1967 Chevrolet Corvette

with **Factory Air**
Gen 5 Evaporator Kit
(564204)

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Packing List: Evaporator Kit (564204)

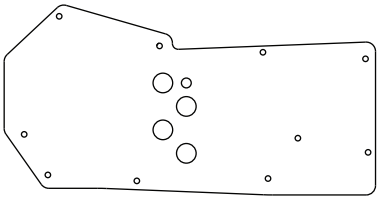
No.	Qty.	Part No.	Description
1.	1	765125	Gen 5 Magnum Module with 444 ECU
2.	1	784204	Accessory Kit

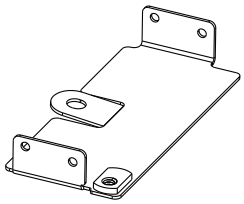
**** Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

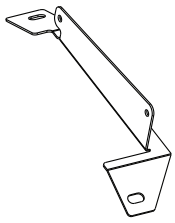
1

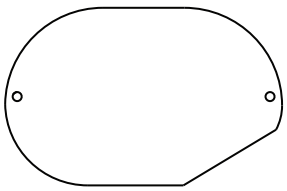
Gen 5 Magnum Module with 444 ECU 765125

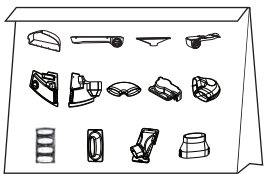
2

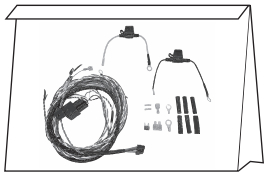


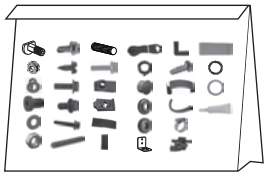












Accessory Kit 784204

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.

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.

Engine Compartment Disassembly

NOTE: Before starting the installation, check the function of the vehicle (horn, lights, etc.) for proper operation, study the instructions, illustrations, photos & diagrams.

Perform the following:

1. Remove the hood and hood latch for ease of installation.
2. Disconnect the battery and remove, if mounted on passenger side. If mounted on driver side, disconnect (-) terminal.
3. Drain the radiator.
4. Evacuate the A/C system if necessary.
5. Remove the OEM A/C blower motor assembly (under hood) (discard).
6. Remove OEM fresh air adapter assembly (discard).
7. Remove OEM condenser and drier (discard) (See Figure 1, below).
8. Remove OEM A/C lines from the compressor to the evaporator (discard).
9. Remove the OEM compressor and bracket (discard).
10. Remove OEM heater hoses, A/C hoses, and hardlines (discard) (See Figure 1, below).
11. Remove the OEM radiator expansion tank (retain) (if equipped).

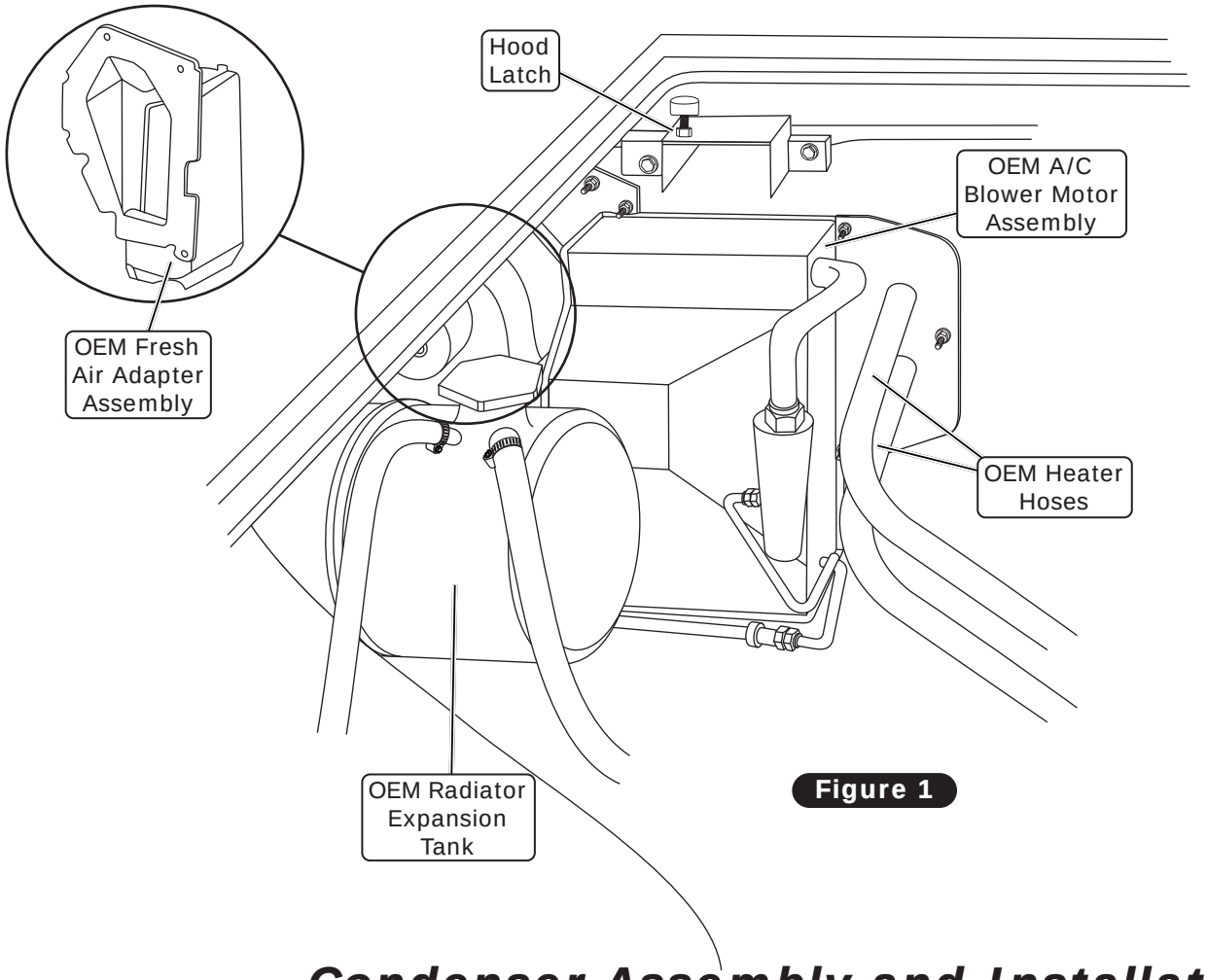

Figure 1

Condenser Assembly and Installation

1. Refer to separate instructions included with the condenser kit to install the condenser.
2. Binary switch installation (Refer to condenser instructions).

Compressor and Brackets

1. Refer to separate instructions included with the bracket kit to install the compressor bracket.

Passenger Compartment Disassembly

Perform the following:

1. Remove glove box, door and mounting panel (discard glove box) (retain hardware) (See Figure 1, below).
2. Remove right and left side console panels (discard) (retain screws).
3. Remove driver- and passenger-side under dash louver, mounting brackets and all ducting (discard).
4. Remove heat/air distribution ducts (discard).
5. Remove OEM A/C heater assembly (discard).
6. Remove OEM defrost duct (discard) (retain nuts).
7. Remove OEM center louver assembly with control, bezel (retain) (See Figure 1a, below). **NOTE: Refer to control panel instructions for installation.**
8. Disconnect all wires and cables from OEM control panel (discard).
9. Remove radio and clock (retain).
10. Remove passenger-side kick panel (retain).
11. Remove OEM passenger-side fresh air cable and kick panel assembly (discard).
12. Loosen OEM driver-side fresh air cable assembly from dash, for later installation.
13. Remove OEM center console floor trim (retain) **NOTE: For 1963 Models only.**
14. Remove center floor console (retain).

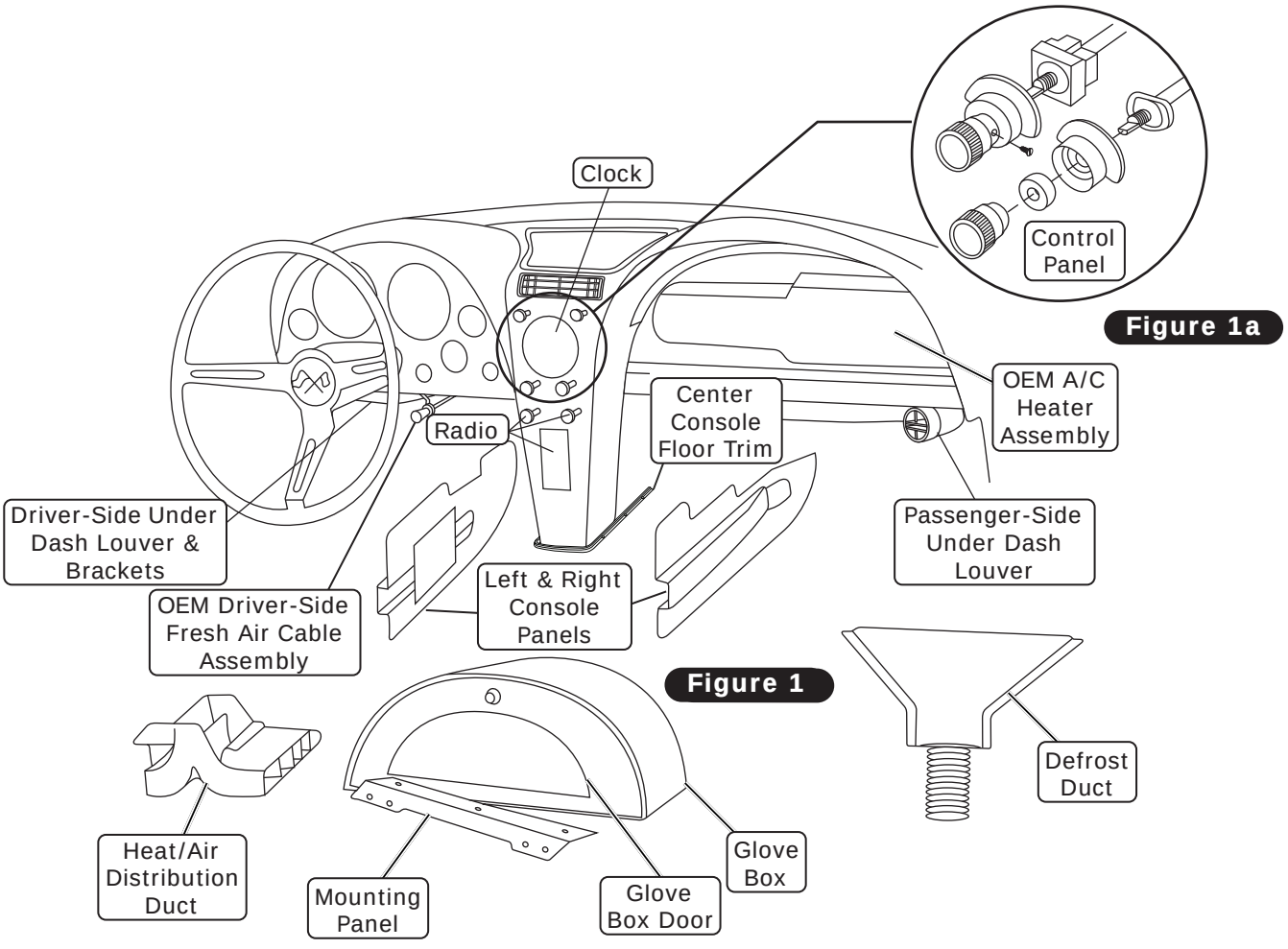

Figure 1a

Figure 1

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Firewall Modification

1. Drill the rivets holding the fresh air door assembly (See Photo 1, below).
2. Remove the fresh air door assembly from the engine compartment (See Photo 2, below).
3. Remove the OEM studs on the firewall by drilling out the rivets (See Photo 3, below).
4. Confirm the firewall is flat and free of obstructions that will interfere with the firewall cover.
5. Install (2) 1/4-20 U-nuts onto the kick panel mounting positions (See Photo 4, below).
6. From the passenger compartment, using the kick panel, measure towards the driver side 10 ¼" then using the firewall opening measure down 5" and drill a 5/8" drain hole for the drain hose (See Photos 5 and 6, below). **NOTE: To ensure a tight fit for the drain hose, do not enlarge the hole more than 5/8".**

Photo 1

Photo 2

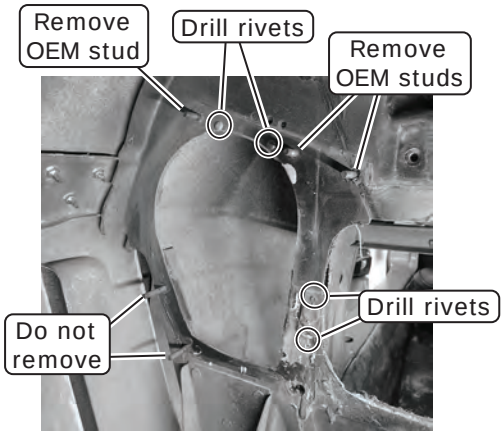


Photo 3

Photo 4

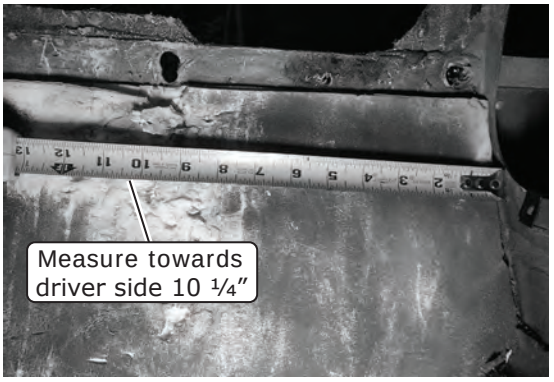


Photo 5

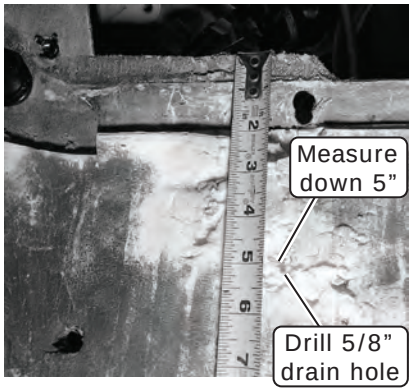
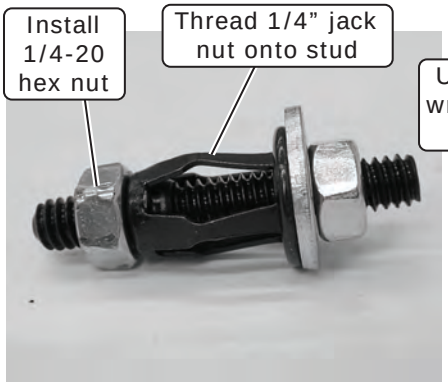


Photo 6

Firewall Modification (Cont.)

