



1982-87 Buick Regal

with Factory Air
Evaporator Kit
(565085)



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A detailed tech video outlining the installation process is available on Vintage Air's YouTube channel at <https://bit.ly/3KNMESH>.

The installation shown in this video may vary slightly between different vehicle applications. Following the written instructions included with your vehicle specific kit will provide the most detailed installation procedure.



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Packing List:
Evaporator Kit (565085)

No.	Qty.	Part No.	Description
1.	1	744004-VUE	Gen IV Evaporator Sub Case
2.	1	785085	Accessory Kit

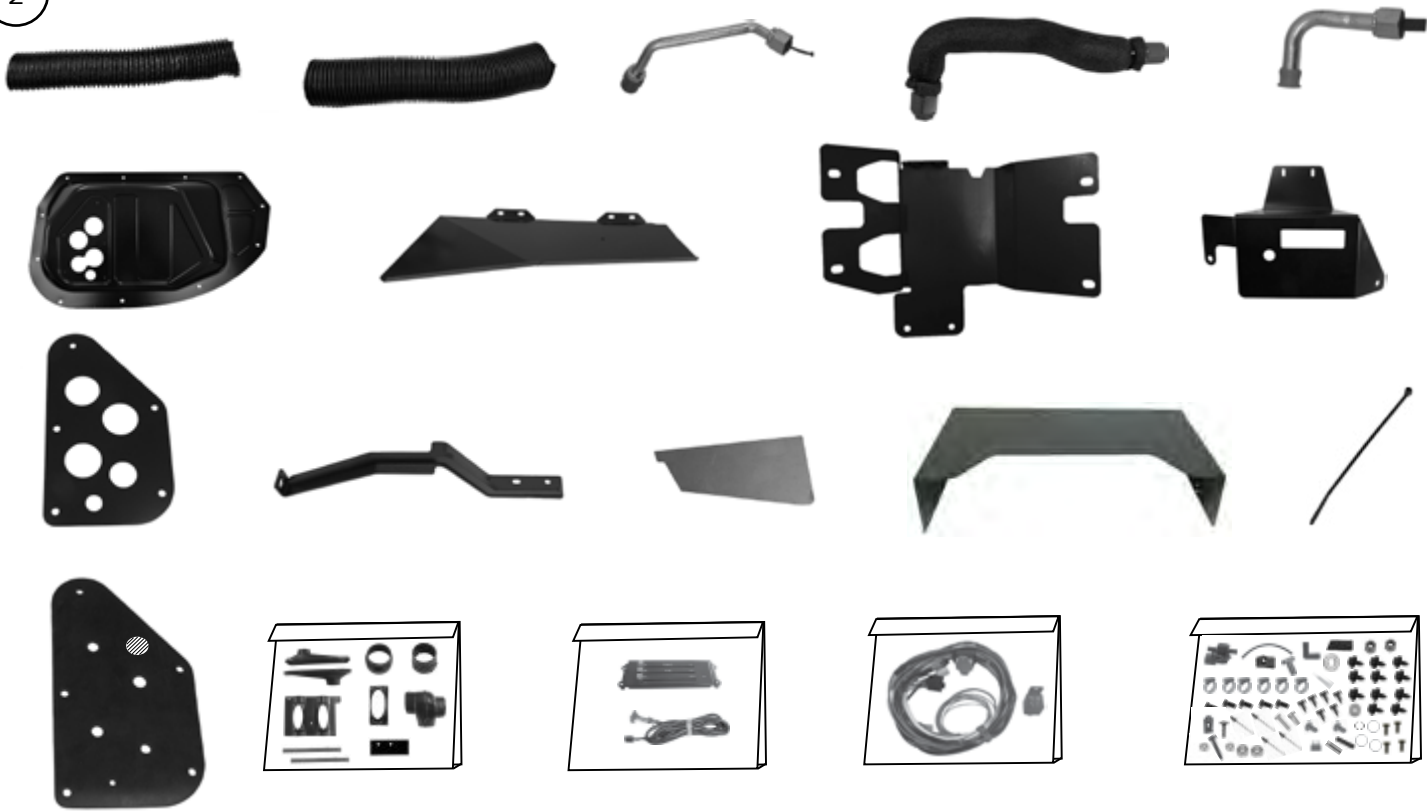
**** Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

1



Gen IV Evaporator
Sub Case
744004-VUE

2



Accessory Kit
785085

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



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Important Notice—Please Read

For Maximum System Performance, Vintage Air Recommends the Following:

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

Refrigerant Capacities:

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

Other Systems: Consult manufacturer's guidelines.

Lubricant Capacities:

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

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

Safety Switches

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

Service Info:

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

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

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

Bolts Passing Through Cowl and/or Firewall:

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

Heater Hose (not included with this kit):

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

Important Wiring Notice—Please Read

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

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

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

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

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

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

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

- Care must be taken, when installing the compressor lead, not to short it to ground. The compressor lead must not be connected to a condenser fan or to any other auxiliary device. Shorting to ground or connecting to a condenser fan or any other auxiliary device may damage wiring or the compressor relay, and/or cause a malfunction.
- When installing ground leads on Gen 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.

Perform the Following:

1. Disconnect the battery (See Photo 1, below).
2. Evacuate the A/C system (if necessary).
3. Jack up the front of the vehicle and support it with jack stands.
4. Remove the passenger-side wheel.
5. Drain the radiator (See Photo 1, below).
6. Remove the OEM heater hoses (See Photo 1, below).
7. Remove the OEM coolant reservoir and any other components attached to the passenger-side inner fender.
8. Remove the windshield wiper arms and wiper park ramps (See Photo 1, below).
9. Remove the lower windshield trim and brackets (See Photo 1, below).
10. Remove the cowl weather stripping (See Photo 1, below).
11. Remove the screen mounting screws and screen (See Photo 1, below).

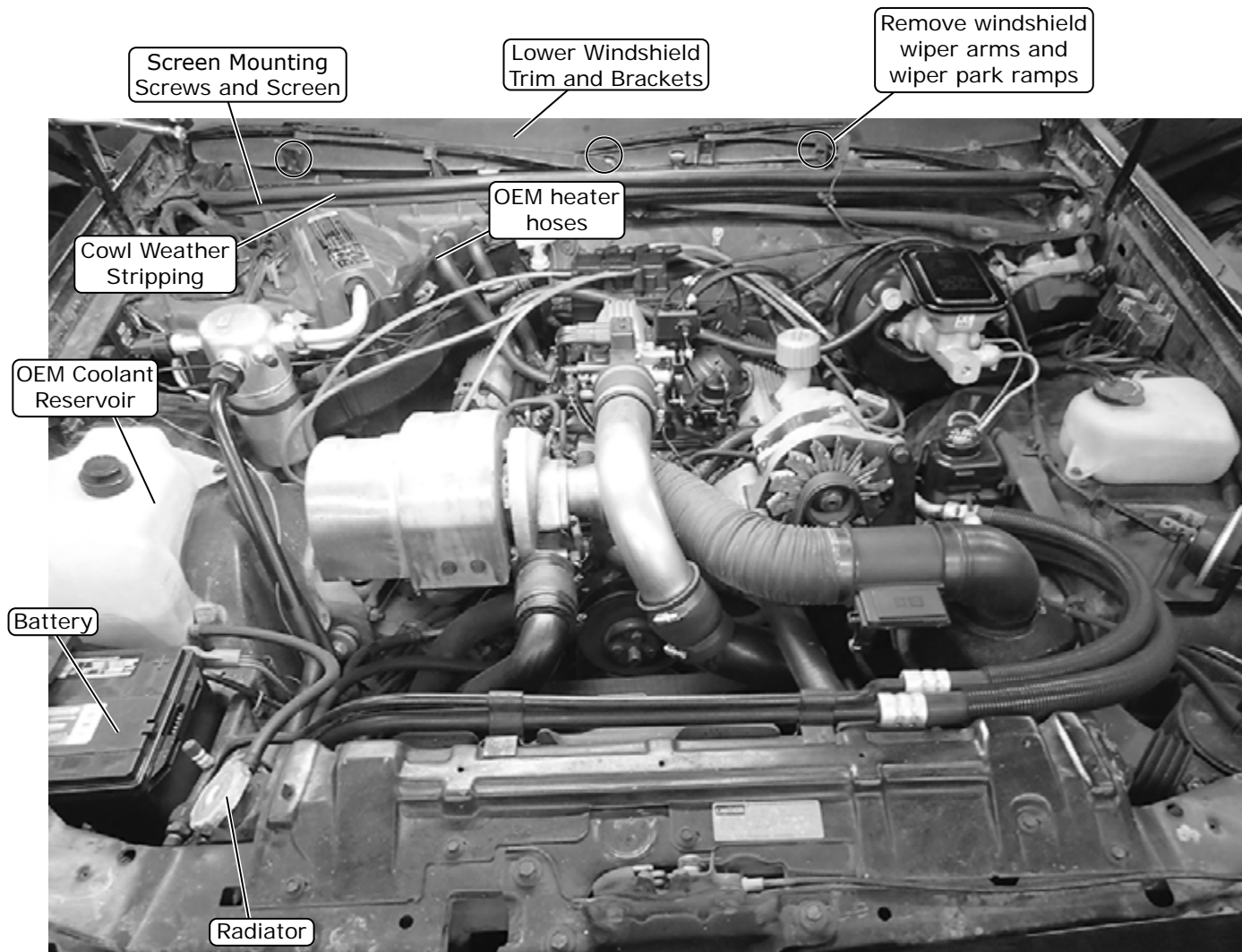


Photo 1



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Engine Compartment Disassembly (Cont.)

12. Disconnect all A/C hoses, vacuum and electrical connections from the OEM evaporator (See Photo 2, below).
13. Disconnect the A/C hoses from the OEM compressor, condenser and evaporator (See Photos 3, 4 and 5, below) (discard).
14. Remove the inner fender mounting hardware, then remove the inner fender. **NOTE: This is necessary to access the evaporator mounting bolts and provide space to remove the OEM evaporator case.**
15. Remove all of the mounting hardware securing the OEM evaporator to the firewall.
16. Remove the ground wire behind the coil packs (See Photo 6, below).

Disconnect electrical connections from OEM evaporator



Photo 2

Disconnect OEM evaporator lines

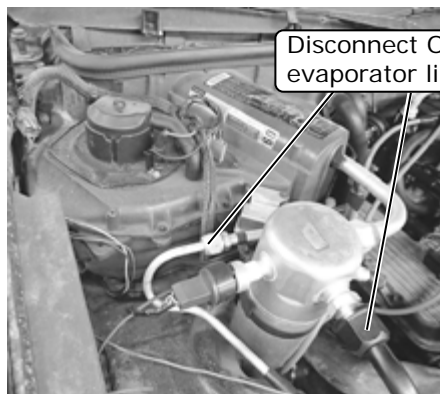


Photo 3

Disconnect A/C hoses from OEM condenser

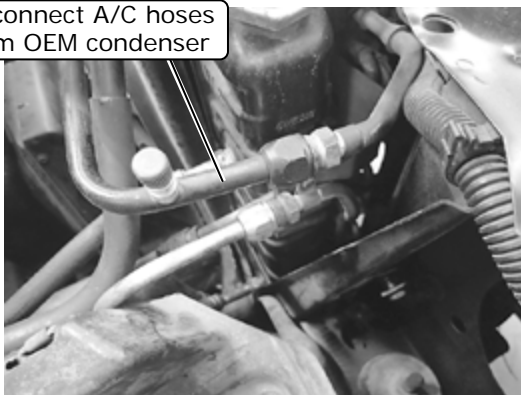


Photo 4

Disconnect A/C hoses from OEM compressor

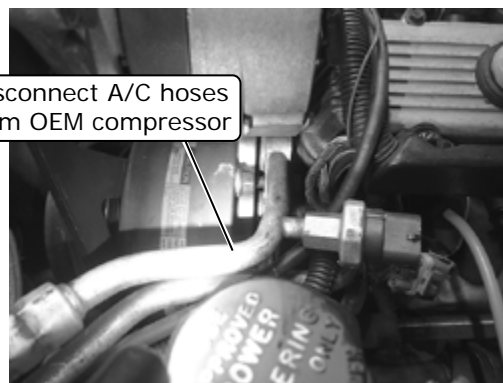
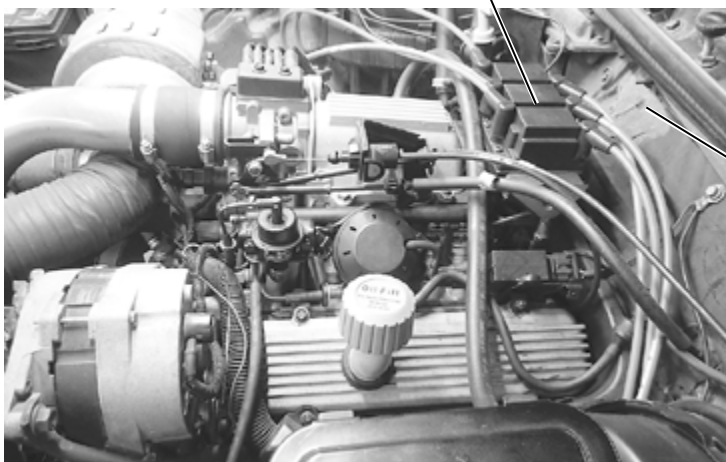


Photo 5

Coil Packs



Remove ground wire behind coil packs

Photo 6



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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).

