

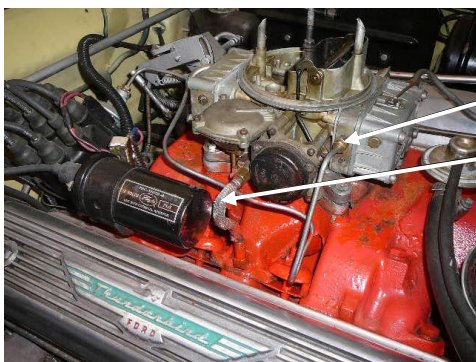
# TECH TIPS

By Tim Chaput and Scott McGilvray

## PVC Smog Device (After Market)

Ok back to the garage and raise the hood on the Thunderbird. Today we want to get rid of the old Road Draft Tube and replace it with an aftermarket PVC Smog Device. If you are not sure you want to do this or do not know what the benefit to you is going to be here is the answer; cleaner air and much less smoke coming from under your car. The smoke is most noticeable in the summertime at a stop. Why in the summertime? Because either the top is down or at least you have the windows open. At a stop you can see the smoke rolling out from under the car. The road draft tube provided positive crankcase ventilation. To be a good steward of the environment without going nuts the Tech Tip will show you how this is done. All necessary parts are available from T-Bird parts suppliers.

You will need to remove the air cleaner and the carburetor. To remove the carb first remove the Choke Tube between the carb and the intake manifold. This is located on the passenger side of the carb, and is fastened to the carb with a brass fitting. It is a press fit into the intake manifold. Loosen the top fitting and pull it free of the intake manifold. This piece will be needed again. Also loosen the brass fitting holding the vacuum line from the Spark Advance (Vacuum Advance) at the carb. (See Photo #1).



**Photo #1.**

Vacuum Line from Spark Advance on Distributor

Choke Tube from Intake Manifold to Carb

Now from the drivers' side of the carb; remove the steel fuel line between the carb and the fuel filter. Fuel will spill out so have a rag nearby. Now disconnect the Throttle Rod at the carb. (See Photo #2).



**Photo 2.**

Throttle Rod, disconnect clip at carb

Mounting Nuts

Fuel Line

A special shaped clip which you will either push the tabs on the side down or up. Should be down but over the years this clip could have been changed out to another clip and pulling up will free it from the linkage rod. (See Photo #3).



← Clip holding the Throttle Rod to the Carb, should look like one of these.

**Photo #3.**

Lastly remove the four nuts at the four corners of the carb which hold it to the intake manifold. Lift off the carb, fuel is inside so keep it level. Once away from the car you can tip and turn the carb to drain the fuel. Now the old Road Draft Tube is removed by removing the bolt which runs through the top of the Road Draft Tube into the Valley Pan, behind the intake manifold (See Photo #4). There is a second Road Draft Tube attachment point. It has a bracket attached to the Tube and one of the bolts which hold the starter runs through this bracket. Remove this bolt, the Road Draft tube is removed from the bottom of the car with some difficulty. Remember to replace the bolt in the starter.



Spark (vacuum) Advance attached to Distributor  
Tach Cable  
Road Draft Tube bolted to Valley Pan under Intake Manifold

**Photo #4.**

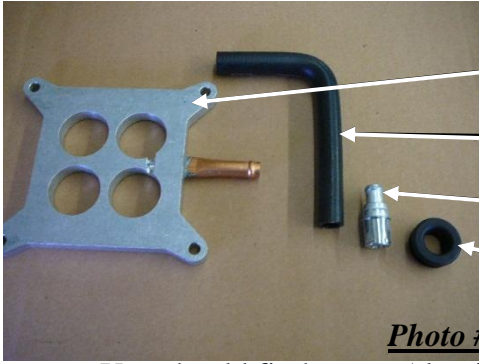


**Photo #5.** - TOP

**Photo #6.** - UNDERSIDE

In Photos # 5 and 6 shows the top and bottom of the Valley Pan, if removed from the engine. Photo #5 shows the nut which the Road Draft Tube bolt screws into. This nut may interfere with the new PCV Valve. As you can see from Photo #6 that nut is attached to a box like structure on the bottom of the Valley Pan. Using a deep socket which fits over this nut, hit the socket a couple of times to recess the nut giving more room for the new PCV Valve. The PCV Valve does not need to be installed all the way into the rubber grommet. It only needs to be securely inserted in the rubber grommet. Photo #7 shows the stop on the PCV Valve at approximately the mid-way point of the Valve.

Under the carb is a gasket, plastic like spacer and one more gasket under this. Keep this last gasket if possible but remove the top gasket and spacer. If you were not able to save the bottom gasket then scrape all of the old gasket off. And install a new gasket, then install the new Aluminum Spacer with the copper tube pointing toward the firewall. The Aluminum Spacer has no 'Up' or 'Down' side. Photo #7 shows the 4 pieces in the PCV Smog Device Kit.



**Photo #7.**

- Aluminum Spacer
- Rubber Hose
- PCV Valve
- Rubber Grommet

You should fit the new Aluminum Spacer to your Carb to be sure the primary and secondary throttle plates move freely. Bolt the two together and check from the bottom, as shown in Photo #8.



**Photo #8.**

- Aluminum Spacer bolted to Carb.
- Carb



**Photo #9.**

If there is binding, remove the Aluminum Spacer, turn it over and file or grind to remove aluminum. Trial fit the Spacer and Carb to ensure you have removed sufficient aluminum (see Photo #9).

The PCV Valve and Rubber Grommet which came with the kit fits into the Valley Pan hole that the Road Draft Tube was removed from. Again the PCV Valve does not need to be pushed all the way into the Rubber Grommet. It will stay in place if installed about the thickness of the Rubber Grommet. The 90 degree Rubber Hose connects the PCV Valve to the copper tube extending from back of the new Aluminum Spacer. Trim the length of both ends of this hose to fit snug to the intake manifold. Install the tube. Install the carb and mounting nuts. (See Photo #10).



**Photo 10.**

- Carburetor
- 90 Degree Tubing trimmed tight to Intake Manifold
- PVC Valve and Rubber Grommet in old Road Draft Tube hole.

On the drivers' side install the fuel line and Throttle Rod to the carb with the special clip. (See Photo #2). On the passenger side install the Spark Advance (Vacuum Line) at the carb. Remember to reinstall the Choke Tube, which was removed in Photo #1. If it looks like it is too short and will not reach, pull on the intake manifold end brass fitting. There is additional tube length in this fitting and it will be sufficient to reach both the intake manifold and carb choke fitting. Check to be sure the 90 degree tubing is still in place and on tight. Reinstall the air cleaner. Lower the hood slowly to be sure the new aluminum spacer is not taller than before and hits the underside of the hood. If the air cleaner stud, from the carb is hitting the hood it will

need to be cut off or replaced with a shorter stud.NOTE: this modification for '55 and '56 are similar but with some differences.

You are done and Al Gore will stop by next week to shake your hand for doing your part to stop global warming.