7. Install a 1/4-20 hex nut and 1/4" USS flat washer onto the 1/4-20 x 1 ¾" stud (See Photo 7, below).
8. Thread the 1/4" jack nut onto the stud then install a 1/4-20 hex nut (See Photo 8, below).
9. Insert the assembly into the mounting hole. Once in place use an Allen key to hold the assembly in place then using a 7/16" wrench, tighten the nut on the stud (See Photos 9 and 10, below). Continue tightening until the jack nut is compressed against the firewall.
10. Remove the 1/4-20 hex nut from the back of the stud then remove the hardware from the jack nut.
11. Install (6) 1/4" jack nuts into the firewall mounting holes as shown in Photos 11 and 12, below. **NOTE: Some holes may have to be enlarged by using a 29/64" drill bit to accommodate the jack nut.**

Photo 7



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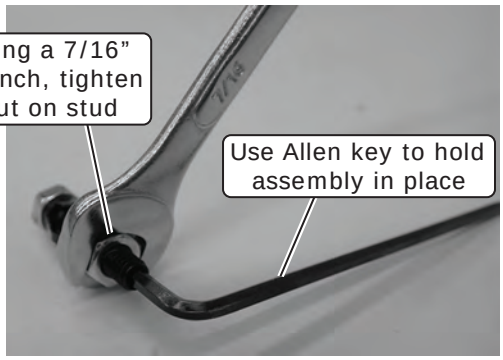

Photo 9

Photo 10

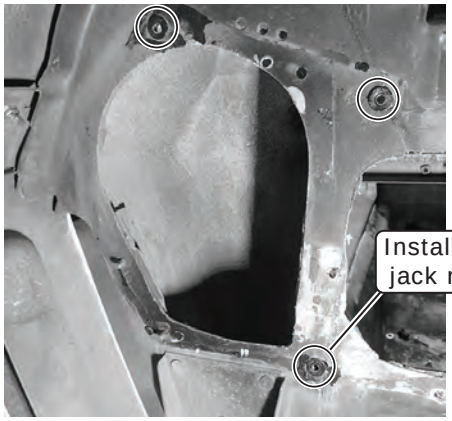

Photo 11

Photo 12

Kick Panel Plate Installation

NOTE: Additional silicone/sealer can be used around the kick panel plate if needed once installed.

1. Apply a 1/4" bead of silicone around the mating surface of the kick panel (See Photo 1, below).
2. Install the kick panel cover onto the kick panel using (2) 1/4-20 x 1/2" flange head hex bolts (See Photo 2, below).

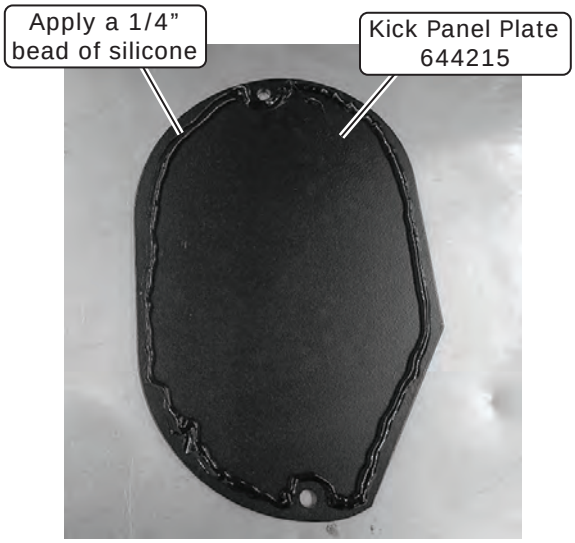

Photo 1

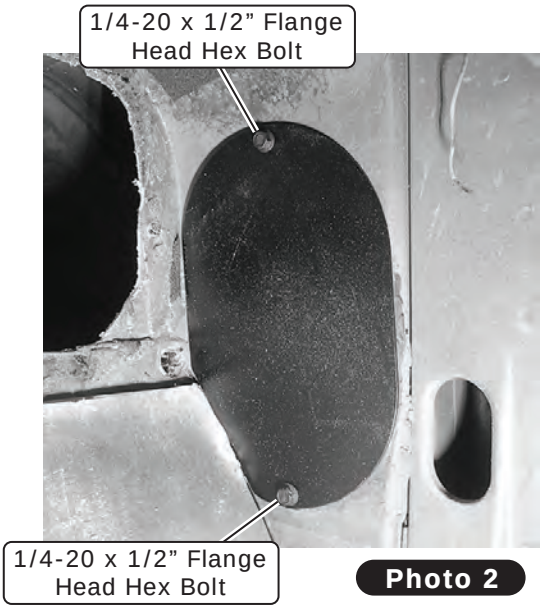

Photo 2

Insulation Installation

NOTE: 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 and 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". Firewall modification is required for the firewall cover and drain hose installation.

1. Apply insulation to the firewall, kick panel and inner cowl (See Photo 1, below).

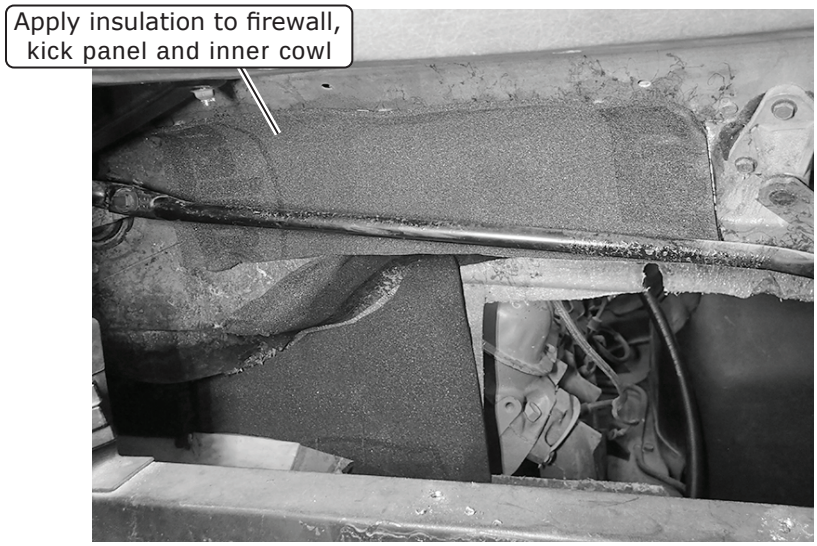

Photo 1

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Firewall Cover Preparation

1. Temporarily install the firewall cover onto the firewall using one or more 1/4-20 bolts or 1/4-20 serrated flange nuts (See Photo 1, below).
2. From the passenger compartment mark the firewall opening then remove the cover (See Photo 2, below).
3. Install (4) large grommets and (1) 5/8" wiring grommet (See Photos 3 and 4, below).
4. Apply insulation to the firewall cover in the previously marked area (See Photo 5, below).

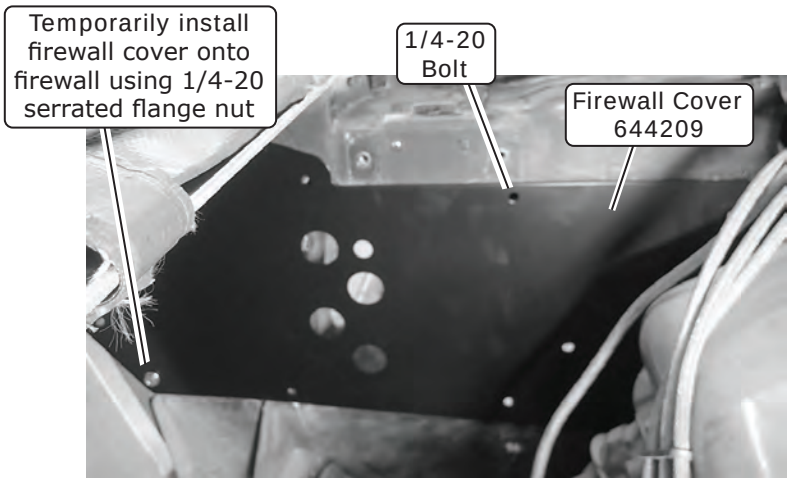
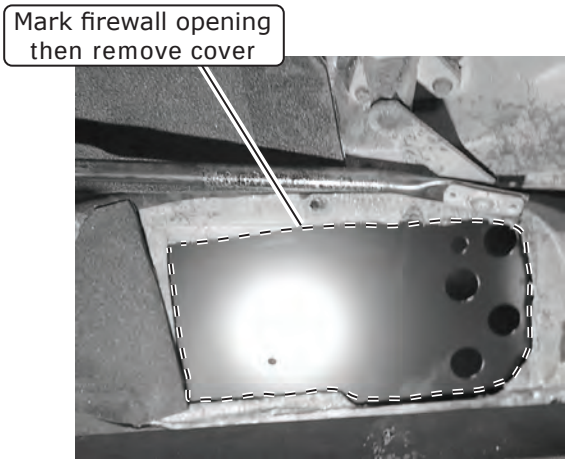


Photo 1



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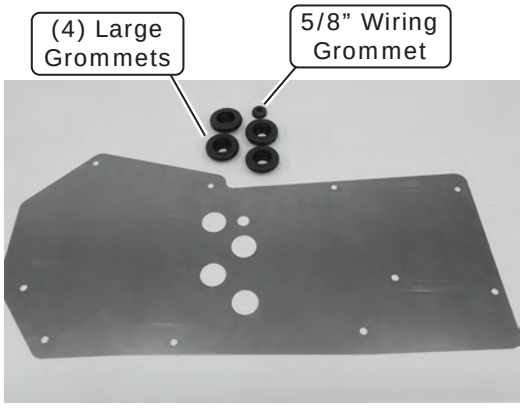

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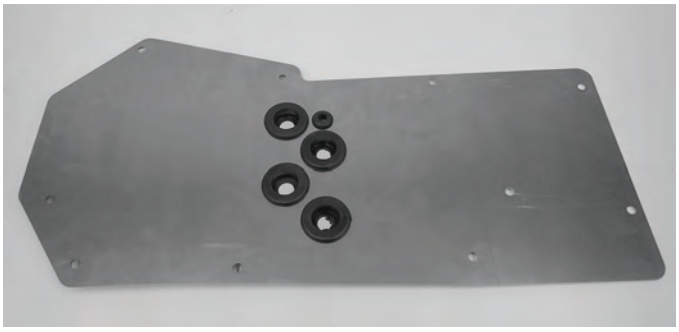


Grommets Installed

Photo 4

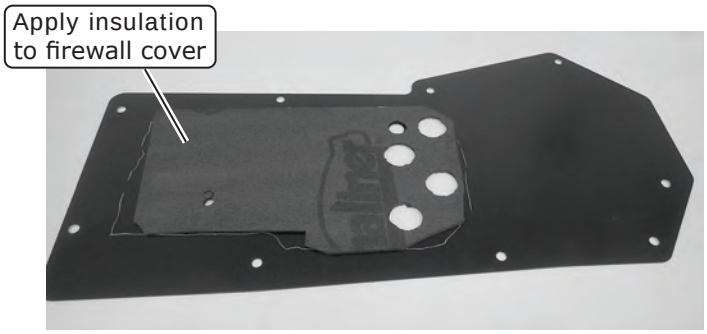


Photo 5

Evaporator Preparation

Perform the following on a workbench:

1. Remove the plastic caps and rubber inserts from the heater fittings (See Photos 1 and 2, below).
2. Install (2) 1/2" plastic plugs into back of the evaporator module (See Photos 3 and 4, below). These mounting points will not be used for this application.
3. Install (1) well nut into the back of the evaporator module (See Photo 5, below).
4. Install the evaporator firewall bracket onto the module and secure it using (4) #10 x 5/8" screws (See Photos 6 and 7, below).

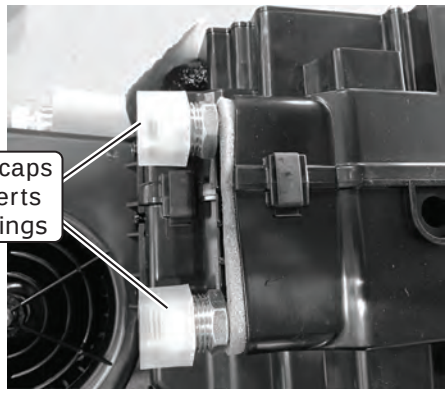
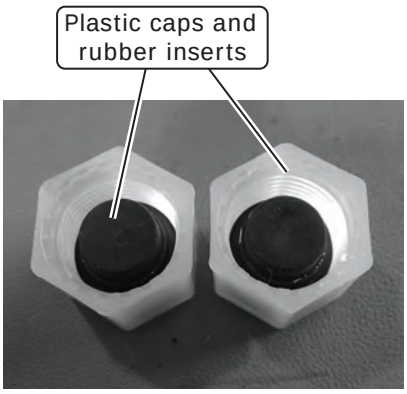


Photo 1



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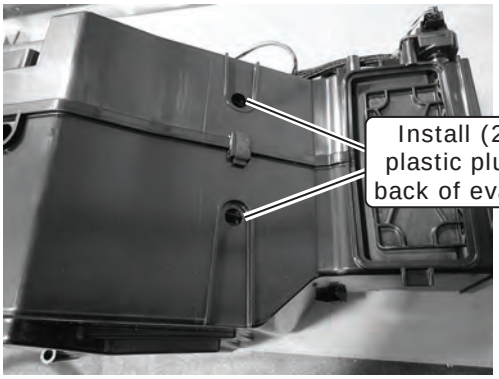

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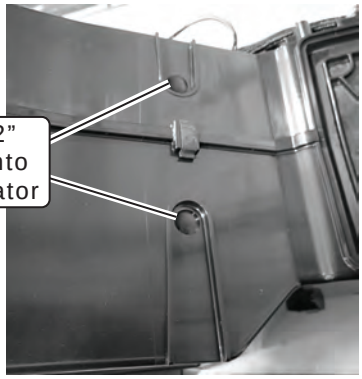
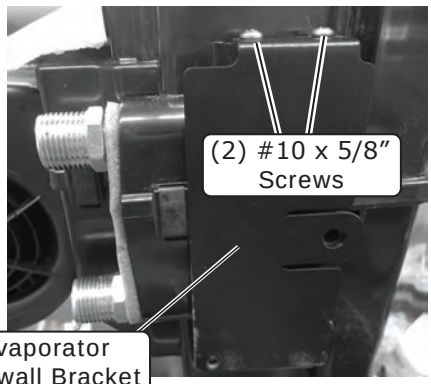


Photo 4

Photo 5



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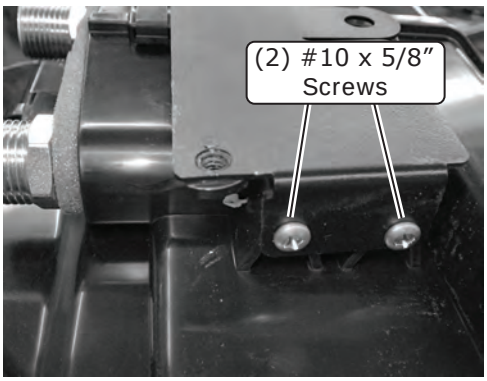


Photo 7

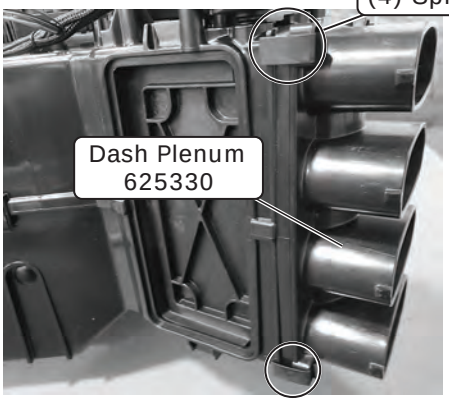
Evaporator Preparation (Cont.)

