1982-92 Pontiac Firebird

with **Factory Air Evaporator Kit (565707)**

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Additional Notes:

- This kit was developed using various 1982-92 F-Body vehicles. Some steps may be depicted with a different year or model from your vehicle.

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Packing List: Evaporator Kit (565707)

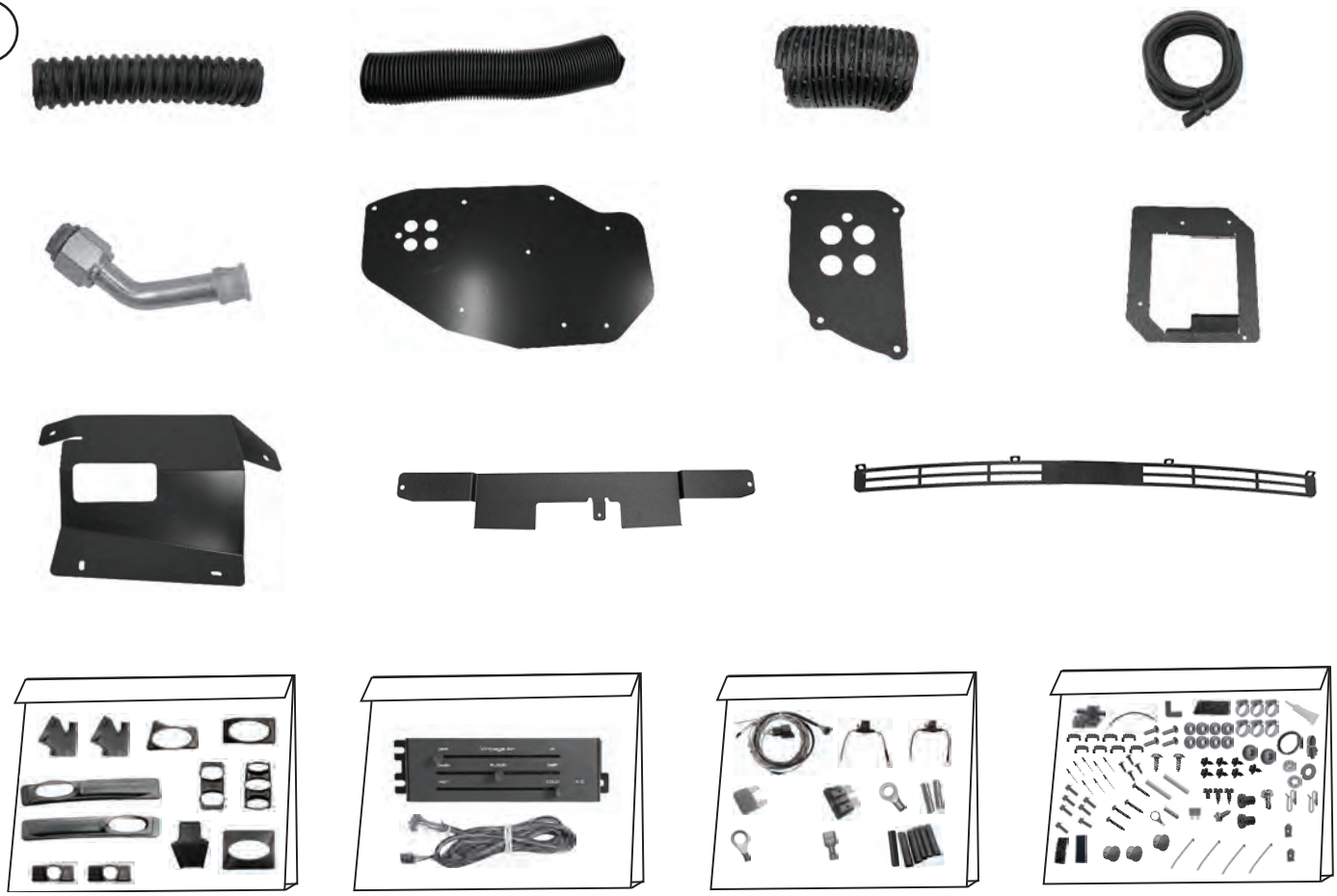
No.	Qty.	Part No.	Description
1.	1	765250	Gen 5 Super Magnum Evaporator Module
2.	1	785707	Accessory Kit

**** Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

1

Gen 5 Super Magnum Evaporator Module 765250

2



Accessory Kit 785707

NOTE: Images may not depict actual parts and quantities. Refer to packing list for actual parts and quantities.

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Important Notice—Please Read

For Maximum System Performance, Vintage Air Recommends the Following:

NOTE: Vintage Air systems are designed to operate with R134a refrigerant only. Use of any other refrigerant could damage your A/C system and/or vehicle, and possibly cause a fire, in addition to potentially voiding the warranties of the A/C system and its components.

Refrigerant Capacities:

Vintage Air System: 1.8 lbs. (28.8 oz.) or 816 grams of **R134a**, charged by weight with a quality charging station or scale. **NOTE: Use of the proper type and amount of refrigerant is critical to system operation and performance.**

Other Systems: Consult manufacturer's guidelines.

Lubricant Capacities:

New Vintage Air-Supplied Sanden Compressor: No additional oil needed (Compressor is shipped with proper oil charge).

All Other Compressors: Consult manufacturer (Some compressors are shipped dry and will need oil added).

Safety Switches

Your Vintage Air system is equipped with a binary pressure safety switch. A binary switch disengages the compressor clutch in cases of extreme low pressure conditions (refrigerant loss) or excessively high head pressure (406 PSI) to prevent compressor damage or hose rupture. A trinary switch combines Hi/Lo pressure protection with an electric fan operation signal at 254 PSI, and should be substituted for use with electric fans. Compressor safety switches are extremely important since an A/C system relies on refrigerant to circulate lubricant.

Service Info:

Protect Your Investment: Prior to assembly, it is critical that the compressor, evaporator, A/C hoses and fittings, hardlines, condenser and receiver/drier remain capped. Removing caps prior to assembly will allow moisture, insects and debris into the components, possibly leading to reduced performance and/or premature failure of your A/C system. This is especially important with the receiver/drier.

Additionally, when caps are removed for assembly, **BE CAREFUL!** Some components are shipped under pressure with dry nitrogen.

Evacuate the System for 35-45 Minutes: Ensure that system components (Drier, compressor, evaporator and condenser) are at a temperature of at least 85°F. On a cool day, the components can be heated with a heat gun ***or*** by running the engine with the heater on before evacuating. Leak check and charge to specifications.

Bolts Passing Through Cowl and/or Firewall:

To ensure a watertight seal between the passenger compartment and the vehicle exterior, for all bolts passing through the cowl and/or firewall, Vintage Air recommends coating the threads with silicone prior to installation.

Heater Hose (not included with this kit):

Heater hose may be purchased from Vintage Air (Part#31800-VUD) or your local parts retailer. Routing and required length will vary based on installer preference.

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Important Wiring Notice—Please Read

Some vehicles may have had some or all of their radio interference capacitors removed. There should be a capacitor found at each of the following locations:

1. On the positive terminal of the ignition coil.
2. If there is a generator, on the armature terminal of the generator.
3. If there is a generator, on the battery terminal of the voltage regulator.

Most alternators have a capacitor installed internally to eliminate what is called “whining” as the engine is revved. If whining is heard in the radio, or just to be extra cautious, a radio interference capacitor can be added to the battery terminal of the alternator.

It is also important that the battery lead is in good shape and that the ground leads are not compromised. There should be a heavy ground from the battery to the engine block, and additional grounds to the body and chassis.

If these precautions are not observed, it is possible for voltage spikes to be present on the battery leads. These spikes come from ignition systems and charging systems, and from switching some of the vehicle’s other systems on and off. Modern computer-operated equipment can be sensitive to voltage spikes on the power leads, which can cause unexpected resets, strange behavior and/or permanent damage.

Vintage Air strives to harden our products against these types of electrical noise, but there is a point where a vehicle’s electrical system can be degraded so much that nothing can help.

Radio interference capacitors should be available at most auto and truck parts suppliers. They typically are cylindrical in shape, a little over an inch long and a little over a half-inch in diameter, and they have a single lead coming from one end of the cylinder with a terminal on the end of the wire, as well as a mounting clip which is screwed into a good ground on the vehicle. The specific value of the capacitance is not too significant in comparison to ignition capacitors that are matched with the coil to reduce pitting of the points.

- Care must be taken, when installing the compressor lead, not to short it to ground. The compressor lead must not be connected to a condenser fan or to any other auxiliary device. Shorting to ground or connecting to a condenser fan or any other auxiliary device may damage wiring or the compressor relay, and/or cause a malfunction.
- When installing ground leads on Gen 5 systems, the blower control ground and ECU ground must be connected directly to the negative battery post.
- For proper system operation, the heater control valve must be connected to the ECU.

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Engine Compartment Disassembly

1. Disconnect the A/C lines from the A/C compressor and the condenser (See Photos 1, 2 and 3, below).
2. Disconnect all wiring from the drier/accumulator and evaporator.
3. Disconnect A/C hoses and hardlines from the drier/accumulator (See Photo 4, below). Unplug the A/C high-pressure fan switch on the #6 hardline (See Photo 5, below), then remove the hoses, hardline and the drier (See Photo 6, below).
4. Remove the drier bracket by removing (2) screws (See Photo 7, below).
5. Remove the heater hoses at the firewall (See Photos 8 and 9, below).

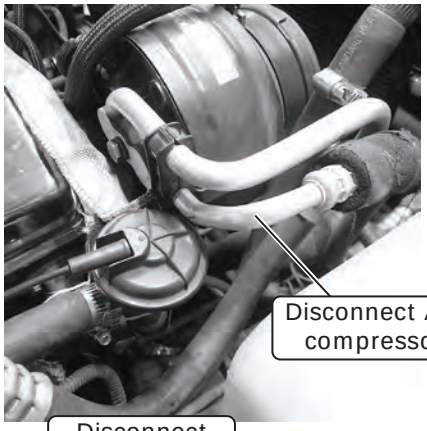
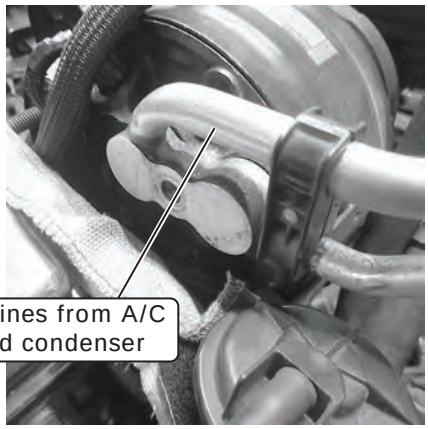


Photo 1



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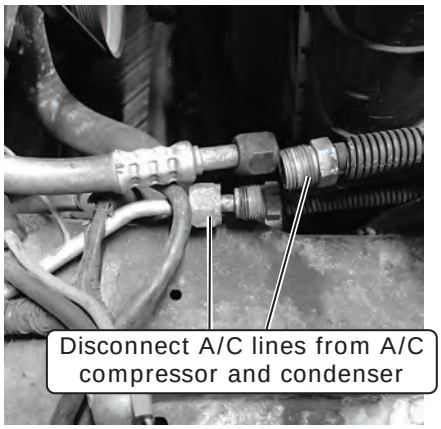

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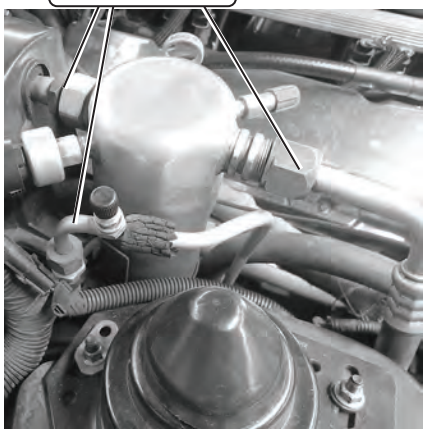

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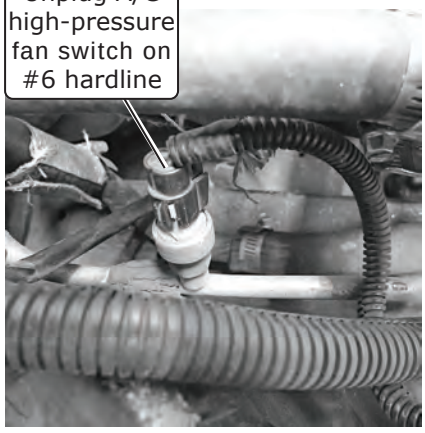

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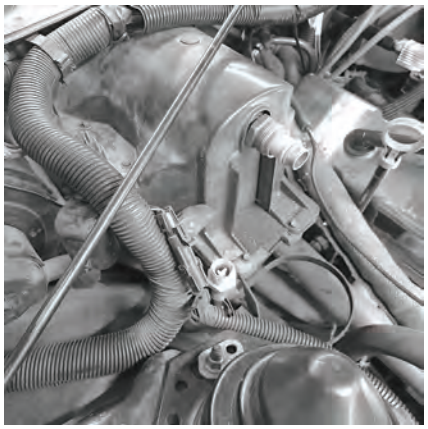
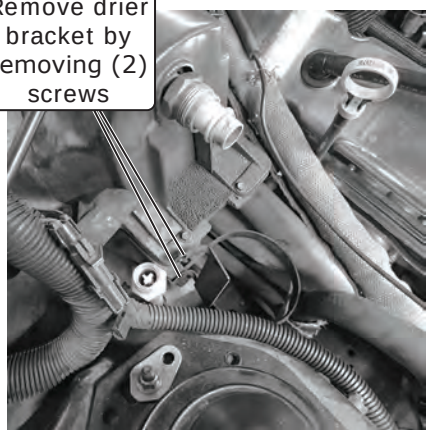


Hoses, Hardline and Drier Removed

Photo 6



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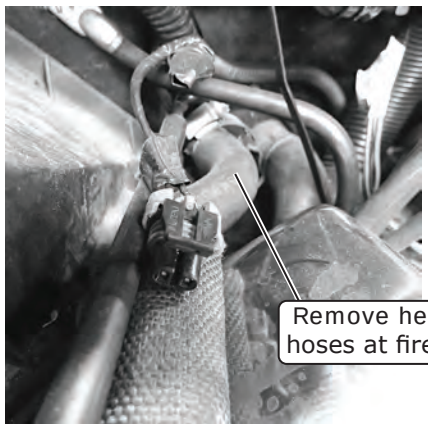


Photo 8

Heater Hoses Removed

Photo 9

Engine Compartment Disassembly (Cont.)

6. Remove the support bracket by removing (2) mounting screws/bolts (See Photos 10 and 11, below)
7. Disconnect the OEM control panel vacuum supply line, then cap the vacuum port (See Photo 12, below).
8. From the engine compartment, remove (3) evaporator mounting screws/bolts and (1) nut. (See Photo 13, below).
9. From the passenger compartment, remove the passenger-side under dash cover by removing the (3) mounting screws (See Photo 14, below).
10. Remove (4) evaporator mounting screws/bolts (See Photo 15, below).
11. From the engine compartment, carefully remove the evaporator from the vehicle (See Photo 16, below).

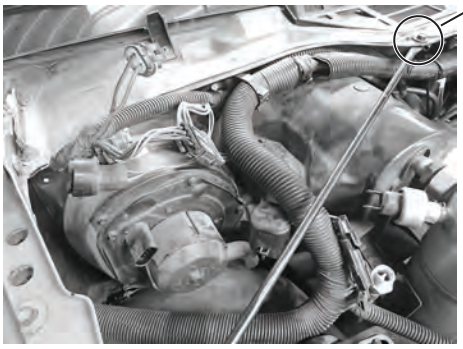
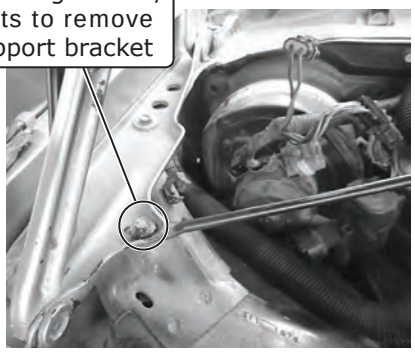


Photo 10



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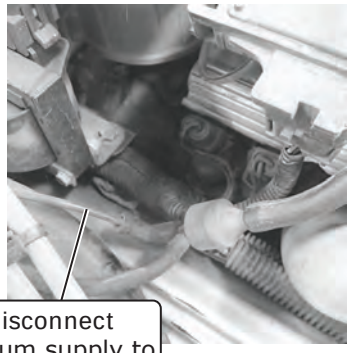

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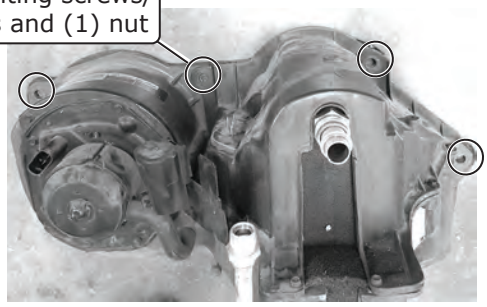

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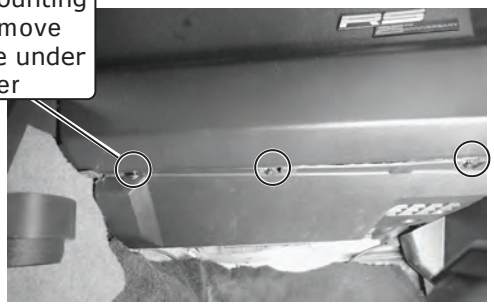

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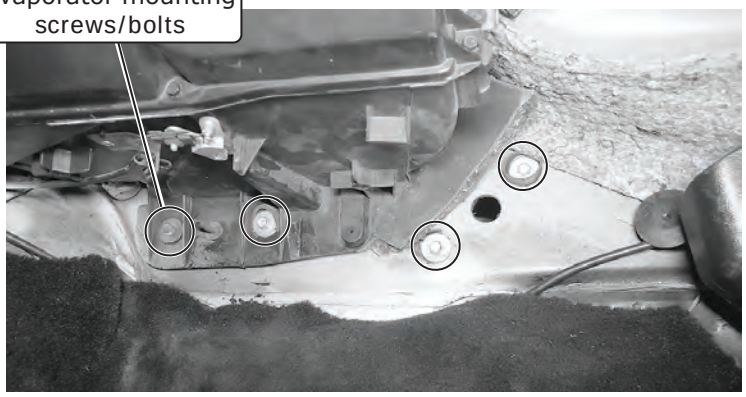

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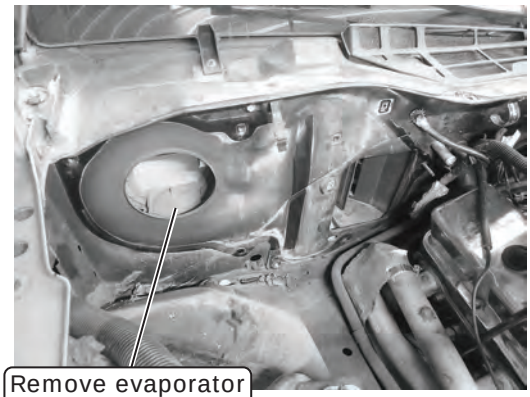

Photo 16

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Passenger Compartment Disassembly

1. Remove the under steering column cover by removing (3) mounting screws (See Photo 1, below).
2. Remove the control console faceplate by gently prying the faceplate up (See Photo 2, below).
3. Remove the radio and A/C control panel.
4. Remove the control console by removing (2) mounting screws.
5. Remove (10) mounting screws, then remove the dash pad (See Photos 3, 4, 5 and 6, below).

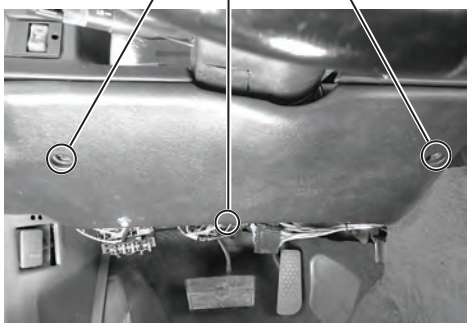
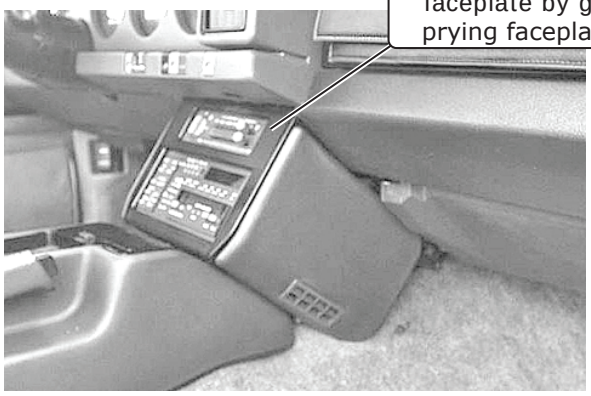


Photo 1



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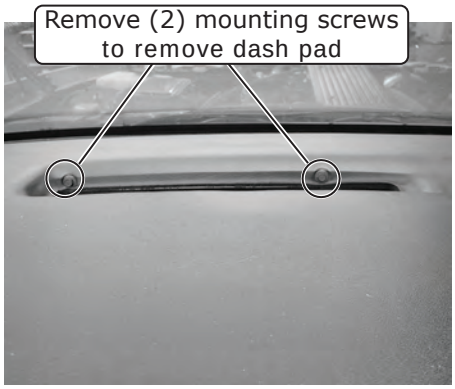

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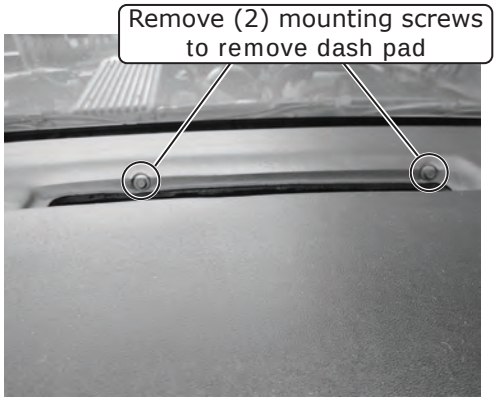


Photo 4

Photo 5

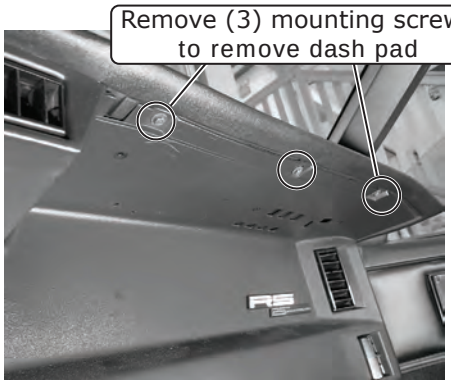
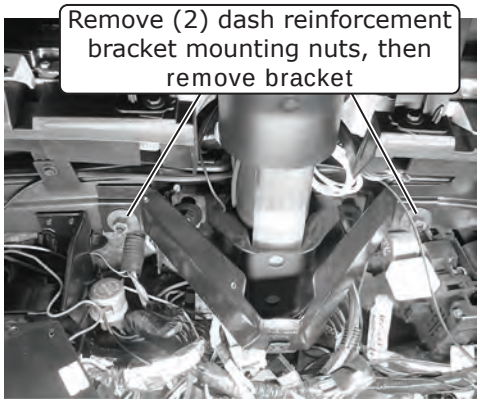


Photo 6

Passenger Compartment Disassembly (Cont.)

