

# Needle Point

The Repair, Adjustment and General Maintenance of the Stromberg 175 CD Metering Needle

By: Joe "Stagmeister" Pawlak

There isn't a whole lot of readily available or detailed information on pulling the metering needles apart on your later model Stromberg 175 CD carbs. Maybe I didn't look hard enough for the information. Since I needed to do some maintenance in this area, I figured I'd snap some pictures and give everyone a write-up on the process. This is not all encompassing, but it's enough that you learn something and may be able to fix without any major headaches.

Before we get into the repair procedures, a few reasons why you want to goof with the things in the first place.

1. You find yourself constantly topping off the damper oil.
2. You can't seem to be able to adjust the mixture.
3. If you can adjust, it's hard to turn the hex wrench inside the carb tool.
4. Good excuse to pull them and inspect the rubber diaphragms.

Reason/Problem 1: At the bottom of the slide tube there is a adjusting screw. The head of the screw is what the hex wrench of the carb adjusting tool mates with. This allows you to bring the mixture metering needle up (turning clockwise) to richen the mixture or to bring the needle down (anticlockwise) to lean it out. There is a rubber o-ring that fits around this adjusting screw and after a bunch of years, is just plain worn out. This allows slight amounts of oil to pass by the metering needle and eventually lower the dampening oil level causing

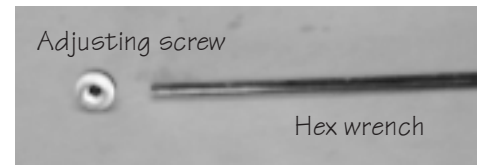
other problems. These are not 2 cycle engines so we don't really need a fuel and oil mix.

Reason/Problem 2: There may have been a time when the mixture needed to be adjusted. In some cases Problem #3 allowed the hex

wrench to round out the hex opening of the screw. The adjusting screw is made out of brass that had a hardness coefficient between silly putty and 2 year old gum stuck to the bottom of the table. With that rounded out, you were pretty much stuck with the needle where it sat.

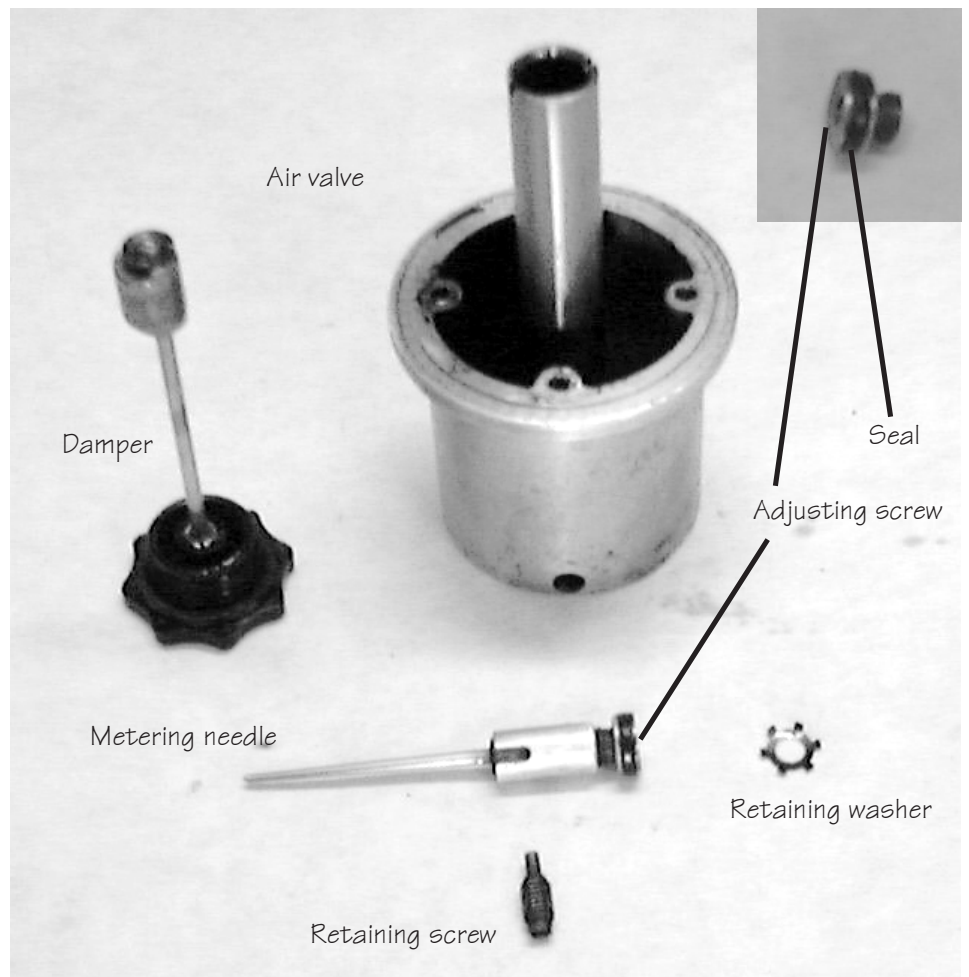
Reason/Problem 3: This usually results in Problem 2. Couple of things I noticed

