PROGRESSIVE™ suspension

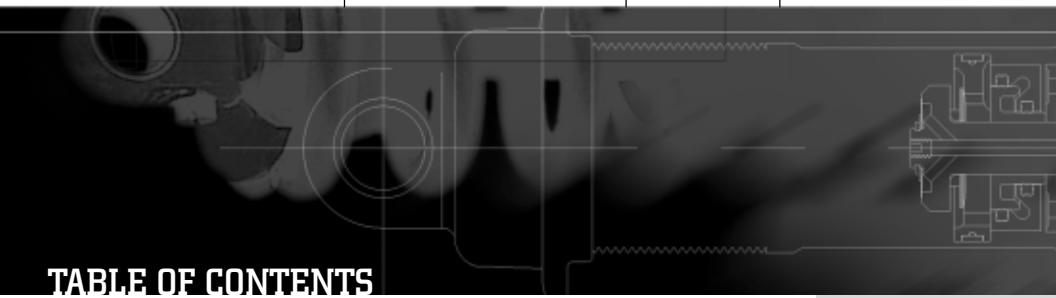
5th™ ELEMENT AIR

SET-UP & TUNING GUIDE

DESCRIPTION	REV.
MOUNTAIN BIKE AIR SHOCK	5-03

DATE	
2003	Ride Technology.™

CV/T™ CONTROL VALVE TECHNOLOGY™ | PLATFORM DAMPING™ | U.S. PATENT NO. 5,190,126



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Welcome to the Progressive Suspension Family

To all of our new mountain bike customers, our most sincere thanks for purchasing a new 5th Element™ shock by Progressive Suspension Inc, USA.

Progressive Suspension has been in business since 1982 when Jay Tullis and Donn Rickard opened a motorcycle suspension business in Jay's garage in Lakewood California. 20 years later, Progressive is the largest aftermarket motorcycle suspension company in the United States.

Our new bicycle suspension project started in early 2001, as a race development collaboration between Roy Turner (former Kawasaki MX team manager & Director of RockShox product development), Jeff Steber (Racing development guru & owner of Intense Cycles) and Eric Carter (Dual Slalom and Downhill Champion).

At the onset of the project, we had no intentions of offering the technology to the retail consumer before 2003. It was also planned that any offering of the technology would be a simplified version of our mega-featured prototype race units.

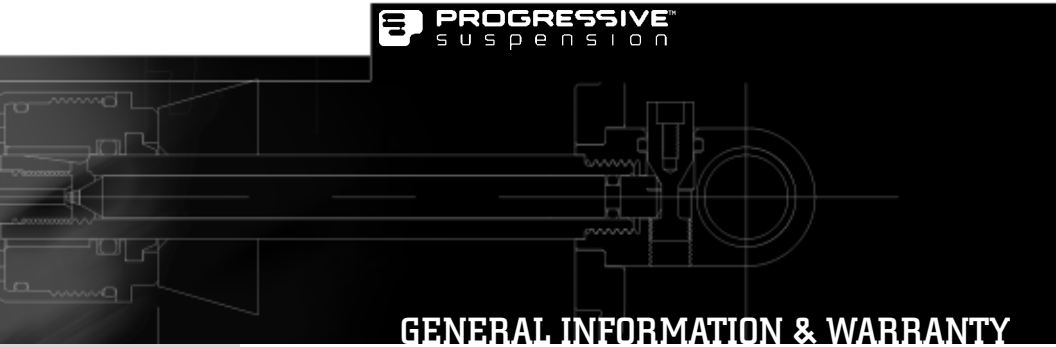
We developed & race tested the innovative new shock technology during the 2001 UCI World Cup & NORBA race tours. Race tested by Dual Slalom Champion Eric Carter, UCI World Cup winner Chris Kovarik, & top ten World Cup competitor Michael Ronning, the 5th Element™ technology provided incredible new performance benefits without a single failure during the entire race season!