6. Remove (2) dash reinforcement bracket mounting nuts, then remove the bracket (See Photo 7, below).
7. Lower the steering column by removing (2) mounting nuts (See Photo 8, below).
8. Remove the driver- and passenger-side lower dash mounting bolts (See Photos 9 and 10, below).
9. Remove (2) instrument cluster bezel mounting screws, then pull to remove from the housing (See Photo 11, below).
10. Remove (4) instrument cluster mounting bolts, then remove the cluster from the dash housing (See Photo 12, below).



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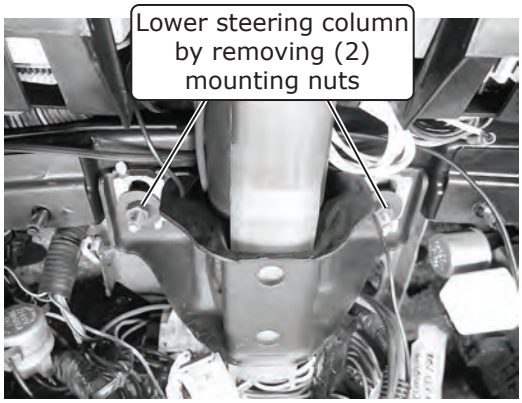

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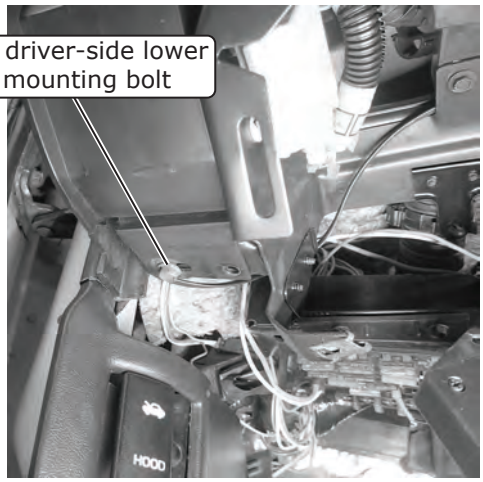
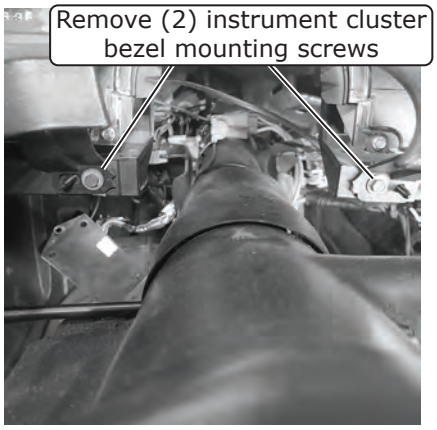


Photo 9

Photo 10



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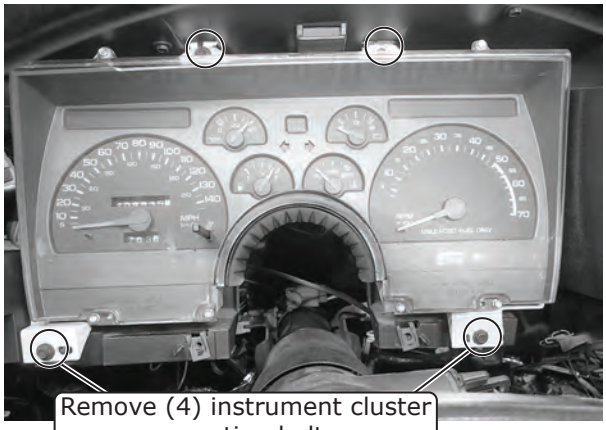


Photo 12

Passenger Compartment Disassembly (Cont.)

11. Remove the headlight switch (refer to the vehicle service manual for removal instructions).

12. Remove all visible mounting screws at the bottom of the dash that are securing the plastic to the lower dash brace. **NOTE: The wiring harness is attached to the brace and does not have to be removed.**

13. Remove (3) driver-side defrost plenum screws, then remove the plenum (See Photos 13 and 14, below).

14. Remove (3) passenger-side defrost plenum screws, then remove the plenum (See Photo 15, below).

15. Remove the remaining upper OEM plenum and dash mounting screws, then remove the dash from the vehicle (See Photos 16, 17 and 18, below). **NOTE: Disconnect the speaker leads or remove the speakers.**

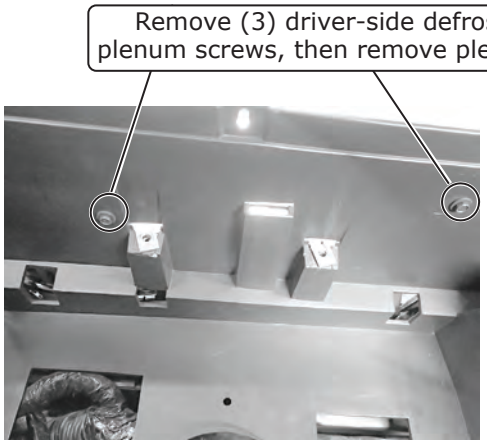


Photo 13

Photo 14

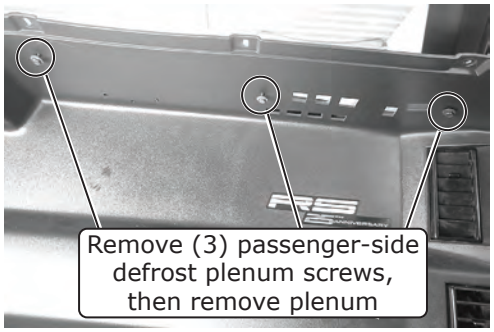
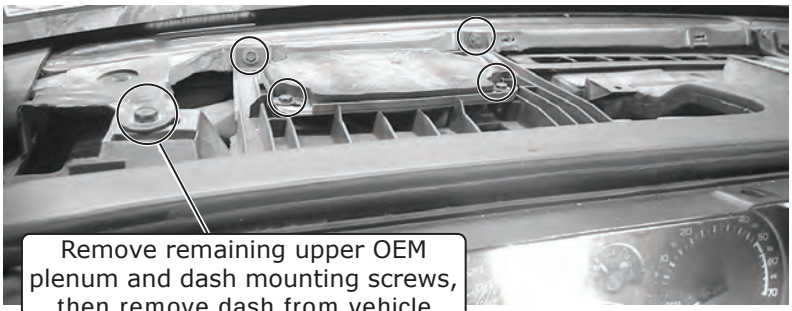


Photo 15



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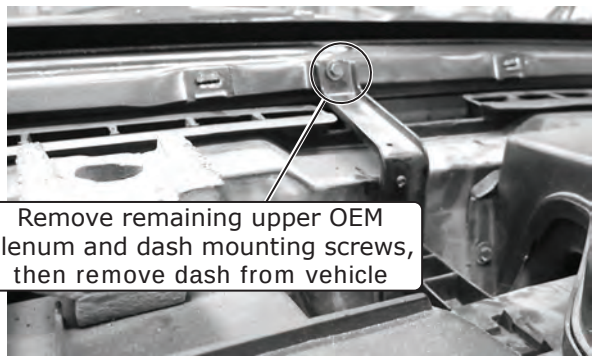


Photo 17

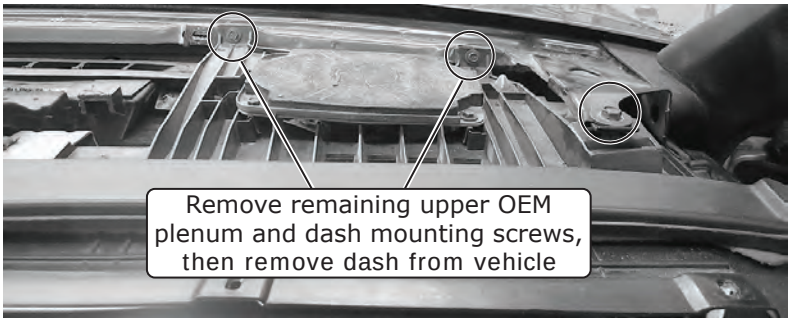


Photo 18

Passenger Compartment Disassembly (Final)

16. Remove the pass-key module from the OEM evaporator bracket, as it will be relocated (See Photo 19, below).

17. Remove the (4) fresh air door screws, then remove the fresh air door from the vehicle (See Photo 20, below).

18. From the engine compartment, remove (1) OEM evaporator screw. From the passenger compartment, disconnect all vacuum lines from the evaporator, then remove the module from the vehicle (See Photo 21, below).

19. From the engine compartment, disconnect the OEM evaporator wiring harness (See Photo 22, below).

20. From the passenger compartment, disconnect the brown OEM A/C power wire at the clip, then remove the factory harness from the vehicle (See Photo 23, below).

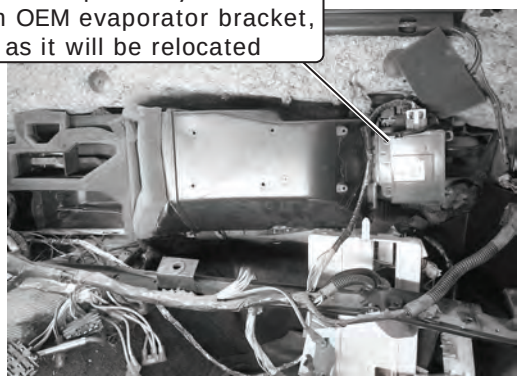


Photo 19

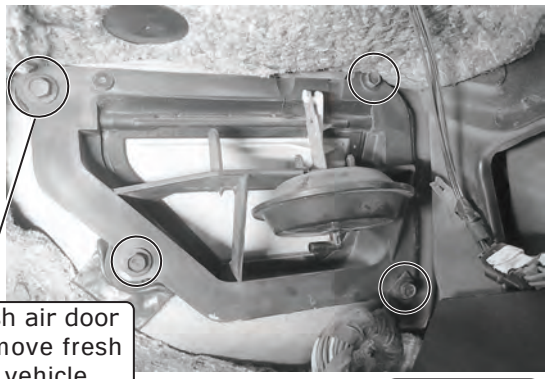
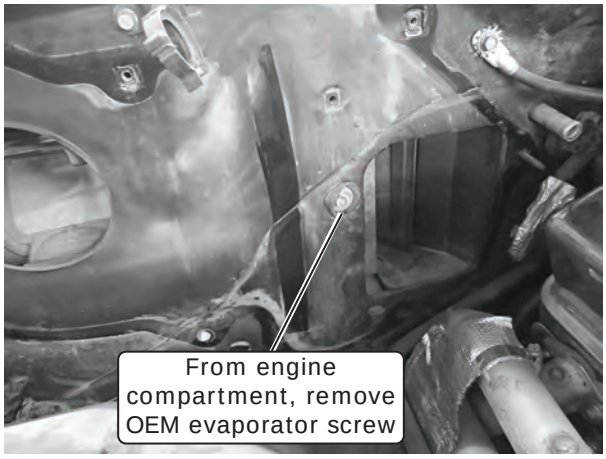


Photo 20



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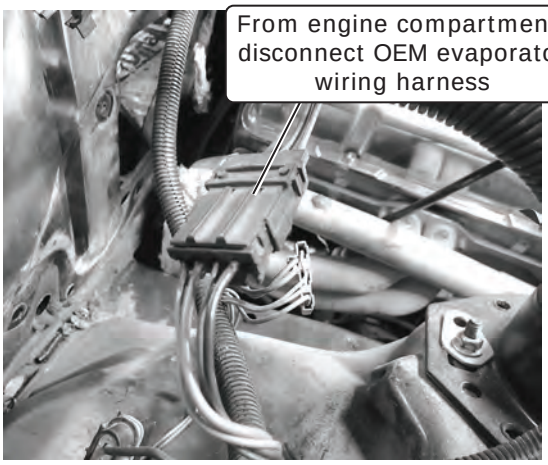

Photo 22

Photo 23

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Firewall Modification and Insulation

NOTE: The firewall requires modification for the drain hose to be installed. For proper system operation, Vintage Air recommends using Dynaliner (461500-VIP) heat-blocking insulation in the area around the evaporator module (firewall, kick panel, inner cowl, firewall covers). Due to tight clearance for the evaporator module between the firewall and dash, Vintage Air recommends an insulation thickness of no more than 1/8".

1. In the engine compartment, remove the lip and weld nut on the firewall where the factory blower was installed (See Photos 1, 2 and 3, below). **NOTE: These modifications are necessary for the firewall cover to seal properly.**
2. From the passenger compartment, measure 3" from the bead roll on the floor pan and 3/4" from the firewall. Mark and drill a 5/8" hole (See Photos 4 and 5, below). **NOTE: To ensure a tight fit, do not enlarge the hole to more than 5/8".**
3. Remove the OEM firewall insulation and replace it with 1/8" thick insulation (insulation not included) (See Photos 6 and 7, below).

Photo 1

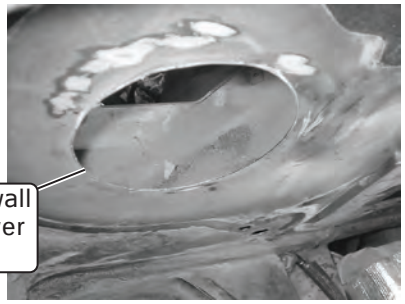

Photo 2

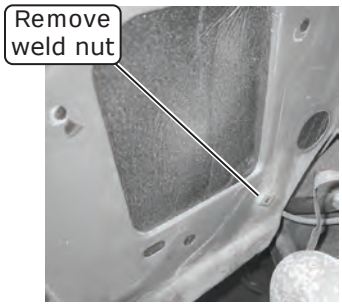

Photo 3

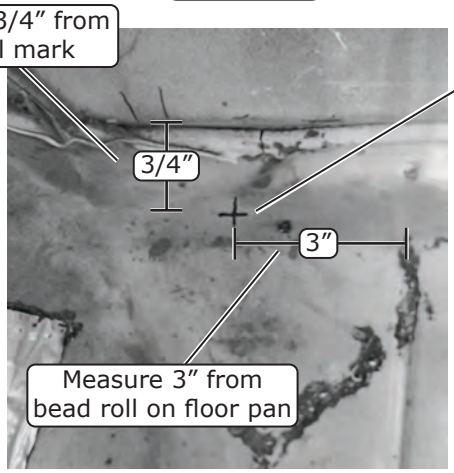

Photo 4

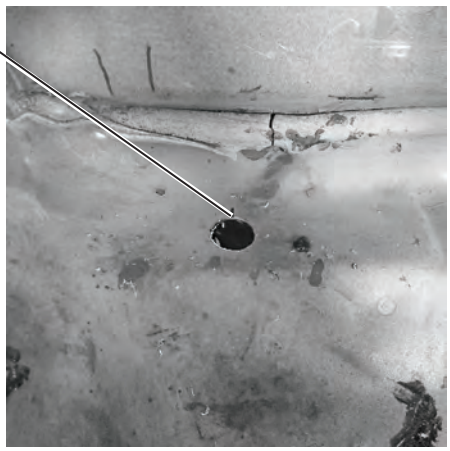

Photo 5

Photo 6

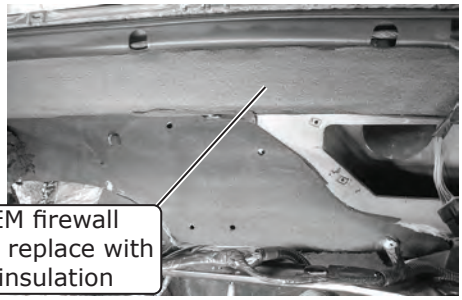

Photo 7

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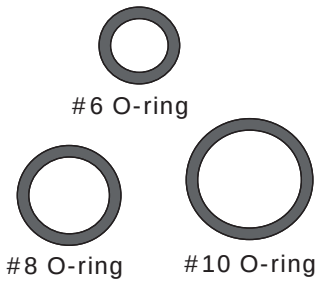
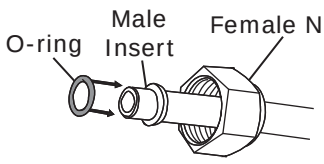
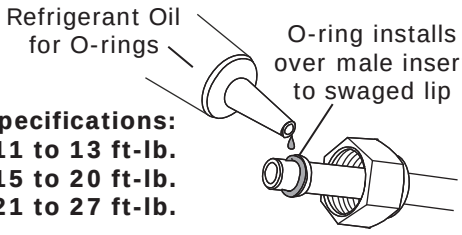
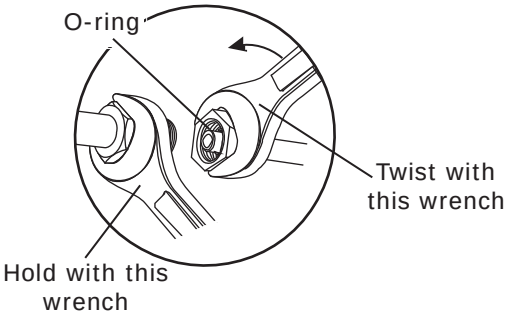
Lubricating O-rings





For a proper seal of fittings: Install supplied O-rings as shown and lubricate with refrigerant oil.





NOTE: Standard torque specifications:
#6: 11 to 13 ft-lb.
#8: 15 to 20 ft-lb.
#10: 21 to 27 ft-lb.

Evaporator Preparation

NOTE: Ensure hardlines are aligned before fully tightening. Use a back-up wrench when tightening fittings. For all mounting provisions not being used, install the supplied caps.

On a workbench, perform the following:

1. With (2) properly lubricated #10 O-rings (See Lubricating O-rings, above), install (2) 45° heater hose fittings onto the evaporator module (See Photo 1, below).
2. Install (3) 1/2" plastic plugs into the back of the evaporator case (See Photo 2, below). **NOTE: These mounting provisions will not be used in this application.**
3. Using (4) #10 x 5/8" screws, secure the evaporator assembly bracket onto the evaporator (See Photos 3, 4 and 5, below).
4. Install (2) 1/4-20 x 1 ½" full-threaded studs an 1/8" into the evaporator assembly bracket in the locations shown in Photo 6, below.

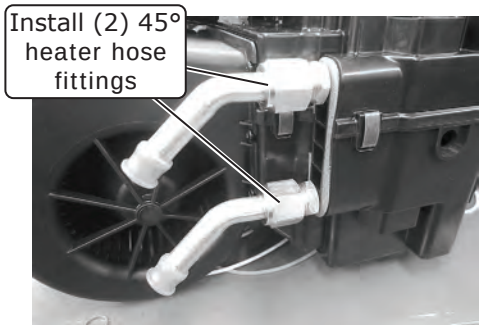


Photo 1

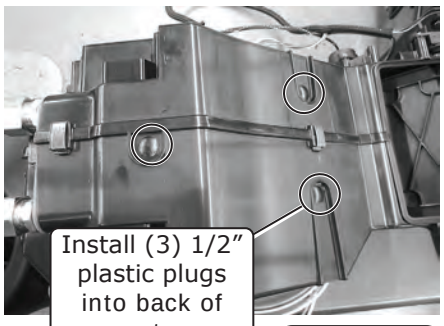
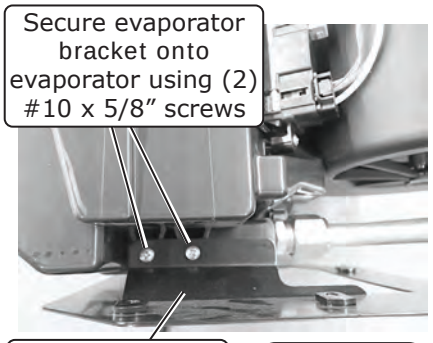


Photo 2



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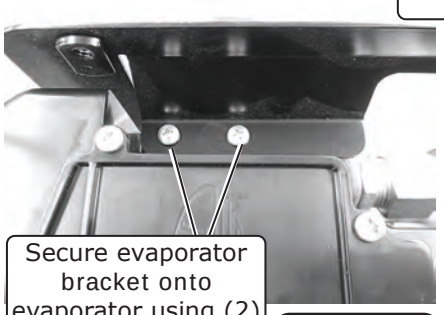

Photo 4

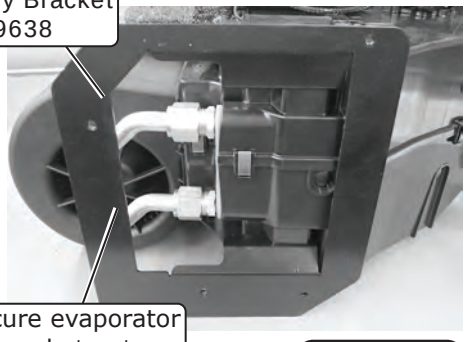

Photo 5

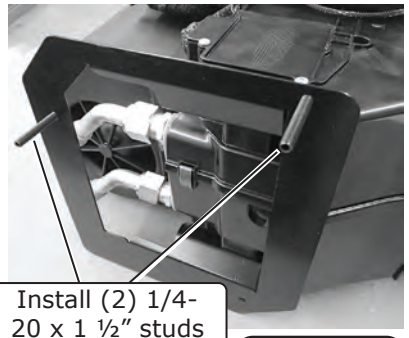

Photo 6

Evaporator Preparation (Cont.)

