

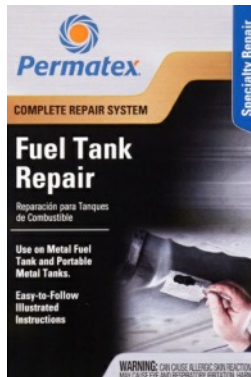
More About Fluid Leaks

Previously, we have talked about engine oil leaks and leaks in the cooling system and how to go about repairing these leaks. Now that all of these problems have been corrected, we need to talk about other components which can also leak fluids. First, we will consider problems associated with the fuel system. The fuel system consists of the gas tank, gas shut off valve, sediment bulb or filter, fuel lines and finally, the carburetor.

First, let's consider the gas tank. A leak in the gas tank itself usually requires that the tank be removed and taken to a shop to have it cleaned and repaired. Sometimes the tank itself is in such bad condition that it must be replaced, however, there are some repairs that can be done while the tank is still in the car.

If there are just one or two small pin holes they can often be soldered or sealed with epoxy. In either case the tank must be empty of fuel and the area around the pin hole must be cleaned down to bright bare metal. If you are soldering the pin hole be sure to use a large enough soldering iron that will get the area hot enough to melt the solder. **NEVER USE ANY KIND OF AN OPEN FLAME OR HEATING ELEMENT THAT COULD CAUSE THE FUEL TO IGNITE.** I have a big old fashioned electric soldering iron that I have had good success with. Another way to fix a small leak is to make a small patch out of a piece of thin metal and use a fuel resistant epoxy to bind the patch to the tank. Just be sure the area to be patched and the patch itself is absolutely clean.

It is not uncommon to find a leak around the bond between the steering column support and the underside of the tank. Originally, this support was riveted to the tank and then solder was applied all around the support and to the exposed rivet heads to insure there were no leaks. Through the years, with the strain of supporting the steering column, the rivets may loosen a little and the solder bond may fracture which results in seepage around the steering column support. To prevent this from happening, in mid 1931, a new steering column support was used that mounted to the underside of the dash rail and not to the tank itself. If the tank is out of the



car, the support can be re-soldered but re-soldering is not practical while the tank is still installed. I have used gas resistant epoxy to seal this seepage but I also strongly recommended a late '31 style steering column support be installed to eliminate the stress on the tank mounted support and help prevent the seepage from re-occurring.

The fuel shut off valve is another place where fuel leaks can occur. The valve can leak where it threads into the tank.



Sometimes, the valve can be tightened one more whole turn to correct the leak but often the valve must be removed and sealer applied to the threads and then re-installed. Be sure to use an ethanol fuel resistant sealer such as Hylomar Blue or Permatex #2.

Use caution and do not over tighten the valve and damage the threads in the tank. It may be necessary to replace the valve if the threads on the valve are badly worn. If the threads in the tank are worn, a new valve may also help this situation.



If the threads in the tank are worn to the point where a new valve will thread in all the way and still not seal, building up the threads on the valve with a thin layer of solder may help. When tightening the valve, do not turn the valve past where it will line up with the fuel line. If you have to back it up a little, you may break the seal of the threads and a slight leak can develop.

If the valve is leaking around the stem, first try tightening the packing gland nut just a little. For some valves, it may be necessary to remove the handle to access the packing gland. If necessary, re-build kits are available that include new packing material.

The other place a valve can leak is at the fuel line connection. From the start of production until mid 1931, the fuel shut off valve was located under the tank. The fuel line used with these valves had flair at each end that seated against a matching taper on the valve. A nut on the tube is screwed onto the valve which pulls the flair tight and seals it against the taper. This connection is designed to NOT use any kind of sealer. If the tube nut is tight and the connection is still leaking, either the flair on the tube is worn and deformed or the taper on the valve is worn or both. A new valve and tube may be in order.



