Disappearing Damper Pot Oil - An Easy Fix

I bought my TR6 last October, and have been making minor tweaks and adjustments on an ongoing basis in an effort to get it running “just right”. The carburetors were professionally rebuilt only a few months before I purchased the car, but the plugs and tailpipe have been plagued with sooty lack deposits indicating that the carb’s were set too rich. Before taking on the Carb’s, I made sure the rest of the ignition was all setup correctly. Timing, Dwell, Plug Gap, any of these can result in similar indications, in fact I have read that most suspected Carb problems are actually ignition related. I purchased the adjustment tool, and began leaning out the mixture, test driving, leaning a bit more, another test drive, and so on. Finally the day arrived when I pulled a plug, and it was a nice chestnut brown indicating the mix was close to perfect. Unfortunately, I was also noticing that the damper pots were dry after almost every test drive.

I did some research, and learned that there are rubber seals at the bottom of the damper tube, around the Adjusting Screw you are turning when you adjust the mixture. This indicated to me that this seal was probably overlooked during the “professional” rebuild, and my recent adjustments had caused them to start leaking. The seals are actually just simple rubber O-rings which you can buy at the plumbing department of Lowes or Home Depot. A pack of 10 is a wopping $1.27, and you will have enough seals left over to share with your fellow Stromberg sufferers. The project will take you about 20-30 minutes, and you don’t need a lot of tools. Here’s the list, a Standard and a Phillips screwdriver, Carb Adjustment tool, unsharpened pencil (no erasor) or similar sized wooden dowel. The O-rings are #5 with the following dimensions, ¼”id x 3/8”od x 1/16”thick.

Here are the step by step instructions;

1. Do one carb at a time in case you forget how something goes together.
2. Remove the Damper assembly (cap and piston)
3. Remove the 4 screws holding the top cover on. These are not really Phillips screws and since most mechanics don’t have the proper driver, most I have seen have heads that are badly stripped. I replaced mine with Stainless Steel Phillips pan head screws #10 x 32 x ¾”long, and new stainless lock washers.
4. Remove the top cover, gently. You may have to tap it with a screwdriver handle to get it loose, not too hard.
5. Remove the spring, be careful not to bend or stretch.
6. Now very carefully pull out the Air Valve assembly, and be very gentle with the rubber diaphragm, they tear very easily. You may want to order replacements if they look stiff or cracked. Dump out any oil that may still be in the tube. The diaphragm can be removed from the Air Valve assembly to prevent damage, I took a chance and managed not to tear them.
7. Using the carb adjustment tool, turn the Adjustment Screw CCW (as viewed from the top). Observe the position of the Metering Needle, and you should notice it advancing out of the Air Valve assembly. Stop turning when the Metering Needle stops advancing.
8. At this point, the Metering Needle and the Adjusting Screw should be separated.
9. Remove the Metering Needle Retaining Screw.
10. The Metering Needle should be able to be removed, but you may need to turn the
    Adjusting Screw a bit more CCW to free the needle. Be gentle, it should almost
    fall out. If there is gunk holding it in, use some carb cleaner.
11. The adjusting screw installs from the top, and sits on a seat at the bottom of the
    tube, and has a spring Retaining Washer above it that holds it in place.
12. Turn the entire Air Valve assembly upside down on a rag, and place the pencil
    into the tube where the Metering Needle was. Take a small hammer, and gently
    tap the pencil until the Adjustment Screw, and the Retaining Washer come out the
    other end of the tube.
13. Now that the adjustment screw is out, you can see the worn O-Ring, and replace
    it. I find a sharp pin or a knife with a fine point works well for removing the old
    O-Ring. (mine was so worn it no longer looked like an O-ring)
14. Install the new O-Ring, and lube it with a drop of oil.

Re-assembly Time

1. Place the Adjustment Screw onto the Carb adjusting tool, and use it to push the
   adjustment screw down the tube until is sits firmly on the seat at the bottom. You
   will notice some friction caused by the new fatter O-Ring. This is good, this is
   what keeps the oil in.
2. The Retaining Washer is a bit tricky to install. I did it upside down as follows.
   Hold the Pencil vertically, and place the washer on the tip of the pencil with the
   concave side down (it should look like a tiny umbrella). Take the Air Valve
   assembly upside down, and place it over the Retaining Washer and push it in, this
   took a few tries and some wiggling. Once it is inside the tube, push it all the way
   in until it sits on the Adjusting Screw, no hammering necessary.
3. Place the Metering Needle into the end of the tube, and take care to align the slot
   in it’s side with the hole for the retaining screw. Install the Retaining Screw.
4. Place the Carb adjustment tool back in, and turn it CW until it catches the thread
   in the back of the Metering Needle. Once this catches, you can adjust it until the
   Metering Needle is flush with the face of the Air Valve. This happens to be
   nearly the perfect mixture setting on these carbs. I discovered that one of my
   retaining screws had backed out allowing the Metering Needle to spin, preventing
   it from adjusting properly.
5. The worst is over at this point. Place the Air Valve assembly back in the carb,
   and make sure the small tab on the diaphragm lines up with the slot in the rim of
   the carb. Gently press the diaphragm into the recess all the way around the rim of
   the Carb.
6. Place the spring into the Air Valve Assembly.
7. Replace the cover on the Carb. If you forgot how it goes on, look at the other
   carb you should not have touched yet. In case you did, the extra boss on the top
   faces the intake side of the carb.
Now do the other one, and you’re finished. The mixture setting was nearly perfect, but slightly on the lean side. I adjust my mixture by taking a test drive 5-8 miles, and then pulling a few spark plugs to check their color, pull at least one from the front group (1-3), and one from the rear group (4-6). White = too Lean, Black = too Rich, Med Brown = just right. Generally speaking the front carb feeds the front three plugs, and the rear carb feeds the rear three plugs. There is a crossover tube so that there is some mixing. Always adjust the screws on both carbs the identical amount, and my experience indicates $\frac{1}{4}$ turn at a time works best.