an ISO 9001:2015 Registered Company

1973-79 Ford F-Series / 1978-79 Bronco

without **Factory Air Evaporator Kit (751160)**

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Table of Contents

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Packing List: Evaporator Kit (751160)

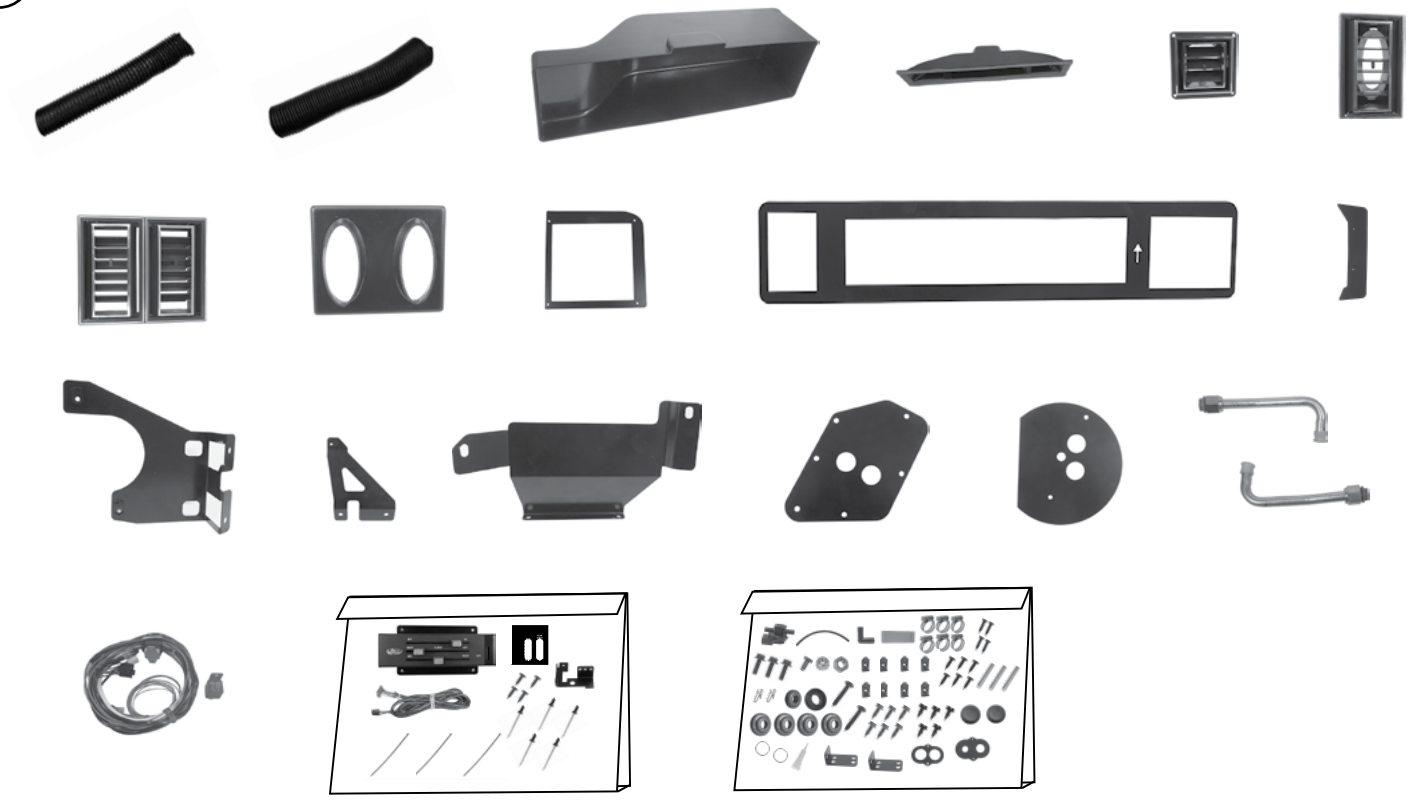
No.	Qty.	Part No.	Description
1.	1	744004-VUE	Gen IV Evaporator Sub Case
2.	1	791160	Accessory Kit

**** 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 IV Evaporator Sub Case 744004-VUE

2



Accessory Kit 791160

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 remained capped. Removing caps prior to assembly will allow moisture, insects and debris into the components, possibly leading to reduced performance and/or premature failure of your A/C system. This is especially important with the receiver/drier.

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

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

Bolts Passing Through Cowl and/or Firewall:

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

Heater Hose (not included with this kit):

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

Important Wiring Notice—Please Read

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

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

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

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

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

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

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

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

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Engine Compartment Disassembly

NOTE: Before starting the installation, check the function of the vehicle (horn, lights, etc.) for proper operation, and study the instructions, illustrations, & diagrams. Retain the 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), and remove the passenger side front tire.
3. Drain the radiator.
4. Remove the heater hoses at the firewall, the intake, and the water pump (discard) (See Photos 2 and 3, below).
5. From the engine compartment, remove the (3) OEM heater core mounting nuts from the firewall (See Photo 2, below).
6. Remove the radiator cooling fan by removing (4) bolts from the fan (See Photo 4, below)
7. Remove the OEM fan shroud by removing (4) bolts, ((2) on each side) (if equipped).

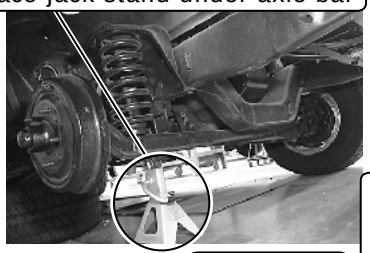
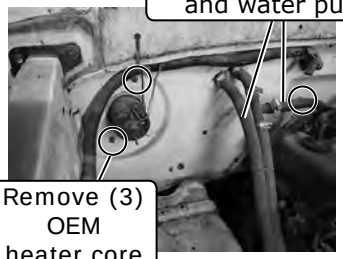


Photo 1



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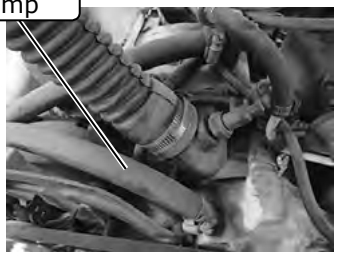
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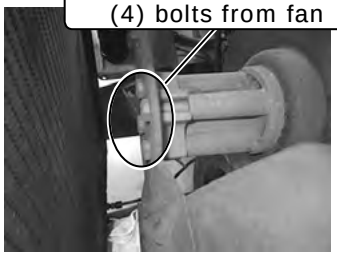


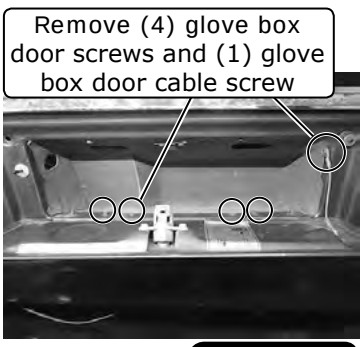
Photo 4

Passenger Compartment Disassembly

NOTE: Some OEM components that are not related to the A/C system will be temporarily removed to gain access to install new parts.

Perform the Following:

1. Remove (4) glove box door screws and (1) glove box door cable screw (See Photo 1, below), then remove the glove box door (discard glovebox).
2. Remove (4) glove box mounting screws and remove the glove box from the dash (discard) (See Photo 2, below).
3. Disconnect all plugs and cables from the heater/blower assembly (See Photo 3, below).
4. Disconnect the defrost boot from the heater/blower assembly and remove the blower assembly from the vehicle (discard) (See Photo 4, below).



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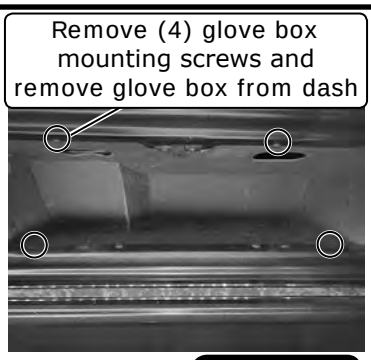

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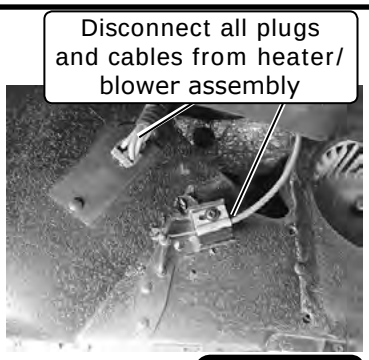

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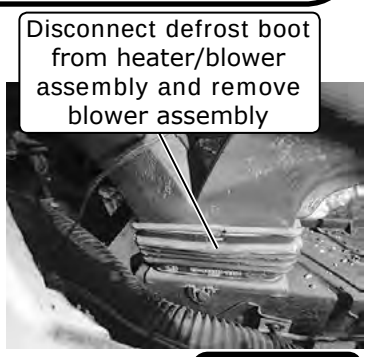
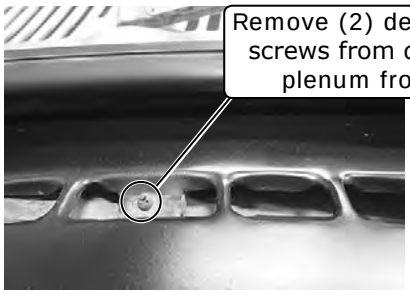


Photo 4

Passenger Compartment Disassembly (Cont.)

5. Remove (2) defrost duct plenum screws from the dash and remove the plenum from under the dash (See Photos 5 and 6, below).
6. Remove the radio knobs and mounting hardware, then the headlight and wiper knobs (See Photos 7 and 8, below).
7. Remove (5-7) gauge bezel screws (depending on model) (retain) (See Photo 9, below).
8. Disconnect the light for the headlight and wiper knobs, then remove the bezel from the vehicle (See Photo 10, below).
9. Remove (4) gauge cluster screws (retain). Unplug the wiring and speedometer connections from the back of the gauge cluster and remove it from the vehicle (See Photo 11, below).
10. Remove (4) control panel mounting screws (retain). Disconnect all the plugs, cables and the light, then remove the control panel from the vehicle (See Photo 12, below).
11. Remove (4) control panel/radio mounting bracket screws. Unplug the radio connections and remove the radio from the vehicle.
12. Remove (6) OEM fresh air duct mounting screws and remove the fresh air duct from the kick panel (See Photo 13, below).



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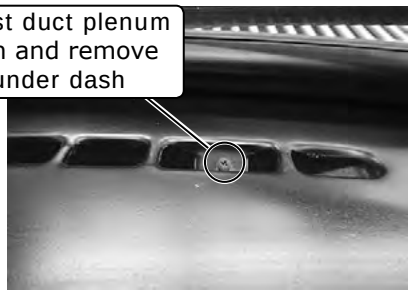

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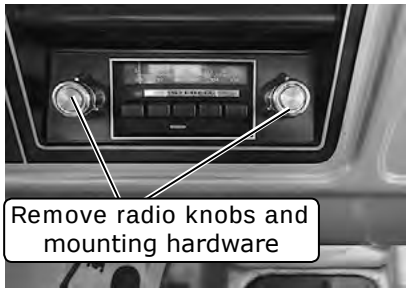

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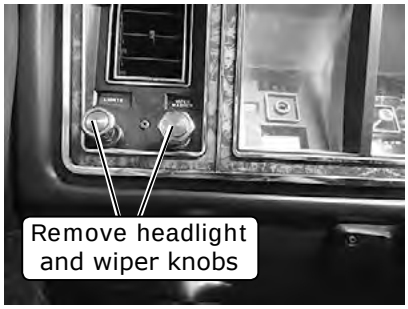
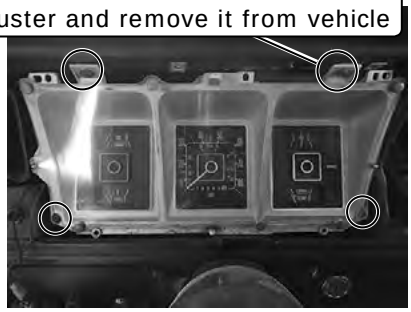


Photo 8

Photo 9

Photo 10



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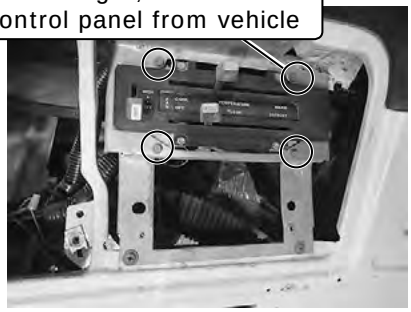

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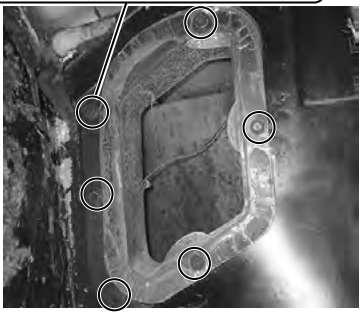


Photo 13

Condenser Assembly and Installation

1. Refer to separate instructions included with the condenser kit to install the condenser.

2. Binary switch installation (Refer to condenser instructions).

Compressor and Brackets

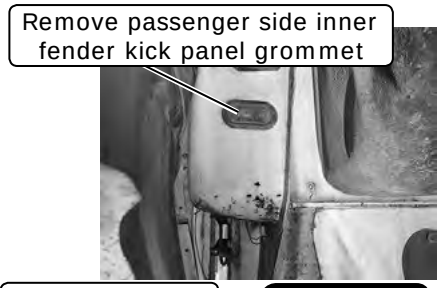
1. Refer to separate instructions included with the bracket kit to install the compressor bracket.

