

Fuel Leaks with Zenith Carburetors

How to fix some common problems.

By Lynn Sondena

THESE ZENITH CARBURETOR problems and fixes come from my many years of experience. I have had Model A owners tell me they will not use Zenith carburetors due to their fuel leaks. But if you understand the carburetor and make the necessary repairs, the Zenith is very reliable.

THE FUEL LINE FITTING to the fuel inlet housing is a source of very slow drips. I suspect it is due to the new, one-piece brass gas line fittings. The old-style fittings were two pieces, which would pinch the fuel line to help produce a leakless seal. *Figure 1* shows the old, two-piece fitting on the right and the new, one-piece fitting on the left.

The solution to this problem is easy: make the one-piece fitting into a two-piece fitting. *Figure 2* shows the new fitting cut down. Basically, you cut off the ferrule.

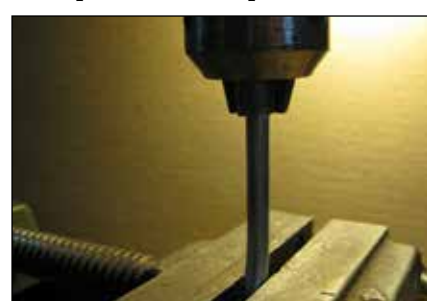


Figure 3

Then place a 3-inch piece of fuel line in a drill press chuck (*Figure 3*). Next, slide the fitting onto the fuel line (*Figure 4*). This will align the fitting hole 90 degrees to the drill press chuck.



Figure 4

Clamp the fitting into a drill press vise and removed the fuel line from the drill chuck. Using a 1/2-inch diameter, 60-degree countersink (*Figure 5*), cut the fitting so the new ferrule will fit. These ferrules, which are very inexpensive, are available at hardware stores, auto parts stores, and plumbing shops. *Figure 6* shows the completed fitting.



Figure 5

A QUICK CHECK of the fuel inlet seat is also needed. It should be free of pits, burrs, or scoring. If you find any of these use a 1/16-inch ball-end grinding stone for touch up. (A drill press is the best method to keep the stone at a 90-degree angle to the casting.) Gray cast iron is soft and cuts away fast, so use only light pressure. Inspect the fuel inlet threads to be sure they are clean and free from rust, dirt, or burrs. The threads are 1/2-20 National Fine and can be chased with a tap.

Avoid using Teflon tape, as this product will melt away with time. If you use high-temperature thread sealants, most of them need to cure for 72 hours before coming into contact with gasoline. Nothing works as well as the squeeze effect of the ferrule on the fuel line.

THE NEXT PROBLEM AREA is the float valve. *Figure 7* shows the original style valve on the left and the modern ball bearing valve on the right. The old style valve is a needle and seat. Though these have been improved with the Vitron seal design, a small speck of dirt can keep the valve from sealing.

A better alternative, and my preferred fix, is to use a ball bearing valve. These



Figure 1



Figure 2



Figure 6



Figure 7. The original style valve (left) and the modern ball bearing valve (right)

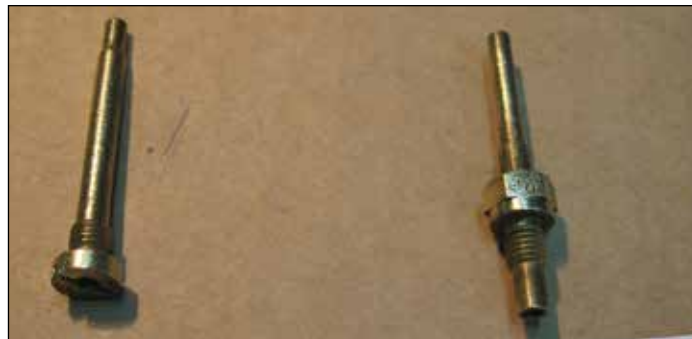


Figure 8. Main jet (left) and cap jet (right)



Figure 9. The cap jet stands taller than the main jet.



Figure 10. Jet with extra gasket.



Figure 11. Original jet with stamped number



Figure 12. Main and cap jets installed correctly, with main jet taller.

are known as the Grose Jet valves. These valves use two ball bearings, which are freewheeling, so a speck of dirt usually does not keep them from sealing.

Please note that wear on the float valve can also produce leakage, so do not be afraid to replace the float valve when rebuilding a carburetor. The Grose Jet valves do not wear out as fast as the needle valves.

THE NEXT COMMON AREA for fuel leakage is the float level. An incorrect float setting can cause fuel to run out of the carburetor's rear throat assembly (by the choke butterfly). When the float level is set correctly, the gasoline in the float bowl is just below the height of the main jet and cap jet.

Too high a float setting will cause leakage from these jets. The main jet should be taller than the cap jet. **Figure 8** shows what the main jet and cap jet look like. The main jet sits vertical, and the cap jet sits at an angle.

Figure 9 shows the cap jet taller than the main jet. Why is it taller? Two common reasons contribute to this

problem. One is if a reproduction jet is not manufactured to original Ford specifications. The other reason could be extra gaskets on the jet (**Figure 10**) or lodged inside the jet's threaded cavity.

Unlike reproduction jets, the original jets have a number stamped on the hex area (**Figure 11**). The main jet will measure 1.48 inches from the gasket area to the end of the jet. A cap jet will measure 1.115 inches from the top of the hex to the end of the jet. (Jets that are too short can siphon gasoline out of the float bowl.) **Figure 12** shows the main jet and cap jet correctly installed, with the main jet $\frac{1}{16}$ to $\frac{1}{32}$ inch taller.

CHECKING AND CORRECTING these problems will solve most gasoline leakage with the Zenith carburetor. With the proper knowledge, these are well designed carburetors that are simple to maintain and use. ☹

Other Possible Causes of Leaks

- Leaky float
- Loose drain plug
- Loose bowl to upper body screw
- Cracked gaskets
- Dry gaskets
- Gas adjusting needle not seating
- Cracks to the gray cast iron body housing

Lynn Sondenaar of Sandy, Oregon, purchased his first Model A while in the 7th grade. He and his wife, Patty, are members of the Beaver Model A Club of Portland, Oregon, and own a 1929 Roadster Pickup (pictured on the front cover of the January/February issue) and a November 1930 Victoria.

