

## Suspension forks are not created equal

There is nothing more deceiving, and potentially dangerous, than a bicycle suspension fork. From the outside, forks look almost the same but the “beauty” may literally be only “metal skin” deep. Even if the front shock is of quality materials, it may be incompatible with your bike.



Resist the temptation to “save” money by upgrading your bike with a different, usually longer travel, shock – unless your mechanic (which could be you) has checked with the manufacturers of your fork and your frame. Different shocks, with different travel systems, create different stresses on frame areas, like the head tube.

Engineers design frames for a particular type or range of suspension forks. Once you deviate from that, you may be setting yourself up for stressing, snapping off the head tube and “chewing” on your handlebars.

While you may get slightly more “bang for the buck” from one manufacturer to another, be leery of a “great deal”. There is no way that a \$160 suspension fork will

perform like a \$1,600 system, unless someone is selling you a stolen fork. Worse yet, if the entire cost of the bike was less than \$200, the fork probably cost \$20. Don’t imitate what the pros do. Don’t even jump off a curb with a department store shock.

Low-end bicycles use elastomers, which are rubberized plastic. They give you a sense of shock absorption but not much more. They’re also quite susceptible to temperature changes.

As the cost goes upward, so does the function. Coil or air springs provide more tuning options. Coil springs require less maintenance but they are heavier. Air springs’ biggest plus is the progression in the spring rate. The drawback is the complexity, maintenance required. Failure to remove dust and grime from the fork on a regular basis, and lapses in periodic overall maintenance, will eventually damage the inner workings of the fork.

Better forks have improved damping systems. Damping allows control over how fast the system returns to its “normal state” after it’s been compressed. As you might guess, an elastomer damper is the cheapest and least responsive. Air dampers are better but oil shocks are superior in that oil is less susceptible to heat fluctuations. Fine tuning is easier in oil dampers through a series of shims and small oil port holes.

One issue misunderstood by many is “sag”. That is the amount a shock (front or back) compressions based on rider weight. A good rule of thumb is 10 percent sag for cross country, 20 percent sag for all-around use and 30-40 percent for downhill use.