Passenger Side Wheel Well Modification

1. Locate the passenger side inner fender kick panel grommet. Follow step "a" if there is a grommet and/or opening. Follow step "b" if the truck does not have a grommet and/or opening.

a. Remove the passenger side inner fender kick panel grommet (See Photo 1, below). Locate the firewall A/C hose cover plate and center it onto the passenger side inner fender kick panel opening. Using the cover plate as a template, mark and drill (2) 5/32" mounting holes (See Photo 2, below).

b. Locate the firewall A/C hose cover plate. Measure down from the body seam 4' (See Photos 3 and 4, below) and from the side body seam 1/2" (See Photo 5, below). Secure the cover plate in place as shown in Photo 6, below. Mark the (4) holes. The (2) mounting holes will be drilled using a 5/32" drillbit and the (2) A/C hose openings will be drilled to 1 ¼" (See Photo 7, below).



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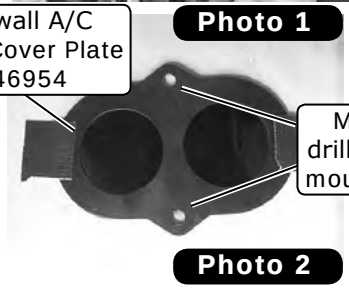

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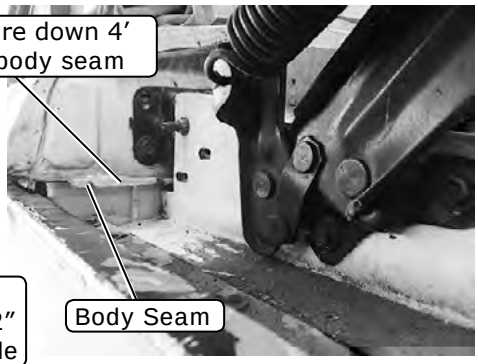

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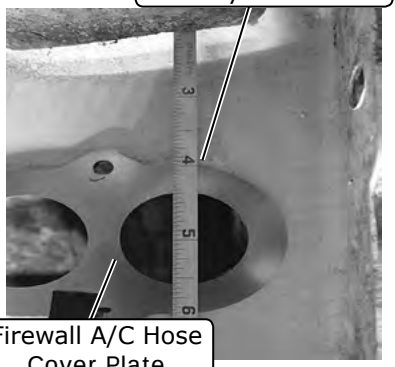

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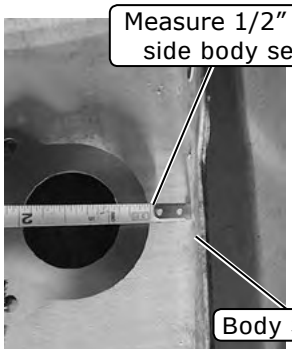

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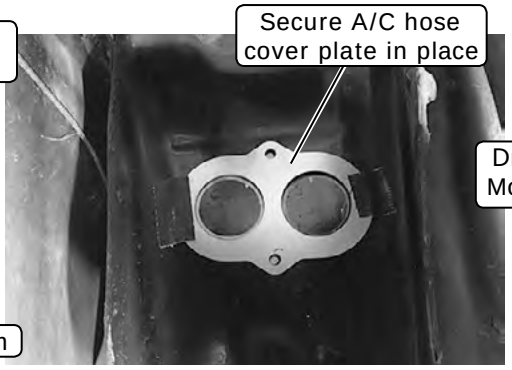

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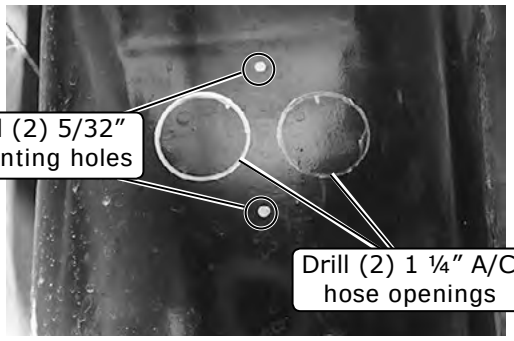

Photo 7

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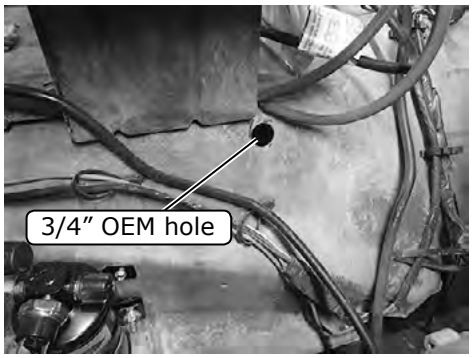
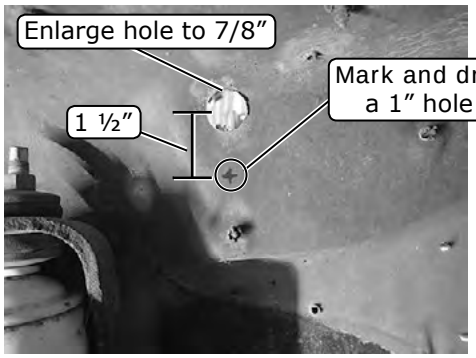
Engine Compartment, Passenger Side Inner Fender Modification

1. On the passenger side inner fender under the battery tray, locate a 3/4" 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).

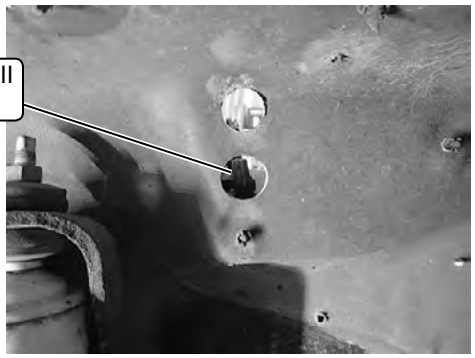
2. Directly under the recently enlarged hole, measure from the middle of the hole 1 ½" down, then mark and drill a 1" hole to accommodate the #6 A/C hose grommet (See Photos 2 and 3, below).



Engine Side **Photo 1**



Wheel Well Side **Photo 2**



Wheel Well Side **Photo 3**

Firewall Modification

1. From the passenger compartment, measure from the passenger side kick panel 15 ⅜" towards the driver side and 2 ½" up from the floor seam (See Photo 1, below). Mark and drill a 5/8" hole for the drain tube grommet (See Photo 1, below). **NOTE: To ensure a tight fit for the drain hose, do not enlarge the hole to more than 5/8".**

2. Install (2) 1" plugs into the OEM heater hardline holes in the firewall (See Photo 2, below).

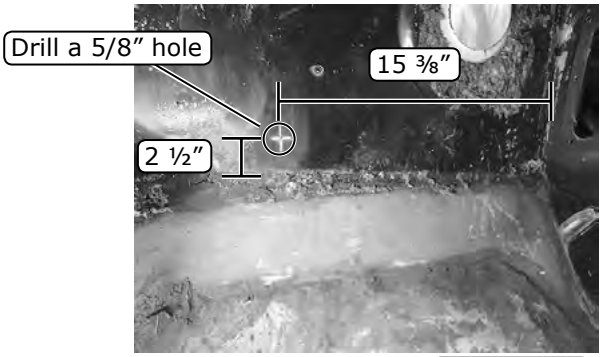


Photo 1

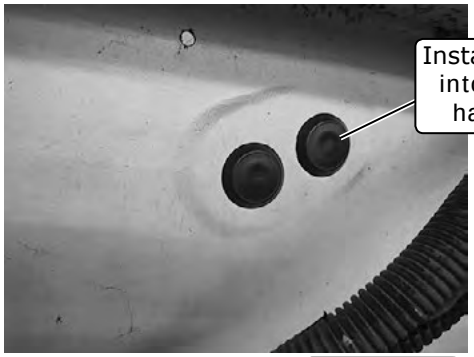


Photo 2

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".

Dash Modification

1. Using the template provided in the kit, align the template for the dual center and passenger side louvers with the arrow facing up as shown in Photo 1 below.
2. Mark the louver openings and cut out the dash (See Photos 2 and 3, below). **NOTE: Before cutting the dash, ensure the marks are the same size as the template openings.**
3. Align the driver side template in the gauge cluster bezel as shown in Photo 4, below. Drill the pilot holes using a 5/64" drill bit.
4. Flip the bezel over and realign the template over the drilled holes, then mark the square (See Photo 5, below).
5. Cut and remove the marked area (See Photo 6, below).
6. **Optional-** Flip the bezel over to the front side and remove the remaining plastic trim so the louver sits flush to the bezel (See Photo 7, below).
7. Install the driver side louver into the bezel opening and secure it using (4) #4 x 1/2" screws (See Photo 8, below).

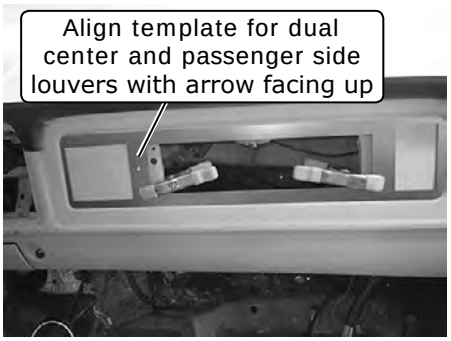
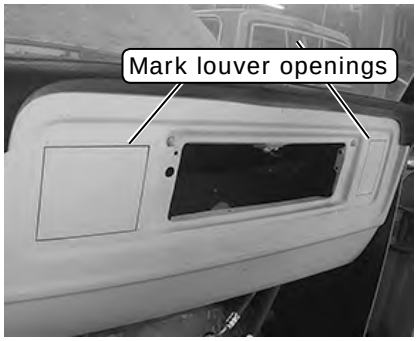


Photo 1



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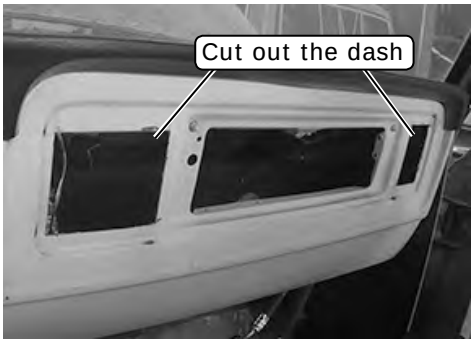