The late 1931 style valves that are accessed under the hood use a fuel line that incorporates a compression type fitting. Compression fitting connections use a round ferrule sleeve slipped over the end of the tube that is pulled up by a tube nut tight against a matching seat in the valve. Often, after many times removing and re-installing the line, the ferrule becomes distorted and worn and will not seal. Replacing the line, of in some cases just the ferrule, will usually cure the problem.

Again, this connection is not designed to use any kind of sealer. Occasionally, the seat in the valve is worn and the ferrule will not seal, oversized ferrules are available for such situations.



The next component we should consider are leaks associated with the cast iron gas sediment bulb which was used on most Model A's produced through mid 1931. The fuel line from the gas shut off valve can leak where it is connected to the bulb. A remedy for this situation is the same as the other end of the line where it attaches to the gas shut off valve. The outlet line uses the same type compression fitting as used with the under hood shut off valve. The cast iron bulb itself can leak where the brass "cap plug" screws into the bottom of the bulb. This connection is sealed with a lead washer and tightening the brass cap plug is often all that is necessary. The drain valve that screws into the brass cap plug can also leak if it is not tight. Replacement parts for the cast iron sediment bulb are available.



When the under hood shut off valve is used, a sediment bulb of a different design was mounted directly on the carburetor. Leaks can occur around the gaskets for the special mounting bolt. If tightening the mounting bolt does not cure the problem, it may be necessary to replace the gaskets. Again, no sealer is used with these gaskets. Tightening the drain valve usually is all that is necessary to stop it from leaking. The fuel line uses a compression ferrule fitting.

From mid-1929 thru mid-1931, some Model A's were produced with a fuel filter that used a die cast housing and a glass bowl. With this design, a fuel leak can occur with the cork gasket where the glass bowl seals to the die cast filter body. If tightening the glass bowl will not stop a leak, then it may be necessary to replace the cork gasket. Be sure to check the die cast housing for distortion from old age or over tightening the glass bowl. Problems with the fuel line connections are corrected in the same manner as the cast iron bulb.



The last component in the fuel system that can leak is the carburetor. Carburetors on Model A's with an under tank fuel shut off valve are designed with an internal gas strainer screen in the upper part of the carburetor. This is held in place by a 3/4 inch hex fitting that is sealed with a gasket. Tightening the hex fitting or replacing the gasket will usually cure a leak in this area. Fuel can also leak from the drain plug in the bottom of the carburetor which is sealed with a small gasket. If the drain plug and the gas strainer screen fittings are not leaking but gas is dripping from the carburetor, the problem is usually inside the carburetor itself.



But wait, there are two other places a fuel leak may be a problem, the gas gauge and the gas cap itself. If fuel is seeping around the gas gauge, tightening the outer and inner nuts may solve this problem. Special wrenches are available from the better parts suppliers to accomplish this task. Sometimes, the gauge itself must be removed and rebuilt with new gaskets. Kits are available that include all the necessary gaskets and other required parts. When the tank has a lot of gas in it fuel can leak from the gas cap and wet the top of the tank. This not only causes a mess but it can damage the paint. A new gasket or a complete new cap usually will cure this problem. Just be sure to inspect the condition of the top surface of the neck to be sure it is smooth and will seal properly when the cap is installed.

Most leaks in the fuel system can be easily repaired. A Model A that does not have fuel leaks is much more pleasant to drive because we do not have to smell the gasoline and is also a lot safer to drive because of greatly reducing the potential for a fire

Tech Tip

Always close the gas shut off valve when your Model A is not in use. The Model A Ford uses a fuel system where fuel flows to the carburetor by gravity. Under normal conditions, the float valve in the carburetor will stop the flow of gas when the float bowl is full. If a small piece of dirt should get caught in the float valve, fuel will keep flowing and the carburetor will overflow causing excess fuel to form a puddle under the car which could result in a fire. To prevent this from happening, always shut off the gas when you park your Model A.