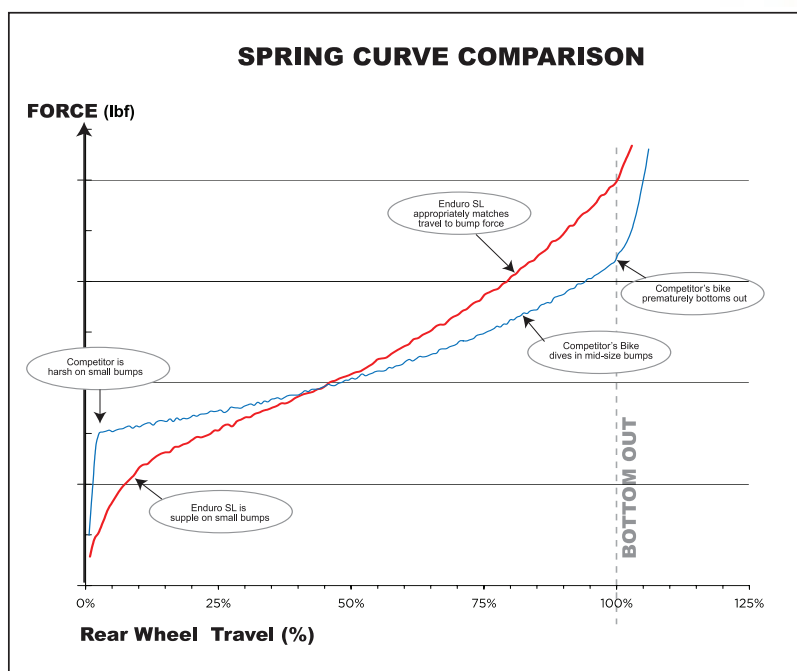
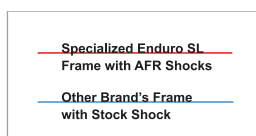


TELEMETRY

AFR Shock valving and air spring rate volumes are developed in conjunction with the bike they are integrated into to ensure the whole system operates as required for the experience the bike is intended to fulfill.

FULLY INTEGRATED:

By designing the rear shock as an integrated part of the frame, we can perfectly match the spring rate of the shock to the telemetry of the suspension linkage.



AFR SHOCK

(Active Functional Response)

One Smart Damper, Three Applications:
All Mountain, XC Trail and Competitive XC

LIGHT WEIGHT

A systems approach to design allows us to optimize each component of the shock to perform its task with minimal mass.