5. Using (4) spring clips ((2) per side), install the dash plenum onto the evaporator module (See Photos 8 and 9, below).

6. Using (2) spring clips, install the single 3" defrost plenum onto the back of the evaporator module as shown in Photo 10, below. **NOTE: Defrost plenum should face the blower when installed.**

7. Remove (2) mounting screws from the stepper motor and install the stepper motor cover using the removed mounting screws (See Photos 11 and 12, below).

8. Loosen ECU mounting screws, cut tie wrap and let the ECU hang in front of the evaporator module (See Photos 13, 14 and 15, below). Retighten the mounting screws. **NOTE: The ECU will be relocated for this installation.**



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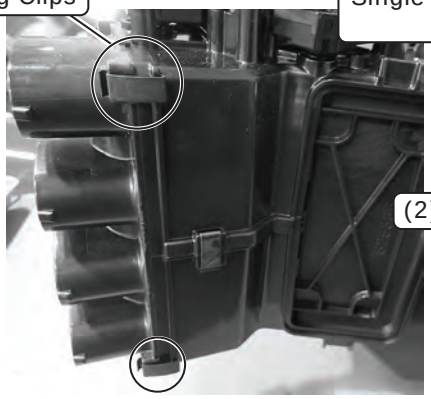

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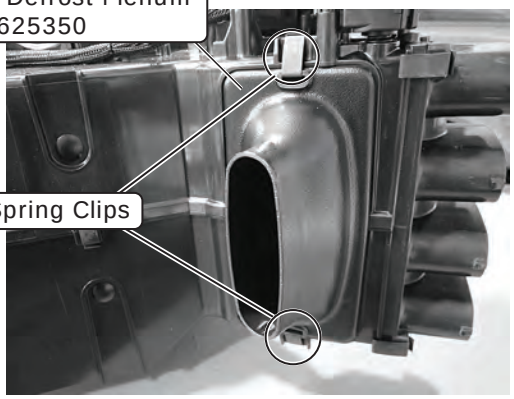

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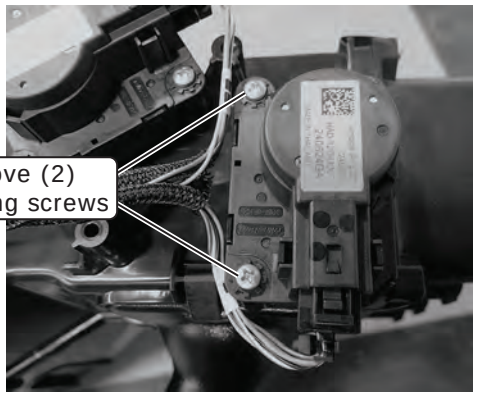

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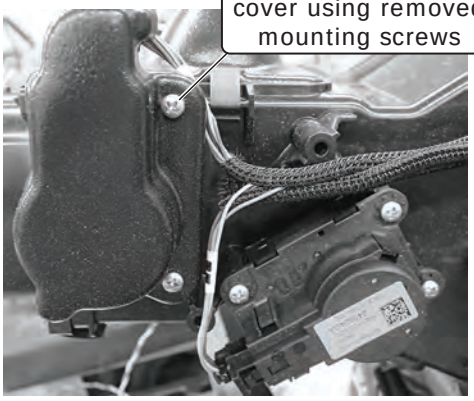

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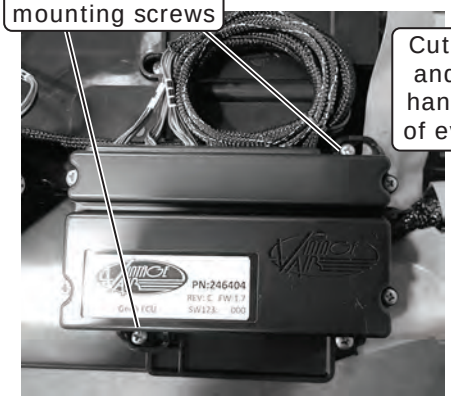

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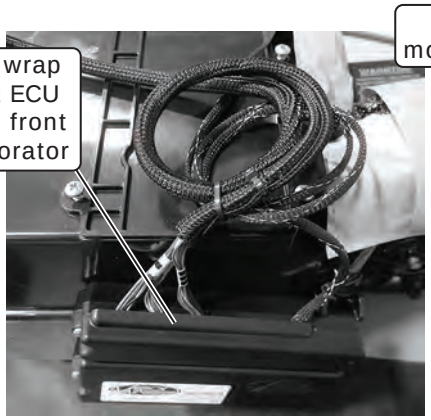


Photo 14

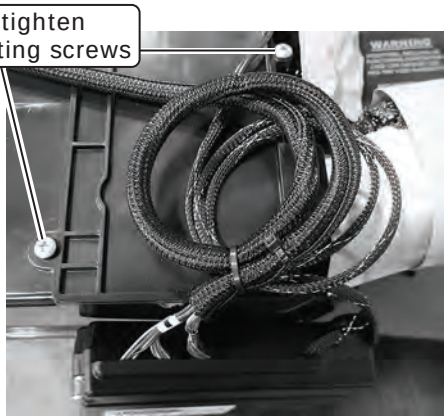


Photo 15

Passenger Compartment Reinstallation

1. Reinstall the radio.
2. Reinstall the clock.
3. Reinstall speaker and grille if removed during disassembly.

Defrost Duct Installation

1. Install the defrost duct under the dash as shown in Figure 1, below. Secure using OEM nuts. **NOTE: Defrost duct mounting holes towards firewall as shown in Figure 1a, below.**

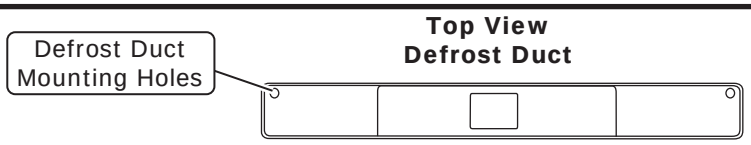


Figure 1a

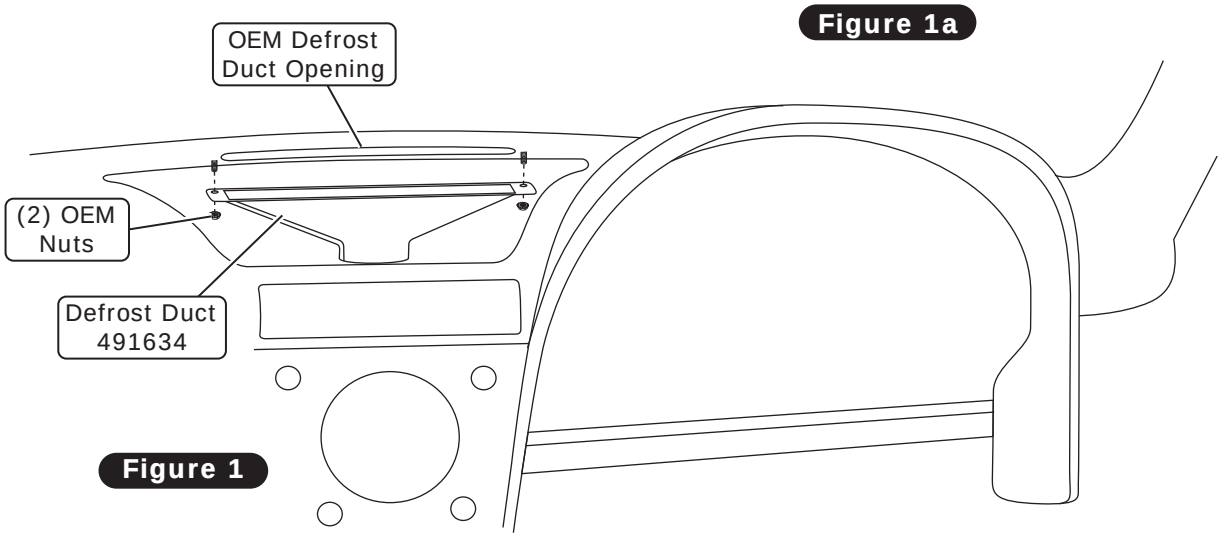


Figure 1

Center Louver Preparation & Installation

1. Gather the OEM center louver adapter (cables removed), (2) #6 O-rings, (2) 8-32 x 3/4" set screws and (2) control studs (See Photo 1, below).
2. Install the set screws into the control studs (See Photo 2, below).

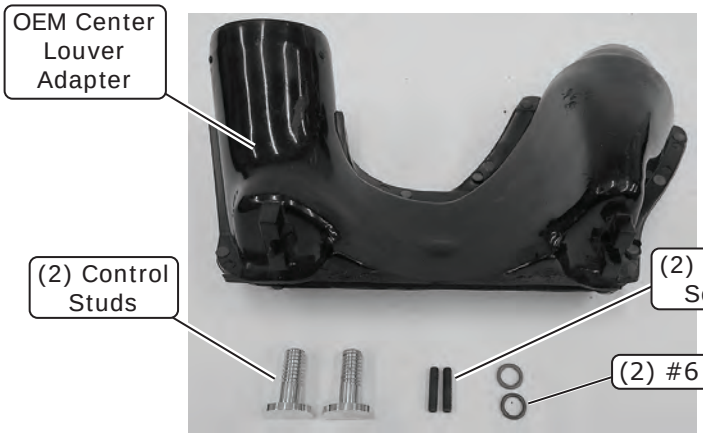


Photo 1

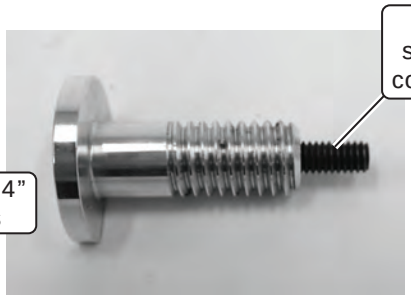


Photo 2

Center Louver Preparation & Installation (Cont.)

3. Install stud assemblies into the OEM center louver hose adapter (See Photo 3, below).
4. Install the #6 O-rings over the control studs to hold them in place while the installation is made (See Photo 4, below).
5. Reinstall the center louver into the dash using the OEM bezels, trim rings, nuts and knobs to secure the assembly to the dash.

Photo 3

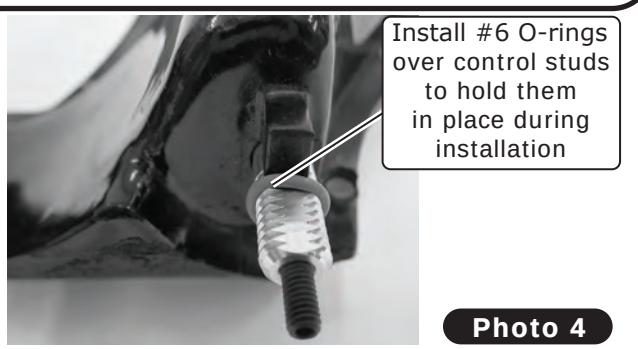
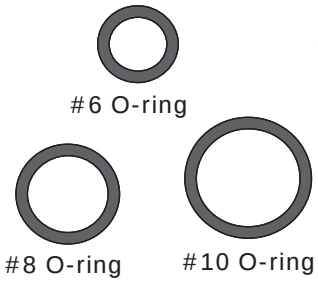


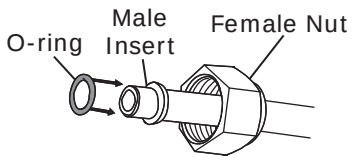
Photo 4

Control Panel Installation

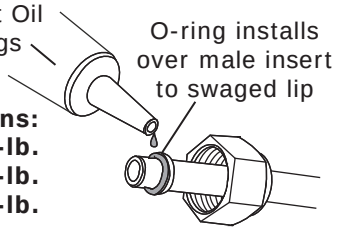
1. Refer to control panel instruction for installation procedures.

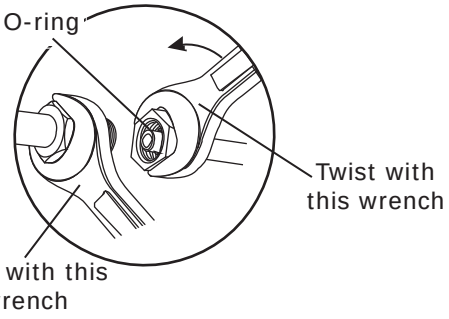
Lubricating O-rings





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.

Properly Seated O-ring Land

When installing a hardline or A/C hose fitting onto the evaporator module, ensure the O-ring land is seated properly (See Photo 1, below). An improperly seated O-ring land (See Photo 2, below) can cause a leak. To properly install the fitting, slide the hardline or A/C hose nut back to expose the O-ring land and seat it onto the evaporator module fitting. Then, slide the hardline or A/C hose nut forward and thread it onto the evaporator module fitting, ensuring the O-ring land does not move or lift.

Properly Seated O-ring Land

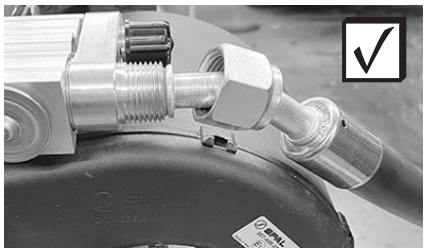


Photo 1

Improperly Seated O-ring Land

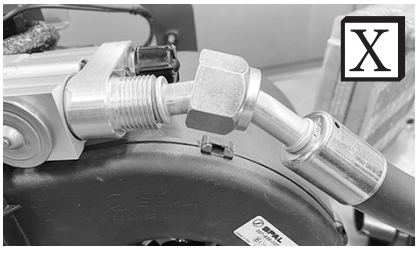


Photo 2

NOTE: Photos shown are for reference only. Fittings may vary depending on kit received.

Evaporator 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. After the evaporator module is under the dash brace it may be helpful to install the 16" piece of 3" duct hose to the defrost plenum. Once the firewall cover is in place there is limited space to install this duct hose.

