

Carburetor Rebuild 101 (Part 1)

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By: Bill Overton

After much delay (also known as procrastination) I finally collected together the Carburetor Rebuild Kits (K&L's), a set of Vacuum gauges (JC Whitney) for synchronizing the carburetors on the bike, and now, the need to get 'er done. (Bike's really running rough).



Since I have a spare set of carburetors, I will complete the clean-up and rebuild on the spare set, then swap them with the set on the bike, and



then sync the rebuilt set on the bike. I will be writing this tutorial in phases for publication in the Voyager Voice and AVA Website. (I hate to use the word "Tutorial" as it tends to infer that I know what I'm doing).

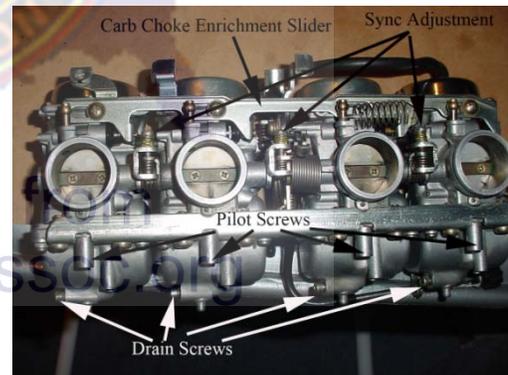
Part One will be just on the disassembly and rebuild of the carburetor sets.

Part Two will cover the removal and installation of the carburetors on the bike.

Part Three will cover the synchronization of the carburetors.

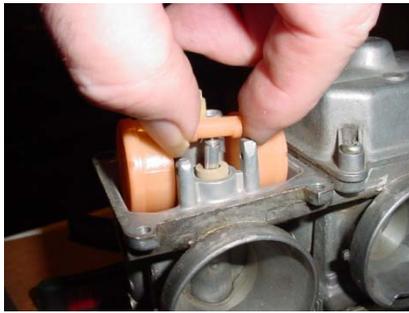
Part Four (if needed) will be what I do with them if they don't work! &

So, let's get started. First thing I did was get four small bowls from Bernadette's fine Corel Dish Set to put the parts from each carb into. Disassembly is pretty straight forward. (If unsure of your ability to put back together, take lots of pictures). I prefer to disassemble, then clean, then put back together. Some clean as they disassemble. The carb's do not have to be completely broken down for a good cleaning and rebuild, however, I suggest the minimum to be removing the bowls and the parts that are to be replaced from the rebuild kit and the top half to include the slider and diaphragm. You do not need to take the carburetors apart from each other. Although, it will be necessary to remove the switch and cable assembly (part of the cruise control circuits), the idle adjustment control, and the choke enrichment slide bar. It is beneficial if you have pages 2-2 through 2-14 of the Fuel Section of the Service Manual available while you are dismantling and rebuilding the carb unit. There is a nice exploded view of the carburetors on page 2-2.



Each Bowl has four screws holding it to the body of the carb. **Two of the left bowl screws also secures the idle adjuster bracket.** To remove the idle adjuster after the bowl is removed, just unscrew the cable from it's mount. (there is a washer and spring on the cable end of the adjuster). After removing the bowls, with the carbs



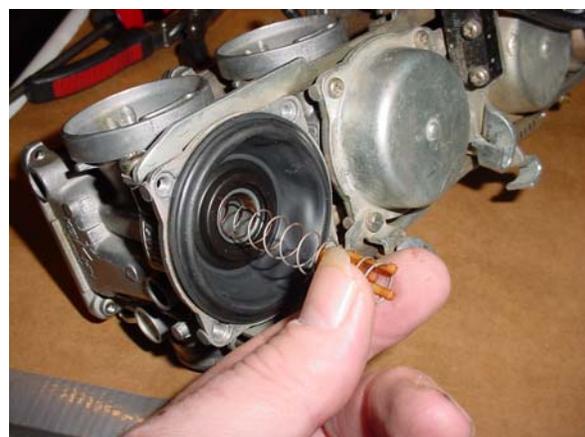
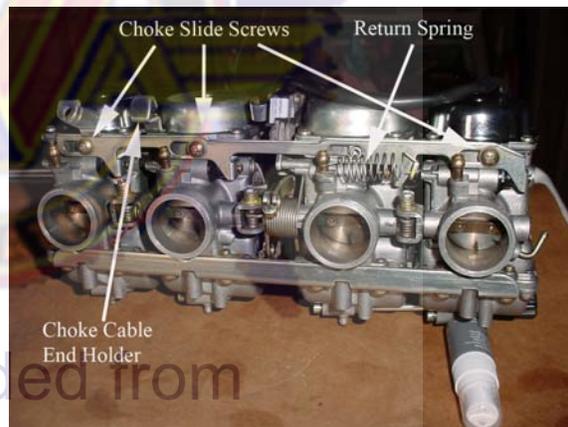


sitting up-side-down, use a small pin, or screwdriver to push the float pins out that hold in the floats. (they just slide in and out) A small needle nose plier will help pull out the pin. (See photo)



Lift out the floats and the needle valves and set aside. (The needle valve will be replaced from the kit) The needle valve is easily removed from the float tang. It will probably fall off while you're thinking about it. Gently remove the gasket seal from the bowl, this is also replaced from the kit. The gasket may be hard and brittle. Take care not to damage the groove in which it sets. At this time, you can remove all four Pilot Jet Screws, their springs, washers and o-rings. This is hard to make out on the manuals exploded view, but there is a small o-ring and steel washer seated in the pilot jet screw hole. They probably will not just fall out, but will have to be coaxed out with a piece of stiff wire or an unbent paper clip. This is also replaced from the kit. (So that's what those little things in the repair kit are!?) You could also remove the Drain Screw from the bottom of the bowls, now. (Mine were allen socket screw heads, but I noticed from a picture of Mr. Fritz's carburetors, his were Philips head screws.)