5. Using (4) spring clips, install the dash plenum as shown in Photos 7 and 8, below.

6. Using (2) spring clips, install the floor plenum onto the back of the evaporator as shown in Photos 9 and 10, below.

7. Using (2) spring clips, install the defrost plenum onto the front of the evaporator as shown in Photos 11 and 12, below.

Photo 7

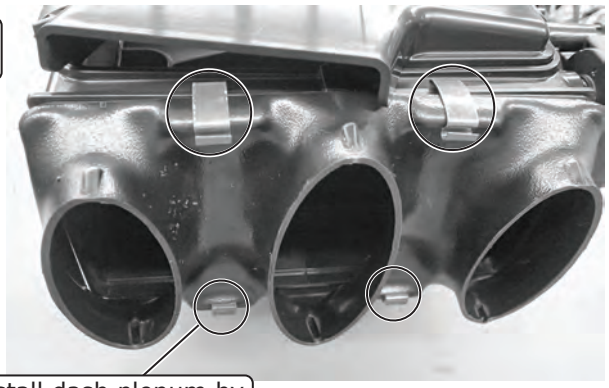

Photo 8

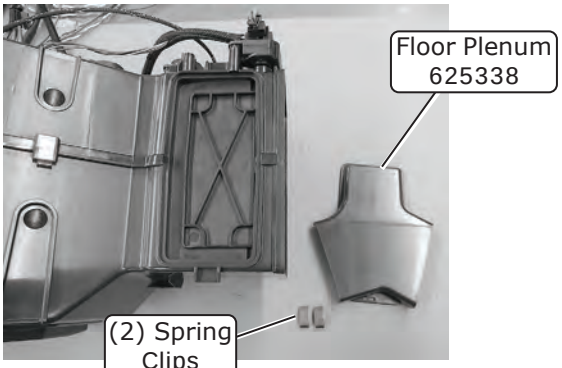

Photo 9

Photo 10

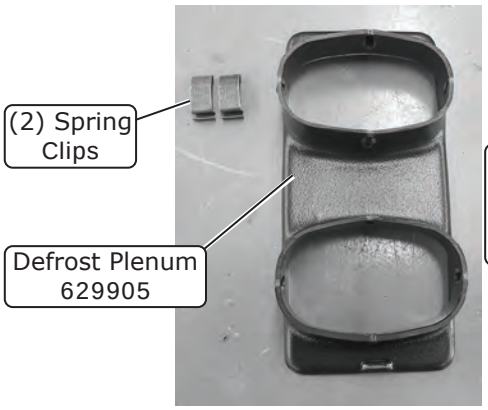

Photo 11

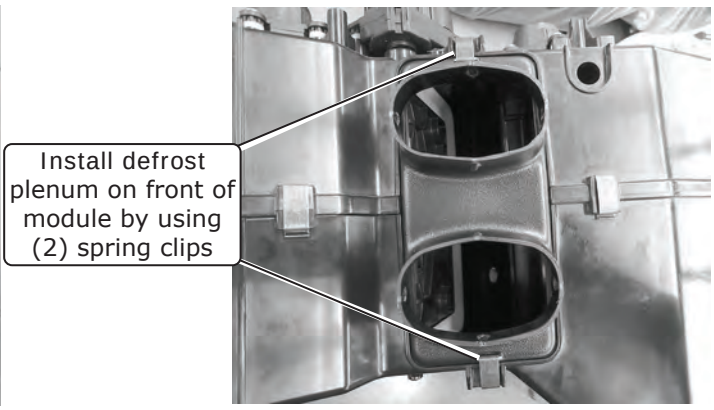

Photo 12

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Firewall Cover
Preparation & Installation

NOTE: To ensure a watertight seal between the passenger compartment and the vehicle exterior, for all bolts passing through the firewall, Vintage Air recommends coating the threads with silicone prior to installation.

1. Install (4) large grommets and a 7/8" O.D. x 3/8" I.D. wiring grommet into the firewall cover (See Photos 1 and 2, below).
2. Install a 1/4-20 x 3/4" serrated flange black zinc bolt with a 1/4" pushnut bolt retainer into the location shown in Photos 3 and 4, below.
3. Install (4) large grommets and a 7/8" O.D. x 3/8" I.D. wiring grommet into the cowl cover (See Photos 5 and 6, below).

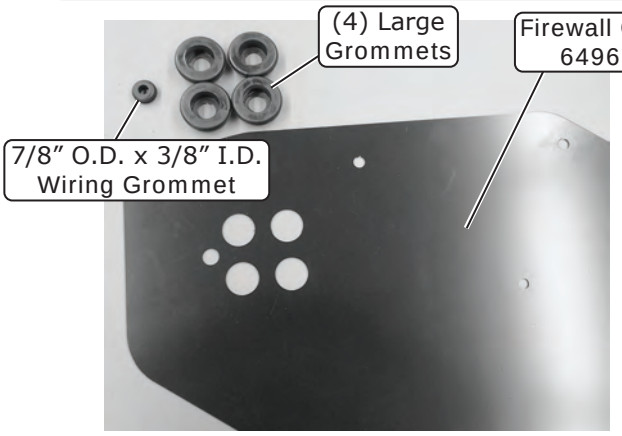


Photo 1

Photo 2

Photo 3

Photo 4

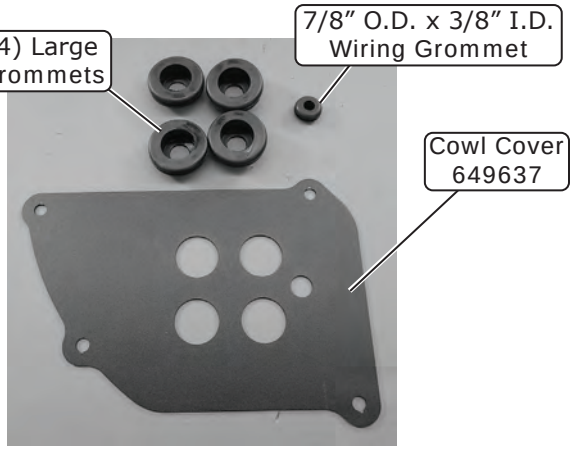


Photo 5

Photo 6

Firewall Cover
Preparation & Installation (Cont.)

4. Apply silicone to the mating surface of the firewall cover (See Photo 7, below).

5. Loosely install the firewall cover onto the firewall using (3) M6.3 x 16MM hex head bolts with washers. Align the mounting holes, then tighten the bolts (See Photo 8, below).

6. From the passenger compartment, install a 1/4" USS flat washer and a 1/4-20 hex nut with star washer (See Photo 9, below).

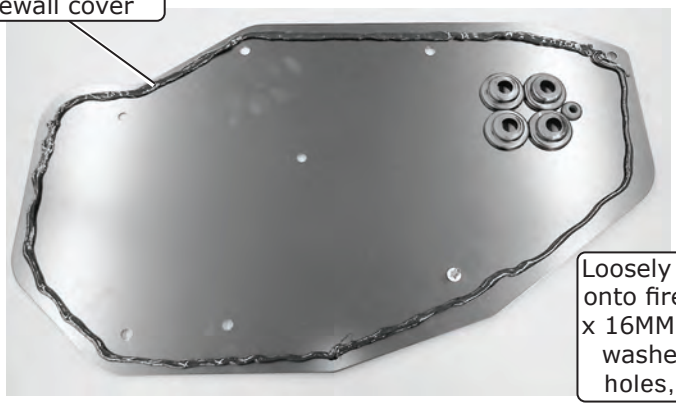


Photo 7

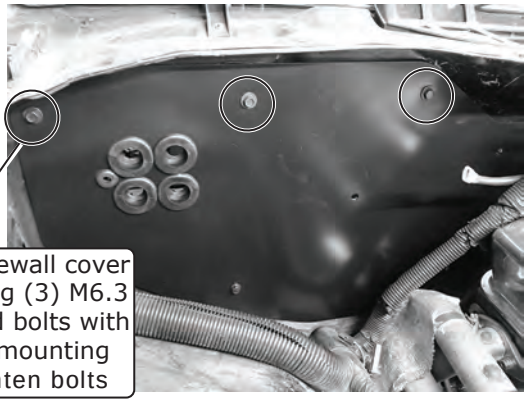


Photo 8

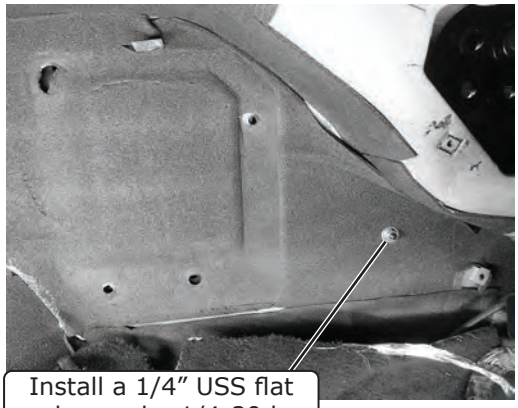


Photo 9

Wiring Installation

1. Locate the heater control valve plug on the main wiring harness (white/yellow/purple). Route it through the wiring grommet into the cowl cover, then through the wiring grommet on the firewall cover, and finally into the engine compartment (See Photos 1, 2 and 3, below).
2. Route the red, white and blue wires from the main harness through the wiring grommet in the cowl cover, then through the wiring grommet on the firewall cover into the engine compartment (See Photos 4, 5 and 6, below).
3. Leave approximately 5" of wiring between the cowl cover and relay.
4. Place the evaporator module on the passenger side floor board.
5. Route the heavy gauge orange and white wires through the wiring grommet in the cowl cover, then through the wiring grommet on the firewall cover into the engine compartment (See Photos 7, 8 and 9, below).

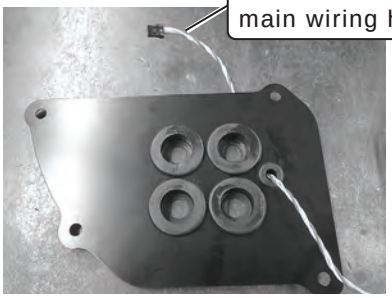


Photo 1

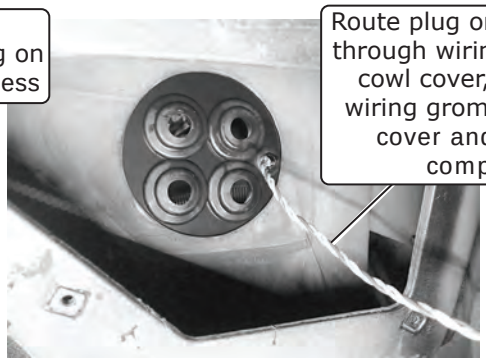
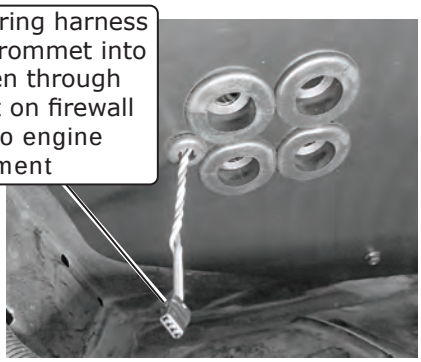


Photo 2



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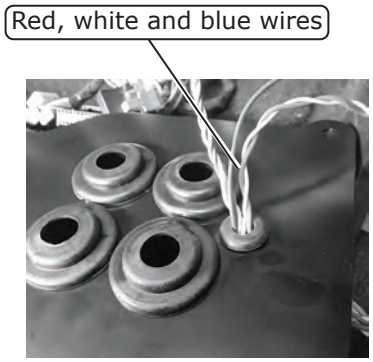

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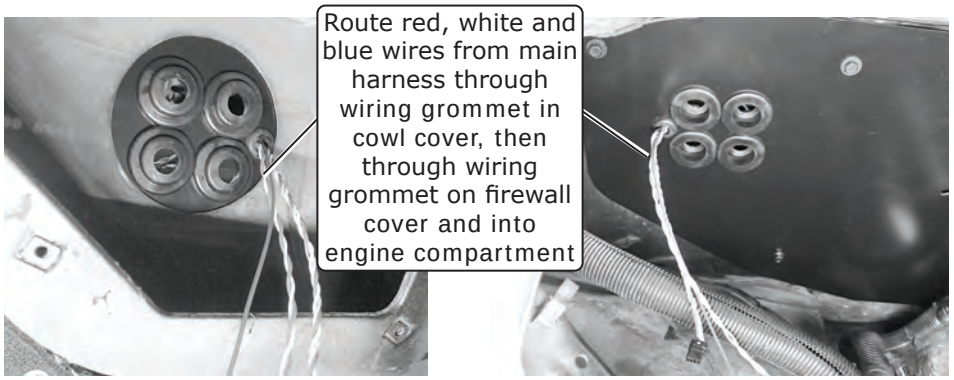


Photo 5

Photo 6

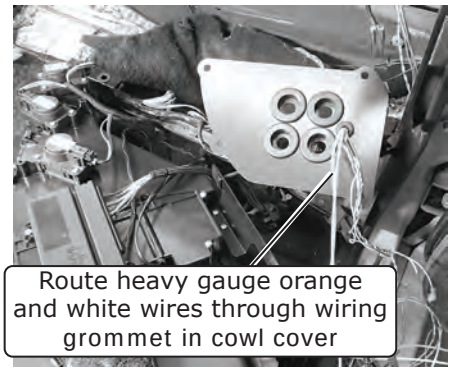
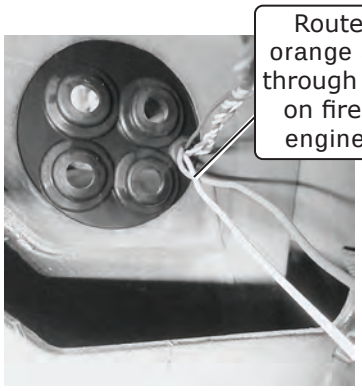


Photo 7



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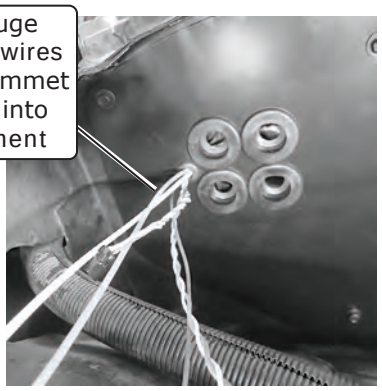


Photo 9

Wiring Installation (Cont.)

6. Connect the blower speed controller plug into the main wiring harness plug (orange and green wires) (See Photo 10, below).

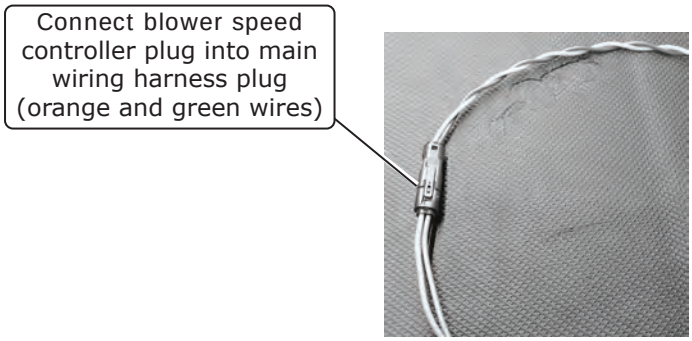


Photo 10

A/C and Heater Hose Installation

NOTE: Vintage Air systems use 5/8" heater connections. On engines equipped with 3/4" hose nipples, these will need to be removed and replaced with 5/8" nipples (not supplied). For water pumps with a cast-in 3/4" heater outlet, a 3/4" x 5/8" reducer fitting (not supplied) or molded hose will need to be installed in the heater hose.

1. From the engine compartment, route (2) lengths of heater hose through the firewall cover into the passenger compartment (See Photo 1, below).
2. Route the straight fitting of the #10 A/C hose through the lower left grommet on the firewall cover and into the passenger compartment (See Photo 2, below).
3. Route the straight fitting of the #6 A/C hose through the upper left grommet on the firewall cover and into the passenger compartment (See Photo 3, below). **NOTE: The longer side of the #6 A/C hose will route into the passenger compartment (See Photo 4, below).**

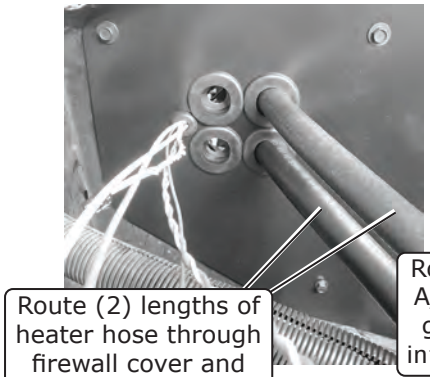


Photo 1

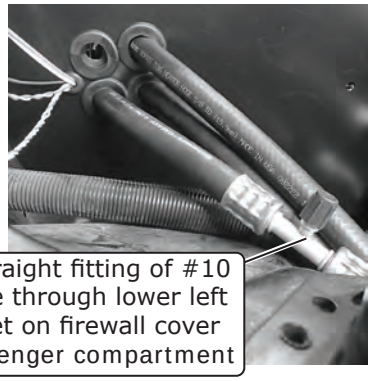


Photo 2

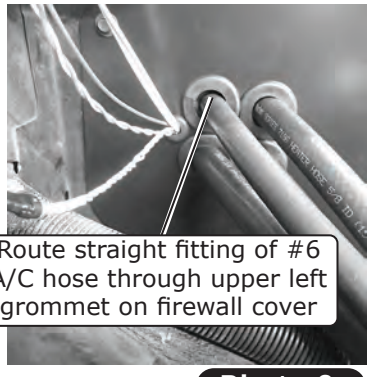


Photo 3

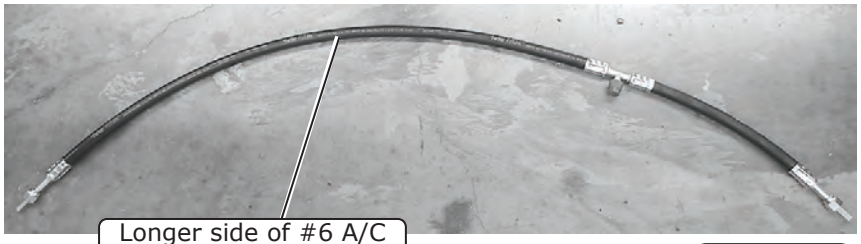


Photo 4

A/C and Heater Hose Installation (Cont.)

4. Route the (2) heater hoses through the cowl cover and into the passenger compartment (See Photo 5, below).
5. Route the #10 and #6 A/C hoses through the cowl cover and into the passenger compartment (See Photo 6, below).
6. Apply silicone to the mating surface of the cowl opening. Slide the cowl cover into place, and secure it using (4) M6.3 x 16MM hex head bolts with washers (See Photo 7, below).

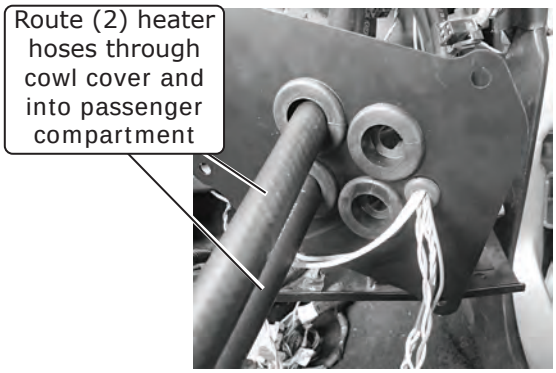


Photo 5

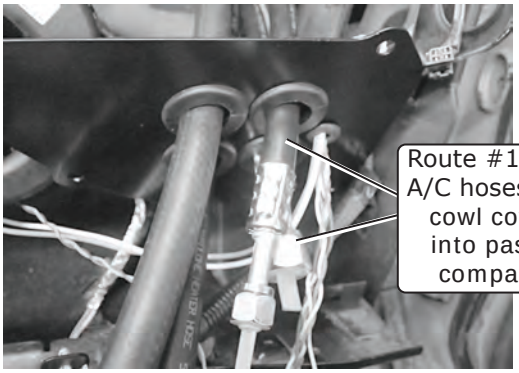


Photo 6

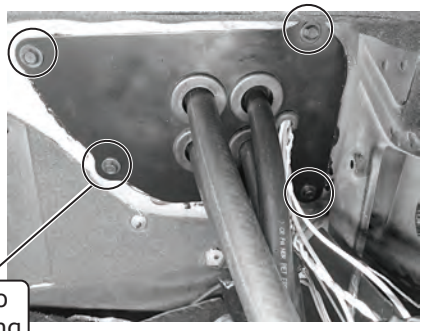


Photo 7

Relay and Ground Installation

1. Select a mounting location for the main harness relay, then install it using a #12 x 1/2" self-tapping hex head screw. Ground the heater control valve ground eyelet using a #12 x 1/2" self-tapping hex head screw (See Photo 1, below).

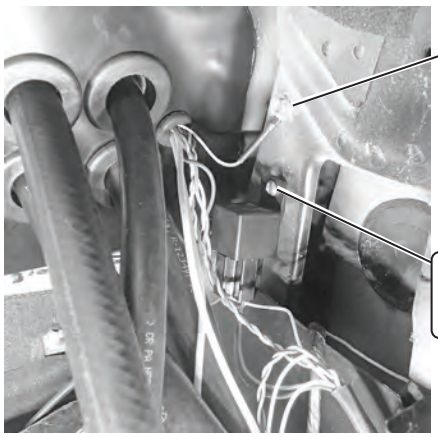


Photo 1

Evaporator Installation

NOTE: Use a backup wrench when tightening the A/C hose fittings.

