

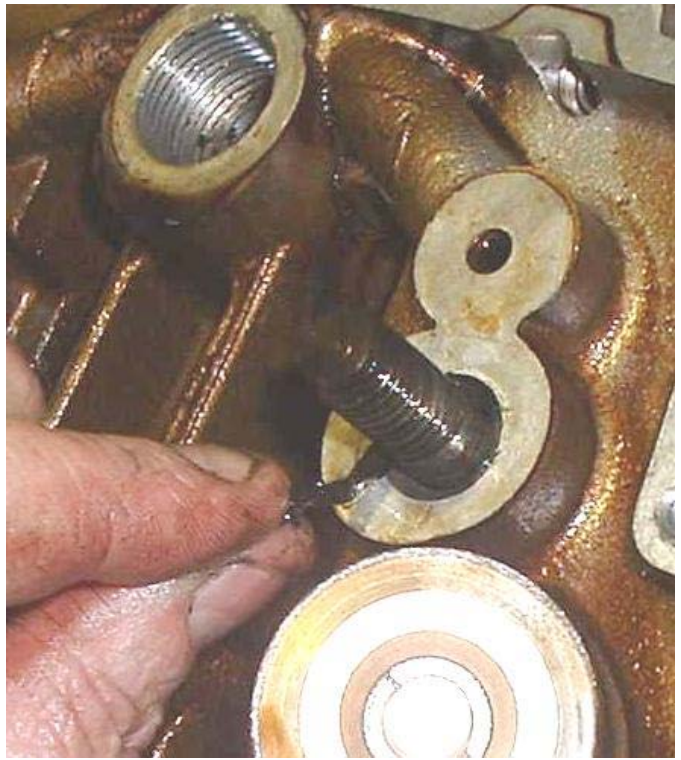
CHAPTER 2: HEAD, BARREL, SUMP, BIGENDS, ALTERNATOR

Posted on the Wildguzzi forum by Pete Roper: December 10, 2005:

Contents: Head, barrel and sump off, bigend bearings, alternator off

Pic 2-01:

Note that under the rocker carrier on the four studs that come through the top of the cylinder head there are O-rings to prevent oil migrating down the studs. These have to be pried out with a pick or small screwdriver otherwise the head can be a right frontbottom to remove.



Pic 2-02:

Once the O-rings are off the head can be lifted from the barrel. As long as no gloop has been used on the head gasket a good tug with fingers in the ports will usually separate the head from the barrel. Some times the head gasket will come with the head. Sometimes it stays with the barrel. If the head is reluctant to move it is sometimes necessary to pry CAREFULLY between the head and barrel. Only do this above the cast in buttresses in the fins of the barrel and try to get your pry-bar or screwdriver in as close as possible to the mating surfaces. On NO account try and get the blade of a screwdriver between the head and gasket or gasket and barrel, you'll simply end up damaging the mating faces. Likewise don't just lever away indiscriminately or you WILL break fins.



Pic 2-03:

Once the head is off it is easy to extract the sleeve nut from beneath the blanking plug. Remember there should be a washer underneath it too. Try not to misplace it.



Pic 2-04:

The head gasket can now be removed if it has remained on the barrel. (Note conspicuous product placement to ensure ongoing sponsorship by major oil company, NOT).



Pic 2-05:

The barrel can then be lifted from the block. Once again a good tug will usually free it from the crankcase.



Pic 2-06:

If the gasket stays with the barrel as in this case the cam followers can then be removed. If the gasket has stayed on the case you will see that on the two short studs there are O-rings above the gasket. These and the gasket need to be removed to access the followers. Don't worry too much about getting the entire gasket off cleanly. Once the block is stripped completely this task is a lot easier.



