

Removal and Service of Driver Air Bag and Location of Components

CAUTION

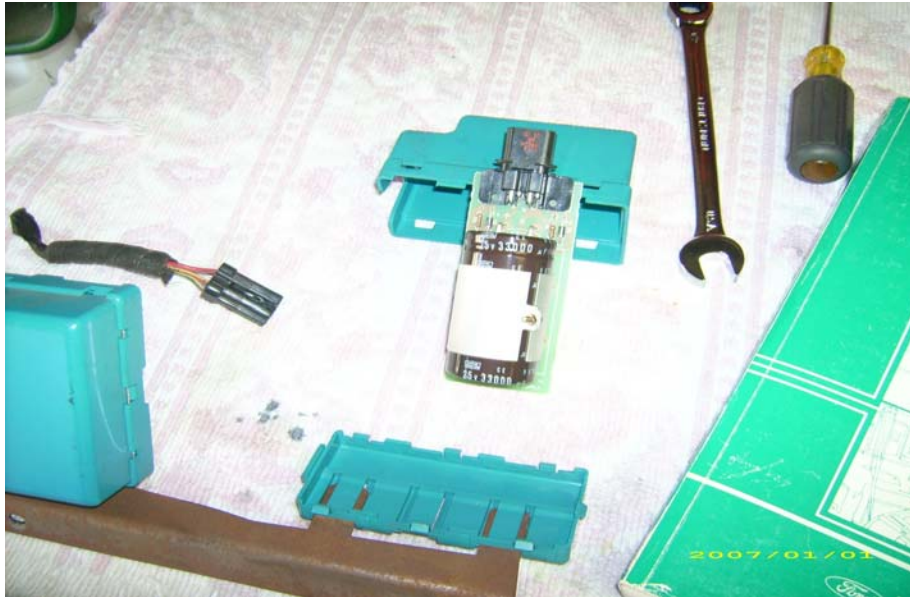
Failure to properly disarm and re-arm the system may cause injury to yourself, others and property.



System Operation

The driver air bag restraint consists of four impact sensors, a control module, a backup power supply, and the air bag itself. Three of the sensors are located on the front of the radiator core support and one is located in the driver side interior kick panel. Any two sensors must detect impact. The system operates in a front impact only. The backup power supply contains a capacitor to provide detonation of the charge which deploys the airbag

should the automobile battery or wiring be damaged or shorted during a collision.