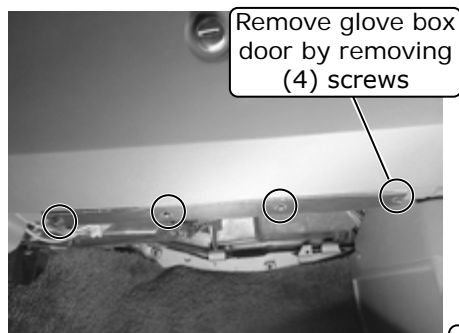
Compressor and Brackets

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

Passenger Compartment Disassembly

NOTE: Removing the front seats will provide extra room for the passenger compartment disassembly process. The removal of the dash is required to remove the OEM duct work from the vehicle. Refer to the vehicle shop manual for more detailed information. Retain OEM bolts, washers and nuts, as some hardware will be reused.

1. Remove the glove box door by removing (4) screws (See Photo 1, below).
2. Remove the control panel/radio bezel by removing (4) screws (See Photo 2, below).
3. Remove the control panel by removing (4) mounting screws (See Photo 3, below) (retain screws).
4. Disconnect the cables, plugs and vacuum lines, then remove the control panel.
5. Remove the radio.
6. Release any clips holding wires to the OEM evaporator.
7. Remove (2) evaporator/duct work mounting screws (See Photo 4, below).
8. Remove the ground wire mounting bolt on the passenger side, above the OEM ECU (See Photo 5, below).
9. Remove the OEM evaporator from the vehicle through the engine compartment.



Remove glove box door by removing (4) screws

Photo 1



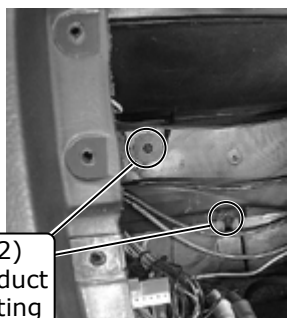
Remove control panel/radio bezel by removing (4) screws

Photo 2



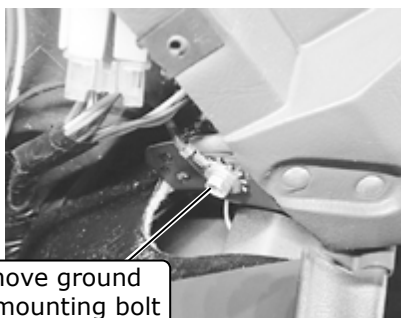
Remove control panel by removing (4) mounting screws

Photo 3



Remove (2) evaporator/duct work mounting screws

Photo 4



Remove ground wire mounting bolt on passenger side, above OEM ECU

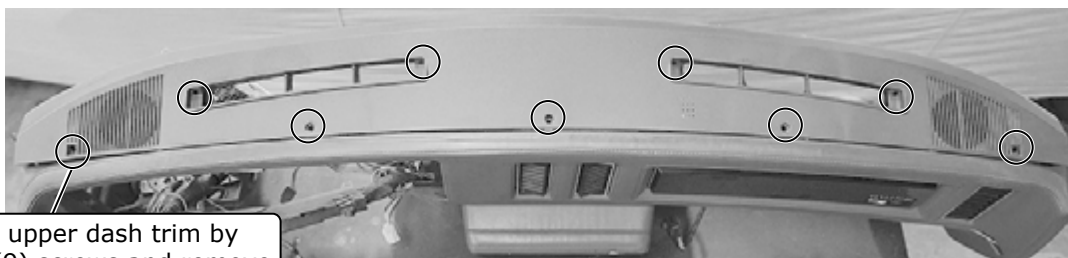
Photo 5



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Passenger Compartment Disassembly (Cont.)

10. Remove the upper dash trim by removing (9) screws (See Photo 6, below), then remove the light sensor (if equipped).
11. Carefully remove the instrument cluster bezel (See Photo 7, below). **NOTE: The bezel is installed with push-in clips.**
12. Remove the dash pad by removing (6) screws (See Photo 8, below).
13. Remove (4) gauge mounting screws, then disconnect the speedometer cable and remove the gauges (See Photo 9, below).
14. Remove (3) headlight switch bracket screws, then unplug the switch and remove it (See Photo 10, below).



Remove upper dash trim by removing (9) screws and remove light sensor (if equipped)

Carefully remove instrument cluster bezel

Remove dash pad by removing (6) screws

Photo 6



Remove (4) gauge mounting screws, then disconnect speedometer cable and remove gauges.

Photo 7



Remove (3) headlight switch bracket screws, then unplug switch and remove it

Photo 8

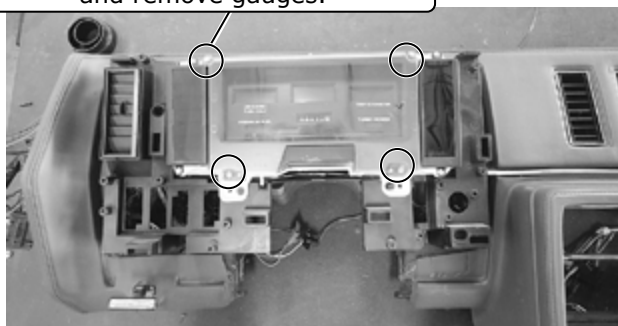


Photo 9

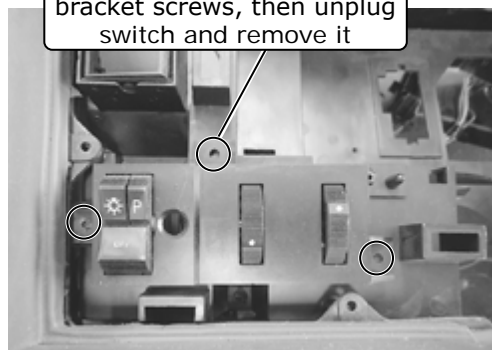


Photo 10



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Passenger Compartment Disassembly (Cont.)

15. Remove the gauge cluster reinforcement by removing (7) screws (See Photo 11, below).
16. Remove the under-column louver cover by removing (4) screws (See Photo 12, below).
17. Drop the steering column by removing the (2) mounting nuts (See Photo 13, below).
18. Remove the under-column mounting bolt (See Photo 14, below).
19. Remove the driver-side under dash mounting nut (See Photo 15, below).
20. Remove the dash bracket support screw (See Photo 16, below). **NOTE: The dash support bracket screw is located in the control panel/radio area and can be accessed from under the dash.**

Remove gauge
cluster reinforcement
by removing (7)
screws

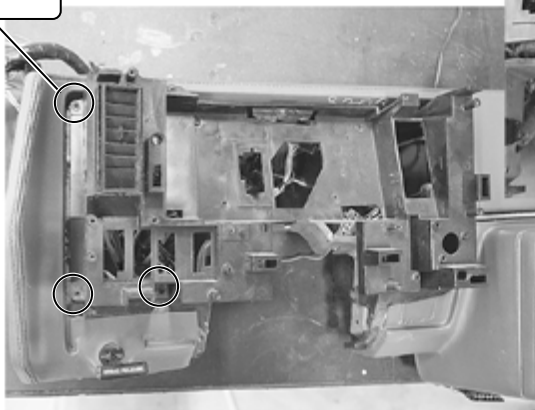


Photo 11

Remove under-
column louver by
removing (4) screws

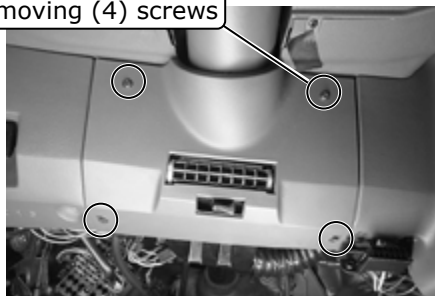


Photo 12

Remove (2) mounting nuts
to drop steering column



Photo 13

Remove under-column
mounting bolt



Photo 14

Remove driver-side under
dash mounting nut

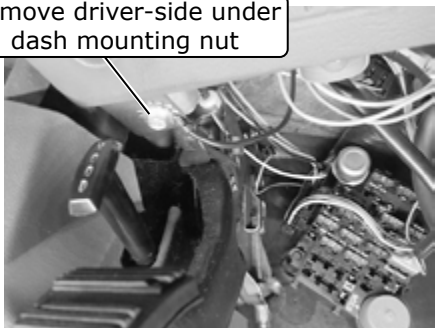


Photo 15

Remove dash bracket
support screw

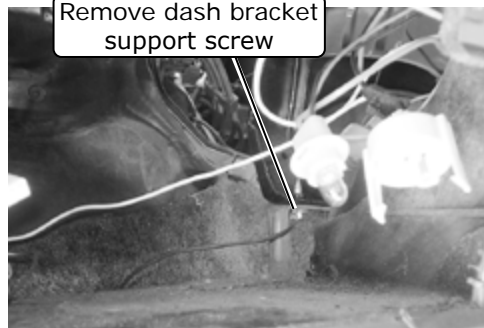


Photo 16



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Passenger Compartment Disassembly (Final)

21. Unplug all wiring connections from the dash.
22. Disconnect the fuse panel from the engine and passenger compartment.
23. Remove (4) dash mounting screws (See Photos 17 and 18, below).
24. Carefully remove the dash from the vehicle.
25. Remove the OEM duct work by removing (4) mounting screws ((2) per defrost duct) (See Photo 19, below).

