

## CHAPTER 11: FLYWHEEL, CLUTCH AND ALTERNATOR BACK ON

Posted on the Wildguzzi forum by Pete Roper: January 17, 2006:

**Contents: Assembling the engine. Flywheel, clutch and alternator back on.**

*Pic 11-1:*

To re-install the clutch line one of the pistons up at TDC, doesn't matter which stroke. On the edge of the flywheel you will see either a line or an arrow on the edge of the flywheel that will align with the little cast in tit in the inner edge of the crankcase. In this pic you can see both the line and the tit. On the pressure plate one of the teeth has a punch mark on it. This has to be aligned with the line on the flywheel to ensure that the springs line up with their seats on both the back of the pressure plate and the flywheel.

To get the springs to stay where they are supposed to go you can either \*glue\* them into the flywheel with a bit of silastic or, my preferred method, simply give one end of the spring a squeeze with some multi-grips so that it will grip the seat in the flywheel. Earlier bikes have eight springs, later, post Centauro models have a ten spring version and some of the V11's have a single plate clutch with a diaphragm spring so this isn't relevant for them.



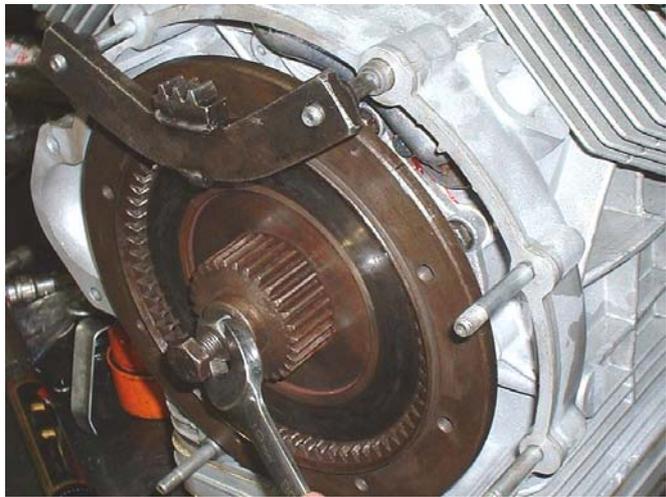
*Pic 11-2A*

*Pic 11-2B:*

Once the plate is installed in the flywheel you need to compress the springs fully.

Guzzi make a special tool (shown) that allows you to do this easily, but you can make one yourself with an old clutch boss from a gearbox, a washer and a long 12x1.5mm bolt with a nut on. The bolt threads into the end of the crank and then you can wind the nut down onto the tool, or if you're using an old hub onto the washer over the back of the boss and this will crush down the springs.

The centre of the hub sits nicely over the raised centre of the plate where the thrust cup sits in service so it will 'Self Centre' as you tighten it down. Locking the flywheel is sometimes necessary but most new motors are fairly tight so you can usually compress the springs without resorting to anything but holding the flywheel by hand. Compress the springs to coil-bind, i.e., until they won't compress any more!



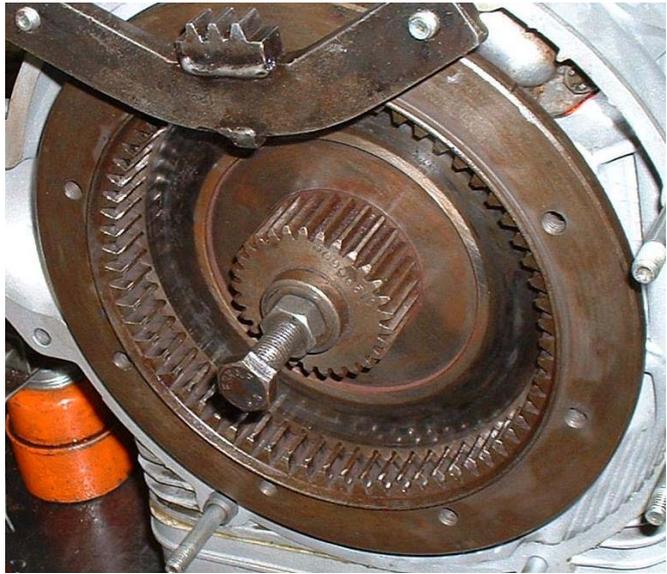
If you do not want to make your own tool, an alternative is shown in pic 11-2B. To be used together with an old clutch boss (or your current boss from the gearbox!). Can be obtained from Rolf Halvorsen:

[rolf.i.halvorsen@nammo.com](mailto:rolf.i.halvorsen@nammo.com)

Pic 11-3:

Once fully compressed it will look something like this.

**I STONGLY advise against** trying to just line everything up by eye and then attempting to clamp the ring gear down using the bolts to pull it into place. The problem is that the intermediate plate splines sit proud of the flywheel splines until the springs are compressed. If you try to tighten the ring gear down using the bolts and trust to hope that everything is aligned it's an almost dead-set certainty that the intermediate plate will hang up on the spines and then get bent. Guess how I know this? I learnt my lesson 20 years ago and haven't bent an intermediate plate since!



