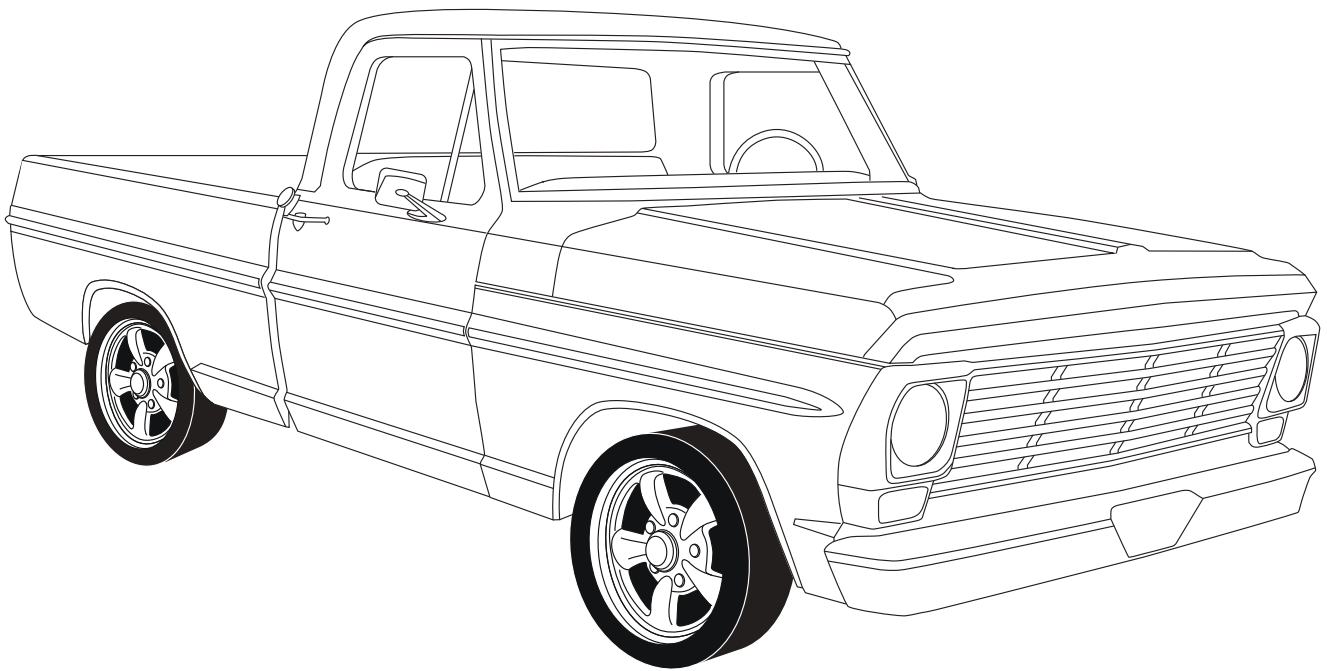




# 1967 Ford F-100

Gen 5 Evaporator Kit  
(751661)



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**A detailed tech video outlining the installation process for the Gen IV kit (some parts may differ from the Gen 5 kit) is available on Vintage Air's YouTube channel at <http://bit.ly/2kyHG5C>. Viewing the tech video along with the written instructions will provide the installer the most detailed installation procedure.**



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## Packing List: Evaporator Kit (751661)

No.	Qty.	Part No.	Description
1.	1	765125	Gen 5 Magnum Module with 444 ECU
2.	1	791661	Accessory Kit

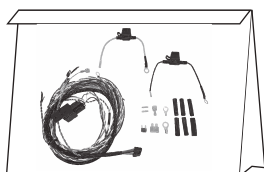
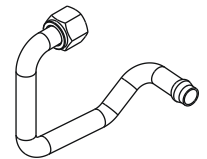
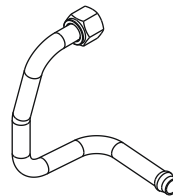
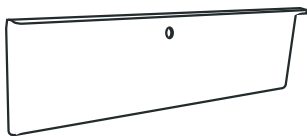
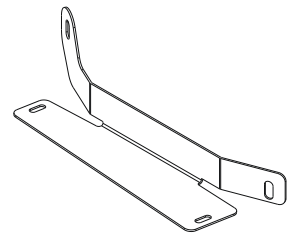
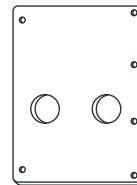
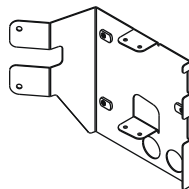
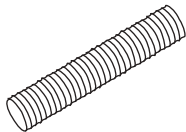
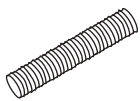
**\*\* Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

1

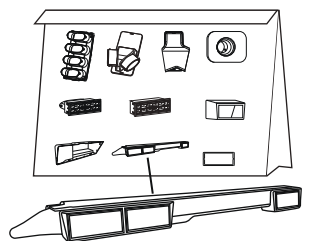
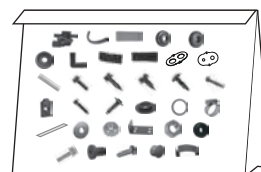
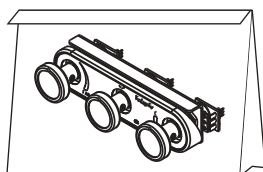


Gen 5 Magnum Module  
with 444 ECU  
765125

2



Accessory Kit  
791661



491663

**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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## Important Notice - Please Read

Some F Series trucks are equipped with a 3-speed manual transmission with a "granny" 1st gear. These configurations use a long shift lever; the most popular in this generation is the 4-speed New Process 435 transmission (Identified as "A" on VIN plate). The shift lever moves approximately 2" further forward to engage 1st gear compared to 3rd gear. This additional travel may cause an interference with the underdash louver bezel, and will require a modification to the shift lever in order to clear it.

## Engine Compartment Disassembly

**NOTE:** Before starting the installation, check the function of the vehicle (horn, lights, etc.) for proper operation, and study the instructions, illustrations, and diagrams. Retain OEM bolts, washers and nuts, as some hardware will be reused.

Perform the following:

1. Disconnect the battery.
2. Place a jack stand under the axle bar on the passenger side of the vehicle (See Photo 1, below), then remove the passenger-side front tire.
3. Drain the radiator.
4. Loosen the cable clamp and disconnect the cable from OEM heater control valve (See Photo 2, below).
5. Disconnect and remove the (2) heater core heater hoses at the firewall, the intake, and the water pump (discard) (See Photos 3, 4, and 5, below).
6. From the engine compartment, remove the (3) OEM heater core mounting nuts from the firewall (See Photo 6, below).

Place jack stand  
under axle bar

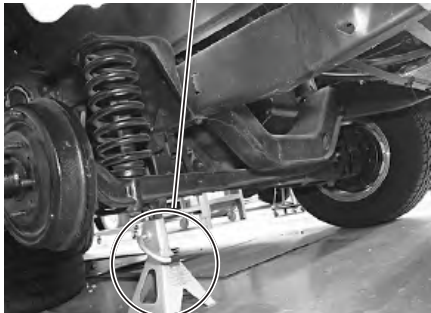


Photo 1

Disconnct cable    Heater control valve

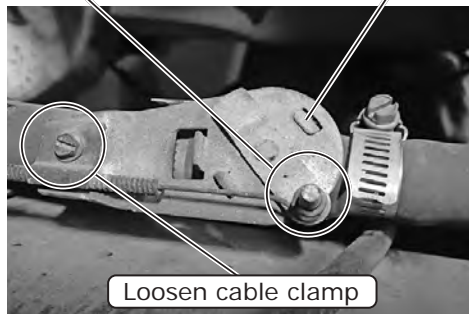


Photo 2

Remove (2) heater  
hoses at firewall



Photo 3

Remove heater  
hose at intake



Photo 4

Remove heater hose at  
water pump

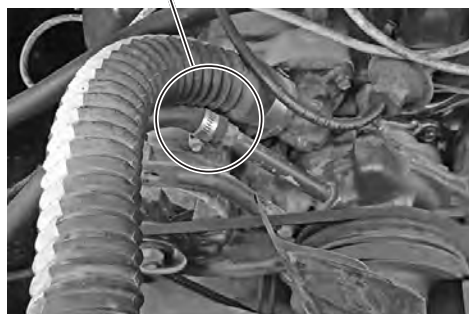


Photo 5

Firewall    Remove (3) heater core  
mounting nuts

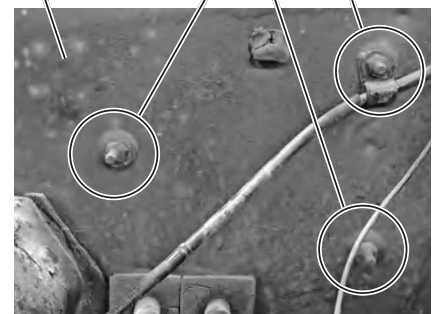


Photo 6

Engine Compartment  
View



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## Passenger Compartment Disassembly

1. Remove the glove box door by removing the (2) screws on the door hinge and the one screw on the cable (See Photo 1, below).
2. Remove the glove box by removing the (6) screws around the glove box and (2) glove box door latch screws (See Photo 2, below). **NOTE: The door latch screws must be removed to allow clearance when installing the new glove box.**
3. Disconnect the cables and wiring from the OEM heater assembly.
4. Remove the OEM heater assembly by separating the rubber boot from fresh air inlet assembly (discard) (See Photo 3, below).
5. Remove the fresh air inlet assembly from the kick panel by removing the (5) OEM screws (See Photo 4, below).

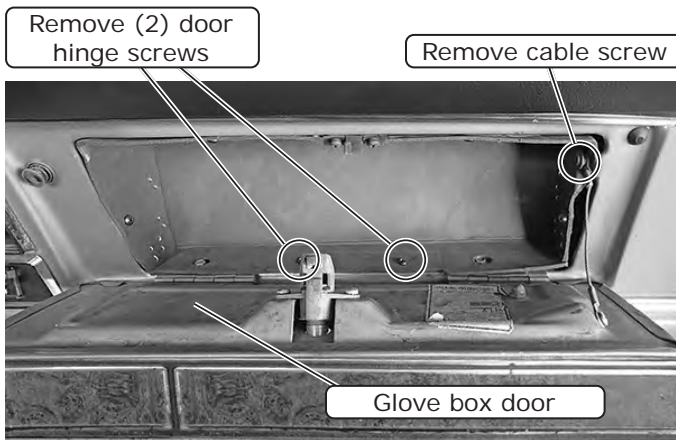


Photo 1

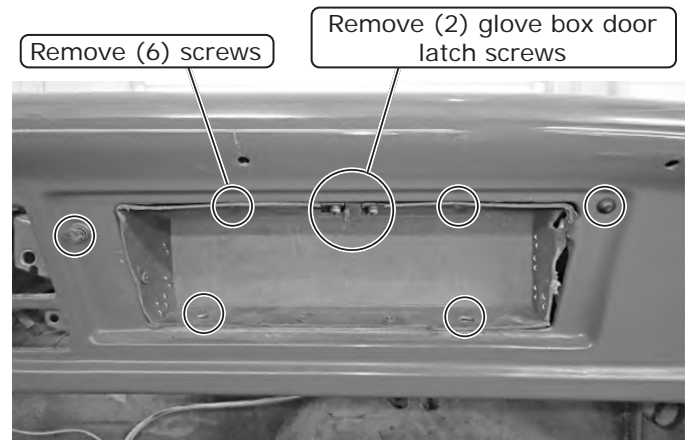


Photo 2

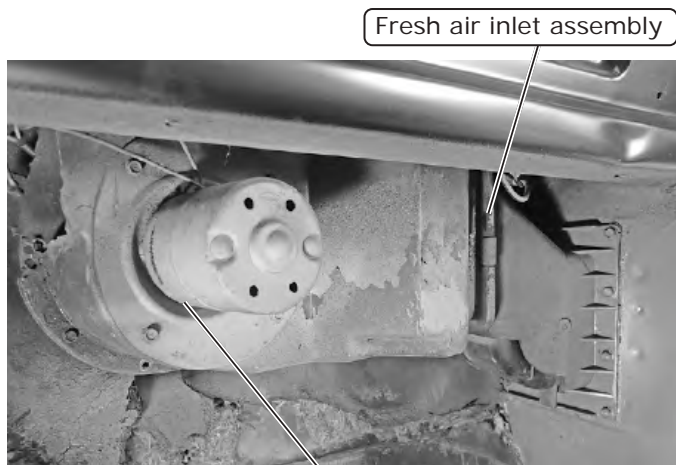


Photo 3

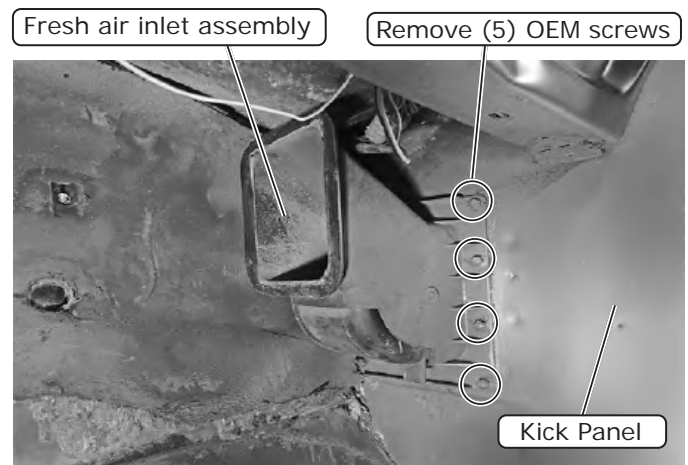


Photo 4



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## Passenger Compartment Disassembly (Cont.)

6. Disconnect the control panel wiring and plugs.
7. To remove the heater control switch and pull knobs, perform the following:
  - A. Remove the fan switch knob by loosening the set screw on the knob shaft (See Photo 5, below).
  - B. Unscrew the thread adapter counterclockwise and remove (See Photo 6, below).
  - C. Remove the fan switch bezel (See Photo 6, below), and the rest of the fan switch assembly out from behind the dash.
  - D. Remove the remaining (2) pull knobs by unscrewing the (2) jam nuts from the back of the dash (See Photo 7, below).
  - E. Remove the bracket (See Photo 7, below), then remove the pull knobs from the front of the dash (See Photo 8, below).
8. Disconnect and remove the radio.

Loosen set screw

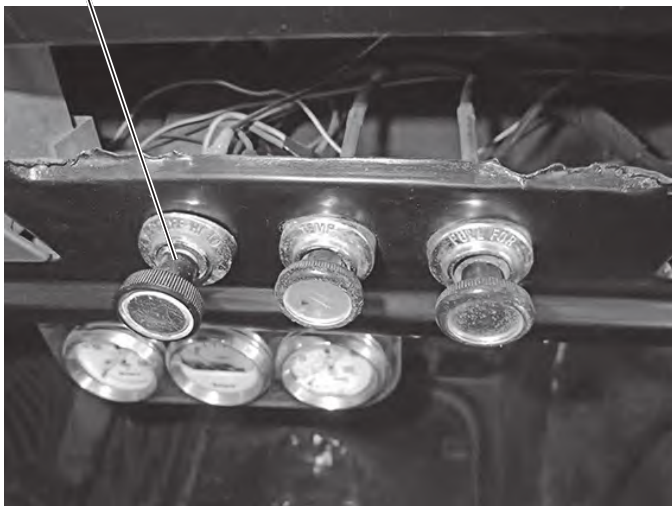


Photo 5

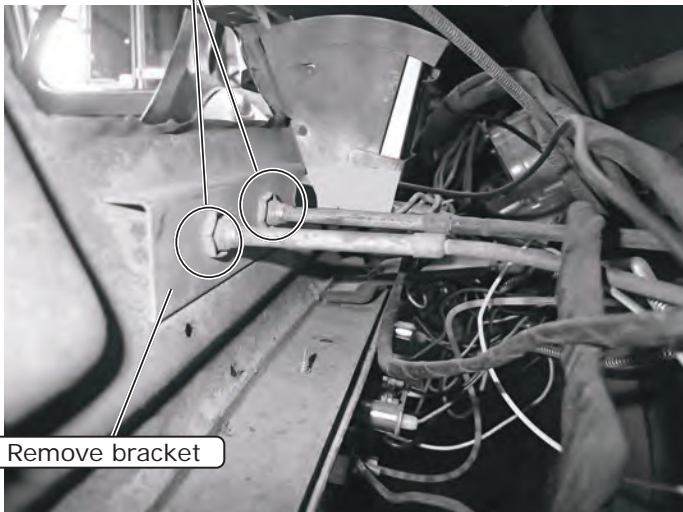
Unscrew thread adapter and remove



Remove fan switch bezel

Photo 6

Remove (2) jam nuts



Remove bracket

Photo 7

Remove (2) pull knobs

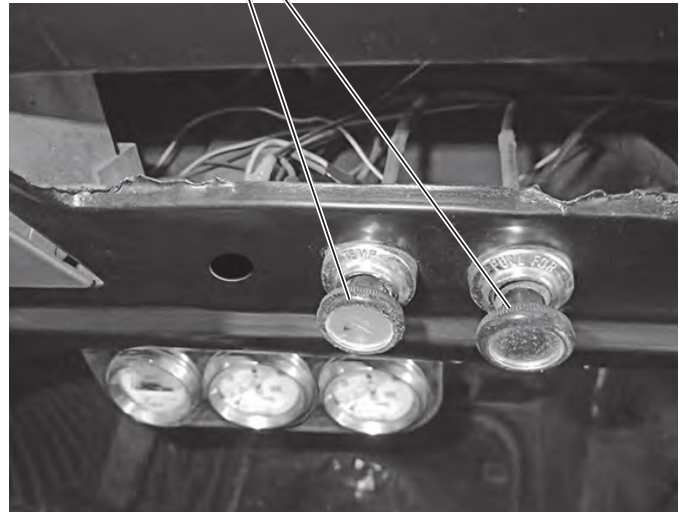


Photo 8

## Passenger Compartment Disassembly (Final)

9. Disconnect the speedometer cable by loosening the speedometer cable nut and sliding it out of the instrument cluster (See Photo 9, below).
10. Remove the (8) instrument cluster bezel mounting screws (retain) (See Photos 10 and 11, below).
11. Unplug the instrument cluster wiring, and remove the instrument cluster (See Photo 12, below).
12. Remove the dash pad by removing the (14) dash pad nuts (retain) (See Photo 13, below). **NOTE: The location of the dash pad nuts is shown in Photo 13, below.**
13. Remove the defrost ducts and hoses from the dash defrost outlets.

