EPA EQUIPMENT REMOVAL
November 7, 2004
Vulcan 800A/B/Drifter

Note: This procedure is optional; removal or retention of the EPA equipment will have little if any effect on performance. However, removal of the system will cause lower exhaust temperatures, resulting in less bluing of the exhaust pipes, and cooler temperatures of the air flowing over the pipes and onto the rider's legs. Also, retention of the system has been known to cause "popping" and, in some cases, backfiring in the exhausts during deceleration.

Note: Procedure is best done with bike completely cooled down; this makes bolt/nut removal easier and prevents burns to modifier. *Read completely through these instructions prior to performing actual modification; this will enable modifier to best plot the course(s) of action, sequence of events, and specific parts to be used.*

Note: All directions given in relation to the bike (right, left, front, back) are as seen when sitting on the bike in a riding position.

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BIKE TYPES: There are 2 types of bikes manufactured; **California** models, which are emissions-legal in all 50 states, and **49-state** models, whose emissions do not meet the California Air Regulatory Board's standards. California models have a vacuum hose routing diagram on the inside of the right side cover, a charcoal vapor canister inside, and a fuel vapor recovery line on the left side of the fuel tank running from a nipple on the front to the charcoal vapor canister. Later year California models also have a fuel vapor recovery line on the right side of the fuel tank; do not confuse this line with the fuel tank vent line that is present on the right side of the fuel tank on **all** models. It is necessary to know *which* model the bike being modified is, as a few steps are different. The easiest and quickest way to tell the difference is to check the left underside of the fuel tank; if there is a nipple and a line on the left side, the bike is a California model. Note that some instructions are labeled **California Models,** some **All Models** and some **49 State Models**.

SEAT REMOVAL (OEM Seat)

Note: If bike has aftermarket seat, consult seat manufacturer's instructions.

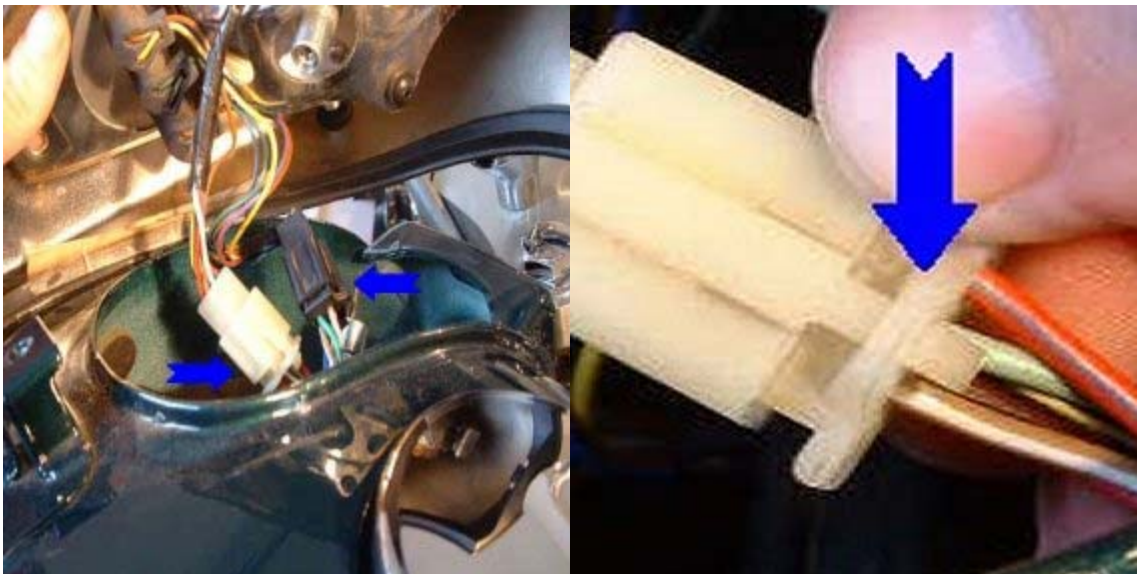
Remove the 8mm bolt at the rear that holds the back of the seat onto the fender. Strike the back of the rider's section of the seat (the "step" where it comes up to become the passenger seat) solidly toward the rear of the bike to release the clips holding the seat onto the U-bracket on the rear fender. Lift the rear of the seat and pull backwards; the front tab will come out from underneath the rear bolt of the fuel tank. Set the seat aside someplace safe.

FUEL TANK REMOVAL

This is easiest if there is very little fuel in the tank; if it is full or partly full the tank will be heavier, and the fuel will slosh, making it more difficult to control.

a. Remove the 8mm bolt at the bottom of the instrument panel (the triangular panel that holds the 3 indicator lights) on the speedometer pod. Carefully lift the rear of the pod and push forward to release the clip holding the pod at the front of the tank. Tilt the pod to allow access underneath.

1. Unscrew the speedometer cable from the bottom of the speedometer.



2. Unhook the 2 wiring harness connectors. Each connector is locked together by a slot-tab arrangement at the junction; push down on the tab and carefully pull backwards on the other half of the connector. *Do not pull on the wiring*. Lift the pod clear of the tank and put it aside someplace safe.

b. Ensure that the fuel petcock is in the **ON** or **RES** position; *not* in the **PRI** position! Disconnect the main fuel line (large hose) from the bottom of the petcock on the left side of the tank.