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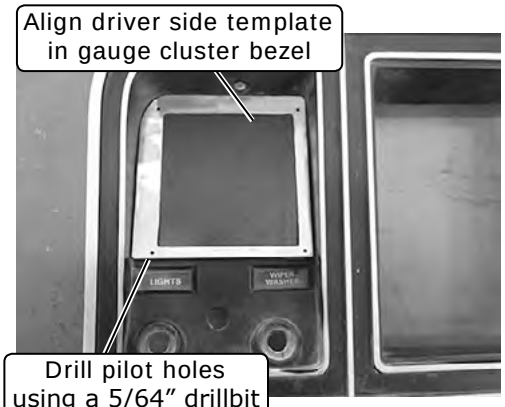


Photo 4

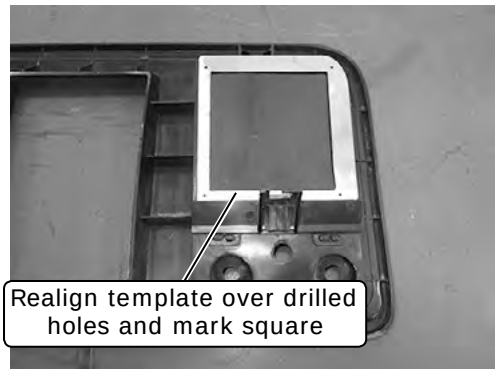


Photo 5

Photo 6

Optional

Photo 7

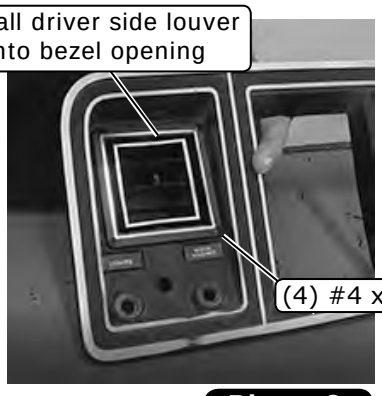
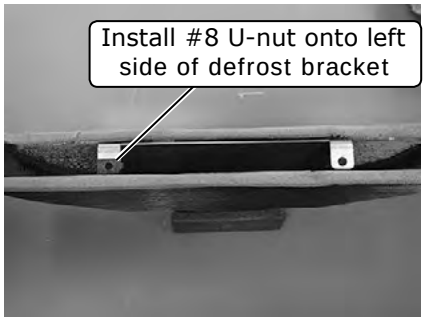


Photo 8

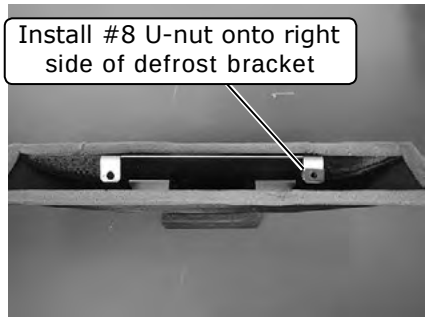
Defrost Duct Installation

1. On the driver side defrost duct, install a #8 U-nut onto the left side of the defrost bracket as shown in Photo 1, below.
2. On the passenger side defrost duct, install a #8 U-nut onto the right side of the defrost bracket as shown in Photo 2, below.
3. Install the driver and passenger side defrost ducts, and secure them using (2) ((1) per side) #8 x 1" screws in the OEM defrost mounting holes (See Photo 3, below).



Driver Side Defrost Duct

Photo 1



Passenger Side Defrost Duct

Photo 2

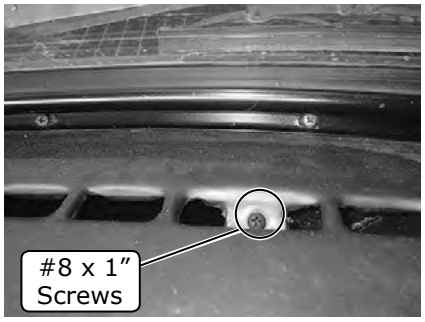


Photo 3

Louver & Hose Adapter Installation

1. Install the new louvers into the previously modified dash openings (See Photos 1 and 2, below).
2. Install (2) S-clips onto the center hose adapter as shown in Photo 3, below.
3. Install the hose adapter onto the back of the new center louver as shown in Photo 4, below.

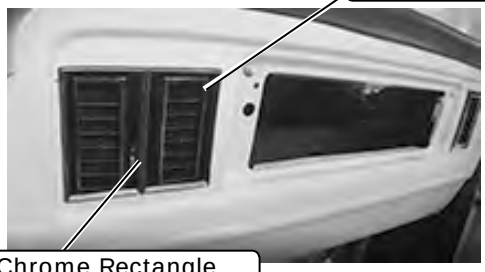
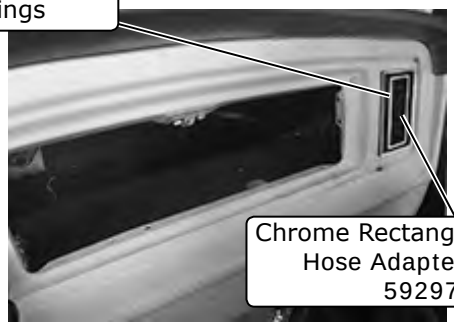


Photo 1



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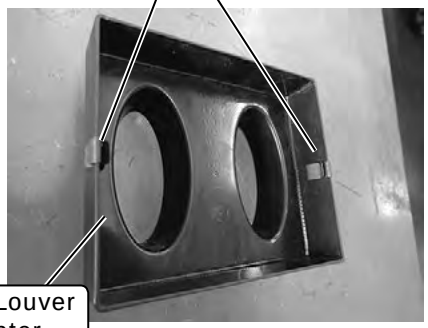

Photo 3

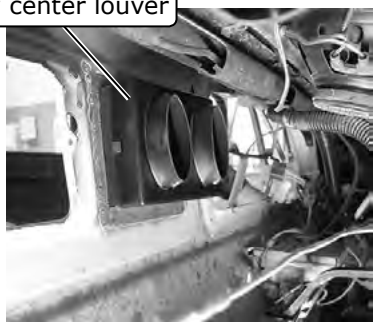

Photo 4

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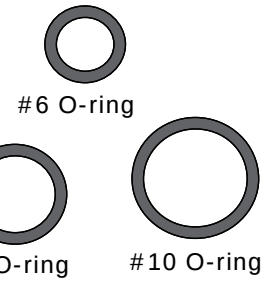
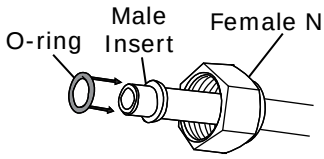
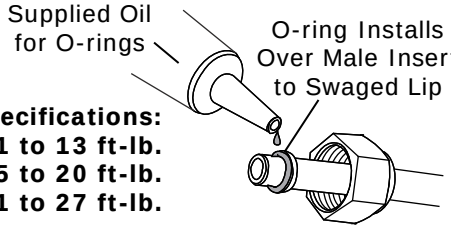
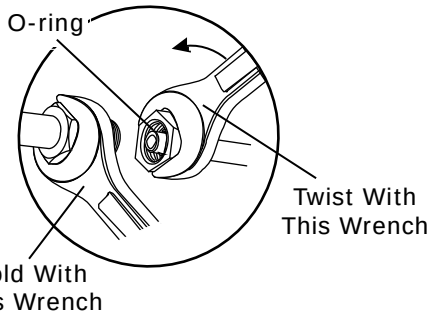
Lubricating O-rings





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





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

Evaporator Preparation

On a workbench, perform the following:

1. Install the passenger side evaporator firewall bracket onto the evaporator using (2) 1/4-20 x 1/2" bolts (supplied on the evaporator sub case) (See Photo 1, below).
2. Install the driver side evaporator firewall bracket using (2) 1/4-20 x 1/2" bolts (supplied on the evaporator sub case) (See Photo 2, below).
3. Install the #10 upper and lower heater hardlines onto the evaporator unit with properly lubricated #10 O-rings (See Lubricating O-rings, above, and Photo 3, below). **NOTE: The sub case is shipped under pressure. When removing the caps from the sub case, be careful and ensure the rubber inserts are removed! Do not fully tighten the hardlines until all lines are in the proper position for installation.**
4. Install (3) 1/4-20 x 1 ½" full-length studs into the weldnuts of the evaporator firewall brackets (See Photos 4 and 5, below).
5. Temporarily place the firewall cover onto the evaporator bracket as shown in Photo 6, below. Center and tighten the hardlines, then remove the cover.
6. Install (2) #8 U-nuts onto the evaporator dash bracket (See Photo 7, below).

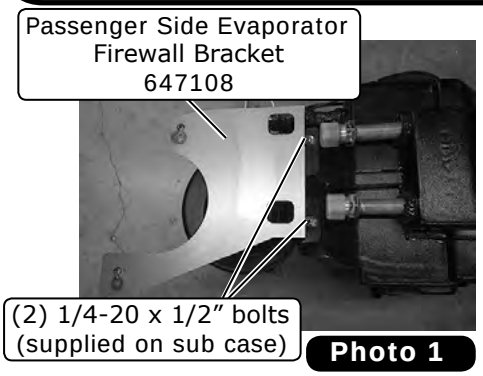


Photo 1

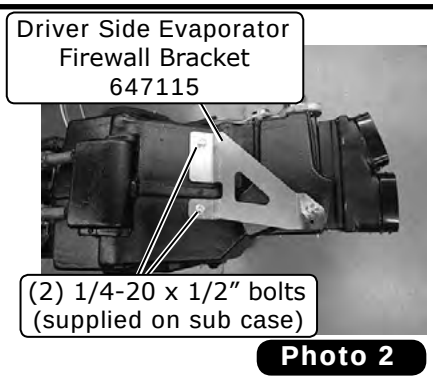


Photo 2

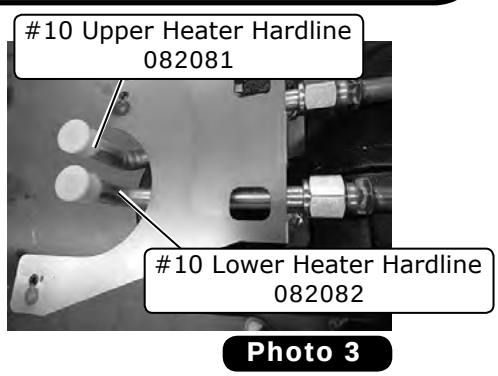


Photo 3

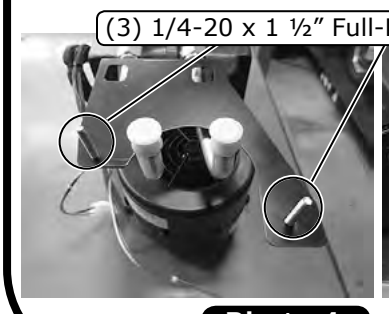


Photo 4

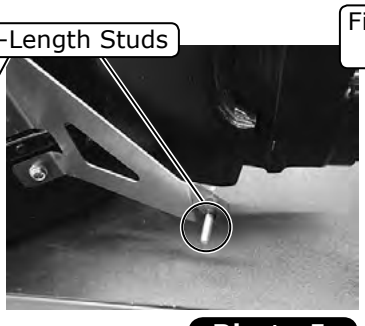


Photo 5

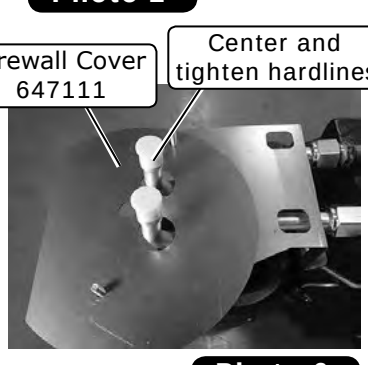


Photo 6

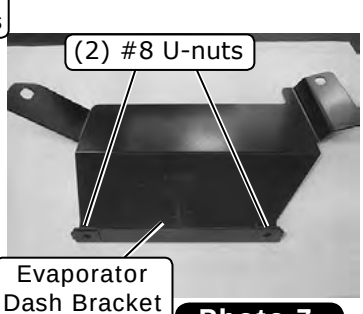


Photo 7

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A/C Hose Routing & Kick Panel Cover 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 #10 evaporator/fenderwell A/C hose, and install the end of the hose with the 90° fitting through the inner fenderwell (See Photo 1, below). **NOTE: The 90° bulkhead fitting will restrict the A/C hose from going through the inner fenderwell.**
2. Locate the 1 ¼" grommet and install it into the inner fenderwell under the #10 bulkhead fitting (See Photo 2, below).
3. Locate the #6 drier/evaporator A/C hose and route the straight fitting from under the fenderwell through the grommet into the engine compartment (See Photo 3, below). **NOTE: Ensure that the straight fitting reaches the drier connection.**
4. Secure the #10 and #6 A/C hoses to the core support using the #10 and #6 Adel clamps with #10 x 1/2" sheet metal screws (See Photo 4, below).
5. Route the (2) A/C hoses into the channel on the inner fender, and install an A/C hose fenderwell bracket onto the OEM bolt using a 5/16-18 hex nut (See Photo 5, below).
6. Locate the firewall A/C hose cover plate and rubber boot (See Photo 6, below).
7. Route the #10 A/C hose 45° fitting through the firewall A/C hoses cover plate, and through the large hole in the rubber boot (See Photo 7, below).