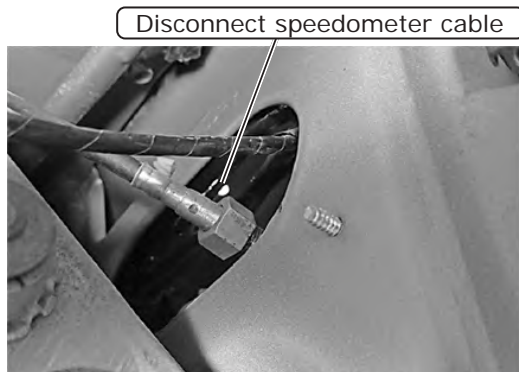


Photo 9

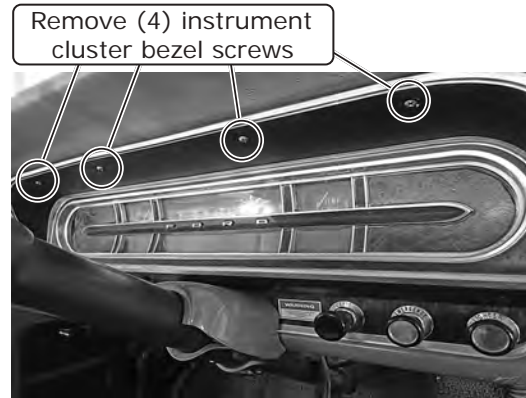


Photo 10

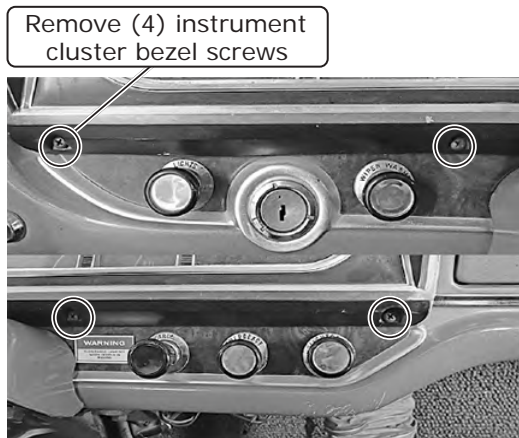


Photo 11

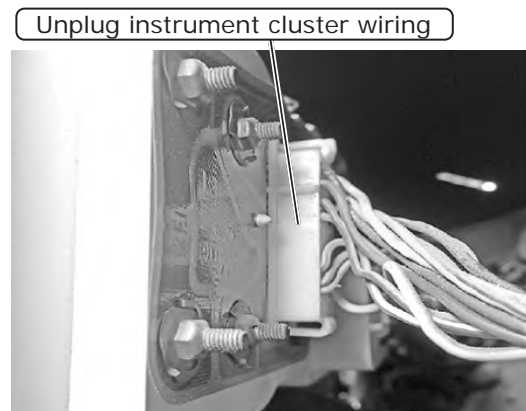


Photo 12

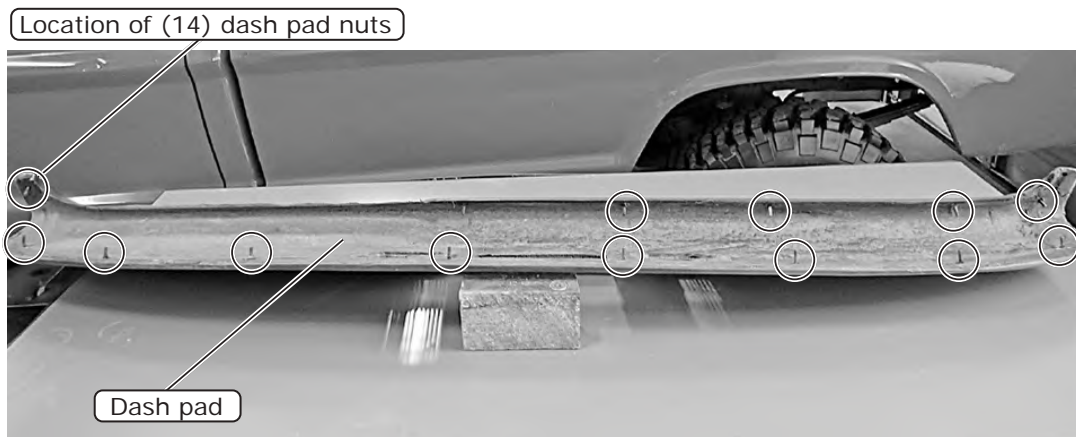


Photo 13



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## 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.

## Pulleys

1. In most instances, the belt lengths will remain the same.

## Defrost Duct Installation

1. Locate the defrost ducts (See Photo 1, below).
2. Place a defrost duct into each of the dash defrost duct outlets (See Photos 2 and 3, below).
3. From under the dash, mark the (2) mounting holes onto the defrost ducts.
4. Remove the defrost ducts, and drill (2) 11/64" holes into each duct (See Figure 1, below).
5. Install each defrost duct into the dash defrost duct outlet, and secure them using (2) #8 x 1/2" pan head screws (See Photo 5, below).
6. Reinstall the dash pad at this time.

Defrost Duct  
491655



Photo 1

Defrost Duct outlets

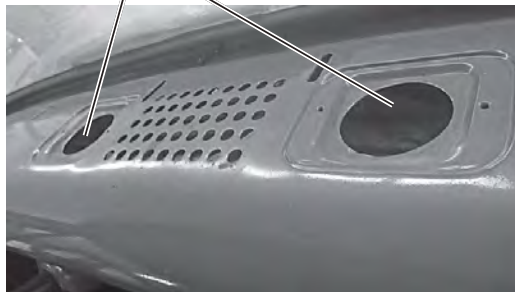


Photo 2

Place Defrost Duct  
into dash opening



Photo 3

Mark and drill  
(2) 11/64" holes

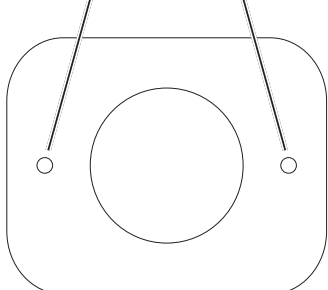


Photo 4

Place the Defrost Duct into  
dash defrost duct outlet



Photo 5

(2) #8 x 1/2"  
Pan Head Screws



Photo 6



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## Passenger-Side Wheel Well and Firewall Modification

1. Remove the passenger-side inner fender kick panel grommet (discard) (See Photo 1, below).
2. Center the firewall A/C hose cover plate onto the passenger-side inner fender kick panel opening. Using the cover plate as a template, mark and drill (2) 5/32" holes (See Photo 2, below).
3. Measure and mark the firewall insulation as shown in Photo 3, below. **NOTE: The measurement starts at the kick panel and runs along the section where the firewall meets the floorboard.**
4. Remove the measured section of insulation from the firewall, and clean the area (See Photo 4, below).
5. Remove the OEM firewall insulation retainer (See Photo 5, below).
6. Enlarge the OEM firewall insulation retainer hole to 5/8" (See Photo 6, below).

Passenger-Side inner Fender Kick Panel Grommet

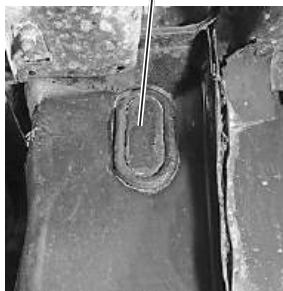


Photo 1

Firewall A/C Hose Cover Plate 646954

Mark and drill (2) 5/32" holes

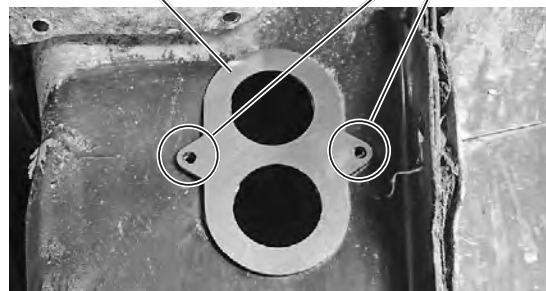


Photo 2

Mark and measure firewall insulation

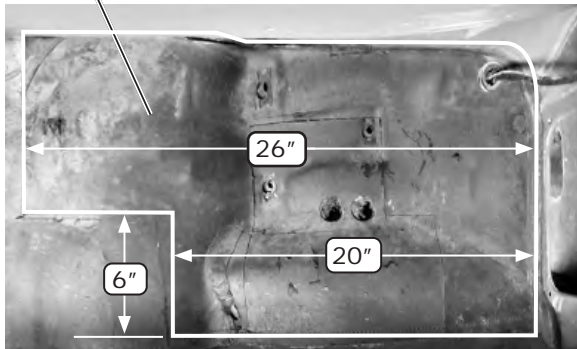


Photo 3

Remove insulation and clean area

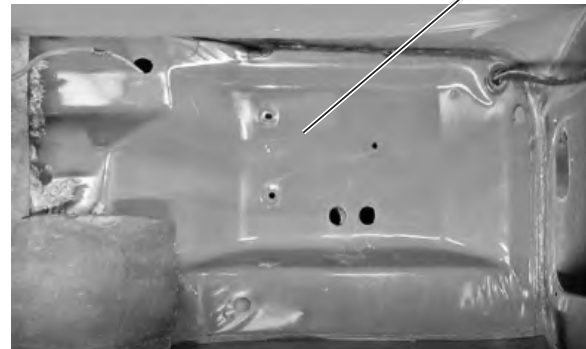


Photo 4

Remove OEM firewall insulation retainer



Photo 5

Passenger Side

Enlarge hole 5/8"



Photo 6



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## Passenger-Side Wheel Well and Firewall Modification (Cont.)

- Using the heater line opening closest to the passenger side for reference, mark and drill a 1 1/4" hole directly under the heater line hole on the beveled ledge (See Photos 7 and 8, below). **NOTE: Do not enlarge the hole more than 1 1/4" for the grommet installation.**
- Install a 1/2" ID x 1 1/4" OD grommet into the 1 1/4" hole (See Photo 9, below).

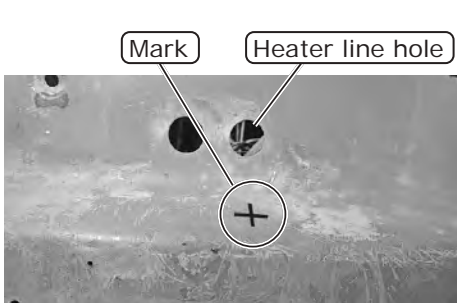


Photo 7

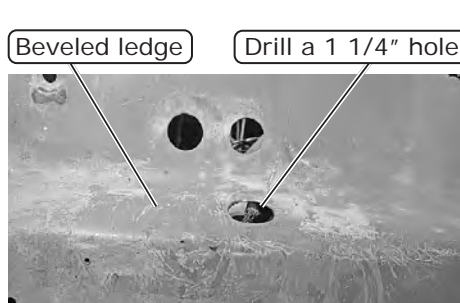


Photo 8

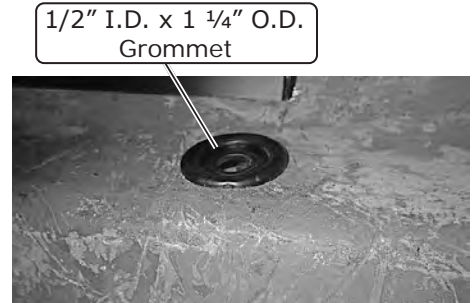


Photo 9

## Engine Compartment, Passenger-Side Inner Fender Modification

- On the passenger-side inner fender under the battery tray, locate the OEM hole (See Photo 1, below). Enlarge the hole to 7/8" to accommodate the #10 A/C hose bulkhead fitting (See Photo 2, below).
- Directly under the recently enlarged hole, in the middle of indented section of the inner fender, mark and drill a 9/32" hole for the compressor lead grommet (See Photo 3, below).

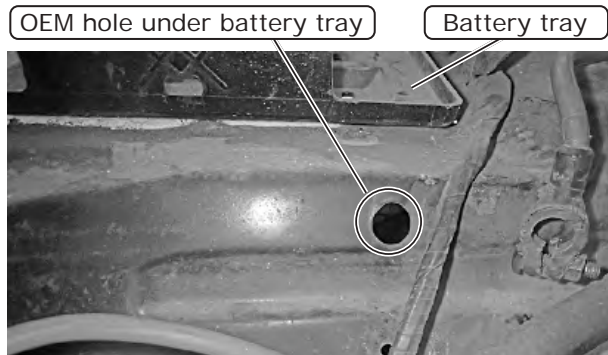


Photo 1

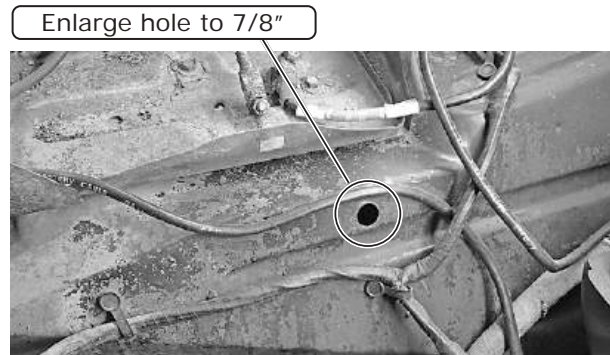


Photo 2

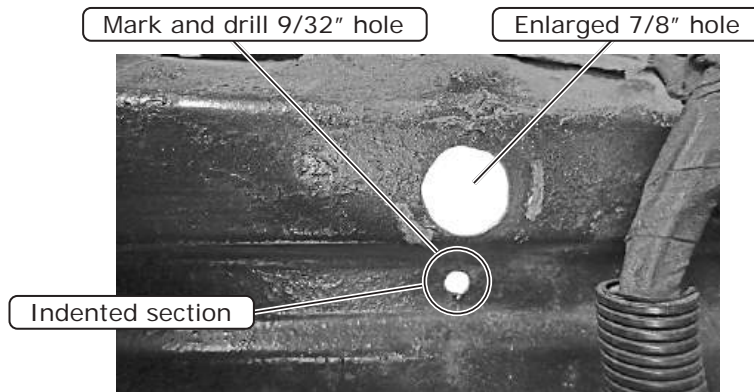


Photo 3



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## Firewall Insulation

**NOTE:** For proper operation of the evaporator unit, Vintage Air recommends using heat-blocking insulation in the area around the subcase (firewall, inner cowl and kick panel). Due to tight clearance for the evaporator unit between the firewall and dash, Vintage Air recommends an insulation thickness of no more than 1/4".

1. Locate the evaporator firewall bracket as shown in Photo 1, below. Place the evaporator firewall bracket onto the firewall, and trace around the base of the bracket as shown in Photos 2, 3, and 4, below.
2. Using spray adhesive, install the new heat-blocking insulation in the area of the firewall that was removed, being careful not to cover the marked area from the evaporator bracket base and the 1/2" ID x 1 1/4" OD grommet (See Photos 5 and 6, below). **NOTE:** During the evaporator installation, if the evaporator unit does not fit properly, look for places where the insulation may be interfering with the evaporator clearance. Trim the insulation as needed.