Disassembled back up power supply

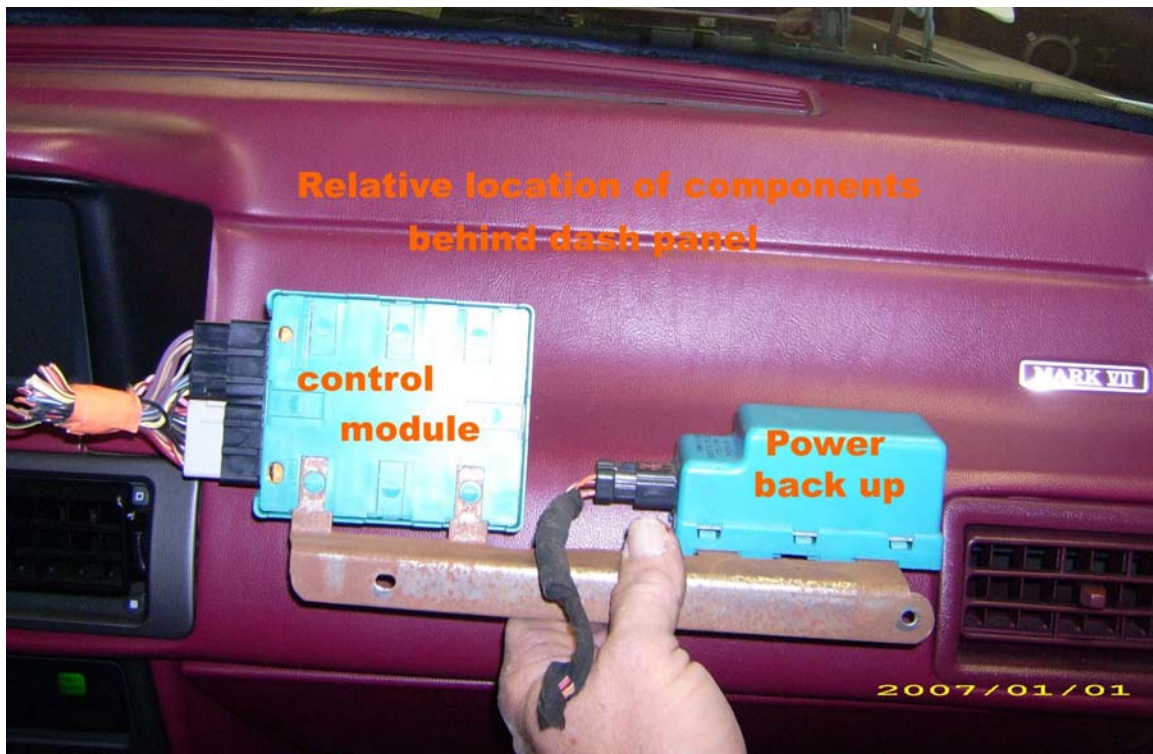
Components



A clock spring is used behind the steering wheel as opposed to brushes and rings as in the earlier models. The cruise control and horn also make electrical connection through this unit. It is a strand of multi conductor wire wrapped like a “clock spring” within a plastic housing. It winds and un-winds as the steering wheel is turned so continuous contact is maintained should impact damage the steering wheel to column interface.

Component Location

As discussed above, the impact sensors are located on the core support and kick panel. The clock spring is located between the steering wheel and column and steering wheel removal is required to replace it. The Power back up and control module are located above the glove box door, attached to the interior of the dash panel. The glove box need not be removed to access these components.



Servicing the System

Before servicing ANY part of the system, it **MUST** be disabled for your safety.

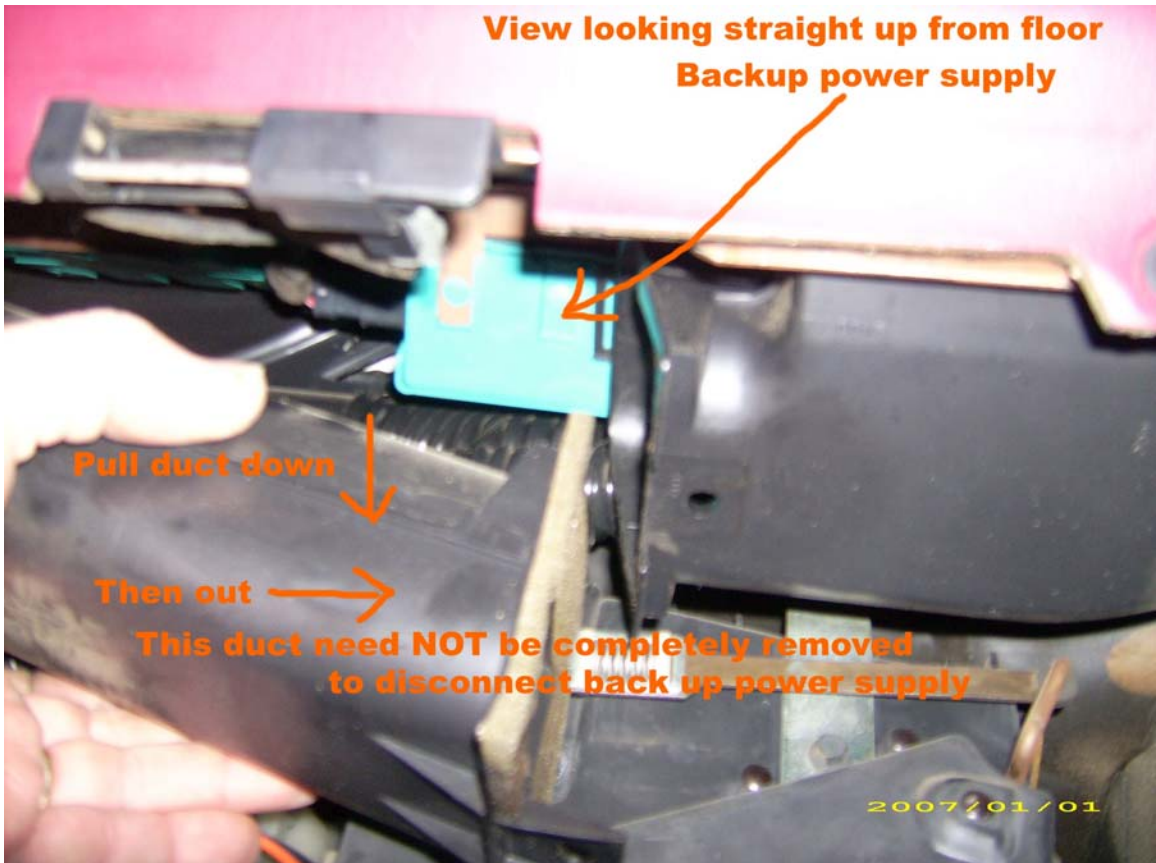
First, disconnect the battery.