1. Loosen the (2) ECU mounting screws (See Photo 1, below), then slide the ECU over and up to remove it from the evaporator (See Photo 2, below). **NOTE: The ECU will be mounted in a different location for this application. Retighten the mounting screws.**
2. Remove the heater hardline caps. Using (2) hose clamps, secure the upper and lower heater hoses to the heater hardlines (See Photos 3 and 4, below).
3. Lift the evaporator module into place using the 1/4-20 x 1 ½" full-threaded studs to locate the module into the mounting position (See Photo 5, below). **NOTE: Pull the slack from the heater hoses and make sure the hoses are not kinked.**
4. From the engine compartment, remove the (2) 1/4-20 x 1 ½" full-threaded studs and replace them with (2) 1/4-20 x 3/4" serrated flange black zinc bolts (See Photos 6, below). **NOTE: Apply silicone to bolts before installing.**
5. From the engine compartment, apply silicone to the threads of (2) 1/4-20 x 3/4" serrated flange black zinc bolts and install them into the (2) lower mounting positions on the firewall cover (See Photo 6, below).

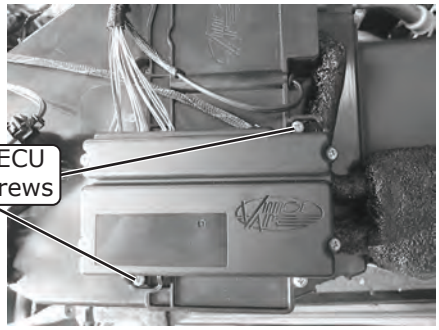


Photo 1

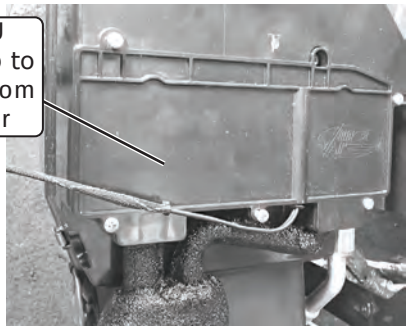


Photo 2

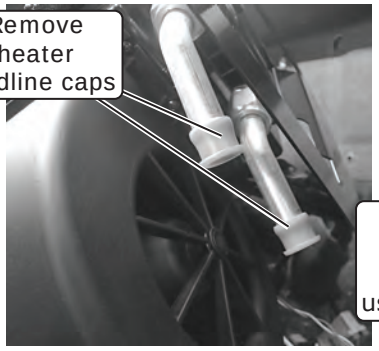


Photo 3

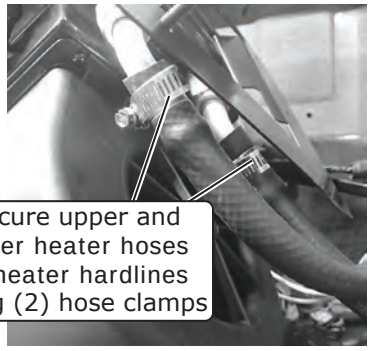


Photo 4

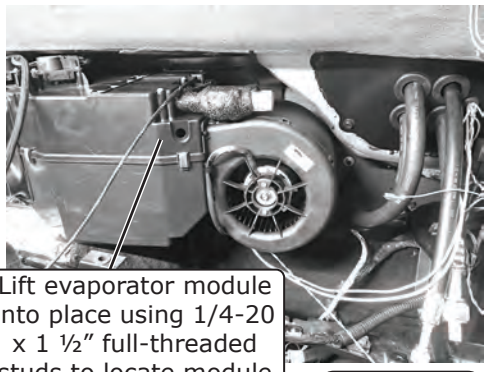


Photo 5

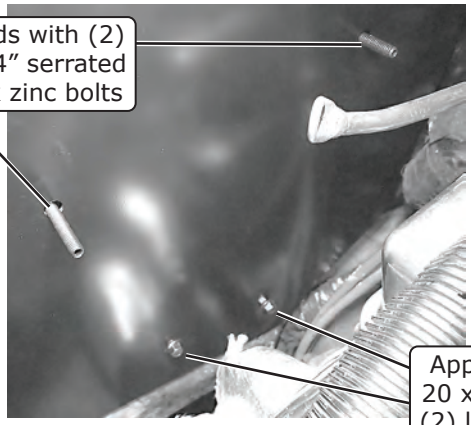


Photo 6

Evaporator Installation (Cont.)

6. From the passenger compartment, install (2) well nuts into the mounting provisions on the evaporator (See Photos 7 and 8, below).
7. Secure the evaporator dash bracket to the evaporator module using (2) 1/4-20 x 1" serrated flange bolts (See Photo 9, below).
8. Using the cowl bracket as a template, drill (2) pilot holes for the (2) #10 x 1/2" sheet metal screws. Secure the bracket to the cowl using (2) #10 x 1/2" sheet metal screws (See Photo 10, below). **NOTE: Level the evaporator module both fore-aft and left-right before tightening mounting hardware.**
9. Cut the drain tube at 7". Install the drain elbow onto the remaining piece of drain hose (See Photo 11, below).
10. Install the 7" portion of the drain hose onto the drain plug located on the bottom of the module, then route it through the 5/8" drain hole in the firewall (See Photo 12, below).
11. In the engine compartment, connect the drain elbow to the drain hose (See Photo 13, below). **NOTE: Route the drain hose away from the exhaust.**

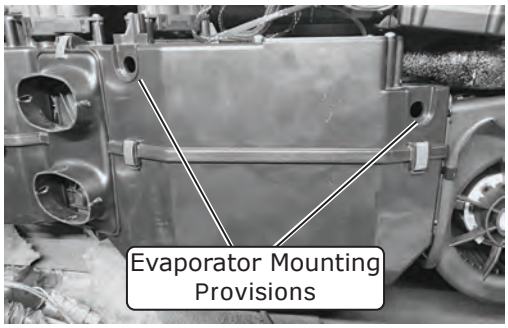


Photo 7

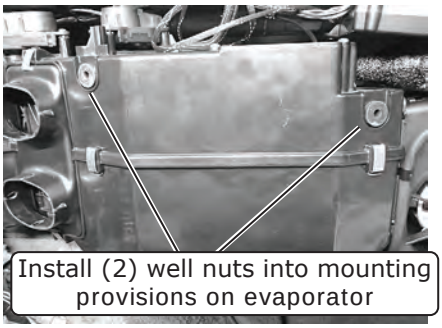


Photo 8

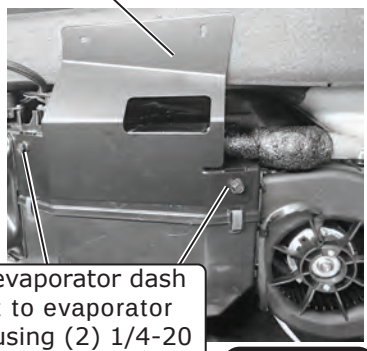


Photo 9

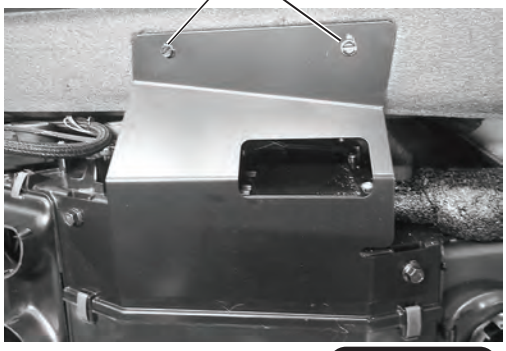


Photo 10

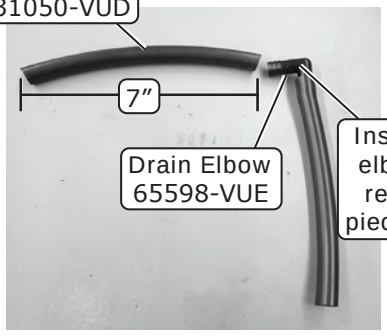


Photo 11

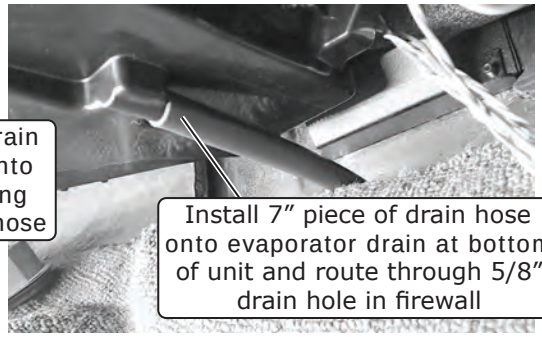


Photo 12

Photo 13

Passenger Compartment Wiring

1. Plug the main wiring harness into the ECU (See Photo 1, below).
2. Route the violet and tan wiring toward the center console.
3. Using the supplied heat shrink and butt splice connector, connect the violet wire from the main harness to the brown OEM A/C power wire (See Photos 2 and 3, below).
4. Using the supplied heat shrink and butt splice connector, connect the tan wire to the OEM control panel light (gray wire) (See Photos 2 and 3, below).

Photo 1

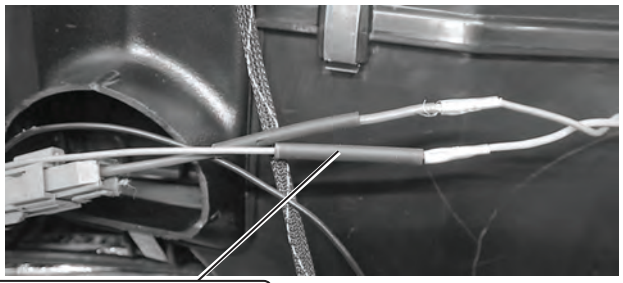


Photo 2

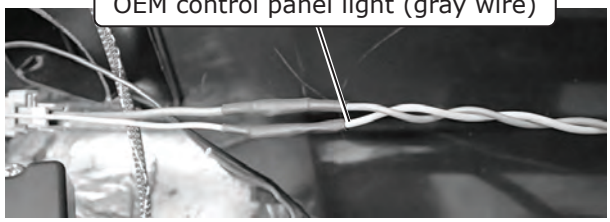


Photo 3

Engine Compartment A/C Hose Installation

NOTE: Before tightening A/C hose fittings, ensure the hose clocking is correct. Use a back-up wrench when tightening A/C hose fittings.

1. With a properly lubricated #6 O-ring (See Lubricating O-rings, Page 13), install the straight fitting of the #6 A/C hose onto the #6 drier hardline (See Photo 1, below).

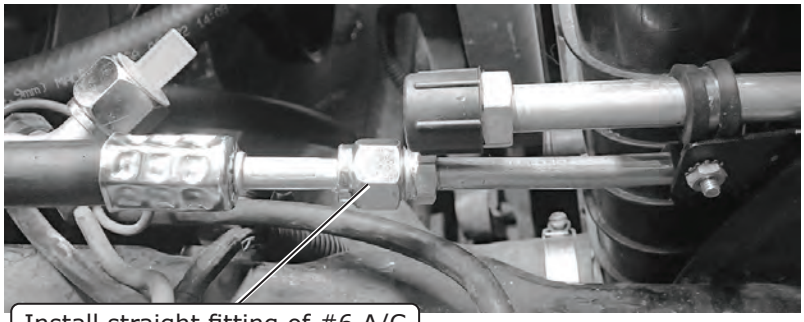


Photo 1

Engine Compartment
A/C Hose Installation (Cont.)

2. With a properly lubricated #10 O-ring (See Lubricating O-rings, Page 13), install the 45° fitting to the suction port on the compressor (See Photo 2, below).
3. With a properly lubricated #8 O-ring (See Lubricating O-rings, Page 13), connect the 45° fitting from the #8 A/C hose to the discharge port on the compressor (See Photo 3, below).
4. With a properly lubricated #8 O-ring (See Lubricating O-rings, Page 13), connect the straight fitting of the #8 A/C hose to the #8 condenser hardline (See Photo 4, below).

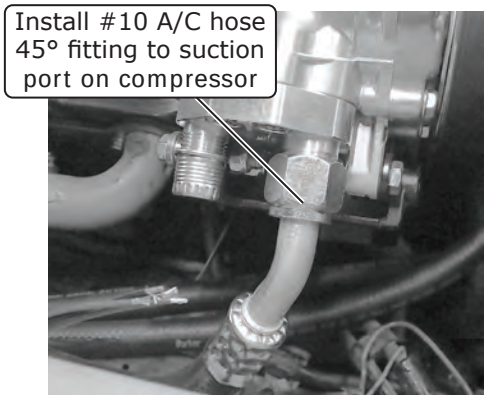


Photo 2

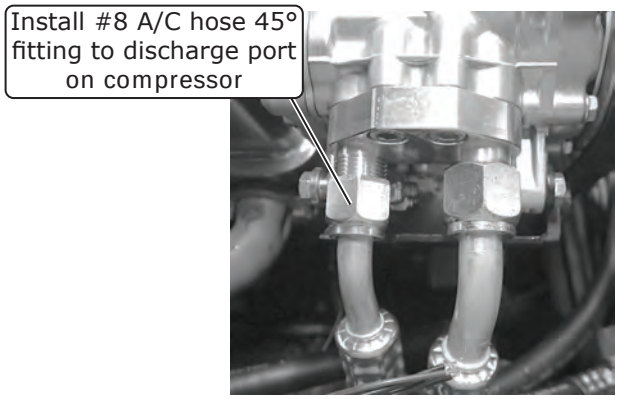


Photo 3

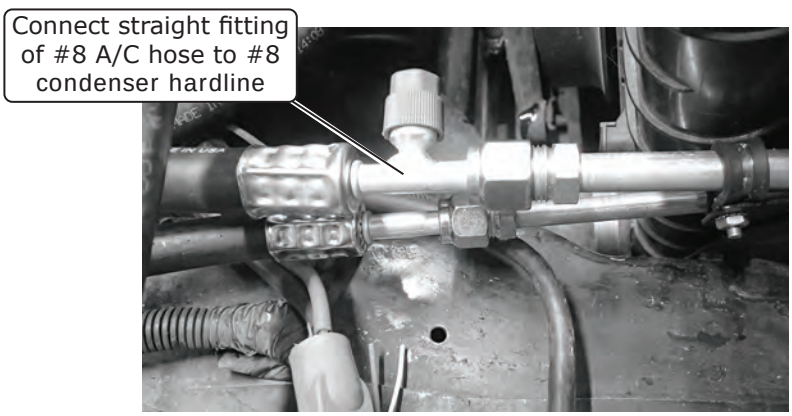


Photo 4

Passenger Compartment A/C Hose Installation

1. With a properly lubricated #6 O-ring (See Lubricating O-rings, Page 13), install the straight fitting of the #6 A/C hose onto the #6 fitting on the evaporator expansion valve (See Photo 1, below).

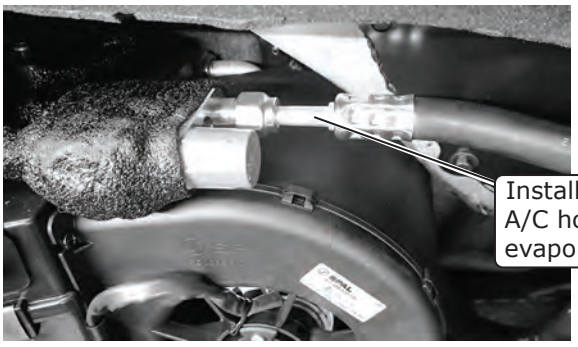
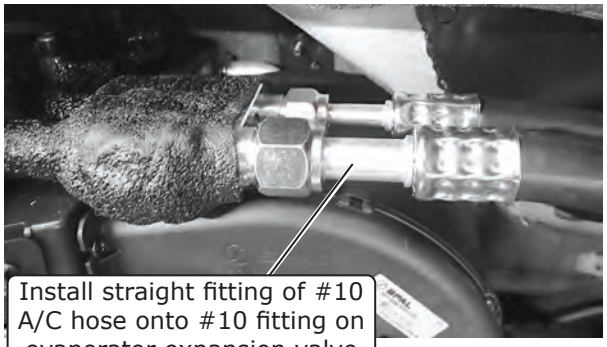


Photo 1

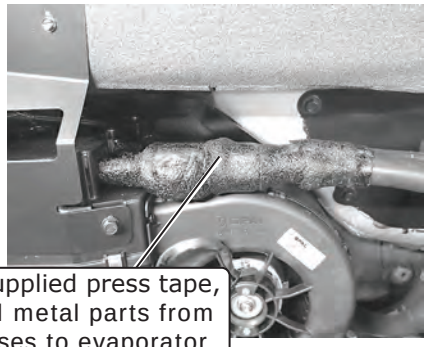
Passenger Compartment A/C Hose Installation (Cont.)

2. With a properly lubricated #10 O-ring (See Lubricating O-rings, Page 13), install the straight fitting of the #10 A/C hose onto the #10 fitting on the evaporator expansion valve (See Photo 2, below).
3. Using the supplied press tape, wrap all metal parts from the A/C hoses to the evaporator expansion valve as shown in Photo 3, below.



Install straight fitting of #10 A/C hose onto #10 fitting on evaporator expansion valve

Photo 2

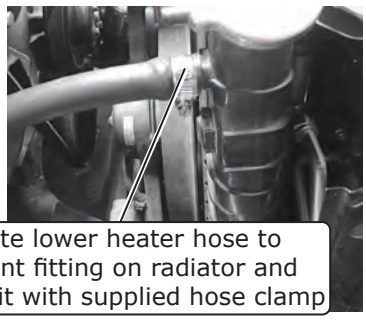


Using supplied press tape, wrap all metal parts from A/C hoses to evaporator expansion valve

Photo 3

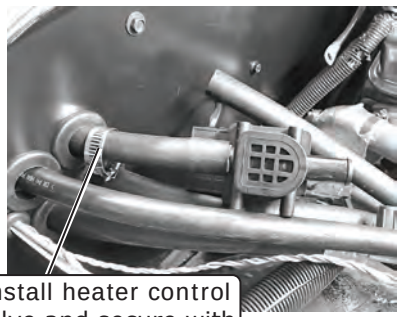
Heater Control Valve Installation w/o OEM Oil Cooler

1. Route the lower heater hose to the coolant fitting on the radiator, then secure it with the supplied hose clamp (See Photo 1, below).
2. Cut the upper heater hose approximately 3" from the firewall cover. Install the heater control valve and secure it with the supplied hose clamp (See Photo 2, below). **NOTE: Ensure proper flow direction through the heater control valve. The flow direction follows the molded arrow on the valve (See Figure 1, below).**
3. Install another length of heater hose from the heater control valve to the intake, then secure it with (2) hose clamps (See Photos 3 and 4, below).
4. Plug the heater control valve connector into the heater control valve connector on the main wiring harness (See Photo 5, below).



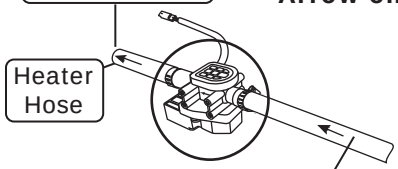
Route lower heater hose to coolant fitting on radiator and secure it with supplied hose clamp

Photo 1



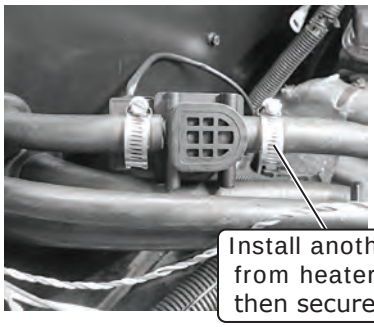
Install heater control valve and secure with supplied hose clamp

Photo 2



NOTE: Flow Direction Follows Molded Arrow on Valve

Figure 1



Install another length of heater hose from heater control valve to intake, then secure it with (2) hose clamps

Photo 3

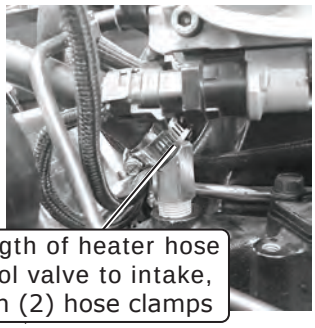
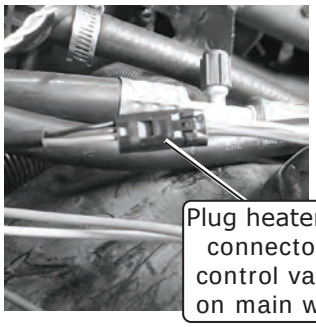


Photo 4



Plug heater control valve connector into heater control valve connector on main wiring harness

Photo 5

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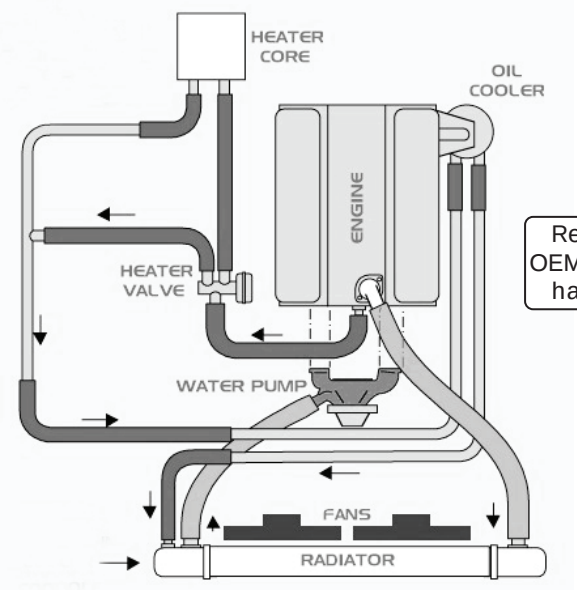
Heater Control Valve Installation with OEM Oil Cooler Lines

NOTE: For vehicles equipped with OEM oil cooler lines (See Figure 1, below), follow the following steps. The oil cooler system will require vacuum solenoid kit PN# 246792 (sold separately).

