

Leak Detection - Worse Than Looking for a Needle in a Haystack?



Above: EVAP leak detection process of the vacuum system
inset photo: the OTC 6521 LeakTamer Plus EVAP smoke machine

OBD II systems can flag an EVAP leak that's smaller than the eye of a needle. Effective diagnostics and the proper tools are required to locate these leaks. With a little practice and a qualified Diagnostic Smoke[®] vapor machine, such as the OTC[®] 6521 LeakTamer[™] Plus EVAP*, technicians and shop owners can easily confirm the integrity of a system by pinpointing leaks faster and more efficiently, minimizing come-backs and improving service bay productivity and customer satisfaction.

EGR VALVE LEAKS

When performing a cursory check of the induction (vacuum) system, the EGR valve will be exposed to smoke and may show leaks at the seat, diaphragm, or even the base gasket. If smoke is seen exiting the EGR valve, first determine if it is of a Back Pressure control design (see underhood emission decal, etc.) where venting is inherent to this design. If not a BPEGR, disconnect the vacuum supply line, and introduce smoke directly into the valve. This will verify if the diaphragm is leaking, or if no smoke, the valve was leaking at the seat or mounting gasket.

IDLE AIR (BYPASS) CIRCUIT LEAKS

A small leak in an idle air passage can make an engine idle rough or stall. Leaks in this circuit are usually found during a normal vacuum leak test. It is not unusual to find base gaskets and o-rings leaking in and around motors and solenoids.

BRAKE BOOSTER LEAKS

A leaking vacuum brake booster not only affects engine performance like other types of vacuum leaks, but more importantly, it can seriously affect the stopping power of the vehicle. Pressing on the brake pedal during this test will falsify the test results.

1. Disconnect the vacuum supply line and the check valve from the brake booster.
2. Insert the smoke supply nozzle into the brake booster, and press the tester's remote button once to begin introducing smoke.
3. If the tester's flow meter continues to indicate flow, the brake booster has a leak.
4. Under the hood, look for smoke exiting around the crimped area of the booster canister. Also look for smoke inside the vehicle under the dash.

TECH TIPS

Testing the EGR pintle shaft will help you diagnose a good or bad EGR valve and other "metered" leaks such as BPEGR.

- Do not cap off any part of the engine – leave it in a normal operating state (but not running). Insert the EVAP tester supply hose into a direct vacuum manifold source, such as a brake booster hose or PCV. Press the remote button on the tester. Watch for smoke to escape from the EGR valve. If you see a lot of smoke, the valve is bad; no smoke, move on to the next step.
- Cap off the intake using one of the cap plugs supplied with the EVAP tester. Insert the exhaust cone into the tailpipe. (The hose on the exhaust cone should be plugged with the cap plug provided). Now that the system is sealed, press the remote button and watch for smoke. A small amount of smoke indicates an acceptable EGR valve.

CONTACT INFORMATION



For more information on the OTC 6521 LeakTamer Plus EVAP machine, please contact OTC support at **1-800-533-6127** or visit **www.otctools.com**

**Contains patented UltraTraceUV[®] vapor solution, the only OEM approved smoke compound containing UV dye. Essential for locating hidden or small leaks!*

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