1. Roll the evaporator module into its mounting position and insert the (2) 1/4-20 x 1 ¾" studs into the mounting holes of the firewall bracket (See Photo 1, below).
2. Install (2) 1/4-20 well nuts into the front mounting provisions of the evaporator module (See Photos 2 and 3, below).
3. Using (2) 1/4-20 x 1" serrated flange bolts, loosely secure the evaporator dash bracket to the evaporator module (See Photos 4 and 5, below).
4. Using (2) properly lubricated #10 O-rings (See Lubricating O-rings, Page 15), install the upper and lower heater hardlines (See Photo 6, below). **NOTE: Before tightening the hardlines pre-fit the firewall cover over the hardlines to assure the hardlines are in the correct position.**
5. Select a mounting location for the main relay and white ground eyelet. Secure the relay using a #10 x 1/2" sheet metal screw and secure the ground eyelet using the #12 x 1/2" self-tapping screw (See Photo 7, below).
6. Route all wiring through the firewall opening (See Photo 8, below). **NOTE: Use caution when installing the firewall cover not to damage the finish during the installation process.**

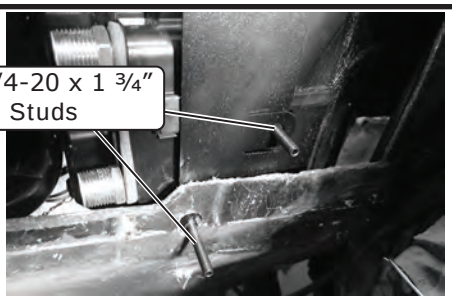


Photo 1

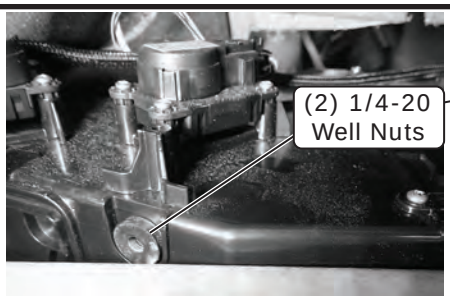


Photo 2

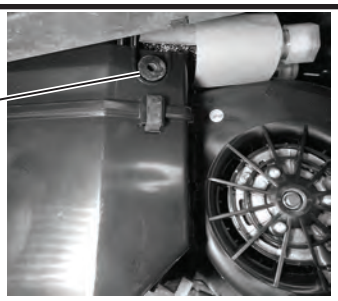


Photo 3

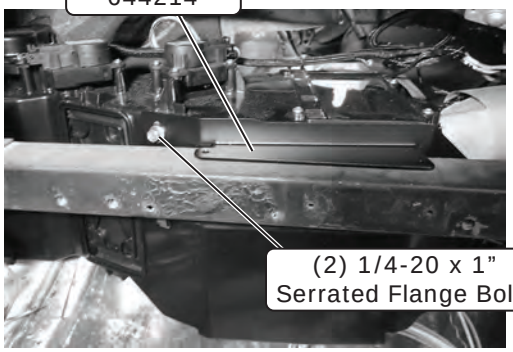


Photo 4

Photo 5

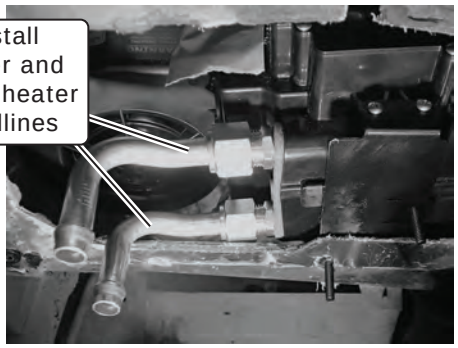


Photo 6

Photo 7

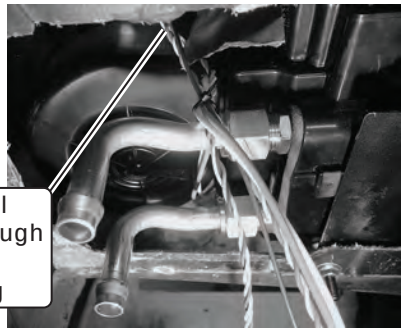


Photo 8

Evaporator Installation (Cont.)

7. Route the 90° fitting of the #6 A/C hose through the 1 ¼" grommet in the core support (See Photo 9, below).
8. Remove the cap and install the female safety switch onto the switch port on the straight fitting then route the 90° fitting through the large grommet in the firewall cover into the passenger compartment (See Photos 10, 11 and 12, below).
9. Route the 90° fitting of the #10 A/C hose through the large grommet in the firewall cover into the passenger compartment (See Photo 12, below).
10. Route the wiring though the wiring grommet in the firewall cover and into the engine compartment (See Photo 13, below).
11. Apply a 1/4" bead of silicone/sealer to the mating surface of the firewall cover and secure the cover using (6) 1/4-20 x 3/4" serrated flange black bolts and (2) 1/4-20 serrated flange nuts onto the OEM studs (See Photos 14 and 15, below. **NOTE: Cutting off the OEM studs after the nuts are tightened is optional.**
12. Replace the (2) 1/4-20 x 1 ¾" studs with a 1/4-20 x 3/4" serrated flange black bolt and a 1/4-20 x 1 ½" flange head hex bolt do not fully tighten (See Photo 16, below).

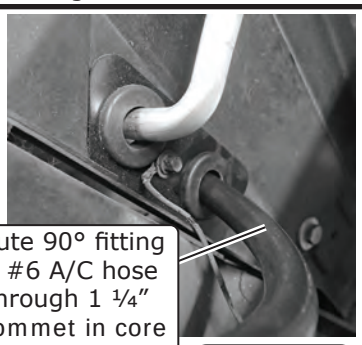


Photo 9

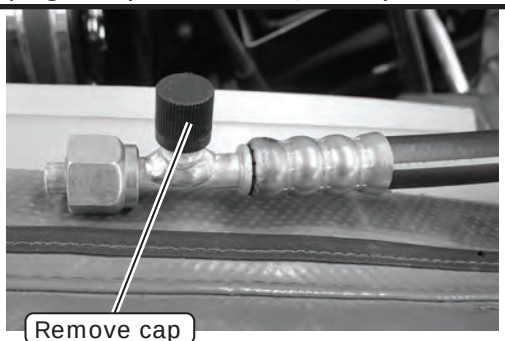


Photo 10

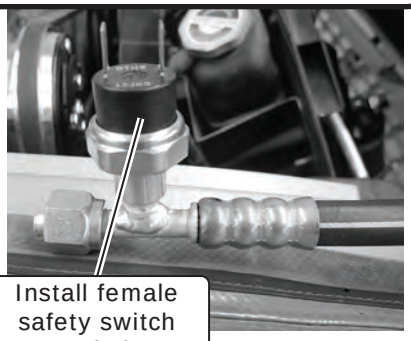


Photo 11

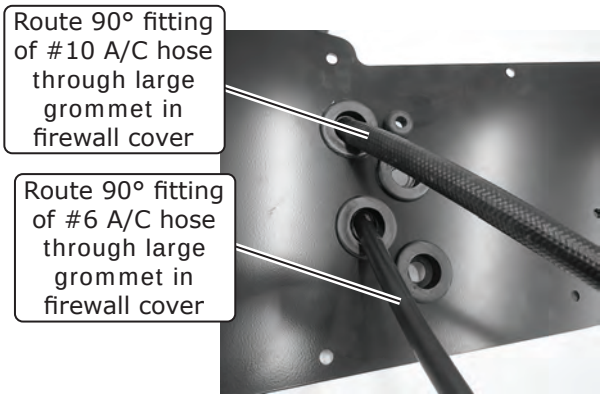


Photo 12

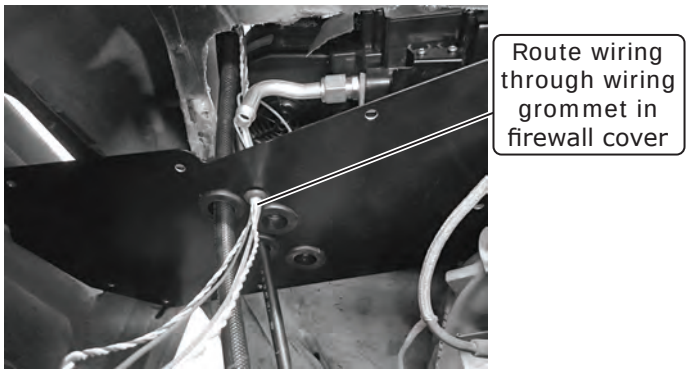


Photo 13

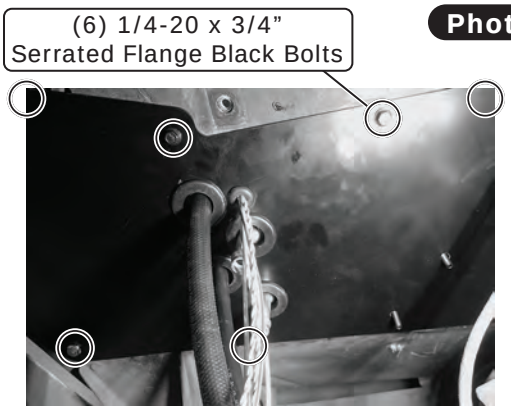


Photo 14

Photo 15

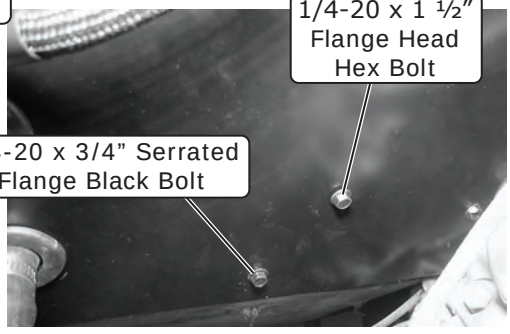


Photo 16

Evaporator Installation (Final)

13. Level the module left to right and fore and aft then tighten the dash bracket and firewall hardware.

14. Using (2) #12 x 1/2" self-tapping screws secure the evaporator dash bracket to the dash brace (See Photo 17, below).

15. Using a properly lubricated #6 O-ring (See Lubricating O-rings, Page 15), install the 90° fitting on the #6 drier/evaporator A/C hose onto the #6 fitting on the block valve adapter on the evaporator module (See Photo 18, below).

16. Using a properly lubricated #10 O-ring (See Lubricating O-rings, Page 15), install the 90° fitting on the #10 compressor/evaporator A/C hose onto the #10 fitting on the block valve adapter on the evaporator module (See Photo 19, below). **NOTE: After installing the #10 compressor/evaporator A/C hose, wrap all exposed metal with the supplied press tape (See Photo 20, below).**

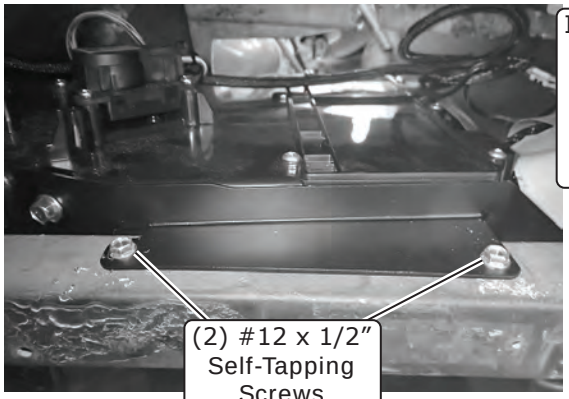


Photo 17

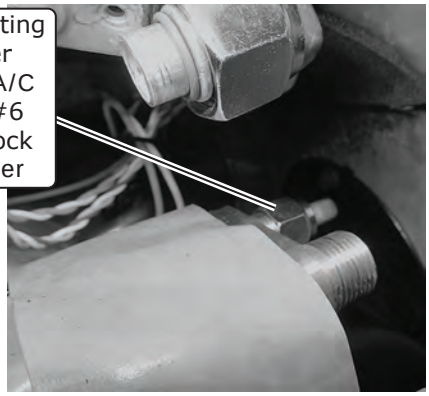


Photo 18

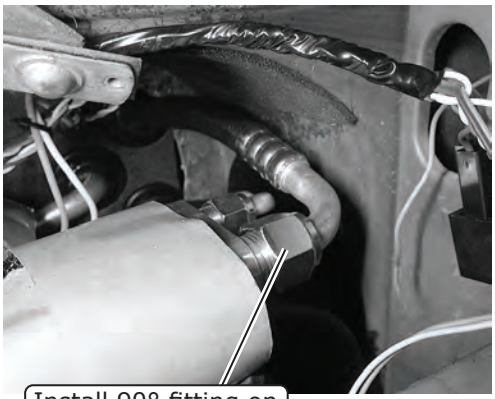


Photo 19

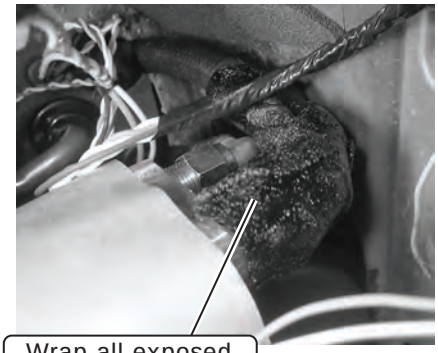


Photo 20

www.vintageair.com

A/C Hose & Heater Control Valve 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 in the heater hose (not supplied) or molded hose (Vintage Air Part # 099010) will need to be installed.

1. With a properly lubricated #6 O-ring (See Lubricating O-rings, Page 15), install the #6 straight fitting onto the drier (See Photo 1, below).
2. With a properly lubricated #10 O-ring (See Lubricating O-rings, Page 15), install the 45° fitting onto the suction port of the compressor (See Photo 2, below).
3. With a properly lubricated #8 O-ring (See Lubricating O-rings, Page 15), install the 135° fitting onto the discharge port of the compressor (See Photo 2, below).
4. With a properly lubricated #8 O-ring (See Lubricating O-rings, Page 15), install the 45° fitting onto the condenser hardline (See Photo 3, below).
5. Route a length of heater hose from the lower heater hardline to the water pump fitting, then secure it using (2) hose clamps (See Photos 4 and 5, below).