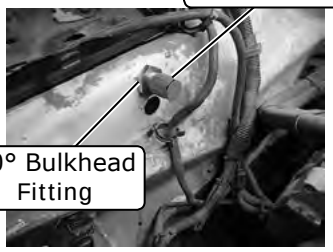

Photo 1

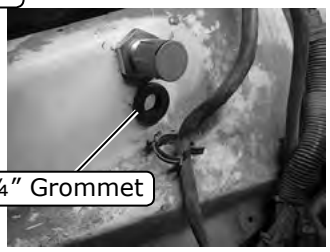

Photo 2

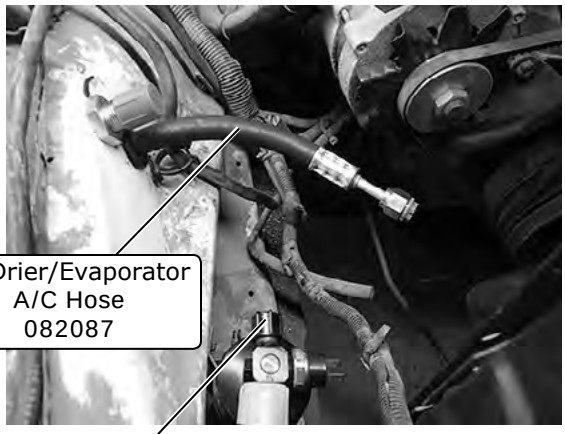

Photo 3

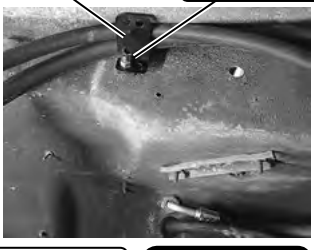

Photo 5

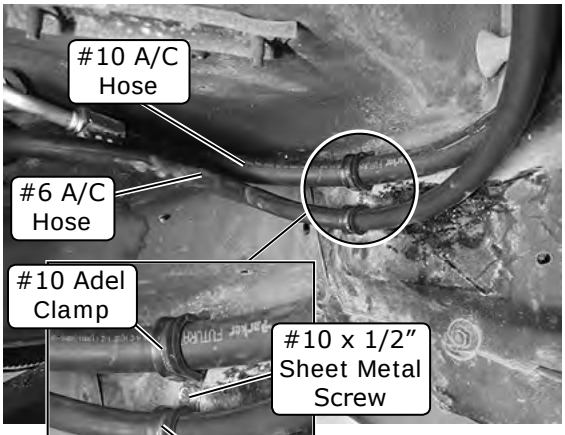

Photo 4

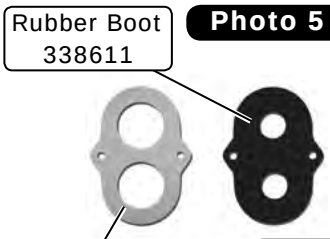

Photo 6

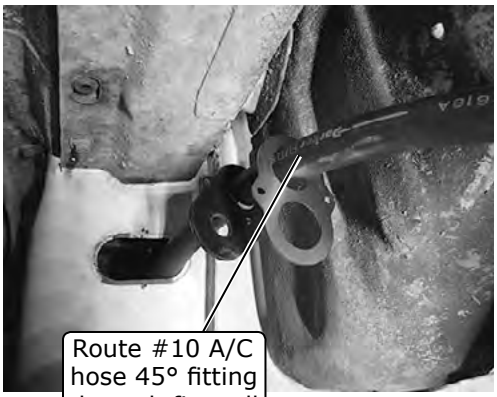

Photo 7

A/C Hose Routing & Kick Panel Cover Installation (Cont.)

8. Route the #6 A/C hose 45° fitting through the firewall cover plate and rubber boot (See Photo 8, below).
9. Route the #6 and #10 A/C hoses through the kick panel opening into the passenger compartment.
10. Install an A/C hose fenderwell bracket using a 1/4-20 x 1/2" hex bolt and 1/4-20 nut with star washer through the OEM hole on the inner fender (See Photo 9, below).
11. Secure the rubber boot and firewall cover plate to the firewall 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 9, below).
12. Locate the kick panel cap and install (2) large grommets (See Photo 10, below). **NOTE: Verify the correct side of the grommet is installed.**
13. Route the #10 evaporator/fenderwell A/C hose 45° fitting through the right side grommet in the kick panel cover (See Photo 11, below).
14. Route the #6 drier/evaporator A/C hose 45° fitting through the left side kick panel grommet (See Photo 12, below). **NOTE: Be sure that the 45° fitting is facing up as shown in Photo 12, below.**
15. Apply silicone around the kick panel cover mating surface for a watertight seal (See Photo 13, below).

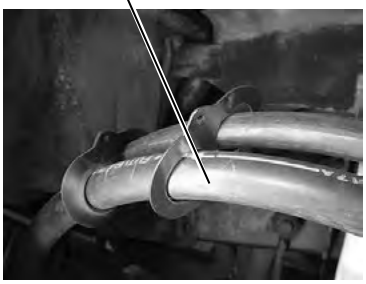

Photo 8

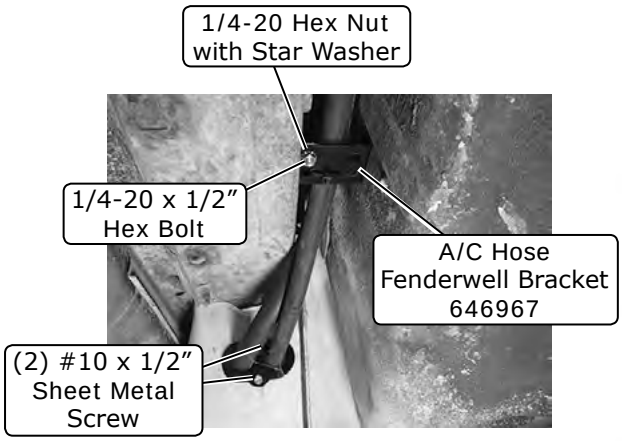

Photo 9

Photo 10

Photo 11

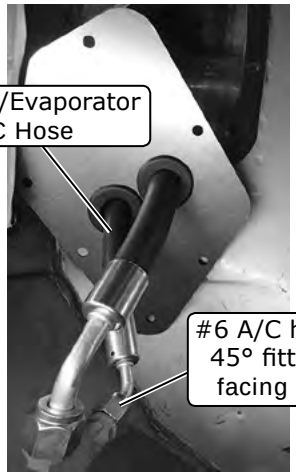

Photo 12

Photo 13

A/C Hose Routing & Kick Panel Cover Installation (Final)

16. Install the kick panel cover onto the kick panel opening, and secure it using (5) #14 x 3/4" washer head screws (See Photo 14, below). **NOTE: The last screw will be installed later with the relay.**

17. Secure the A/C hoses to the fenderwell brackets using the supplied tie wraps (See Photos 15 and 16, below).

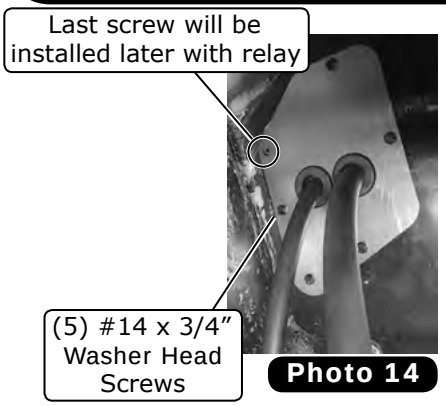

Photo 14

Photo 15

Photo 16

Evaporator & Firewall Cover Installation

NOTE: A board cut between 12" to 13 ½" may be used between the firewall and the dash to provide space to install the evaporator unit (See Photo 1, below).

1. Remove the (2) dash mounting bolts ((1) in the center of lower dash (See Photo 2, below), and (1) on the passenger side in the upper right corner next to the kick panel opening (See Photo 3, below)). **NOTE: This will be necessary to provide extra space when installing the evaporator unit.**

2. Place the evaporator unit on the passenger floorboard, and connect the #6 A/C hose 45° fitting to the expansion valve with a properly lubricated #6 O-ring (See Lubricating O-rings, Page 12, and Photo 4, below).

3. Raise the evaporator unit under the dash, inserting the studs and hardlines through the firewall.

4. Remove the support board, and loosely install the evaporator dash bracket onto the evaporator sub case inside of the dash with the (2) 1/4-20 x 1/2" bolts (supplied on sub case) (See Photo 5, below).

5. Reinstall the previously removed (2) OEM dash mounting bolts from Photos 2 and 3, below.

6. Use the template provided against the evaporator unit to mark the bottom of the dash (See Photo 6, below).

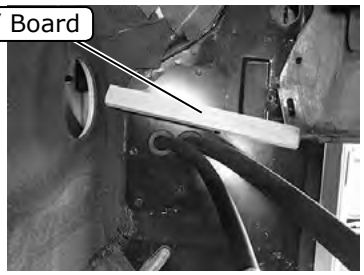

Photo 1

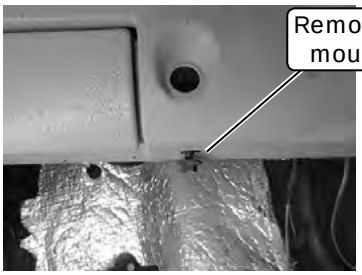

Photo 2

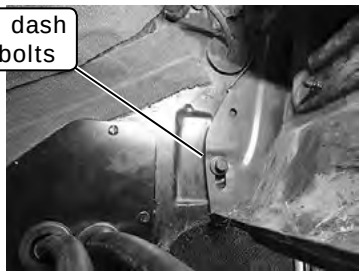

Photo 3

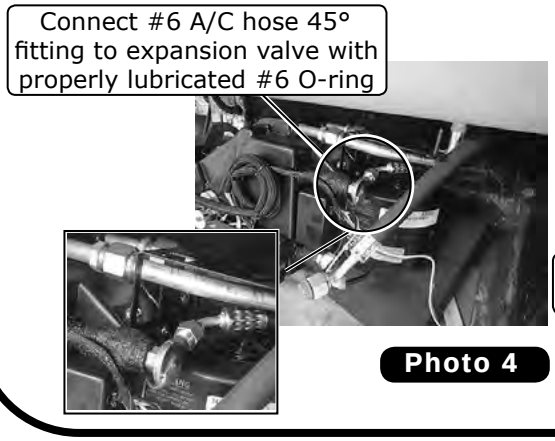

Photo 4

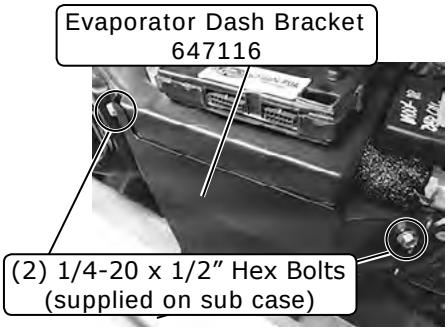

Photo 5

Photo 6

Evaporator & Firewall Cover Installation (Cont.)