Evaporator Firewall Bracket 647166

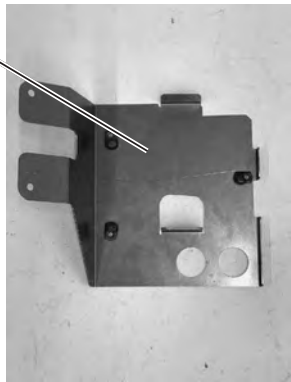


Photo 1

Temporarily install Evaporator Firewall Bracket



Photo 2



Photo 3

Trace around base of Evaporator Firewall Bracket



Photo 4

Apply spray adhesive on area where insulation was removed



Photo 5

Do not install insulation inside Evaporator Firewall Bracket tracing marks

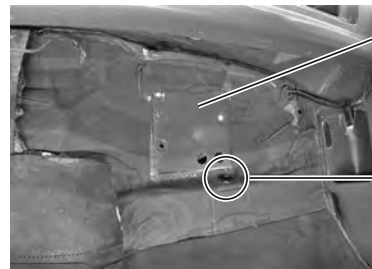


Photo 6

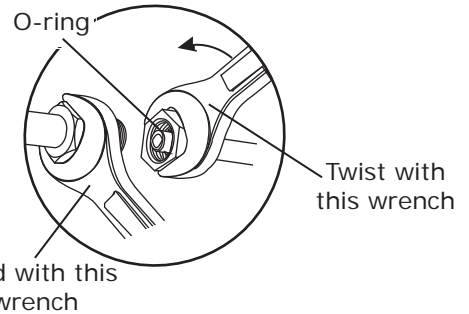
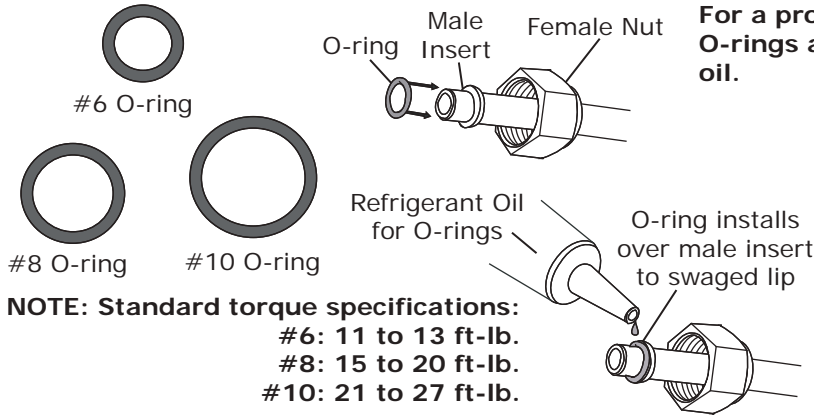
Do not install insulation over 1/2" I.D. x 1 1/4" O.D. grommet



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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.

## A/C Hose Routing & Kick Panel Cap Installation

**NOTE: Soapy water may be used to ease insertion of the A/C hoses through the grommets, but be sure the hoses are capped to prevent water from getting inside.**

1. Locate the passenger-side headlight wiring hole on the core support, and measure 1 1/2" below the hole. Drill a 7/32" hole as shown in Photo 1, below.
2. Locate the #10 bulkhead/evaporator A/C hose (See Photo 2, below), and install the end of the hose with the 90° hose fitting through the inner fenderwell (See Photo 3, below). **NOTE: The 90° bulkhead fitting will restrict the A/C hose from going through the inner fenderwell (See Figure 1, and Photo 3, below).**
3. Secure the #10 A/C hose to the core support using a 1" Adel clamp, a 10-32 x 1/2" screw and a 10-32 nut with star washer (See Photo 4, below).
4. Locate the #6 drier/evaporator hose (See Photo 2, below), and install it onto the drier with a properly lubricated O-ring (See Figure 1, above, and Photo 5, below).

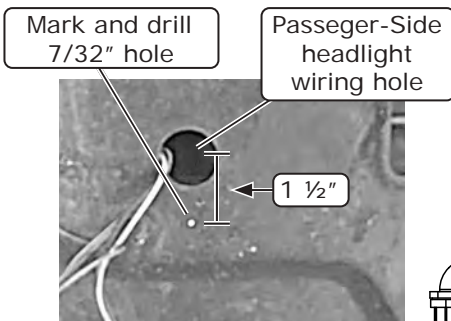


Photo 1

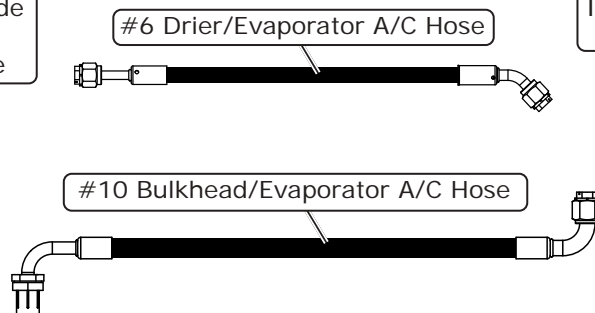


Photo 2

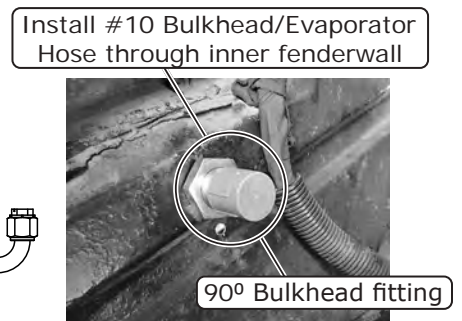


Photo 3

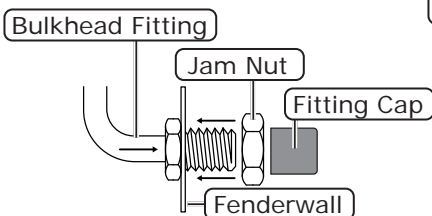


Figure 1

Secure #10 A/C hose to core support with 1" Adel Clamp, 10-32 x 1/2" screw and 10-32 nut with star washer



Photo 4

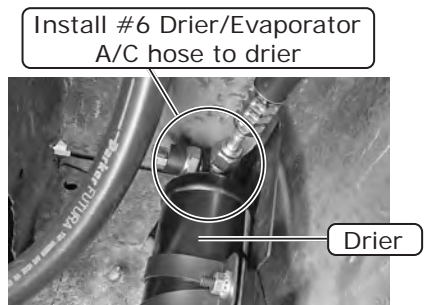


Photo 5

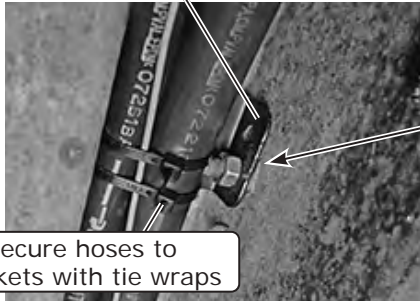


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# A/C Hose Routing & Kick Panel Cap Insullation (Cont.)

5. Route the A/C hoses into the channel on the inner fender, and install the (2) A/C hose fenderwell brackets onto the OEM bolts using (2) 5/16" nuts (See Photos 5, 6 and 7 below).
6. Secure the A/C hoses to the A/C hose fenderwell brackets using the supplied tie wraps (See Photos 5 and 7, below).
7. Locate the inner fender A/C hose cover plate and rubber boot (See Photo 8, below).
8. Route the 90° hose fitting of the #10 A/C hose through the cover plate (See Photo 9, below).
9. Install the rubber boot onto the #10 A/C hose (See Photo 10, below).
10. Route the #6 A/C hose through the cover plate and rubber boot (See Photo 11, below).
11. Install the rubber boot and the cover plate using (2) #10 x 1/2" sheet metal screws into the previously drilled 5/32" holes in the inner fender kick panel grommet location (See Photo 12, below).
12. Route the #6 and #10 A/C hoses through the kick panel opening in the passenger compartment.

A/C Hose Fenderwell Bracket  
646967



Secure hoses to brackets with tie wraps

Photo 5

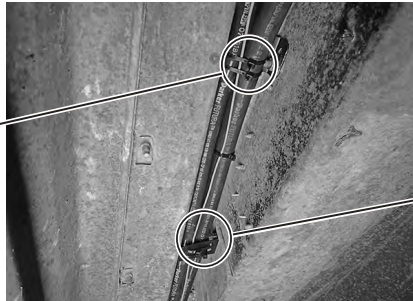
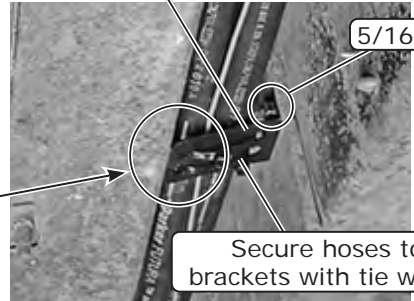


Photo 6

A/C Hose Fenderwell Bracket  
646967



Secure hoses to brackets with tie wraps

5/16" Nut

Photo 7

Inner Fender A/C  
Hose Cover Plate  
646990



Photo 8

Inner Fender  
Rubber Boot  
338637



Route #10 90° hose fitting  
through cover plate



Photo 9

Install rubber boot  
onto #10 A/C hose



Photo 10

Route #6 90° A/C Hose  
through A/C hose Fenderwell  
Bracket and rubber boot



Photo 11

Install rubber boot and cover plate with  
(2) #10 x 1/2" Sheet Metal Screws

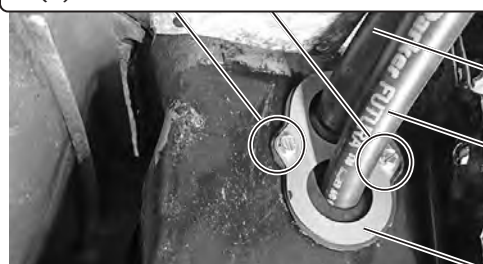


Photo 12

#10 A/C Hose

#6 A/C Hose

Inner fender kick panel  
grommet location



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## A/C Hose Routing & Kick Panel Cap Insulation (Cont.)

13. Locate the kick panel cap bracket (See Photo 13, below).
14. Install a 1/2" ID x 1 1/4" OD grommet and a large grommet into the kick panel cap (See Photo 14, below).
15. Route the 90° hose fitting of the #10 bulkhead/evaporator A/C hose through the right grommet in the kick panel cap bracket (See Photo 15, below).
16. Route the 45° hose fitting of the #6 drier/evaporator A/C hose through the left kick panel cap bracket grommet (See Photo 16, below).
17. Apply silicone around the kick panel mating surface for a water tight seal (See Figure 1, below).
18. Install the kick panel cap bracket onto the kick panel opening, then secure using (5) #14 x 3/4" sheet metal screws (See Photo 17, below).

Kick Panel Cap Bracket  
646957



Photo 13

1/2" ID x 1 1/4" OD  
Grommet

Large Grommet



Photo 14

Route #10 A/C hose 90° fitting  
through right grommet



Photo 15

Route #6 A/C 45° hose fitting  
through left grommet



Photo 16

Apply silicone around mating  
surface of kick panel

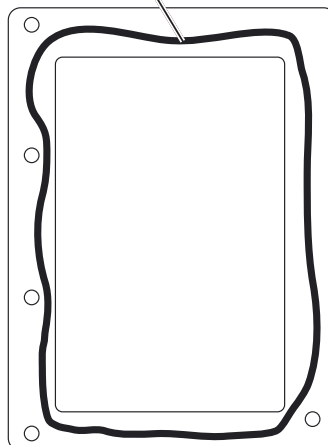


Figure 1

(5) #14 x 3/4" Sheet  
Metal Screws



Photo 17



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## A/C Hose Routing & Kick Panel Cap Insullation (Final)

19. Using the kick panel cap bracket upper left hole as a template, drill a 3/16" hole into the kick panel (See Photo 18, below). **NOTE: Some vehicles may have this hole predrilled.**
20. Install a #14 x 3/4" sheet metal screw into the upper-left hole of the kick panel cap bracket into the kick panel (See Photo 19, below).

Drill 3/16" hole

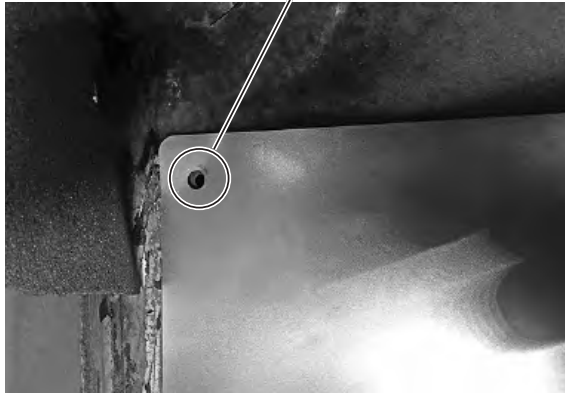


Photo 18

#14 x 3/4" Sheet Metal Screw

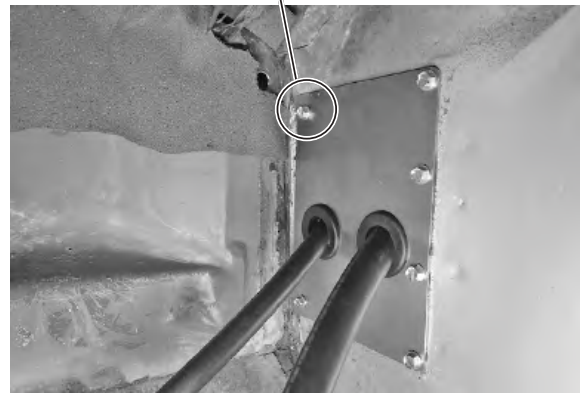


Photo 19

## Wiring Installation

1. Enlarge the hole on the relay mounting tab to accommodate the #14 x 3/4" sheet metal screw installed on the kick panel cap bracket (See Photo 1, below).
2. Route the heater control valve plug through the 3/8" ID x 7/8" OD grommet (See Photo 2, below).

Enlarge hole on relay mounting tab

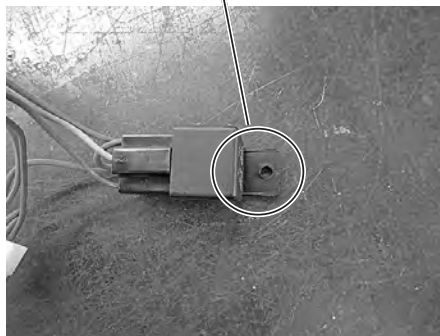


Photo 1

Route heater control valve plug through 3/8" I.D. x 7/8" O.D. Grommet

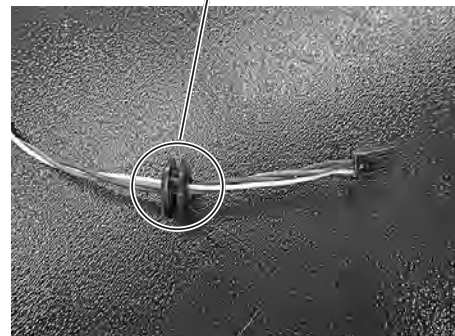


Photo 2



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## Wiring Installation (Cont.)

3. Install the 3/8" ID x 7/8" OD grommet into the previously enlarged 5/8" firewall insulation retainer hole (See Photo 4, below).
4. Route the red, white and blue wires from the main wiring harness through the 3/8" ID x 7/8" OD grommet into the engine compartment (See Photo 5, below).
5. Remove the #14 x 3/4" sheet metal screw from the top left of the kick panel cap, and install the heater control valve ground lead (See Photo 5, below).
6. Remove the #14 x 3/4" sheet metal screw from the top right of the kick panel cap, and install the main wiring harness relay between the screw and kick panel cap bracket (See Photo 6, below).
7. Route the red and white wires along the top of the inner fender toward the battery in the engine compartment (See Photo 7, below).

Install 3/8" I.D. x 7/8" O.D. grommet into enlarged 5/8" firewall insulation retainer hole



Photo 4

Heater control valve ground lead

Top-left Kick Panel Cap Bracket #14 x 3/4" Sheet Metal Screw

Red, white and blue wires from main harness

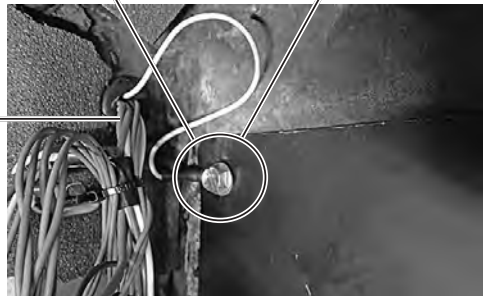


Photo 5

Install main wiring harness relay between sheet metal screw and Kick Panel Cap Bracket



Photo 6

Route red and white wires toward battery



Photo 7



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## Wiring Installation (Final)

8. Route the blue wire from the main wiring harness between the firewall and the back of the inner fender. Run the blue wire along the #10 A/C hose, securing it to the hose with the supplied tie wraps (See Photos 8 and 9, below).
9. Crimp the supplied 1/4" female terminal to the blue wire, then connect it to the safety switch on the drier (See Photos 10 and 11, below).