Photo 1

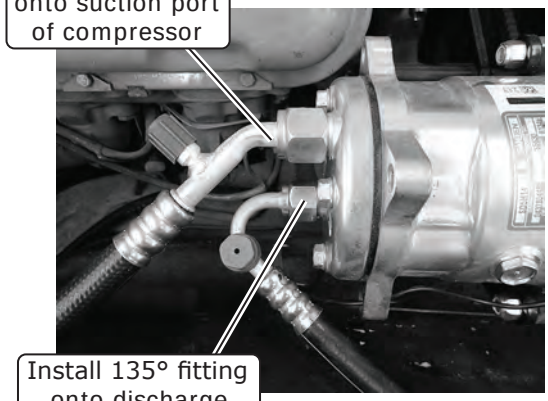


Photo 2

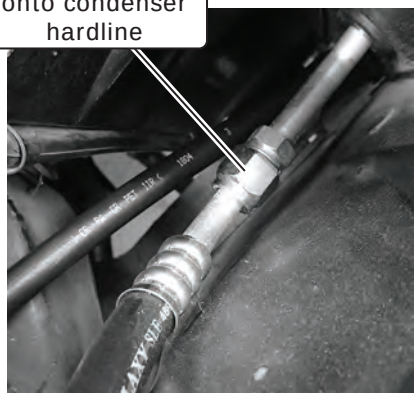


Photo 3

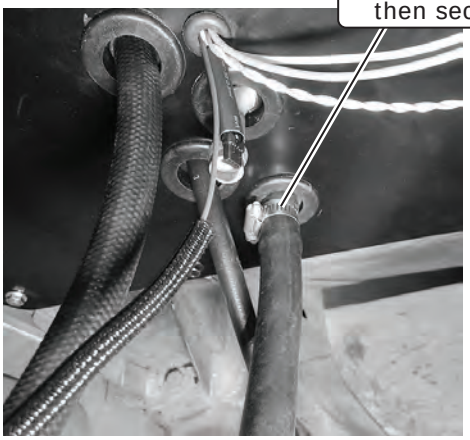


Photo 4

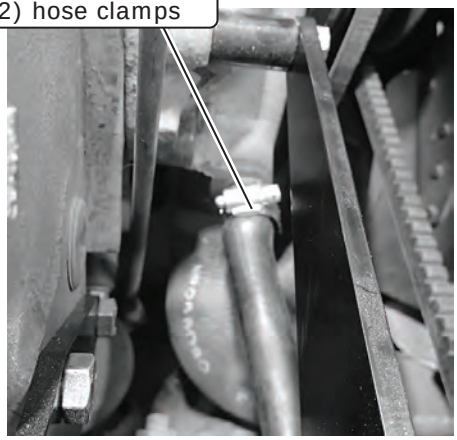


Photo 5

A/C Hose & Heater Control Valve Installation (Cont.)

6. Cut a length of heater hose approximately 4" to 5" from the firewall cover, then install it onto the upper heater hardline. Install the heater control valve and secure it with (2) hose clamps (See Photo 6, 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).**
7. Install another length of heater hose from the heater control valve to the intake, then secure it with (2) hose clamps (See Photo 7, below).
8. Plug the heater control valve connector into the heater control valve connector wiring harness (See Photo 8, below).

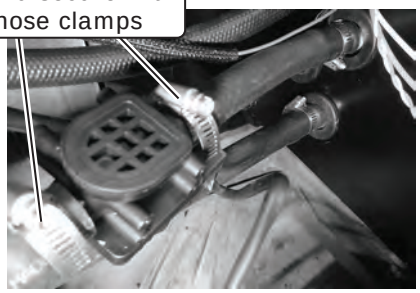
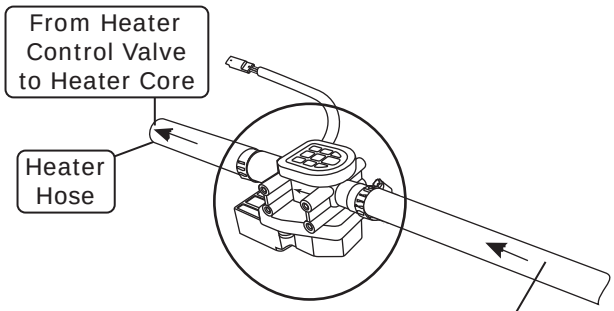


Photo 6



NOTE: Flow Direction Follows Molded Arrow on Valve.

Figure 1

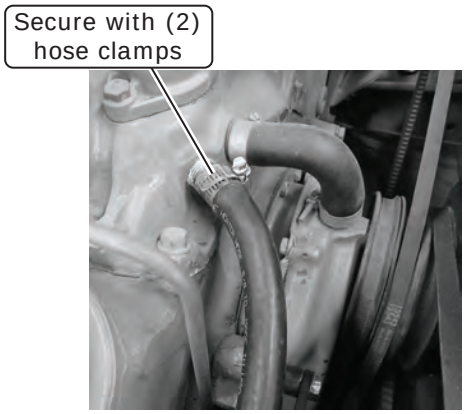


Photo 7

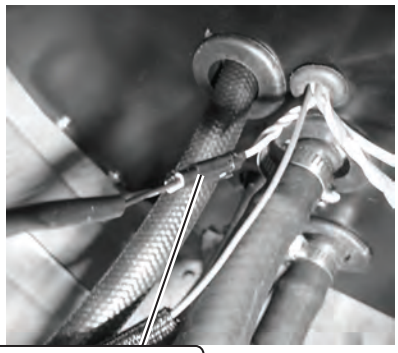


Photo 8

Engine Compartment Wiring

NOTE: The following connections are critical to the performance of the system. Before making connections, refer to Quality Crimp Guidelines, Page 34.

1. Wrap the blue safety switch wire from the main harness with the supplied 1/4" flexo sleeve and route it along the #6 A/C hose toward the drier use supplied tie wraps to secure it to the #6 A/C hose.
2. Route blue safety switch wire from the main harness through the #6 A/C hose grommet then crimp on the female spade terminal connector and connect it to the safety switch (See Photo 1, below).
3. Connect the compressor lead bullet connector at the compressor then route it through the flexo sleeve to the safety switch then connect the female terminal to the safety switch (See Photo 2, below).
4. Wrap the power and ground wires in the supplied 1/2" flexo sleeve and route toward the battery (See Photo 3, below).
5. Install the supplied heat shrink over the 12 AWG orange standard fuse holder assembly wire and crimp it to the 12 AWG orange wire from the main wiring harness (See Photo 4, below). Slide the heat shrink over the crimp, then apply heat.
6. Install the supplied heat shrink over the 16 AWG black mini fuse holder assembly wire and crimp it to the 16 AWG red wire from the main wiring harness (See Photo 5, below). Slide the heat shrink over the crimp, then apply heat.
7. Install the fuses into the holders (See Photos 6 and 7, below).

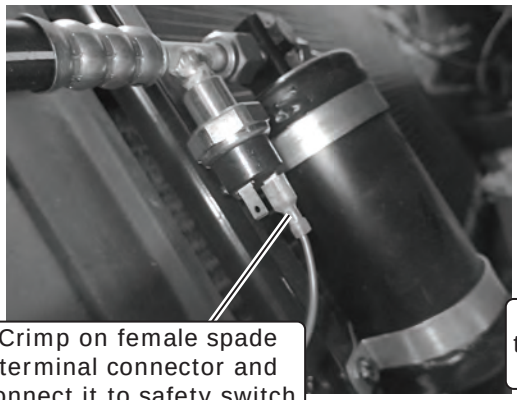


Photo 1

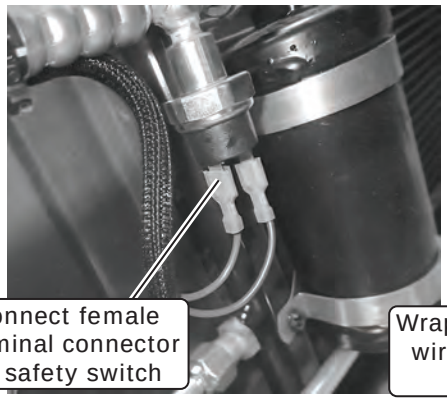


Photo 2

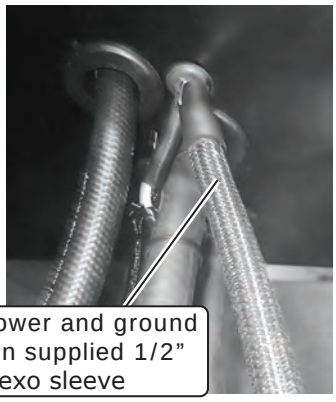


Photo 3

Photo 4

Photo 5

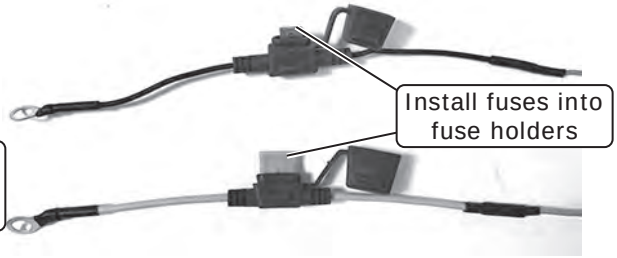


Photo 6

Photo 7

Engine Compartment Wiring (Cont.)

8. Install the supplied heat shrink over the white ground wires, then crimp on the supplied ring terminals (See Photo 8, below). Slide the heat shrink over the crimps, then apply heat. **NOTE: Both white wires can be crimped to the larger ring terminal. Install the heat shrink, then strip the wires, twist them together and trim to length. Crimp on the ring terminal, then slide the heat shrink over and apply heat (See Photos 9 and 10, below).**
9. Connect the ground wire ring terminals to the negative battery terminal connector (See Photos 11 and 12, below).
10. Connect the positive wire ring terminals to the positive battery terminal connector (See Photos 13 and 14, below). **NOTE: Do not connect power until the installation is completed.**
11. Wiring completed (See Photo 15, below).

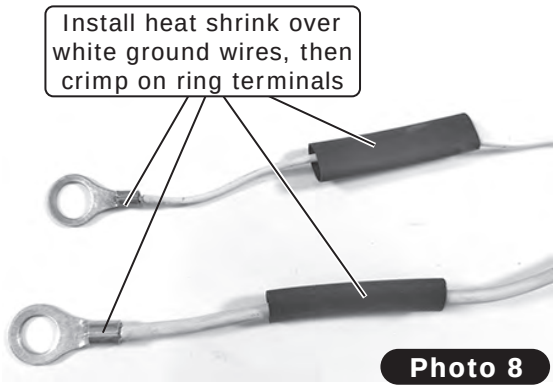


Photo 8

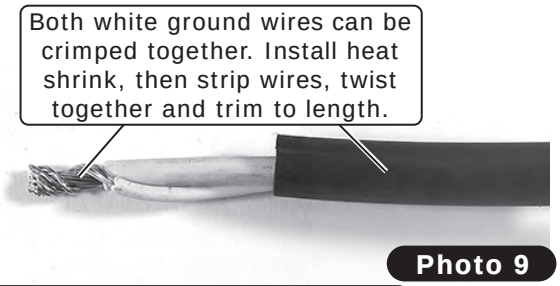


Photo 9

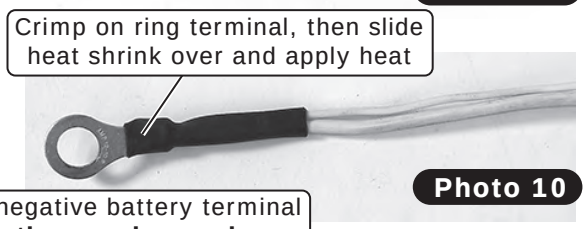


Photo 10

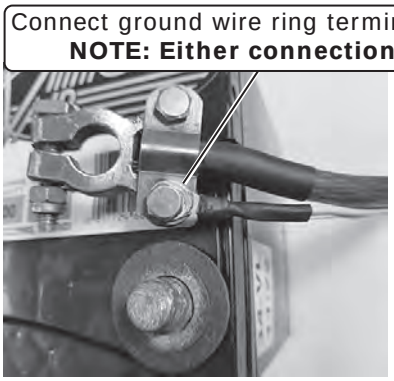


Photo 11

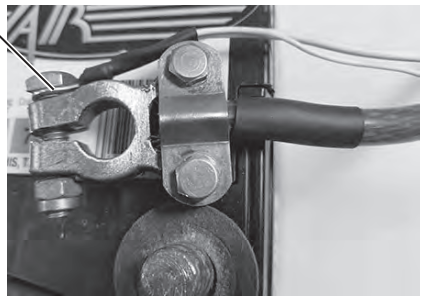


Photo 12

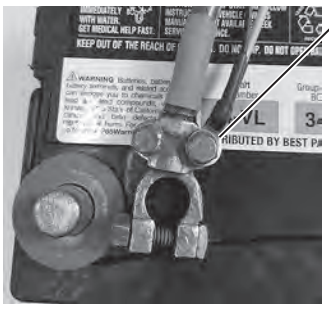
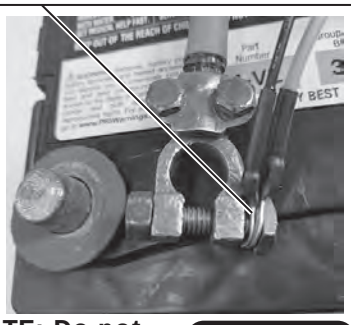


Photo 13



NOTE: Do not connect power until installation is completed.

Photo 14

Completed Installation Shown

Photo 15

Passenger Compartment Wiring

1. Connect the main harness plug to the ECU (See Photo 1, below).
2. Locate the control panel plug and connect the plug to the ECU (See Photo 2, below).
3. Connect the BSC plug to the main harness (See Photo 3, below).
4. Route the violet power wire to a switched 12v power source on the fuse panel (See Photo 4, below).
   NOTE: This requires a male fuse extension (not supplied).
5. Connect the tan wire to the factory dash lights to enable control panel backlighting.

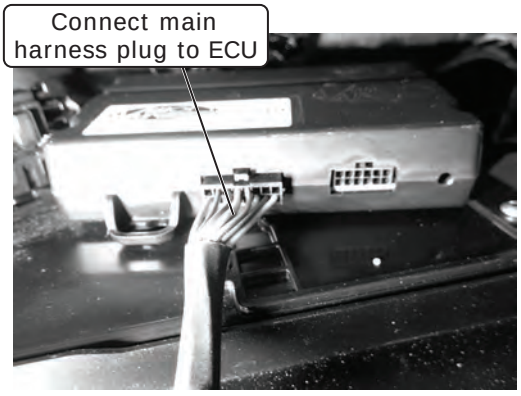


Photo 1

Photo 2

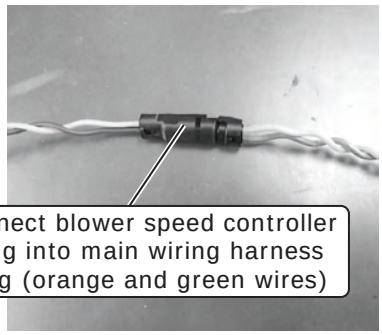


Photo 3

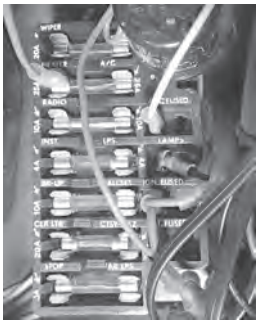


Photo 4

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Driver & Passenger-Side Courtesy Lamp Installation

1. Using OEM hole, secure driver-side courtesy lamp bracket under the dash using #10 x 1/2" sheet metal screw as shown in Figure 1, below.
2. Install the OEM courtesy lamp in the bracket as shown in Figure 1 and 1a, below.
3. Using the OEM hole, secure the passenger-side courtesy lamp bracket under the dash using #10 x 1/2" sheet metal screw as shown in Figure 1a, below.
4. Install the OEM courtesy lamp in the bracket as shown in Figure 1 and 1a, below.