7. Drill (2) 11/64" holes (See Photo 7, below).
8. Install (2) #8 x 1/2" screws through the lower dash into the evaporator dash bracket (See Photo 8, below).
9. Install (2) large grommets into the openings on the firewall cover. **NOTE: Verify the correct side of grommet is installed as shown in Photo 9, below.**
10. Apply a bead of silicone around the mating surface of the firewall cover (See Photo 10, below), and install it over the full-length studs and heater hardlines (See Photo 11, below).
11. From the engine compartment, replace the full-length studs with (3) 1/4-20 x 3/4" hex washer bolts ((2) on the passenger side firewall cover (See Photo 12, below), and (1) on the driver side evaporator bracket) (See Photo 13, below). **NOTE: Do not fully tighten mounting hardware at this time.**

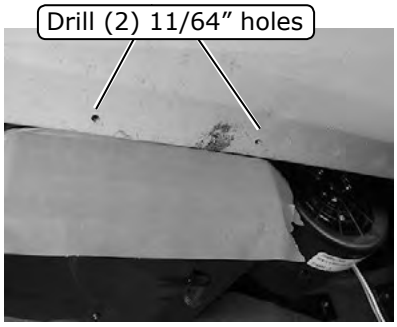

Photo 7

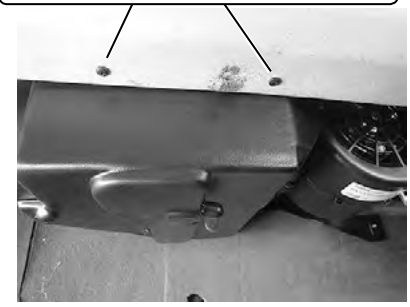

Photo 8

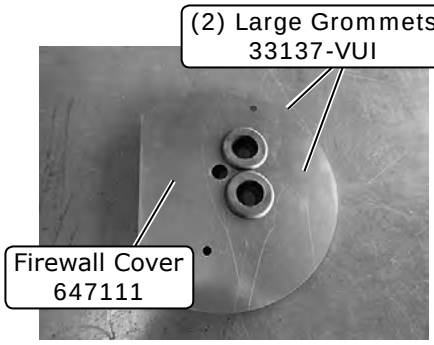

Photo 9

Photo 10

Photo 11

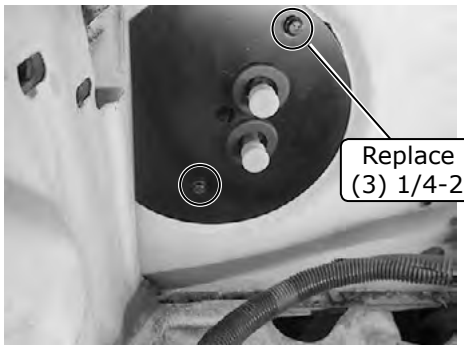

Photo 12

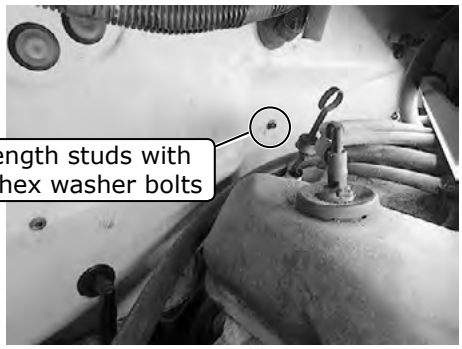

Photo 13

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Evaporator Unit Leveling

NOTE: To ensure proper drainage, it is very important the evaporator is level, both fore-aft and left-right. Before leveling the evaporator, ensure the vehicle is level (See Photos 1 and 2, below).

1. Once the unit has been leveled, tighten all mounting hardware ((3) firewall mounting bolts and (2) dash bracket mounting bolts).

Photo 1

Photo 2

Wiring Installation

1. Disconnect the circuit breaker from the main wiring harness (See Photo 1, below).

2. Enlarge the hole on the relay mounting tab to accommodate the #14 x 3/4" washer head screw installed on the kick panel cover (See Photo 2, below).

3. Route the heater control valve plug through the 7/8" OD x 3/8" ID grommet (See Photo 3, below).

4. Install the 7/8" OD x 3/8" ID grommet into the 5/8" hole in the firewall cover (See Photo 4, below).

5. Route the red, white and blue wires from the main wiring harness through the 7/8" OD x 3/8" ID grommet into the engine compartment and along the top of the inner fender toward the battery in the engine compartment (See Photo 5, below).

6. Attach the white ground wire eyelet from the heater control valve to a suitable ground (See Photo 6, below).

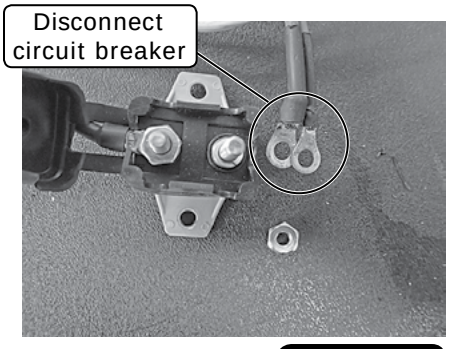


Photo 1

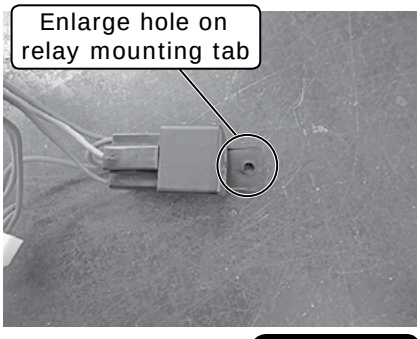


Photo 2

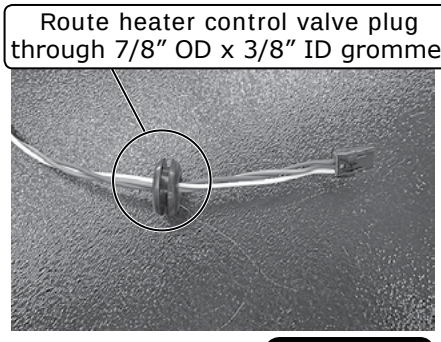


Photo 3

Photo 4

Photo 5

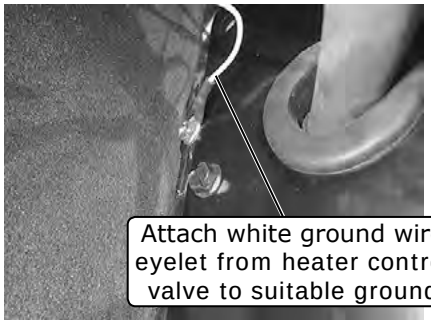


Photo 6

Wiring Installation (Cont.)

7. Install the main wiring harness relay onto the kick panel cover with the remaining #14 x 3/4" washer head screw (See Photo 7, below).
8. Plug the white connector of the heater control valve into the white connector on the main wiring harness (See Photo 8, below).
9. Plug the white connector of the fan motor into the white connector of the main harness (See Photo 9, below).
10. Place the circuit breaker onto the vehicle body and secure it using (2) #10 x 1/2" sheet metal screws (See Photo 10, below). **NOTE: Mount the circuit breaker as close to the battery as possible.**
11. Reconnect the positive wires to the circuit breaker (See Photo 11, below).
12. Crimp the supplied 5/16" ring terminals to the white ground wires and connect them to the negative side of the battery (See Photo 12, below).
13. Crimp the supplied 5/16" ring terminal to the red positive wire. **NOTE: Do not connect to the positive side of the battery until the installation is complete.**
14. Plug the main wiring harness into the ECU (See Photo 13, below).
15. Route the violet power wire to a switched 12v power source on the fuse panel (See Photo 14, below).
16. Connect the tan wire to the factory dash lights to enable control panel backlighting.

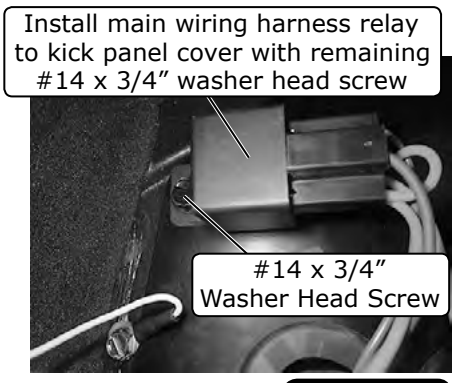
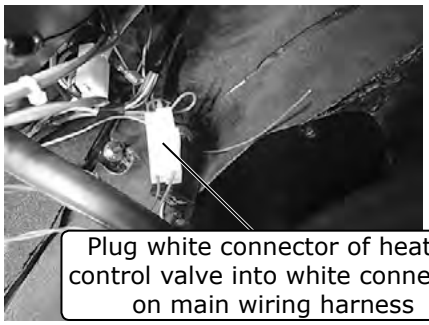


Photo 7



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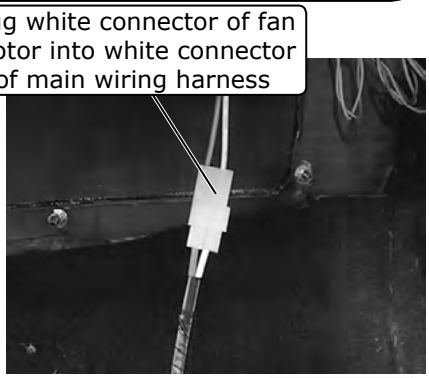

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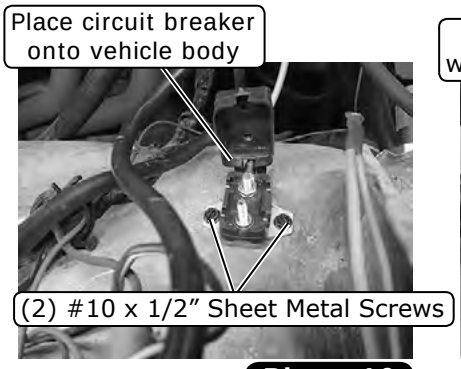
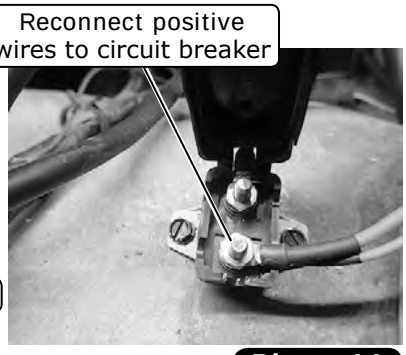


Photo 10



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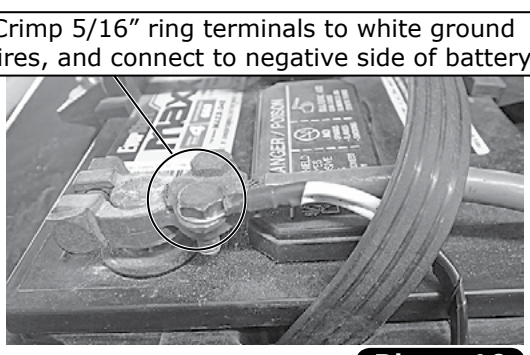


Photo 12

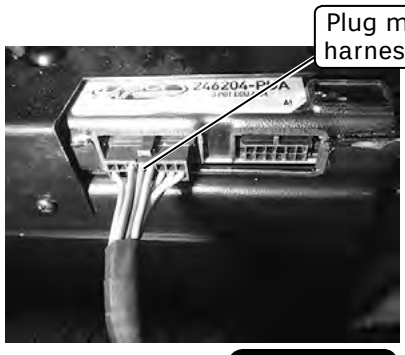


Photo 13

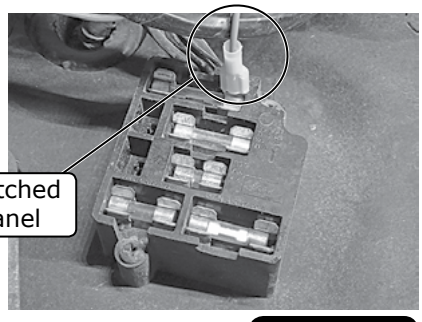


Photo 14

A/C Hose Installation

1. Install the 45° fitting of the #10 evaporator/fenderwell A/C hose to the evaporator unit #10 fitting with a properly lubricated #10 O-ring (See Lubricating O-rings, Page 12, and Photo 1, below).
2. Insulate the #10 evaporator fitting and all exposed metal with the supplied press tape (See Photo 2, below).
3. Using a properly lubricated #6 O-ring (See Lubricating O-rings, Page 12), connect the straight fitting of the #6 drier/evaporator A/C hose to the drier (See Photo 3, below).
4. Using a properly lubricated #10 O-ring (See Lubricating O-rings, Page 12), connect the 135° fitting with service port of the #10 fenderwell/compressor A/C hose to the #10 suction port on the compressor (See Photo 4, below).
5. Using a properly lubricated #10 O-ring (See Lubricating O-rings, Page 12), connect the 45° fitting of the #10 fenderwell/compressor A/C hose to the #10 bulkhead fitting (See Photo 5, below).
6. Using a properly lubricated #8 O-ring (See Lubricating O-rings, Page 12), connect the #8 condenser/compressor A/C hose 90° fitting with service port to the #8 discharge port on the compressor (See Photo 6, below).
7. Using a properly lubricated #8 O-ring (See Lubricating O-rings, Page 12), connect the #8 A/C hose straight fitting to the #8 condenser hardline (See Photo 7, below).