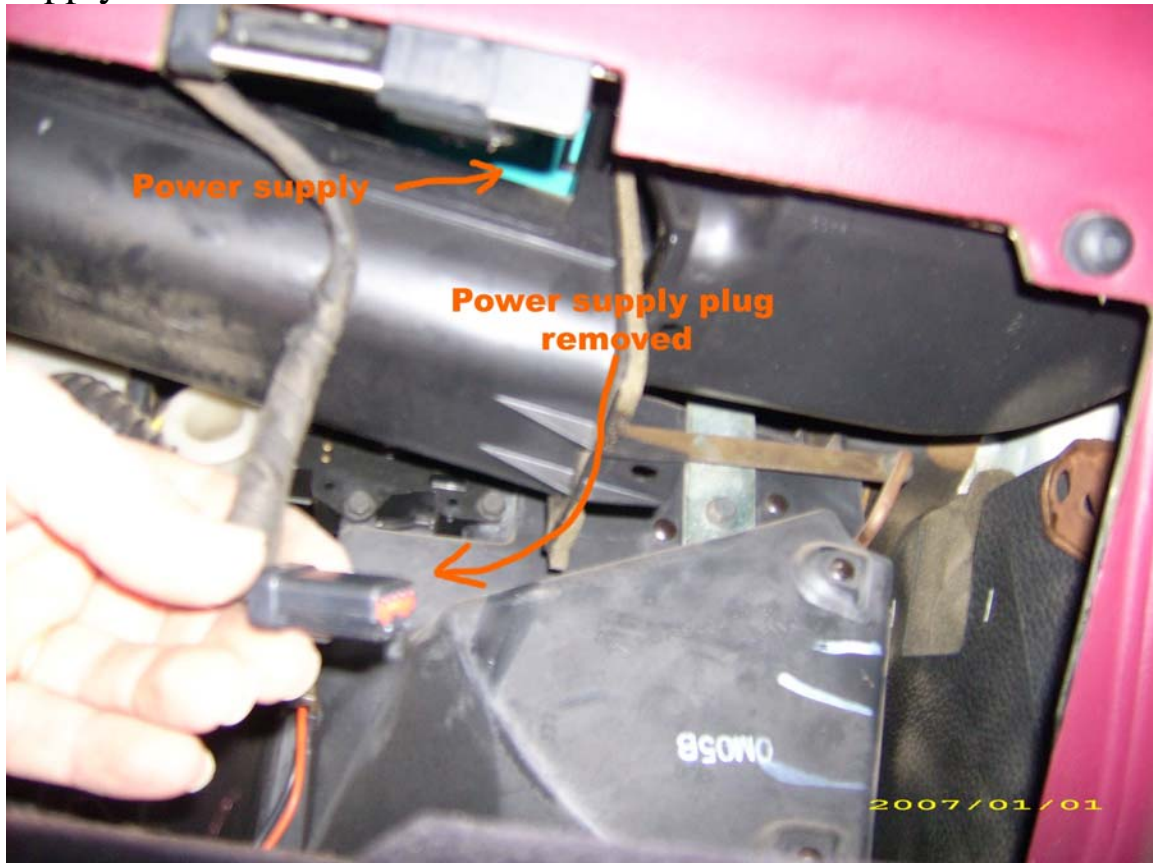
Next, the back up power supply must be disconnected. Do this by opening the glove box and squeeze the latches so it may open past the stops and expose the hardware behind it. Look up into the opening and you will see a duct, which must be partially removed to access the power backup connector.