The 2001 and 2002 DH Race seasons have resulted in an overwhelming number of podium finishes for our 5th Element™ Technology. Beginning in 2003, Progressive offers this technology to the XC World.

Housed in an amazingly lightweight package, bred from years of advanced suspension engineering and real-world fine tuning, our 5th Element™ Air Shock delivers performance as original equipment on Santa Cruz Bicycles, Intense Cycles, and other select top bicycles.

From the entire staff at Progressive, we are genuinely proud and excited to continue an era of cutting-edge suspension technology for the DH and XC mountain bike community. We hope you'll share in our excitement of the many new performance benefits of the 5th Element™ technology.

"Launching a new Suspension Technology for the 21st Century – Again!"



GENERAL INFORMATION & WARRANTY

Progressive Suspension, Inc USA
11129 G Ave
Hesperia, CA 92345
Ph (760)948-4012 Fax (760)948-4307
E-Mail: info@progressivesuspension.com
Web Site: www.progressivesuspension.com
Business Hours: 7am - 4:30pm, Mon - Fri PST

Warranty

Your 5th Element shock carries a one-year warranty from the date of purchase. Where required by law, a two-year limited warranty applies from the date of purchase. Proof of performing scheduled maintenance is required to maintain this warranty. Failure to do so may void this warranty coverage. A copy of the original receipt and proof of all performed scheduled maintenance must be sent with any warranty service. Warranty will cover only defective materials or workmanship. It does NOT cover damage to the shock which has occurred from abuse, unauthorized disassembly, improper installation, improper or lack of service, modifications, improper cable routing, low seat post damage, unauthorized oil changes or shipping damage or loss.

Service & Warranty Work

For Warranty or service work, please contact Progressive Suspension Customer Service at 760-948-4012 or e-mail for a Return Goods Authorization Number (RGA). This number must be written on the package.

When returning your shock for any warranty or service work, include a note with the RGA number, name, address and phone number where we can reach you during the day along with a description of the problem with the shock (or request for service) and information about the bicycle (manufacturer, model, year) and the type of shock you are sending. Mark your return address clearly on the outside of the package. **Note: Your warranty is void if you have service performed by anyone other than an authorized Progressive Suspension Service Center.**

Authorized Progressive Suspension Service Centers

Please see our website for detailed Progressive Distributor and Service Center contact information.

USA

Progressive Suspension
BTI - **Distributor Only**
Hippie-Tech Suspension
QBP - **Distributor Only**
Garageworks

Canada

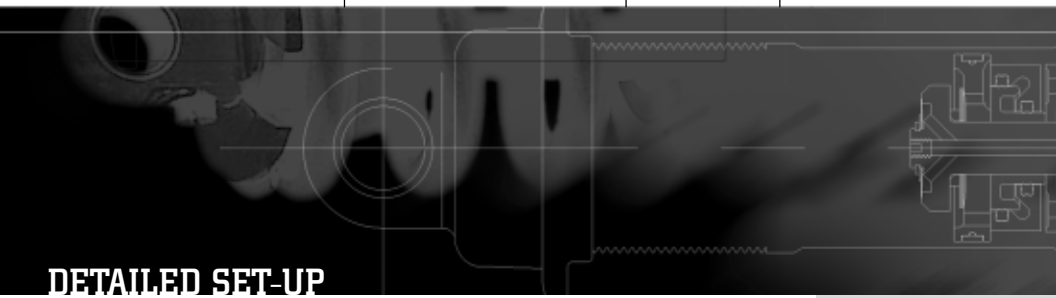
Trident Sports

Overseas

TF Tuned Shox - *UNITED KINGDOM*
Neezy PTY LTD - *AUSTRALIA*
Bike Suspension Center - *ITALY*
Wide Open Dist. - *NEW ZEALAND*
PC Sportech - *HONG KONG*
Mizutani Bicycle - *JAPAN*
Bike Right - *NETHERLANDS*
ADP Engineering - *GERMANY*