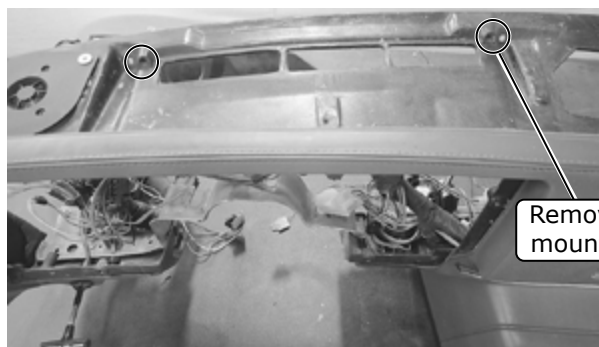


Photo 17

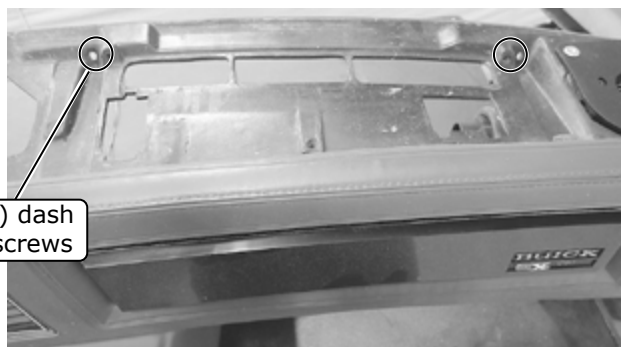


Photo 18

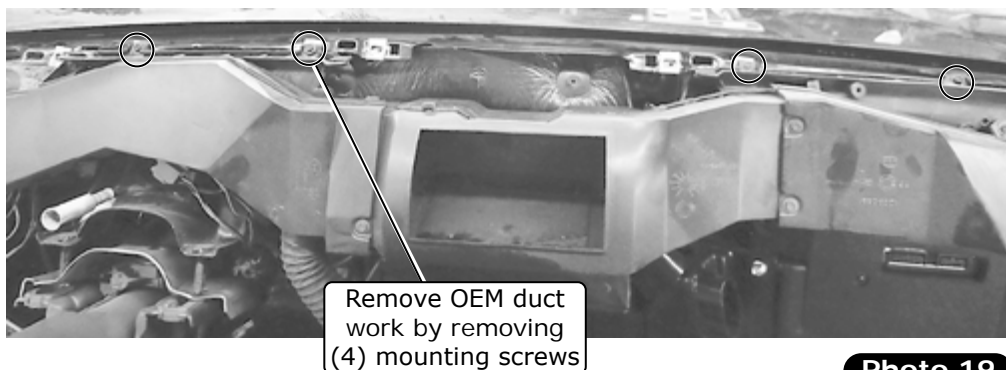


Photo 19



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Firewall Modification & Insulation

NOTE: The firewall requires modification for the drain hose to be installed. For proper system operation, Vintage Air recommends using heat-blocking insulation in the area around the evaporator unit (firewall, kick panel, inner cowl, firewall covers). 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". To ensure a watertight seal between the passenger compartment and the vehicle exterior, for all bolts passing through the firewall, Vintage Air recommends coating the threads with silicone prior to installation. The OEM insulation on the passenger side of the transmission tunnel should be changed to an 1/8" thickness to ease the installation of the evaporator assembly (See Photo 1, below).

Perform the Following:

1. Using the bead roll on the floor pan for reference, measure toward the driver side 3/4" and down 3 1/2" from the firewall (See Photos 2 and 3, below). Mark and drill a 5/8" hole for the drain tube (See Photo 4, below).

NOTE: To ensure a tight fit for the drain tube, do not enlarge the drain hole more than 5/8".

2. Install heat-blocking insulation to the firewall and firewall cover at this time (See Photos 5 and 6, below).

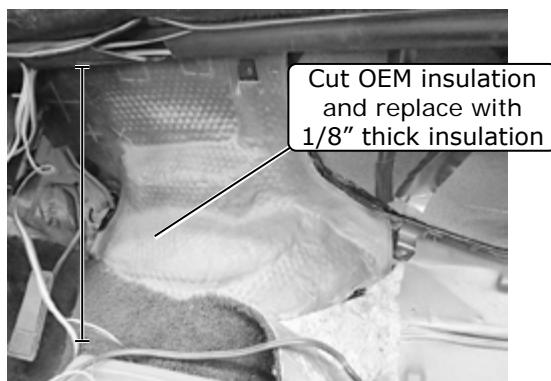


Photo 1

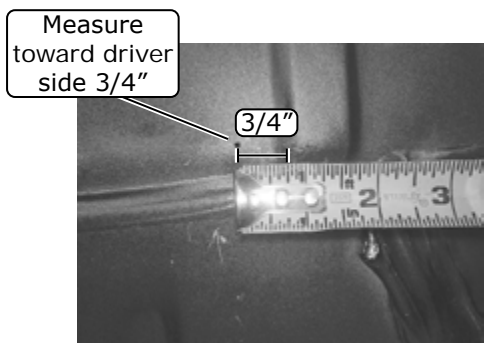


Photo 2

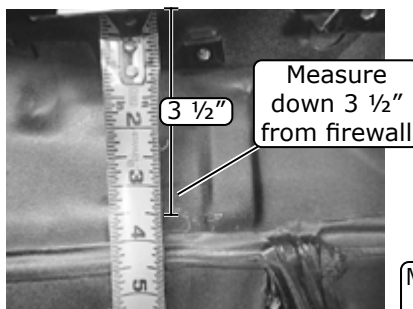


Photo 3

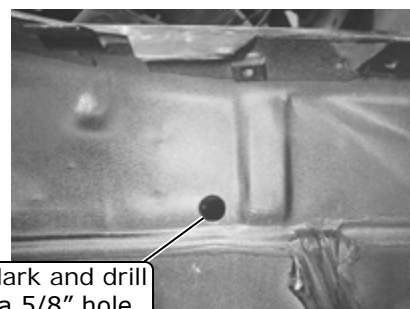


Photo 4

Install heat-blocking insulation to firewall and firewall cover



Photo 5

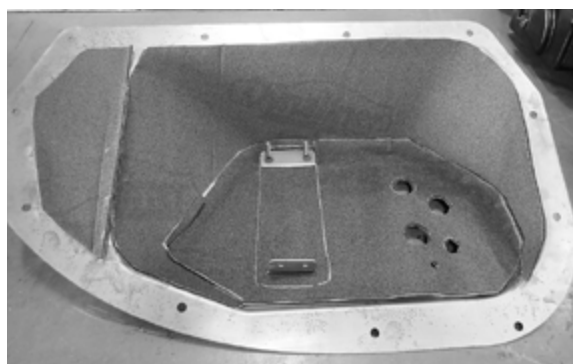


Photo 6



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Dash Support Bracket Modification

1. Locate the dash support bracket rivet by the glove box door opening (See Photo 1, below). Use the measurements in Photo 1, below, then mark and remove the portion of the dash support bracket (See Photos 1 and 2, below).

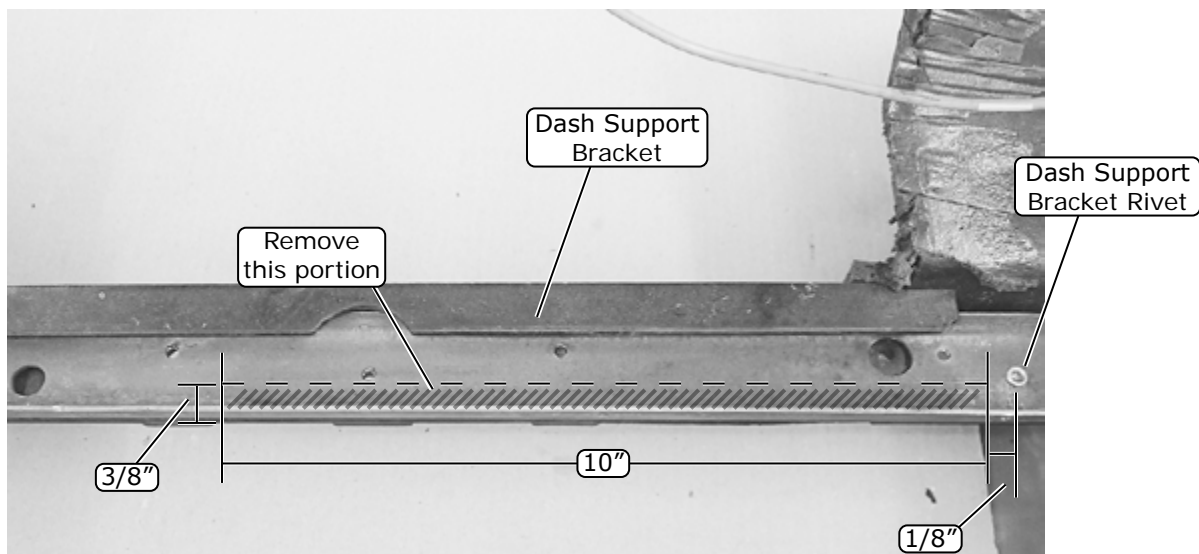
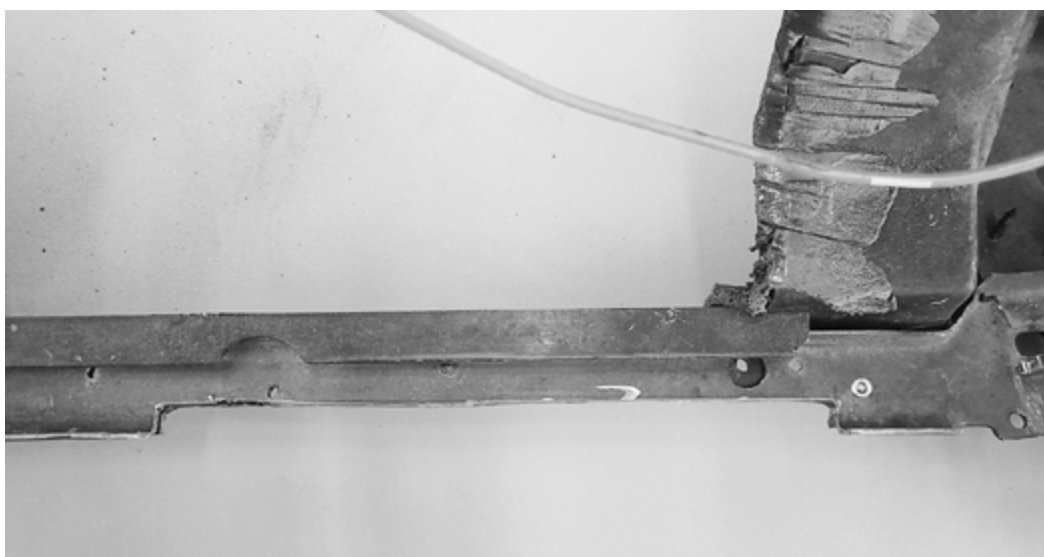


Photo 1



After Modification

Photo 2



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Dash Louver Adapter Preparation

On a workbench, perform the following:

NOTE: If equipped, the twilight sentinel will have to be relocated as shown in Steps 2-4.

1. Remove the (3) OEM screws (retain) from the OEM center louver vent flange, then remove it from the dash (discard) (See Photo 1, below).
2. Place the center louver template onto the center louver hose adapter as shown in Photo 2, below. Mark and drill (2) 7/32" mounting holes into the center dash hose adapter (See Photo 2, below).
3. Remove the twilight sentinel mounting screw (retain screw) (See Photo 3, below), and install the #8 U-nut into the open side of the sentinel (See Photo 4, below).
4. Install the sentinel onto the center louver hose adapter using the factory mounting screw and a #8 x 3/4" screw with washer (See Photo 5, below).