Route blue wire between firewall  
and back of inner fender



Photo 8

Crimp supplied 1/4"  
female terminal  
connector to blue wire



Photo 10

Secure to #10 hose  
with tie wraps

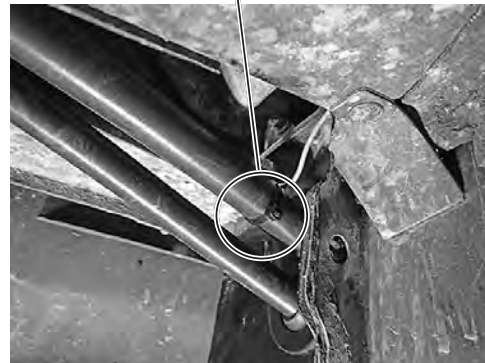


Photo 9

Connect blue wire to  
safety switch on drier

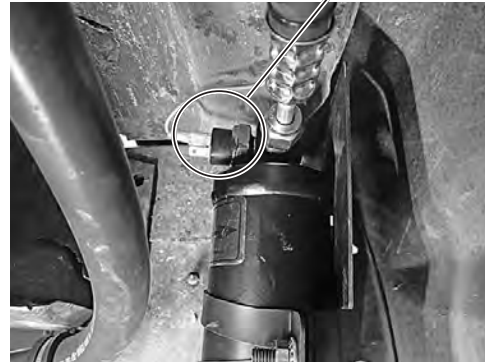


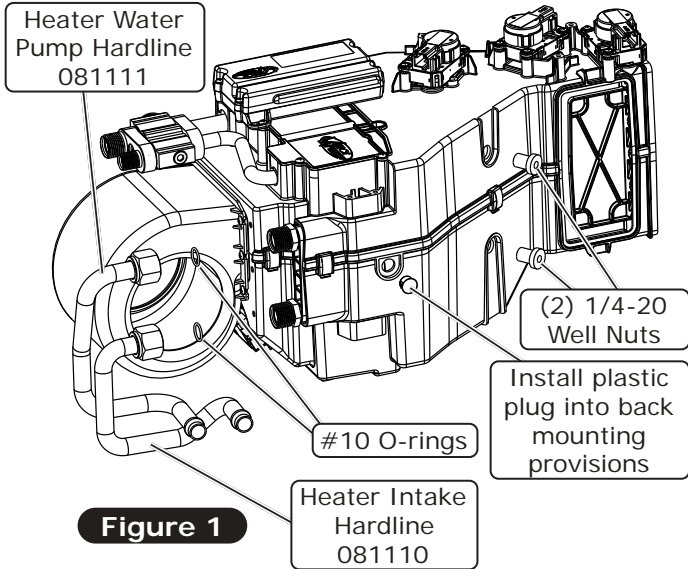
Photo 11



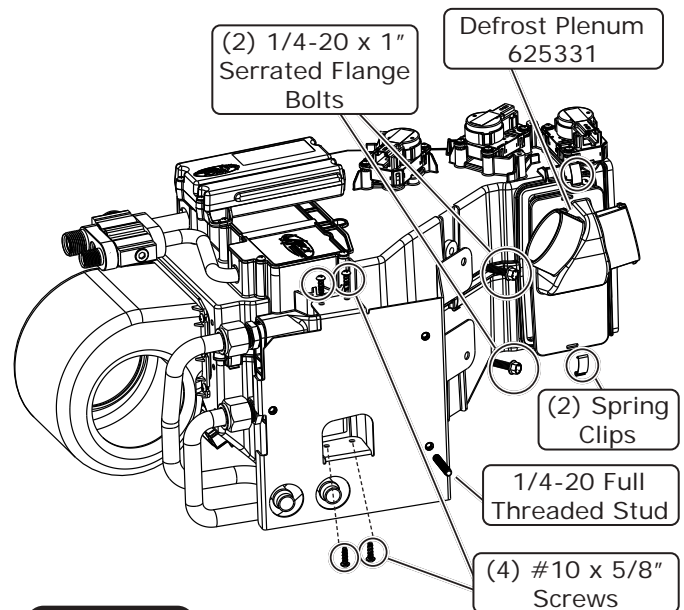
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# Evaporator Firewall Bracket, Plenums and Heater Hardline Installation

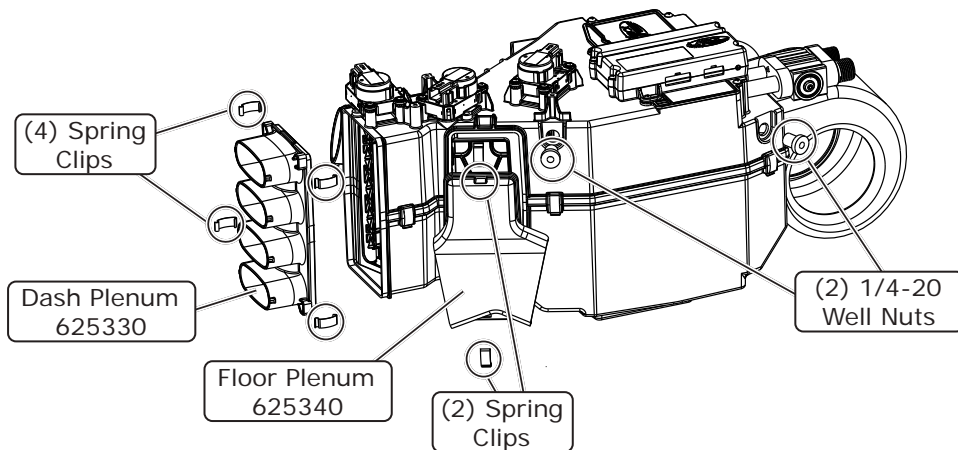
1. On a workbench, insert (2) 1/4-20 well nuts in the locations shown in Figure 1, below.
2. Install a plastic plug at the location shown in Figure 1, below.
3. Install the hardlines with properly lubricated O-rings (See Lubricating O-rings, Page 14, and Figure 1, below).
4. Install the defrost plenum using (2) spring clips as shown in Figure 2, below.
5. Install the evaporator firewall bracket using (2) 1/4-20 x 1" serrated flange bolts and (4) #10 x 5/8" screws (See Figure 2, below).
6. Install a 1/4-20 full-threaded stud into the bottom hole on the evaporator firewall bracket, leaving a 1/2" of the stud protruding outward. (See Figure 2)
7. Insert (2) 1/4-20 well nuts in the locations shown in Figure 3, below.
8. Install the dash and floor plenums using spring clips as shown in Figure 3, below.



**Figure 1**



**Figure 2**



**Figure 3**



# Evaporator Firewall Bracket, Plenums and Heater Hardline Installation (Cont.)

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- 9. Apply double-sided tape onto the evaporator firewall bracket as shown in Figure 4, below.
- 10. Remove the double-sided tape backing, and install the firewall rubber boot over the (2) heater hardlines. Keep the hardlines centered and tight inside the bracket holes (See Figure 5, below). **NOTE: Remove the heater line caps before installing the rubber boot. Replace the caps onto hardlines after rubber boot has been installed. Be sure the heater hardline holes and the threaded holes are centered with the firewall rubber boot holes for a correct fit.**

Apply double-sided tape to back of Evaporator Bracket

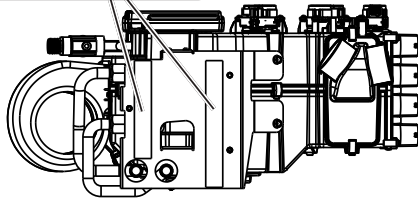
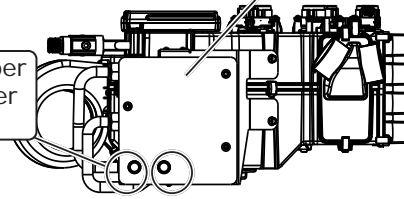


Figure 4

Install Firewall Rubber Boot over (2) heater hardlines



Firewall Rubber Boot 338609

Figure 5

## 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 Vintage Air recommends coating the threads of all bolts passing through the firewall with silicone prior to installation.**

- 1. Clean the back of the dash, to the right of the glove box on the inner dash, where the ECU is to be mounted (See Photos 1 and 2, below).

Clean back of this area

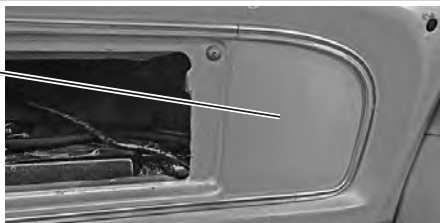


Photo 1

Clean this area



Photo 2



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## Evaporator Installation (Cont.)

**NOTE: The fitment of the evaporator unit into the proper position under the dash is very tight. Follow the steps below to help with the installation. Remove the caps from the hardlines before installation.**

2. Place the evaporator module onto the passenger side floorboard. Route the heavy-gauge orange and white wires through the grommet along the other wires.
3. Rotate the evaporator unit blower end up first, and angle the bottom of the evaporator toward the dash (See Figure 1, below).
4. Rotate/push the left end of the evaporator unit up until the hardline ends and the 1/4-20 stud line up with the holes in the firewall (See Figure 2, below). **NOTE: Be careful positioning the heater hardlines. Forcing or jamming the hardlines against the firewall may loosen one or both of the fittings on the heater which could result in a leak. A 2"x 4" block of wood may be put between the dash and the evaporator unit to keep it in place if necessary (See Photo 3, below).**
5. Reinstall the caps onto the heater hardlines.
6. From the engine compartment, install (2) 1/4" nylon sleeve washers and (2) 1/4-20 x 3/4" serrated flange hex bolts into the (2) open firewall mounting holes (See Photo 4, below). **NOTE: Do not fully tighten the bolts at this time.**
7. Remove the 1/4-20 stud from the evaporator firewall bracket, and insert a 1/4" nylon sleeve washer and 1/4-20 x 3/4" serrated flange hex bolt (See Photo 5, below). **NOTE: Do not fully tighten the bolt at this time.**
8. Install both the #10 and #6 A/C hoses onto the evaporator module with properly lubricated O-rings (See Photo 6, below).

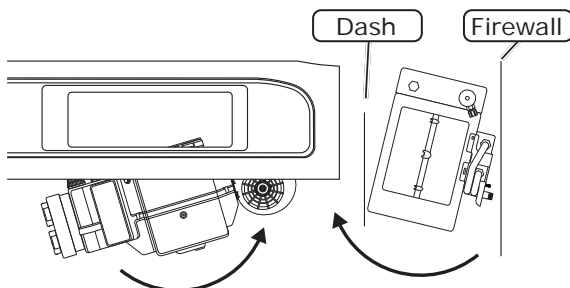


Figure 1

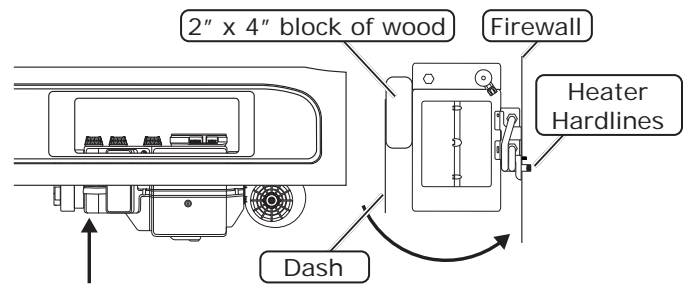


Figure 2

2" x 4" block of wood



Photo 3

Install (2) 1/4" Nylon Washers and (2) 1/4-20 x 3/4" Serrated Flange Hex Bolts



Photo 4

Remove 1/4-20 x 1 1/2" Stud, and insert 1/4" Nylon Sleeve Washer and 1/4-20 x 3/4" Serrated Flange Hex Bolt



Photo 5

Install both #10 and #6 A/C hoses onto evaporator module with properly lubricated O-rings



Photo 6



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## Evaporator Installation (Final)

9. Insulate the #10 and #6 evaporator fittings and all exposed metal with the supplied press tape (See Photo 7, below).
10. Remove the ECU from the evaporator module and carefully clip the tie wraps from the wires. Apply (2) strips of Velcro to the bottom of the ECU as shown in Photo 8, below.
11. Locate the evaporator dash bracket (See Photo 9, below).
12. Position the evaporator dash bracket under the dash and install bracket onto front well nuts on the evaporator. Using the dash bracket as a template, mark and drill (2) 13/64" holes into the bottom of the dash (See Photo 10, below).
13. Remove the evaporator dash bracket from the evaporator module, and install (2) #8 U-nuts onto it (See Photo 11, below).
14. Install the evaporator dash bracket inside the dash, and secure it with (2) #8 x 1" oval head screws (See Photo 12, below).
15. Install the evaporator dash bracket onto the evaporator module using the flange hex bolt (See Photo 12, below). **NOTE: Do not fully tighten the bolt at this time.**
16. Plug the control panel wiring into the ECU (See Photo 13, below).

Insulate #10 and #6 fittings with press tape



Photo 7

Apply (2) strips of Velcro to ECU

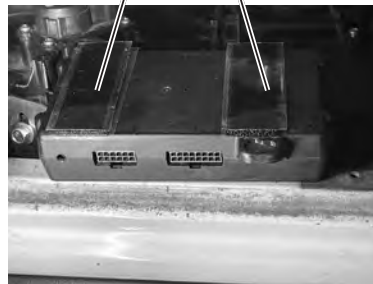


Photo 8

Evaporator Dash Bracket 647168



Photo 9

Mark and drill (2) 13/64" holes

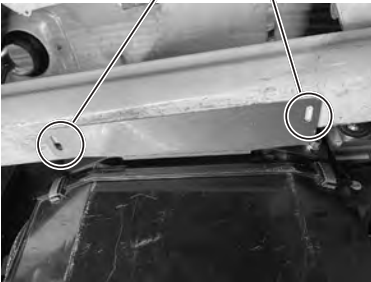


Photo 10

Install (2) #8 U-Nuts

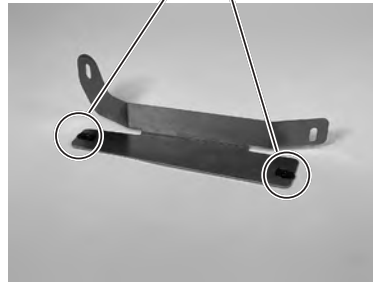


Photo 11

Install dash bracket under dash, and secure with (2) #8 x 1" oval head screws



Photo 12

Plug the control panel wiring into ECU



Photo 13

Install evaporator dash bracket onto evaporator unit using flange hex bolt



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## Evaporator Unit Leveling

**NOTE:** To ensure proper drainage, it is very important that the evaporator is level, both fore-aft and left-right. Before leveling the evaporator, ensure the vehicle is level.

1. Level the unit left-right and fore-aft (See Photo 1, below).
2. At this time, tighten the (3) 1/4-20 x 3/4" serrated flange hex bolts on the firewall (See Photo 2, below).  
**NOTE: Tighten all bolts on the firewall first.**
3. Tighten the dash bracket evaporator hex bolts (See Photo 3, below). **NOTE: Adjust the evaporator dash bracket as needed, then tighten the evaporator hex bolts.**