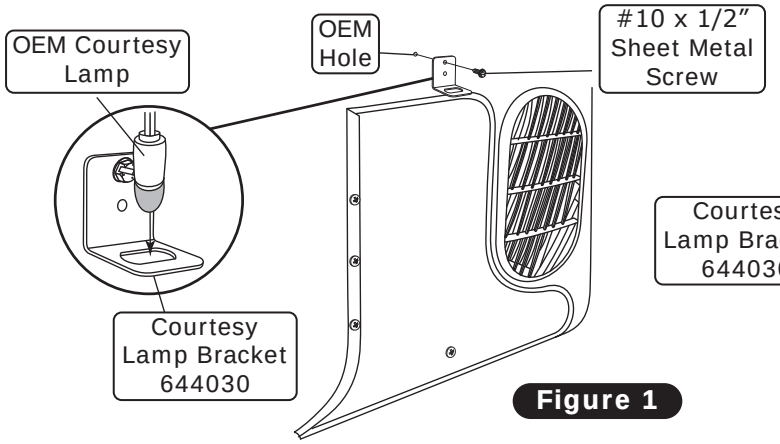

Figure 1

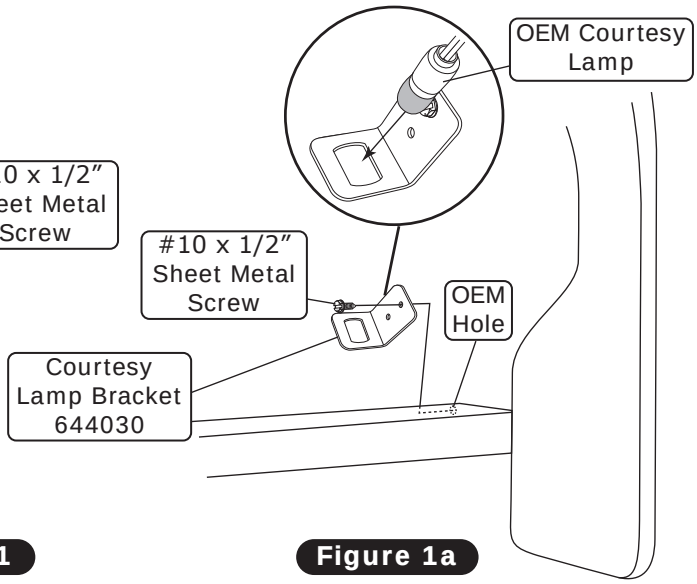

Figure 1a

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Center Console Trim Modification

On a workbench perform the following:

1. Measure 5 ¼" from the end of the console trim panel on the passenger side and mark (See Photos 1 and 2, below).
2. Remove area shown in Photo 3, below.
3. Remove the center console floor trim and passenger-side center console floor plate.
4. Cut and remove 6" from the center console floor trim as shown in Figure 1, below.
5. Cut and remove 5 ¼" from the center console floor plate as shown in Figure 1, below.
6. Reinstall the center console floor plate and floor trim.
7. Install control switches and wiring (See Control Panel instructions).

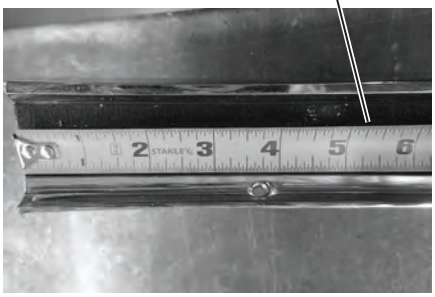

Photo 1

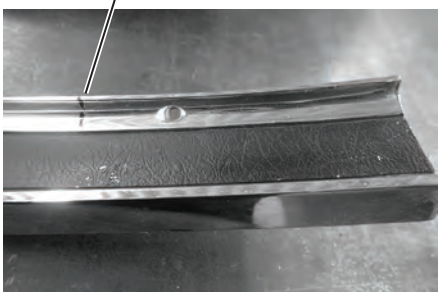

Photo 2

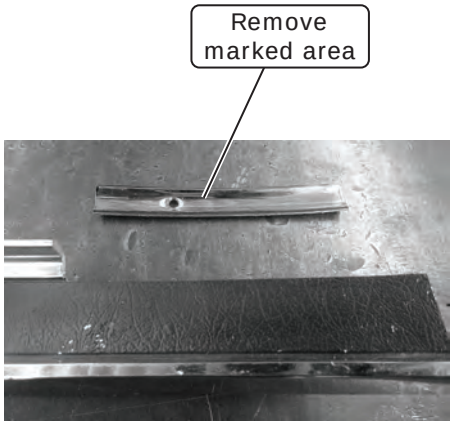

Photo 3

For Vehicles Equipped with Floor Trim

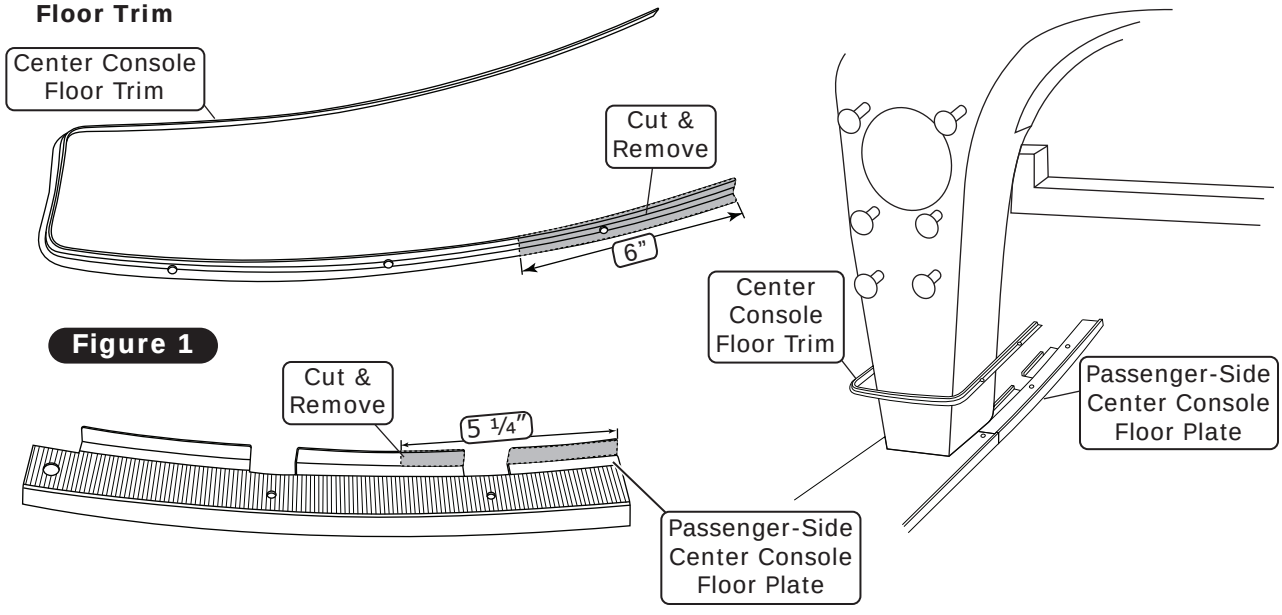

Figure 1

Duct Hose Installation

NOTE: If the 16" piece of 3" hose was not attached during the evaporator module installation it will be necessary to install the duct hose from the driver side under dash area.

1. Install the 3" to 3" hose adapter onto the 3" defrost hose (See Photo 1, below).
2. Apply Velcro strip to the bottom side of the elbow (See Photo 2, below). Install a 16" piece of 3" duct hose to the elbow and to the defrost duct (See Photo 3, below). Secure the defrost elbow to the top of the evaporator module using the previously installed Velcro (See Photo 3, below).
3. Install a 15" piece of 2" duct hose onto the 2" hose adapter reducers (See Photo 4, below).
4. Install the 2" adapters onto the 1st and 2nd outlets on the upper dash plenum on the evaporator module (See Duct Hose Routing, Page 33).
5. Attach the 2" duct hose to each side of the OEM center dash louver adapter.
6. Install (from the driver side of the console) the 180° 2 ½" hose adapter to the 3rd dash outlet of the dash plenum. Install a 5" piece of duct hose onto this adapter (See Duct Hose Routing, Page 33).
7. Install 16" piece of 2 ½" duct hose onto the last outlet on the dash plenum, route to the driver side (See Duct Hose Routing, Page 33).

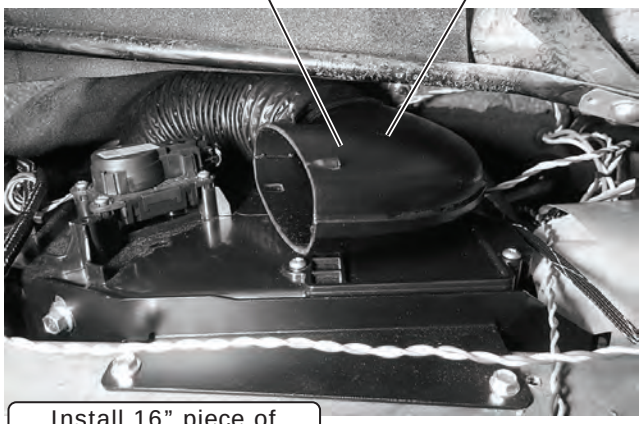

Photo 1

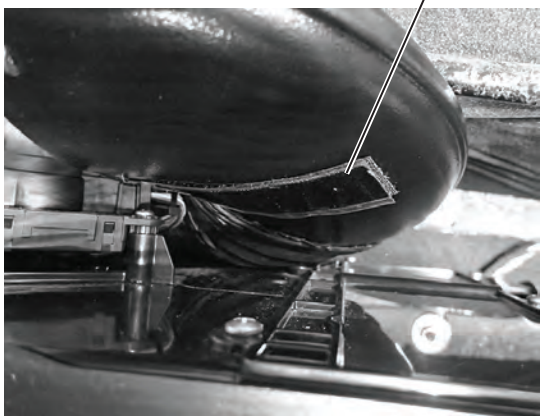

Photo 2

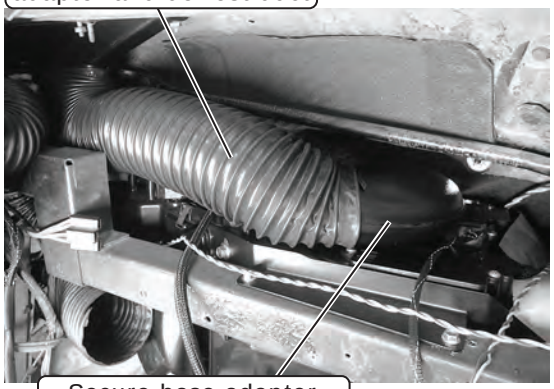

Photo 3

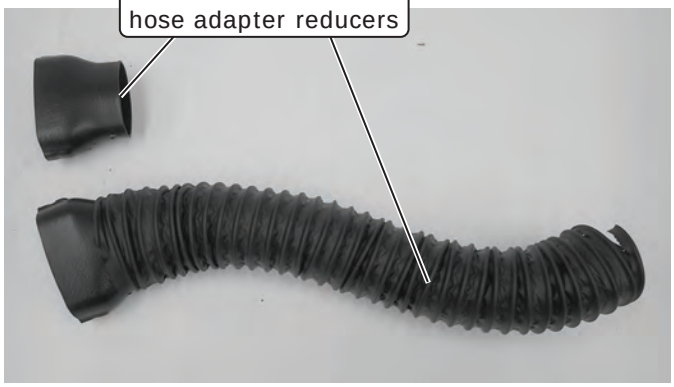

Photo 4

Duct Hose Installation (Cont.)

8. Using (2) spring clips, install the floor with 2” hose adapter plenum onto the front of the evaporator module (See Photos 5 and 6, below).
9. Route a 12” piece of 2” duct hose from the floor plenum to the driver side.
10. Attach the 2” floor plenum duct hose to the driver-side console panel assembly (See Photo 7, below). **NOTE: See control panel installation instructions before installing console panel.**
11. Install control switches and wiring (See conrol panel instructions).
12. Install driver-side fresh air cable assembly in new driver-side console panel.
13. Install driver- and passenger-side console panels using OEM screws as shown in Figure 1, below. **NOTE: Lower mounting hole must be drilled in OEM console to mount new console. Use driver/passenger console panel as guide to drill 3/16” hole in console. Relocate OEM J-nut and attach as shown.**

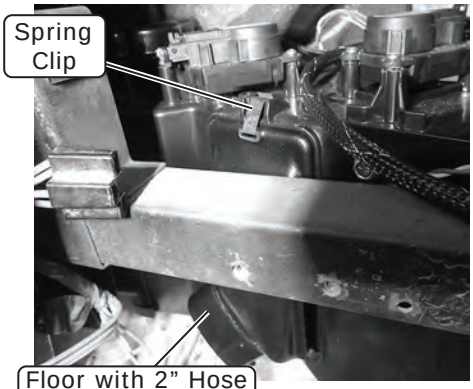

Photo 5

Photo 6

Photo 7

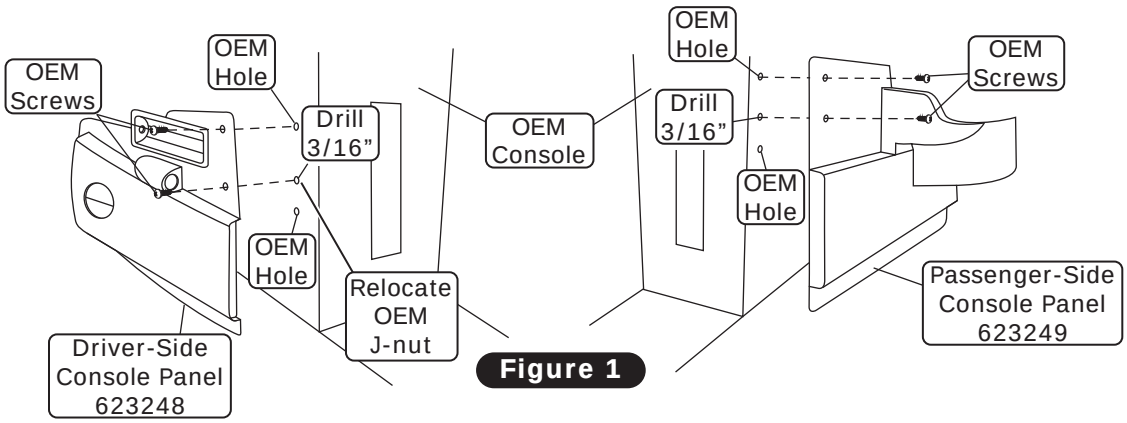

Figure 1

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Driver-Side Under Dash Louver Installation

1. Remove the (2) bolts and nuts from the steering column brace and secure the louver housing to the under dash steering column brace using the (2) OEM bolts and nuts as shown in Figure 1, below.

