



Service Bulletin

Bulletin No.: 92-T-40D

Date: March, 2023

TECHNICAL

Subject: Odor from A/C at Vehicle Start-Up (Remove Debris from Evaporator Case, Disinfect Evaporator or Apply Cooling Coil Coating, and Install Delayed Blower Motor Control Module)

Models: 1991-1994 Saturns equipped with A/C

This bulletin is being revised to update the Correction. This bulletin supersedes bulletin 92-T-40C, which should be discarded.

· This bulletin is being revised to include instructions for using cooling coil coating on A/C evaporators and a new part number for cooling coil coating.

· Depending on part availability, use A/C system disinfectant kit or cooling coil coating when performing the procedures in this bulletin.

· This bulletin supersedes bulletin 92-T-40B, which should be discarded.

Condition

A musty odor from A/C system, most noticeable at vehicle start-up.

Cause

An unpleasant (musty) odor from A/C outlets at vehicle start-up can be the result of microbial growth on the evaporator core. This bacteria feeds on the organic matter and moisture that is present on the evaporator core.

Correction

Remove any debris from evaporator case, clean evaporator with disinfectant or apply cooling coil coating, and install delayed blower motor control module according to the following procedures.

Important: Before installing delayed blower motor control module, the following information on the next page **must be explained to the customer**.

- The delayed blower motor control module will not affect normal A/C or blower motor operation. However, the delayed blower motor control module will activate the blower motor on high speed for approximately five minutes, if the A/C compressor clutch has been continuously engaged for four minutes or more. The delayed blower motor control module will wait approximately fifty minutes after the ignition is turned Off before activating the blower motor. The blower run time reduces the amount of condensate on the evaporator core that may contribute to undesirable odors. The blower motor will be turned On with NO driver input if the conditions as stated above are met. The air rush sound created by the blower motor is noticeable from outside of the vehicle.
- The parasitic current draw of the delayed blower motor control module, combined with the blower motor load, will lower the state of charge of the vehicle's battery, and may negatively impact battery life depending on the driving habits of the customer.

PROCEDURES

A/C EVAPORATOR DISINFECTING/COOLING COIL COATING APPLICATION

Depending on part availability, use A/C system disinfectant kit or cooling coil coating when performing this procedure.

Before starting procedures, obtain the following equipment and supplies:

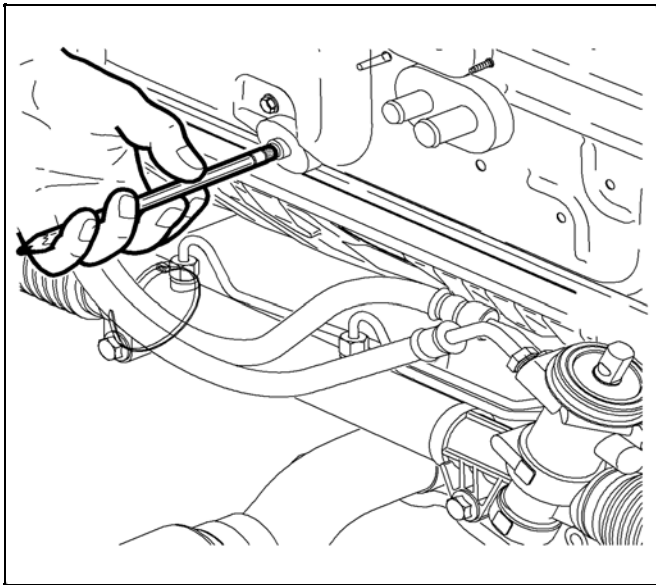
- A/C System Disinfectant Kit (P/N 21030784; P/N 10953503 for Canada) or Cooling Coil Coating (P/N 12346390)
- Cleaning Gun, OTC Tool SA9216NE

Caution: WHEN USING DISINFECTANT KIT (P/N 21030784), ORDINARY SAFETY GLASSES ARE NOT SUFFICIENT.

- If using Disinfectant Kit (P/N 21030784; P/N 10953503 for Canada), safety goggles or face shield
- If using Disinfectant Kit (P/N 21030784; P/N 10953503 for Canada), National Institute of Occupational Safety and Health (NIOSH) approved acid gas/organic vapor respirator with chlorine dioxide cartridges (3M®P/N 5103-small, 5203-medium, 5303-large), which are to be used with a pre-filter (P/N 5010) and retainer (P/N 501), or equivalents
- If using Cooling Coil Coating (P/N 12346390), safety glasses
- Rubber gloves
- Pedestal fan
- Plug (P/N 21121827)

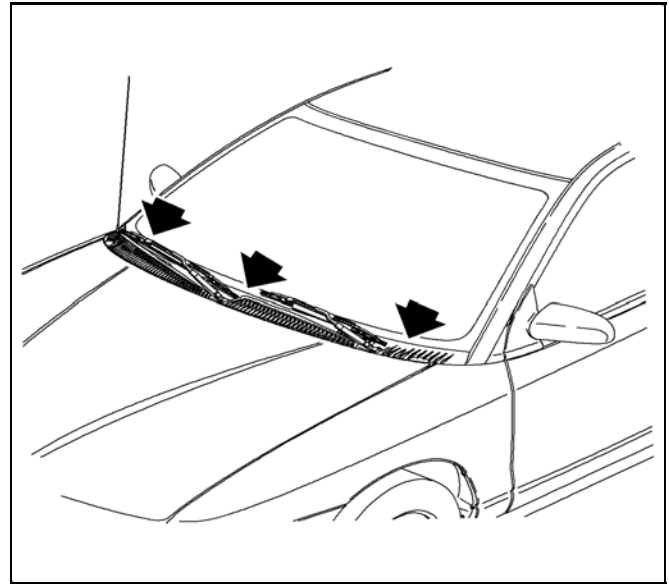
1. Dry evaporator by:

- Adjusting temperature to full hot
- Turning RECIRC On
- Making sure A/C button is Off
- Close all doors and windows
- Start engine and allow to reach operating temperature
- Allow blower motor to operate on HI blower for 5 minutes, once engine reaches operating temperature



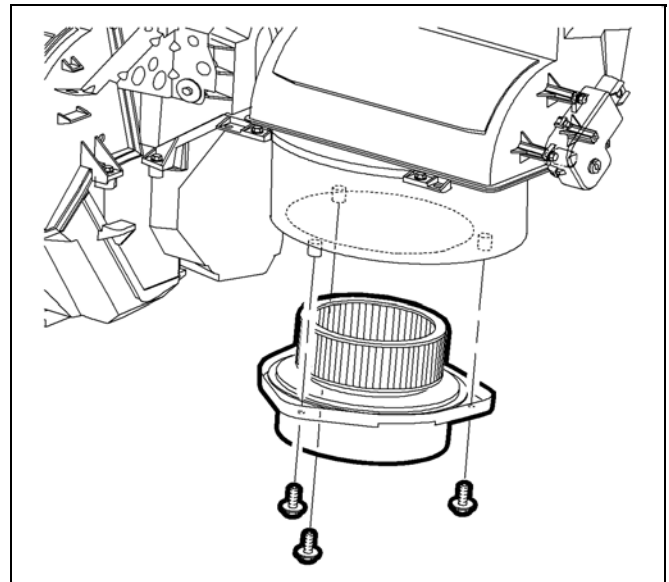
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2. Raise vehicle on a hoist.
3. Check the HVAC module drain for blockage. If necessary, clear drain hole with a soft blunt tool such as the eraser end of a pencil.
4. Lower vehicle from hoist.



