



GreaseSpot #9 – Chain Tensioning

The purpose of the 'GreaseSpot' is to share ideas and tips on 'two wheel vehicle' maintenance (Bicycle and Motorcycle). Questions, ideas and tips come from our fellow riders, and they can be on most any topic of maintenance. GreaseSpot #8 focused on chain cleaning; if you would like us to resend this GreaseSpot just let us know (info@greaseninja.com)

This GreaseSpot discusses several aspects of Chain Tensioning. Chain Tensioning is an easy process, but it does require an understanding of the dynamics of the chain when it is transmitting power to the rear wheel. Certainly, chain tensioning is more critical on the motorcycle simply because of power and speed, and most multi-speed bicycles have a 'built-in' drive chain tensioner called the de-railer. This GreaseSpot will primarily discuss the aspects of adjusting the chain tension on a motorcycle.

Most Motorcycle Owners Manuals will recommend checking the chain tension during chain cleaning / lubrication operation, and will also recommend checking the Chain Tension before each use (ride). Chain Tension Checking is a simple operation but there are varying opinions on how best to do this. The following is an abbreviated operation from our Owners Manual. (refer to your Owners Manual).

- 1) Place Motorcycle on the side stand.
- 2) Measure the 'Chain Slack' on the lower strand, half way between the front and rear sprocket.
 - a. Chain Slack is the full distance the chain can be moved up and down in the middle of the chain.
- 3) Most motorcycles spec the acceptable 'Chain Slack' to be 0.75" to 1.25" (refer to your Owners Manual)
- 4) If the Chain Slack is outside of the spec adjust as necessary.
 - a. Loosen rear axle nut.
 - b. Loosen chain adjuster lock nuts on swing arm
 - c. Make adjustment, keeping the rear wheel assembly in vertical alignment. This is the difficult part. There are specialized tools you can buy for this instead of using the 'hash marks' on your swing arm.
 - d. Tighten chain adjuster lock nuts
 - e. Tighten rear axle nut.
- 5) Re-check 'Chain Slack'.

Normally, there are no problems, but sometimes there are questions. Here's what we found...

Why the side stand and not the center-stand / rear wheel stand when checking 'Chain Slack'?

If the Motorcycle Owners Manual says to check the 'Chain Slack' while on the side-stand, it is because as the swing arm is rotated up because of the rider weight and riding dynamics. The distance from the front sprocket to the rear sprocket is at the greatest distance when the front sprocket, swing arm pivot point and rear sprocket are alignment. Having the weight of the motorcycle on the swing arm is a good compromise. Some riders set and re-check the 'Chain Slack' when sitting on the motorcycle.

For those riders that set and check the 'Chain Slack' with the motorcycle center-stand or rear wheel stand, it is recommended to re-check the 'Chain Slack' with the motorcycle on the side-stand if your Owners Manuals indicates to use the side-stand.

Is it better to run on the tighter side or looser side of the 'Chain Slack' specification?

It was unanimous that the chain should be set in the middle or 'looser side' of the 'Chain Slack' specification. When it is too tight, the chain will stretch (wear) more and likely damage the counter-shaft bearing / seals or possibly the wheel bearings / seals.

When should I get a new chain?

An easy check that will indicate it is time to consider getting a new chain is to see how much of it you can pull away from the sprocket at the very rear. If you can pull enough to see light under the chain links, it is time to consider a new chain.

Chain Tight Spots – What are they and what causes them?

Many of us are frustrated by our chains getting tight and/or loose spots. The 'tight and/or loose' spots are where the chain had stretched inconsistently (more stretch or less stretch) than other parts of the chain.

The easiest way to determine if your chain has tight and loose spots is to set the motorcycle on the center-stand or rear wheel stand and slowly rotate the tire watching the 'Chain Slack'. If there appears to be varying 'Chain Slack' in the chain, then measure it to get a better idea on the amount of change.

If you do not have a center-stand or rear wheel stand, then move the motorcycle a couple of feet and measure the 'Chain Slack'.

If you find the chain has tight / loose spots, make your adjustment on the 'Chain Slack' on the 'tight' spot. It is our opinion that the chain is nearing the end of its life.

We asked the experts (motorcycle chain manufacturer) what causes the chain to develop 'tight / loose' spots. This is what they said...

D.I.D. "Thank you for contacting D.I.D. There are two main causes as to why chains sometimes get the tight spots. First, lack of lubrication causes friction which wears the bushings and pins out. This causes rust which can cause the chain to get tight. Second, if the chain is not strong enough for the bike, this will deform the chain because the horsepower is too much for the chain."