Remove (3) OEM screws, then remove OEM center louver vent flange from dash

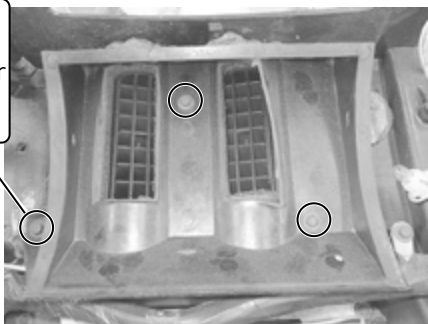


Photo 1

Center Dash Hose Adapter 625033

Center Louver Template 649633

Mark and drill (2) 7/32" mounting holes into center dash hose adapter

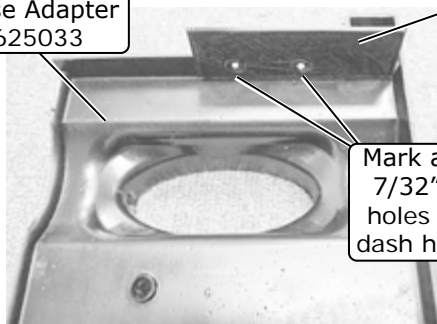


Photo 2

Remove twilight sentinel mounting screw

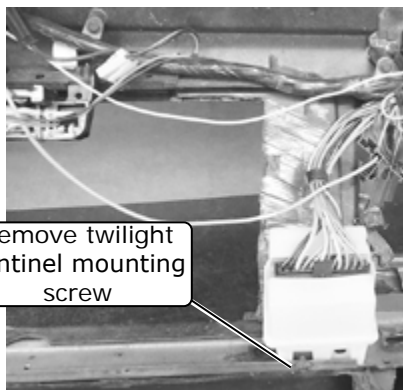


Photo 3

Install #8 U-nut into open side of sentinel

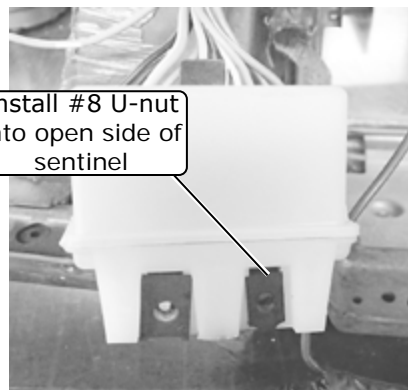


Photo 4

Factory Mounting Screw

#8 x 3/4" Screw with Washer

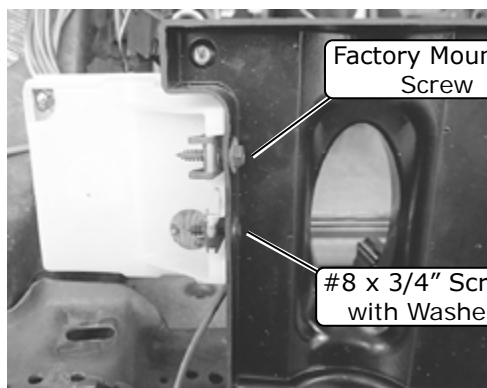


Photo 5

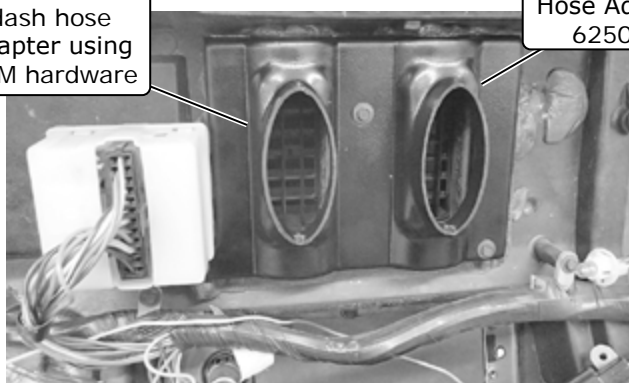


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Dash Louver Adapter Preparation (Cont.)

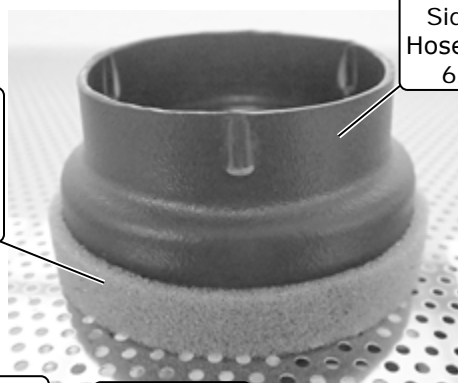
5. Install the center dash hose adapter using the OEM hardware (See Photo 6, below).
6. Apply the foam strips onto the passenger-side dash hose adapter (See Photo 7, below). Install it into the passenger-side plenum (See Photo 8, below). **NOTE: Silicone may be used for an additional seal.**
7. Apply silicone to the mating surface of the driver-side dash hose adapter, and install it over the OEM louver housing (See Photos 9 and 10, below).
8. Apply silicone to the under dash louver housing, and install the hose adapter reducer (See Photos 11 and 12, below).

Install center dash hose adapter using OEM hardware



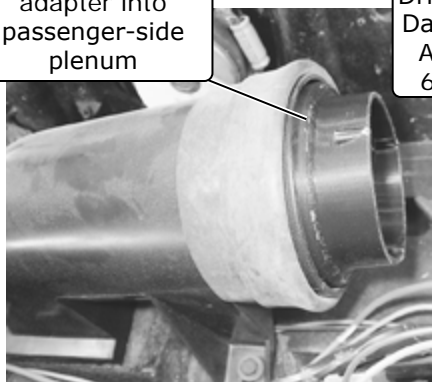
Center Dash Hose Adapter 625033

Apply foam strips to passenger-side dash hose adapter



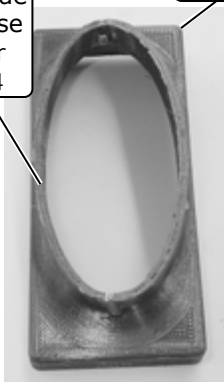
Passenger-Side Dash Hose Adapter 625031

Install passenger-side dash hose adapter into passenger-side plenum



Driver-Side Dash Hose Adapter 625034

Apply silicone to mating surface



Install hose adapter over OEM louver housing

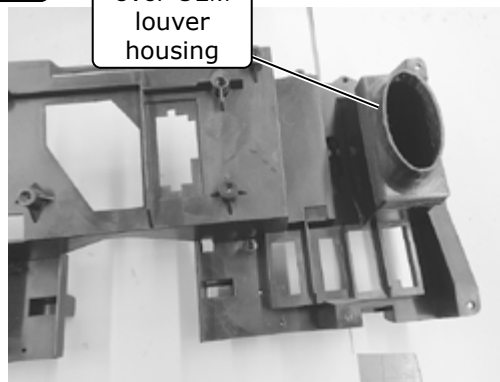
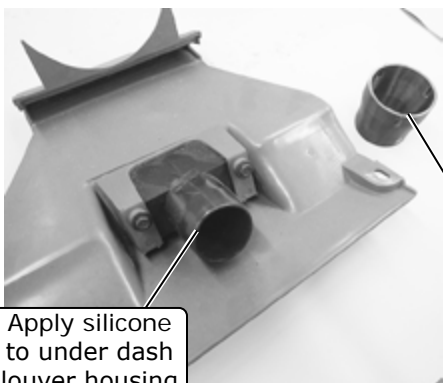


Photo 6

Photo 7

Photo 8



Apply silicone to under dash louver housing

Hose Adapter Reducer 625032



Install hose adapter reducer

Photo 11

Photo 12



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Evaporator Preparation

NOTE: Before fully tightening the hardlines, ensure the hardlines are aligned with the opening on the firewall cover plate as shown in Photos 10 and 11, Page 17. Use a back up wrench when tightening fittings.

Perform the following on a workbench:

1. Remove the (4) 1/4-20 x 1/2" mounting bolts from the evaporator case (See Photo 1, below).
2. Place the evaporator firewall bracket in position, and secure it using the mounting hardware (See Photo 2, below).
3. Install the #6 evaporator/drier hardline onto the expansion valve with a properly lubricated #6 O-ring (See Photo 3, below).
4. With (2) properly lubricated #10 O-rings, install the upper and lower heater hardlines onto the evaporator unit (See Photo 4, below).
5. Install the #10 evaporator/compressor hardline onto the evaporator with a properly lubricated #10 O-ring, then wrap all exposed metal with the supplied press tape (See Photos 5 and 6, below).
6. Place the evaporator into the firewall cover bracket (See Photo 7, below). Secure the firewall cover onto the unit using (2) 10-24 x 1/4" pan head screws at the bottom and (2) 1/4-20 locknuts on the top of the firewall bracket (See Photos 8 and 9, below).

Remove (4) 1/4-20 x 1/2" mounting bolts

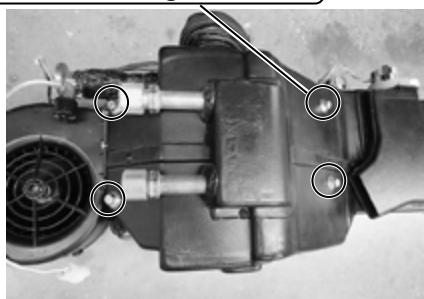
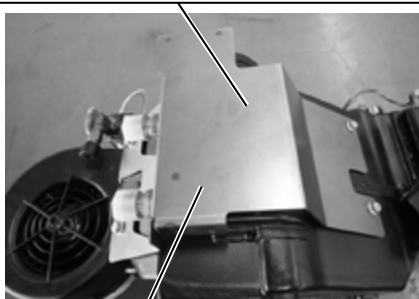


Photo 1

Place evaporator firewall bracket in position and secure using mounting hardware



Evaporator Firewall Bracket 649598

Photo 2

Install #6 evaporator/drier hardline onto expansion valve

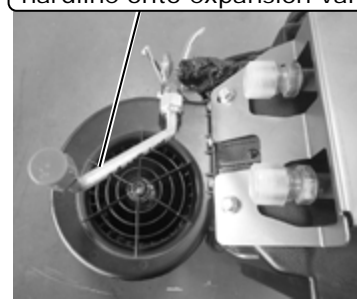


Photo 3

Install upper and lower heater hardlines onto evaporator unit



Photo 4

Install #10 evaporator/compressor hardline

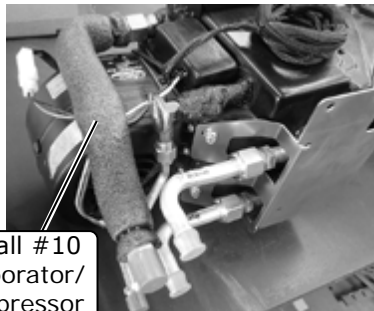


Photo 5

Wrap all exposed metal with supplied press tape

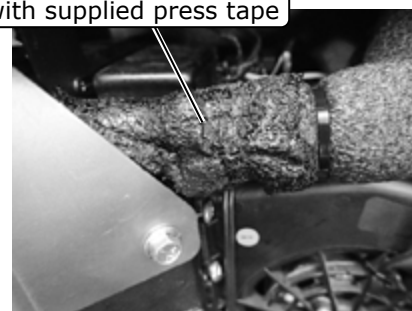


Photo 6

Place evaporator into firewall cover bracket



Photo 7

Secure firewall cover onto unit using (2) 10-24 x 1/4" pan head screws

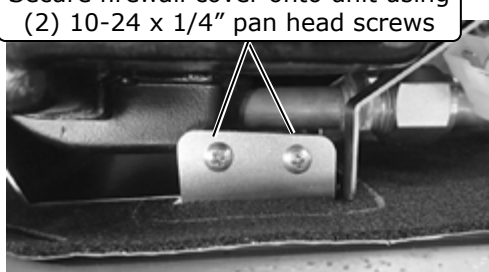


Photo 8

Secure firewall cover using (2) 1/4-20 locknuts

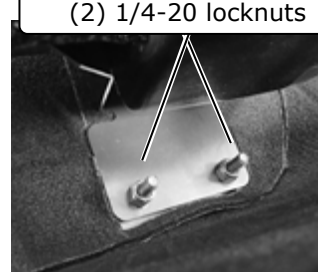


Photo 9



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Evaporator Preparation (Cont.)