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5. To reduce the risk of debris from entering the HVAC module, check for gaps between cowl panel foam and windshield, at base of windshield. Repair gaps by repositioning panels or by removing cowl panels and installing additional foam to panel. Use Kent Industries P/N 40115 Adhesive Back Shim Stock or equivalent 5/16 x 3/8 inch foam.
6. Place a drain pan directly below the HVAC drain to collect disinfectant or cooling coil coating and rinse water runoff.
7. Open all doors and windows in the vehicle and position pedestal fan so that it provides cross ventilation, through the vehicle, during the cleaning/coating procedure.



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8. Cover interior of vehicle to protect it from spray.
9. Disconnect blower motor connector.

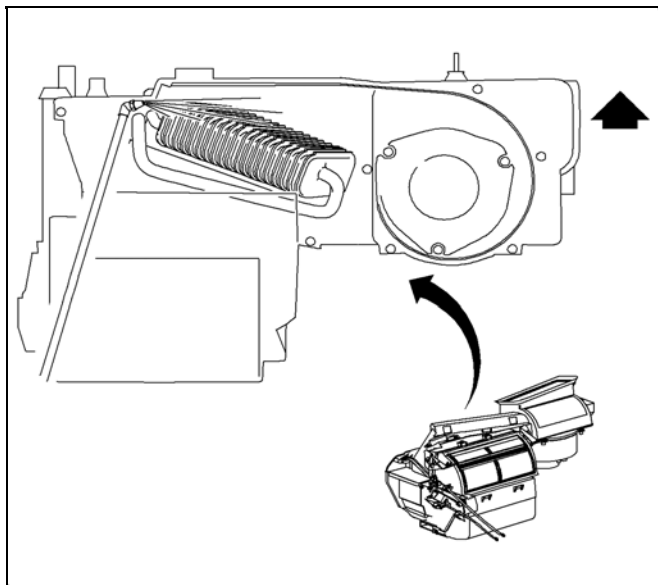
10. Remove blower motor mounting screws and remove blower motor assembly.

Important: Use care when removing debris from front of evaporator so no damage is done to the fins.

11. Check the HVAC module for debris through the blower motor opening. Remove any debris from evaporator face. (Refer to Bulletin 92-T-41, "Water or Debris Intrusion into Blower Motor," to restrict water and foreign material from entering HVAC module.)
12. Install blower motor and connect electrical connector.

Tighten

Tighten the blower motor mounting screws to 1.7 N•m (15 lb-in).



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13. Using a 15/32 in. drill bit, attach a drill stop or depth gauge, or masking tape to allow for a 4 mm (5/32 in.) depth.
14. Locate the center of the triangle shaped portion of the plenum which slopes upward and to the right, next to the left-most blower motor fastener.

Notice: Running the drill bit in more than 4 mm (5/32 in.) can damage the evaporator.

15. Drill a 15/32 in. hole. Be careful not to let the drill bit penetrate beyond a 4 mm (5/32 in.) depth.

Important: Depending on part availability, two different products may be available for use on A/C evaporators. Select the appropriate procedure to follow based on the product you will be using:

- If using the Disinfectant Kit (P/N 21030784; P/N 10953503 for Canada), continue to the "Evaporator Disinfecting Using Disinfectant Kit (P/N 21030784; P/N 10953503 for Canada)" procedure in this bulletin.
- If using the Cooling Coil Coating (P/N 12346390), continue to the "Applying Cooling Coil Coating (P/N 12346390) to Evaporator" procedure in this bulletin.

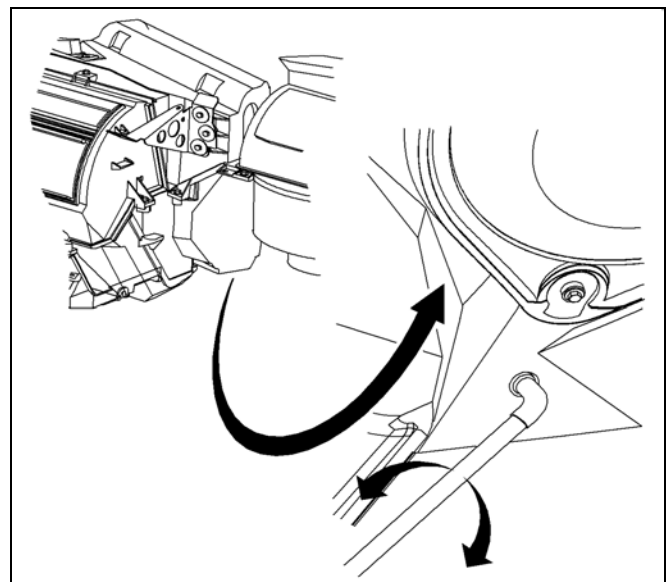
EVAPORATOR DISINFECTING USING DISINFECTANT KIT (P/N 21030784; P/N 10953503 for Canada)

Perform this procedure only if you are using A/C System Disinfectant Kit (P/N 21030784; P/N 10953503 for Canada).

Caution: THIS PROCEDURE SHOULD ONLY BE PERFORMED ON A COLD CAR. IT HAS BEEN DEMONSTRATED THAT IRRITATING VAPORS WILL BE FORMED IN THE ENGINE COMPARTMENT IF THE DISINFECTANT COMING OUT OF THE DRAIN OUTLET CONTACTS HOT ENGINE COMPONENTS. DISINFECTANT CAN CAUSE SUBSTANTIAL, BUT TEMPORARY EYE INJURY. DO NOT GET DISINFECTANT IN EYES OR ON CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.

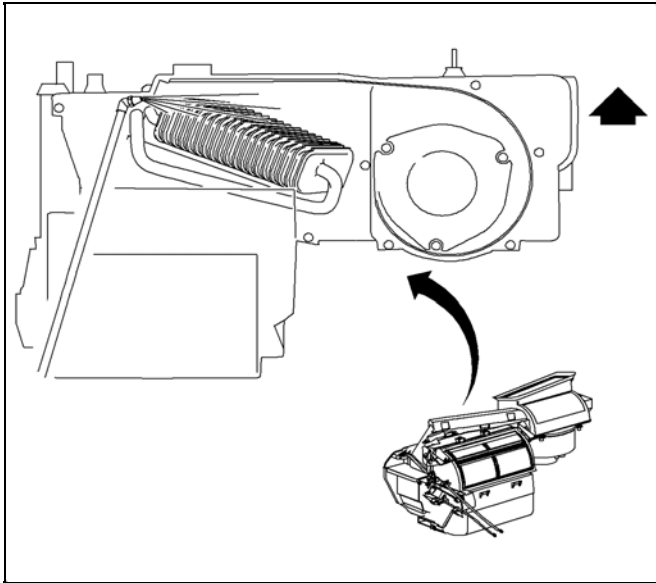
FIRST AID: IF DISINFECTANT GETS INTO EYES, HOLD EYELIDS OPEN AND FLUSH WITH A STEADY, GENTLE STREAM OF WATER FOR 15 MINUTES. OBTAIN MEDICAL ATTENTION IF IRRITATION PERSISTS.