> **Note:** A small amount of fuel will spill from both the petcock and the line; have rags and a non-flammable container ready to catch the fuel (do *not* use a Styrofoam cup; gasoline will dissolve Styrofoam). Dispose of this fuel safely and immediately. Wipe up any fuel that spilled onto the bike and/or the floor; dispose of the rags safely and immediately. Do *not* store the rags for reuse; *rags soaked with gasoline are known to spontaneously combust*.

c. Disconnect the vacuum line (small hose) from the rear of the petcock.

d. [California Models] Look/feel for the fuel vapor recovery line on the left side of the tank towards the front; disconnect this line from the nipple on the fuel tank. Look/feel along this line for the tabs that secure the line along the inside of the seam at the bottom of the tank; free the line from these tabs and allow it to hang. Repeat for fuel vapor recovery line on the right side of the tank, if present; if so, label this line to differentiate it from the tank vent line.

d. [All Models] Look/feel for the tank vent line on the right side of the tank towards the front; disconnect this line from the nipple on the fuel tank. Look/feel along this line for the tabs that secure it to the inside of the seam of the tank; free the line from these tabs and allow it to hang.


e. Remove the 12mm bolts at the rear and front of the tank. Lift the tank free, being careful not to tangle the crossbrace with the speedometer cable or instrument wiring.

Set the tank aside someplace safe, placing it upright onto something that will keep the petcock off a solid surface.

AFTERBURNER REMOVAL

The air switch valve is a gold-colored valve located just below the spine of the frame, between the two cylinders. It is held in place by the lines connecting it to the reed valve line (T-shaped hose between the cylinders) and the hose to the back of the air cleaner backing plate.


a. Release the clamp holding the reed valve line to the switch valve and the clamp holding the vacuum line from the carburetor to the switch valve. Pull the switch valve free of both lines; the third line going to the airbox backing plate needs to be removed as well, and the nipple on the airbox capped with a ½" neoprene vacuum cap. Put the switch valve, line, and clamps in a spare parts bin; *they will **not** be reused*, but may be needed should the bike ever need to be returned to factory original configuration.


b. The reed valve line is a T-shaped hose that connects the two reed valves (in the cylinder heads) and the switch valve. Either plug the hole in the line to the switch valve (a large marble or internal line plug works well), remove the line and install vacuum caps over the nipples (better solution), or remove the line and replace it with a single length of high-temperature, high-pressure radiator line (best solution). This blocks the operation of the reed valves.

Note: In the case of replacing the OEM line with a single length of line, some members advocate the insertion of a ball bearing to block the line, preventing the possibility of gases passing back and forth between the front and rear cylinder reed valves. I (Russian Wolf) have had a single length of line, unblocked, on my bike for 3 years, and have not noted any problems. However, if the modifier wishes to block the line, use a stainless steel ball bearing of sufficient size to block the line without moving. Insert this ball deeply into the line; approximately to the halfway point of its length. At one time the use of a glass marble was accepted; however, at least one member noted during disassembly for another purpose that the marble had shattered, depositing glass fragments in the reed valves. Thus this method is now considered obsolete.

c. Remove the vacuum line to the switch valve from the tee in the vacuum line between the carburetor and the fuel petcock. Either plug the empty stub of this tee with a vacuum cap, remove the tee and replace it with an inline splice (better solution), or remove the line entirely and replace it with a single length of vacuum line from the carburetor to the fuel petcock (best solution).

d. ADDITIONAL: FOR CALIFORNIA MODELS. California models have a charcoal evaporative fuel canister and vapor lines. Removal of this equipment is strictly optional; there is no effect on performance whether it is removed or retained. If the equipment is to be retained, go to **REINSTALLATION OF REMOVED PARTS**.

1. Cap the fuel vapor recovery line nipple on the left side of the fuel tank with a ¼" vacuum cap; secure the cap with a small hose clamp or zip-tie.

1a. If a second fuel vapor recovery line is present on the right side of the fuel tank, remove the line from the charcoal canister and either route it to vent underneath the bike, alongside the tank vent line, or install a T-fitting into the tank vent line and attach the fuel vapor recovery line to the T-fitting (better solution). Do *not* remove this line and cap the nipple; this will cause overpressurization of the fuel tank, which creates other problems.

2. Remove the right side cover. Remove the 5 10mm bolts holding the back of the box in place; it may be necessary to remove the rear exhaust pipe to get to the last bolt at the bottom of the box. Pull the back free of the bike; the charcoal canister is riveted to this back plate. Remove the fuel vapor recovery hose along with the backplate/charcoal canister. Take the assembly to a workbench. Drill out the rivets holding the charcoal canister to the back plate; the canister and hose will drop free. Put the canister and hose in a spare parts bin; *they will **not** be reused*, but may be needed should the bike ever need to be returned to factory original configuration. Plug the rivet holes in the back plate with silicone caulk or rubber plugs to prevent water intrusion if desired. Reinstall the back plate into its original position and reinstall the rear exhaust pipe, if removed. Reinstall the right side cover. Reinstall the rear exhaust pipe, if removed.

REINSTALLATION OF REMOVED PARTS

In reverse order of disassembly, reinstall the fuel tank and seat. Make sure to reconnect the fuel , vacuum and vent lines to the fuel tank. When reinstalling the speedometer cable, ensure it is *tightly* screwed on; an extra ¼ turn with a pair pliers after getting it finger-tight is a good idea to ward off a known problem with this cable backing off.

Hope this was helpful.

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