

Adjusting the GS03AR shocks

The CR Suspension shocks are high-performance design DeCarbon-type dampers. The damper body is divided by a floating piston into two separate spaces, the upper space is filled with high pressure nitrogen gas to eliminate cavitation of the damper oil. You can check the system in the attached file (picture 1).

The standard GS03AR twin shocks are mounted with 90 lbs/inch springs. This is an optimal rate for a 120-140 kg lightweight racing bike with a 80 kg rider, a bit softer than a similar road legal bike, which have usually round 100-120 lbs springs, using several times with passenger. The springs are linear ones, progressive springs mostly need mx and road legal bikes. The damping valves via shim stacks working also linear, so it is easier to adjust to the spring (see picture 2).

First have to adjust the spring preload. The static sag (moving the rear of the bike downward under the weight of the driver) should be 20 mm (1/4 of the total travel, which is 80 mm at the GS03AR). Then adjust the rebound damping, with the adjusting ring under the spring (picture 3). At the beginning adjust it to the middle of the possible 16 clicks, choose the 8-th. Check the damping pushing the bike downwards. After it is compressed, will rebound and when reaches the top of its stroke, it will barely overshoot and settle down to its sag. If the rebound damping is too much, as it slowly reaches the top of the rebound stroke it stops all movement. If it's too little, the shocks rebound nearly as fast as you can remove your weight and when it reaches the top of its stroke, moves back down again and oscillates two or more times.

The second and best way to go testing on the track. Check first the spring preload: fit a small cable tie on to the damper rod (or simply slide the rubber enddamper upwards) and after a few laps extensive riding check its travel. The best is if it uses 80-90% of the whole travel. If it reaches 100% (bottoms on bumps or at axeleriting), give more preload. Then take the rebound damping. I usually turn 3 clicks at once, by one click you can't feel definite difference. After proving the direction was good, you can refine the adjustment. If you give more rebound damping (turn to „slow”), the shocks can lead to packing. This means between two or more bumps the suspension doesn't return far enough, the travel becomes less and less, this can reduce traction as well as make for a harsh ride. Opposite direction (fast) makes less rebound, you feel loose control, shakes, may be chatters.

It's hard to give objective advice on how to adjust a suspension: Each rider has different preferences. A perfect setup, that works for everyone, really does not exist. With tips above you would like to find the best setup for your own riding style. The proper setup also depends on the character of the race track: riding on purposeful built race track requires stiffer suspension with much rebound damping, while racing on country roads generally needs looser forks and shocks.

Finally an other important detail of the length adjuster. The common bikes have relatively smooth 62-63 degree front fork rake. But nowadays riders, riding on short circuits, are preferring 66-67 degree rake, which results in dramatically better and easier character by turning tight corners. The length adjuster of the shocks allows you to lift the rear end of the bike, resulting in steeper rake on short tracks and opposite way, lowering the rear end for more stability on country roads with long and fast straights.