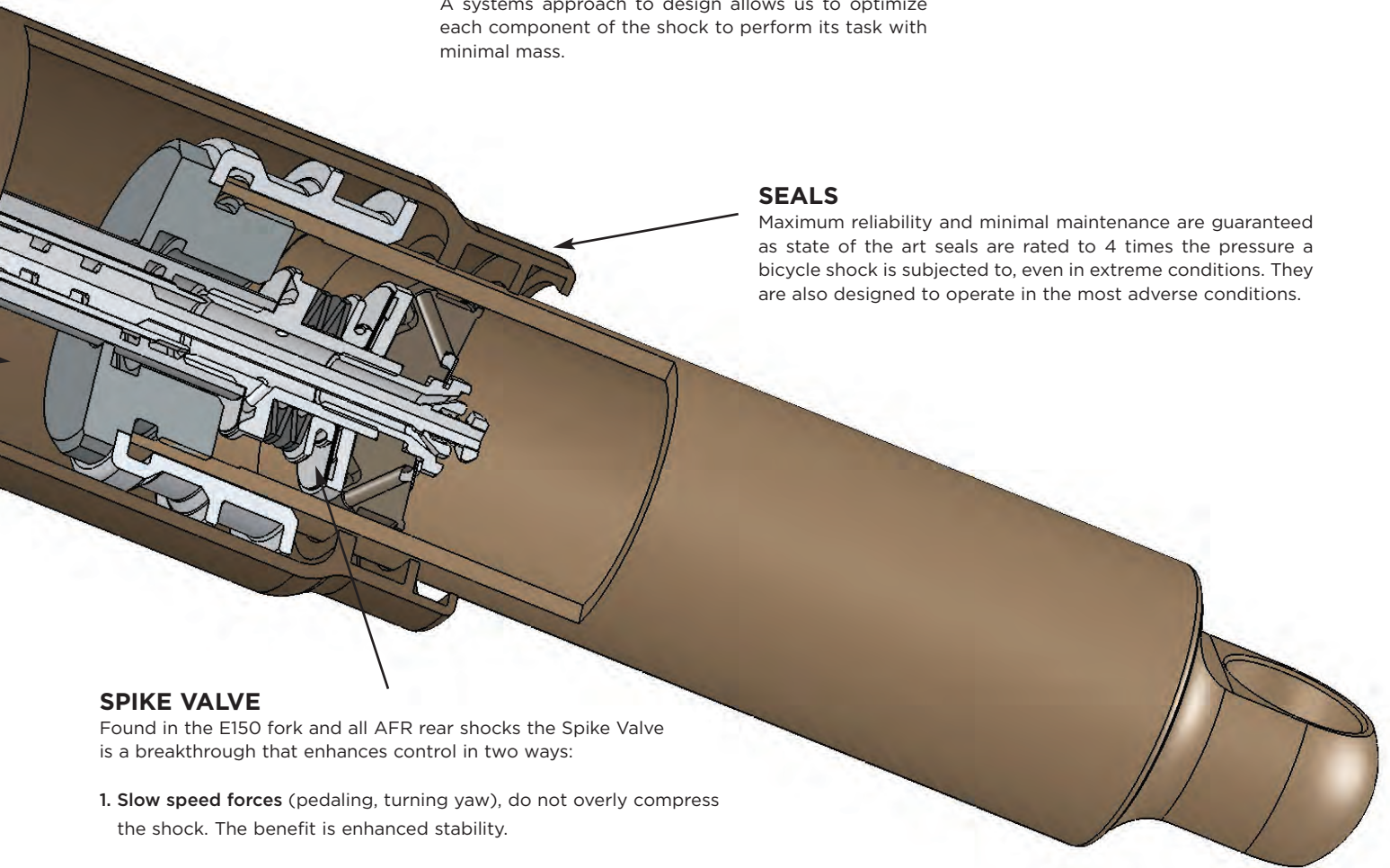
SEALS

Maximum reliability and minimal maintenance are guaranteed as state of the art seals are rated to 4 times the pressure a bicycle shock is subjected to, even in extreme conditions. They are also designed to operate in the most adverse conditions.

SPIKE VALVE

Found in the E150 fork and all AFR rear shocks the Spike Valve is a breakthrough that enhances control in two ways:

1. **Slow speed forces** (pedaling, turning yaw), do not overly compress the shock. The benefit is enhanced stability.
2. **High speed forces** (like drop-offs or high-speed bumps) that “spike” the compression loads open the Spike Valve which immediately dumps oil so that maximum travel can be immediately utilized.



THINK FAST!

Revolutionary FlowControl Brain Technology Enables our Stumpjumper and Epic Models to be the Fastest, Most Efficient Bikes on the Trail.

New for 2007, our FlowControl Brain technology adds some I.Q. points to our already intelligent Brain damper, boosting both control and efficiency.

The Stumpjumper FSR and Epic are both designed to be efficient and provide maximum control to the rider. The FlowControl Brain enhances both experiences like no other because it senses the terrain that is being traversed and instantaneously changes the compression of the shock from firm for maximum pedaling efficiency, to fully active for unsurpassed bump control.

In order to suit each experience perfectly, the factory tuning of the firm mode on each FlowControl Brain is customized for Stumpjumper and Epic models. Since the Epic is an all-out race machine, it is tuned to allow for "Hardtail Firm" adjustment while riding over smooth terrain. A trail bike like no other, the Stumpjumper never settles into a hardtail firm mode, instead it has a "Trail-Tuned" firm setting while riding over smooth terrain and moves to fully active immediately upon hitting the rough stuff.

Christoph Sauser on his way to a World Cup win riding the S-Works Carbon Epic with FlowControl Brain.

Ned Overend on a S-Works Carbon Stumpjumper FSR.



