

Tech-Tips 2

Fitting a Fuel Filter to the Carburetor

Many – maybe most – carburetors use a female 1/8" National Pipe Thread (NPT) at the fuel inlet. The pipe thread measurements differ considerably from traditional tap sizes. A 1/8" NPT is much larger than the 1/8" indicated by the tap size. The actual nominal outside diameter of an 1/8" NPT is 0.405" – considerably larger than 1/8". The 1/8" NPT is actually known as a 1/8-27. Threads – male, female or sometimes both - are tapered providing a secure, leak-proof joint.

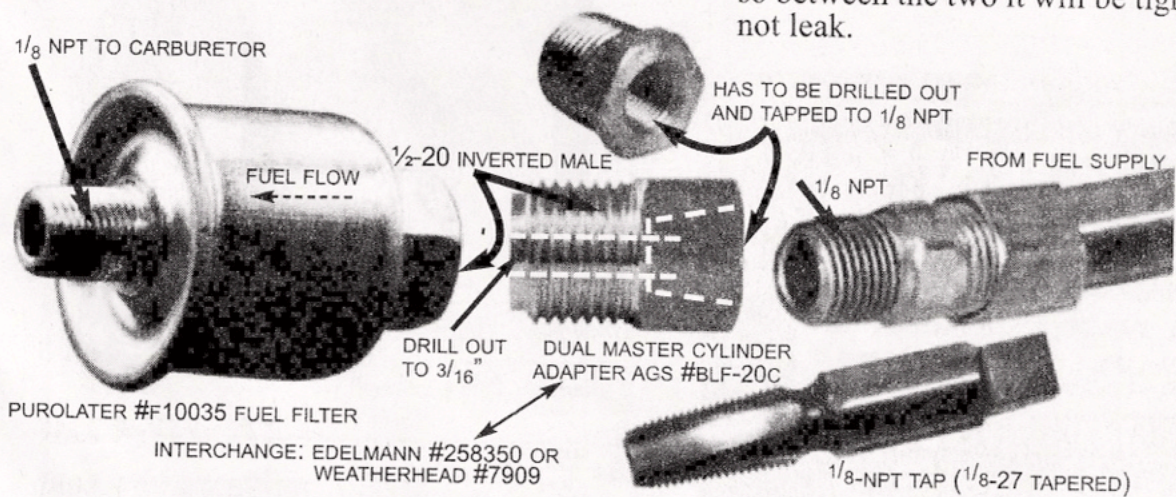
Very few fuel filters are available to readily fit the carburetors on our older car. Having written that, I will back-track; many fuel filters are available using a universal connection consisting of one end, sometimes both ends, and a piece of rubber hose and spring clamps. I don't approve of the rubber connections for two major reasons. First, the ethanol in gasoline may rot the rubber. I cannot be sure, nor is it indicated on any of the packages, that the rubber tubing is ethanol resistant. The second reason is that when the copper line is cut to fit the filter, the clamp provides a dubious, at best, seal. The seal improves considerably, if the end of the copper tubing is slightly flared.

The problem, then, is adapting one of the readily available fuel filters to your carburetor as a screw-in installation. Whether the fuel is being delivered by a fuel pump, vacuum tank or gravity*, a secure, leak-proof installation is possible.

Purolator makes a fuel filter (available in most auto parts stores or on-line) with one end a male 1/8" NPT fitting. The filter is number F10035 (about \$6.00). It is a very common filter for older Ford truck installations.

The problem comes in trying to adapt the supply line from the fuel source. In most cases, the fuel supply line will have a female compression fitting at the carburetor end. A male fitting connects to that compression fitting, and the other end (and it may even take a lot of adapters before it gets to the carburetor) is eventually a male 1/8" NPT.

But the female (inlet) end of the Purolator filter is much larger than 1/8" NPT, so a step-down adapter is needed. After much searching at auto parts stores, I found a 'dual master cylinder adapter'. It has a 1/2-20 inverted male end which fits the fuel filter perfectly. The other end is a female 3/8-24 thread. I chucked the adapter in the lathe (a rigid drill press set-up will work, too) and drilled out the female threads to 21/64" (a size Q [0.332"] or R drill [0.339"]). Once drilled, a 1/8 NPT (1/8-27) tap will cut the proper threads for the fitting from the fuel supply. Center drill the fitting to approximately 3/16" to allow proper fuel flow. Be sure to clean all of the brass chips out of the adapter so that they do not get into the carburetor. Because most 1/8-27 taps are designed to tap pipe threads they are tapered (3/4 per inch), so between the two it will be tight fit, and it will not leak.



* For Model A and Model T Fords, vacuum tanks (and other gravity feed fuel systems), be sure that the fuel filter allows fuel to flow freely without the need of pressure to force the fuel through

S.K.