1. Remove the OEM heater hardline by removing (2) bolts (See Photos 1 and 2, below).
2. Install a 5/8”-3/4” heater hose T-connector to the OEM heater hose and lower evaporator (See Photo 3, below). Secure using supplied hose clamps (See Photo 3, below).
3. Install the OEM 3/4” molded heater hose onto the T-connector and secure it using a hose clamp (See Photos 4 and 5, below).
4. Install the OEM heater control valve onto the OEM 3/4” heater hose (See Photo 6, below).



OEM Cooling System **Figure 1**

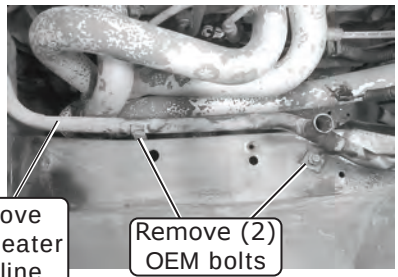


Photo 1

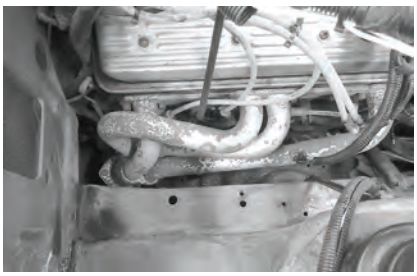


Photo 2

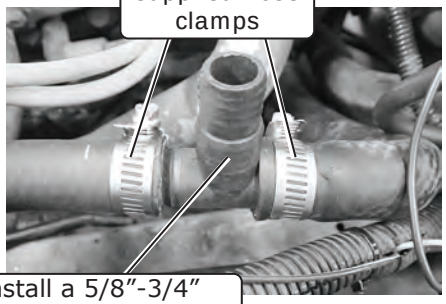


Photo 3

Photo 4

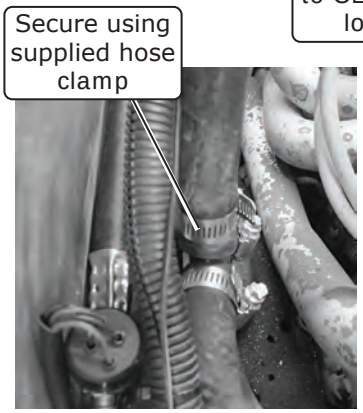


Photo 5

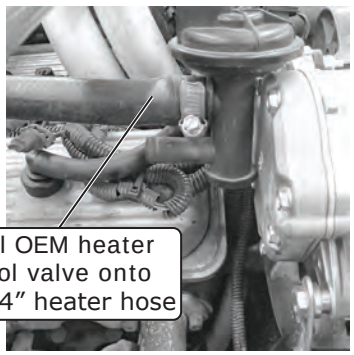


Photo 6

Heater Control Valve Installation with OEM Oil Cooler Lines (Cont.)

5. Install a piece of 5/8” heater hose between the heater control valve and intake port. Secure using (2) hose clamps (See Photo 7, below).
6. Connect the upper heater hose to the heater control valve, and secure it using a hose clamp (See Photo 8, below).
7. Select a mounting location for the vacuum solenoid, then mount it using a #12 x 1/2” self-tapping screw (See Photo 9, below).
8. Attach a length of the vacuum line to the port on the solenoid. Route the vacuum line and connect it to the vacuum supply at the intake (See Photos 10 and 11, below).

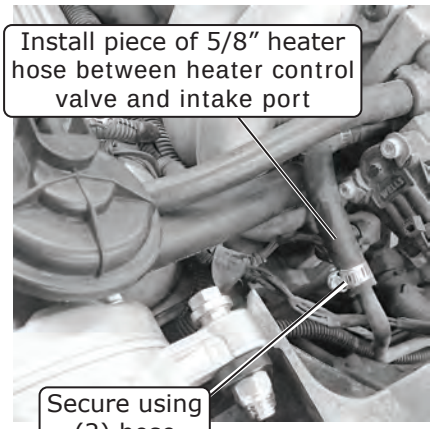


Photo 7

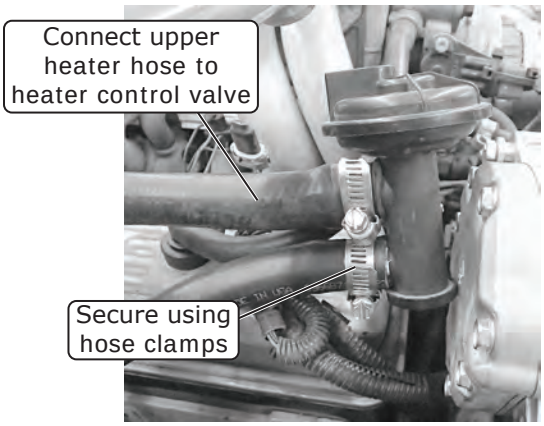


Photo 8

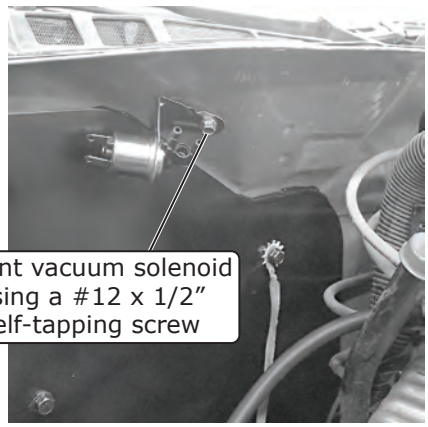


Photo 9

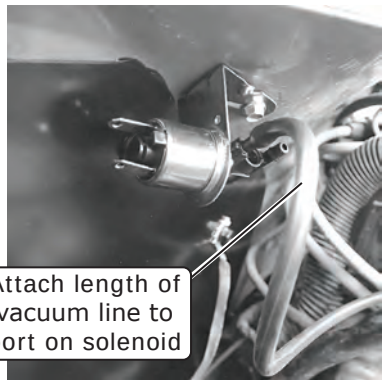


Photo 10

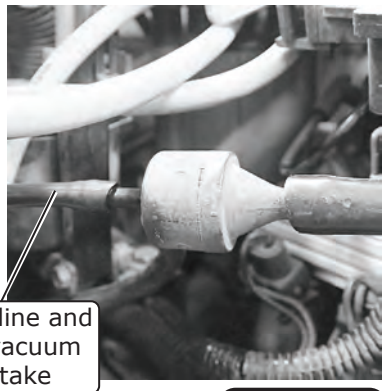


Photo 11

Heater Control Valve Installation with OEM Oil Cooler Lines (Final)

9. Connect a length of vacuum line between the vacuum solenoid and the heater control valve (See Photos 12 and 13, below).

10. Locate the heater control valve connector from the main wiring harness (See Photo 14, below) and connect it to the supplied vacuum solenoid harness (See Photo 15, below).

11. Connect the yellow and violet wires to the vacuum solenoid (See Photo 16, below).

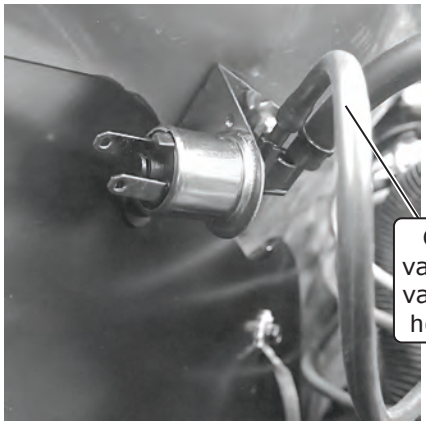


Photo 12

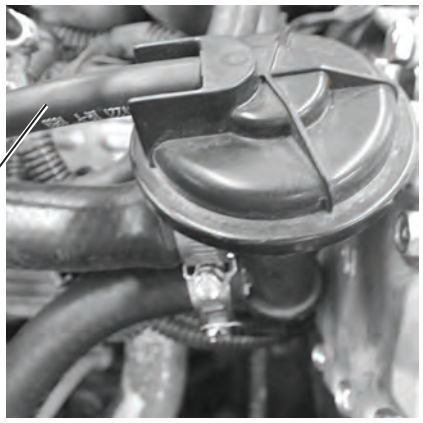


Photo 13

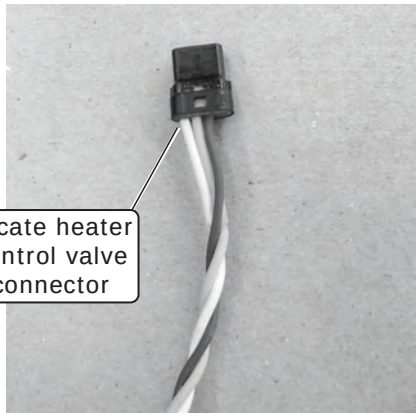


Photo 14

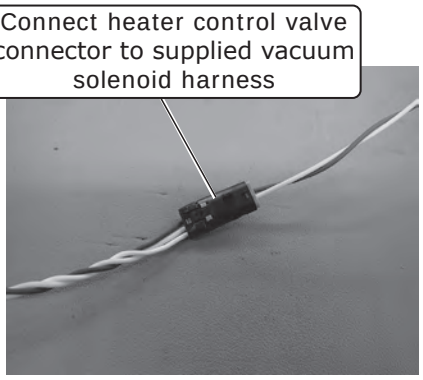


Photo 15

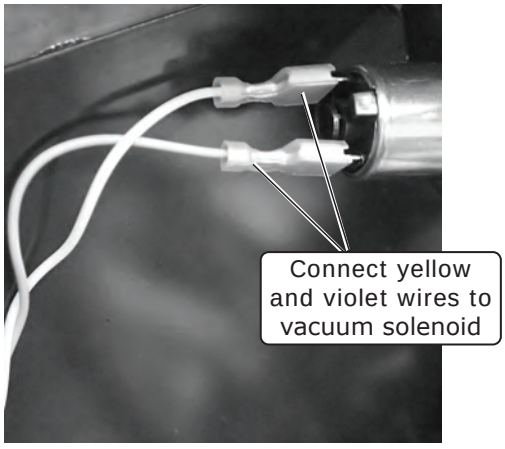


Photo 16

Binary Switch Wiring

NOTE: Binary switch set up is for use with mechanical cooling fan applications.

1. Lubricate the #6 O-ring on the binary switch (See Lubricating O-rings, Page 13), and install it onto the switch port on the #6 A/C hose (See Photos 1 and 2, below).
2. Locate the blue safety switch wire from the main wiring harness.
3. Crimp the supplied female spade terminal connector onto the blue wire and install it onto the binary switch (See Photo 3, below).
4. Connect the bullet terminal from the compressor to the compressor lead (See Photo 4, below) and route it along the #10 A/C hose toward the binary switch, securing it with tie wraps.
5. Connect the female spade terminal of the compressor lead to the binary switch (See Photo 5, below).

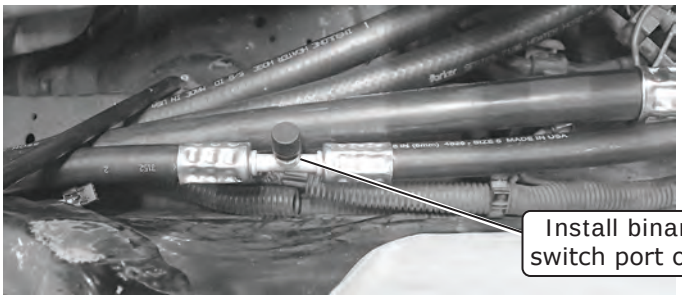


Photo 1

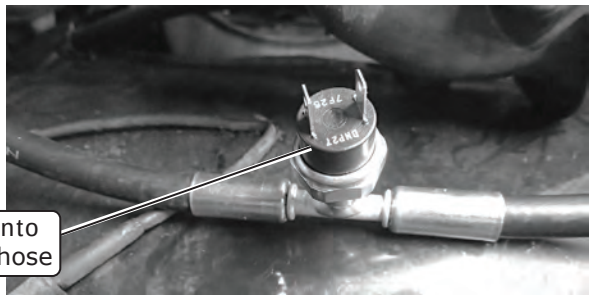


Photo 2

Photo 3

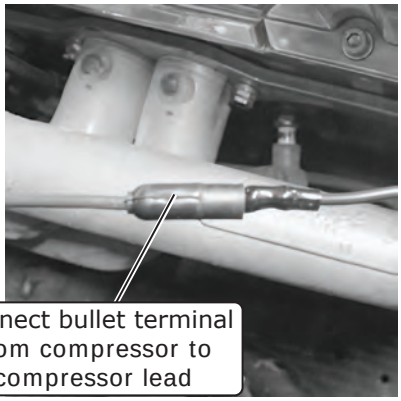


Photo 4

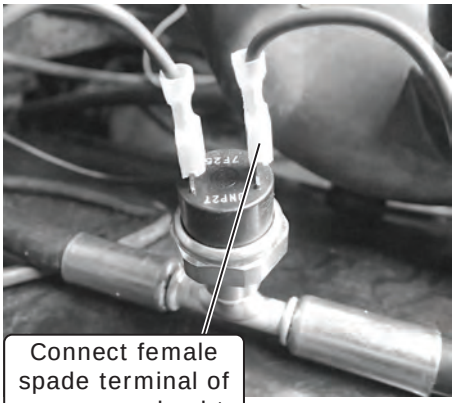


Photo 5

Trinary Switch Wiring

NOTE: Trinary switch set up is for use with mechanical cooling fan applications.

1. Lubricate the #6 O-ring on the trinary switch (See Lubricating O-rings, Page 13), and install it onto the switch port on the #6 A/C hose (See Photos 1 and 2, below).
2. Using the supplied heat shrink and butt splice connector, connect one of the blue leads from the trinary switch to the gray wire from the OEM A/C high-pressure fan switch wiring (See Photo 3, below).
3. Using the supplied heat shrink and butt splice connector, connect one of the black leads from the trinary switch to the compressor lead (See Photo 4, below). Connect the bullet terminal from the compressor to the compressor lead (See Photo 5, below).
4. Using the supplied heat shrink and butt splice connector, connect the blue lead from the main wiring harness to the remaining black lead on the trinary switch (See Photo 6, below).
5. Using the supplied 3/8" eyelet and heat shrink connect the remaining trinary switch blue lead to a chassis ground (See Photo 7, below).

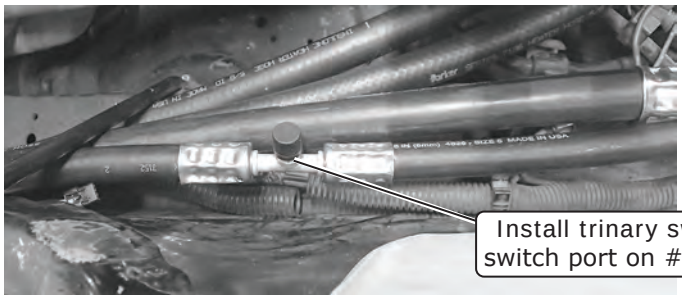


Photo 1

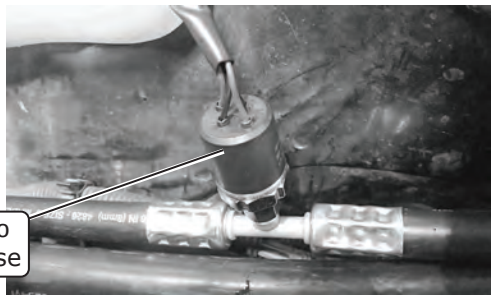
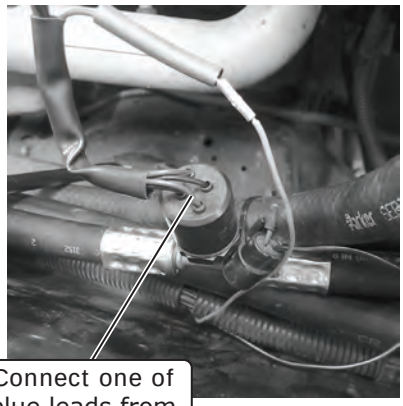


Photo 2



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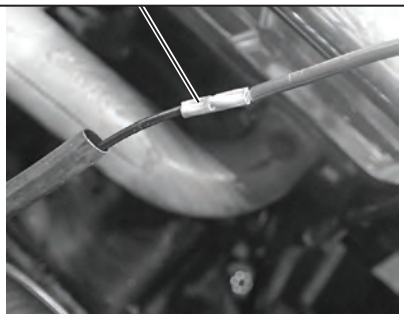


Photo 4

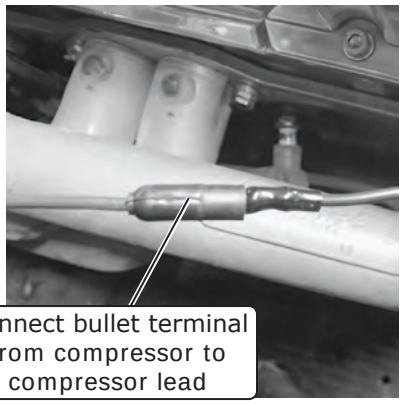


Photo 5

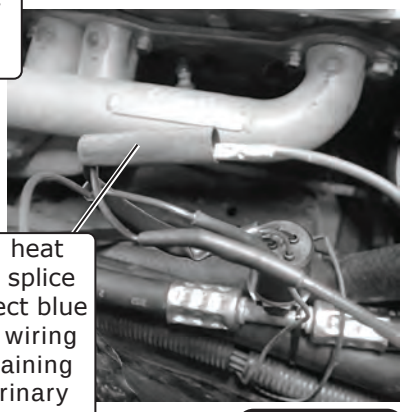


Photo 6

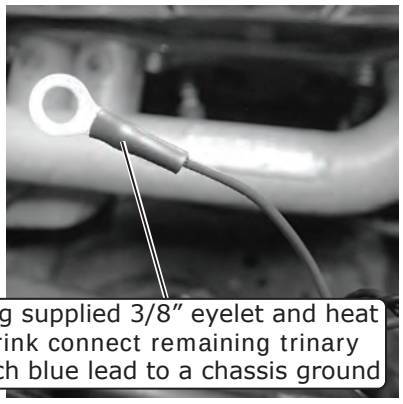


Photo 7

www.vintageair.com

Engine Compartment Wiring

NOTE: This kit was designed for the factory electric fan and it will have to be integrated into the vehicle's wiring harness. Side post battery terminal extensions (not included) may be needed to connect the power and ground connections to the battery.

1. Route the power and ground wires toward the battery.
2. Install the supplied heat shrink over the 12 AWG orange fuse holder assembly wire and crimp it to the 12 AWG orange wire from the main wiring harness (See Photo 1, below).
3. Install the supplied heat shrink over the 16 AWG black fuse holder assembly wire and crimp it to the 16 AWG red wire from the main wiring harness (See Photo 2, below).
4. Install fuses into the holders (See Photos 3 and 4, below).
5. Install the supplied heat shrink over the white ground wires, then crimp on the supplied eyelets (See Photos 5 and 6, below).
6. Connect the ground wiring eyelets to the negative battery terminal connector.
7. Connect the positive wiring eyelets to the positive battery terminal connector. **NOTE: Do not connect power until installation is completed.**
8. Wrap exposed wiring using the supplied 1/2" flexo sleeve (See Photo 7, below).

Photo 1

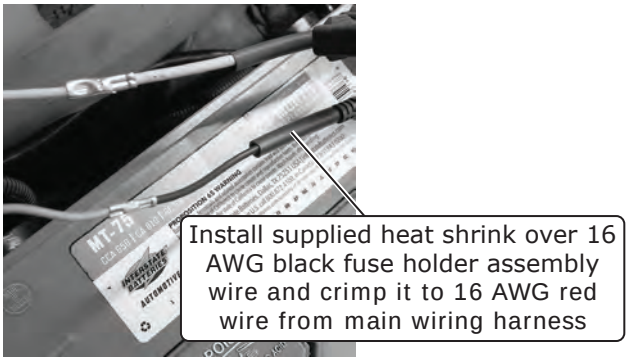


Photo 2

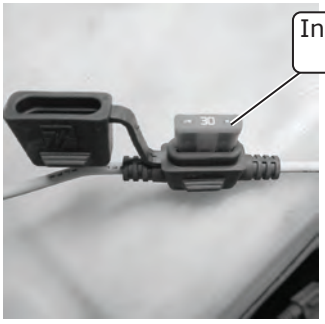


Photo 3

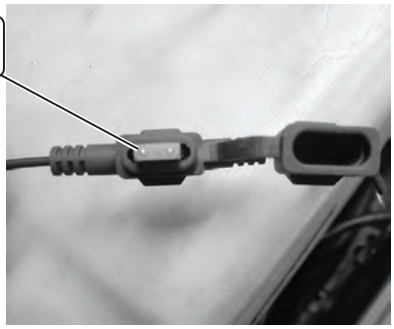
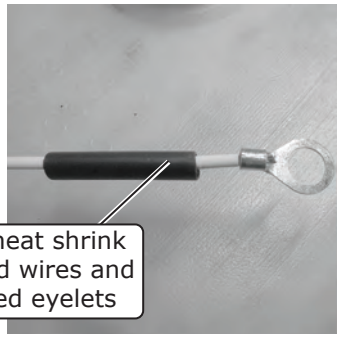


Photo 4

Photo 5



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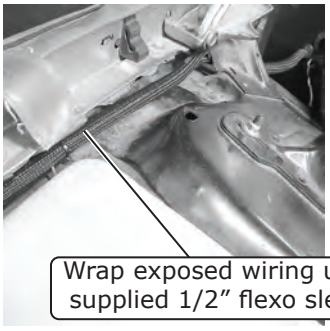


Photo 7

www.vintageair.com

Side Defrost Plenum Preparation

1. Remove the side defrost plenums from the dash by removing (7) OEM screws (See Photo 1, below).
2. Cut the 1/2" x 3/8" foam into (2) 4" pieces and apply them to the top and sides of the plenums as shown in Photo 2, below.
3. Install the 1" side defrost hose adapters onto the plenums as shown in Photo 3, below. **NOTE: The flattened sides of the adapters face up.**
4. Turn the plenums over. Measure and mark 5/16" back from the edge of the hose adapters in the center (See Photo 4, below).
5. Drill through the adapters and plenums with a 9/64" drill bit (See Photo 5, below).
6. Secure with black pop rivets (See Photo 6, below).
7. Reinstall onto the dash using the OEM hardware.