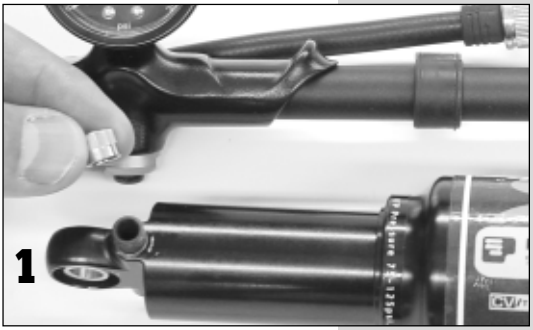
Methods of payment:
Visa • Master Card • Cashiers Check
Wire Tranfer

Method of Shipping:
We use UPS Ground service within North America unless otherwise specified. Terms are FOB Hesperia, Ca.

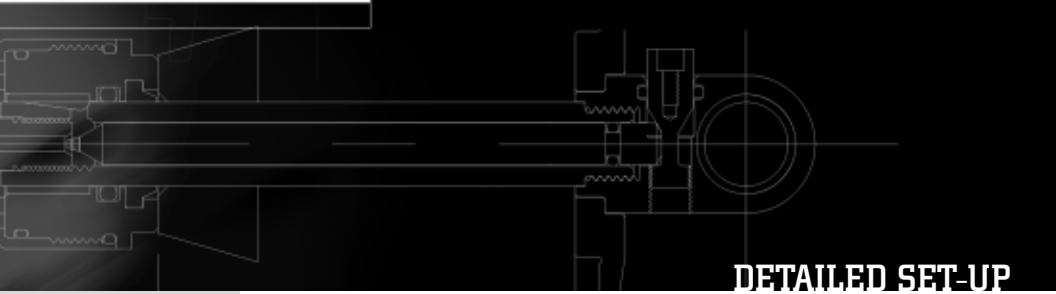


DETAILED SET-UP

The following information will guide you through the set-up of your 5th Element™ Shock. The 5th Element™ provides the highest level of tuning & performance features of any bicycle shock on the market. After referring to the consumer safety tips, the online quick start guide will help you find a recommended default setting for your weight range & bike model so you can hit the trail & become familiar with your bike. After your initial riding experience, the following set-up and tuning guide will help you to customize your shocks performance for your riding preferences. You should allow a one hour break-in period before determing your preferred settings. Always remember, what might be your perfect set-up may not be the same for someone else with the same bike and weight. We, like our bikes, are individuals!



1. Internal Floating Piston (IFP) Air Pressure Settings - The shock depends on air pressure to function properly. Use of the shock with improper IFP air pressure will cause damage & failure of the shock that is not covered by the warranty. The IFP air pressure settings control the position sensitive damping feature of the shock. IFP air pressure adjustments vary the starting compression force that affects the pedaling platform & high-speed blow-off. The IFP air pressure range is 75-125psi. Never use a pressure outside this pressure range. You can refer to the online Quick Start guide at: ***www.progressivesuspension.com/literature.html*** for accurate pressure ranges matched to your bike model and body weight. The IFP air pressure also affects sag, so you should set the IFP air pressure before setting the main spring pressure. The IFP pressure settings will vary according to rider weight, main spring pressure, your bike's leverage ratio & your personal preferences. Lower pressures will provide a softer ride & lower blow-off threshold for sharp, high-speed bumps. Higher pressures will provide a firmer ride control, firmer pedaling & higher blow-off threshold for sharp, high-speed bumps. IFP air pressure should be added with Progressive's GP3-300 Shock Pump.