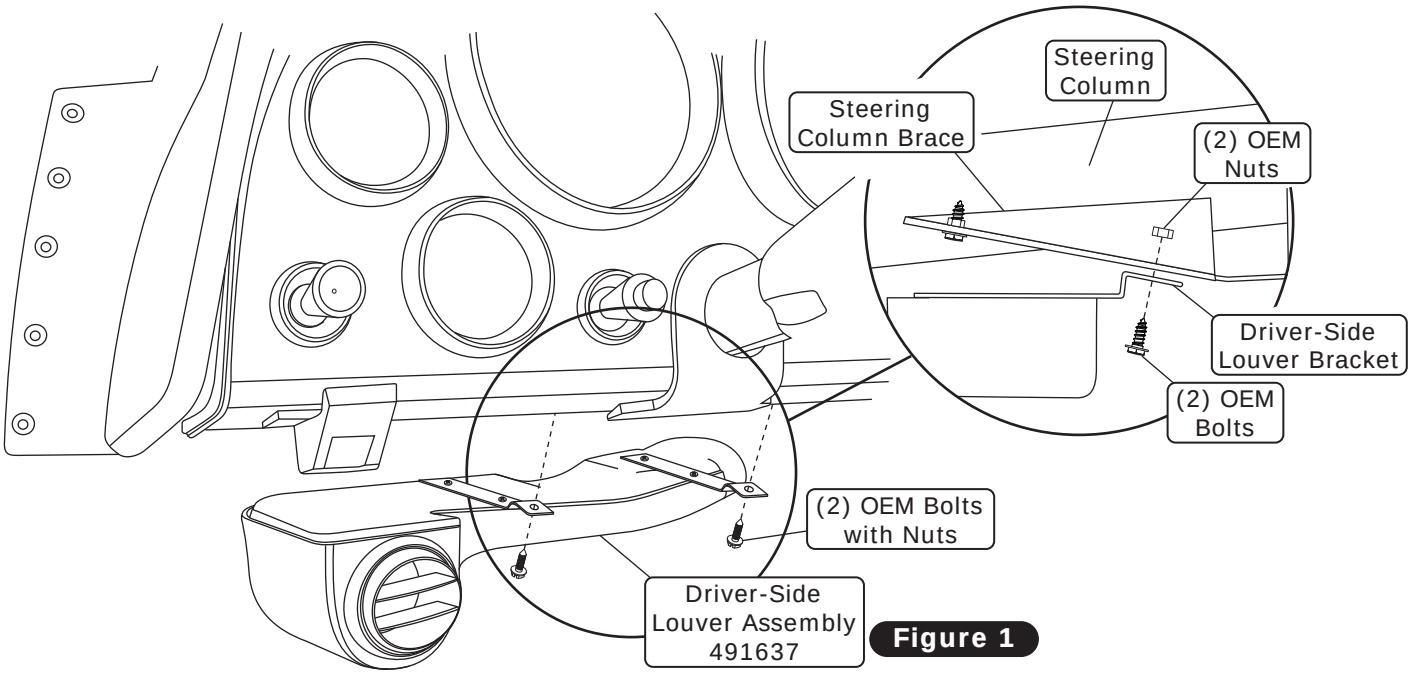


Figure 1

Glove Box Installation

1. Install (9) #8 U-nuts onto the glove box (See Figure 1, below).
2. Peel the backing from the Velcro and attach the ECU to the back of the glove box (See Photos 1 and 2, below).
3. Install the new glove box using the OEM screws.

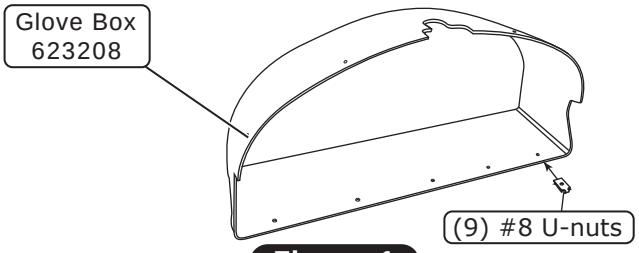


Figure 1

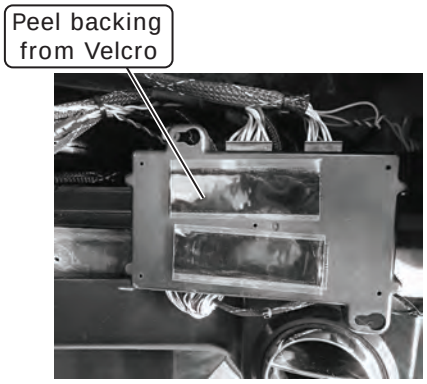


Photo 1

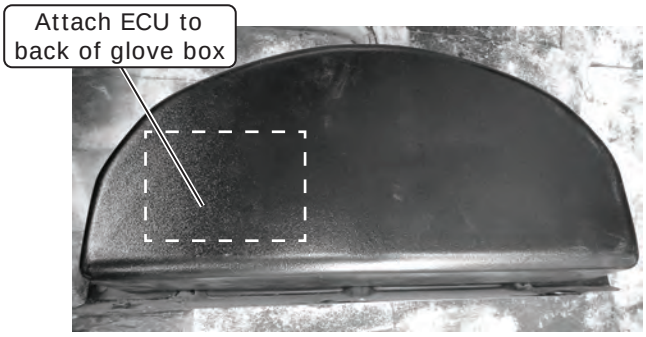


Photo 2

Passenger-Side Under Dash Louver Installation

1. Connect the 2 ½" duct hose to the passenger under dash louver.
2. Align the indentions on the passenger-side under dash louver to the glove box door hinges (See Photos 1 and 2, below).

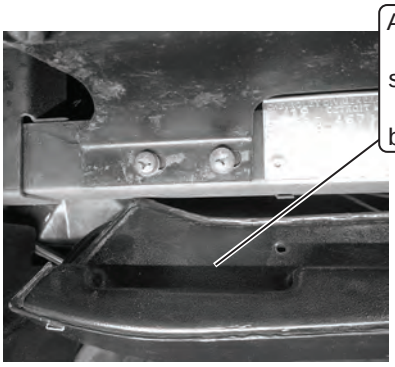


Photo 1

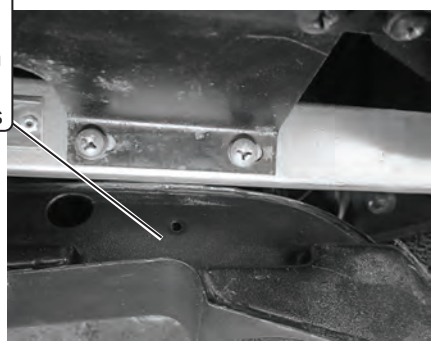


Photo 2

Passenger-Side Under Dash Louver Installation (Cont.)

3. Using (2) #12 x 1/2" self-tapping screws, secure the under dash louver to the dash brace (See Figure 1, below).

4. Install (2) 1/2" plastic plugs in the base of the louver assembly.

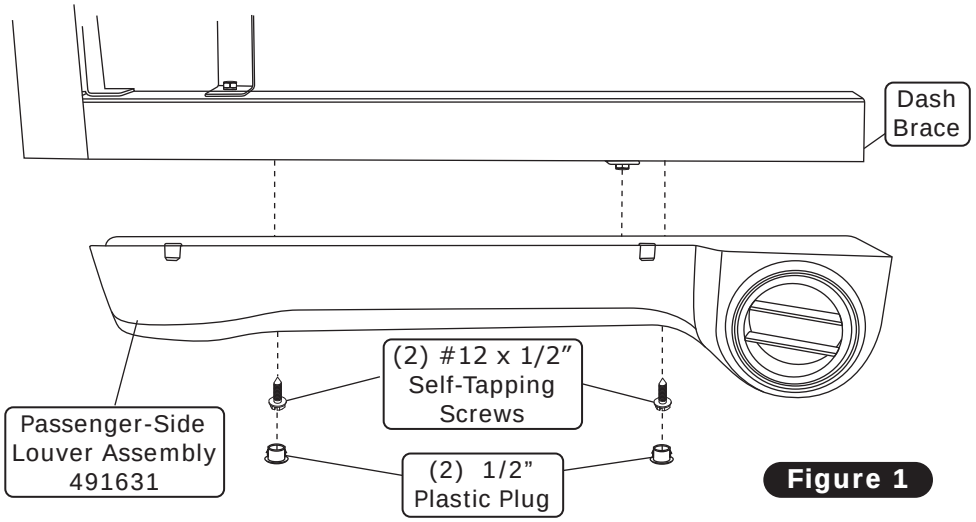


Figure 1

Drain Hose Installation

1. Route the drain hose through the firewall and connect it to the evaporator drain.

2. Cut the drain hose 1 ½" from the firewall (See Photo 1, below).

3. Install the drain elbow onto the remnants of the drain hose (See Photo 2, below).

4. Install the drain elbow into the drain tube protruding from the firewall (See Photo 3, below).

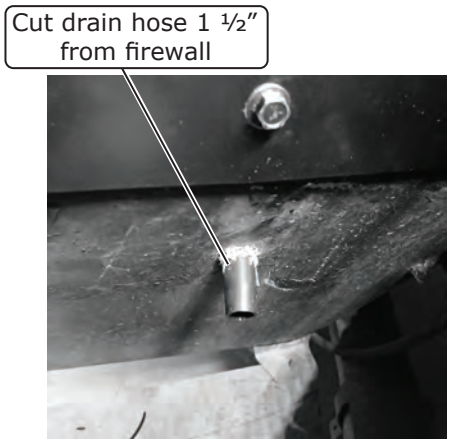


Photo 1

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

NOTE: When reinstalling parts, some may need modification to fit correctly.

1. Reinstall all previously removed parts.
2. Relocate OEM driver-side fresh air cable assembly to the OEM passenger-side mounting location (See Figure 1, below).
3. Fill the 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.
4. Double check all fittings, brackets and belts for tightness.
5. Vintage Air recommends that all A/C systems be serviced by a certified automotive air conditioning technician.
6. Evacuate the system for a minimum of 45 minutes prior to charging and leak check prior to servicing.
7. Charge the system to the capacities stated on the information page (See Page 4), of this instruction manual.
8. See Operation of Controls procedures on Page 37.

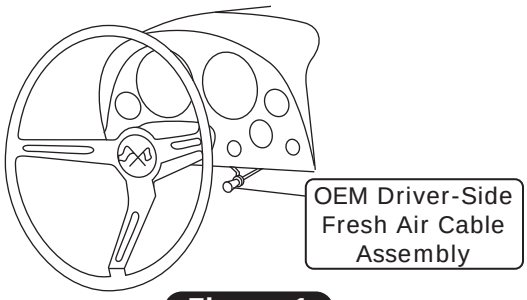


Figure 1

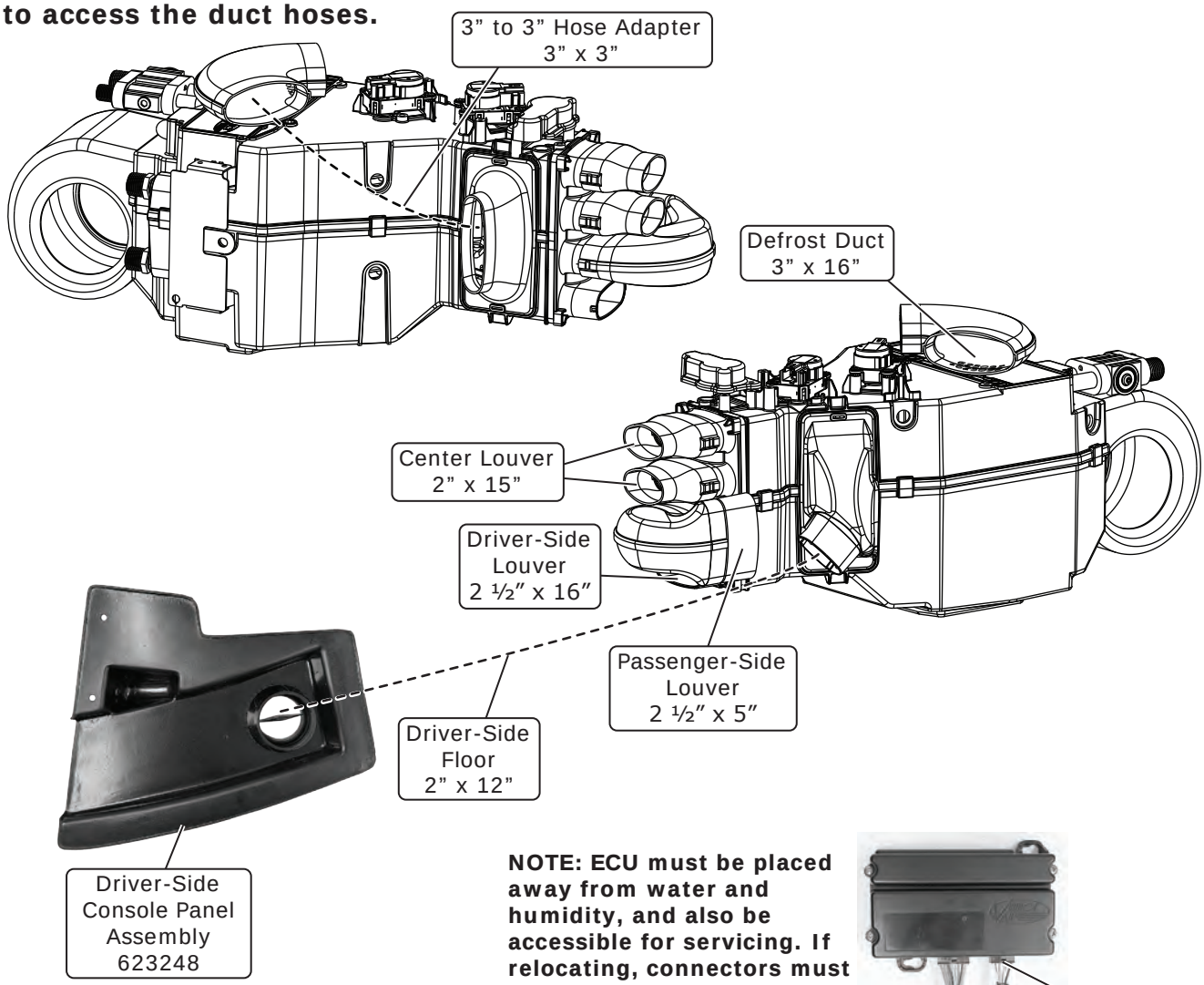
Duct Hose Routing

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.