Pull down and out on the duct and you will see the blue power back up. Remove the plug. It is a squeeze type and does not require lifting the hatches, which are such a pain, as on most of the other connectors. This connector has three wires.



Reach in around the duct and remove the plug from the power supply.

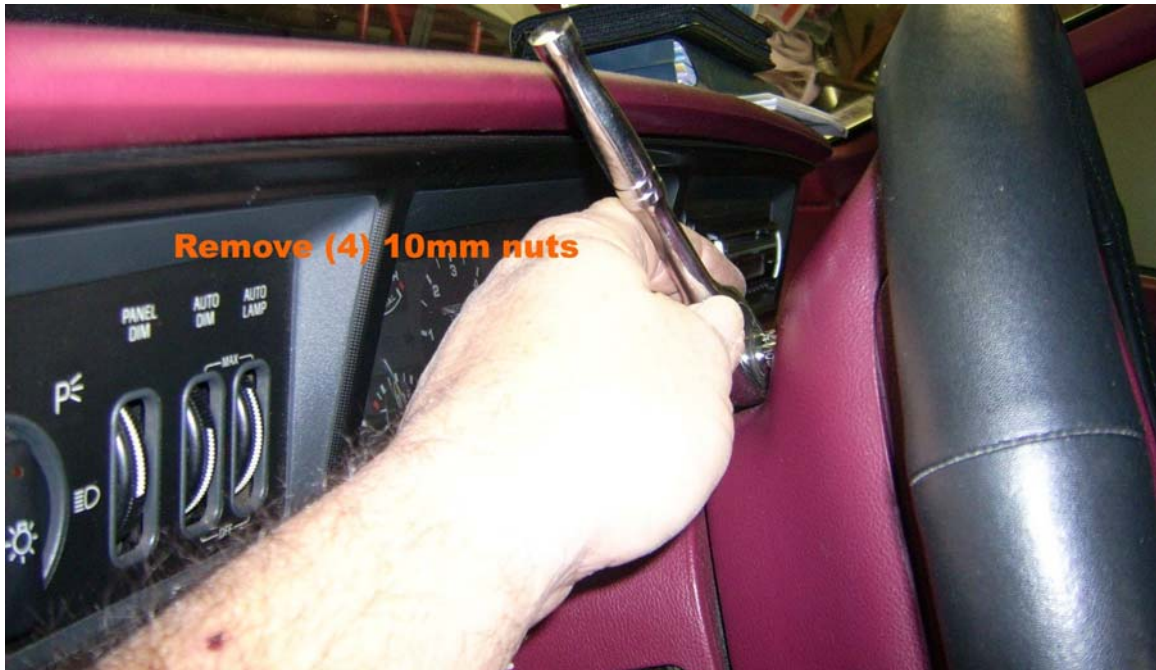


It is now safe to do further disassembly of components.

Removal of Air Bag Restraint Unit

Extreme caution must be exercised when handling the actual air bag itself. Should it deploy accidentally, you will be injured!