DETAILED SET-UP

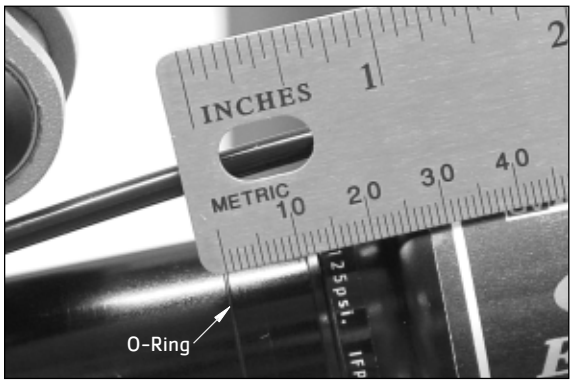
2. Installing Air Pressure – Remove the air cap from the Schrader valve on the end of the shock body. Attach the pump to the Schrader valve. Some people damage their pumps by screwing them on too far. As soon as the gauge registers pressure, screw 1/2 turn more and pump to the desired level. Use the release button on the pump to reduce air pressure. The hiss you hear when unscrewing the pump is only the air from the pump and not from the shock! Likewise, when you install the pump again, you will also hear a hiss as air from the shock fills the pump and reduces the registered pressure you previously installed. All perfectly normal when pressurizing the shock! After removing the pump, be sure to reinstall the Schrader valve cap. If the shock does not dampen properly after pressurizing, the air pressure may have been lost during pump removal as a result of a worn pump fitting o-ring that needs replacement. Do not ride the bike until the shock is properly pressurized.

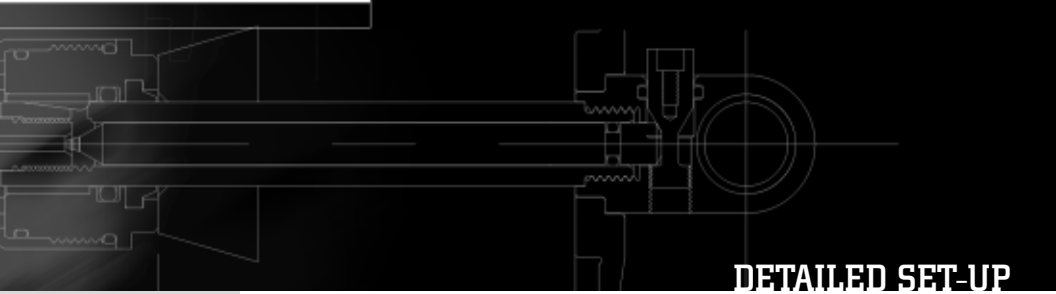
3. Main Air Spring Pressure Adjustments – Air Spring adjustments are made by inflating or deflating the main air spring chamber. Since your IFP air pressure adjustment (outlined above) also affects your starting spring force, you should always adjust your IFP pressure before adjusting the main air spring pressure. You can refer to the online Quick Start guide at: ***www.progressivesuspension.com/literature.html*** for accurate main air spring pressure

DETAILED SET-UP

and sag settings matched to your bike model and body weight. Main air spring pressure settings and sag will vary according to rider weight, IFP air pressure, your bike's leverage ratio and your personal preferences. As a general rule, the 5th Element™ Air shock performs best when set with 25% of the shock stroke as sag. The pressure for the main air spring can range from 75 to 150psi. The main air spring chamber should be inflated and deflated with Progressive's GP3-300 Shock Pump.

4. Measuring Preload & Sag Adjustments – Refer to the Quick Start guide at ***www.progressivesuspension.com/literature.html*** for sag settings matched to your bike model, riding preferences, riding style, and body weight. Without compressing your bike's suspension, measure the distance between the centers of each shock mounting bolt (eye-to-eye length of your shock) & record this first measurement. Next, sit on the bike in a normal riding position near a wall to steady yourself. Without bouncing on the saddle, distribute your weight on the saddle, pedals, and handlebar grips in a normal riding position. Have a friend measure the distance between the centers of each shock mounting bolt. Record this second measurement. The difference between the first and second measurement is your sag.

