

Sag Measurement — Trial by Numbers

You can read, go online, listen to the experts and you'll find all sorts of opinions as to what sag measurement is best from bike to bike. But somebody else's opinion of what worked well for them, or even for a sample pool of riders, doesn't necessarily mean that measurement is the be-all best sag setting for you to run. The bottom line is that any sag measurement should simply be a starting point. It's track- and trail-time that determine the ideal measurement for you. And it can be as subjective as they come.

What Is Sag?

In the simplest sense, your bike's sag is a ride-height measurement. It's the starting point for how tall or squatted the rear end of your bike will feel when you take it onto the track or trail. The importance of the sag has to do with the balance of the bike in action. A sag that is too low may lead to the front end feeling tall, harsh and deflective, as there isn't as much weight on the front of the bike. Additionally, it may have the rear of the bike feeling low, too squatted in corners and over obstacles. This can lead to a harsh, short-stroke feel through the rear of the bike.

Alternatively, a sag that feels too tall can put too much weight on the front end. This may lead to knifing under cornering, or a feeling of chasing the front end under braking. On top of that, the rear end can feel stink-bugged. In action, the shock can feel over-active and kick, especially under braking. Likewise, you might get some fishtail under acceleration as the rear of the bike doesn't have enough weight on it to track ideally.

Where to Start

There are some guidelines that tend to hold up when it comes to an initial sag measurement. Generally speaking, most modern bikes like a measurement between 100mm and 108mm. Narrowing it down some, most motocross and grand prix riders float between 105mm to 106mm. Meanwhile, off-road and desert conditions can call for a starting point around 102mm to 104mm. This tends to stem from the higher-speed, quick movements of the shock. As a result, you want a little taller sag to give the shock a longer-stroke feel.

So, once you set your initial sag measurement to put it in the ballpark before you ride, the best thing you can do is stop worrying about the numbers. Really feel your bike when you go ride. Let's create an example. Say you're at a motocross track and your bike feels too tall in the rear. First, try to feel whether your forks are setup too soft and diving too much, as that may be a good place to start. But if the front end is plenty firm and you're happy with it, try changing the sag. Take some preload off (i.e. loosen the spanner) by going out a half turn, three-quarters of a turn, even a full turn if you think there needs to be a big difference. Then, don't measure it! Go out and ride. Try it. If you feel the bike needs a little more, go further. Conversely, if it was too much, go back closer to the starting point.

The idea is to get any preconceived notions out of your head before you ride. Don't worry about numbers or settings, except as starting and reference points. Learn how to feel what the bike does and how it reacts to different adjustments.

What's the Goal?

The ideal sag measurement is one that leads to a balanced feeling in the ride-height of your motorcycle. This is something that can take a little testing to determine. To explain, it can be easier to make comparisons between different settings then to jump on a bike without reference and determine how it feels. Going further, ride-height issues will typically have symptoms that affect both ends of the bike simultaneously; e.g. when the front of the bike feels low AND the rear end feels stink-bugged, or vice versa. If your forks feel good to you, but the shock feels a little tall or stiff, it may be better to soften the high-speed adjuster, the internal valving, or shock spring, depending on the symptoms.

When the Number Matters

Once you feel like the sag is dialed to your liking, then take a measurement. This is now your personal sag setting. Now you have a reference point for each time you ride. So, if you have your shock serviced, you can check your sag measurement before you ride the next time to make sure it's where you last liked it. But again, this doesn't mean you have to stick by that number through thick and thin just because you liked it one day at a particular riding location. Don't get locked into a number or measurement to guide your riding experience. Let your feel for your bike be your guide. Then go enjoy the ride.

Resources

If you'd like a guide to setting sag, head over to our website and click on the Suspension Resources link for a quick tutorial. And look out for a Tech Tip video soon!