7. Install the firewall cover rubber boot over the evaporator hardlines, ensuring the hardlines stay fully tightened (See Photo 10, below). Install the firewall cover boot plate using (5) 1/4-20 x 1/2" button head screws (See Photo 11, below). **NOTE: Soapy water may be used to ease the insertion of hardlines through the rubber boot. Hardline caps may be removed for this step; replace caps when step is completed.**

Install rubber boot over evaporator hardlines

Firewall Cover Rubber Boot
338632

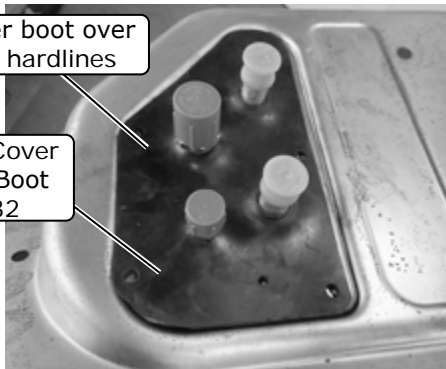


Photo 10

Firewall Cover Boot Plate
649613

Install cover plate using (5) 1/4-20 x 1/2" button head screws

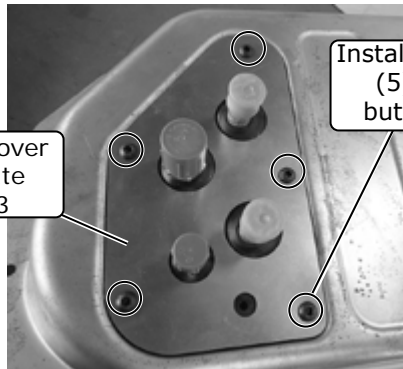


Photo 11

Evaporator Installation

NOTE: To ensure a watertight seal between the passenger compartment and the vehicle exterior, for all bolts passing through the firewall, Vintage Air recommends coating the threads with silicone prior to installation. To ensure proper drainage, it is important that the evaporator is level, both left-right and fore-aft. Check for level on the flat portions of the case around the drain (See Photos 1 and 2, below).

1. Remove the OEM dash support bracket by removing the (2) mounting bolts (See Photo 3, below) (retain hardware).



Photo 1



Photo 2



Remove OEM dash support bracket by removing (2) mounting bolts

Photo 3



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Evaporator Installation (Cont.)

2. Apply silicone to the mating surface of the stamped firewall plate or firewall opening (See Photo 4, below).
3. Install the evaporator assembly into the firewall opening, and secure it using (11) M6.3 x 16mm hex head screws (See Photos 5 and 6, below). **NOTE: Do not overtighten the bolts, as this will cause the firewall cover to warp.**
4. Install the evaporator dash bracket using the 1/4-20 x 1/2" bolts on the unit (See Photo 7, below).
5. Using the slots on the top of the dash bracket as a template, drill (2) mounting holes to secure the bracket to the firewall using (2) #10 x 1/2" sheet metal screws (See Photo 8, below). **NOTE: Level the evaporator unit front to back before tightening mounting hardware.**
6. Loosely install the new support brace bracket using OEM hardware (See Photo 9, below).
7. Install the 1/4-20 x 1" U-nut onto the support brace bracket (See Photo 10, below).

Apply silicone to mating surface of stamped firewall plate

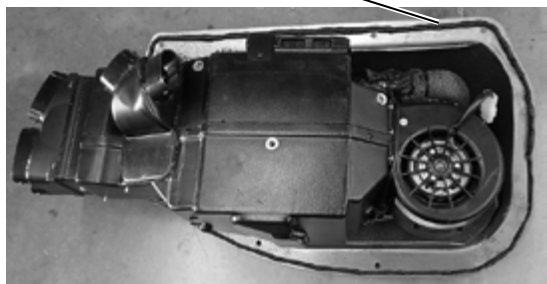


Photo 4

Install evaporator assembly into firewall opening

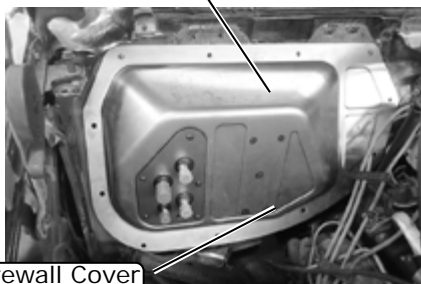


Photo 5

Secure using (11) M6.3 x 16mm hex head screws

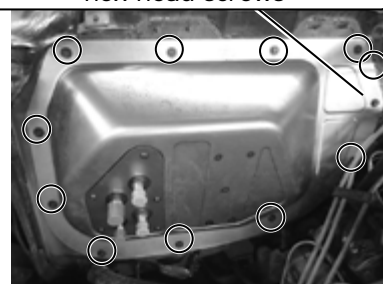


Photo 6

Install evaporator dash bracket using 1/4-20 x 1/2" bolts on unit

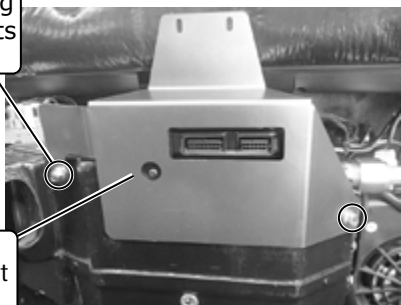


Photo 7

Evaporator Dash Bracket 649617

Use slots on top of dash bracket as template to drill (2) mounting holes

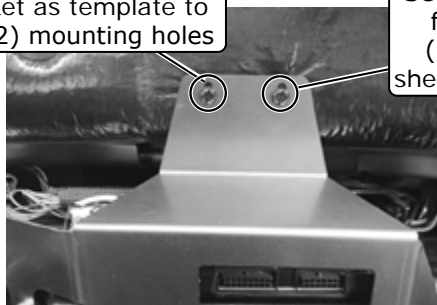


Photo 8

Secure bracket to firewall using (2) #10 x 1/2" sheet metal screws

Loosely install new support brace bracket using OEM hardware

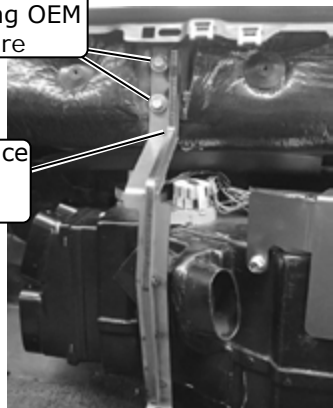


Photo 9

Support Brace Bracket 649621

1/4-20 x 1" U-nut

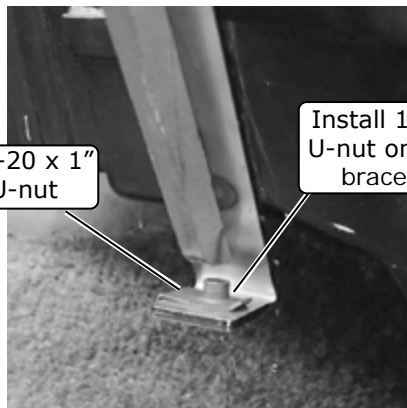


Photo 10

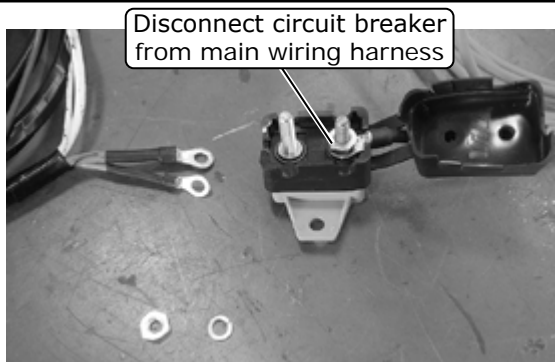
Install 1/4-20 x 1" U-nut onto support brace bracket



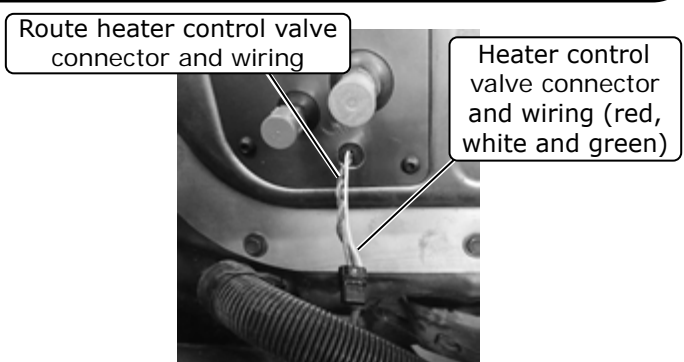
www.vintageair.com

Wiring Installation

1. Disconnect the circuit breaker from the main wiring harness (See Photo 1, below).
2. From the passenger compartment, route the heater control valve connector and wiring (red, white and green) through the firewall cover boot and cover plate (See Photo 2, below).
3. Route the red, white and blue wires from the main wiring harness through the firewall cover boot plate and rubber boot cover (See Photo 3, below). **NOTE: Leave approximately 27" of wiring between the relay and the firewall boot. This allows enough wiring to secure the relay to the mounting position.**
4. Plug the white connector from the heater control valve wiring into the white connector on the main wiring harness (See Photo 4, below).
5. Plug the white two-wire connector from the main wiring harness into the white connector on the blower motor (See Photo 5, below).
6. Plug the main wiring harness into the ECU (See Photo 6, below).
7. Select a suitable location for the main relay, and secure it using a #10 x 1/2" sheet metal screw (See Photo 7, below).
8. Select a suitable ground location for the white ground wire eyelet from the heater control valve harness and secure it using a #10 x 1/2" sheet metal screw (See Photo 8, below).

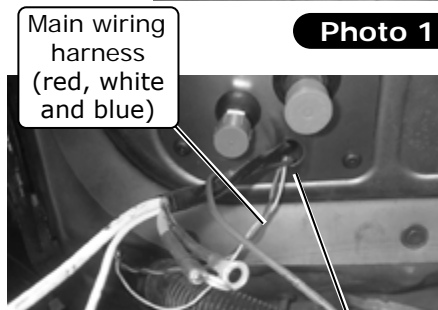


Disconnect circuit breaker from main wiring harness



Route heater control valve connector and wiring

Heater control valve connector and wiring (red, white and green)



Main wiring harness (red, white and blue)

Photo 3

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

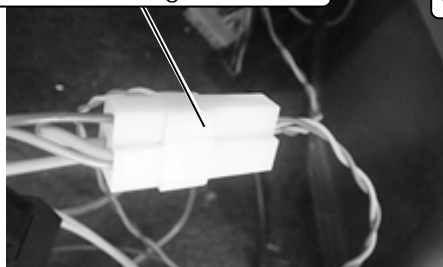


Photo 4

Plug white two-wire connector from main wiring harness into white connector on blower motor

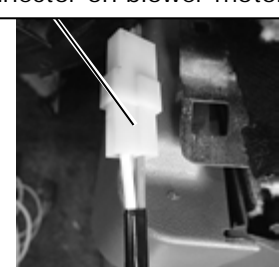


Photo 5

Route red, white and blue wires from main wiring harness through firewall cover boot plate and rubber boot cover

Plug main wiring harness into ECU

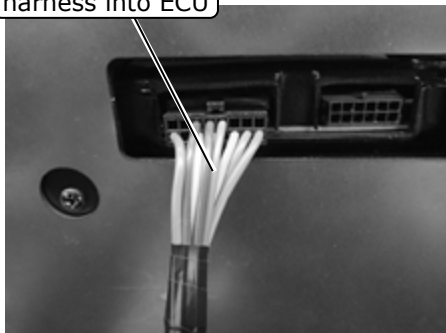


Photo 6

Install main relay and secure it using a #10 x 1/2" sheet metal screw

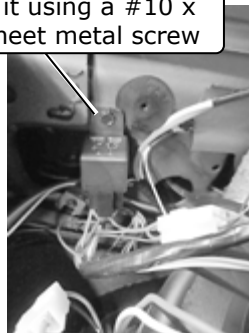
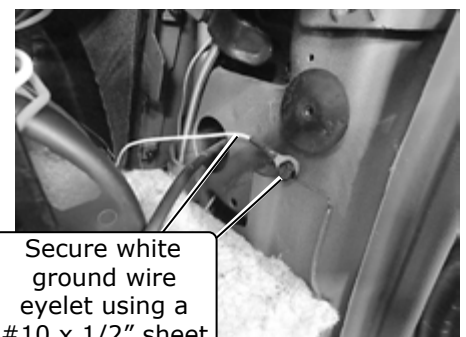


Photo 7



Secure white ground wire eyelet using a #10 x 1/2" sheet metal screw

Photo 8



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Duct Hose Routing

NOTE: These are recommended duct hose lengths, hoses can be shortened if needed.