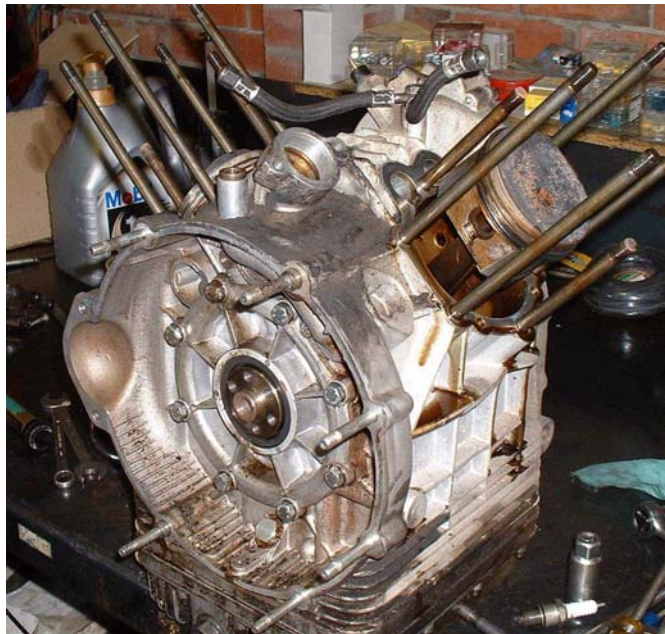
Pic 2-07:

This is a rather poor picture of a badly damaged cam follower. I'll try and get a better one and insert it later. As the followers are removed they should be stored in a way that allows them to be identified and matched with the cam lobe they run on if they are in good condition and are going to be re-used. I simply get a small cardboard box and put slits in it into which the followers can be stuck and write LI for Left inlet, LE for Left exhaust etc. next to them so they can't be mixed up.



Pic 2-08:

Once you are at that point you can turn the engine around and remove the other head, barrel and cylinder in the same way. Some people prefer to remove both head first and leave the barrel in place. This means that when you turn the crank to get the second piston at TDC to remove the valve gear the piston on the first side doesn't have the opportunity to jam in the crankcase mouth risking damage. I've done this so many times I don't bother. I simply support the piston and rod on the first side and guide it carefully into the bore as the crank turns but this is simply my way, it is probably safer to remove both heads first and then both barrels. Note that in this pic the piston and rod on the right hand side are sticking up unsupported. Usually the rod will fall towards the outer stud under its own weight. The fact it's sitting there like some sort of horrid choirmasters erection indicates that all is not well in the bottom end!





Pic 2-09A:

Pic 2-09B:

Pic 2-09C:

With the motor resting on the bell housing studs you can now remove the sump bolts. Don't forget the 4 bolts hiding in the fins on Post 850T and pre Broad sump models, (Including the latest Cali's.)



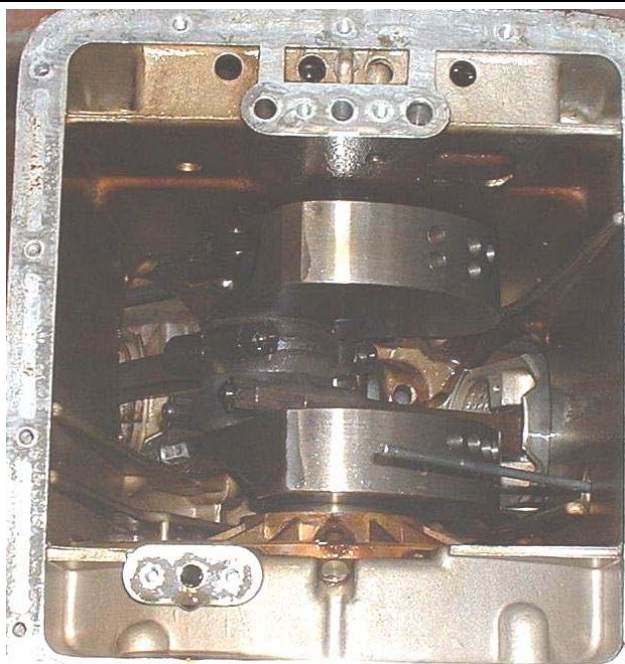
Pic 2-10:

Now the sump can be removed. And Lo! There is the culprit in this case! The tubular thing with a thread on the end is the oil pressure relief valve housing. It should be screwed into that threaded hole in the oil gallery to the rear main bearing!!!!