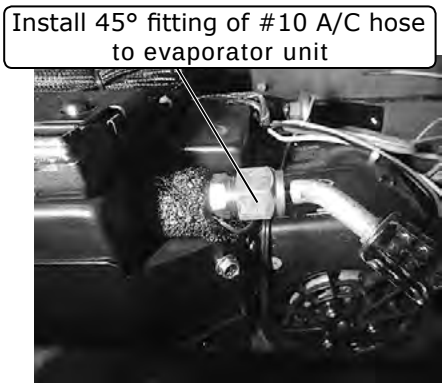


Photo 1

Photo 2

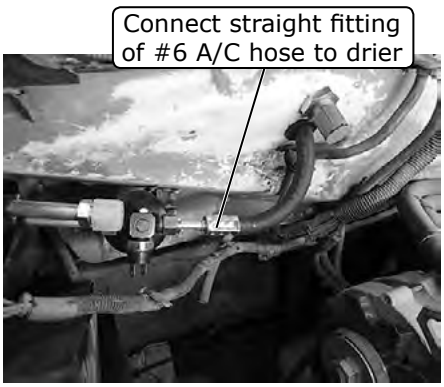


Photo 3

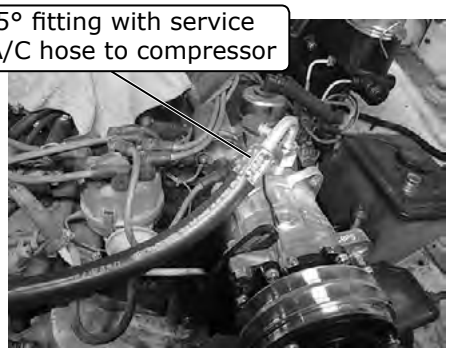


Photo 4

Photo 5

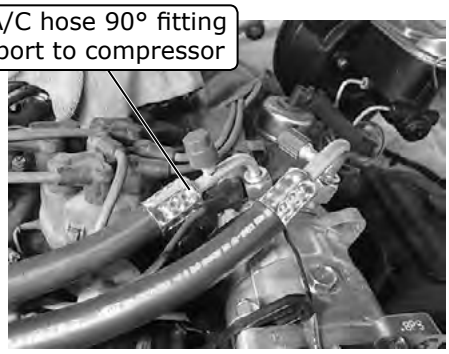


Photo 6

Photo 7

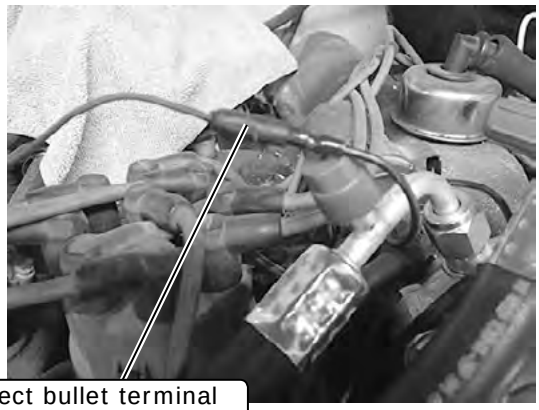
Wiring Final Steps

1. Route the blue wire from the main wiring harness along the inner fender toward the drier, and secure it to the #6 A/C hose with the supplied tie wraps. Crimp the supplied 1/4” female terminal to the blue wire, and connect it to the safety switch on the drier (See Photo 1, below).
2. Connect the bullet terminal of the compressor lead to the compressor bullet terminal (See Photo 2, below).
3. Route the compressor lead wire along the #8 A/C hose. Secure the compressor lead wire to the #8 A/C hose with the supplied tie wraps. Connect the 1/4” female terminal of the compressor lead to the safety switch on the drier (See Photo 3, below).

Crimp supplied 1/4” female terminal to blue wire, connect it to safety switch on drier

Route blue wire from main wiring harness along inner fender toward drier and secure it to #6 A/C hose with supplied 4” tie wraps

Photo 1



Connect bullet terminal of compressor lead to compressor bullet terminal

Photo 2

Secure compressor lead wire to #8 A/C hose with supplied tie wraps

Connect 1/4” female terminal of compressor lead to safety switch on drier

Photo 3

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Heater Hose & 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 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. Remove the caps from the heater hardlines.
2. Route a piece of heater hose (not supplied) from the lower heater hardline to the water pump and secure the hose using (2) #12 hose clamps (See Photo 1, below).
3. Install a 5" piece of heater hose (not supplied) to the heater control valve and install it to the upper heater hardline, then secure it using (2) #12 hose clamps (See Photo 1, below). **NOTE: Ensure proper flow direction through the heater control valve (the flow direction follows the molded arrow on the valve) (See Figure 1 and Photo 2, below).**
4. Install a length of heater hose (not supplied) from the heater control valve to the intake manifold fitting. Secure the hose with (2) #12 hose clamps (See Photo 1, below).
5. Plug the heater control valve connector to the main harness (See Photo 3, below).

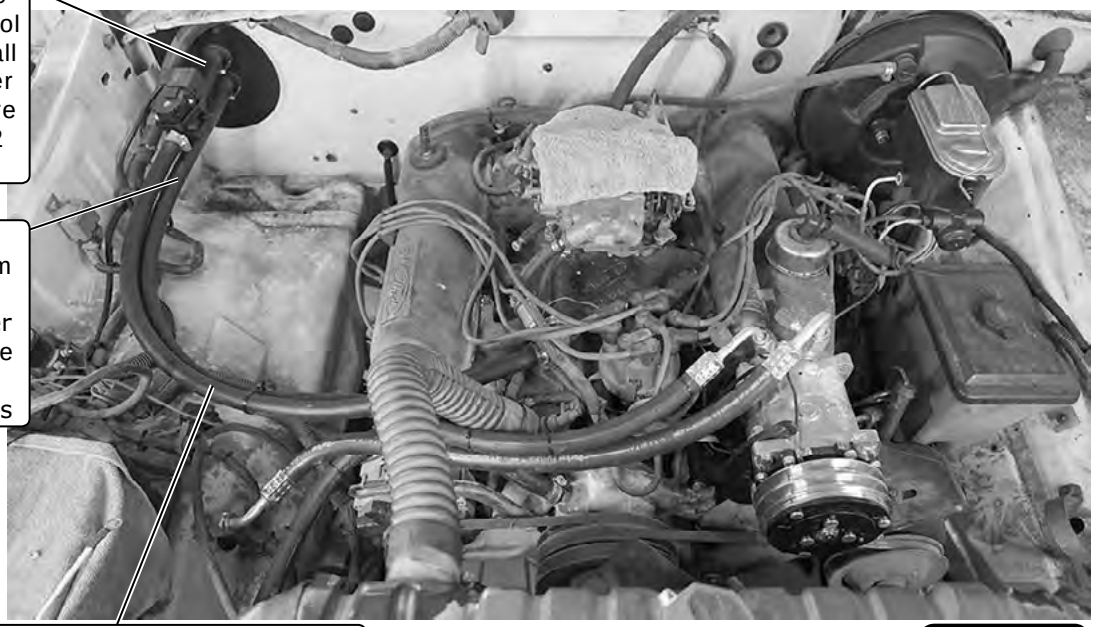
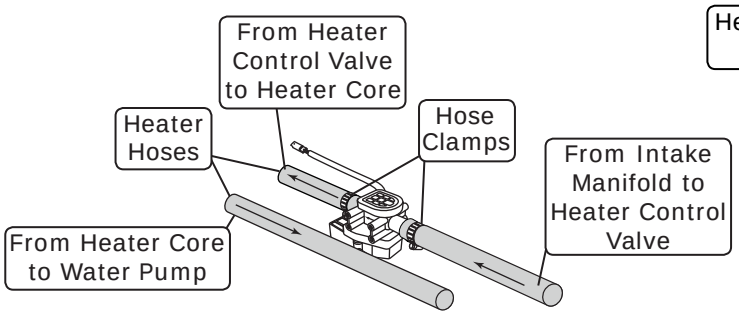


Photo 1



NOTE: Flow Direction Follows Molded Arrow on Valve.

Figure 1

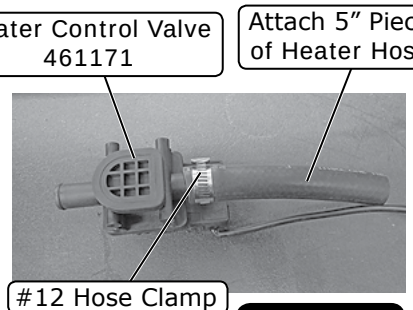


Photo 2

Photo 3

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Drain Hose Installation

1. Cut the supplied drain hose to 9” long, and install the 1/2” drain elbow, then attach the remainder of the drain hose to the other end as shown in Photo 1, below.
2. Install the drain hose through the previously drilled 5/8” hole on the firewall, then onto the evaporator drain (See Photos 2 and 3, below). **NOTE: The 9” piece of hose attaches to the drain on the evaporator.**

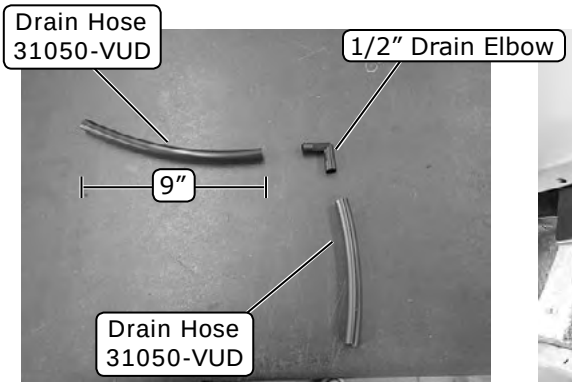
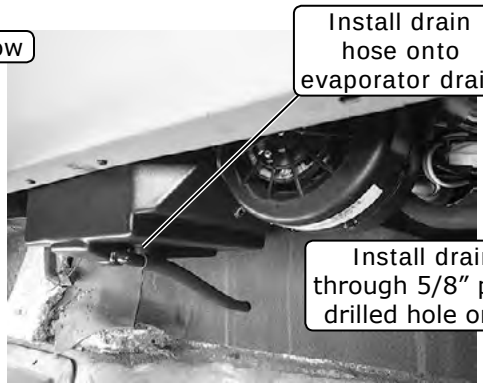


Photo 1



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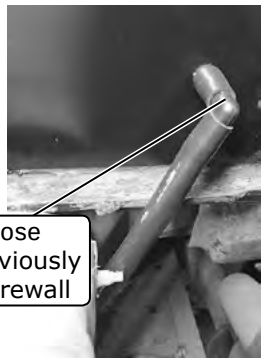

