How to identify the cylinder bores of roundfin Guzzis

Posted on the www.wildguzzi.com forum by Pete Roper on 12 November 2006.
Final comments by Pete Roper on treatment of the bores for re ringing are added at the end of the document.

This subject seems to have come up fairly regularly. I just so happen to have examples of all three in the w'shop at the moment so I've taken a few pics. All the shown barrels are essentially the same, they are all roundfins with an 83mm bore.

Note that to the best of my knowledge ALL the squarefins have the Nicasil bores so this is totally irrelevant to all you saddos with squarefins. Oh, and all smallblocks have Nicasil bores.

Pic 01:

This first one is a ***chrome bore*** off a T3.

Note the shiny in patches but *mottled* appearance. The mottling seems to be a precursor to peeling. After service they are generally shiny almost like show-chrome. When they flake the flakes expose the alloy underneath which wears rapidly leading to more peeling and eventually, (Soon.) broken rings. The lighter area on the top of the mating face is where the steel (?) insert of the kingerlite head gasket seats and seals the face betwixt head and barrel.

Pic 02:

This one shows a barrel with a ***cast iron sleeve*** off an Mk I LeMans.

As you can clearly see there is a well-defined difference between the alloy of the fin casting and the shrunken in cast iron sleeve. Note also that there are severe hone marks on the inside of the sleeve. This is one I'd honed in an attempt to get it to go around again with another set of rings. Unfortunately it wasn't to be. Also clearly visible in the top of the bore is the wear ridge formed where the top ring stops.

Pic 03:

This third barrel is a ***Nicasil bore*** off a late model Mk II LeMans.

Note the darker colour than the chrome but lack of the differentially coloured and clearly defined sleeve. While it is clearly obvious where the rings reach up to in the bore there is little or no *feelable* wear ridge and these particular barrels have done close to 100,000Km and are completely serviceable with a new set of rings.

Pic 04:

At a glance they all look pretty much the same!

Pic 05:

Another shot down the throat of a ***chrome bore***. In this you can better see the *Shinyness* of the chrome, it's almost mirror like in places and is not in the slightest way magnetic, you can check with a magnet.

Pic 6:

The ***cast iron bore***, once again showing the clearly defined wear ridge.

Pic 7 - 8:

Two more of the ***Nicasil bore***. How sweet it is. Nicasil must have some component that is either ferrous or Tungstenite as it *is* mildly magnetic, unless it somehow absorbs ferous deposits from the rings, (Shrug?) doubtfull.

Pic 9:

Going the other way now this is the bottom of the ***Nicasil cylinder*** spigot. Note the *step* in the aluminium wall of the spigot, (The cutaway in the edge of the spigot is for the rod bolts to pass through as the crank spins incidentally.)

Pic 10 - 11:

Two of the spigot, (Actually the bottom of the sleeve of the ***cast iron liner***.) of the Mk1 barrel, note the absence of the *shoulder* on the liner. The vertical streaks visible in the bore are the result of particulate contamination being dragged up and down the bore by the piston. Fit air filters!!!!! Good ones!!!!! Rings can't seal those scores!

Pic 12 - 13:

Finally two of the ***chrome bore*** spigots. Note the seeming multiple steps in the spigot and most importantly the dull matt finish of the 'un-stroked' chrome.

Final comments:

Look, it's probably not a *definitive* explanation but I hope it gives people some idea what they're looking at if they have doubts about what's in their bikes.

As for treatment of the bores for re ringing?

- Well, if they're **chrome** I bung 'em.
- **Cast iron** you can use hone-stones but a boron ball hone is best.
- **Nicasil** I never do anything with unless they look glazed (Only seen that a couple of times and I think it occurred because the owners were using a friction modified oil, not good in air cooled motors.)

Rings for standard pistons are plain cast iron and seem to bed in fine without treatment. If you look at the MkII barrel you can still see the original hone marks in the bore even at the sort of mileage that this bike had done. If they do look as if they need de-glazing I just give them a very light hone with hone stones but my theory is that this will do nothing more than disrupt an glazing and help prevent more forming. The other really nice thing about Nicasil is that it needs practically no care when running/breaking in by the time you've done 100 miles the rings should be seated and chances of seizure, (As long as they are gapped right.) are practically non existent.

Pete