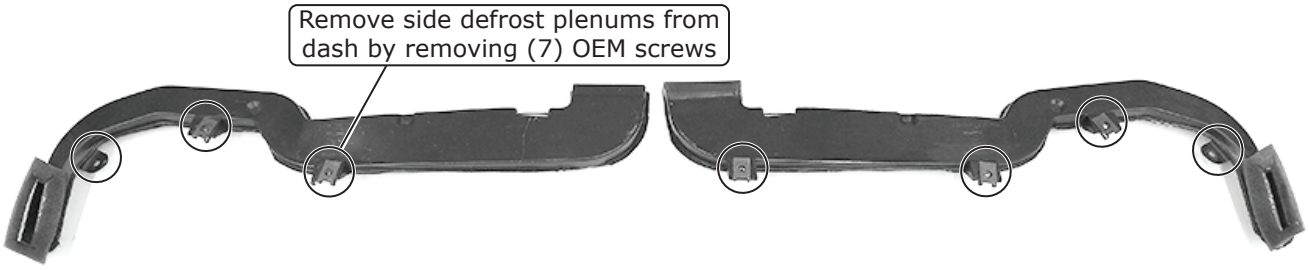


Photo 1

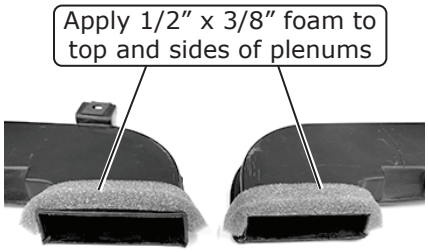


Photo 2

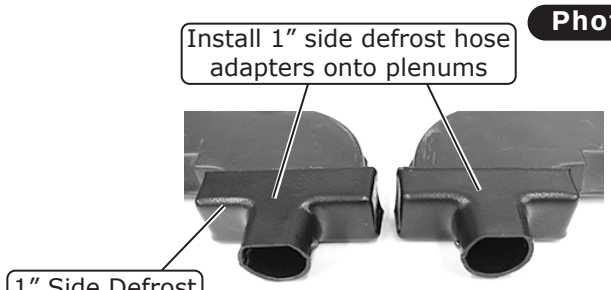
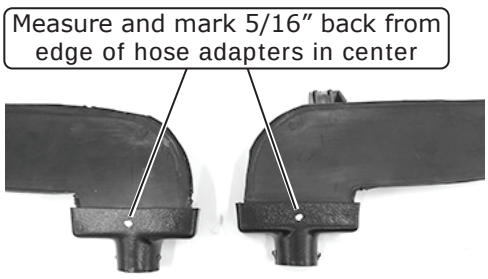


Photo 3



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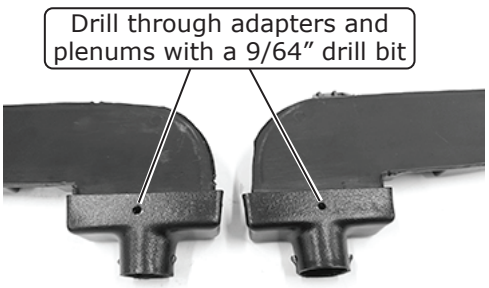

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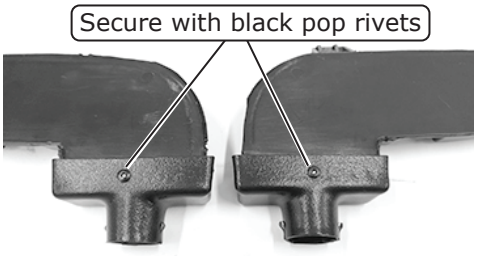

Photo 6

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Center Defrost Bracket Preparation

1. Attach (2) splitter defrost assembly hose adpaters onto the driver- and passenger-side defrost hose adapters, facing the same direction as shown in Photo 1, below. Secure both sides of adapters using (4) black pop rivets as shown in Photos 2 and 3, below.
2. Attach both defrost duct assemblies to the defrost bracket, with the splitters towards each other, using (4) #8 x 1/2" pan head screws as shown in Photos 4, 5 and 6, below.
3. Attach a 6" length of 1" hose to the driver-side splitter defrost assembly hose adapter (See Photos 7, below).
4. Attach a 12" length of 2 ½" hose to the driver-side splitter defrost assembly hose adapter (See Photo 6, below).
5. Attach a 15" length of 1" hose to the passenger-side splitter defrost assembly hose adapter (See Photo 8, below).
6. Attach a 20" length of 2 ½" hose to the passenger-side splitter defrost assembly hose adapter (See Photo 8, below).

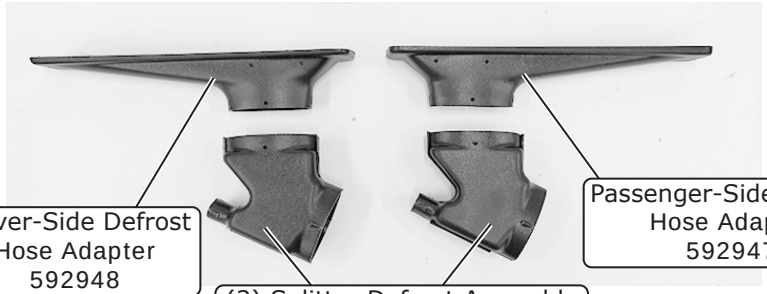


Photo 1

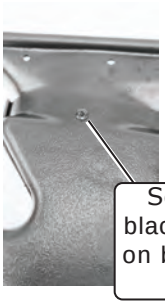
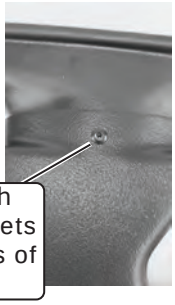


Photo 2



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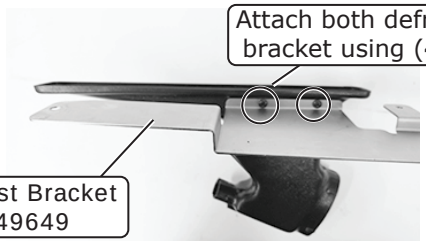

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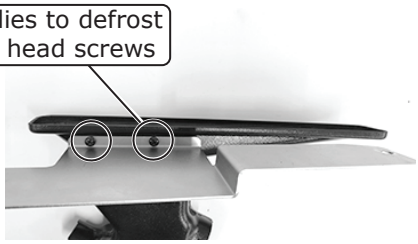

Photo 5

Completed Bracket Installation

Photo 6

Photo 7

Photo 8

Center Defrost Bracket Preparation (Cont.)

7. Install (2) #8 U-nuts onto the defrost bracket as shown in Photos 9 and 10, below.
8. Temporarily mount the defrost assembly to the dash using (2) #8 x 1/2" wide head screws (See Photo 11, below).
9. Mark the center of the dash support bracket (See Photo 12, below).
10. Remove assembly and drill bracket with 9/32" drill bit (See Photo 13, below).

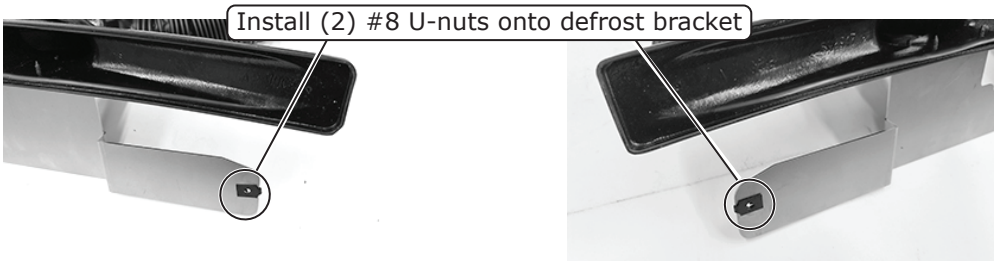

Photo 9 **Photo 10**

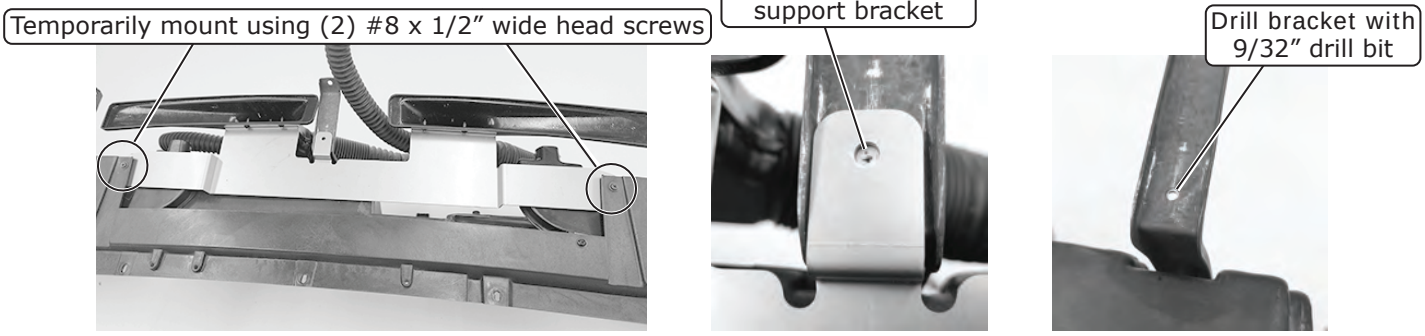

Photo 11 **Photo 12** **Photo 13**

Dash Center Vent Preparation

1. Install (2) S-clips onto the dash center vent as shown in Photo 1, below.
2. Install the 3" center louver hose adapter onto the S-clips (See Photo 2, below).

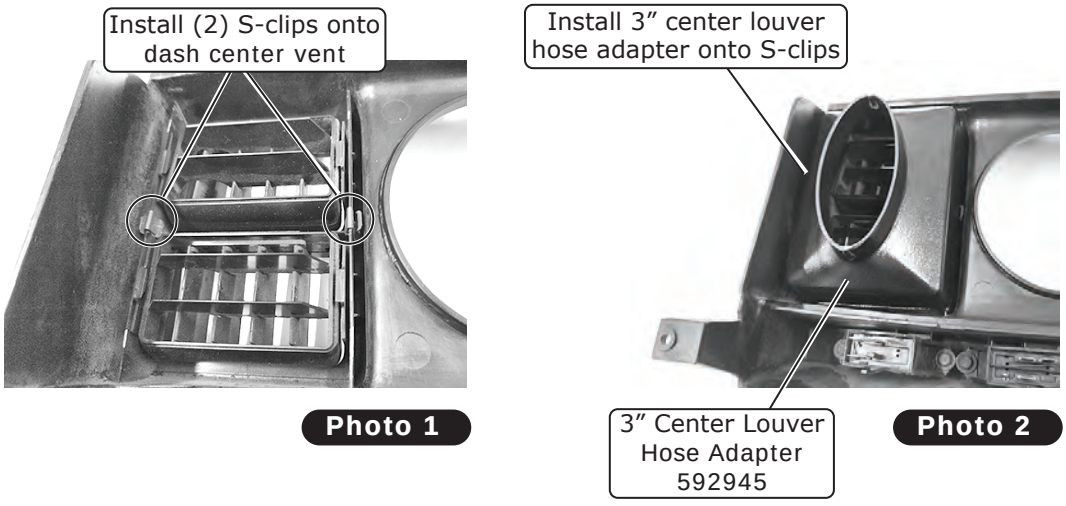

Photo 1 **Photo 2**

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Side Dash Plenum Preparation

1. Remove both the driver- and passenger-side OEM dash vent plenums from the dashboard (retain hardware) (See Photos 1 and 2, below).
2. Apply foam around the outside of driver-side louver hose adapter (See Photo 3, below).
3. Mark both long sides of the plenum a 1/2” from the opening and halfway down as shown in Photos 4 and 5, below.
4. Install the driver-side louver hose adapter and foam inside of the driver-side OEM dash vent plenum as shown in Photo 6, below.
5. Drill 9/64” holes through the plenum and driver-side louver hose adapter where previously marked.
6. Secure the driver-side louver hose adapter to the plenum using (2) black pop rivets as shown in Photos 7 and 8, below.
7. Apply the remaining foam around the outside of the passenger-side louver hose adapter (See Photo 9, below).
8. Repeat Steps 2-6 on the passenger-side OEM dash vent plenum.
9. Reinstall both plenums onto the dash using the original hardware.

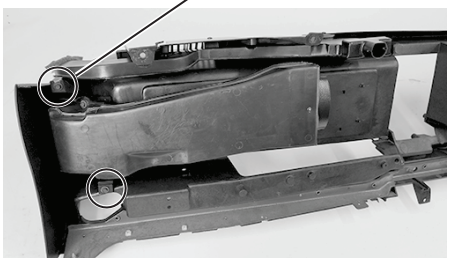


Photo 1

Remove driver- and passenger-side OEM dash vent plenums from dashboard

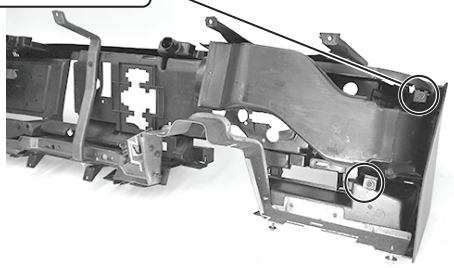


Photo 2

Driver-Side Louver Hose Adapter 592943

Apply foam around outside of driver-side louver hose adapter

Photo 3

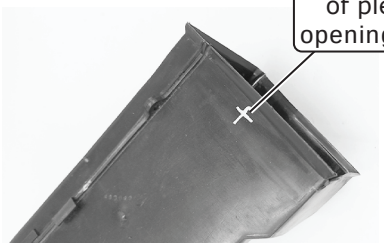


Photo 4

Mark both long sides of plenum a 1/2” from opening and halfway down

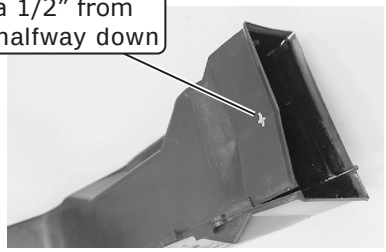
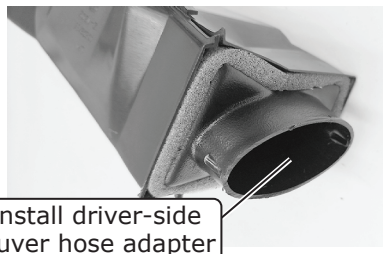


Photo 5



Install driver-side louver hose adapter and foam inside of driver-side OEM dash vent plenum

Photo 6

Photo 7

Secure hose adapter to plenum using (2) black pop rivets

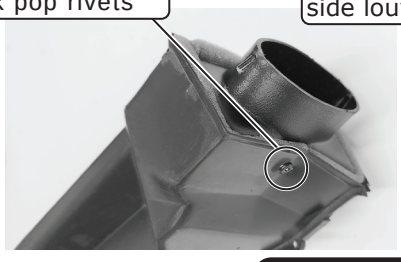
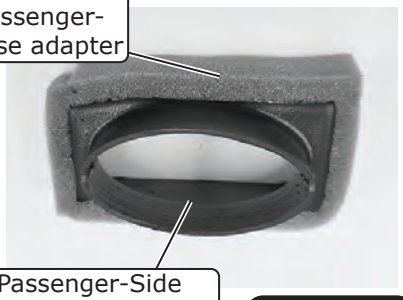


Photo 8



Apply foam around outside of passenger-side louver hose adapter

Passenger-Side Louver Hose Adapter 592944

Photo 9

Dash Installation Preparation

1. Before installing the dash, reinstall the lower dash support bracket on the passenger side using an OEM screw (See Photo 1, below), and under the steering column using an OEM nut (See Photo 2, below).
2. Reinstall all OEM control modules (See Photo 3, below). **NOTE: Some modules may have been mounted to the OEM evaporator unit and may need to be secured to the new module.**

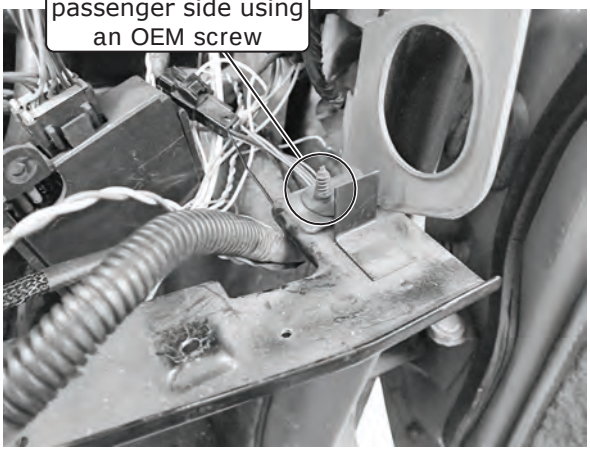


Photo 1

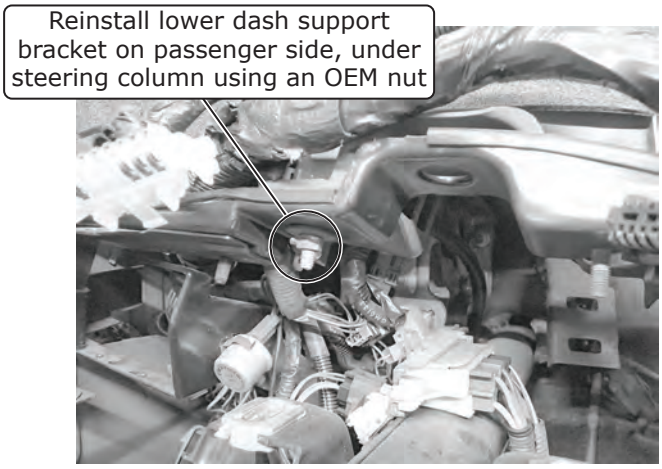


Photo 2

Photo 3

Dash Installation

NOTE: To ease the installation of the dash, the steering column will need to be raised and lowered at times. The column can be temporarily secured by a single OEM nut.

1. Bring the dash back into the car and set it in place.
2. Secure the vertical dash bracket to the cowl using the OEM hardware (See Photo 1, below). **NOTE: Ensure the vertical dash support bracket is resting on the lower dash brace (See Photo 2, below).**
3. Secure the dash to the cowl using the OEM hardware (See Photos 3 and 4, below).
4. Secure the driver-side lower dash support bracket through the dash using the OEM screw.
5. Secure the sides and underside of the dash to the support bracket using the OEM hardware.

Photo 1

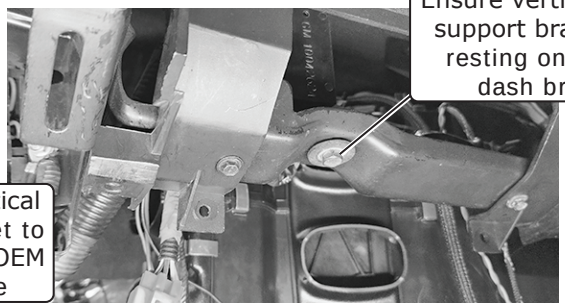


Photo 2

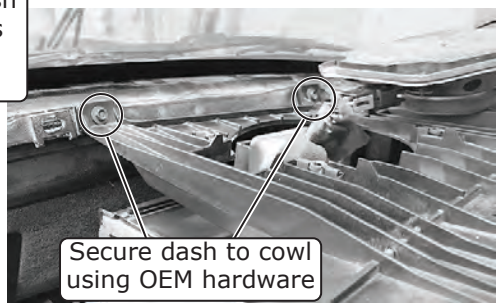


Photo 3

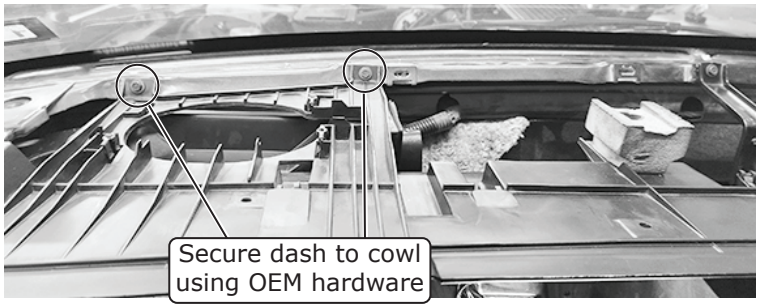


Photo 4

Duct Hose Installation

NOTE: Due to the shallow area behind the dash and the size of the factory wiring harness, this portion of the install will be difficult. Patience and care will be needed to complete the install with the best results.

1. Attach 20" of 2 ½" hose to the top position of the 3-hole dash plenum on the evaporator module (See Photo 1, below). Route the hose over the relay box to the right of the steering column and towards the driver-side door as shown in Photo 1, below. Connect to the hose adapter.

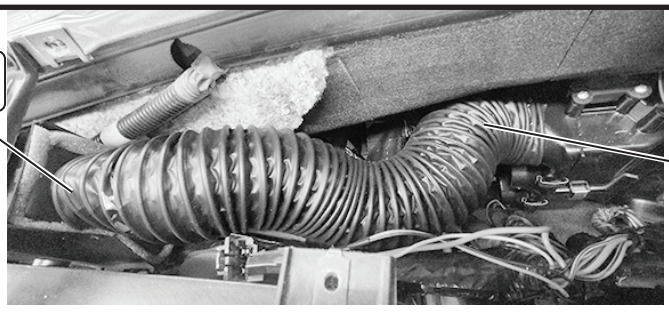


Photo 1

Duct Hose Installation (Cont.)

