

## **SUSPENSION TROUBLESHOOTING** from Sport Rider Magazine

Here are some basic symptoms of suspension damping problems that you might find affecting your bike. Remember these are only extreme examples - your symptoms may be more subtle. You may have to find an acceptable compromise on either end of the adjustment spectrum. It all depends on how the bike's handling feels to you.

### **LACK OF COMPRESSION DAMPING ( Front Fork )**

Front end dive while on the brakes becomes excessive.  
Rear end of motorcycle wants to "come around" when using front brakes aggressively.  
Front suspension "bottoms out" with a solid hit under heavy braking and after hitting bumps.  
Front end has a mushy and semi-vague feeling, similar to lack of rebound damping.

### **TOO MUCH COMPRESSION DAMPING ( Front Fork )**

Overly harsh ride, especially right at the point when bumps and ripples are contacted by the front wheel.

Bumps and ripples are felt directly - the initial hit is routed through the chassis instantly, with big bumps bouncing the tire off the pavement.

The bike's ride height is affected negatively - the front end winds up riding too high in the corners.

Brake dive is reduced drastically, though the chassis is upset significantly by bumps encountered during braking.

### **LACK OF REBOUND DAMPING ( Front Fork )**

The fork offers a supremely plush ride, especially when riding straight up. However, when the pace picks up the feeling of control is lost. The fork feels mushy, and traction "feel" is poor.

After hitting bumps at speed, the front tire tends to chatter or bounce.

When flicking the bike into a corner at speed, the bike will tend to "porpoise" or wallow a bit, before settling down. Getting aggressive with the controls makes it worse. As speed increases and steering inputs become more aggressive, chassis attitude and pitch become a real problem, with the front traction feedback going numb after the bike is countersteered hard into a turn.

### **TOO MUCH REBOUND DAMPING ( Front Fork )**

The ride is quite harsh - just the opposite of the plush feel of too little rebound. Rough pavement makes the forks feel as if they're locking up with stiction and harshness.

Under hard acceleration exiting bumpy corners, the front end feels like it wants to "wiggle" or "tankslap." The tire feels as if it isn't staying in contact with the pavement when on the gas.

The harsh, unforgiving ride makes the bike hard to control when riding through dips and rolling bumps at speed. The suspension's reluctance to maintain tire traction through these sections erodes rider confidence.

### **LACK OF COMPRESSION DAMPING ( Rear Shock )**

Too much rear end "squat" under acceleration - bike wants to steer wide exiting corners (since chassis is riding rear-low/nose-high).

Hitting bumps at speed causes the rear to bottom, which upsets the chassis.

Chassis attitude affected too much by large dips and "G-outs" - steering and control become difficult due to excessive suspension movement.

### **TOO MUCH COMPRESSION DAMPING ( Rear Shock )**

Ride is harsh, though not quite as bad as too much rebound - however, the faster you go the worse it gets.

Harshness hurts rear tire traction over bumps, especially during deceleration.

There is very little rear end "squat" under acceleration.

Medium to large bumps are felt directly through the chassis - when hit at speed, the rear end kicks up.

### **LACK OF REBOUND DAMPING ( Rear Shock )**

The ride is plush at cruising speeds, but as the pace increases, the chassis begins to wallow and weave through bumpy corners.

Poor traction over bumps under hard acceleration - rear tire starts to chatter due to lack of wheel control.

Excessive chassis pitch through large bumps and dips at speed - rear end rebounds too fast, upsetting chassis with a pogo-stick action.

### **TOO MUCH REBOUND DAMPING ( Rear Shock )**

Very harsh ride - rear suspension compliance is poor and "feel" is vague.

Poor traction over bumps during hard acceleration (due to lack of suspension compliance).

Bike wants to run wide in corners since the rear end is "packing down" - this forces a nose-high chassis attitude, which slows down steering.

Rear end wants to hop and skip when the throttle is chopped during aggressive corner entries.