cause this. There is a small itsy bitsy roll pin through the side of the metering needle assembly. On one of my carbs, it was sticking out ever so slightly that it would bind in the damper tube, impeding movement for the adjustment. Another area was the damper tube area in which the needle assembly sat was fairly contaminated. Still another was the retaining screw in the air valve being slightly long, pushing against the needle



assembly adding to the resistance of movement. Finally, the o-ring on the adjusting screw and the threads of that screw where it goes into the metering needle assembly needed some attention.

Reason/Problem 4: The rubber



diaphragms are critical in regulating the vacuum in these carbs. It has nothing to do with the mechanicals of the needle, but they do crack and cause problems. It is a good idea to inspect them prior to placing your parts order.



Punch back through, the adjusting nut and retaining washer

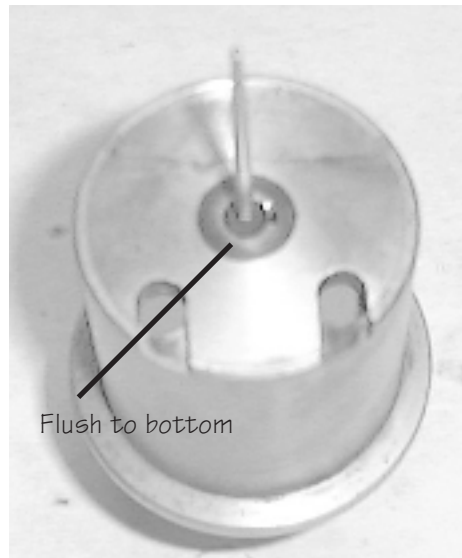
### Repair and Renewing

With the air valve out of the carb body, remove the diaphragm to prevent it from getting damaged. Use the hex wrench from your adjusting tool and turn anti clockwise to back out the metering needle to its farthest point. Remove the retaining screw on the side of the air valve and the needle assembly should be able to be pulled out. You may have to give it a half turn but it should come out.

If the adjusting screw is stripped, the assembly extraction is a bit trickier. You will need a very small punch and a small manually operated inertially driven impact generator, something like a tack hammer. Turn the air valve over and carefully secure it in a vise, warp this thing and forget about the next steps since you'll have to get a new one. You will see a small notch at the bottom of the needle assembly where the retaining screw floats in. This slot will give you some leverage as it is the only way I can see that would give you a chance of rotating the thing out. I'm sure there is a special tool, but geez who would have

that? Using the small punch and hammer, angle the punch and gently tap on the edge of the notch so you can rotate it anticlockwise and wind it out of the tube. Lots of baby steps here and be gentle! You will probably knicker up the edge a bit, but that can be dressed up and it is fortunately in a non critical area.

With the needle assembly out, you can check the itsy bitsy roll pin and clean any corrosion on the assembly and in that same area on the tube. Using a



Flush to bottom

larger punch or dowel rod, you can now push/punch the adjusting screw and retaining washer back out the top of the tube. At this time you'll be replacing the o-ring on the adjusting screw or screw if needed. It is a good idea to get a new retaining washer as they are cheap. Place the new screw back down the tube. Make sure the hex hole faces up. This will rest on a shoulder at the bottom of the damper tube. The retaining washer is concave. Its tricky, but place the washer down in the tube making sure the concave of the concave screw faces up. Push this down until it hits the adjusting screw. Turn it over and you're ready for the needle assembly.

With everything clean including any edges you may have induced during extraction, the needle assembly should slide nicely into the bottom of the tube. Rotate it around, line up the notch and put the retaining screw back in. Using the hex wrench, turn clockwise to bring the bottom of the needle assembly flush with the bottom of the air valve. This gives you a basepoint for the mixture adjustment. 9 times out of ten, that's usually where it ends up staying. Turns nice now don't it? Before total reassembly, check the notches at the top of the damper tube where the adjusting tool attaches. Sometimes with a hard adjusting needle assembly, the notch developed a burr which is enough to cause binding with the dashpot cover. Take the cover and slide it up and down on the tube to check it out. That's it, put the diaphragm back on and put back in the carb body. Top off the damper oil and perform any final mixture adjustments. Other notable checks involve your adjusting hex wrench. Make sure the edges are square and clean. If needed, grind away the worn area. Then take off for a nice ride, you've accomplished something.



Look for "knicks" here

Next month, I have a article on the whole theory of ops on how the air valve works and some discussion on damper oils.