2. Install a 32” length of 3” hose onto the center position of the evaporator, below the previous hose. Route the hose up and towards the center dash vent. Pull the hose through the center vent opening (See Photos 2 and 3, below).
3. Install 32” of 2 ½” hose onto the bottom position of the evaporator dash plenum, below the last two. Route this hose across the front and bottom of the module. Once it’s past the module, bring the hose up towards the passenger-side dash plenum. Connect the hose to the hose adapter (See Photos 4 and 5, below).
4. Install the defrost assembly by sliding the bracket under the dash mounting tabs, then secure it using (2) #8 x 1/2” wide head screws through the dash and into the previously installed U-nuts (See Photo 6, below). Secure the center tab into the dash support brace using the #8 x 1/2” sheet metal screw (See Photo 6, below).
5. From below the dash, pull the driver-side defrost hose down and connect it to the top outlet of the defrost plenum on the evaporator module (See Photo 7, below).

Photo 2

Install a 32” length of 3” hose onto center position of evaporator dash plenum, below previous hose

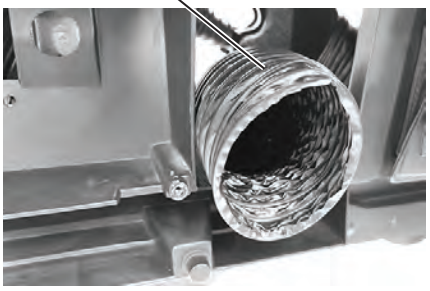


Photo 3

Install 32” of 2 ½” hose onto bottom position of evaporator dash plenum, below last two

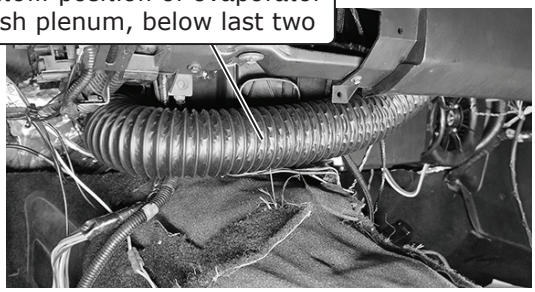


Photo 4

Connect hose to passenger-side hose adapter

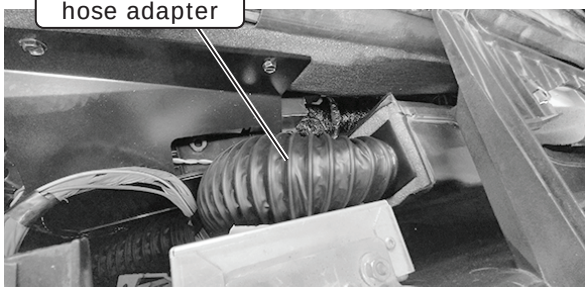
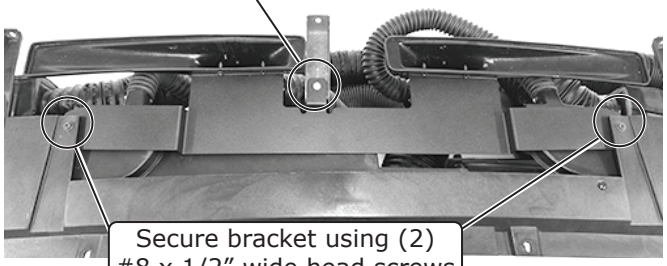


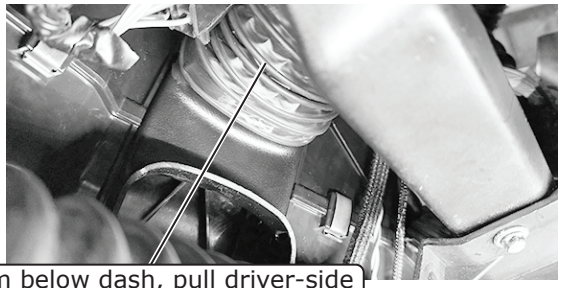
Photo 5

Secure center tab into dash support brace using #8 x 1/2” sheet metal screw



Secure bracket using (2) #8 x 1/2” wide head screws through dash and into previously installed U-nuts

Photo 6



From below dash, pull driver-side defrost hose down and connect to top defrost plenum outlet

Photo 7

Duct Hose Installation (Final)

6. Pull the passenger-side defrost hose down and connect it to the lower position on the defrost plenum (See Photo 8, below).

7. Connect the driver-side 1" hose to the side defrost plenum.

8. Route the passenger-side 1" hose around the backside of the defrost splitter and attach it to the side plenum.

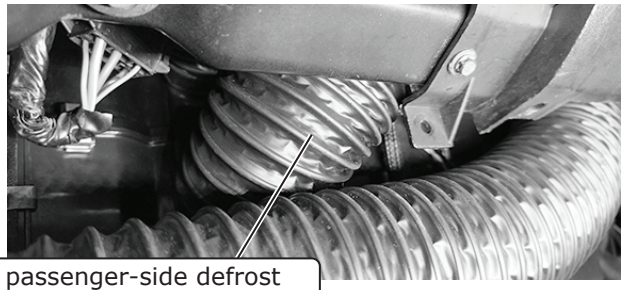


Photo 8

Speaker Installation

1. Reconnect the speaker electrical connections, then secure speakers using OEM hardware (See Photo 1, below).

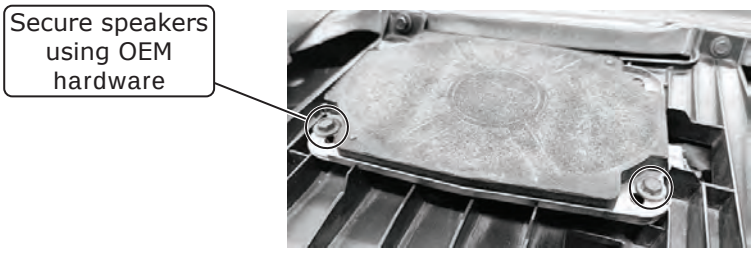


Photo 1

Dash Pad Installation

1. Bring the dash pad into the vehicle and set it in place.

2. Bring the defrost grille bracket into the vehicle and place it on the dash pad. Secure the grille with the (4) #8 x 1 ¼" pan head screws provided (See Photo 1, below).

3. Secure the dash underside using the OEM hardware.

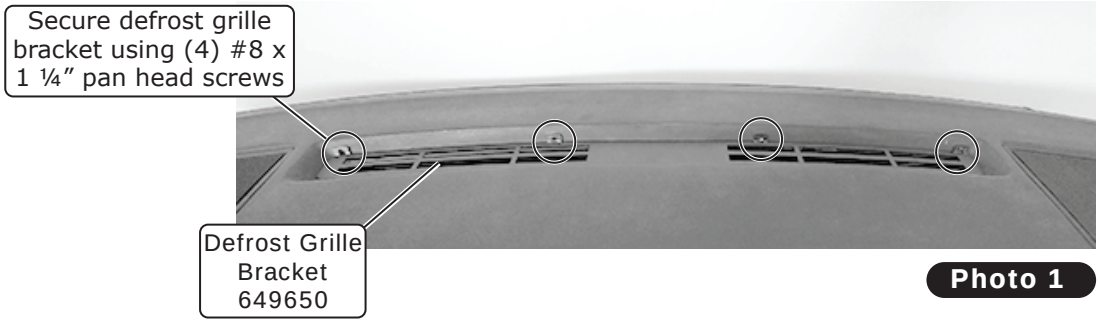


Photo 1

Dash Assembly

NOTE: Pull all electrical connections through the dash and clip them into the openings.

1. Reinstall the gauge cluster with the OEM hardware.
2. Reconnect and reinstall the headlight switch to the dash (See Photo 1, below).
3. Remove the unused plenum from the control console by removing (4) screws (See Photo 2, below).
4. Reinstall the control console between the dash and center console, then secure it using (2) OEM screws (See Photo 2, below).

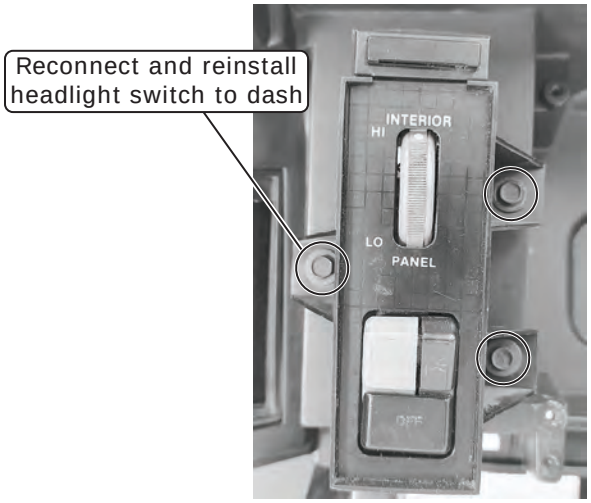


Photo 1

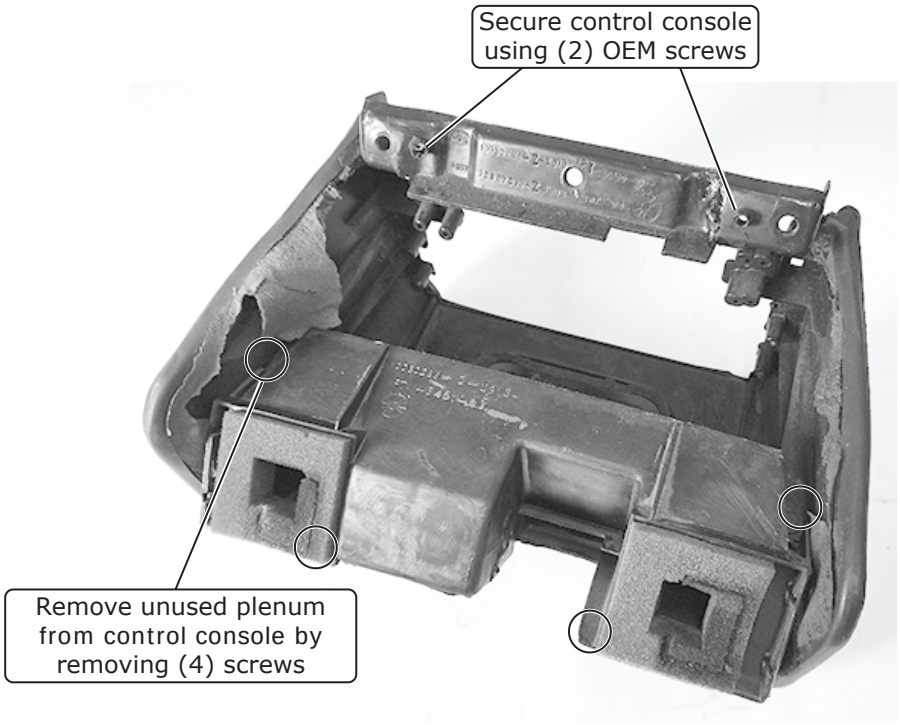


Photo 2

Dash Assembly (Cont.)

5. Reinstall and connect the radio.
6. Place the new A/C control panel into position and route the wiring harness down towards the ECU. Connect the control panel wiring to the ECU (See Photo 3, below).
7. Secure the control panel with (3) OEM screws (See Photo 4, below).
8. Reinstall the bezel over the radio and A/C controls.
9. Connect the 3" center dash hose to the previously installed hose adapter on the gauge cluster bezel and reinstall with OEM hardware (See Photo 5, below).
10. Reinstall the lower switch assemblies (See Photo 6, below).
11. Reinstall the lower dash covers (See Photo 7, below).

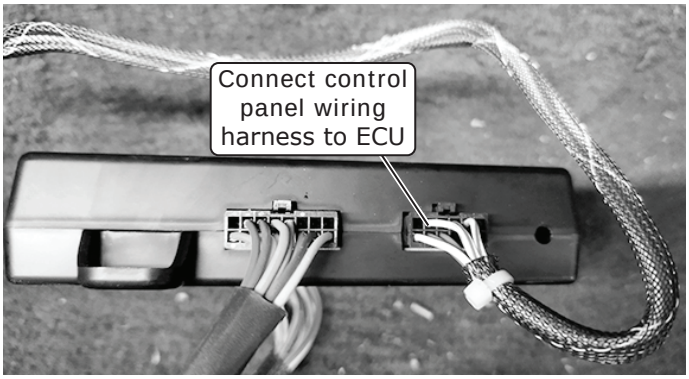


Photo 3

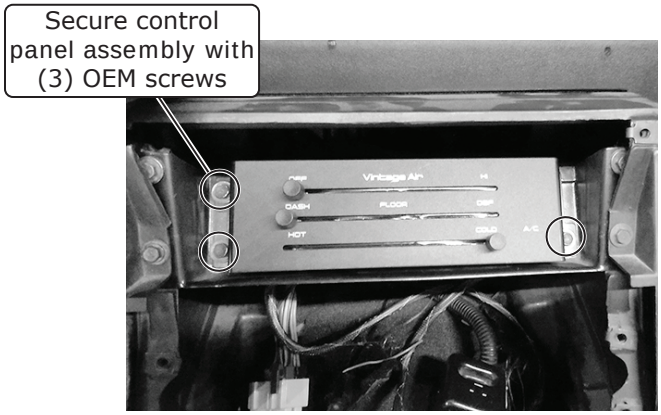


Photo 4

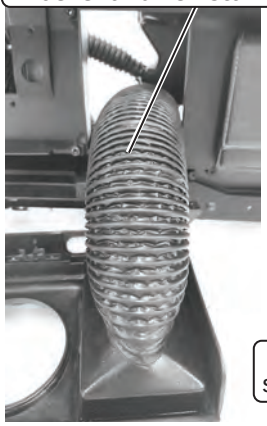


Photo 5

Photo 6

Photo 7

Steering Column Installation

1. Raise the steering column and secure it to the studs using (2) OEM nuts (See Photo 1, below).
2. Install the lower cover bracket and secure it using (2) OEM nuts (See Photo 2, below).

Photo 1

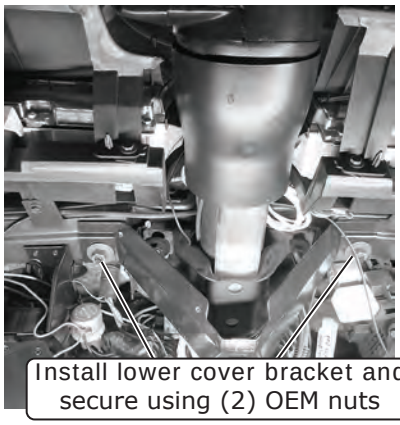


Photo 2

Lower Dash Covers and ECU Installation

1. Reinstall the driver-side under dash cover with the OEM hardware (See Photo 1, below).
2. Put the passenger-side cover plate into place on the floorboard (See Photo 2, below).
3. Secure the ECU to the evaporator module using the supplied Velcro (See Photo 2, below).
4. Secure the wires for the ECU harness using the supplied tie wraps (See Photo 2, below).
5. Push the cover plate up into place, then secure the front of the plate to the bottom of the dash using the OEM hardware (See Photo 3, below).

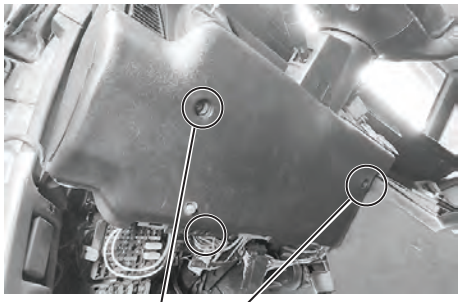


Photo 1

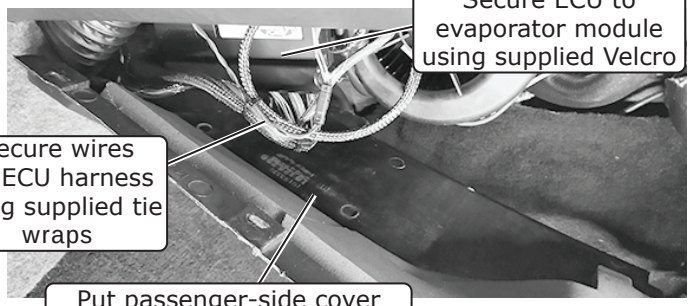


Photo 2

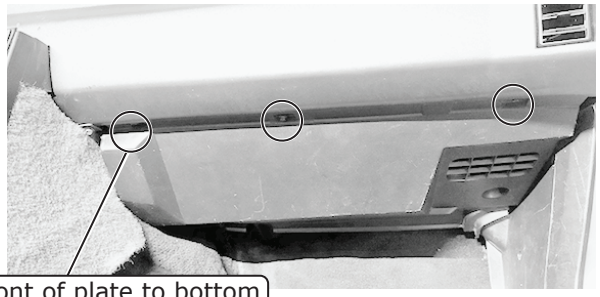


Photo 3

Final Steps: Installation Check

Installation Check		
ITEM TO CHECK		Procedure
☐	ECU	If no blinking is observed after 1 minute of turning the ignition on, go to the next check. If repetetive blinking is observed, go to the **Advanced Diagnostics** Section to diagnose.
☐	Blower speed control	Set the blower speed control to **OFF**, *confirm that the blower is off*. Position the blower speed control to **LOW** then **MEDIUM** and then **HIGH**. *At each setting confirm that the blower speed increases*, do this by feeling for the amount of air coming from the unit and hearing the blower speed increase.
☐	Mode control	Set the **MODE** control to the **DASH** position. *Confirm that air is being blown at the dash vents.* Set the **MODE** control to the **FLOOR** position. *Confirm that air is being blown at the floor vents.* Set the **MODE** control to the **DEFROST** position. *Confirm that all air is being blown from the defrost vents*
☐	Temperature control	**If heater lines are installed:** Set the **MODE** control to the **DASH** position. Set the **TEMP** control to the **MAX HEAT** position. *Confirm that HOT air is coming from the dash vents.* **If system is charged:** Set the **TEMP** control to the **MAX COOL** position. *Confirm that **COLD** air is coming from the dash vents.* Also *confirm that the compressor "clicks" on* when adjusting the **TEMP** control from the **MAX HEAT** position to the **MAX COOL** position.
☐	AC Indicator (If applicable)	While the **MODE** control is set to the **DASH** position, and the **TEMP** control is set to the **MAX COOL/MIN HEAT** position, *confirm that the blue AC Indicator light is on*.
☐	Backlight (If applicable)	If your control panel has backlight capabilities and has been wired, turn the dash lamp on and *confirm that the AC panel's legend is lit*.
☐	Fittings	Verify AC and Heater fittings are all tight.

Final Steps: Completing the Install

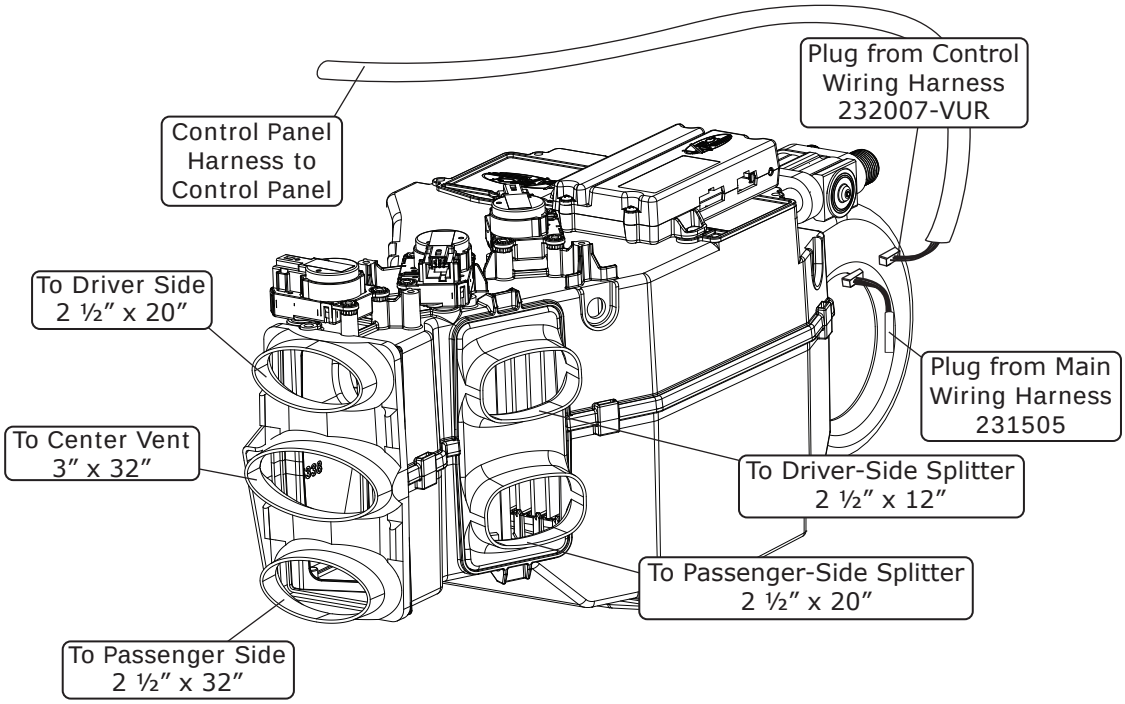
1. Reinstall all previously removed items.
2. Fill radiator with at least a 50/50 mixture of approved antifreeze and distilled water. It is the owner's responsibility to keep the freeze protection at the proper level for the climate in which the vehicle is operated. Failure to follow antifreeze recommendations will cause heater core to corrode prematurely and possibly burst in A/C mode and/or freezing weather, voiding your warranty.
3. Double check all fittings, brackets and belts for tightness.
4. Vintage Air recommends that all A/C systems be serviced by a licensed automotive A/C technician.
5. Evacuate the system for a minimum of 45 minutes prior to charging, and perform a leak check prior to servicing.
6. Charge the system to the capacities stated on Page 4 of this instruction manual.
7. See Operation of Controls procedures on Page 48.

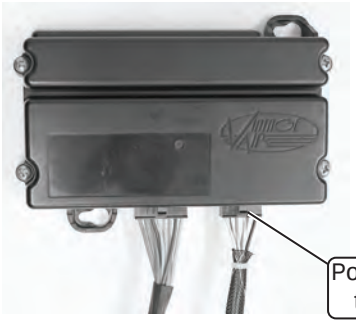
ECU, Control Panel & Duct Hose Routing

NOTE: For the system to function optimally, the duct hoses must be routed as directly as possible, taking care to avoid kinks, sharp bends and unnecessary length. Vintage Air supplies duct hoses in continuous lengths that will need to be cut to size depending on application. Before cutting, familiarize yourself with the installation instructions and verify the routing will work with your application. For custom hose routing, additional hose may be needed and can be purchased from Vintage Air.