Pic 11-4A

Pic 11-4B

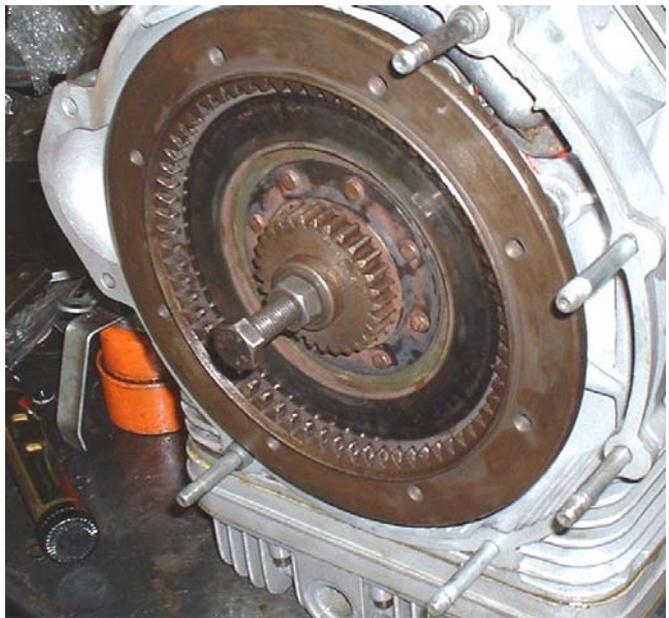
The two friction plates have a raised side to the splined centre and a flat side. On both plates the flat side goes to the front and the raised side to the rear of the engine. This is important, if you put them in the wrong way round the clutch usually won't work at all and if it does it works badly as the raised bits rub on the centre of the pressure plate.



*Pic 11-5:*  
Install the first friction plate.



*Pic 11-6:*  
Then the intermediate plate. It doesn't matter how these go in.



*Pic 11-7:*  
And then the second friction plate.



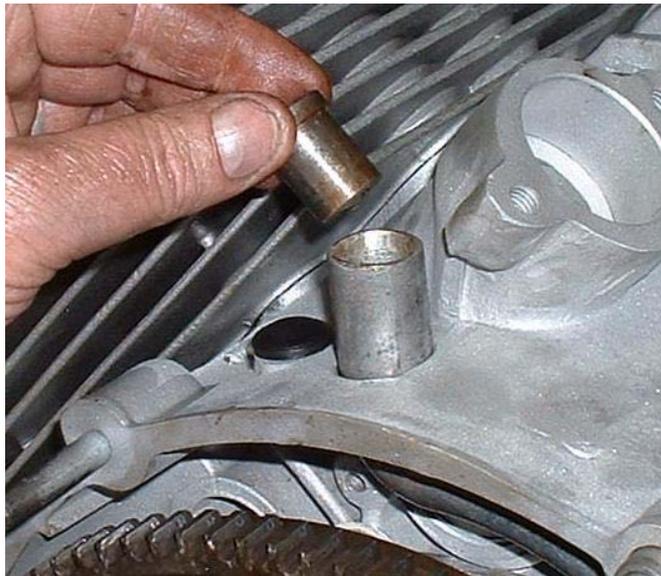
*Pic 11-8:*

The ring gear can now be offered up and the eight or ten (depending on model) bolts that hold it to the flywheel installed and torqued down. I always use loctite 243 and Schnoore washers on these bolts.



*Pic 11-9:*

While we think about it we can re-install the ball valve in the breather pipe! Sorry, I know that one is out of sequence!



*Pic 11-10:*

Then the nut can be undone releasing the springs before the tool or hub, along with the bolt, can be withdrawn from the correctly assembled clutch.

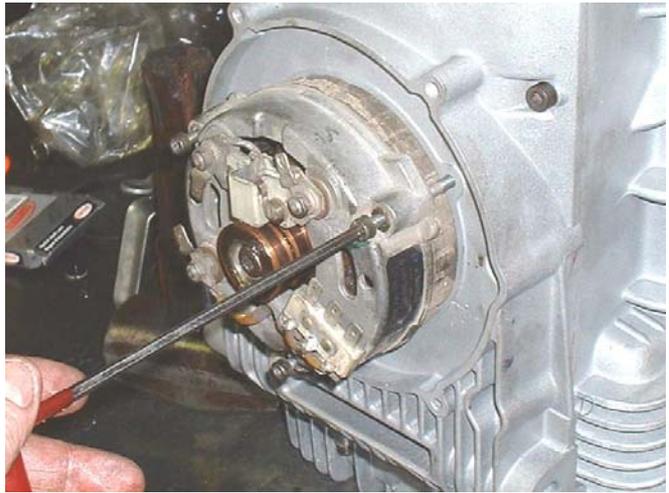


*Pic 11-11:*

The alternator rotor can now be re-attached to the front of the crank. If you haven't already done it don't forget the timing chest oil seal before you pop the rotor on and tighten it's bolt.

The stator can then be slipped over the rotor. Make sure that as you do this you hold the carbon brushes up into their guides as you put it on. The brushes are very delicate and will snap annoyingly if you try to force them over the slip rings!

Tighten the three stator bolts carefully, they are only 4mm bolts and you can snap them or pull out threads if you're ham-fisted!



*Pic 11-12:*

Done! Like a dinner!

Yes, you too can have a fat, deranged, psychopath rebuild your engine! Incidentally the bloke whose engine it is is dead happy!