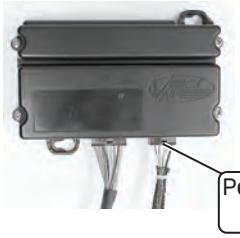
1. Stretch the duct hose until there is no slack, measure, mark and cut hose to size (See Photo 1, below).

Photo 1

NOTE: To ensure the duct hose will not disconnect from the plenums, use tie wraps or screws to secure them if loose. Once the dash is installed, it will be very difficult to access the duct hoses.



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

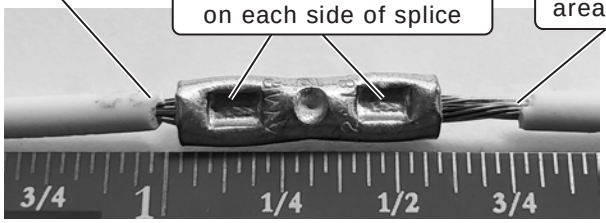


Photo 1

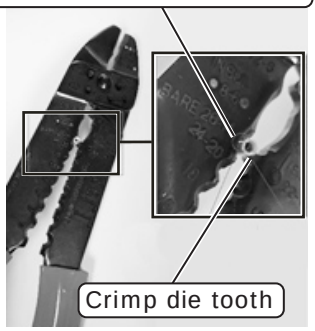


Photo 2

Good Ring Terminal Crimp

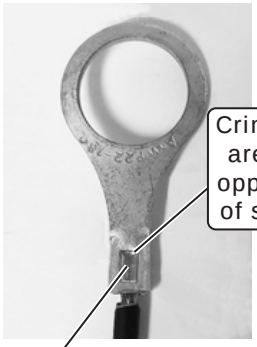


Photo 3

Bad Ring Terminal Crimp

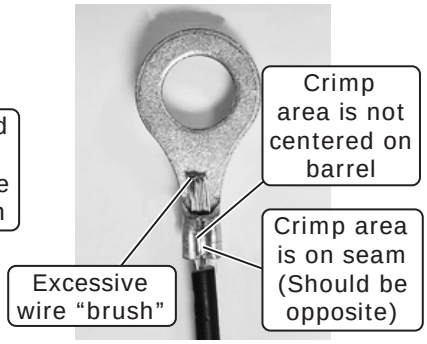


Photo 4

Photo 5

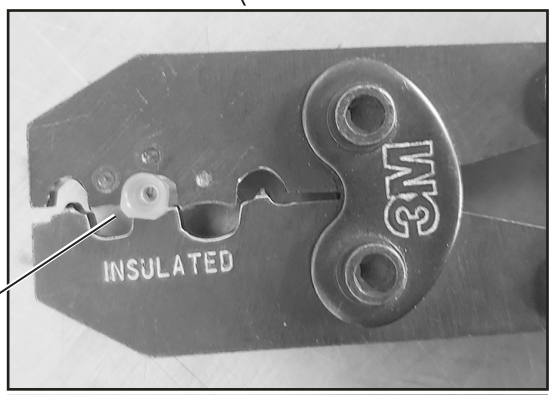
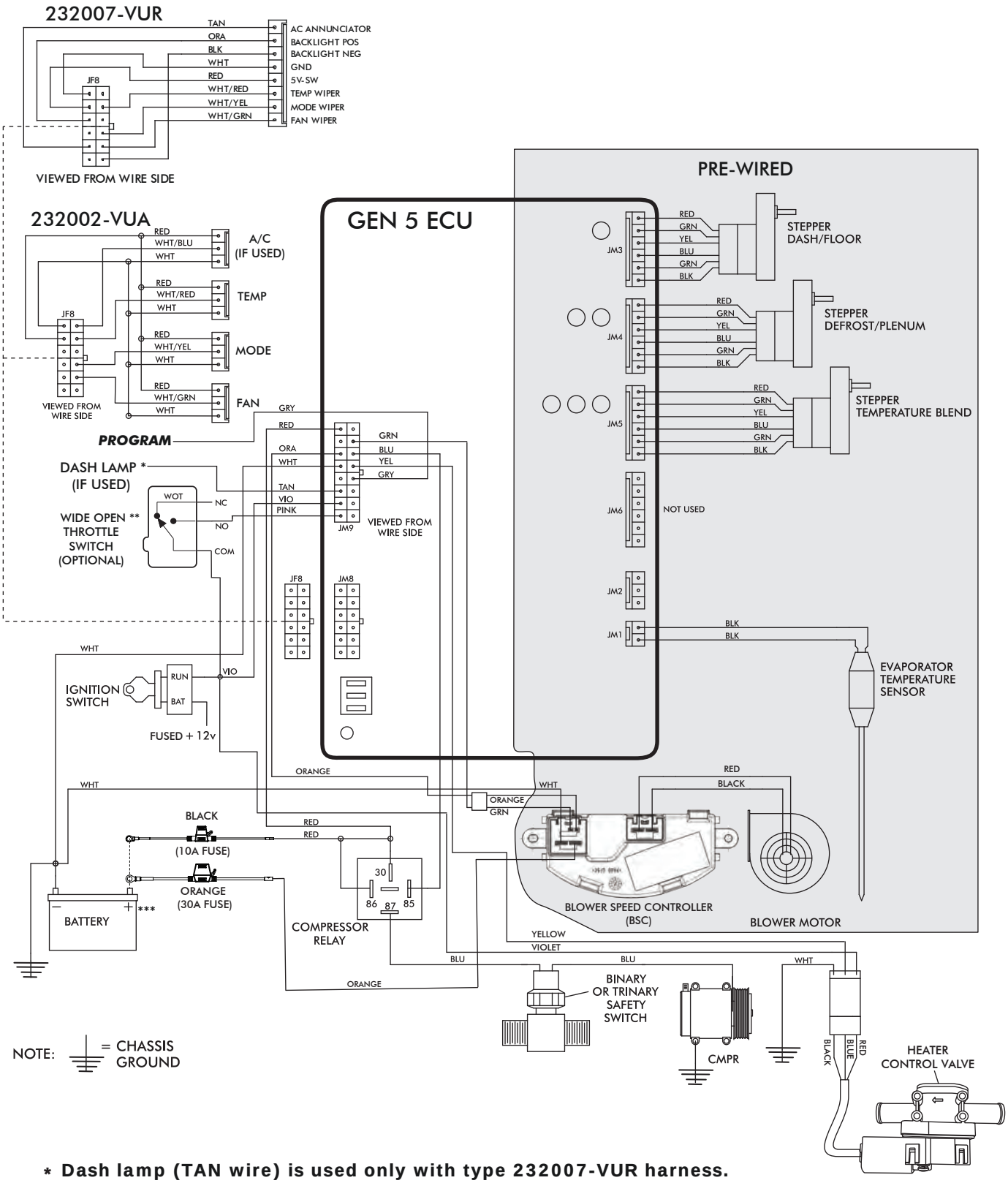


Photo 5a

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.

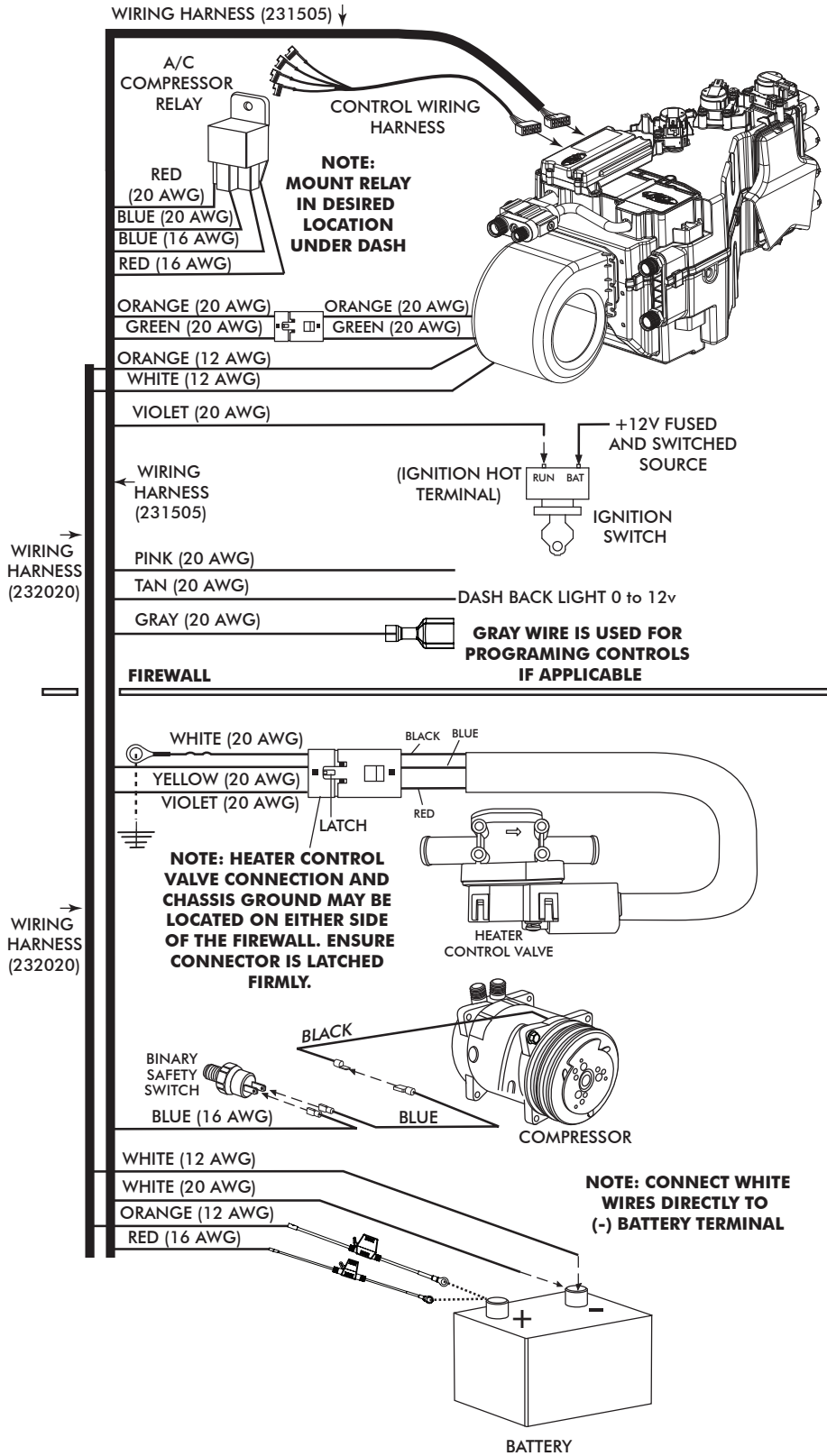
Gen 5 Wiring Diagram



*** 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.**



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 16 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.

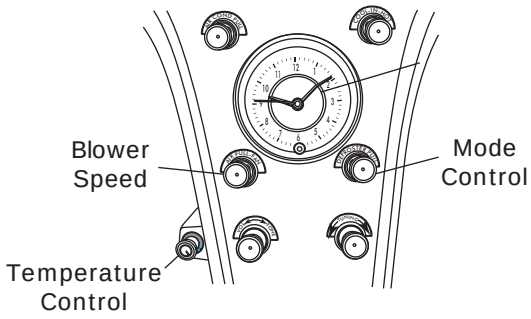
Operation of Controls

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. **NOTE: For proper control panel function, refer to control panel instructions for calibration procedure.**

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

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

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

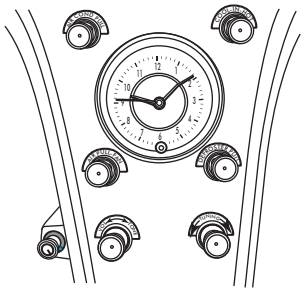


A/C Operation

Blower Speed
Adjust to desired speed.

Mode Control
Rotate the knob to the left to direct air flow to the dash vents.

Temperature Control
Rotate the temperature knob all the way right to the COLD position to engage compressor. (Rotate knob left or right to adjust desired temperature)

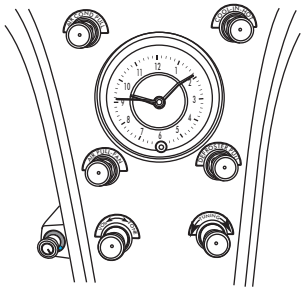


Heat Operation

Blower Speed
Rotate knob right to desired blower speed from OFF to HI.

Mode Control
Rotate the knob to the center to direct air flow to the floor.

Temperature Control
Rotate the temperature knob all the way left to the HOT position. (Rotate knob left or right to adjust desired temperature)

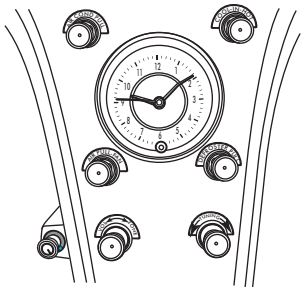


Defrost/De-fog Operation

Blower Speed
Rotate knob right to desired blower speed from OFF to HI.

Temperature Control
Rotate knob left or right to adjust desired temperature. (Compressor is automatically engaged)

Mode Control
Rotate the knob to the right to direct air flow to the DEFROST vents.



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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 (564204)

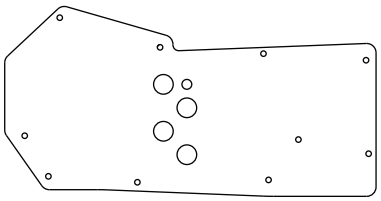
No.	Qty.		Part No.	Description
1.	1	_____	765125	Gen 5 Magnum Module with 444 ECU
2.	1	_____	784204	Accessory Kit

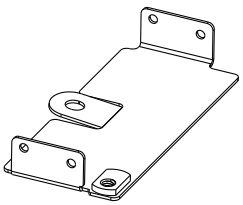
Checked By: _____
Packed By: _____
Date: _____

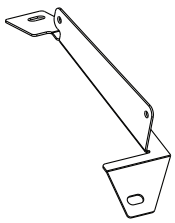
1

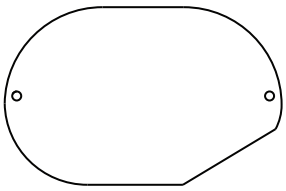
Gen 5 Magnum Module with 444 ECU 765125

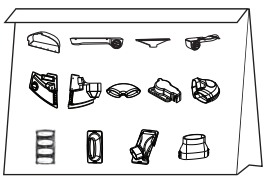
2

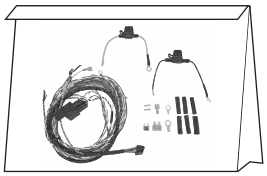


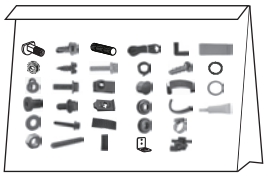












Accessory Kit 784204

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