Zenith Float Valves

by Tom Endy

The float valve in a Zenith carburetor controls the fuel level in the reservoir. Most Zenith how to publications recommend that the fuel level should be set at a nominal 5\8" down from where the upper and lower castings come together. This is an important setting and it should be confirmed that the setting is actually there. However, since you cannot see it, in most cases the adjustment is done by guess and it is not always accurate.

There is a test widget on the market that you connect to the bottom of the carburetor at the drain plug. My experience has been that they don't work very well. For this reason I constructed a test stand that allows me to see where the fuel level is actually set, and more important, holding at that level over a period of time.

Zenith carburetor fuel level test stand. Fuel is poured into the container at the top. It then runs down into the carburetor reservoir. When the float rises with the fuel level and reaches the set point, the valve closes.

The fuel level can be seen in the glass and measured down from the bottom of the top casting. The fuel level at the mark is at 5\8".

To adjust the fuel level, the recommended method is to add or subtract washers underneath the float valve. It is best to never bend or adjust the float mechanism, as the results will more than likely distort it and cause it to not actuate properly. Molested floats are often the cause of the float valve not holding the fuel at the proper level over a period of time.

My experience has shown that the best float valve on the market is the modern viton tip float valve Bratton's carry. However, it does come with some problems. Though the design is good, the quality control is poor. For that reason it is advised to take it apart and do some work on it. It comes apart very easy. With a small jewelers type screwdriver pry out the clear plastic washer and remove the needle valve. Inspect both the valve and the seat with a magnifying glass. You will no doubt find brass-machining debris, clean them off the viton tip and from around the seat. You may also have to use a small drill bit to clear the burrs off the seat. This is no reflection on Bratton's, as they have little control over the quality control process of their supplier.

Bratton's viton tip float valve. The valve comes apart by prying the nylon washer out at the left end of the valve.

When testing an upper casting for the proper fuel level, allow the test to sit static for about 30 minutes. If the fuel level is going to rise past the set point it will show an indication within 30 minutes.

A properly set float level is but one of the important aspects of several for a properly functioning Zenith carburetor. ☺