1. Allow vehicle to cool down before performing disinfectant procedure.
2. Put on rubber gloves, safety goggles and NIOSH approved acid gas/organic vapor respirator.
3. Pour the small bottle of the two part A/C System Disinfectant Kit (P/N 21030784; P/N 10953503 for Canada) into the large bottle. Put the cap back on the large bottle and invert bottle once or twice to mix the contents.
4. Using cleaning gun, OTC Tool SA9216NE (or equivalent siphon-type parts cleaning spray gun capable of delivering 2 ounces per minute of liquid with shop air at 552-620 kPa [80-90 psi]), insert siphon hose into container of disinfectant. Take care to place the bottle in a secure upright position to avoid spilling contents.



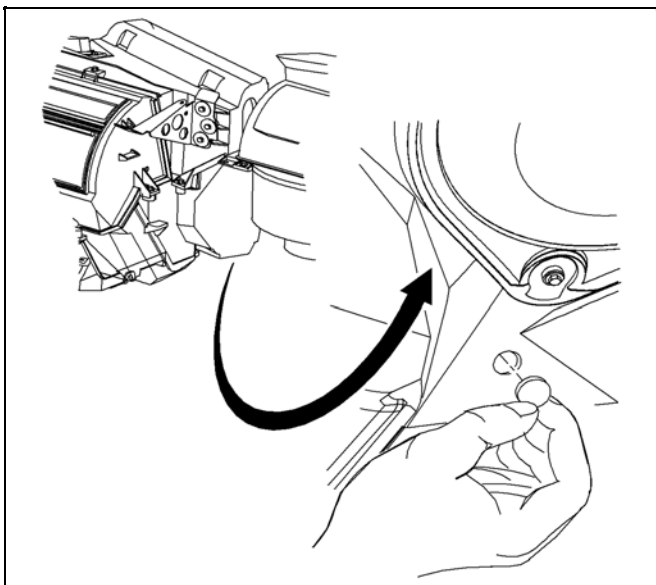
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5. Insert nozzle tip of spray gun through the drilled hole and orient so spray pattern will be parallel to the evaporator face.



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6. With blower motor on HI and engine Off, spray the entire contents of the disinfectant mix. Rotate the nozzle tip up and down while spraying disinfectant to allow for an even distribution and to ensure full coverage of the evaporator.
7. Turn blower motor Off.
8. Allow evaporator core to soak for at least 5 minutes.
9. With blower motor on HI, thoroughly rinse the evaporator core (using the above procedure) with 1 quart of clean water to remove any disinfectant residue.



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10. Install hole plug (P/N 21121827).

11. Properly dispose of disinfectant and rinse water runoff collected in drain pan into a sanitary drain.

Important: Before enabling afterblow function, refer to Customer Information on page 2 of this bulletin and review operation of afterblow function with customer.

12. If the delayed blower motor control module is to be installed, proceed to "Delayed Blower Motor Control Module Installation" in this bulletin.

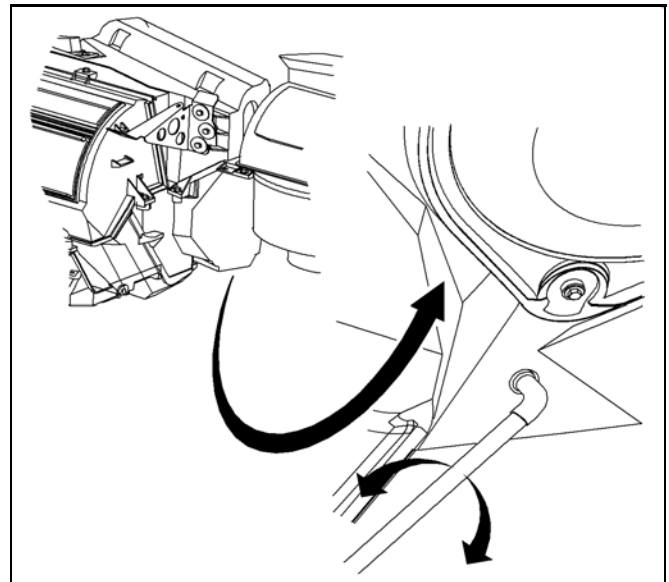
APPLYING COOLING COIL COATING (P/N 12346390) TO EVAPORATOR

Perform this procedure only if you are using Cooling Coil Coating (P/N 12346390).

Caution: COOLING COIL COATING CAN CAUSE TEMPORARY EYE INJURY. DO NOT GET COOLING COIL COATING IN EYES OR ON CLOTHING. WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.

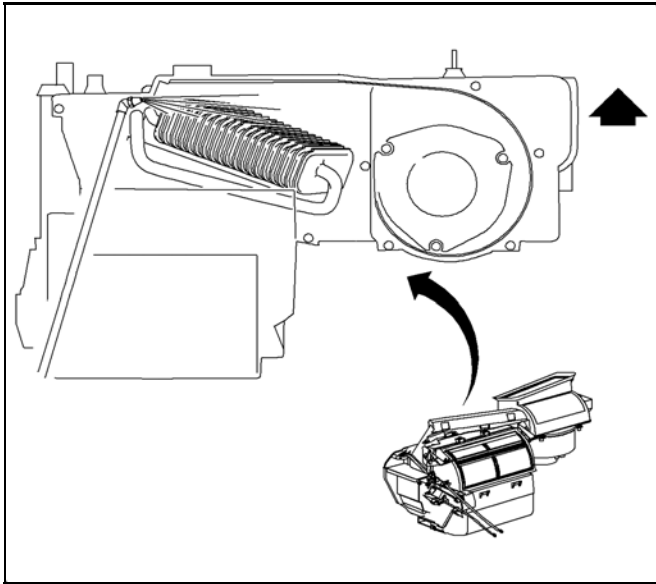
FIRST AID: IF COOLING COIL COATING GETS INTO EYES, HOLD EYELIDS OPEN AND FLUSH WITH A STEADY, GENTLE STREAM OF WATER FOR 15 MINUTES. OBTAIN MEDICAL ATTENTION IF IRRITATION PERSISTS.

1. Allow vehicle to cool down before performing cooling coil coating procedure.
2. Put on rubber gloves and safety glasses.
3. Using cleaning gun, OTC Tool SA9216NE (or equivalent siphon-type parts cleaning spray gun capable of delivering 2 ounces per minute of liquid with shop air at 552-620 kPa [80-90 psi]), insert siphon hose into container of cooling coil coating. Take care to place the bottle in a secure upright position to avoid spilling contents.
4. Regulate shop air to 276-414 kPa (40-60 psi).



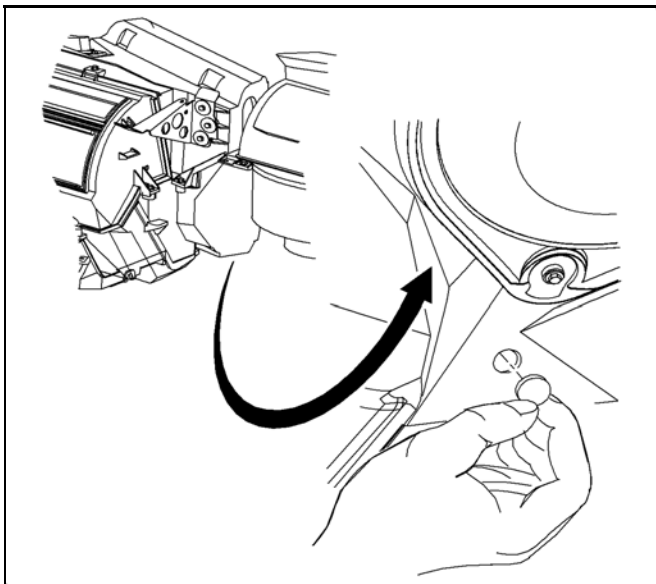
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5. Insert nozzle tip of spray gun through the drilled hole and orient so spray pattern will be parallel to the evaporator face.