FLOW CONTROL BRAIN: CLAIRVOYANT

Boosted Control and Efficiency Makes Riding an Intuitive Stream of Consciousness

The Original Brain, pioneered by Specialized and Mike McAndrews back in 2002 was and is the first and only bicycle suspension that could sense the terrain and automatically change the compression from firm (on smooth terrain) to active (in rough terrain). The original Brain worked with an inertial valve that stayed closed until a bump caused its ballast to move relative to its shaft, thus opening a compression flow port and allowing the suspension to compress. After a period determined by a hydraulic “timer,” the ballast was then closed by a spring and the suspension was again firm.

Instead of using a hydraulic timer, the new FlowControl Brain relies on the rebound flow of the shock’s oil to close the compression valve instantaneously. This new configuration allows the FlowControl Brain to move between active and firm modes seamlessly, resulting in:

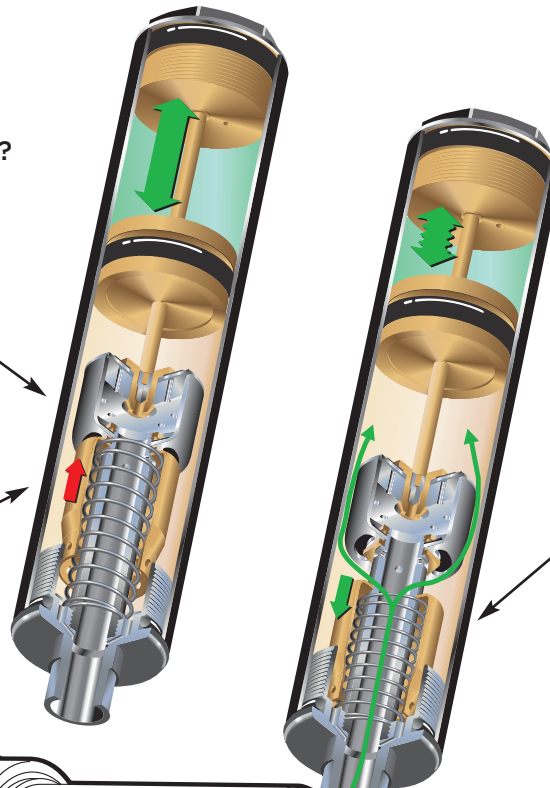
- Superior efficiency: the FlowControl Brain instantly returns to firm mode
- Superior control: there is a seamless transition to active mode when a rider encounters rough terrain

Explained: How Does It Do That?

1. Brass Mass: covers compression port on smooth terrain, making for a firmly efficient ride.

3. Rebound Oil Flow: As the shock rebounds, the reversed fluid helps return the brass mass to its “firm” state. This instantaneously returns the Brass Mass to cover the compression flow ports when riding on smooth terrain.

2. The Brass Mass slides down to reveal port in rough terrain, enabling fully active suspension.



FlowControl Brain

Patents # 6,722,678, 6,991,076

SPECIALIZED SUSPENSION:

What Have We Learned About Specialized Suspension? Total Integration Makes It Better

Specialized front and rear suspension has been developed as part of the complete bike to deliver the most integrated and controlled ride available.

Total Integration Provides Maximum Control

- Optimal Bump Force Management
- Travel and Impact Matching
- Unsurpassed Steering Precision
- Terrain Specific Damping

Total Integration Provides Unsurpassed Efficiency

- Minimum Weight
- Terrain Specific Damping
- Optimized Telemetry



Enduro SL (All Mountain)

Equipped with a FutureShock E150 fork and custom AFR Shock rear shock and all new chassis, the 2007 Enduro SL is the lightest, most efficient bike of its kind with unsurpassed control.

WHAT AND WHERE



Stumpjumper FSR (XC Trail)

Thanks to its custom AFR Shock rear shock with FlowControl Brain and a revolutionary chassis, the 2007 Stumpjumper is the lightest, most efficient and best handling XC Trail bike available.

Epic (Competitive XC)

Already the winner of a World Cup, the 2007 Epic has a custom AFR Shock rear shock with FlowControl Brain that makes it the fastest Competitive XC bike in the world.

NOTES:



SPECIALIZED



*Christoph Sauser Winning the 2006 World Cup in Mont Ste. Anne,
on an S-Works Carbon Epic with FlowControl Brain.*

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