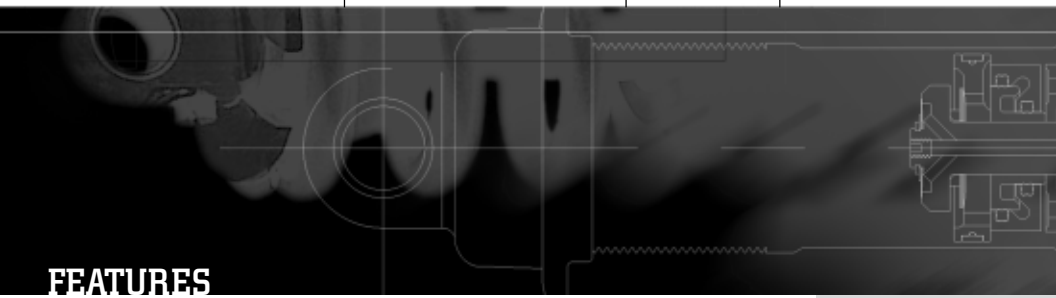




Note: A quick way to visually measure your sag is to measure the difference in positions of the travel indictor o-ring located on the shock body. Adjust the IFP air pressure and main air spring pressure (inflate or deflate) to achieve the desired amount of sag.

5. Rebound Damping Adjustment - The rebound damping controls the return rate of the shock & rear wheel after it has compressed to absorb the bump. The rebound adjustment will vary for different air spring pressures, rider weights, leverage ratios, type of riding and individual rider preferences. As a general rule, adjustments that are too fast (counterclockwise adjustment) will produce a springy ride with excessive kick-up of the rear end during aggressive riding or racing. Adjustments that are too slow (clockwise adjustment) will cause packing of the rear wheel that is identified by a low ride height & stiff ride feeling when the rear wheel can't return fast enough to absorb the next bump. An average starting adjustment will achieve a return movement of the shock somewhere between a "snap-back" and""sluggish" motion. You can refer to the quick start guide for an average starting setting for your bike model, spring rate and rider weight. The rebound adjuster is a red knob found on the eyelet cap of the main air chamber. All models are fitted with a knurled knob for easy no-tool adjustment.

When reaching the minimum & maximum stops of the adjuster range, do not apply excessive force to continue turning the adjuster, or damage to the adjuster will occur that is not covered by the warranty.



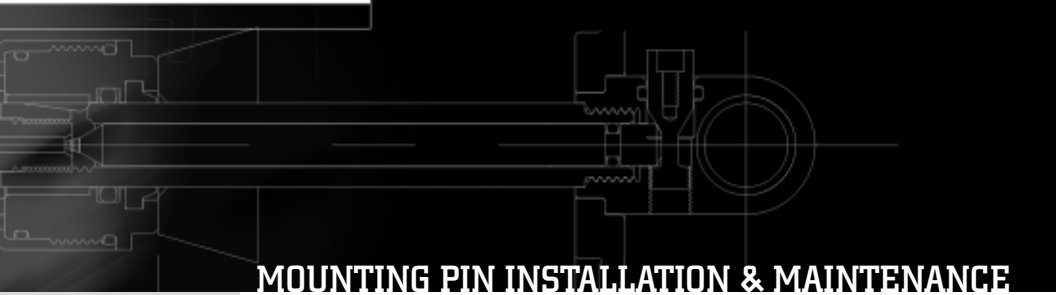
FEATURES

Design Features

- Amazingly lightweight design @ sub 200 grams (6.50 x 1.50 model).
- CV/T™ Control Valve Technology™
- Spherical Ball Mounting Hardware
- Ultra-low Air Spring Compression Ratio
- Ultra-low Air Spring Pressures
- Tunable Negative Spring System
- Micro Cellular Foam Bottoming Bumper
- O-Ring Backed Piston Ring

Performance Features

- Platform Damping™ – Eliminates pedal induced suspension bob & the need for lockout.
- Adjustable Position Sensitive Compression Damping – Can be custom tuned for any leverage ratio, type of terrain, rider weight or performance preference.
- Velocity Sensitive Compression Damping
- Adjustable Rebound Damping - Can be custom tuned for any air pressure, leverage ratio, type of terrain, rider weight or performance preference.
- Micro Cellular Foam Bottom-out Bumper – Eliminates harsh bottoming.
- Tunable Negative Spring System – provides uncompromised small bump ride.
- Hydraulic Controlled Top-Out – Minimizes annoying brake chatter.
- Spherical Ball Mounting Hardware – Eliminates side load friction for a silky smooth ride.
- Low Air Spring Compression Ratio ––Provides–"long travel" ride feeling.
- New Technology Air Spring Piston – Utilizes low air spring pressures for the resulting benefits of reduced seal friction, incredible small bump ride & improved seal life.