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6. Apply cooling coil coating using short bursts and rotating the nozzle tip up and down. This will allow for an even distribution and to ensure full coverage of the evaporator.
7. Allow evaporator core to soak for 30 minutes.
8. Dry evaporator by:
 - Adjusting temperature to full hot
 - Turning RECIRC On
 - Making sure A/C button is Off
 - Open windows 1/2 in. and close doors
 - Start engine and allow to reach operating temperature
 - Allow blower motor to operate on HI blower for 5 minutes once engine reaches operating temperature



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9. Install hole plug (P/N 21121827).

10. Properly dispose of cooling coil coating runoff collected in drain pan into a sanitary drain.
11. Remove protective covering from interior of vehicle.

Important: Before enabling afterblow function, refer to Customer Information on page 2 of this bulletin and review operation of afterblow function with customer.

12. If the delayed blower motor control module is to be installed, proceed to "Delayed Blower Motor Control Module Installation" in this bulletin.

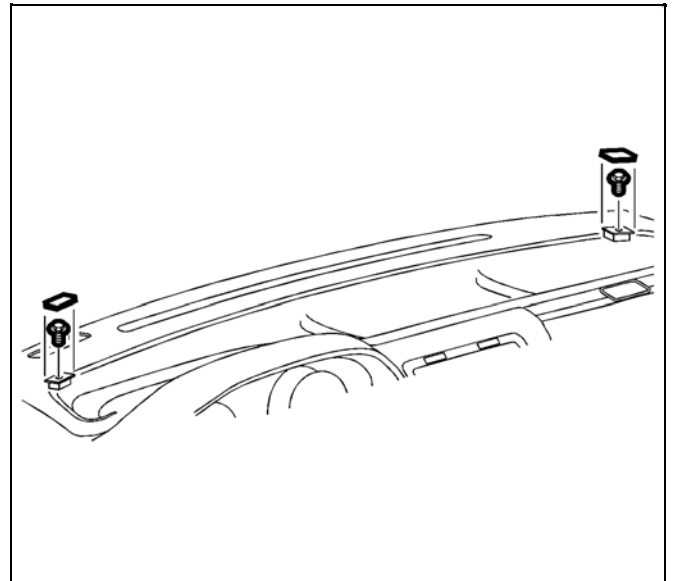
DELAYED BLOWER MOTOR CONTROL MODULE INSTALLATION

Important: Before proceeding with the installation of the delayed blower motor control module, make sure the customer is fully aware of its function and operation.

The following parts are required to install the delayed blower motor control module:

Part Number	Description
21031158	Delayed Blower Motor Control Module Kit
12112245	Ring Terminal

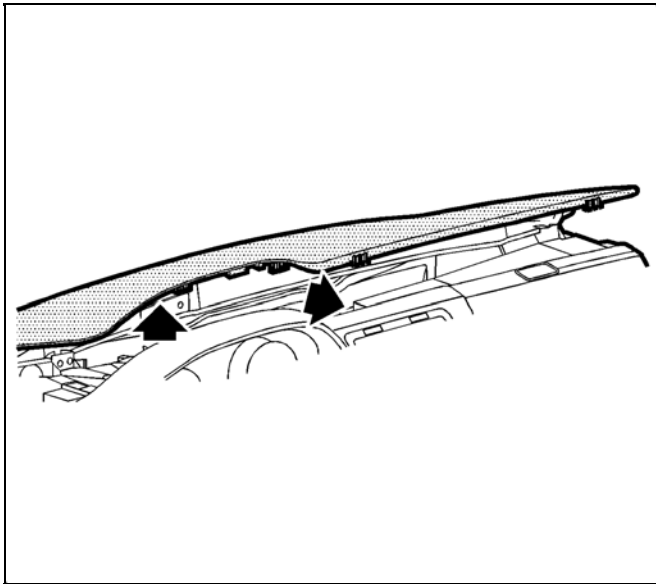
Caution: WHEN PERFORMING SERVICE ON OR AROUND SIR COMPONENTS OR SIR WIRING, FOLLOW THE CAUTIONS AND PROCEDURES IN THE APPROPRIATE YEAR SIR SERVICE MANUAL TO TEMPORARILY DISABLE THE SIR SYSTEM. FAILURE TO FOLLOW THE DISABLE PROCEDURES COULD RESULT IN POSSIBLE AIR BAG DEPLOYMENT, PERSONAL INJURY OR OTHERWISE UNNEEDED SIR SYSTEM REPAIRS.



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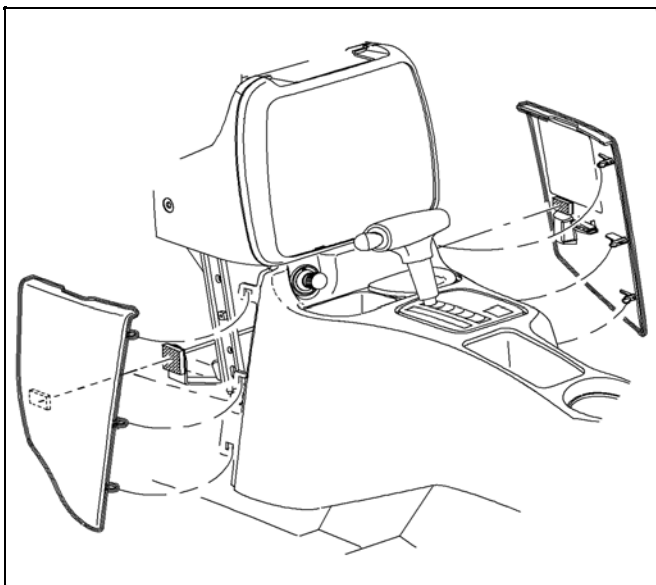
1. On vehicles equipped with supplemental inflatable restraints, disable the SIR system. (Refer to "Disabling the SIR System" in the "1991-1994 SIR Service Manual.")
2. Record radio preset stations and disconnect negative battery cable.

3. Remove I/P upper trim panel screw caps by carefully prying with a small flat head screwdriver.



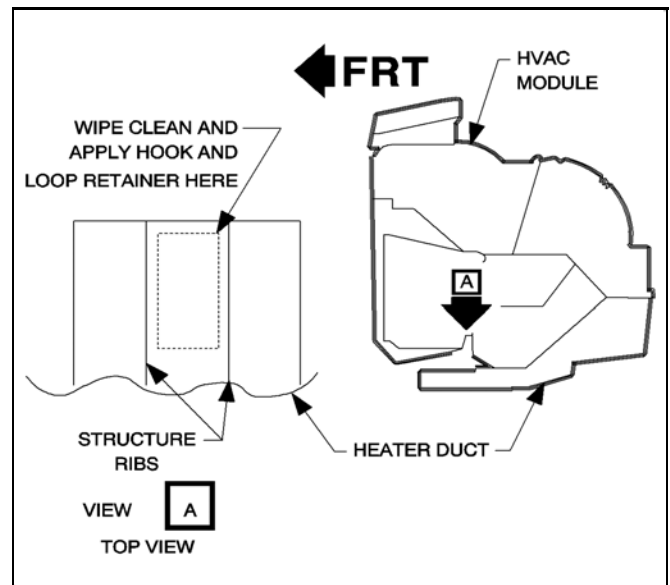
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4. Remove I/P upper trim panel screws.
5. Lift I/P upper trim panel to disengage clips at rear edge.
6. Pull I/P upper trim panel rearward out of clips at the bottom of windshield and remove I/P upper trim panel and insulator.