1. Stretch the duct hose until there is no slack, measure, mark and cut hose to size (See Photo 1, below).

Photo 1





NOTE: ECU must be placed away from water and humidity, and also be accessible for servicing. If relocating, connectors must be positioned towards the bottom.

Quality Crimp Guideline

Refer to wiring diagram on Page 46, and instructions on Page 47.

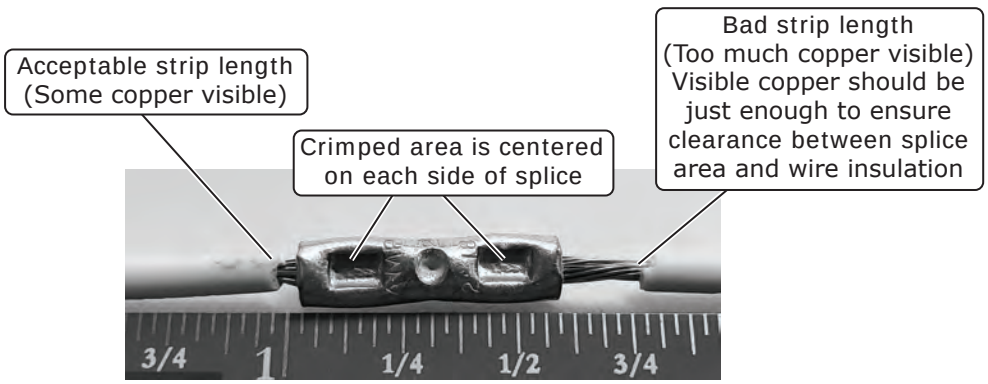


Photo 1

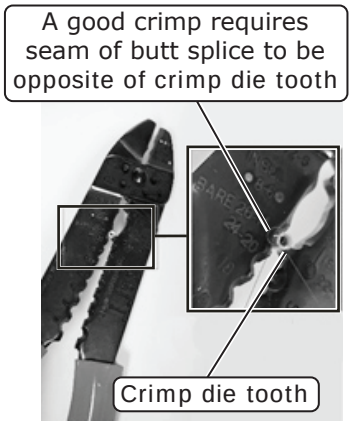


Photo 2

Good Ring Terminal Crimp

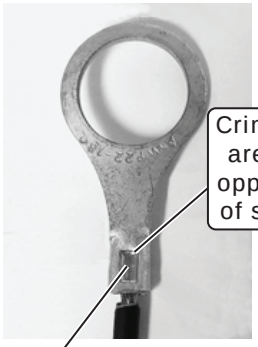


Photo 3

Bad Ring Terminal Crimp

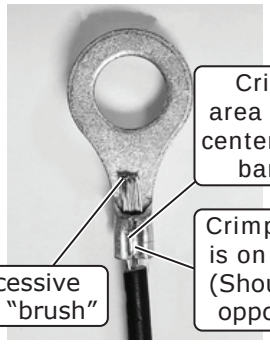


Photo 4

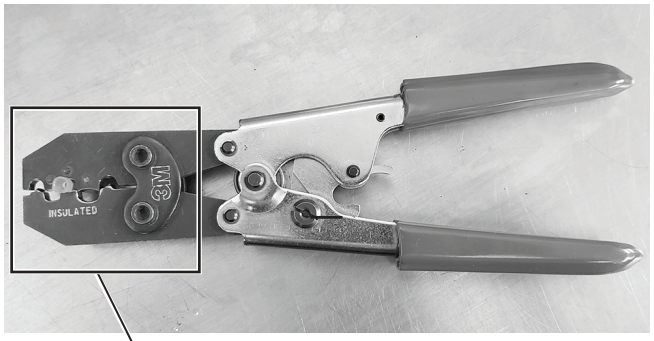


Photo 5

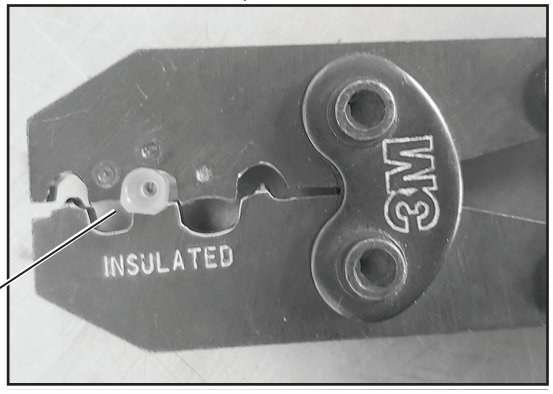
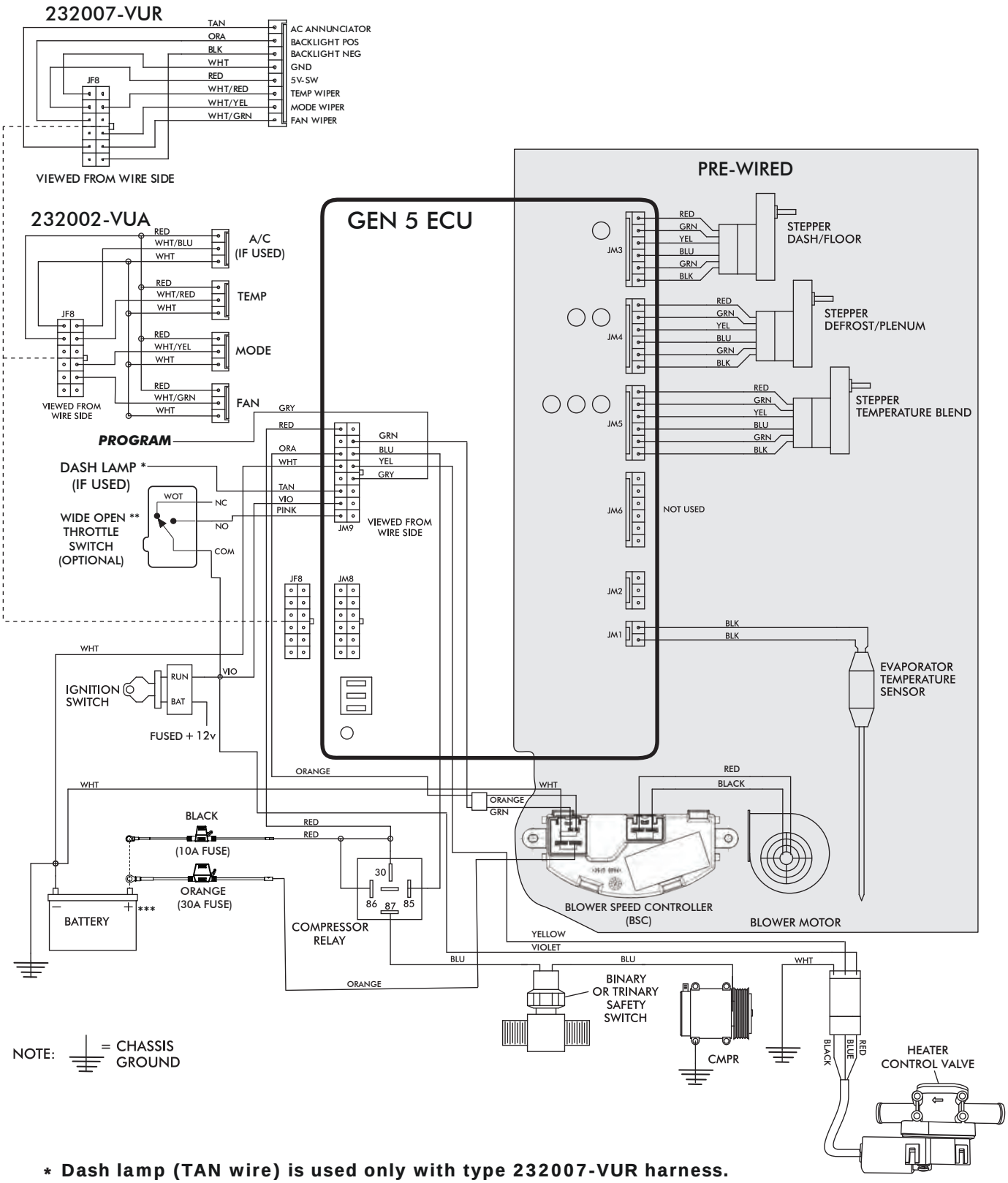


Photo 5a

Use a ratcheting crimp tool for insulated barrel terminals when crimping the provided female insulated terminal. Ensure terminal is inserted in appropriate position before crimping.

Gen 5 Wiring Diagram

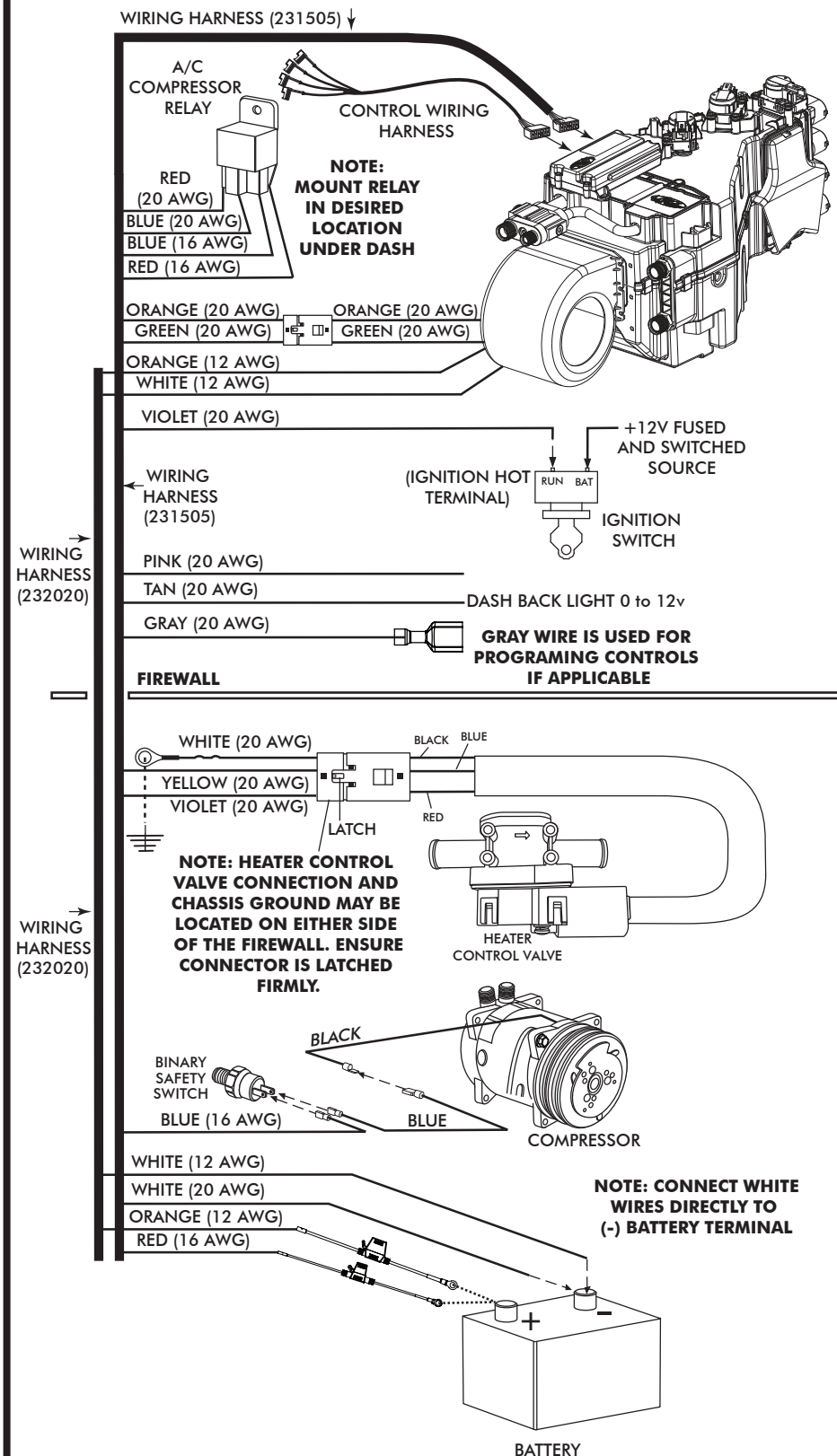


*** Dash lamp (TAN wire) is used only with type 232007-VUR harness.**

**** Wide open throttle switch contacts close only at full throttle, which disables A/C compressor.**

***** Install fuse assemblies at or as near to the battery as possible.**

Gen 5 Wiring Instructions



Ignition Switch:
Using provided butt splice (PN 226004), connect the 20 AWG violet wire to a 5A fused and switched 12V source such as Key On.

Wide Open Throttle Switch (Optional):
If a wide open throttle switch is required, connect the 20 AWG pink wire to a normally open switch that, when closed, connects a fused and switched 12V source to the pink wire. See Gen 5 wiring diagram for an example.

Dash Light (Optional):
If using a Vintage Air control panel with back light, connect the 20 AWG tan wire to the vehicle's dash back light 0-12V using provided butt splice (PN 226004).

Heater Control Valve:
Connect the Violet/Yellow/White twisted branch with 3 position connector into the heater control valve connector. Ensure that the mating latch is fully seated.

Binary / Trinary & Compressor:
Binary Switch: Terminate provided insulated female terminal (PN 23172-VUW) to the blue 16 AWG wire. Connect as shown.
Trinary Switch: Connect according to trinary switch wiring diagram.

Battery Connections:
ECU Ground: Terminate provided ring terminal (PN 226110) to 20 AWG white wire from the 231505 wire assembly and install at battery.
ECU PWR: Terminate provided fuse assembly with black leads (PN 233012) to the 20 AWG red wire from the 231505 wire assembly. Install provided 10A Red Mini Fuse (PN 226118). Install at battery.
Blower Speed Controller (BSC) Ground: Terminate provided ring terminal (PN 226111) to 12 AWG white wire from the 232020 wire assembly and install at battery.
Blower Speed Controller (BSC) PWR: Terminate provided fuse assembly with orange leads (PN 233008) to the 12 AWG orange wire from the 232020 wire assembly. Install provided 30A Green ATO/ATC Fuse (PN 226125). Install at battery.

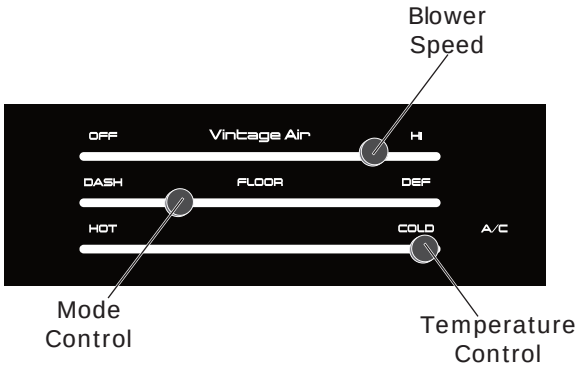
Operation of Controls

On Gen IV or Gen 5 systems with three lever/knob controls, the temperature control toggles between heat and A/C operations. To activate A/C, move the temperature lever/knob all the way to cold and then back it off to the desired vent temperature. For heat operation, move the temperature lever/knob all the way to hot and then adjust to the desired vent temperature. The blower will momentarily change speed, each time you toggle in and out of heat and A/C operations, to indicate the change.

Blower Speed
This lever/knob controls blower speed, from OFF to HI.

Mode Control
This lever/knob controls the mode positions, from DEFROST to FLOOR to DASH, with a blend in between.

Temperature Control
This lever/knob controls the temperature, from HOT to COLD.



A/C Operation

Blower Speed
Adjust to desired speed.

Mode Control
Adjust to desired mode position (DASH position recommended).

Temperature Control
For A/C operation, adjust to coldest position to engage compressor (Adjust between HOT and COLD to reach desired temperature).

Heat Operation

Blower Speed
Adjust to desired speed.

Mode Control
Adjust to desired mode position (FLOOR position recommended).

Temperature Control
For maximum heating, adjust to hottest position (Adjust between HOT and COLD to reach desired temperature).

Defrost/De-fog Operation

Blower Speed
Adjust to desired speed.

Temperature Control
Adjust to desired temperature.

Mode Control
Adjust to DEFROST position for maximum defrost, or between FLOOR and DEFROST positions for a bi-level blend (Compressor is automatically engaged).

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Troubleshooting Guide

This printed troubleshooting guide is our basic guide that covers common installation problems. To see our advanced diagnostics and troubleshooting guide, please refer to the following page for instructions on how to download the complete guide.

WARNING: While troubleshooting the system, never probe connector terminals from the front mating side, only back probe.

WARNING: While troubleshooting the system, never use automotive check lights.

Symptom	Condition	Checks	Actions	Notes
1. Blower stays on high speed with ignition on.	No other functions work.	Check for damaged pins or wires in the control panel wire assembly and mating header at ECU.	If found damaged, replace wire assembly or ECU.	
		Check for a bad ECU GND.		
	All other functions work.	Check for damaged pins or wires in the control panel wire assembly and mating header at ECU.	If found damaged, replace wire assembly or ECU.	
		Check if Blower power fuse is blown.	Replace fuse.	If fuse continues to blow, there is a serious problem in the wiring. Check all wiring and ensure the wire is not damaged and shorting out along its route.
		Check for a bad ECU GND.	Repair connection.	
2. Compressor will not turn on (All other functions work).	System is not charged.	System must be charged for compressor to engage.	Charge system.	**Danger: Never bypass safety switch with engine running. Serious injury can result.**
	System is charged.	Check for faulty A/C potentiometer or associated wiring (not applicable to 3-pot controls).	Check continuity to ground on white control head wire. Check for 5V on red control head wire.	To check for proper pot function, check voltage at white/red wire. Voltage should be between 0V and 5V, and will vary with pot lever position.
		Check for disconnected or faulty thermistor.	Check 2-pin connector at ECU housing.	Disconnected or faulty thermistor will cause compressor to be disabled.
3. Compressor will not turn off (All other functions work).		Check for faulty A/C potentiometer or associated wiring.	Repair or replace pot/control wiring.	Red wire at A/C pot should have approximately 5V with ignition on. White wire will have continuity to chassis ground. White/Red wire should vary between 0V and 5V when lever is moved up or down.
		Check for faulty A/C relay.	Replace relay.	

Troubleshooting Guide (Cont.)

Symptom	Condition	Checks	Actions	Notes
4. System will not turn on, or runs intermittently.	Works when engine is not running; shuts off when engine is started	Noise interference from either ignition or alternator.	Install capacitors on ignition coil and alternator. Ensure good ground at all points. Relocate coil and associated wiring away from ECU and ECU wiring. Check for burned or loose plug wires.	Ignition noise (radiated or conducted) will cause the system to shut down due to high voltage spikes. If this is suspected, check with a quality oscilloscope. Spikes greater than 16V will shut down the ECU. Install a radio capacitor at the positive post of the ignition coil (see radio capacitor installation bulletin). A faulty alternator or worn out battery can also result in this condition.
	Will not turn on under any conditions.	Verify connections on power lead, ignition lead, and both white ground wires.	Check for power at ECU, and confirm ignition is being applied to ECU properly.	
		Verify battery voltage is greater than 10 volts and less than 16 while engine is running.	Verify proper meter function by checking the condition of a known good battery.	
5. Loss of mode door function.	No mode change at all.	Check for damaged mode switch or potentiometer and associated wiring.		
6. Blower turns on and off rapidly.	Battery voltage is at least 12V.	Check for at least 12V at circuit breaker.	Ensure all system grounds and power connections are clean and tight.	System shuts off blower at 10V. Poor connections or weak battery can cause shutdown at up to 11V.
	Battery voltage is less than 12V.	Check for faulty battery or alternator.	Charge battery.	
7. Erratic functions of blower, mode, temp, etc.		Check for damaged switch or pot and associated wiring.	Repair or replace.	

Advanced Diagnostics and Troubleshooting Guide

If after referencing the Troubleshooting Guide, the issue is not resolved, move to The Advanced Diagnostics and Troubleshooting Guide that covers the following:

- **ECU Diagnostics Codes**
  1. ***ECU Blink Sequence***
  2. ***Firmware Version Number***
  3. ***ECU Model Number***
  4. ***ECU Start-Up Blink Sequence***
  5. ***Diagnostic Codes***
- **Complete Advanced Troubleshooting Guidelines**

Access the latest version of the Advanced Diagnostics and Troubleshooting Guide by scanning the following QR code on your mobile device:

You can also access the guide by typing the following address into your web browser:

https://www.vintageair.com/instructions_pdf/905000.pdf

www.vintageair.com

Packing List: Evaporator Kit (565707)

No.	Qty.	Part No.	Description	
1.	1	765250	Gen 5 Super Magnum Evaporator Module	_____
2.	1	785707	Accessory Kit	_____

Checked By: _____
Packed By: _____
Date: _____

1

Gen 5 Super Magnum Evaporator Module 765250

2












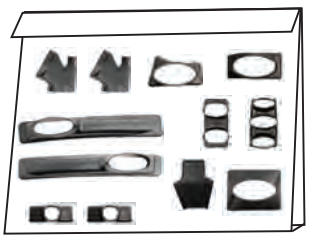

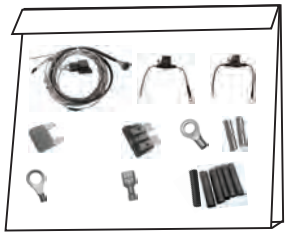
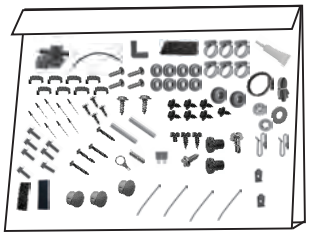

Accessory Kit 785707

NOTE: Images may not depict actual parts and quantities. Refer to packing list for actual parts and quantities.