

# Motocross Suspension - What are they talking about?

Modern motocross suspension has a lot of adjustment and tuning that you can do with it. Every rider can benefit by spending a little time getting to know what their bikes suspension is capable of. Here are a few of the terms used and some brief explanations.

## **Compression Dampening**

Compression dampening controls how the suspension compresses. An adjustable valve lets a certain amount of oil through the suspension and controls the speed at which it travels through its stroke.

**High speed** - High speed compression dampening allows you to adjust the suspension rate when the suspension is moving at high speed. Hitting a big square edged bump will cause the forks or rear shock to move through their travel at a high speed.

**Low speed** - Low speed compression dampening adjusts oil flow through the base valve and would be used for tuning the suspension when you are hitting obstacles that are more rounded or perhaps landing on the down ramp of a jump, any situation where the suspension is moving through its travel at a slower speed.

Keep in mind that high and low speed suspension tuning is more about how fast the motocross suspension components are travelling in relation to the bike, not how fast the bike is travelling on the track.

## **Rebound Dampening**

Rebound dampening controls how fast the suspension returns to its full travel after it's been compressed by hitting an obstacle or bump. If your rebound dampening is set too fast the bike may have a tendency to kick up over braking bumps or when accelerating out of corners. If it's set too slow the suspension can pack down over a series of bumps because the shock or forks can't return to full travel quickly enough before they hit the next bump.

## **Spring Rates**

Spring rates are the numbers used to indicate the stiffness of the spring, either fork springs or shock spring.

## **Wheelbase Length**

Wheelbase is the measure of the distance between the front wheel and back wheel. Bringing your rear wheel forward in the swingarm will decrease your bikes wheelbase and will make the bike quicker to turn in corners. Increasing your wheelbase makes the bike more stable at high speeds.

## **Fork Leg Height**

Fork leg height is adjusted by moving your fork legs either up or down in the triple clamps. This has a similar effect to changing your wheelbase. If the fork legs are high in the triple clamps, the wheelbase is effectively shortened and the bike turns in faster. Dropping the fork legs down makes the bike more stable at speed.

## **Fork Leg Spike and Stiction**

**Fork leg spike** is used to describe a harsh feeling as the forks (or shock) move through their travel. It is usually caused by a mismatch in the suspension tuning between the front and rear of the bike. One end will be trying to move at a different rate than the other and this can cause a feeling of harshness.

**Stiction** is the term used to describe the friction of the motocross suspension components moving against each other. Manufacturers use special coatings on the fork leg inners and specially designed seals to try to minimise the amount of stiction in the suspension.

## **Bottoming**

Bottoming is when the suspension uses all of its travel. If your suspension is way too soft it will bottom out with a crunch and feel quite nasty. If your suspension is tuned correctly it should just lightly bottom out, that's fine, after all you want to be using all of your suspension's travel.

These are just some of the terms used when working with motocross suspension. Most owners manuals have a pretty good section on tuning and adjusting your bikes suspension. It's a very worthwhile exercise to experiment with the settings on your bike, a well handling bike is an easier bike to ride and that means quicker lap times as well.