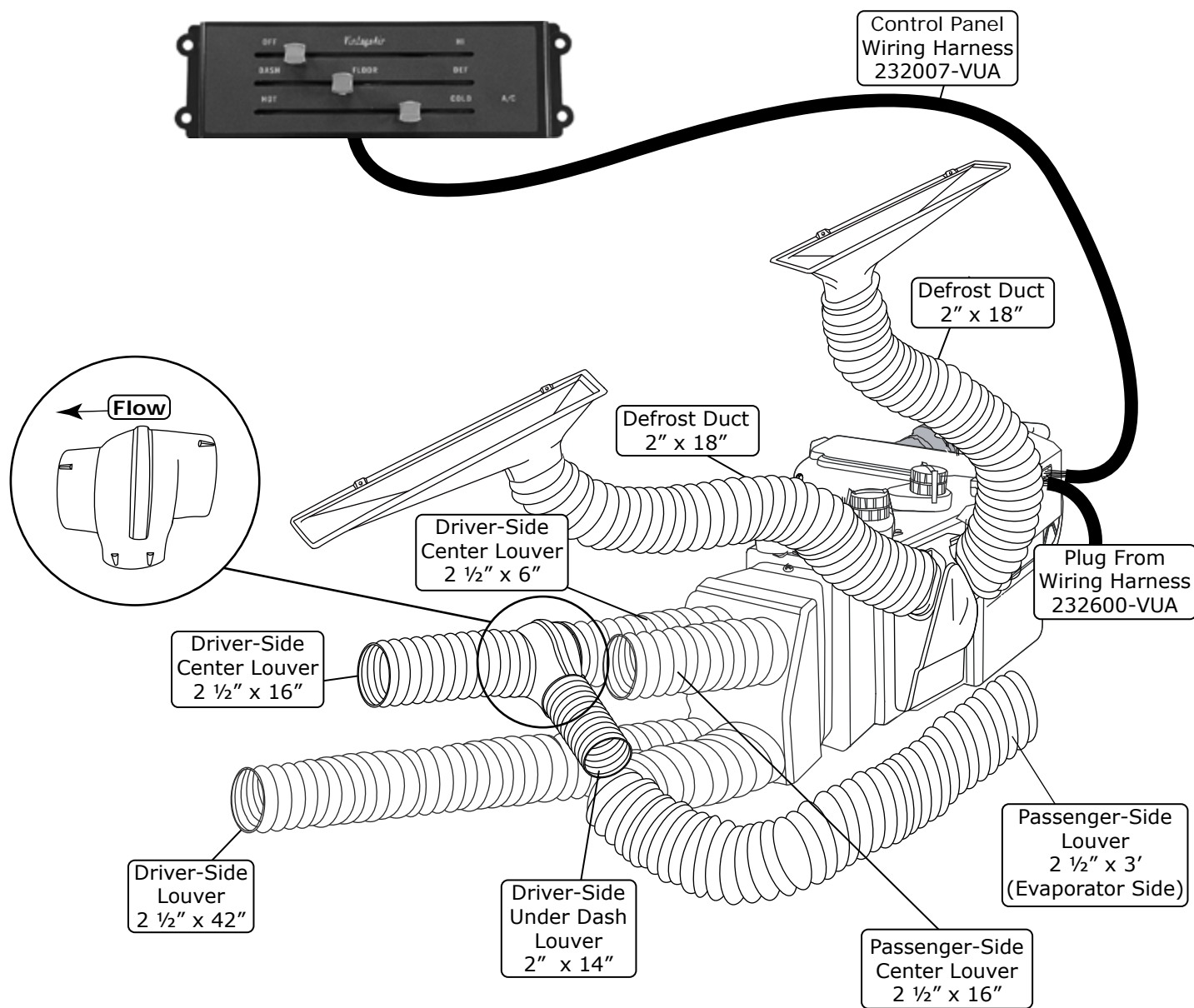


Figure 1



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Defrost Duct and Dash Installation

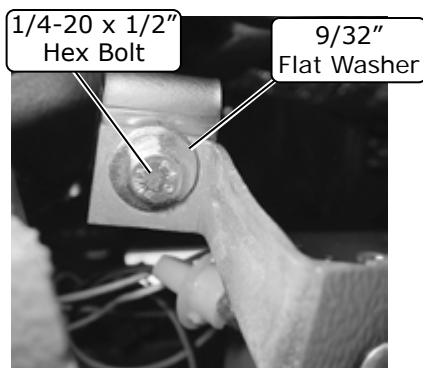
1. Install the driver- and passenger-side defrost ducts using the OEM hardware (See Photos 1 and 2, below).
NOTE: The hose adapter openings face the center of the vehicle.
2. Reinstall the dash at this time using the OEM hardware.
3. Secure the dash to the new support bracket using a 1/4-20 x 1/2" hex bolt and a 9/32" flat washer (See Photo 3, below).
4. Tighten the support bracket mounting bolts at this time (See Photo 4, below).
5. Secure the steering column with OEM hardware.
6. Connect all the electrical connections disconnected during the disassembly process.
7. Install the duct hoses as shown on Page 20.
8. Connect the duct hose to the driver-side louver adapter, then reinstall the gauge reinforcement housing using the OEM hardware.
9. Reinstall the gauge cluster and trim, ensuring the speedometer cable and all plugs are connected.
10. Install the 2" duct hose and splitter to the under-column louver (See Figure 1, below), then reinstall the under-column cover using the OEM hardware (See Photo 5, below).



Install driver- and passenger-side defrost ducts using OEM hardware



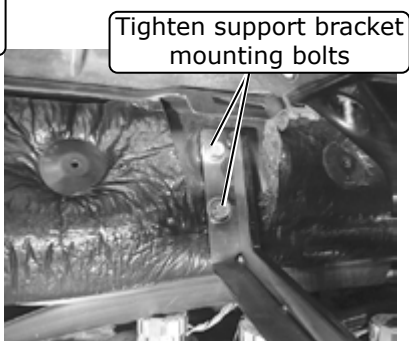
Photo 2



1/4-20 x 1/2" Hex Bolt

9/32" Flat Washer

Photo 3



Tighten support bracket mounting bolts

Photo 4

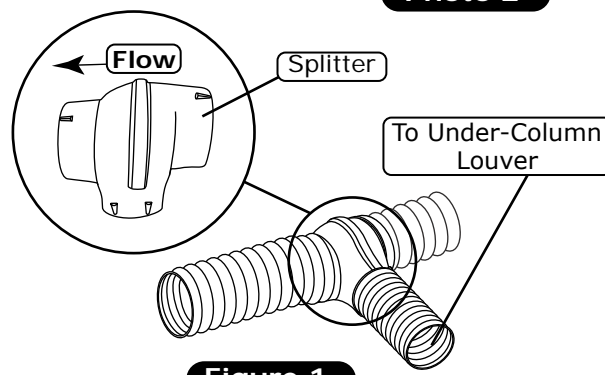
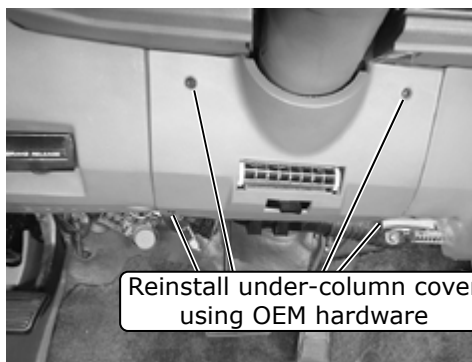


Figure 1



Reinstall under-column cover using OEM hardware

Photo 5



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Passenger Compartment Wiring

NOTE: If using the factory wiring for power, the OEM A/C fuse must be changed to a 5 AMP on the fuse panel.

1. Route the violet power wire to a switched 12v power source on the fuse panel.
2. Connect the tan wire to the factory dash lights to enable control panel backlighting.

Control Panel Installation

1. Route the new control panel wiring towards the ECU.
2. Install the control panel into the OEM location using the OEM hardware (See Photo 1, below).
3. Connect the control panel harness plug to the ECU (See Photo 2, below).
4. Reinstall the dash trim (See Photo 3, below).

Install control panel into OEM location using OEM hardware

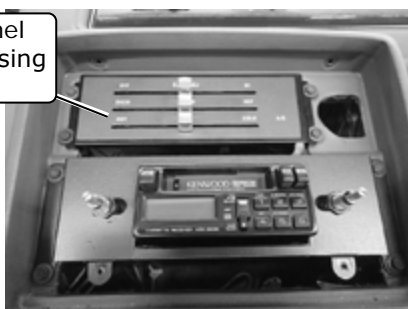


Photo 1

Connect control panel harness plug to ECU

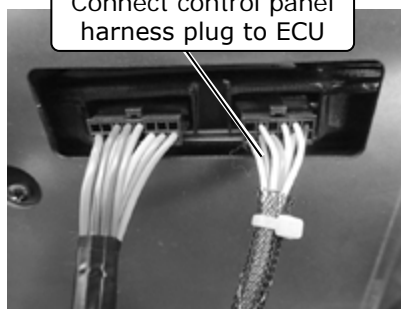


Photo 2

Reinstall dash trim

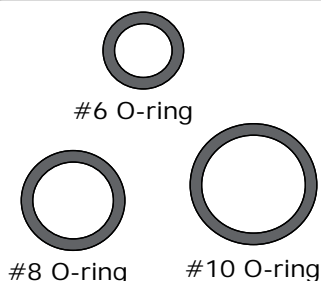


Photo 3

Inner Fender Reinstallation

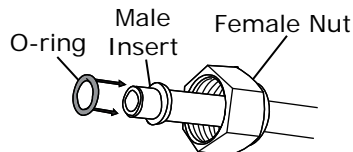
1. Reinstall the passenger inner fender at this time using OEM hardware.

Lubricating O-rings



NOTE: Standard torque specifications:

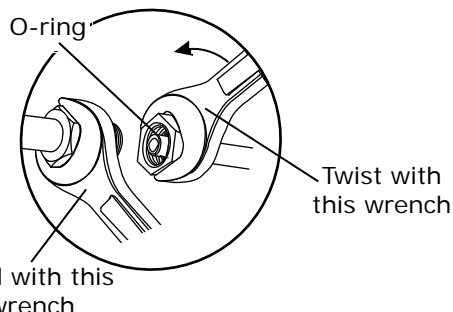
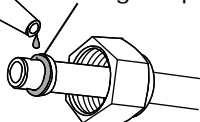
- #6: 11 to 13 ft.-lb.
- #8: 15 to 20 ft.-lb.
- #10: 21 to 27 ft.-lb.



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

Refrigerant Oil for O-rings

O-ring installs over male insert to swaged lip





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A/C Hose Installation

NOTE: Be sure to use a backup wrench when connecting A/C hoses and hardlines to avoid damaging hose fittings.

1. With a properly lubricated #6 O-ring, connect the #6 straight fitting from the #6 A/C hose to the #6 evaporator hardline (See Photo 1, below).
2. Route the #6 A/C hose along the inner fender. With a properly lubricated #6 O-ring, connect the #6 straight fitting to the #6 drier hardline (See Photo 2, below).
3. Install a #6 Adel clamp onto the #6 A/C hose, and secure it to the inner fender using a 10-32 x 1/2" screw and a 10-32 nut with star washer (See Photo 3, below).
4. With a properly lubricated #10 O-ring, connect the #10 straight fitting of the #10 A/C hose to the evaporator hardline (See Photo 4, below).
5. Route the #10 A/C hose along the inner fender. With a properly lubricated #10 O-ring, connect the #10 straight fitting to the #10 hardline fitting at the condenser (See Photo 5, below).
6. With a properly lubricated #10 O-ring, connect the #10 straight fitting with the service port on the #10 compressor A/C hose to the #10 fitting at the condenser (See Photo 6, below).