Level evaporator unit  
fore-aft and left-right

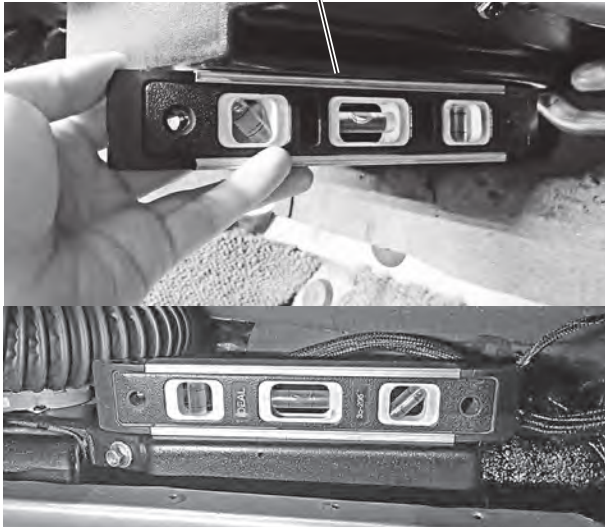


Photo 1

Tighten (3) 1/4-20 x 3/4" serrated  
flange hex bolts on firewall

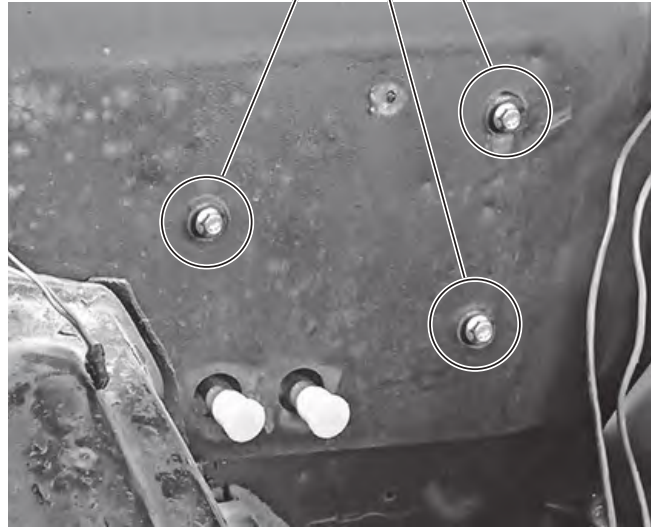


Photo 2

Tighten dash bracket evaporator  
hex bolts



Photo 3

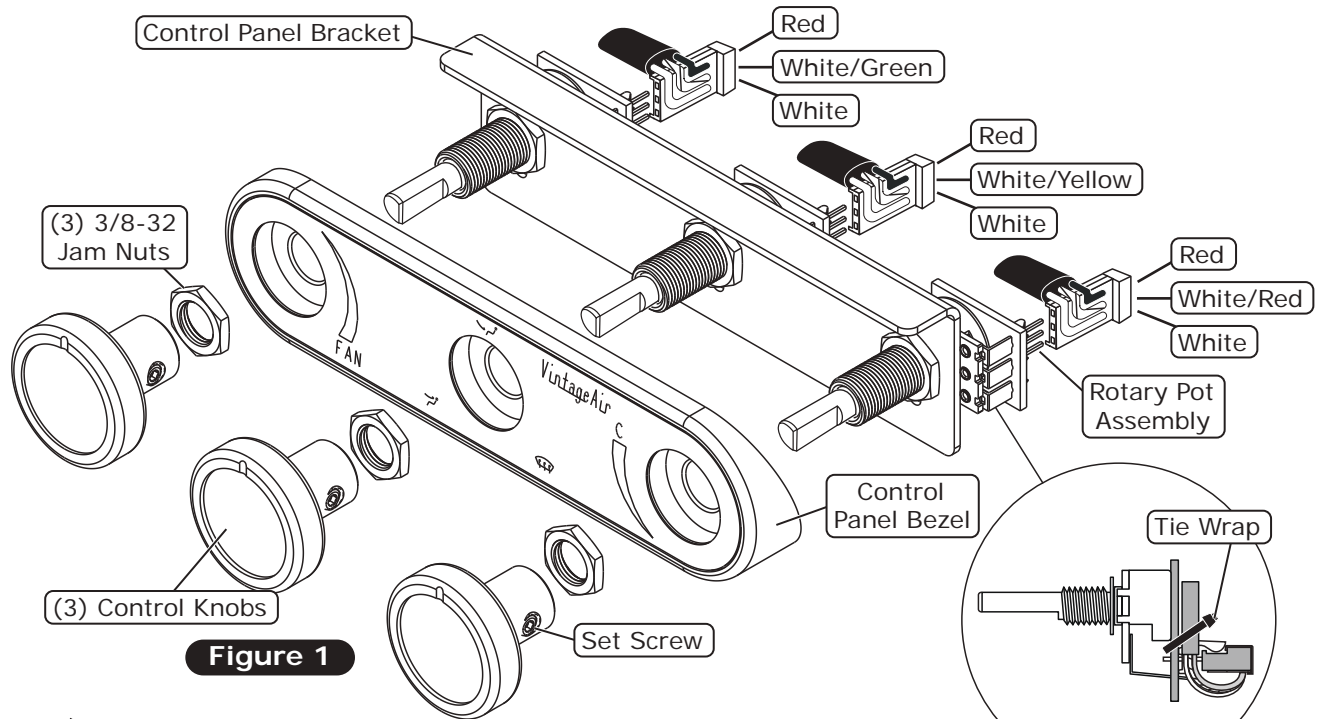


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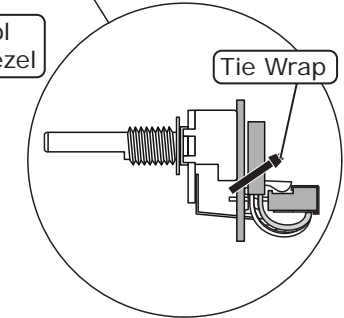
## Radio and Control Panel Installation

**NOTE: To install the control panel, the control panel bezel and knobs must be disassembled.**

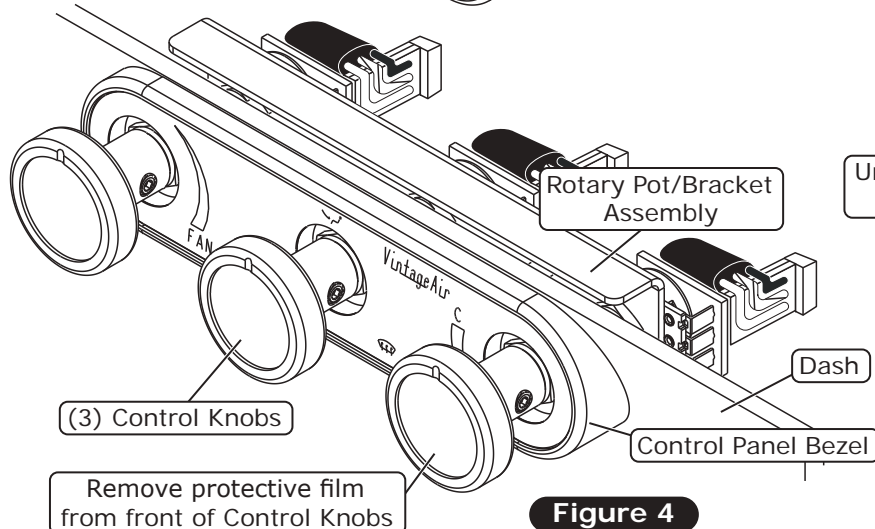
1. Reinstall the radio.
2. Remove the (3) control knobs by loosening the set screws (See Figure 1, below).
3. Remove the (3) 3/8-32 jam nuts (See Figure 1, below).
4. Remove the control panel bezel (See Figure 1, below).
5. Install the wiring harness to the rotary pot assemblies as shown in Figure 1, below.
6. Secure the wiring harness to the rotary pot assemblies with the supplied tie wraps (See Figure 2, below).
7. Secure the unused wire to the wiring harness with a supplied tie wrap (See Figure 3, below).
8. Install the rotary pot/bracket assembly of the control panel from behind the dash, and reinstall the control panel bezel, jam nuts, and control knobs on the front of the dash (See Figure 4, below).
9. Remove the protective film from the front of the control knobs.



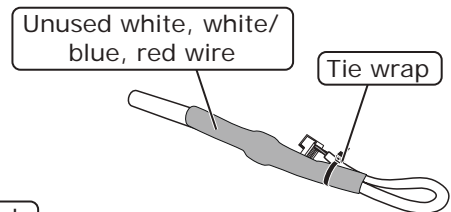
**Figure 1**



**Figure 2**



**Figure 4**



**Figure 3**

**NOTE: Tie the unused wire to the wiring harness as shown above.**



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## Radio and Control Panel Installation with Heater Mounted OEM Control

**NOTE:** Some 1967 Ford trucks came with heater controls on the heater unit (See Photo 1, below). The dash will need to be modified to accommodate the control panel. Before drilling, Vintage Air recommends protecting the dash with painters tape to avoid scratches. To install the control panel, the control panel bezel and knobs must be disassembled.

1. Remove the (3) control knobs by loosening the set screws (See Figure 1, Page 25).
2. Remove the (3) 3/8-32 jam nuts (See Figure 1, Page 25).
3. Remove the control panel bezel (See Figure 1, Page 25).
4. Install the wiring harness to the rotary pot assemblies as shown in Figure 1, Page 25.
5. Secure the wiring harness to the rotary pot assemblies with the supplied tie wraps (See Figure 2, Page 25).
6. Secure the unused wire to the wiring harness with a supplied tie wrap (See Figure 3, Page 25).
7. Mark a level horizontal line 2 3/4" from the bottom of the dash (See Figure 1, below).
8. Locate the center of the radio opening in the dash, and mark a vertical line intersecting with the previously marked horizontal line (See Figure 2, below).
9. Make a mark 2" to the right of the center, and another 2" to the left of the center as shown in Figure 3, below.
10. Drill (3) 13/32" holes into the dash as shown in Figure 4, below.
11. Reinstall the radio.
12. Install the rotary pot/bracket assembly of the control panel from behind the dash, and reinstall the control panel bezel, jam nuts, and control knobs (See Figure 4, Page 25).

OEM heater controls on unit

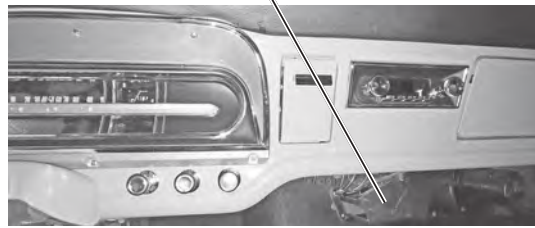


Photo 1

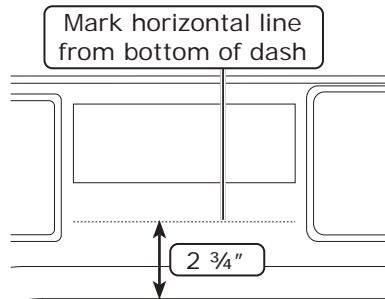


Figure 1

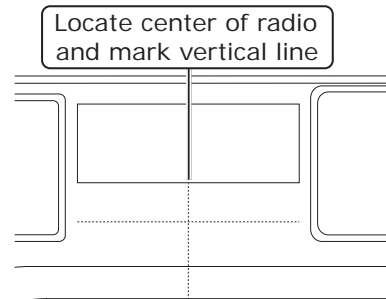


Figure 2

Measure 2" to the left and right of the intersecting lines and mark

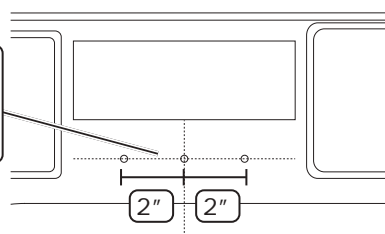


Figure 3

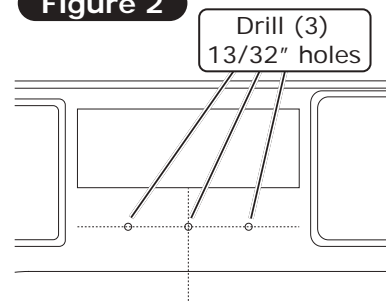


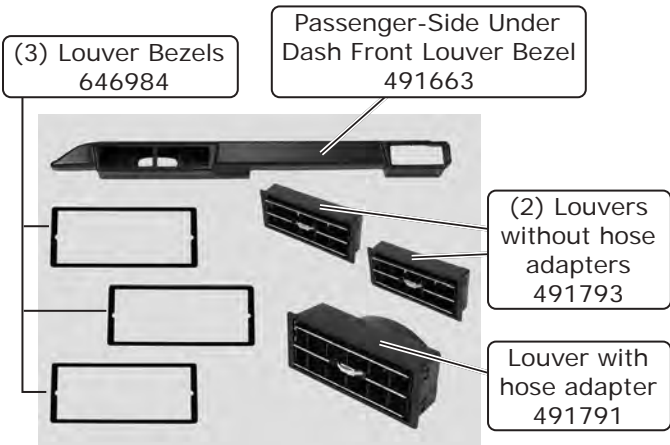
Figure 4



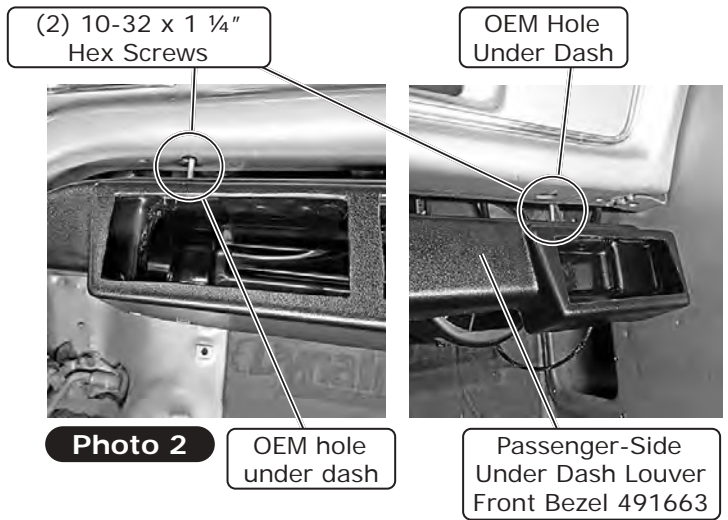
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# Passenger-Side Plenum Assembly Louver Bezel Installation

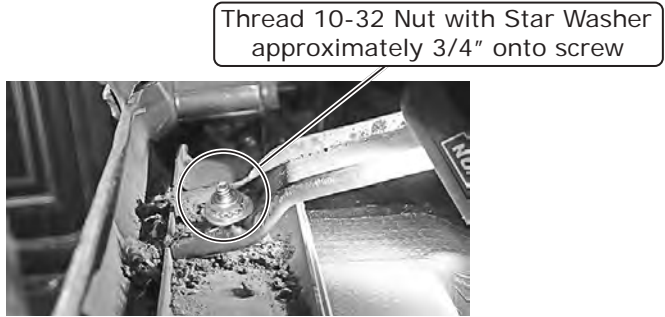
1. Locate the passenger-side under dash front louver bezel, (3) louver bezels, the (2) louvers without hose adapters and (1) louver with hose adapter (See Photo 1, below).
2. Install the (2) 10-32 x 1 1/4" hex screws, (2) 10-32 nuts with star washers, and (4) #8 flat washers approximately 3/4" into the passenger-side plenum louver bezel and into the OEM holes under the dash (See Photos 2, 3, 4, and Figure 1, below). **NOTE: Do not fully tighten the nuts at this time.**



**Photo 1**



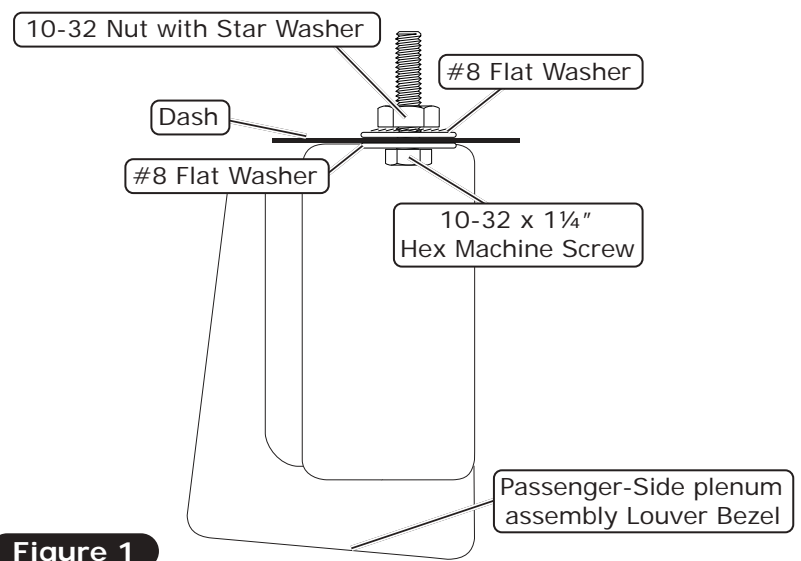
**Photo 2**



**Photo 3** Toward Driver Side



**Photo 4** Passenger Side



**Figure 1**



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## Passenger-Side Plenum Assembly Louver Bezel Installation (Cont.)

3. After ensuring that the plenum assembly is in the proper position, tighten the (2) 10-32 nuts with star washers on the carriage bolts (See Photo 5, below),
4. Carefully snap the louvers into the bezels (See Photo 6, below).
5. Install the (2) louvers without hose adapters into the center vent locations of the plenum. Install one of the louvers with hose adapter into the passenger side vent location (See Photo 7, below). **NOTE: Louvers should fit flat onto the plenum after installation.**

Ensure plenum assembly is in proper position and tighten (2) 10-32 Nuts with Star Washers



Photo 5

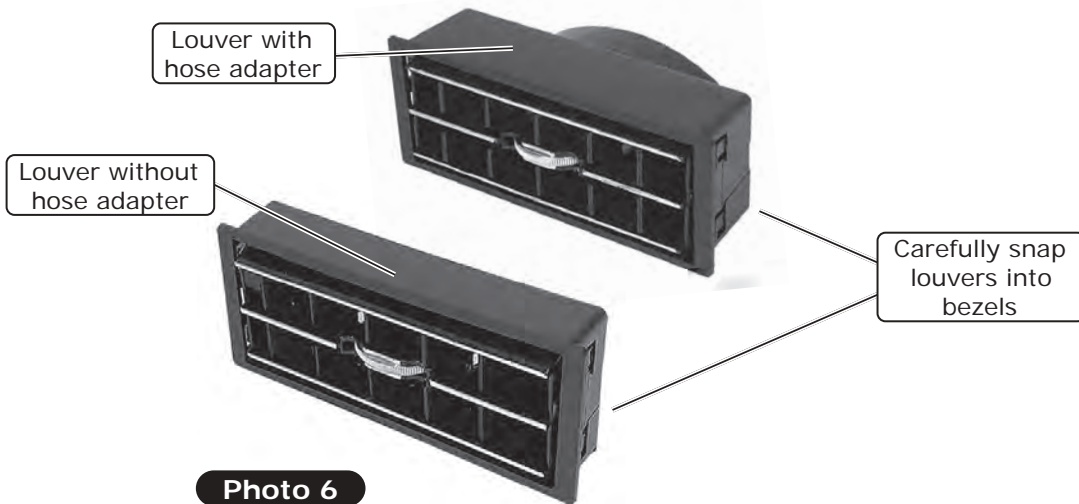


Photo 6

Install (2) Louvers without hose adapters into plenum assembly

Install Louver with hose adapter into passenger-side vent location



Photo 7



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## 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.