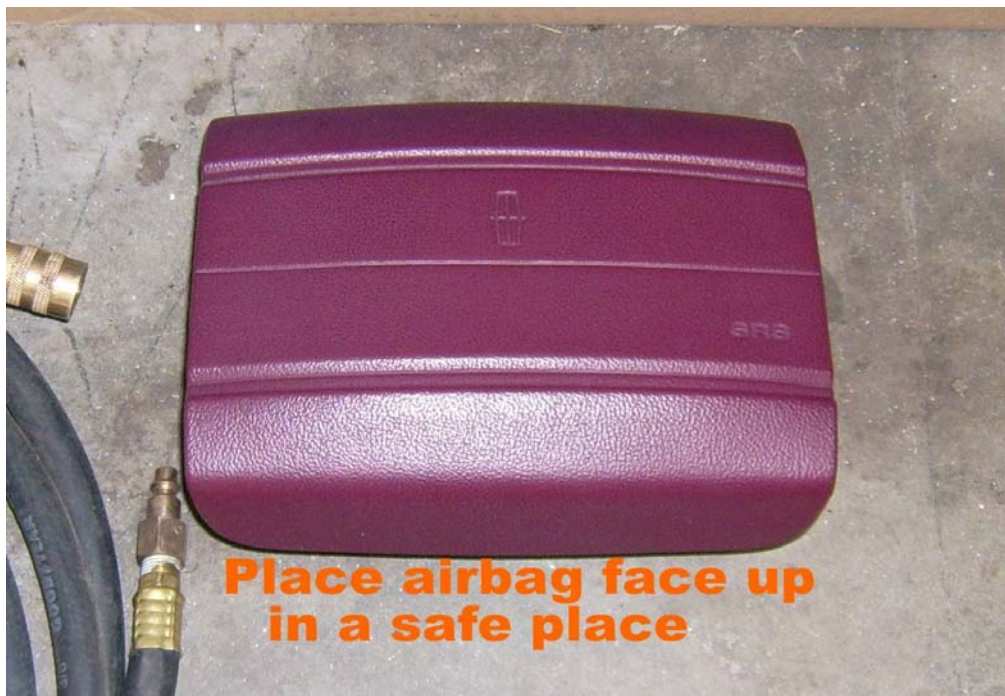
Remove the four 10mm nuts behind the steering wheel.



