Relationship Goals: What to Expect from Your Suspension

We'd all like our suspension to make us feel like a hero when we ride. But what does having a "good" suspension setting mean? The answer for each rider is going to be different. After all, suspension is one of the most subjective aspects of a motorcycle. However, there are some general principles to consider when you're analyzing the handling of your bike. These can help you navigate your relationship with your suspension and what you should be expecting from it.

You're going to feel some stuff

The first principle to consider is that your suspension is not going to make all the bumps on the course disappear. If the terrain is rough or rocky, whooped or rain-rutted, you're going to feel that. We haven't quite mastered the hovercraft technology yet. What can be improved, however, is how sharp (or harsh) the feeling is. The goal is to have a level of comfort when absorbing rough terrain; you want a smooth progression through the stroke. Additionally, bottoming isn't always a sign of needing to adjust your suspension. A comfortable thud on a hard impact isn't bad, so long the bike comes out of the impact predictably. However, a sudden, harsh jolt or spike through the bars, foot pegs, or seat can mean there's room for improvement. Keep in mind, though, that the faster you hit a sharp bump (or rock, etc.), the quicker your suspension has to move through the stroke, and the quicker it'll build resistance. This leads us into the next principle: suspension is speed sensitive.

Speed matters

Hitting the same bump at 20mph, 50mph and 90mph is going to create a completely different feel each time. This is because you're forcing the suspension to move more rapidly at higher speed. To understand the concept, think of moving your hand through water in a pool. When you move it slowly, you don't feel too much resistance. However, when you rapidly and aggressively move it through the water, you feel noticeably more. This concept is magnified inside the tighter confines of your suspension, as the internal pistons push oil through the shafts and small openings. In action, this means that the faster you hit an object, the more resistance you're going to feel. The importance of this comes in when the style of terrain changes drastically.

Let's compare a couple of examples.

A motocross suspension setting will be targeted more for slower-to-mid-speed, and longer duration hits—think jump faces, braking bumps, etc. The suspension may use most of the stroke, but it typically doesn't need to move as fast through as much of the stroke. It also needs to be firm enough to handle the larger impacts without wallowing—like landing off jumps or hitting whoops.

In contrast, suspension that's setup for Baja, or Best in the Desert, is going to focus more on the higher-speed impacts. This is when the suspension needs to move markedly faster and push the oil incredibly quick. Think about hitting a square-edged bump at 70mph. The suspension has to move really fast, deeper into the stroke to soak up the bump at higher speed. If it were too stiff, the suspension wouldn't absorb enough. Best-case, the rider would feel the bump as a sharper impact when the suspension tightens up too quickly. Worst case, the suspension doesn't move through enough of the stoke to

absorb the bump and the rider may be bucked over the bars. The moral of this example leads us into the third principle: suspension is a compromise and a balance.

Suspension usually takes some compromise

Going back to the previous example, it's not realistic to expect a motocross style setup to work ideally well in faster off-road conditions. The suspension just isn't going to move quick enough to absorb the high-speed chop. Conversely, taking a high-speed off-road setting to the MX track is likely going to result in more bottoming, and a soft, wallowing feel with less control. This leads to the compromise.

So many of us nowadays ride multiple disciplines, or types of terrain. So, when having the suspension set up, it's usually best to pick a favored style of riding. For example, say you ride mostly motocross, but occasionally head out to the desert or the enduro trails. Your best compromise would be to have your bike set-up for moto, then make clicker adjustments to help increase the comfort somewhat in the off-road terrain. Unfortunately, it's just not realistic to make a suspension setting that works ideally well everywhere. This is why grand prix, and to an extent, hare and hound suspension can be the most difficult to dial in. It's because of the wide variety of speeds and impacts. In these styles of riding, the rider may have to make up, to some degree, for any of the shortcomings in the handling. This transitions to the next principle: sometimes the action of your suspension depends on how you ride your bike.

Help your bike help you

The way you're hitting obstacles—braking bumps, ditches, whoops, etc.—makes a big difference in the handling of your bike. You can hit the exact same obstacle in differing fashions and have drastically different outcomes. Say you're approaching a ditch a little too fast and out of your comfort zone. Your input is going to affect how the bike handles the impact. If you panic-brake and let the front end drop into the ditch heavily, the odds of coming out the other side smoothly are not in your favor. Alternatively, if you keep the front-end light, maybe scrub some speed, but then throttle into the ditch, you'll have a better chance at making it through without getting bucked over the bars. This owes to the relationship you have with your bike. As much as you want it to work for you, you also have to work for your bike. This, then, segues to offering some insight as to the initial question of what having a "good" suspension setting means.

What is "good" suspension?

Suspension is a tool to achieve your goals on a dirt bike. For some, their goal is to feel comfortable as they cruise over mountain fire roads on a long ride. Others want to get the most speed out of themselves and their equipment on a motocross track. Yet more might like to see how fast they can ride in Baja. The definition of a good suspension setting is a setting that can help you achieve your goals. If it's to feel comfortable on a long ride, a plusher set-up will be ideal. Alternatively, if the goal is for speed on a motocross track, the rider may trade some comfort for the stiffness and control required to push the limits on a track. The Baja racer will likely need a setting that can handle the cross-grain and rocks, while not blowing through the stroke too much on the occasional ditches and whoops.

Predictability is key

While the settings may differ depending on your riding goals, we've found one key point to transfer across all disciplines. That point is that you want the suspension to be predictable. Even if it's not

“perfect” for your ideal terrain, a predictable handling character is going to make you a safer, more confident rider. An example of this would be feeling the bumps a little more than your liking but knowing what the suspension is going to do in most, if not all situations. While you can try to chip away at getting more comfort out of the suspension, having the predictability lays the foundation of confidence in your bike to ride to your ability.

In closing, the next time you’re analyzing your suspension, the first place to look is anything that the suspension is doing that’s slowing you down or making you nervous. If your bike is handling unpredictably over a certain type of bump or terrain, make note of that. Then, ask yourself what your goals for your riding are? When you judge your bike’s handling, use that framework to get the most out of your riding experience. If your goals are to feel more comfort, then maybe that bit of harshness through the chop can be improved. Or, if you want to hit those braking bumps faster, you may need to compromise and feel the chop a bit more to get the forks firm enough to offer the control and resistance to diving necessary. Use the principles outlined above and see where you can realistically expect to find improvements in your suspension. Then, above all else, go enjoy the ride.