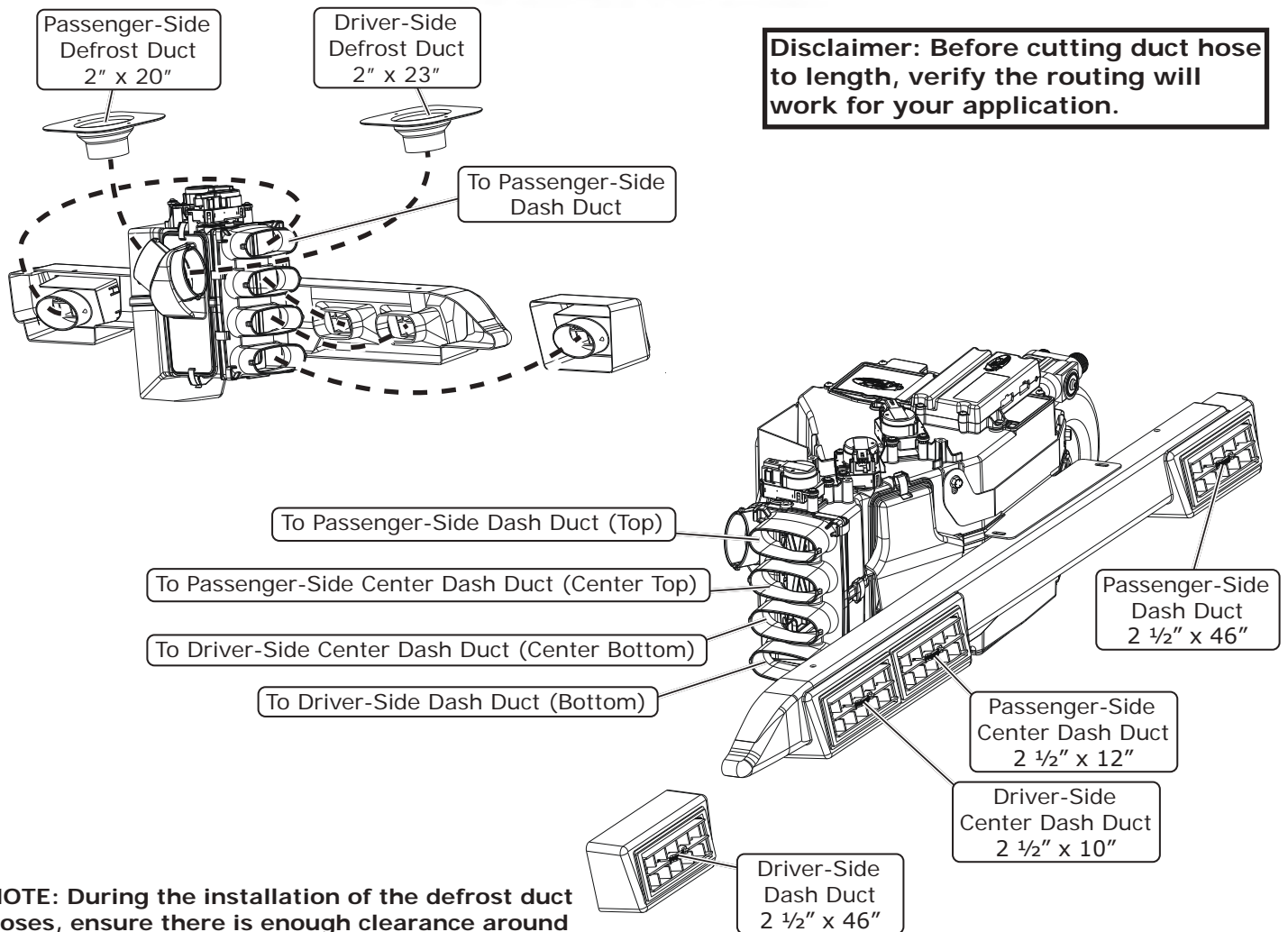
1. Stretch the duct hose until there is no slack, measure, mark and cut hose to size (See Photo 1, below).

Stretch, measure, mark and cut hose to size



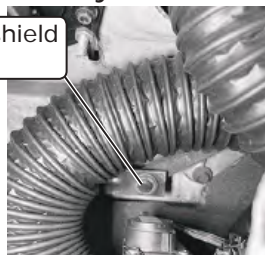
**Photo 1**

**Disclaimer:** Before cutting duct hose to length, verify the routing will work for your application.



**NOTE:** During the installation of the defrost duct hoses, ensure there is enough clearance around the passenger-side windshield wiper assembly for the wiper arm to move freely.

Passenger-Side Windshield Wiper Assembly



**Photo 2**

**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.

Position connectors towards bottom

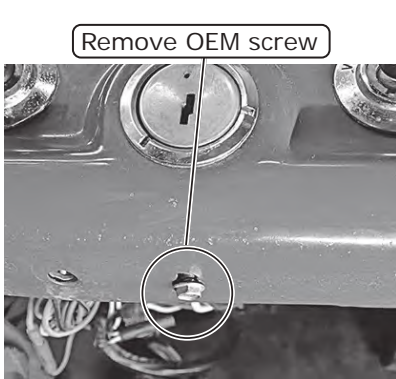




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# Driver-Side Underdash Louver Installation

1. Remove the OEM screw from under the dash on the (See Photo 1, below).
2. Locate the driver-side underdash louver bezel, driver-side louver housing bracket, the louver with hose adapter, the remaining louver bezel and the #8 x 3/4" countersunk screw (See Photo 2, below).
3. Place the driver-side louver housing bracket into the driver-side underdash louver bezel, making sure it is all the way in and flushed to the top of the bezel. Using the bracket as a template, mark the mounting hole of the bracket onto the bezel (See Photo 3, below).
4. Remove the bracket and drill a 7/32" hole into the bezel (See Photo 4, below).
5. Install the driver-side underdash louver bezel onto the dash using a #8 x 3/4" countersunk screw as shown in Photo 5, below.
6. Route the duct hose from the passenger-side plenum assembly louver bezel to the driver-side louver bezel, and insert it through the bezel opening 2 to 3 inches (See Photo 6, below).
7. Snap the louver into the bezel (See Photo 7, below)
8. Install the duct hose onto the louver hose adapter (See Photo 8, below).



Remove OEM screw

Photo 1

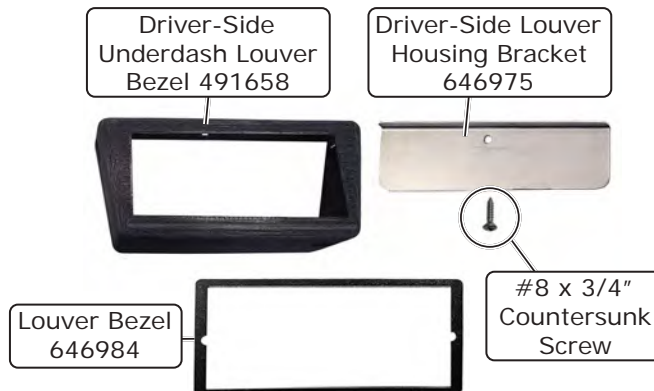
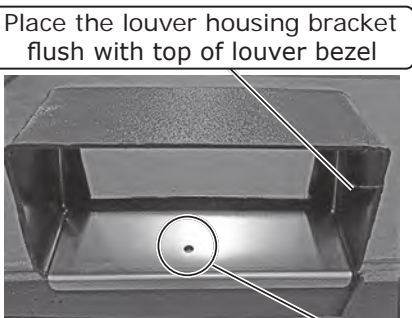


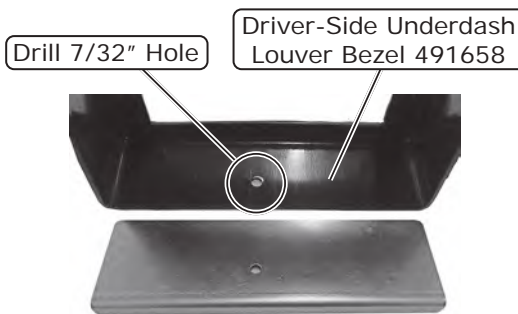
Photo 2



Place the louver housing bracket flush with top of louver bezel

Photo 3

Mark mounting hole



Drill 7/32" Hole

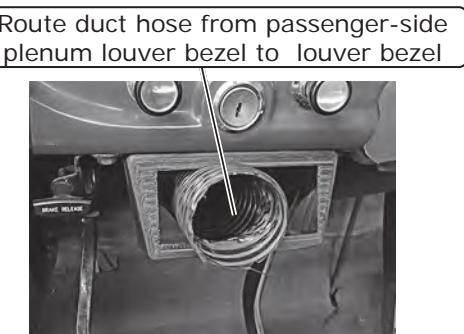
Driver-Side Underdash Louver Bezel 491658

Photo 4



Install bezel onto dash using #8 x 3/4" countersunk screw

Photo 5



Route duct hose from passenger-side plenum louver bezel to louver bezel

Photo 6



Snap louver into bezel

Photo 7



Install duct hose onto louver hose adapter

Photo 8



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## Driver-Side Underdash Louver Installation (Cont.)

9. Insert the louver into the louver bezel (See Photo 9, below).

Insert Louver into Louver Bezel

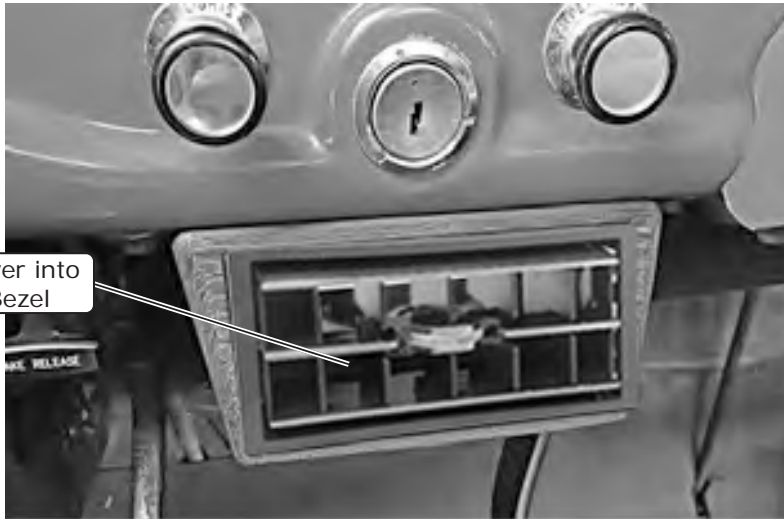


Photo 9

## Drain Hose Installation

1. Cut an 8" piece of drain hose and attach the drain elbow to one end. Install the drain elbow into the 1/2" ID x 1 1/4" OD grommet on the firewall (See Photo 1, below).
2. Install the 7" piece of drain hose between the evaporator unit drain outlet and the drain elbow (See Photo 2, below).

Attach 8" piece of drain hose to drain elbow and insert into 1/2" I.D. x 1 1/4" O.D. Grommet

Attach 7" piece of drain hose between evaporator drain outlet and drain elbow



Photo 1

8" piece of drain hose



Photo 2

1/2" I.D. x 1 1/4" O.D. Grommet

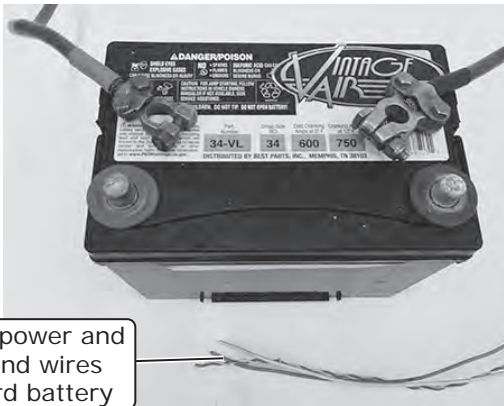


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## Engine Compartment Wiring

**NOTE: The following connections are critical to the performance of the system. Before making connections, refer to the Quality Crimp Guidelines, Page 42.**

1. Route power and ground wires toward the battery (See Photo 1, below).
2. 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 2, below). Slide the heat shrink over the crimp, then apply heat.
3. 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 3, below). Slide the heat shrink over the crimp, then apply heat.
4. Install the fuses into the holders (See Photos 4 and 5, below).
5. Install the supplied heat shrink over the white ground wires, then crimp on the supplied ring terminals (See Photo 6, 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 7 and 8, below).**



Route power and ground wires toward battery

Photo 1

Crimp 12 AWG orange fuse holder wire to 12 AWG orange wire from main wiring harness



Photo 2

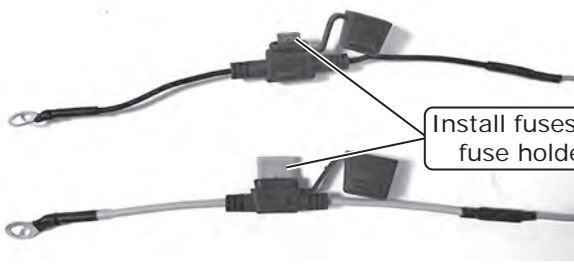
Install heat shrink over 12 AWG orange standard fuse holder assembly wire

Crimp 16 AWG black fuse holder wire to 16 AWG red wire from main wiring harness



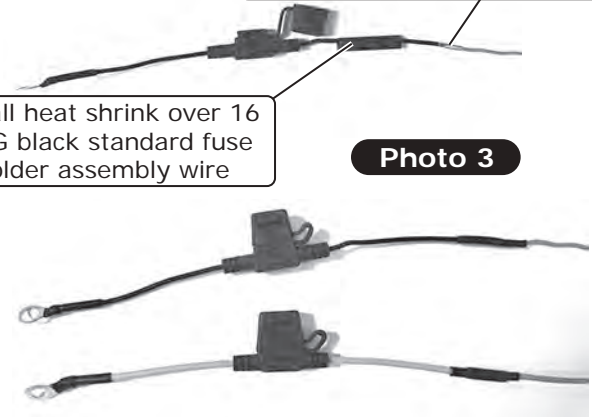
Photo 3

Install heat shrink over 16 AWG black standard fuse holder assembly wire



Install fuses into fuse holders

Photo 4



Both white ground wires can be crimped together. Install heat shrink, then strip wires, twist together and trim to length.

Photo 5

Install heat shrink over white ground wires, then crimp on ring terminals

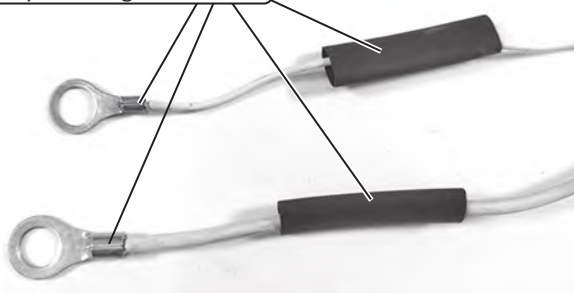


Photo 6



Photo 7

Crimp on ring terminal, then slide heat shrink over and apply heat



Photo 8



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## Engine Compartment Wiring (Cont.)

6. Connect the ground wire ring terminals to the negative battery terminal connector (See Photos 9 and 10, below).
7. Connect the positive wire ring terminals to the positive battery terminal connector (See Photos 11 and 12, below). **NOTE: Do not connect power until the installation is completed.**
8. Wiring completed (See Photo 13, below).