Photo 3

Duct Hose Installation and Routing

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

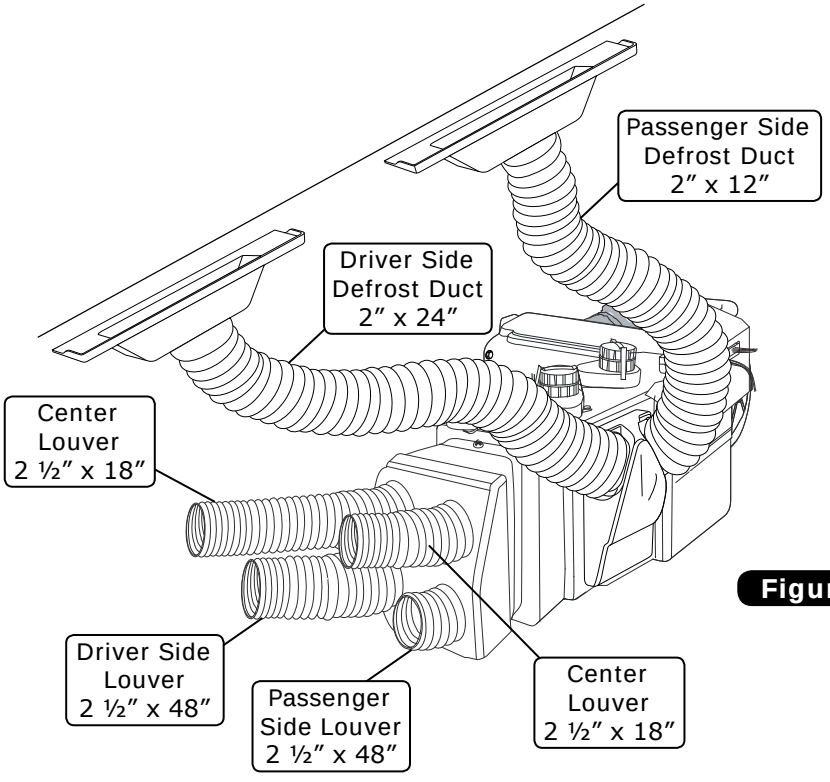

Figure 1

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Control Panel Installation

NOTE: Before installation, refer to the instructions included with the control panel.

1. Install the new Vintage Air control panel into the OEM control panel/radio bracket, and secure it using (4) #8 x 1/2" pan head screws (See Photo 1, below). Reinstall the bracket assembly into the dash opening using OEM hardware.
2. Plug in the OEM rear window/auxiliary tank switch connection, if equipped.
3. Route the Vintage Air control panel wiring to the ECU and connect the plug (See Photo 2, below).
4. Reinstall the radio and plug in connections.

Photo 1

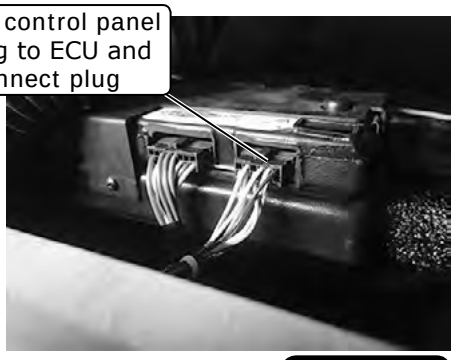


Photo 2

Glove Box Installation

1. Insert the glove box into the dash opening (left side first, clearing the glove box door tab, then rotate into place) (See Photo 1, below). Pull the glove box into the correct position against the back of the dash opening, then mark the (4) mounting holes and the (4) glove box door mounting holes (See Photo 2, below).
2. Remove the glove box and drill out marks using a 3/16" drillbit. Install (4) #8 U-nuts onto the glove box mounting holes as shown in photo Photo 3, below.
3. Reinstall the glove box into the dash opening and secure it using (4) #8 x 1/2" pan head screws (See Photo 4, below).
4. Reinstall the glove box door using the OEM hardware (See Photo 5, below).

Photo 1

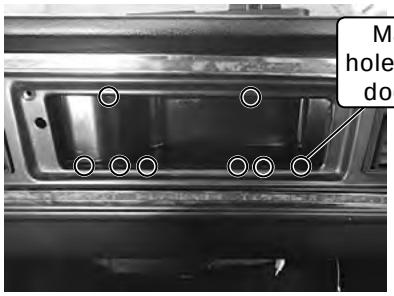


Photo 2

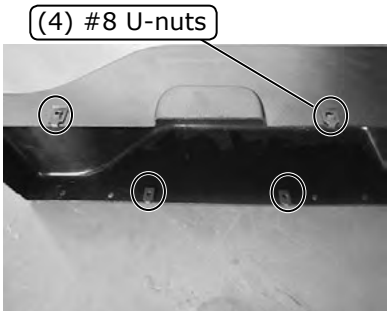


Photo 3

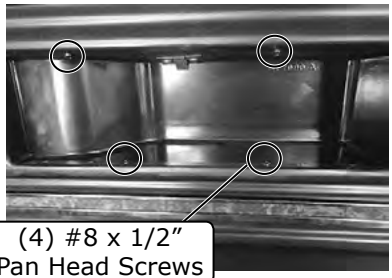


Photo 4

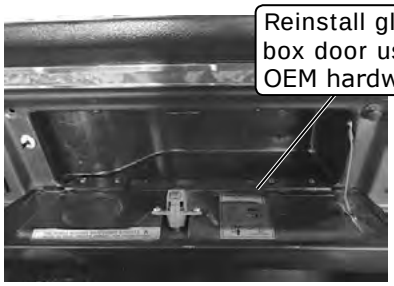
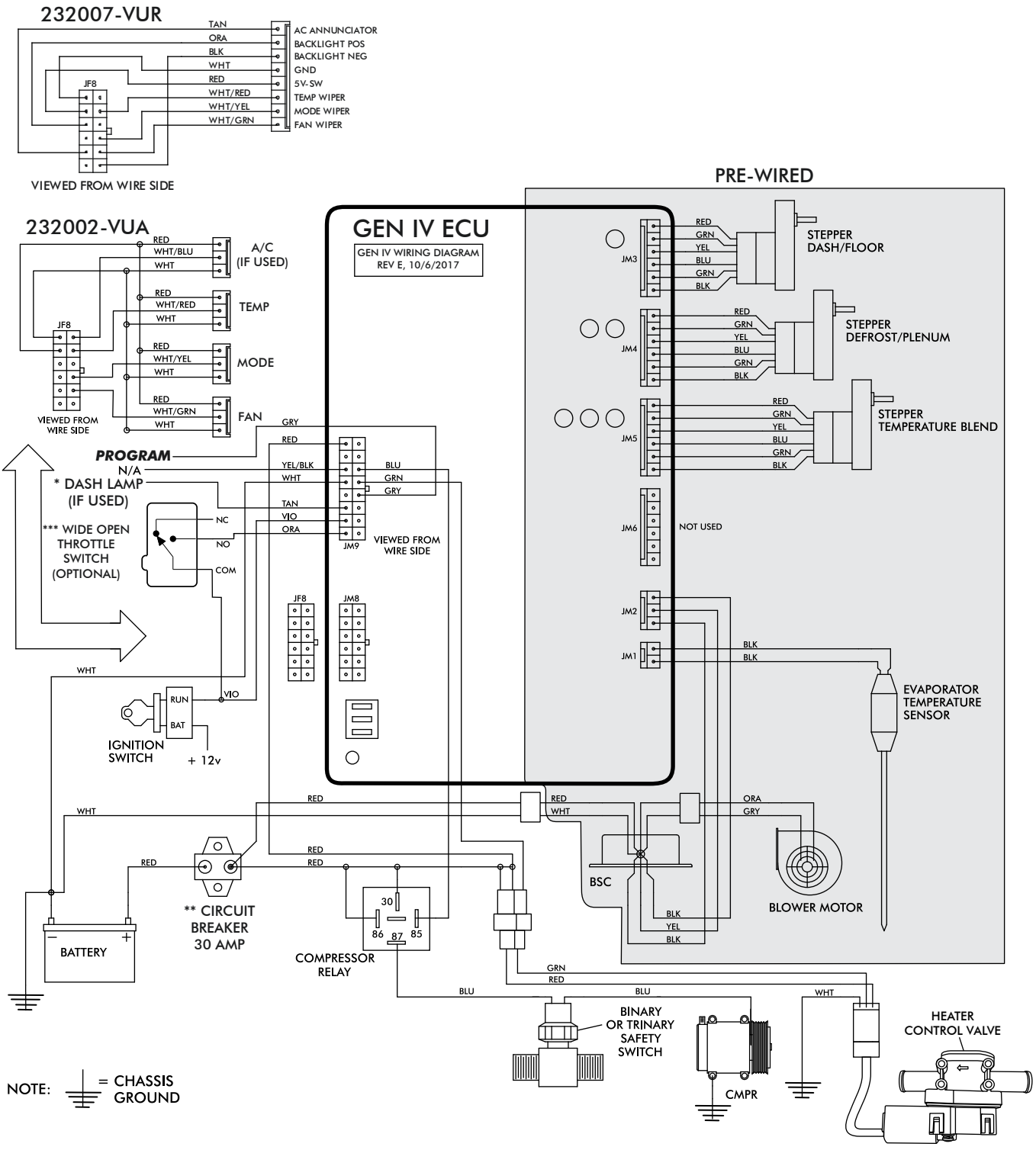


Photo 5

Final Steps

1. Connect the speedometer cable and connection plug to the gauge cluster and reinstall it into the dash using the OEM hardware.
2. Reinstall the gauge bezel connecting the driver side duct hose to the louver.
3. Reinstall any other previously removed items.
4. Fill radiator with at least a 50/50 mixture of approved antifreeze and distilled water. It is the owner's responsibility to keep the freeze protection at the proper level for the climate in which the vehicle is operated. Failure to follow antifreeze recommendations will cause heater core to corrode prematurely and possibly burst in A/C mode and/or freezing weather, voiding your warranty.
5. Double check all fittings, brackets and belts for tightness.
6. Vintage Air recommends that all A/C systems be serviced by a licensed automotive technician.
7. Evacuate the system for a minimum of 45 minutes prior to charging, and perform a leak check prior to servicing.
8. Charge the system to the capacities stated on Page 4 of this manual.
9. See the operation of controls procedures on Page 27 of this manual.

Wiring Diagram



*** Dash lamp is used only with type 232007-VUR harness.**

**** Warning: Always mount circuit breaker as close to the battery as possible. (NOTE: Wire between battery and circuit breaker is unprotected and should be carefully routed to avoid a short circuit).**