Connect straight fitting from #6 A/C hose to #6 evaporator hardline



Photo 1

Connect straight fitting to #6 drier hardline

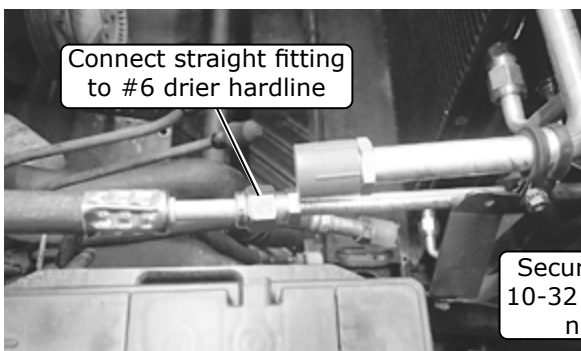


Photo 2

Install a #6 Adel clamp onto #6 A/C hose

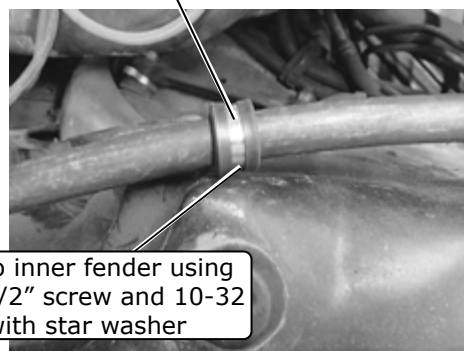


Photo 3

Secure to inner fender using 10-32 x 1/2" screw and 10-32 nut with star washer

Connect straight fitting of #10 A/C hose to evaporator hardline



Photo 4

Connect straight fitting to #10 hardline fitting at condenser

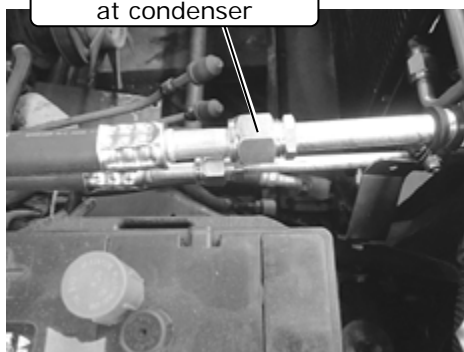


Photo 5

Connect straight fitting with service port of #10 compressor A/C hose to #10 fitting at condenser

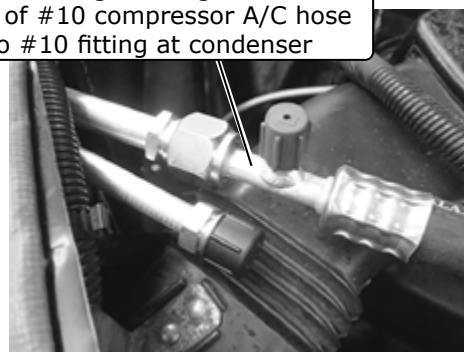


Photo 6



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A/C Hose Installation (Cont.)

7. With a properly lubricated #10 O-ring, connect the #10 45° fitting to the suction port on the compressor (See Photo 7, below).
8. With a properly lubricated #8 O-ring, connect the straight fitting with the service port on the #8 A/C hose to the #8 hardline fitting at the condenser (See Photo 8, below).
9. With a properly lubricated #8 O-ring, connect the #8 45° fitting to the discharge port on the compressor (See Photo 9, below).

Connect #10 45° fitting to suction port on compressor

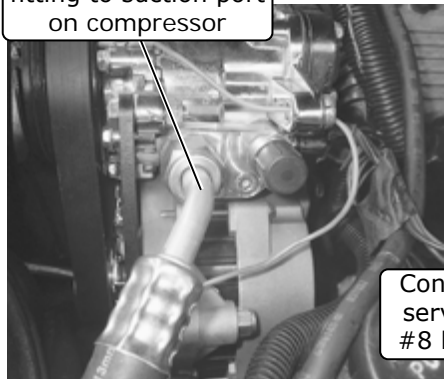


Photo 7

Connect #8 straight fitting with service port on #8 A/C hose to #8 hardline fitting at condenser

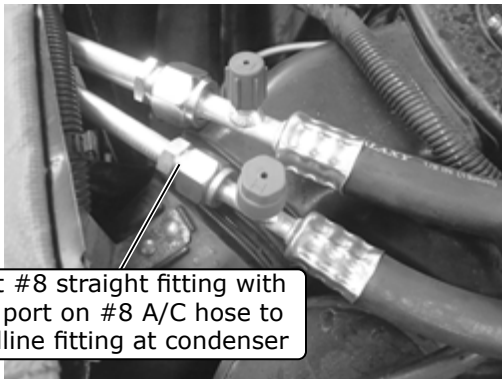


Photo 8

Connect #8 45° fitting to discharge port on compressor

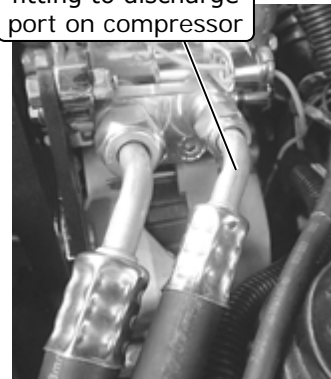


Photo 9

Water Deflector Installation

NOTE: The hood weather stripping may have to be trimmed to fit correctly.

1. Install the windshield washer nozzle onto the water deflector cowl using a #8 x 1" pan head screw, .500" OD x .252" ID x .313" length nylon spacer, 10-32 x 1/2" screw and a 10-32 hex nut with star washer (See Photo 1, below).

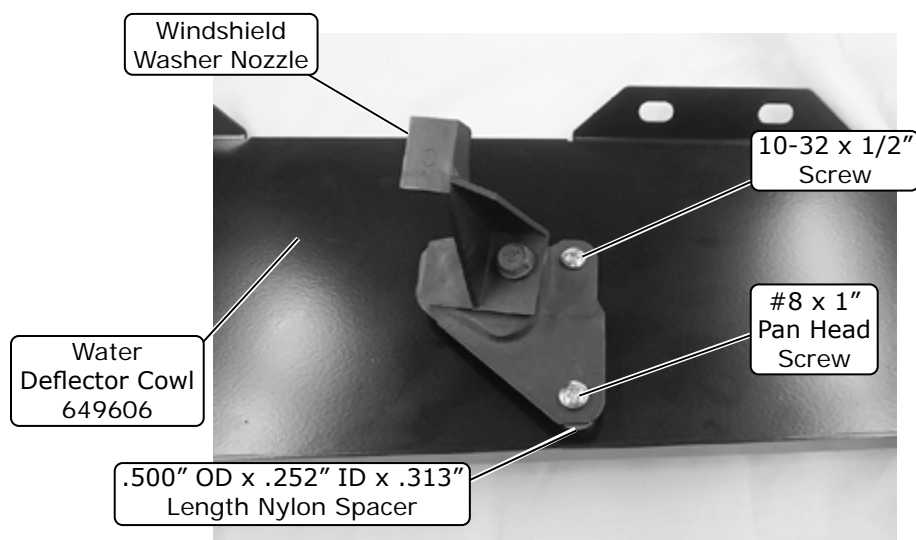


Photo 1



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Water Deflector Installation (Cont.)

2. Install the water deflector cowl using the OEM trim brackets and hardware.
3. Route the windshield water nozzle hose as shown in Photo 2, below, then reconnect it onto the washer nozzle (See Photo 3, below).
4. Reinstall the hood weather stripping (use silicone if needed) (See Photo 4, below).
5. Reinstall the lower windshield trim using the OEM hardware.
6. Reinstall the windshield wiper arms.

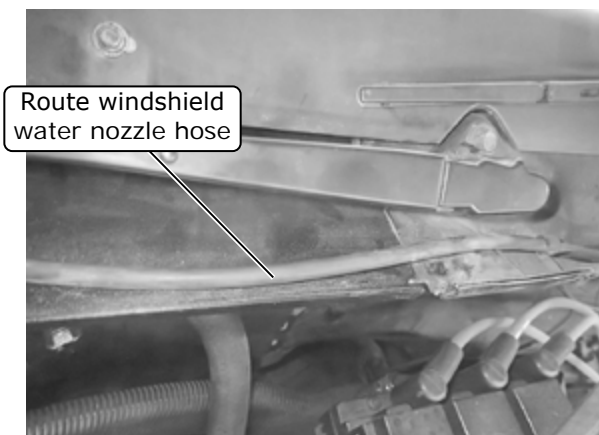


Photo 2



Photo 3



Photo 4



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Heater Hose & Heater Control Valve Installation

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

1. Route a length of heater hose from the lower heater hardline to the OEM heater hardline connected to the water pump, and secure it using (2) hose clamps (See Photo 1, below). **NOTE: A molded 90° heater hose was used in this installation and is not included in the kit.**
2. Cut the upper heater hose approximately 13" and attach it to the heater control valve. Secure it using a hose clamp as shown in Photo 2, below. **NOTE: Ensure proper flow direction through the heater control valve. The flow direction follows the molded arrow on the valve (See Figure 1, below).**
3. Attach a length of heater hose approximately 14" to the heater control valve (See Photo 3, below), then attach the heater hose to the OEM heater hardline connected to the intake manifold. Secure using (2) hose clamps (See Photo 4, below).

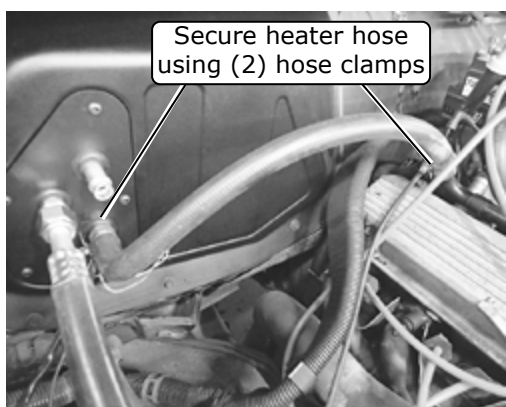


Photo 1

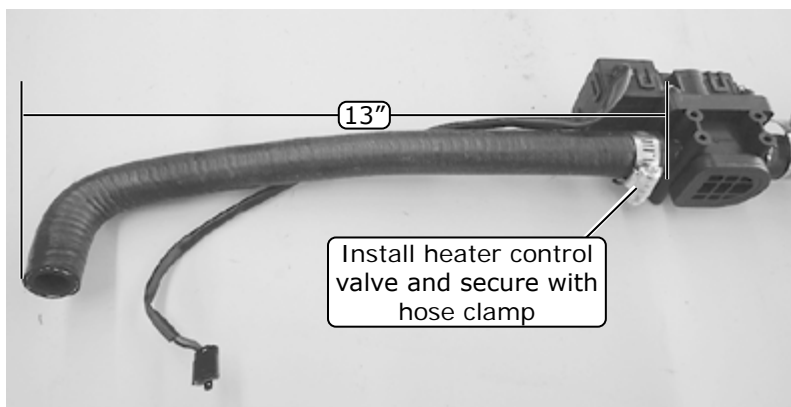


Photo 2

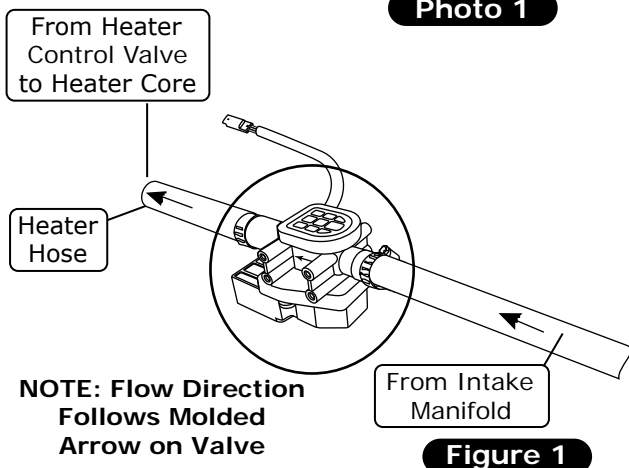


Figure 1

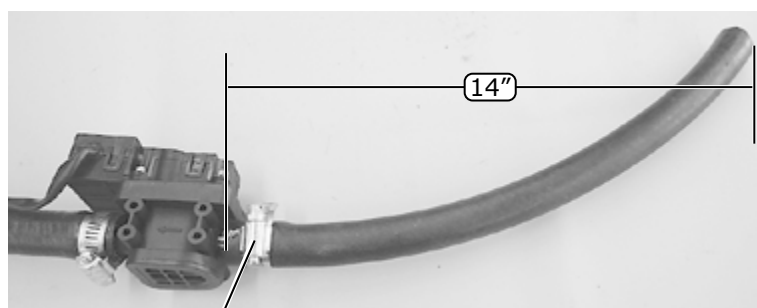


Photo 3

Attach heater hose to OEM heater hardline connected to intake manifold and secure with (2) hose clamps