MOUNTING PIN INSTALLATION & MAINTENANCE

Install Mounting Pins and Spacers in the flowing configuration:

No tools are requires to fit the pins into the spherical ball eyelets.

Note: Always refer to your bicycle manufacturer's recommendation for appropriate torque specifications of your mounting hardware.

Maintenance Schedule	New	Every Ride	Every 20 hrs	Every Year or 200 hours
Check IFP Pressure (75-125psi)*	X	X		
Check Air Spring Pressure (75-150psi)*	X	X		
Set Rebound Adjustment to Desired Setting	X		X	
Check Mounting Hardware Torque	X		X	
Clean Shock, Check for Wear, Damage & Oil Leakage		X		
Clean/Inspect Mounting Hardware & Replace if Worn			X	
Clean/Inspect/Grease Air Spring Seals & Replace if Worn**			X	
Complete Inspection, Service & Oil Change**				X

* Riding the 5th Element Air Shock with improper air pressures can result in loss of control of your bicycle that may cause injury or death. Progressive Suspension is not responsible for improper air pressure. Consult your Setup and Tuning guide or call Progressive Suspension at 760-948-4012 for safety information.

** Services to be completed by Authorized Progressive Service Center.

DISCLAIMER, CONSUMER WARNINGS & SAFETY

Disclaimer

Progressive Suspension Inc., USA is not responsible for any damages to you or others from riding, transporting or other use of your 5th Element™ Shock or mountain bike. User fully understands that mountain bike riding and/or racing is dangerous and hard on equipment. In the event your 5th Element™ shock breaks or malfunctions, Progressive Suspension, Inc USA will assume no liability or obligation beyond the repair or replacement or your shock, pursuant to the terms outlined in the Warranty provisions in this manual.

Consumer Safety & Warnings

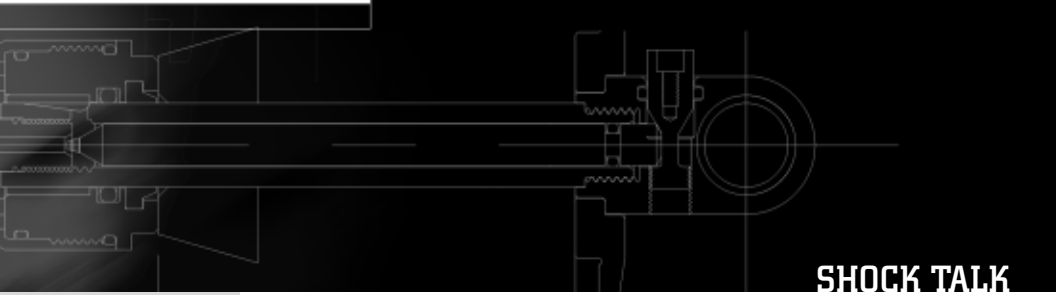
Before riding, take the time to read the sections in this manual on set-up, use, adjustments and service of your 5th Element™ Shock. If you have any questions please do not hesitate to call our customer service dept at (760) 948-4012 or e-mail at info@progressivesuspension.com.

The 5th Element™ Air Shock relies on air pressure to function properly! The air pressure range is 75-125psi for the IFP pressure and 75-150psi for the main air spring pressure. **This setting must be checked before every ride.** Use of the shock with improper air pressure can cause a total loss of damping and total malfunction of the shock. **RIDING YOUR BIKE WITH IMPROPER SHOCK AIR PRESSURE CAN RESULT IN LOSS OF CONTROL AND POSSIBLE SERIOUS INJURY OR DEATH.**

If your 5th Element™ Air Shock loses oil or makes unusual noise, stop riding immediately! Have the shock inspected by an authorized service center or contact Progressive Suspension.