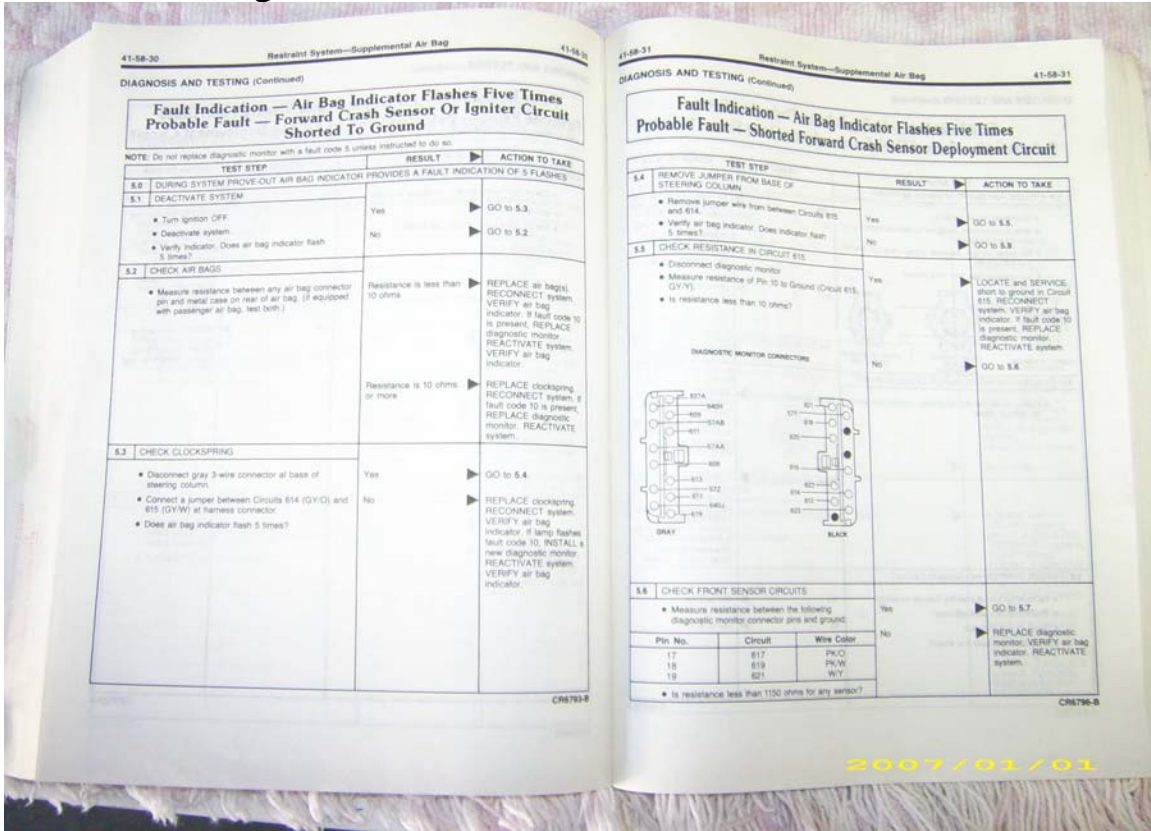
Lift the air bag away from the steering wheel. Do not sit in the seat while doing this. Stay to the side in case of accidental deployment. You can see the connector at this point. (circled in orange)



Disconnect the connector and place the air bag unit in an out of the way space, studs DOWN.



The number of successive flashes of the warning lamp will guide you as to where to start. In my case, it was five flashes. Consult the manual for diagnostic codes.



In many cases, the clock spring is the culprit. I will take you through the process of troubleshooting the clock spring, but regardless of what you are having a problem with; many of the following procedures may be of help.

After the air bag itself has been safely removed, re-connect the back up power supply and connect the battery. I connected a battery charger to keep my battery up during this process.



To troubleshoot the clock spring, it must be checked for continuity. This is accomplished by inserting a jumper into the harness plug, which would plug into the “now removed” air bag unit.



The ignition switch was turned on and the warning lamp was observed for codes. Mine still flashed out a five code.

The next test was to check the connector at the base of the steering column where the pigtails from the column side of the clock spring connect to the vehicle harness. The panel cover beneath the steering column must be removed and two gray connectors are visible through the opening.



A jumper was installed at the vehicle harness connector and codes were re-checked by again turning on the ignition.