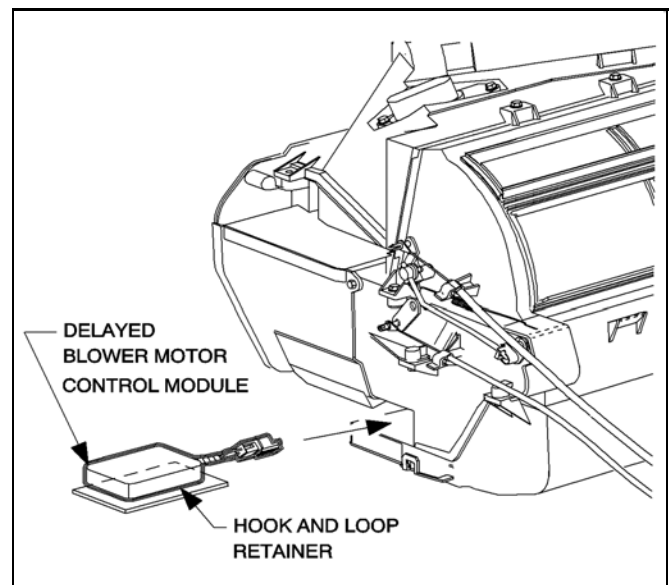
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7. Remove right and left console extension assemblies.



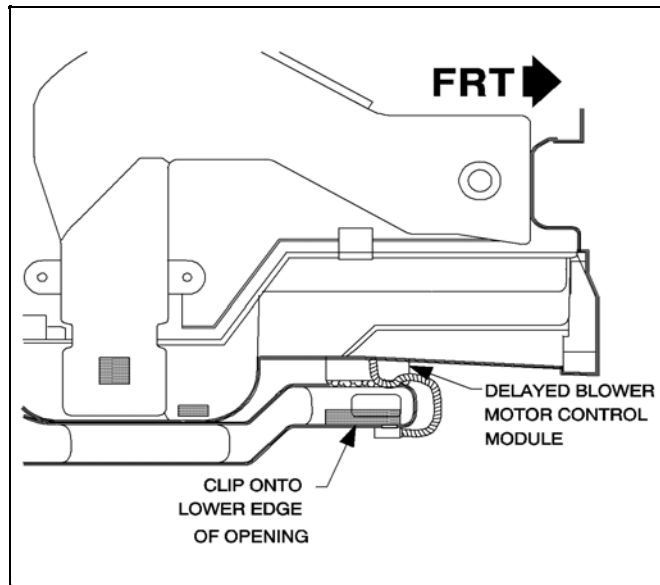
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8. From passenger side of vehicle, wipe clean top center surface of heater duct.
9. Remove hook side of hook and loop retainer that is attached to delayed blower motor control module.
10. Peel backing off of hook side of hook and loop retainer and apply to top center of heater duct between two structure ribs. Press firmly to seat.
11. Install edge clip on electrical connector of delayed blower motor control module.
12. Using electrical tape, solid wrap delayed blower motor control module pigtail harness from electrical connector edge to delayed blower motor control module.



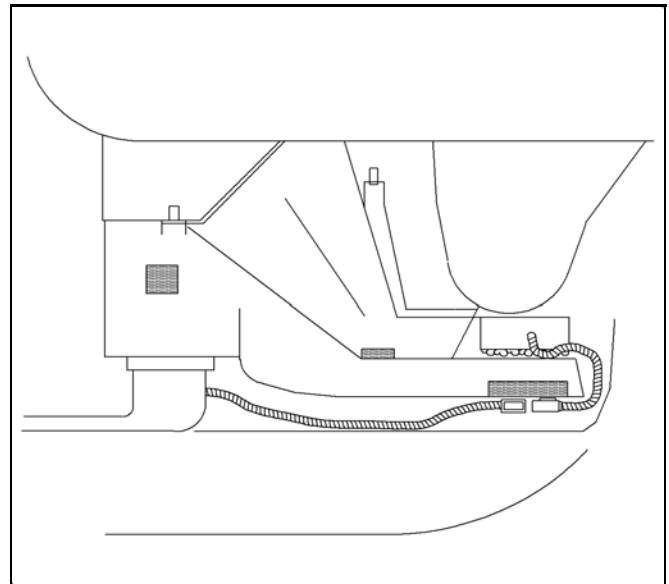
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13. From driver's side of vehicle:
 - 13.1. Insert delayed blower motor control module, with pigtail harness end first and hook and loop retainer down, into cavity above forward end of heater duct.
 - 13.2. Slide delayed blower motor control module in until rear edge is flush with heater duct edge on driver's side of vehicle.
 - 13.3. Press down on blower motor control module to engage hook and loop retainer. (Delayed blower motor control module should fit securely if engagement of hook and loop retainer has been achieved.)



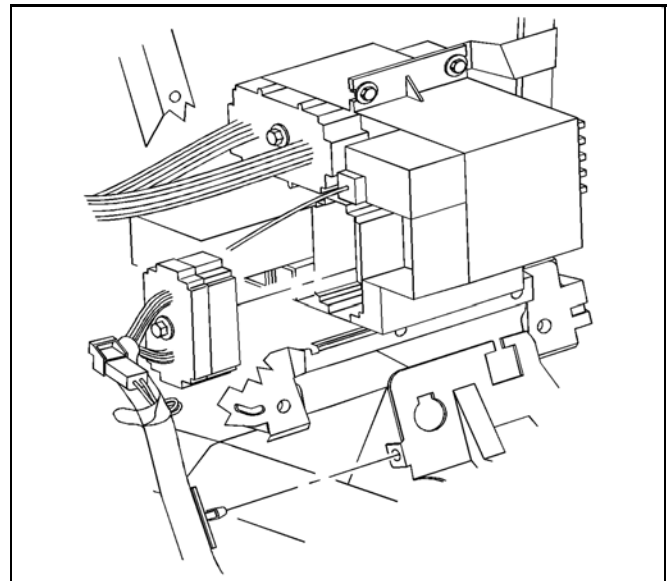
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14. From passenger's side of vehicle:
 - 14.1. Route delayed blower motor control module pigtail harness between forward edge of heater duct and carpet.
 - 14.2. Attach delayed blower motor control module pigtail harness connector to the lower forward edge of the heater duct. Place clip as far forward as possible.



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15. Using black electrical tape, solid wrap 381 mm (15 in.) of the delayed blower motor control module jumper harness, starting at electrical connector end.
16. Connect delayed blower motor control module jumper harness with delayed blower motor control module pigtail at heater duct.
17. Route delayed blower motor control module jumper harness under front heater duct, forward of rear heater duct (if equipped), to the I/P wiring harness on the driver's side of the vehicle.



