

Maintenance of the rubber damping - 'cush-drive' - in the rear wheel of (most) Guzzi big-twins

Take note that the designers in Mandello built-in a large rubber damping system inside the rear wheel of most big-twins (not all). However it does not appear the assembly department took much care in lubricating the system and very often these 'cush-drives' are completely stuck and not really doing a great job in dampening shock loads and thereby not protecting the rest of the drive line from excessive loads. At least older models, such as my own LM3, commonly have a completely frozen up cush-drive. It is strongly recommended to get it opened up and give it a clean-up and lubrication with grease. If nobody has been in there since new you can expect a pretty tough battle to open it – an even bigger reason to get it done now or latest by the next change of tyres. Probably little need to go in there often after that I reckon(?).

Opening the hub:

Undo the three small bolts holding the cover-ring (*Fig.1*).



Fig. 1 Remove cover-ring

Try to bend the hub up by use of a small crowbar of some kind as shown in *Fig.2*. Use lubricating spray and whatever else you may keep in liquid form in the shed. You may have to change support once or twice in the process. Never try to grab the outer edge of the plate (not that it is easy!), it may warp and is not cheap to replace! If the method in *Fig.2* does not work then the next step is to apply a simple small puller tool (found in most hardware stores) and let it push against the hub bearing using a steel plate as protection of the bearing (a good one is e.g. a large coin!). The more stuck the hub is, the bigger is the reason to persevere until it is open, so don't give up!



Fig. 2 Bend the hub open

Lubrication:

After the hub is opened, remove the rubber dampers (*Fig.3*) and wipe everything clean. Lubricate the rubber dampers with grease before putting them back again. Don't exaggarete with the grease as this can cause grease sweating out on the rim while driving. You're hereby warned, so don't point fingers if there is some sweating from the hub later on. By now the change for a long life of the rest of the transmission system, such as bevel drive and U-joint, should be increased considerably.



Fig. 3 Rubber dampers

Regarding the type of grease to use, I've contacted expertise in this technological field of producing industrial rubbers and they reassured me that there is no worry using ordinary grease for lubrication, i.e. there should be no adverse effect on the rubber.

Closing and sealing the hub

Put it all back in the opposite order. Don't forget to clean and put a little grease on the driving splines (seen in the upper left corner of *Fig.3*) before putting the wheel back in the bike again.

Tip for sealing the hub: Before you put back the cover-ring (*Fig.1*) you should use clear silicone on the narrow edge of the rim where the cover-ring is attached after cleaning the surfaces thoroughly with a solvent. This method gives you the best chance to never see lubricant weeping from the hub and messing the rim at a later time. I have previously made an attempt with a gasket maker (blue Hylomar) but it failed, probably due to the narrow and sometimes uneven contact surface between the plate-cover and the rim. A few thousand kilometres with silicone as sealant has worked perfectly.

Modifications

Judging from forum discussions and what is written in Guzziology, a popular modification to increase the damping effect of the cush-drive is to drill two or three holes in the rubber dampers, some even remove every other of them and some even do both!

I've kept all my rubber dampers, but drilled two holes in each of them using drill bits for wood, 10mm and 6mm respectively (*Fig.4*). Out of principle I wouldn't recommend destructive modifications to fellow Guzzisti, but when you get to see for yourself how rock hard these rubber 'dampers' are I reckon you also get ideas! However, it should have a great just to get this system to function as the designers in Mandello had in mind by getting it opened and lubricated!



Fig. 4 Modified rubber damper