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

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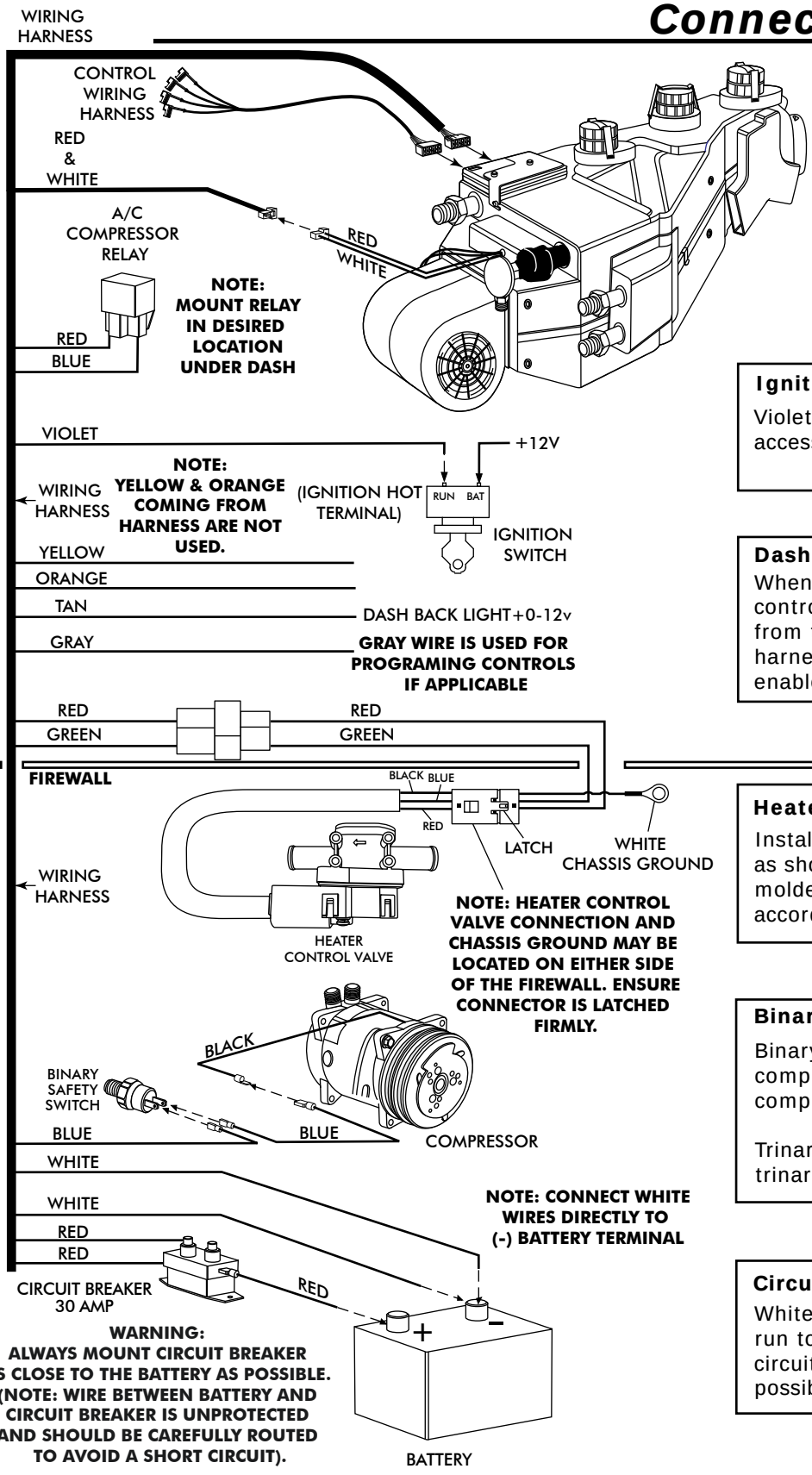
Gen IV Wiring Connection Instruction



Ignition Switch:

Violet 12V ignition switch source (key on accessory) position must be switched.

Dash Light:

When using a Vintage Air supplied control panel, connect the tan wire from the Gen IV evaporator wiring harness to the factory dash lights to enable panel backlighting.

Heater Control Valve:

Install with servo motor facing down, as shown. Note flow direction arrow molded into valve body and install accordingly.

Binary/Trinary & Compressor:

Binary: Connect as shown (typical compressor wiring). Be sure compressor body is grounded.

Trinary Switch: Connect according to trinary switch wiring diagram.

Circuit Breaker/Battery:

White **must** run to (-) battery. Red may run to (+) battery or starter. Mount circuit breaker as close to battery as possible.

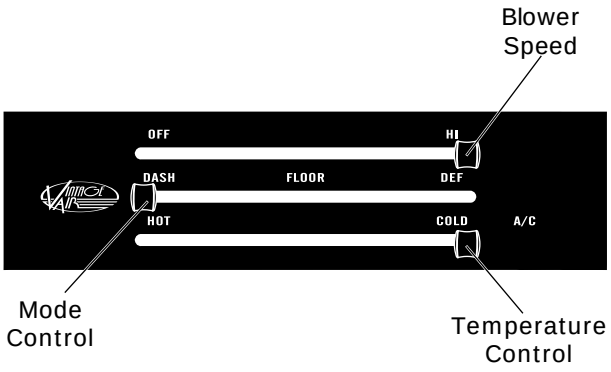
Operation of Controls

On Gen IV 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 between 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).

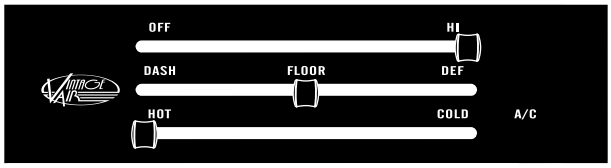
Temperature Control
For A/C operation, adjust to coldest position to engage compressor (adjust between HOT and COLD to reach desired temperature).

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).

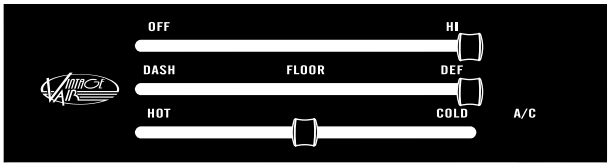


Defrost/De-fog Operation

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

Symptom	Condition	Checks	Actions	Notes
1a. Blower stays on high speed when ignition is on.	No other functions work.	Check for damaged pins or wires in control head plug.	Verify that all pins are inserted into plug. Ensure that no pins are bent or damaged in ECU.	
		Check for damaged ground wire (white) in control head harness.	Verify continuity to chassis ground with white control head wire at various points.	Loss of ground on this wire renders control head inoperable.
	All other functions work.	Check for damaged blower switch or potentiometer and associated wiring.		See blower switch check procedure.
1b. Blower stays on high speed when ignition is on or off.		Unplug 3-wire BSC control connector from ECU. If blower shuts off, ECU is either improperly wired or damaged.	Be sure the small, 20 GA white ground wire is connected to the battery ground post. If it is, replace the ECU.	
		Unplug 3-wire BSC control connector from ECU. If blower stays running, BSC is either improperly wired or damaged.	Check to ensure that no BSC wiring is damaged or shorted to vehicle ground. The BSC operates the blower by ground side pulse width modulation switching. The positive wire to the blower will always be hot. If the "ground" side of the blower is shorted to chassis ground, the blower will run on HI.	
			Replace BSC (This will require removal of evaporator from vehicle).	No other part replacements should be necessary.
2. Compressor will not turn on (All other functions work).	System is not charged.	System must be charged for compressor to engage.	Charge system or bypass pressure switch.	**Danger: Never bypass safety switch with engine running. Serious injury can result.**
	System is charged.	Check for faulty A/C potentiometer or associated wiring (not applicable to 3-pot controls).	Check continuity to ground on white control head wire. Check for 5V on red control head wire.	To check for proper pot function, check voltage at white/blue wire. Voltage should be between 0V and 5V, and will vary with pot lever position.
		Check for disconnected or faulty thermistor.	Check 2-pin connector at ECU housing.	Disconnected or faulty thermistor will cause compressor to be disabled.
3. Compressor will not turn off (All other functions work).		Check for faulty A/C potentiometer or associated wiring.	Repair or replace pot/control wiring.	Red wire at A/C pot should have approximately 5V with ignition on. White wire will have continuity to chassis ground. White/ Blue wire should vary between 0V and 5V when lever is moved up or down.
		Check for faulty A/C relay.	Replace relay.	

Troubleshooting Guide (Cont.)

Symptom	Condition	Checks	Actions	Notes
4. System will not turn on, or runs intermittently.	Works when engine is not running; shuts off when engine is started (typically early Gen IV, but possible on all versions).	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 positive power at heater valve green wire and blower red wire. Check for ground on control head white wire.	
		Verify battery voltage is greater than 10 volts and less than 16.	Verify proper meter function by checking the condition of a known good battery.	
5. Loss of mode door function.	No mode change at all.	Check for damaged mode switch or potentiometer and associated wiring.		Typically caused by evaporator housing installed in a bind in the vehicle. Be sure all mounting locations line up and don't have to be forced into position.
	Partial function of mode doors.	Check for obstructed or binding mode doors.		
		Check for damaged stepper motor or wiring.		
6. Blower turns on and off rapidly.	Battery voltage is at least 12V.	Check for at least 12V at circuit breaker.	Ensure all system grounds and power connections are clean and tight.	System shuts off blower at 10V. Poor connections or weak battery can cause shutdown at up to 11V.
	Battery voltage is less than 12V.	Check for faulty battery or alternator.	Charge battery.	
7. Erratic functions of blower, mode, temp, etc.		Check for damaged switch or pot and associated wiring.	Repair or replace.	
8. When ignition is turned on, blower momentarily comes on, then shuts off. This occurs with the blower switch in the OFF position.		This is an indicator that the system has been reset. Be sure the red power wire is on the battery post, and not on a switched source. Also, if the system is pulled below 7V for even a split second, the system will reset.	Run red power wire directly to battery.	

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Packing List: Evaporator Kit (751160)

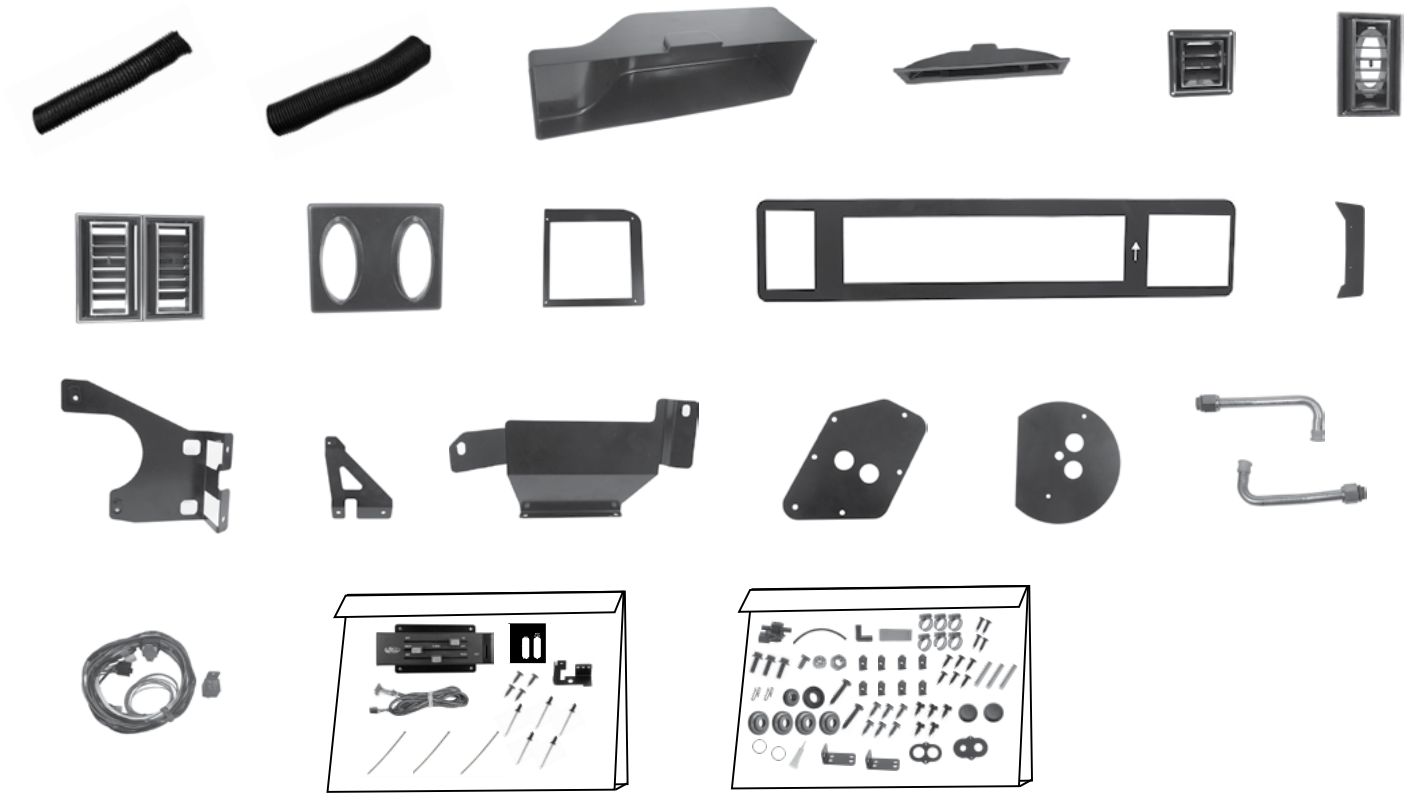
No.	Qty.	Part No.	Description	
1.	1	744004-VUE	Gen IV Evaporator Sub Case	_____
2.	1	791160	Accessory Kit	_____

Checked By: _____
Packed By: _____
Date: _____

1

Gen IV Evaporator Sub Case 744004-VUE

2



Accessory Kit 791160

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