When the shock compresses, its position within the frame will change. Always check for adequate clearance between the shock and frame/seat post for the entire stroke/motion of the shock. Do not lower the seat post below the bottom of the seat tube. Periodically inspect your frame, as extreme riding may cause frame tubes to bend and contact the shock. Some bicycle models have more than one shock mounting position to achieve different bottom bracket heights and different rear wheel travel options. Even though the 5th Element™ shock may statically bolt onto various bicycle models in various mounting positions, the shock may not have adequate frame clearance when the shock compresses and its position changes within the frame. It is the users responsibility to check for adequate clearance between the shock and frame/seat post for the entire stroke/motion of the shock. **DO NOT USE THE SHOCK IN A MOUNTING POSITION OR RIDE YOUR BICYCLE IF ANY PORTION OF THE SHOCK CONTACTS THE FRAME OR SEAT POST DURING NORMAL OPERATION OF THE SHOCK. IF THE SHOCK TOUCHES THE FRAME OR SEAT POST, IT MAY BREAK OR TOTALLY MALFUNCTION AND CAUSE LOSS OF CONTROL AND POSSIBLE SERIOUS INJURY OR DEATH!**
Your 5th Element™ shock is pressurized. The shock should never be opened, disassembled or serviced, except by an authorized service center. **OPENING A PRESSURIZED SHOCK CAN BE DANGEROUS AND CAN RESULT IN INJURY!**

Do not attempt to pull apart, open, disassemble or service a shock if it is compressed or has not returned to its original free length. **DISASSEMBLY OF A SHOCK THAT WILL NOT RETURN TO ITS ORIGINAL FREE LENGTH IS DANGEROUS AND CAN RESULT IN INJURY!**



SHOCK TALK

Suspension Balance: Is the matching of adjustments between your front & rear suspension to achieve the best suspension performance for a riders weight, ability level, riding style, type of riding & terrain conditions.

Bobbing: Is the up and down (power loss) movement of your suspension that occurs from weight shifts of the rider during pedaling.

Attitude & Rider Stability: Is created by a controlled damping (not spring) action that manages excessive dive, squatting, bobbing, chassis motion and the springy ride of conventional shocks that can throw a rider off-line in aggressive riding or racing conditions.

Platform Damping: Is a new damping characteristic of the **5th Element Control Valve Technology** that improves pedal bobbing & attitude/ride stability.

Spike: Is the harsh feeling that occurs when riding over hi-speed bumps if the shock cannot compress fast enough to absorb the size or sharpness of initial bump contact.

Blow-Off: Is the shocks ability to absorb the spike of hi-speed bumps, separately from other compression force & position sensitive functions.

Eye-to-Eye: Is the shock length between the two mounting points of the shock.

Travel: Is the distance the shock can compress. Travel may also be referred to when talking about the distance of wheel movement.

Spring Rate: Is the pounds or kilograms of force needed to compress the spring one inch.

Spring Preload: Is the difference in length between the free length and the installed length of the spring.

Sag: Is the amount of shock (& rear wheel) compression caused by the riders weight while sitting on the bike in a normal riding position.

Compression Damping: Is the amount of resistance produced by the shock during the bump induced movement of the shock & rear wheel. The **5th Element Control Valve Technology** is the first production bicycle shock to offer both **Position Sensitive & Velocity/Speed Sensitive** compression damping characteristics that separately manage a variety of riding conditions such as (a) bobbing (platform damping), (b) ride, attitude & corning stability, (c) hi-speed bump absorption (blow-off), (d) low-speed bump absorption, (e) bottoming control, (f) improved traction.

Rebound Damping: Is the amount of resistance produced by the shock during the return movement of the wheel. Rebound damping controls the speed at which the shock (and rear wheel) returns after being compressed. Rebound damping is typically adjusted faster (less damping) for soft spring rates and slower (more damping) for stiff spring rates to provide similar wheel movement rates.

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