Connect ground wire ring terminals to negative battery terminal  
**NOTE: Either connection application can be used.**

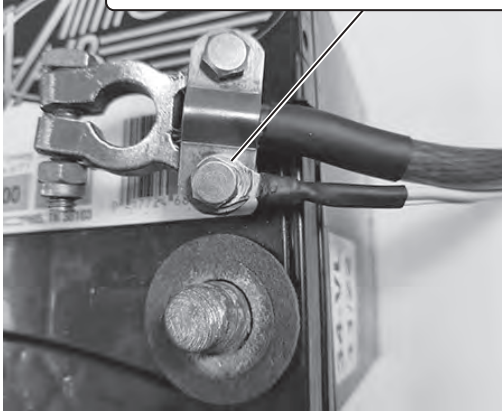


Photo 9

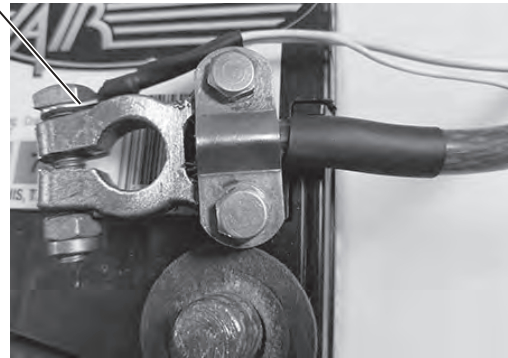


Photo 10

Connect power wire ring terminals to positive battery terminal  
**NOTE: Either connection application can be used.**

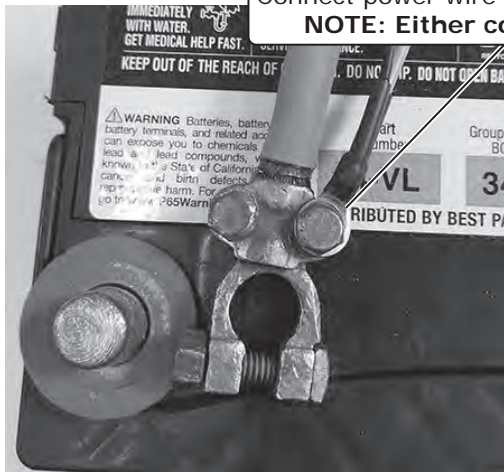
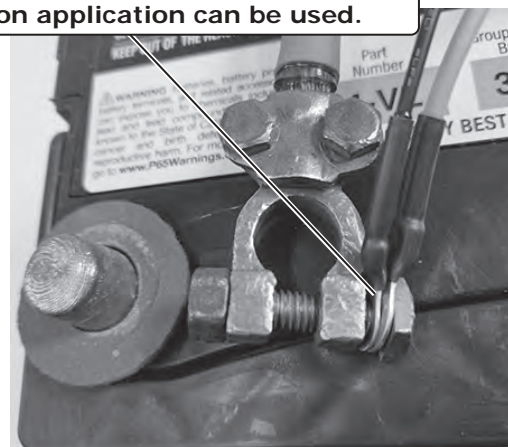


Photo 11



**NOTE: Do not connect power until installation is completed.**

Photo 12



Completed Installation Shown

Photo 13



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## ECU Wiring Harness Installation

1. Route the violet power wire to a switched 12V power source on the fuse panel (See Photo 1, below).  
**NOTE: This requires a male fuse extension (not supplied) (See Photo 2, below).**
2. Plug the main wiring harness into the ECU (See Photo 3, below).
3. Locate the blower speed control wire/plug on the evaporator module. Connect the plug to the corresponding lead coming off of the main wiring harness (See Photo 4, below).
4. Peel the backing from the Velcro, and mount the ECU behind the dash next to the glove box opening (See Photo 5, below). **NOTE: At this point, reinstall the speedometer cable and plugs into the instrument cluster and install it into the dash with the OEM hardware (See Photos 6 and 7, below).**

Route violet power wire to switched 12V power source on fuse panel

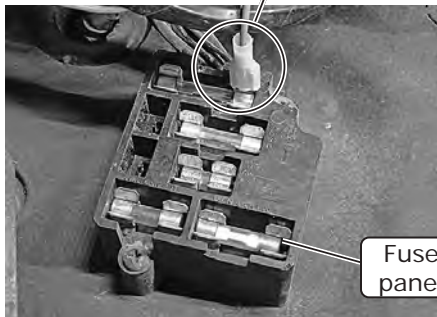


Photo 1

Male fuse extension



Photo 2

Plug main harness into ECU



Photo 3

Peel backing from velcro and mount ECU behind dash next to glove box opening



Photo 5

Connect blower speed control wire/plug to lead coming off main wire harness

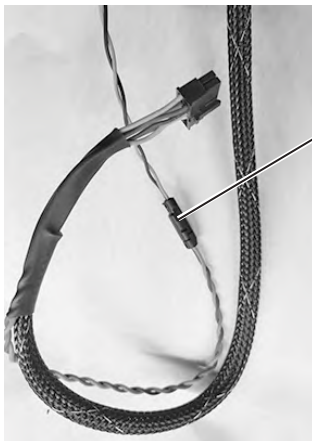


Photo 4

Reconnect speedometer cable



Photo 6

Reconnect instrument cluster wiring and install instrument cluster

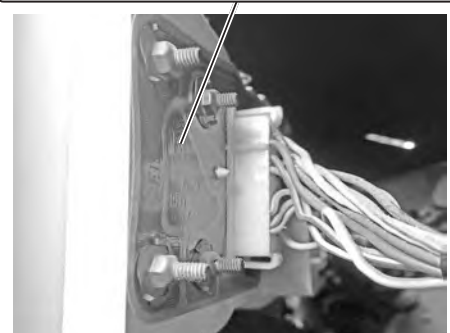


Photo 7

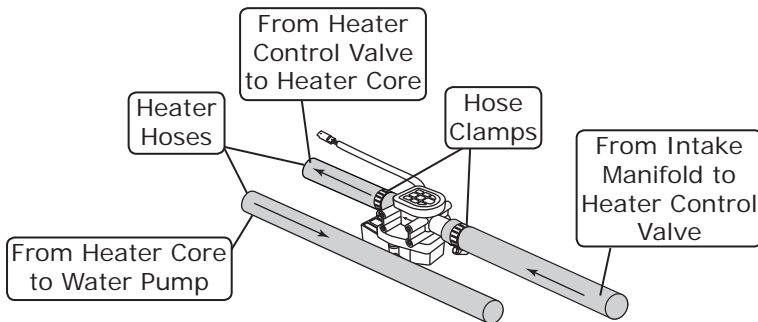


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# Heater Control Valve Installation

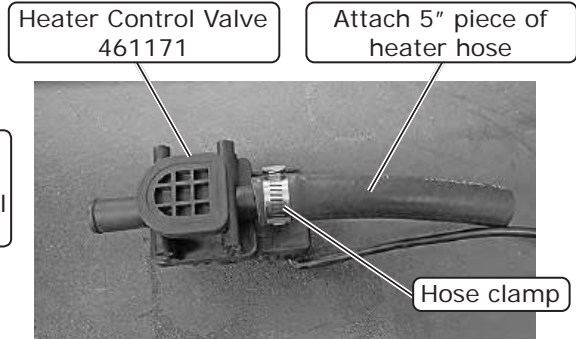
**NOTE:** Vintage Air Systems use 5/8" connections. On engines equipped with 3/4" hose nipples, these will need to be removed and replaced with 5/8" nipples (not supplied). For water pumps with a cast-in 3/4" heater outlet, a 3/4" x 5/8" reducer fitting (not supplied) or molded hose (Vintage Air Part # 099010) will need to be installed in the heater hose.

1. Attach a 5" piece of heater hose (not supplied) to the heater control valve, and secure it using a #12 hose clamp (See Figure 1 and Photo 1, below).
2. Install the heater hose on the heater control valve onto the lower heater hardline (right side), and secure it using a #12 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).**
3. Install a length of heater hose (not supplied) from the intake manifold to the heater control valve, and secure it using (2) #12 hose clamps (See Photo 3, below).
4. Install a length of heater hose (not supplied) from the heater core to the water pump, and secure it using (2) #12 hose clamps (See Photo 4, below).
5. Plug the heater control valve connector into the connector on the main wiring harness (See Photo 5, below).



**NOTE: Flow Direction Follows Molded Arrow on Valve.**

**Figure 1**



**Photo 1**

Install hose from heater control valve onto lower heater hardline and secure with #12 hose clamp



**Photo 2**

Install length of heater hose from intake manifold to heater control valve and secure it with (2) #12 hose clamps



**Photo 3**

Install length of heater hose from heater core to water pump and secure it with (2) #12 hose clamps



**Photo 4**

Plug heater control valve connector into main wiring harness



**Photo 5**



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## V8 A/C Hose Installation

### Standard Hose Kit:

1. Locate the #8 condenser/compressor A/C hose (See Photo 1, below).
2. Install and lubricate (2) #8 O-rings (See Lubricating O-rings, Page 14), and connect the 90° fitting with the service port to the #8 discharge port on the compressor (See Photo 2, below). Tighten fitting connection (See Lubricating O-rings, Page 14).
3. Route the 45° fitting to the #8 condenser/core hardline coming from the condenser (See Photo 3, below). Tighten fitting connection (See Lubricating O-rings, Page 14).
4. Locate the #10 compressor/bulkhead A/C hose (See Photo 1, below).
5. Install and lubricate (2) #10 O-rings (See Lubricating O-rings, Page 14), and connect the #10 135° fitting with the service port to the #10 suction port on the compressor (See Photo 4, below). Tighten fitting connection (See Lubricating O-rings, Page 14).
6. Connect the #10 45° fitting to the #10 bulkhead fitting (See Photo 5, below). Tighten fitting connection (See Lubricating O-rings, Page 14).

### Modified Hose Kit:

1. Refer to separate instructions included with modified hose kit.

#8 Condenser/Compressor A/C Hose



#10 Compressor/Bulkhead A/C Hose



Photo 1

Route #8 A/C Hose 45° fitting to #8 condenser/core hardline coming from condenser



Photo 3

Compressor

Connect #8 A/C Hose 90° fitting with service port to #8 discharge port on compressor



Photo 2

Connect #10 A/C hose 135° fitting with service port to #10 suction port on compressor



Photo 4

Compressor

Connect #10 A/C hose 45° fitting to #10 A/C hose bulkhead fitting



Photo 5



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## Straight 6 A/C Hose Installation

1. Locate the #8 condenser/compressor A/C hose (See Figure 1, below).
2. Lubricate (2) #8 O-rings (See Lubricating O-rings, Page 14), and connect the 45° fitting with service port to the #8 discharge port on the compressor (See Photo 2, below).
3. Route the other end of the #8 A/C hose to the #8 condenser hardline by the radiator (See Photo 3, below).
4. Locate the #10 compressor/bulkhead A/C hose (See Photo 1, below).
5. Lubricate (2) #10 O-rings (See Lubricating O-rings, Page 14), and connect the #10 90° fitting with service port to the #10 suction port on the compressor (See Photo 2, below).
6. Connect the #10 straight fitting to the #10 bulkhead fitting on inner fender (See Photo 4, below).

#10 Compressor/Bulkhead A/C Hose

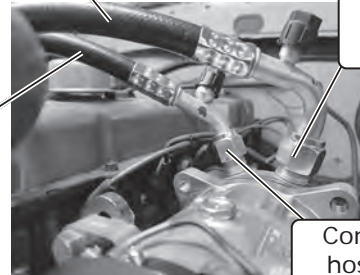


#8 Condenser/Compressor A/C Hose



Figure 1

#10 Compressor/Bulkhead A/C Hose



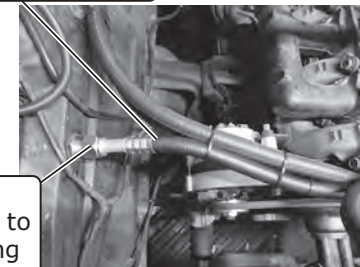
Connect #10 A/C hose 90° fitting with service port to #10 suction port on compressor

#8 Condenser/Compressor A/C Hose

Connect #8 A/C hose 45° fitting with service port to #8 discharge port on compressor

Photo 2

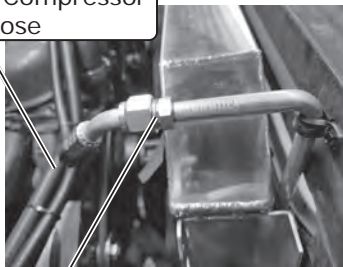
#10 Compressor/Bulkhead A/C Hose



Connect #10 A/C hose straight fitting to #10 bulkhead fitting on inner fender

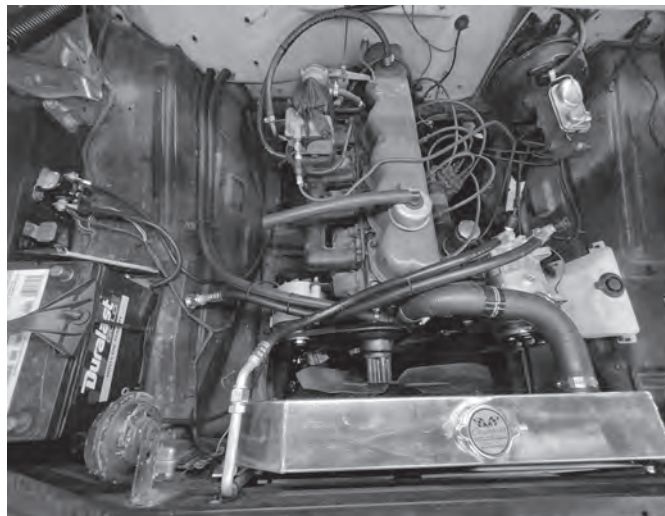
Photo 4

#8 Condenser/Compressor A/C Hose



Route other end of #8 A/C hose to #8 condenser hardline by radiator

Photo 3



Final installation

Photo 5

## Wiring Final Steps

1. Install the 1/4" grommet into the previously drilled 9/32" hole on the inner fender under the #10 bulkhead fitting (See Photos 1 and 2, below).
2. Locate the compressor lead wire, and cut off the 1/4" female terminal as shown in Photo 3, below.
3. Connect the bullet terminal of the compressor lead to the compressor bullet terminal (See Photo 4, below).
4. Route the compressor lead wire along the #10 A/C hose and through the 1/4" grommet into the fenderwell (See Photo 5, below). Secure the compressor lead wire to the #10 A/C hose with the supplied tie wraps.
5. Under the fenderwell, continue routing the compressor lead along the #10 A/C hose toward the drier. Crimp a 1/4" female terminal onto the compressor lead, and connect it to the safety switch (See Photo 6, below).
6. Secure the compressor lead to the #10 A/C hose with tie wraps.

Previously drilled 9/32" hole



Photo 1

Install 1/4" grommet



Photo 2

Compressor Lead  
23135-VUW

Cut Off 1/4"  
female terminal

Bullet connection  
of compressor lead

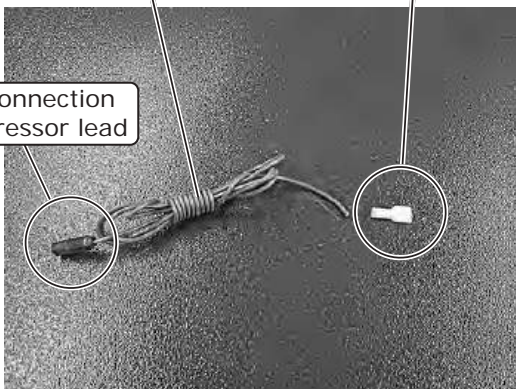


Photo 3

Connect bullet terminal of compressor  
lead to compressor bullet terminal



Photo 4

Route compressor lead wire  
along #10 A/C hose and  
through 1/4" grommet



Photo 5

Crimp 1/4" female terminal onto compressor  
lead and connect to safety switch

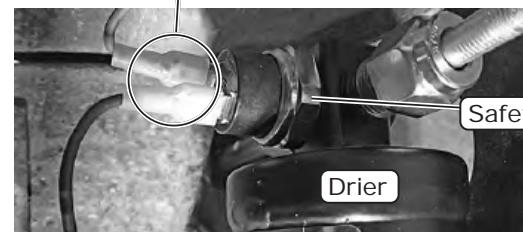


Photo 6



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# Final Steps: Installation Check

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



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# Glove Box Installation

1. Locate the glove box (See Photo 1, below).
2. Install the glove box by inserting the right side of the glove box into the dash first (See Photo 2, below).
3. Push the left side of the glove box into the dash, then slide the glove box to the left to align the glove box with the dash mounting holes (See Photo 3, below). **NOTE: If the glove box door hinge holes do not line up to the correct locations, slightly notch the corner of the hinge where it hits the glovebox (See Photo 4, below).**
4. Secure the glove box to the dash using (6) #8 x 1/2" screws (See Figure 1, below).
5. Install the glove box door latch using the (2) OEM screws (See Photo 5, below).
6. Install the glove box door using the (3) OEM screws ((2) for the lower mounts and one for the door cable (See Photo 6, below).



Photo 1

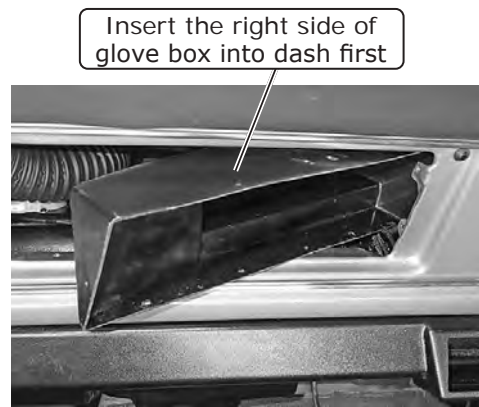


Photo 2

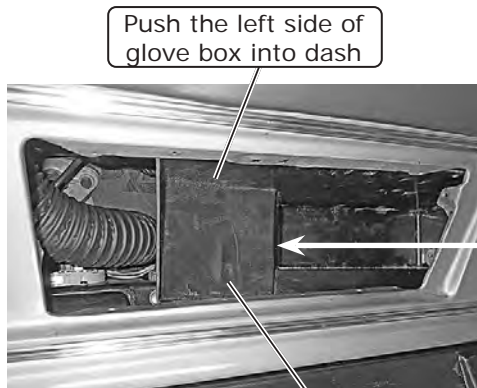


Photo 3

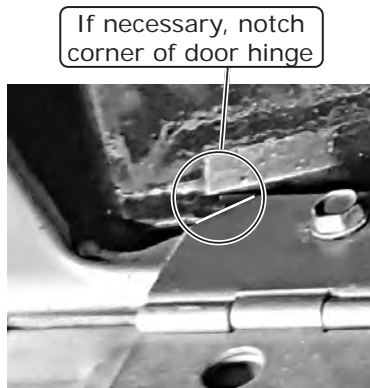


Photo 4

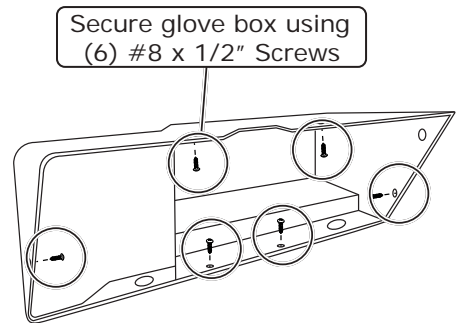


Figure 1



Photo 5

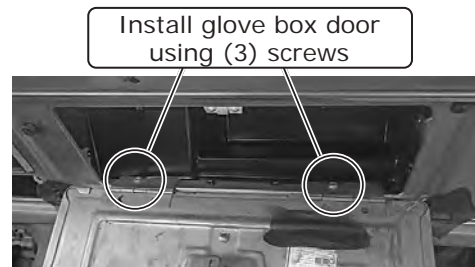


Photo 6



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## ***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 heated 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 the Operation of Controls procedures on Page 45 of this instruction manual.