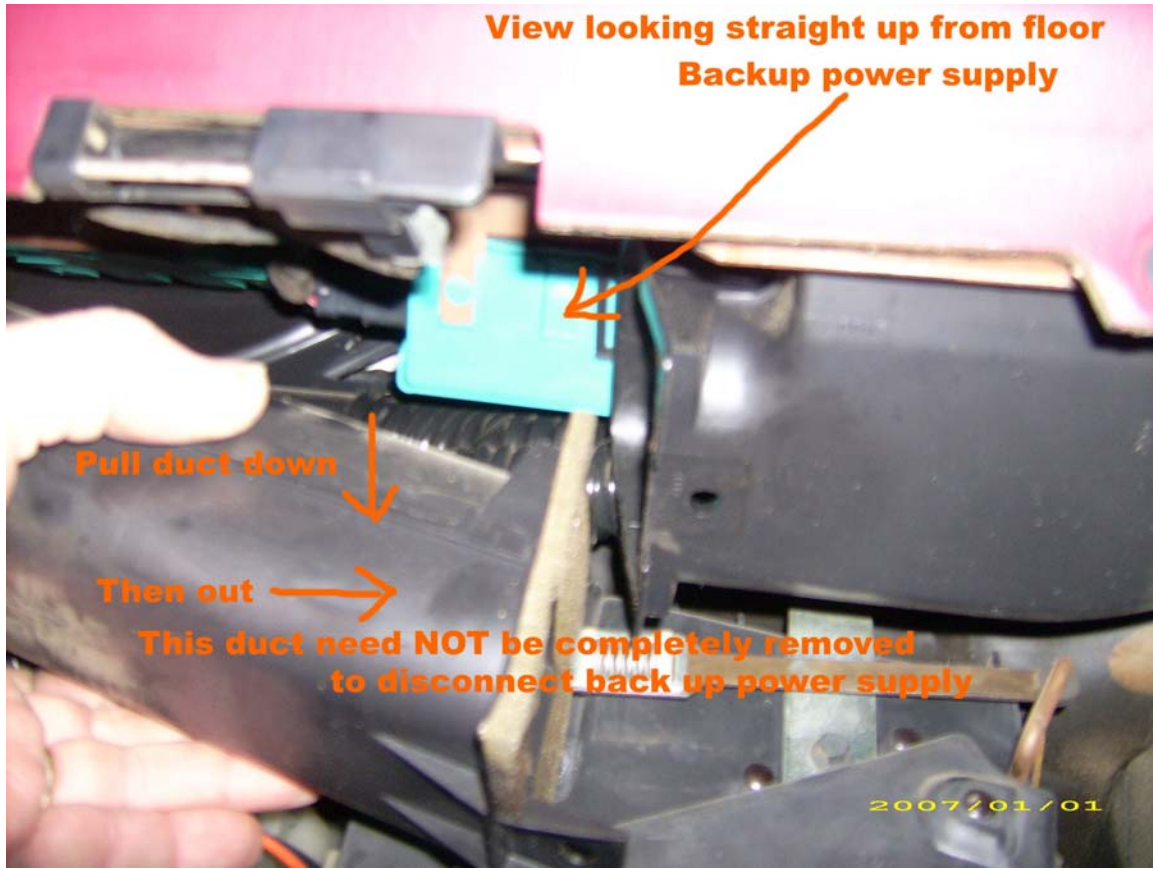


In my case, when the ignition was turned on again, the warning lamp again flashed a 5 code.

The jumper was removed and ignition was again turned on and a 10 code was observed, which meant, "Replace module"

Module Replacement

As mentioned earlier, the control module is attached to the same bracket as the back up power supply, however, the duct must be completely removed to reach and remove it. It is again necessary to disconnect the main battery and passenger air bag back up power supply.



The control module was then removed by grasping it and pushing it straight up toward the top of the vehicle. It snaps out of its metal bracket easily.



After reinstallation of the replacement module, the backup power supply was re-connected, the harness connector at the lower steering column was re-connected, and the battery was re-connected. A jumper was installed at the plug behind the air bag unit at the steering wheel, and the ignition was again turned on.



The warning light came on for two to three seconds and shut off.

Re-installation of the air bag unit was then necessary. The battery must be disconnected again as is the backup power supply. **Re-verify that both of these power sources are disconnected.**

Carefully position the air bag unit onto the steering wheel leaving enough room to connect the harness plug. I used needle nose pliers to connect the harness to keep my fingers out of the area between the bag and wheel, again in case of accidental deployment causing the bag assembly to crush my fingers.



After re-attachment of the bag unit to the steering wheel, the backup power supply was re-connected, followed by the battery.

Keeping clear of the air bag, I turned on the ignition switch, and the warning light glowed for 2-3 seconds and then extinguished.

The ducts and covers were re-installed and the glove box closed. The battery cables were checked and tightened. This whole process took about two hours, however, I was very thorough and verified each step, consulting the manual through each step

In as much as you are working with a unit which may cause personal injury, I strongly advise that you take your time, re-check your work, carefully follow the proper process, and exercise extreme caution, or don't do it!

Art Bailey

1, January 2007