Now, on to the top side. Remove the spring and Choke Slide Bar. Notice that there are only three screws for the slide bar. The third location is occupied by the return spring. There are two nylon washers with each mounting screw. (set aside). Now, there are four screws holding the diaphragm /slider covers on for each carb. Take one off at a time. There is a spring under each cover, so hold the cover down until the last screw is removed, then release the cover. If you haven't noticed by now, only the outside two covers are chromed. I guess Kaw figured, "If you can't see it, why spend the money getting all four tops chromed!" **Note: the picture showing the spring and diaphragm was taken to show location of spring. The spring is, in fact, shown backward! The end piece in the spring actually goes into the slide first.**



slide can now be removed. Examine the diaphragm for any tears. If there are any tears, it must be replaced. The needle pin can also be removed from the slide at this time. Set all aside.



With all the top disassembled, it is now time to give the carb bodies a good cleaning with a carburetor/Choke cleaner. (Wear some glasses so you don't get any in your eyes. It smarts!) Spray into all the nooks and crannies and hit all the passage holes. Also clean the bowls.

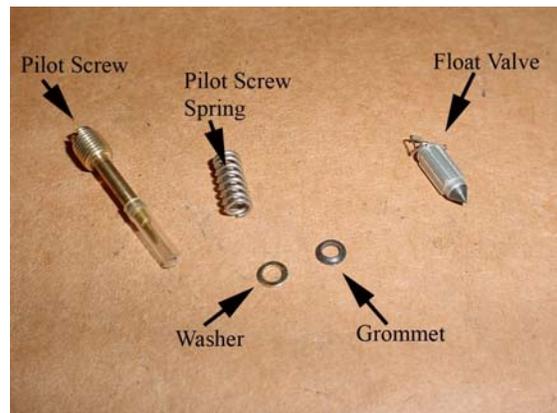


Reassembly

The easiest procedures are to rebuild the bowls side first then reassemble the tops. Now is the time to open a rebuild kit, being careful not to lose any of the small pieces.

Refer to the picture of the small pieces and the picture of the assembled pilot jet needle for the following steps.

Assemble the Pilot jet needle screw assembly according to the pictures.





I found it necessary to install the Pilot Screw holding the carbs and inserting the screw from underneath to ensure the grommet and washer seated correctly. It can be started by finger then completed with a narrow screw driver. Screw it in until it seats, then turn it out the customary 2 full turns.



(Refer to page 2-10 in the Service manual) Now you will take the original floats and gently bend the Tang near the mounting arms so it is flat in relation to the rest of the float arms. This will be just about right for setting the float height adjustments to follow. Hang the new float valve on the tang and place the float w/ valve into it's respective carb. (Guide the value into it's hole as you lower the float into place. Re-insert the float pin into the carb. When the pin is inserted, the float should *float* on top of the valve pin. According to the manual the proper height adjustment for the float is 17mm from the Float Bowl Matting Surface to the top of the float as it sets static on the valve. I found the best method for measuring this is with a 6' machinist ruler. (see photo) Set the arms of the machinist ruler at 17mm and



measure the height of the floats. If the height is not correct, adjust it by slightly bending the tang of the float up or down, depending on the location of the float. Set it so the ruler just sets on the float or with very little deflection when measuring. **Complete the assembly of the remaining floats.**

After you have completed the adjustments to the floats, you should be able to view down the bottom of the carburetors and see all the bowls standing at attention at



about the same height. If you see one out of whack, check the height measurement of the offending float, readjust as needed. At this point, install the new bowl gaskets into the grooves of the bowls. It should not be necessary to apply any adhesive to keep them in place. With two bowl screws, mount the bowls back onto the carb bodies. Place screws, one at each opposing corner. Tighten only lightly. *(Lesson learned! I reinstalled all the screws only to find out I needed to remove some to remount other attachments that use the bowl screws.)*



Now back to the tops. The original parts going back into the top assemble as shown:

The slide will only go into the carb one way. I suggest you place the slide and diaphragm into the carb body prior to putting in the needle. If you put the needle in first, it may not align itself into the lower section of the carb and get cockeyed. With the slide in first, the needle will slide right into place. Then the spring and spring seat is installed. *(Refer to page 2-12 in the manual for additional view)*



The spring seat goes in the slide next. It needs to be installed so that the legs of the seat do not block a hole in the slide. It is easy to see this. Now, with the spring seat in, place the spring into the slide. Again, with two cover screws and the respective cover, secure the carb top in place. *(Remember the thing about the chromed ones!)* The underside of the tops have a stay that is there to keep the slide springs in the center of the tops. Make sure you have the spring over the stay when placing the top on the barbs. (again, easy to see). Now complete the rest of the top reassemblies.

It is now a good time to reinstall the choke slide bar, the choke cable end holder, and the idle adjuster. Refer to the earlier picture for details. Remember there are only three screws and three sets of nylon washers *(for each side of the bar)* to secure the bar. The spring is not difficult to re-install. *(The exploded view on page 2-2 could be handy here again.)*

Hopefully the results you have should look like this.....



The next installment will cover the removal and installation of the carburetors on the bike. Wish me luck!

Bill

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