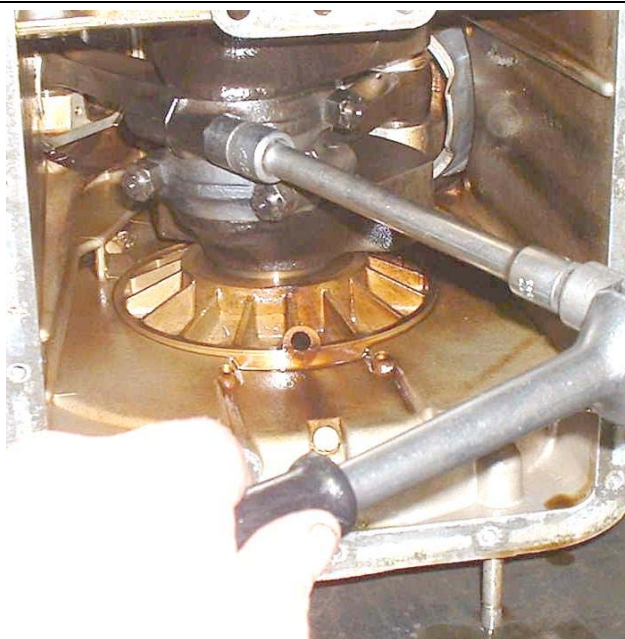
Pic 2-11:

Looking *up* through the sump you can see what I mean when I describe the Guzzi motor as simply being a box with a couple of sticks in it.



Pic 2-12:

Using a 14mm socket undo the nuts on the connecting rod bolts and remove the caps.



Pic 2-13:

Ooo-er Missus! It ain't supposed to look like that. Buzzer!



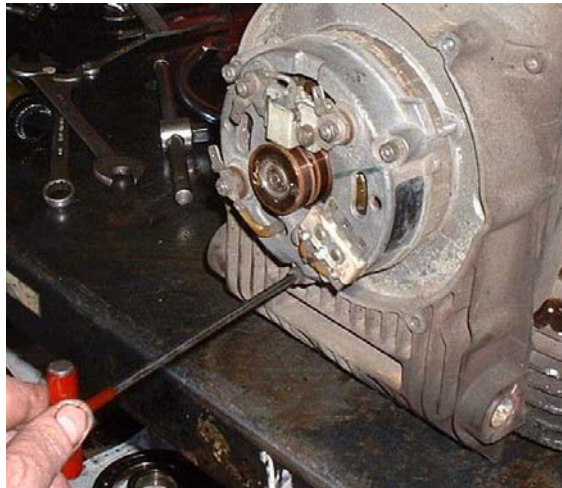
Pic 2-14:

Double Bigger!!!! That's what happens when you cut off the oil supply to something spinning round at 4000 times a minute!



Pic 2-15:

Remove the dipstick and set the block back on it's sump after having lifted out the pistons and rods. Make sure you keep the caps with their correct rods if there is no damage. In this case where the rods have been cooked they will need re-sizing anyway so it's less important. Once on it's sump again remove the alternator stator by removing the 4 x 5mm bolts.



Pic 2-16:

Gently pull the alternator stator off the rotor. On Bosch equipped bikes take care not to damage the graphite brushes that feed the slip rings. On models with permanent magnet rotors there are no brushes but care should be taken to try not to scrape the inside of the stator against the rotor if possible.



Pic 2-17:

The crank now needs to be locked. For this purpose I re-installed a flywheel i had hanging around and used the Guzzi flywheel holding tool. If you don't have this tool you can make something suitable out of w three inch piece of flat steel bar. Drill a couple of holes in either end and then hook one end over a bell housing stud and secure the other to the flywheel with a bolt to one of the ring gear mounting holes.



Pic 2-18A:

Pic 2-18B:

Pic 2-18C:

These three pics show how to get a Bosch rotor off. The rotor is retained by a bolt that goes into the nose of the crank. The end of the rotor just inside the slip rings is also threaded. Guzzi makes a tool which is essentially a piece of hardened steel rod that you slip in through the rotor and it butts up against the crank at the bottom of the threads the bolt goes into. It is just the right length that when you screw the rotor bolt back into the threads inside the slip rings it bears on the end of the rod and exerts a force on the crank which should pop the rotor off its taper.

I use a cut off hardened steel bolt or allen key for this task but it's easier by far to simply buy the tool. It isn't expensive and as you can see from the state of my current 'Tool' my home made jobbies have a fairly high attrition rate. Length of the tool is critical. Buy one or repent at leisure. Be prepared to catch the rotor as it pops off, it'.

Optional tool,

Pic 2-18D:



Available from Rolf Halvorsen
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