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18. Remove radio. (Refer to "Radio" removal procedure in the "Instrument Panel and Console" section of the "1991-1994 Body/Collision Service Manual.")

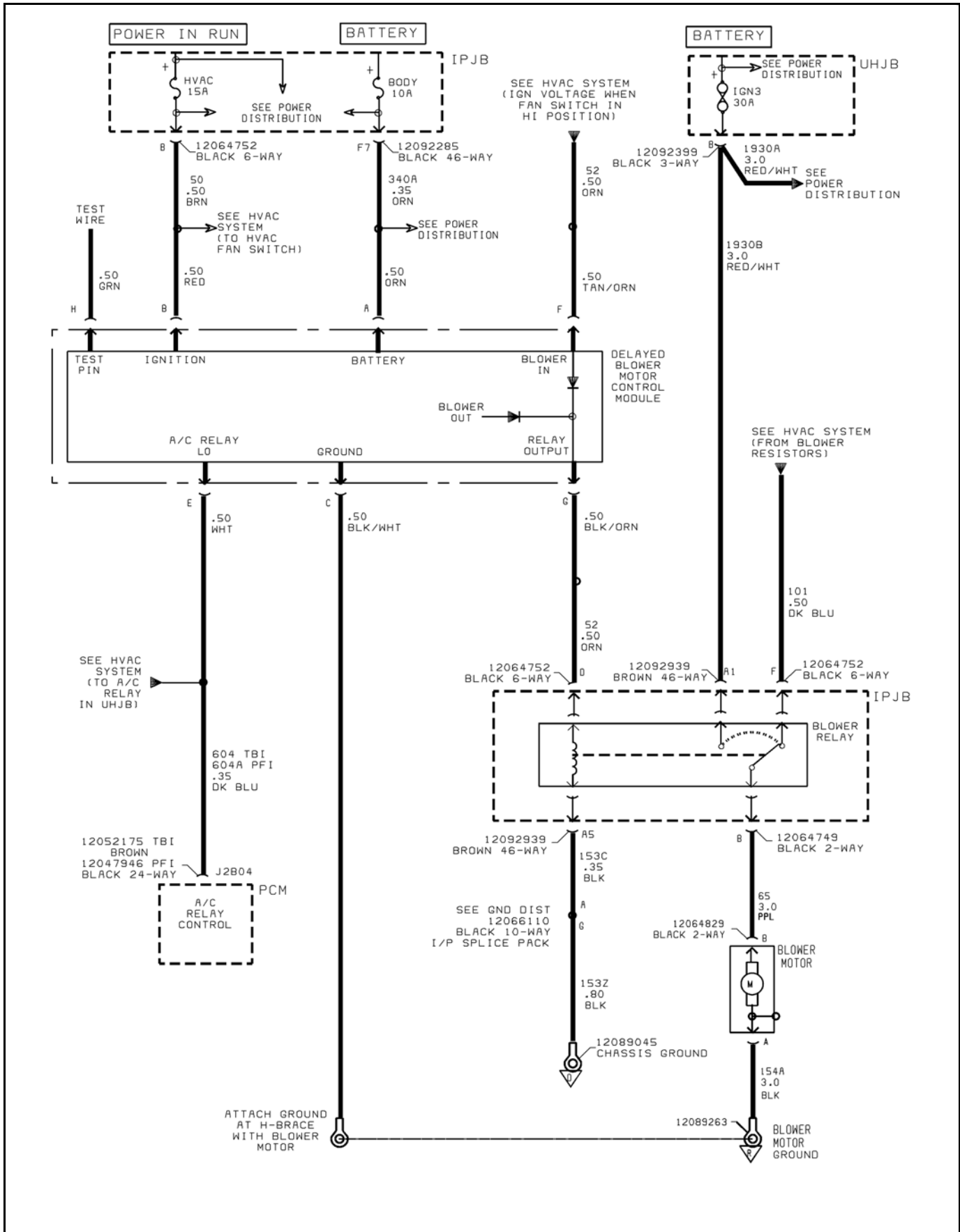
19. Remove console. (Refer to "Console" removal procedure in the "Instrument Panel and Console" section of the "1991-1994 Body/Collision Service Manual.")
20. Disconnect instrument panel junction block (IPJB) black 46-way connector and pull it rearward through H-brace and towards driver's side of vehicle.

Notice: To prevent any possibility of a short circuit, replace any tape that is pushed back or removed from any wiring harness that is moved.

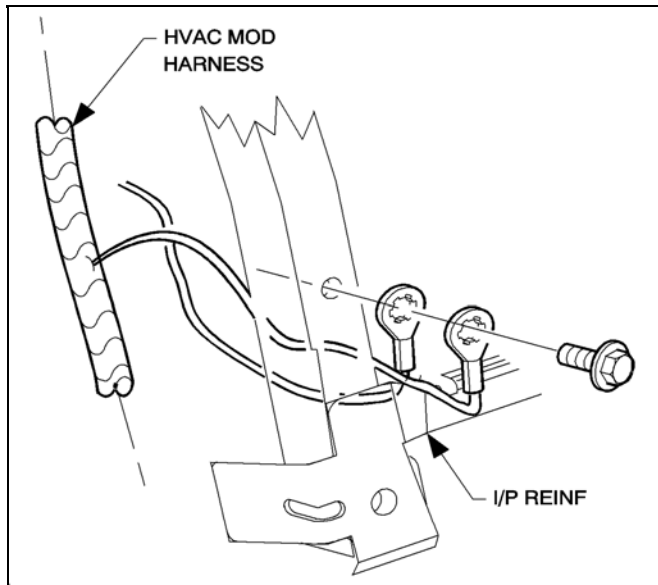
21. Route delayed blower motor control module's jumper harness rearward through H-brace.

Important: For information on splicing wires, refer to "Wire Splicing" instructions in this bulletin.

22. Make the following splices (refer to electrical wiring schematic on facing page):
 - 22.1. At terminal F7 of IPJB black 46-way connector, splice ORN wire from delayed blower motor control module into ORN wire (circuit 340A-battery feed) from 46-way connector.
 - 22.2. At terminal B of IPJB black 6-way connector, splice RED wire from delayed blower motor control module into BRN wire (circuit 50-ignition) from 6-way connector.
 - 22.3. At terminal D of IPJB black 6-way connector, locate ORN wire (circuit 52-HVAC blower control switch), and cut wire 51 mm (2 in.) from 6-way connector, then:



- Splice BLK/ORN wire from delayed blower motor control module to length of ORN wire (circuit 52) that goes to black IPJB 6-way connector.
- Splice TAN/ORN wire from delayed blower motor control module to length of ORN wire (circuit 52) that goes to HVAC blower control switch.