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## Quality Crimp Guideline

Acceptable strip length  
(Some cooper visible)

Crimped area is centered on each side of splice

Bad strip length  
(Too much cooper visible)  
Visible cooper should be just enough to ensure clearance between splice area and wire insulation

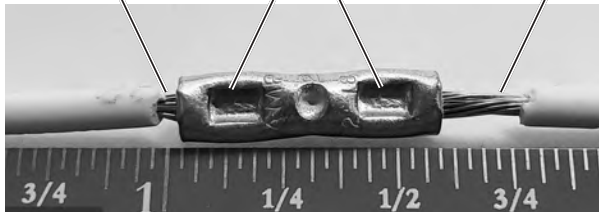


Photo 1

A good crimp requires seam of butt splice to be opposite of crimp die tooth



Photo 2

### Good Ring Terminal Crimp

### Bad Ring Terminal Crimp



Photo 3

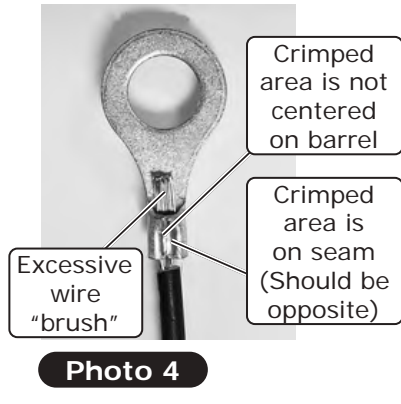


Photo 4

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

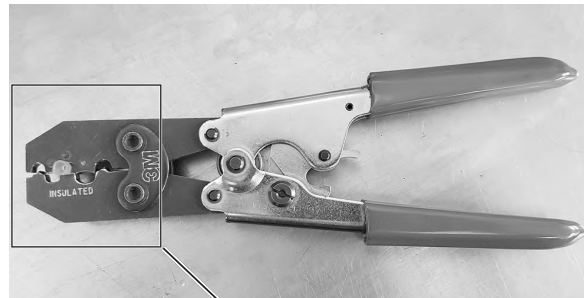


Photo 5

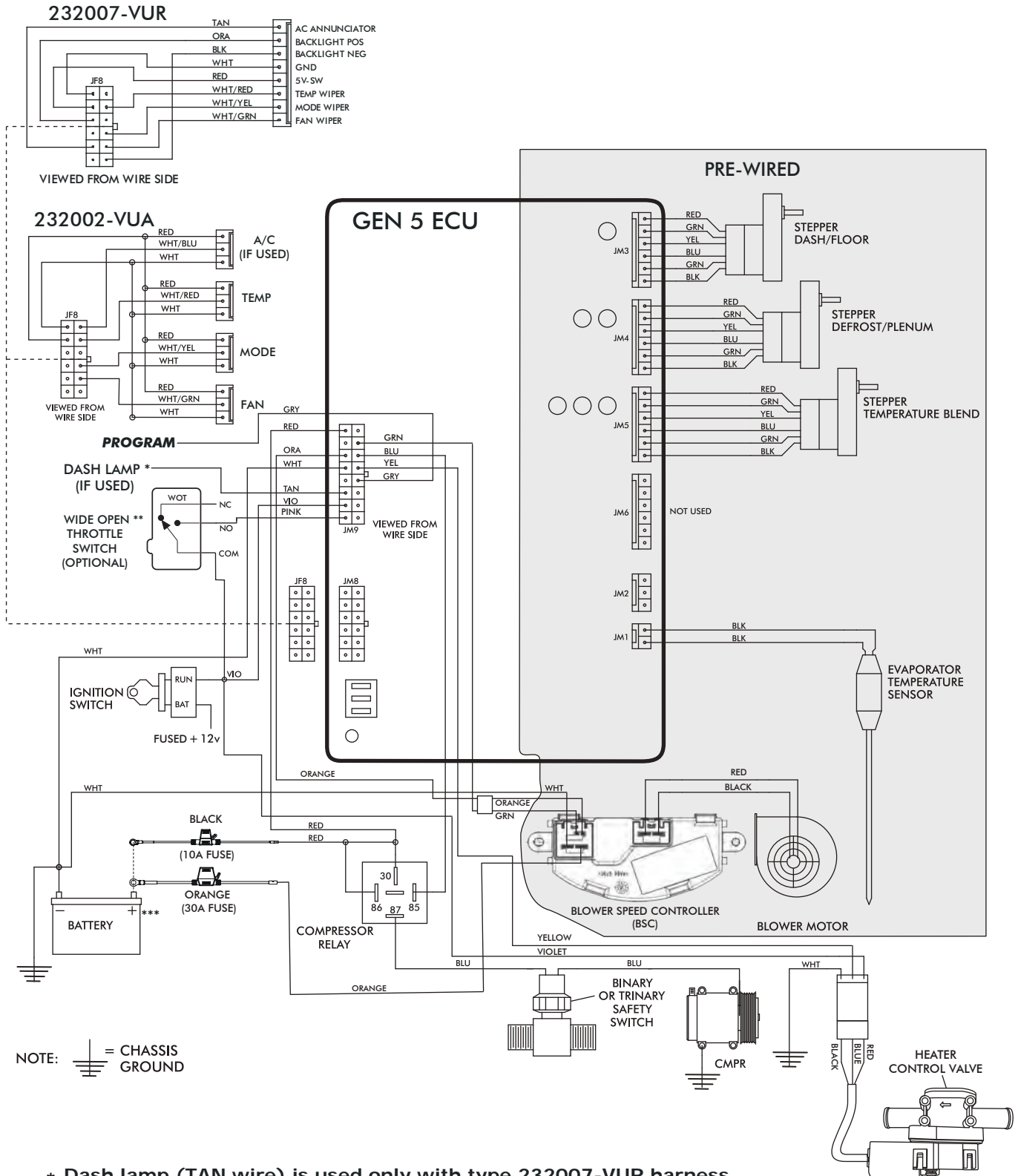


Photo 5a



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# Gen 5 Wiring Diagram



232007-VUR

- TAN → AC ANNUNCIATOR
- ORA → BACKLIGHT POS
- BLK → BACKLIGHT NEG
- WHT → GND
- RED → 5V-SW
- WHT/RED → TEMP WIPER
- WHT/YEL → MODE WIPER
- WHT/GRN → FAN WIPER

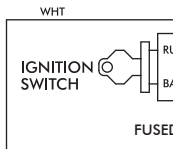
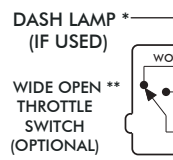
VIEWED FROM WIRE SIDE

232002-VUA

- RED → A/C (IF USED)
- WHT/BLU → A/C (IF USED)
- WHT → A/C (IF USED)
- RED → TEMP
- WHT/RED → TEMP
- WHT → TEMP
- RED → MODE
- WHT/YEL → MODE
- WHT → MODE
- RED → FAN
- WHT/GRN → FAN
- WHT → FAN

VIEWED FROM WIRE SIDE

PROGRAM



NOTE: = CHASSIS GROUND

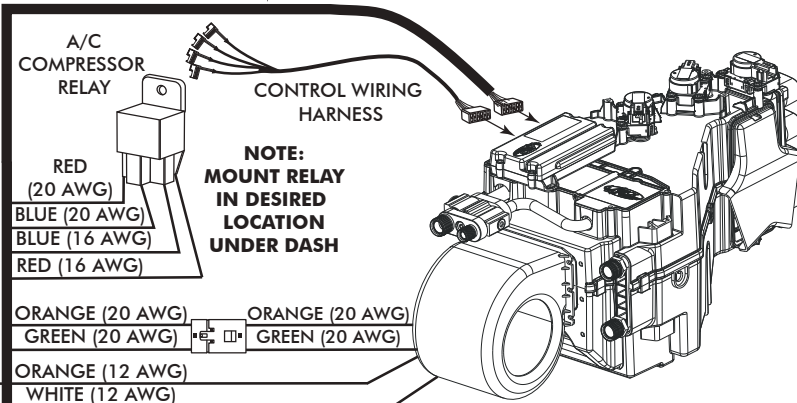
- \* Dash lamp (TAN wire) is used only with type 232007-VUR harness.
- \*\* Wide open throttle switch contacts close only at full throttle, which disables A/C compressor.
- \*\*\* Install fuse assemblies at or as near to the battery as possible.



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# Gen 5 Wiring Instructions

WIRING HARNESS (231505) ↓

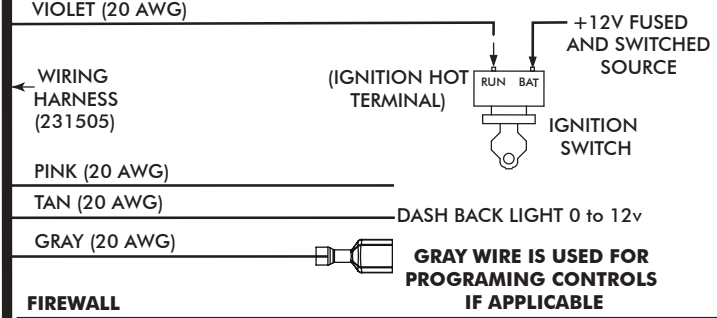


**Ignition Switch:**  
Using provided butt splice (PN 226004), connect the 20 AWG violet wire to a 5A fused and switched 12V source such as Key On.

**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).

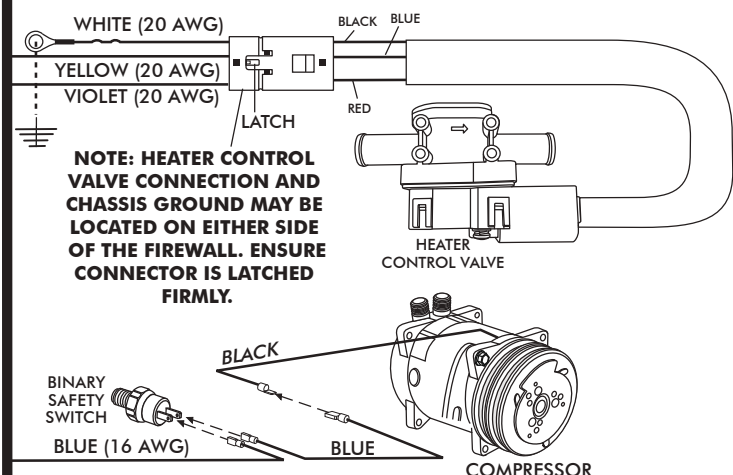
WIRING HARNESS (232020) →



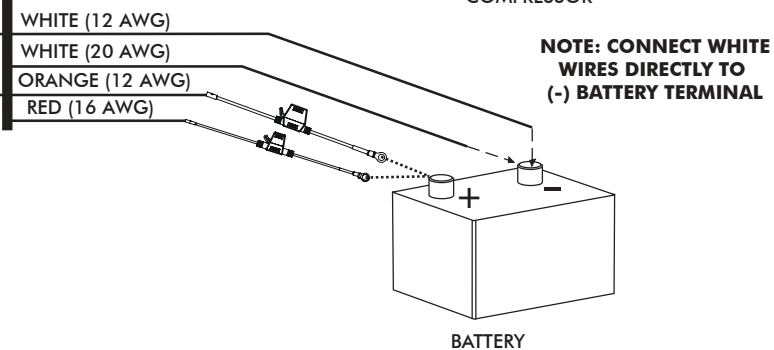
**Heater Control Valve:**  
Connect the Violet/Yellow/White twisted branch with 3 position connector into the heater control valve connector. Ensure that the mating latch is fully seated.

**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.

WIRING HARNESS (232020) →



**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.





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## 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

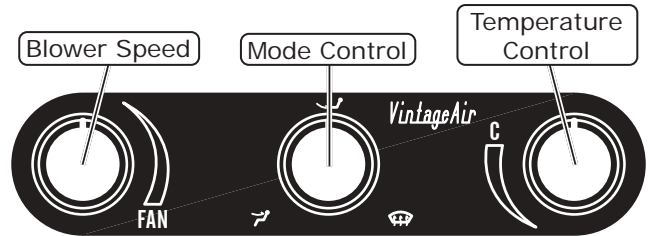
This lever/knob controls blower speed, from OFF to HI.

### Mode Control

This lever/knob controls the mode positions, from 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

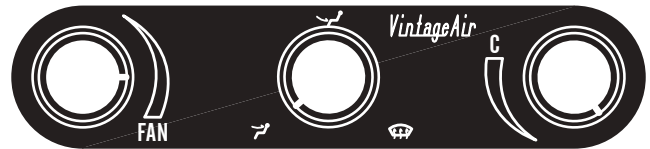
Adjust to desired speed.

### Mode Control

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

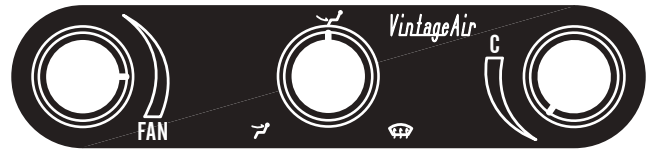
Adjust to desired speed.

### 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

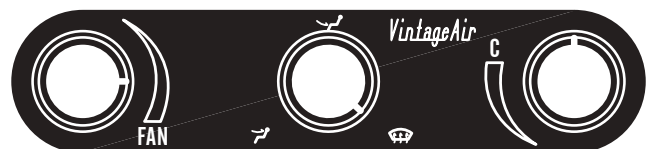
Adjust to desired speed.

### 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. Check for a bad ECU GND.	If found damaged, replace wire assembly or ECU.	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.
	All other functions work.	Check for damaged pins or wires in the control panel wire assembly and mating header at ECU. Check if Blower power fuse is blown. Check for a bad ECU GND.	If found damaged, replace wire assembly or ECU. Replace fuse. 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.	<b>Danger: Never bypass safety switch with engine running. Serious injury can result.</b>
	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).	System is charged.	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.	



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# 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.	
		No mode change at all.	Check for damaged mode switch or potentiometer and associated wiring.	
5. Loss of mode door function.	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.	
6. Blower turns on and off rapidly.	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](https://www.vintageair.com/instructions_pdf/905000.pdf)



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## Packing List: Evaporator Kit (751661)

No.	Qty.	Part No.	Description
1.	1	765125	Gen 5 Magnum Module with 444 ECU
2.	1	791661	Accessory Kit

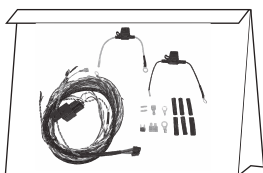
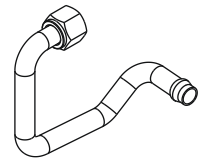
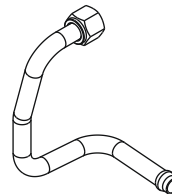
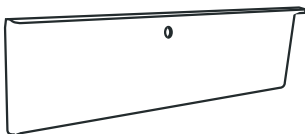
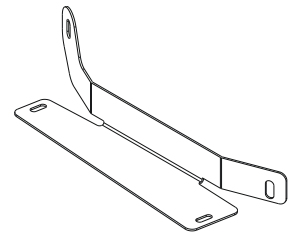
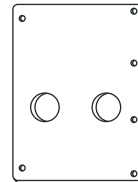
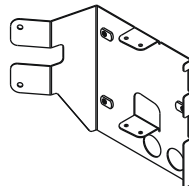
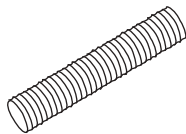
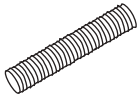
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Packed By: \_\_\_\_\_  
Date: \_\_\_\_\_

1

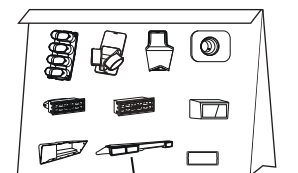
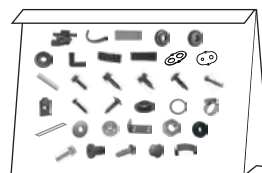
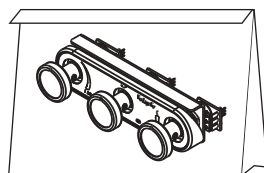


Gen 5 Magnum Module  
with 444 ECU  
765125

2



Accessory Kit  
791661



491663

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