Fork Seal Cleaning on V45 Magna

Late this Fall both my bikes started leaking fork oil. The Goldwing was leaking from the left fork and the Magna from both forks.

Having Mother Honda replace the fork seals and dust caps on the Goldwing would cost over $400! The Magna would likely be a little less since the 'Wing has air adjustable forks and shocks.

The seals and dust caps were about $50 per bike which is highway robbery of course. Having purchased them I can tell you that they are double-lip seals similar to what we buy at work for about $2.50 each! For anybody that wants to buy from an industrial supply house here is the information you need:

Goldwing GL1200 – double lip 41mm x 54mm x 11mm
(Also fits: 91-00 GL1500 / 94-03 VF750C / 95-96 VF750CD / 97-00 VF750C2 / 83-86 VF1100C)

Magna V45 – double lip 39mm x 52mm x 11mm

Cheaper yet than doing the labour yourself is to repair the leaking seals while they are on the bike! There are lots of videos from some pretty interesting characters on YouTube showing just how to do it with a tool made from old beer cans or cardboard.

According to www.sealmate.net most seals can be saved using their $4.99 tool. It seems like a good buy and the logic behind it seems solid – certainly I would buy one at that price if I saw it at a local store. But ordering it and having it shipped or mailed to me would take the best part of a month (past USPS experience) and the shipping and Customs Brokerage costs would likely bring the total cost up to the neighbourhood of $30!

So I decided to make my own tool for free and give it a try. I decided that my material of choice would be that annoying plastic packaging material that is so freekin’ impossible to open in a safe manner. It is thin enough to slip between the seal and the fork tube and stiff enough to retain it’s shape.

You can get a general idea of the size and shape that I used in the picture to the left. The most important thing is to make smooth even cuts and avoid leaving sharp or jagged edges that can do damage to the seals.
Here are the tools and supplies that I used – the white and black tool is actually the tracing pattern for the plastic wiper that is lying on top of it (difficult to photograph clear plastic clearly). The black tie strap is two Velcro cable ties. The grey stuff under the scissors is felt from a boot liner long gone to its Maker.

The black circle is something perished that I removed from the fork – more on that later.

First wipe down the fork tubes and area around the dust seals then pry the dust seal up using a small flat bladed screw driver. Even after all these years (as you can see from the cracks), this is surprisingly easy.

Under the dust cap is a perished wiper that has the consistency of a soggy charcoal briquette – goodness only knows what it used to be.

Remove this carefully and throw it away.

Under the wiper lies the toughest part of this project – getting the thin plastic ring out. It isn’t pressed in but there is very little clearance in the inside or outside of the ring to get under it and lift it out – that is what I used the dental picks for (and it was still difficult!).

Push the white plastic ring up the fork tube and hold it there with the tie wrap.

Under the plastic lies a rusty munge accumulated over many years and a faint glimmer of the seal. The munge is rust from the circlip that holds the seal in place. Using the small flat bladed screw driver carefully scrape the rust away and wipe it out with a rag. When most of the large chunks are out, blow the rest out with compressed air (safety glasses and shield nearby paint etc.).
After a good cleaning the circlip and seal are now visible.

The plastic tool can now be inserted easily between the seal and the fork tube then aligned with the length of the tube and slid around the tube 2 or 3 times and pulled out. This picture shows what was pulled out the first time.

I had some trouble with hidden obstructions below the seal so I re-profiled the tool before repeating the cleaning.

This picture shows the re-profiled tool and the results of the second cleaning – much better!

A third cleaning produced only a thin film of oil on the tool.

Time to see if the leak has been stopped – set the anti-dive on the bottom of the left fork to 2 (basically OFF) and aggressively bounce the handlebars to compress the forks as far as possible.

The picture on the right shows the forks before the test and the left shows them afterwards.

The difference appears minimal but it is possible to see two light soil marks on the unrepaired left fork where I am pointing. It is much more visible than the photo shows. There is no corresponding mark on the right fork that has had the seal cleaned.

After another wipe down and blow out with compressed air it is time to reassemble. I sprayed the 3M penetrant over the circlip just in case I have to do the replacement at some time in the future (hopefully distant) and wiped out the excess.

Wipe down and lower the plastic ring then cut a strip of felt to replace the discarded wiper. Carefully insert it and arrange it with the screwdriver. Clean and lower the dust cap. Use the wooden block and hammer to tap the cap into place.

The first fork is done, on to the next.