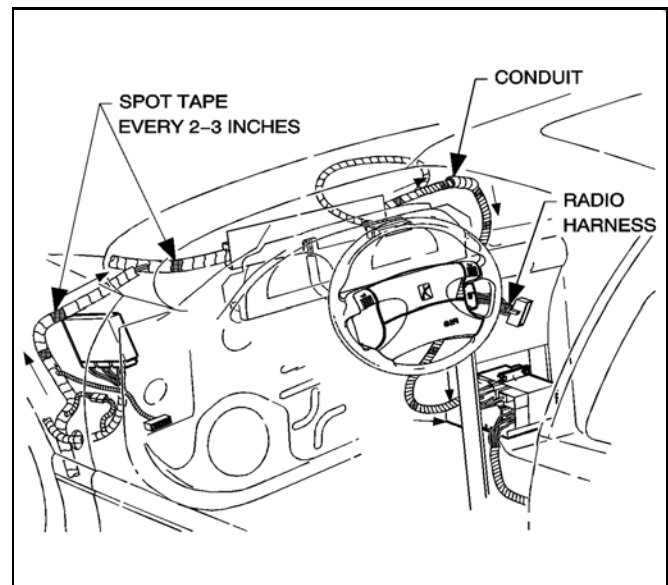


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23. Attach ring terminal lead kit (P/N 12112245) to BLK/WHT wire from delayed blower motor control module.
24. Attach ring terminal on the BLK/WHT wire from delayed blower motor control module to ground location at H-brace. Make sure that new ring terminal is on top of existing ring terminal.

Tighten

Tighten the ring terminal-to-ground to 2.2 N•m (20 lb-in).



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25. Using a 1.5 m (5 ft.) length of .50 mm² (20 gauge) wire:
 - 25.1. At terminal J2B04 of PCM 24-way connector, splice one end of wire to DK BLU wire (circuit 604 [SOHC], 604A [DOHC]-A/C relay control).
 - 25.2. Route wire to the IPJB as follows (using electrical tape, spot tape wire to harnesses approximately every 51-77 mm (2-3 in.):
 - Tape wire to DLC connector harness branch.
 - From top of I/P, route wire between I/P harness splice packs and I/P harness channel.
 - Route through conduit on I/P harness at left side bracket of HVAC module.
 - Reaching through radio opening, pull wire rearward, and spot tape to radio harness.
 - Route wire downward, forward of I/P carrier radio support bracket.
 - Follow HVAC module harness branch downward, then rearward to IPJB connector.
 - 25.3. Splice wire to WHT wire from delayed blower motor control module and spot tape to HVAC module harness.
26. The BLU wire from the delayed blower motor control module is unused. Tape end of BLU wire and tape back to jumper harness of delayed blower motor control module. The delayed blower motor control module GRN wire is used for testing.
27. Attach top half of "Notice" label provided in kit to blower motor cover. Attach bottom half of "Notice" label to inside of right side console extension assembly.
28. Connect IPJB black 46-way connector to IPJB.

Tighten

Tighten the IPJB connector to IPJB to 6.5 N•m (58lb-in).

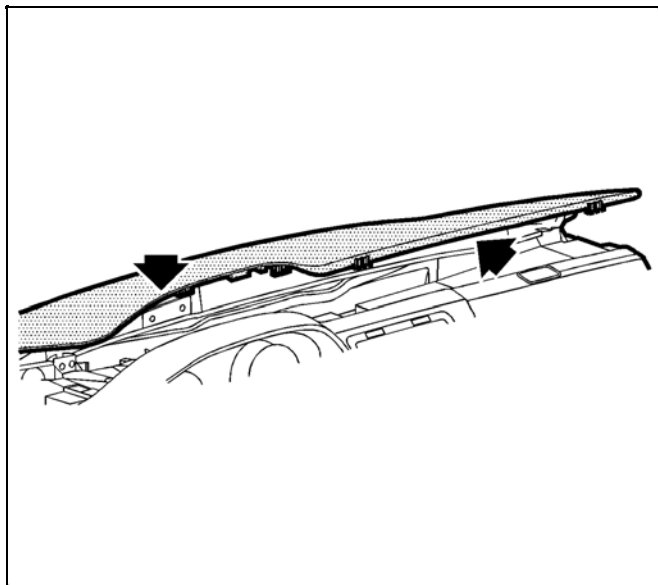
29. Connect negative battery cable.

Tighten

Tighten the battery cable to 17 N•m (13 lb-ft).

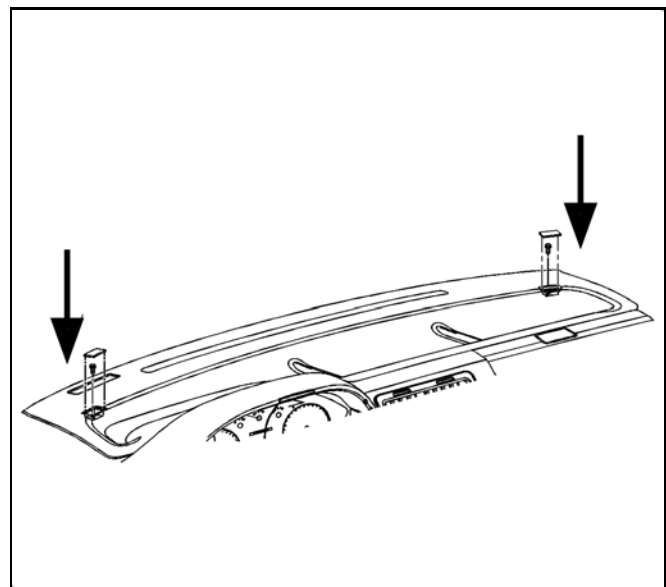
Important: Do not install parts that have been removed, except for black 46-way connector, until correct operation of the delayed blower motor control module has been verified.

30. Proceed to "Testing the Delayed Blower Motor Control Module" and verify operation. After operation is verified, proceed to next step.
31. Disconnect negative battery cable.
32. Install console. (Refer to "Console" installation procedure in the "Instrument Panel and Console" section of the "1991-1994 Body/Collision Service Manual.")
33. Install radio. (Refer to "Radio" installation procedure in the "Instrument Panel and Console" section of the "1991-1994 Body/Collision Service Manual.")



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34. Insert I/P upper trim panel by inserting into clips at windshield and snapping rear of I/P upper trim panel into position.



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Important: For 1992-1994 vehicles, the I/P upper trim panel screw caps are interchangeable.

35. Install I/P upper trim panel screws and I/P upper trim panel screw caps.
36. On vehicles equipped with supplemental inflatable restraints, enable the SIR system. (Refer to "Enabling the SIR System" in the "1991-1994 SIR Service Manual.")
37. Connect negative battery cable.

Tighten

Tighten the battery cable to 17 N•m (13 lb-ft).

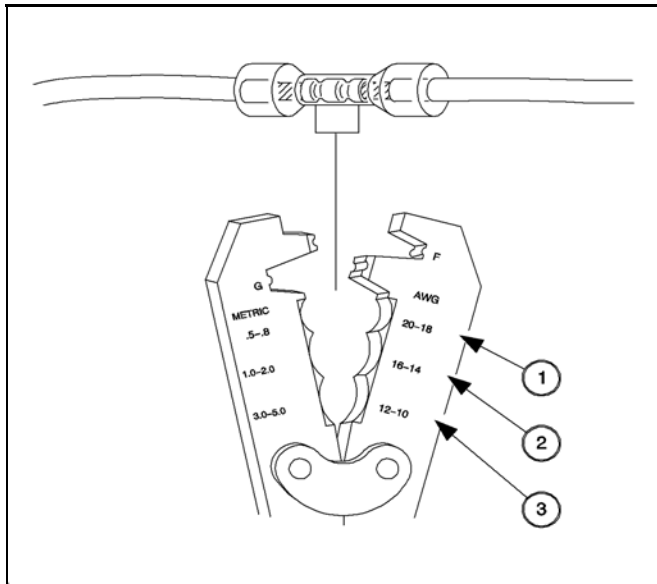
38. On vehicles equipped with supplemental inflatable restraints, clear any SIR diagnostic trouble codes that may have set during delayed blower motor control module testing. (Refer to the "1991-1994 SIR Service Manual.")
39. Set radio station presets.

