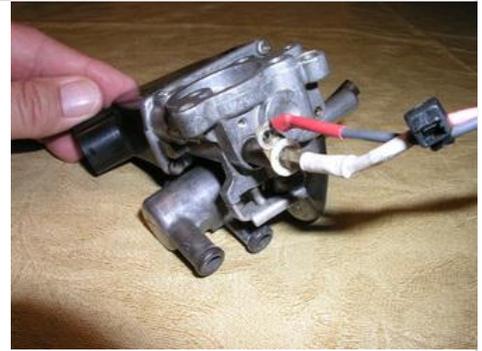


side view of the assembled device. The tube at the left is the outlet, where fuel/air mix heads to the balance tube in the manifold. The wires to the cartridge heater are seen coming from the bottom of the unit.



...like this. Sometimes they'll stick. Be patient, shoot some carb cleaner in there and wiggle it. It should come out.



Now remove the pozidrive screw holding the clamp to the outlet tube...



...and remove the tube.



Remove the three pozidrive screws holding the snorkel cover on and remove it.

FASD Disassembly and Repair

By Wayne Simpson

In this second and final part of the series, we cover disassembly of the FASD unit. Reconditioning of the unit essentially involves disassembling, cleaning and reassembling it. At this time, there are no replacements available for gaskets, O rings, etc, so be careful with all these parts as they have to be reused. We may look into having gaskets and seals made as time and expenses allow.

We begin with the FASD removed from the front carburetor. We assume you're already familiar with removing the carbs from the car. Removing the FASD from the front carb simply involves removing the three screws securing it and the ported FASD spacer to the carb body.

Although the FASD isn't as complex and incomprehensible as many fear it to be, it does consist of a number of small and delicate parts, so if you're unsure of your ability to handle a job like this, it may be better to leave it to someone who is. Contact us in the TWA and we'll try to help.



Let's have a look at the assembled FASD. This is a nice clean unit for photographic clarity. Here is the "outside" or left

The right, or "inside" view of the unit. The flange mates to the adapter and then to the left or front carburetor. Be careful with the gaskets as these are hard to come by. You'll need to reuse them in most circumstances.



Bottom of the unit showing the cartridge heater. The heater warms the fuel for better atomization during cold starts. It is controlled by a thermostatic switch on the manifold.



Begin the disassembly by removing the cartridge heater. This gets the wires, which are often brittle, out the way and prevents further damage. Remove the pozidrive screw and the heater should pull out...



Here are some views of the top of the unit with the cover off. Take note of how the operating lever and needle metering needle/stepped air shutoff valve all interrelate.



This shows the order of assembly for the thermostat bulb. The shaft of the bulb is inserted in a brass bushing that serves as the adjustment for shutoff temperature. This is not shown. The thermostat bulb is the key piece of this unit. Most times the shaft can be cleaned and this will restore operation. Don't bother trying to test it in hot water by itself, it needs the spring tension of the rest of the mechanism to extend and retract properly. Instead, weigh the unit. If it weighs 30 grams, the wax is still in there.



The E-clip removed. The outlet tube is just propping up the unit so it won't fall over while I photograph it.



Time to remove the water cell and thermostat bulb. Two more pozidrive screws here.



A top view of the unit showing the operating lever in it's assembled location, kept properly located by an e-clip. You can't get the air valve casting off with the operating lever in this position, so...



Now slide the operating lever on its pivot to the left (outside) to clear the metering bracket.



Withdraw the water cell and reveal the thermostat bulb and O ring. Be sure the bleed screw on the water cell is clear. You will need to bleed air from the water cell with the engine running once everything is back together. The thermostatic actuator will not work if there's air in the water cell, and it will not bleed itself. If you find the unit needs to be bled constantly to keep it functioning, you don't have an FASD problem, you have a head gasket problem.



Carefully remove the E-clip. I say carefully because it will sail across the room and be lost if you aren't.

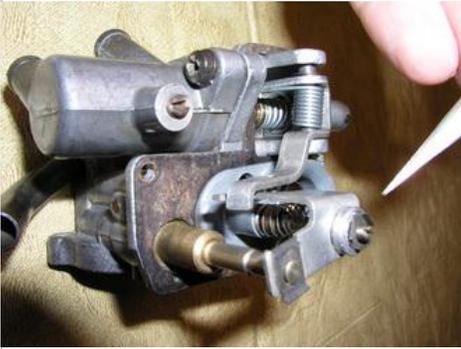


Remove the two pozidrive screws securing the air valve casting to the FASD body...



...and remove it from the body. This is as far as you should need to go with disassembling the air valve casting. The

inverted cone is the stepped shutoff valve. As the engine warms, the cone descends into its seat in the FASD body and eventually shuts the air supply off. The metering needle also follows this motion and decreases the extra fuel supplied as the engine warms. Be very careful with the brass metering needle as this is fragile and easily bent. If the metering needle is stuck in the sleeve, solvent and patience is required to remove it.



The locking washer and threaded rod should be left alone. This adjustment was set at the factory and should not require attention, and you'll likely break it if you try to. If you feel the need to remove the metering needle from the bracket, gently pry up the black spring clip (no need to remove it) and slide the needle sideways out of the bracket. In most cases, you won't need to do this.



The air valve disc. Be very careful with the springs as you clean them. There is a vacuum piston under the disc. These are two separate pieces although they may get stuck together. When you first crank a cold engine, both springs press upward on the disc, holding the air valve closed and preventing air from entering the FASD. This provides a burst of pure gasoline while cranking to get a cold engine started. Once the engine fires, the vacuum piston is pulled down so only the weaker outer spring holds the disc up

against the seat. This allows air in, supplying the extra air needed to raise the idle speed during warm up.



This spring can be left in place unless it falls out. It's often stuck in there good and you don't want to stretch it while removing it. Better to simply clean it by soaking it where it is. That plastic bushing comes out easily.



This shows the order of assembly of the air valve, From right (top in operation) are the air valve disk, vacuum piston, outer spring, and plastic bushing.



Time to remove the operating lever. Do not attempt to remove the gasket until you remove the operating lever as you will wreck it. With a suitable drift, tap the operating rod pivot from the inside out.



Once the ridged bit at the end of the pivot is clear of the casting, you should be able to remove it by hand.



With the operating lever removed, you can remove the gasket safely. Remove the thermostatic actuator return spring, bushing and sleeve.



This shows how the thermostatic actuator, bushing, return spring and sleeve interrelate. There is a set screw in the bushing that serves as an adjustment for shutoff temperature. The sleeve has three lugs on it that fit into the FASD body. Experiment with the orientation on reassembly until you get it seated fully. If you were to place this assembly in a C clamp to apply pressure to the actuator rod, then you could test its operation in hot water.

This completes the disassembly of the FASD unit. Soaking or spraying the parts in carb cleaner should restore operation when reassembled. Assembly is the reverse of disassembly, although it may be

easier to install the thermostatic actuator assembly and water cell prior to installing the operating lever. You can adjust the unit by turning the set screw in the brass bushing on the actuator rod. You access this screw from a hole in the end of the return spring sleeve. Turning the screw to lower the operating lever reduces the shutoff temperature.

Finally, if you've determined your unit is beyond repair, you simply aren't interested in using it anymore, or if you have cores, spares or extra parts lying around the garage you no longer want to store, please don't throw them out. Contact us and we will happily pay shipping so we can build an inventory of spares to help others keep their cars in original working condition.