WIRE SPLICING

With the wiring used in the Saturn vehicles, it is recommended that approved Packard Electric Crimp and Seal Splice Sleeves (or equivalent) be used.

1. Remove insulation from both ends, recommended strip length is 9.5 mm (3/8 in.). Caution must be used to prevent cutting the wire strands. Locate new splice a minimum of 40 mm (1 1/2 in.) from an outlet or other splice.
2. Determine proper sleeve for gauge of wire. Position stripped ends in sleeve until wires hit stop.

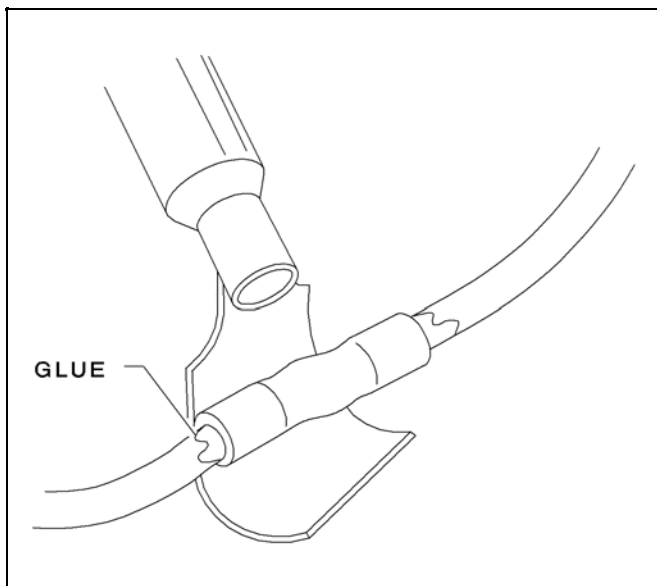
Important: When using the salmon splice sleeve with 0.35 mm² (22 gauge) wire, remove 19 mm (3/4 in.) of insulation. Bend the stripped portion in half to double the thickness of the wire going into the splice sleeve. Twist the stripped, doubled wire and insert into the splice sleeve.



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Important: When splicing three wire ends into one splice sleeve, insert one cut wire end from vehicle harness and new splice wire end into one side of the splice sleeve until wires hit stop. Hand crimp using approved crimping tool. Insert remaining cut wire end from vehicle harness into other side of splice sleeve and crimp.

3. Hand crimp sleeve using the approved crimping tool. Gently tug on wires to make sure they are secure before applying heat to them.

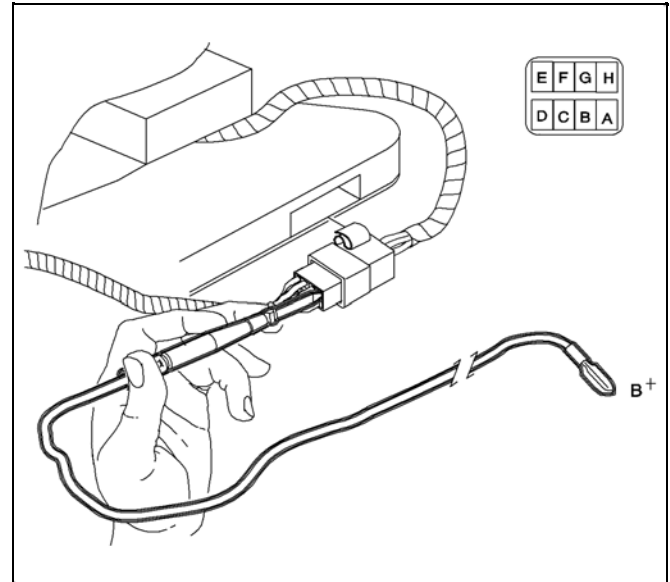


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Caution: DO NOT USE A MATCH OR OPEN FLAME TO APPLY HEAT TO SPLICE SLEEVE.

4. Apply heat using Ultratorch® (or equivalent), heating splice sleeve to 175° C (347° F). Heat until glue flows around edges of splice sleeve.
5. Check for continuity in the wire.

Testing the Delayed Blower Motor Control Module



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A full functional check of the delayed blower motor control module is required to assure that all electrical connections are connected properly and it is functioning as designed.

Important: Do not disconnect the jumper harness connector from the delayed blower motor control module pigtail connector or system test will not function.

1. Locate the GRN wire at cavity H of the delayed blower motor control module, and insert a metri-pack 280 series male test adapter into cavity H until contact is made with GRN wire terminal in the delayed blower motor control module pigtail connector.
2. Start engine and turn On A/C and verify that compressor clutch engages. With clutch engaged, apply battery voltage to GRN wire for 30 seconds. Turn Off ignition switch. Approximately 10 seconds after the ignition switch is turned Off, the blower motor will run for one second if the delayed blower motor control module is wired correctly.
3. Disconnect voltage to adapter and remove adapter from connector.
4. If the delayed blower motor control module runs for one second, go back to installation procedures and install parts removed from vehicle. If the delayed blower motor control module does not run for one second, go back to installation procedures and check all wiring connections.

Delayed Blower Motor Control Module Diagnosis

VEHICLE RUNNING, HIGH BLOWER SETTING DOES NOT OPERATE	
Cause	Solution
The blower in and blower out wires to the module are not properly connected	Verify that the TAN/ORN wire of delayed blower motor control module is connected to ORN wire (circuit 52) coming from blower fan switch. Verify that the BLK/ORN wire of delayed blower motor control module is connected to ORN wire (circuit 52), connected to wire going to the high-blower relay.

BLOWER DOES NOT OPERATE AFTER SPECIFIED DELAY TIME (MAKE SURE THAT ALL WIRES TO MODULE ARE PROPERLY CONNECTED. USE A VOLTMETER TO CHECK THAT THE PROPER SIGNAL IS APPLIED TO EACH WIRE.)	
Cause	Solution
(Test Mode Only) GRN test wire from delayed blower motor control module is not properly connected to vehicle battery source.	Connect or jumper GRN test wire (pin H) to the vehicle's battery (not ignition).
Proper signal not received from A/C compressor.	Make sure A/C compressor is connected electrically. Secondly, use a voltmeter to verify that A/C compressor low signal is zero volts when A/C is turned On.
A/C compressor was not in operation long enough to trigger delayed blower motor control module.	Start engine and turn On A/C. Make sure A/C compressor clutch is continuously engaged for at least four minutes to trigger delayed blower motor control module. For test mode, run A/C for 30 seconds before turning Off engine.

Parts Requirements

Part Number	Description
21031158	Module Kit - Delayed Blower Motor Control
12112245	Terminal - Ring
21030784	Kit - A/C Disinfectant (P/N 10953503 for Canada)
12346390	Coating - A/C Evap Organic Matl Growth Prev
21121827	Plug

Claim Information

To receive credit for this repair during the warranty coverage period, submit a claim through the Saturn Dealer System as follows:			
Case Type	Description	Labor Operation Code	Time
VW	Disinfect A/C System	T9555	1.3 hrs.
VW	Disinfect A/C System and Install Delayed Blower Motor Control Module	T9709	305 hrs.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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