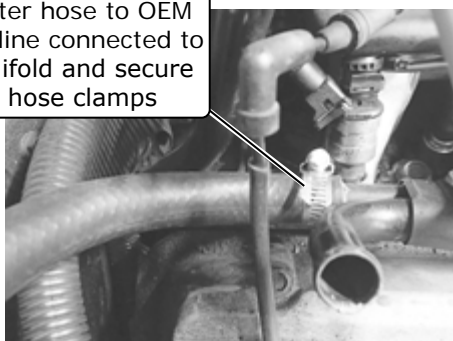


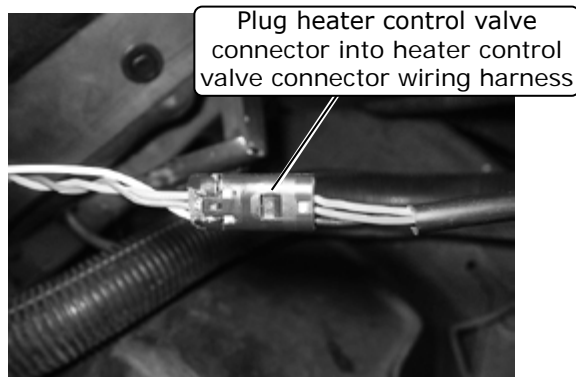
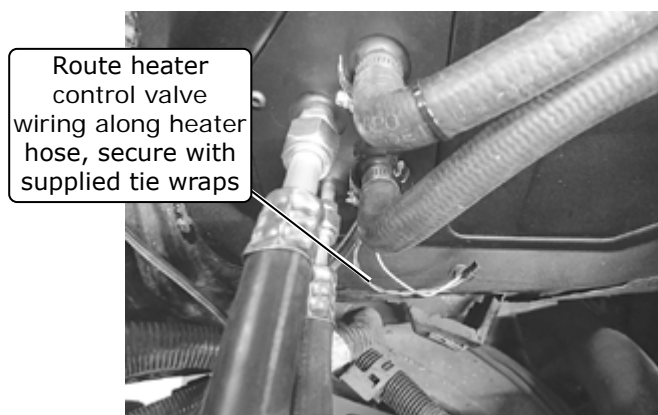
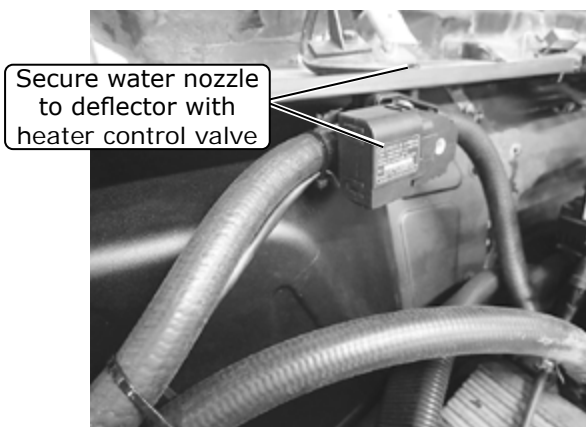
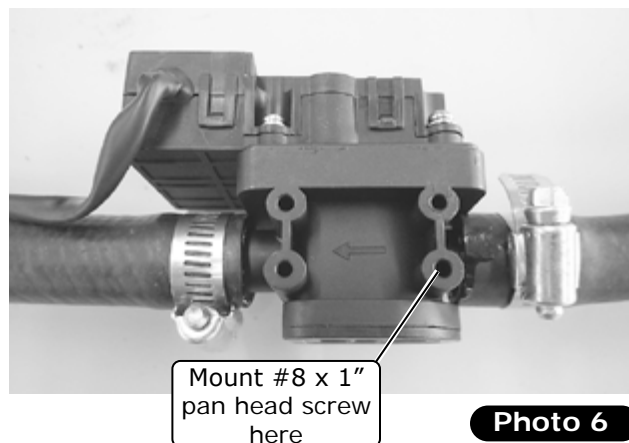
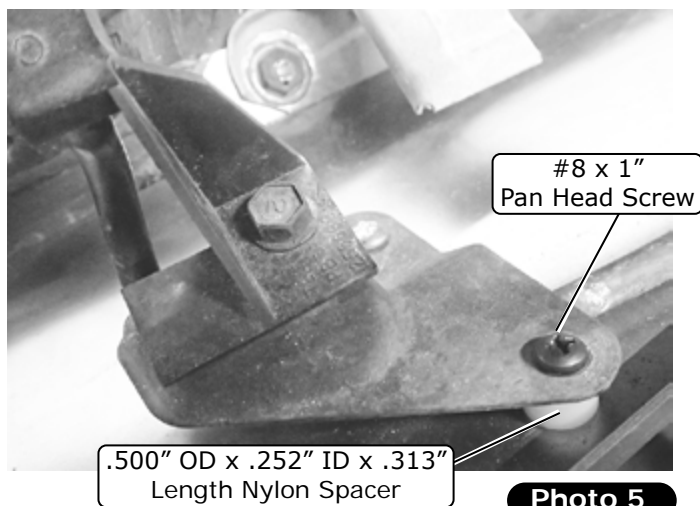
Photo 4



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Heater Hose & Heater Control Valve Installation (Cont.)

4. Using a #8 x 1" pan head screw and a .500" OD x .252" ID x .313" length nylon spacer, secure the water nozzle to the deflector with the heater control valve as shown in Photos 5, 6 and 7, below. **NOTE: If installing the heater control valve in another location, secure the washer nozzle with a 10-32 x 3/4" screw and a 10-32 hex nut with star washer.**
5. Route the heater control valve wiring along the heater hose, and secure it with the supplied tie wraps (See Photo 8, below).
6. Plug the heater control valve connector into the heater control valve connector wiring harness (See Photo 9, below).





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Engine Compartment Wiring

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

1. Connect the trinary switch wiring to the trinary switch plug (See Photo 1, below).
2. Route the blue wire from the main wiring harness along the #6 A/C hose. Using the supplied butt connector and heat shrink, connect the short blue wire from the trinary switch to the blue wire from the main wiring harness (See Photos 2 and 3, below). Secure the wiring to the #6 A/C hose using tie wraps.
3. Route the blue and (2) black wires along the #10 condenser hardline and the #10 A/C hose toward the compressor. **NOTE: Cover the wires with the supplied flexo sleeve. Secure wiring to the hardline and hose using tie wraps (See Photo 4, below).**
4. Connect the blue bullet connector to the compressor lead (See Photo 5, below).

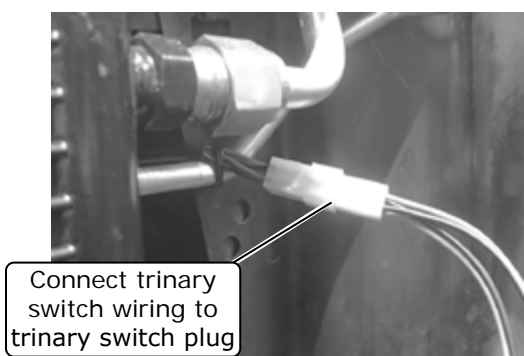


Photo 1

Using supplied butt connector, connect short blue wire from trinary switch to blue wire from main wiring harness

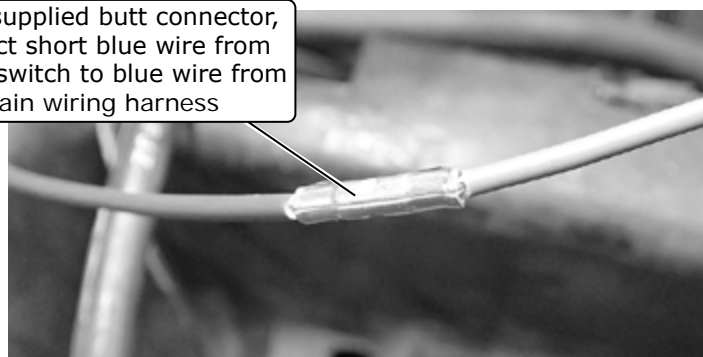


Photo 2

Using supplied heat shrink, connect short blue wire from trinary switch to blue wire from main wiring harness

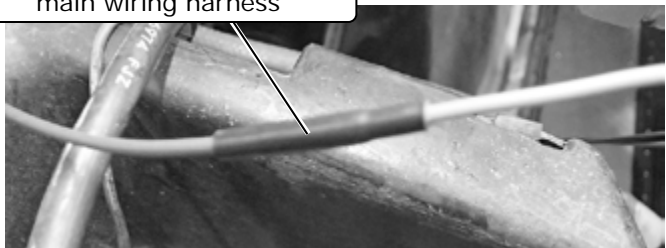
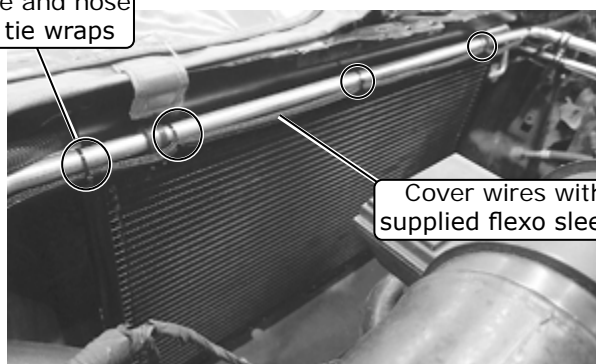


Photo 3

Secure wiring to hardline and hose using tie wraps



Cover wires with supplied flexo sleeve

Photo 4

Connect blue bullet connector to compressor lead

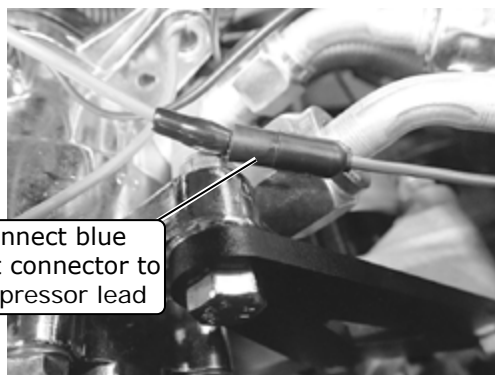


Photo 5



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Engine Compartment Wiring (Cont.)

5. Locate the OEM A/C high-pressure fan switch connector (See Photo 6, below), and cut the black with white stripe wire (See Photo 7, below). Using the supplied butt connector and heat shrink, connect one of the trinary switch harness black wires to the black with white stripe wire of the OEM A/C high-pressure fan switch wiring.
6. Cut the remaining (2) wires from the OEM A/C high-pressure fan switch connector (green and green with yellow) (See Photo 8, below). Using the butt connector and heat shrink provided in the evaporator installation kit, connect the (2) wires from the OEM A/C high-pressure fan switch to the remaining black wire (See Photo 9, below). **NOTE: Vintage air recommends that the trinary switch wire be folded to make a secure crimp connection.**
7. Select a suitable location as close as possible to the battery to mount the circuit breaker.
8. Mark, drill and mount the circuit breaker. Secure it using (2) 10-24 x 3/8" pan head screws and (2) 10-24 hex nuts with star washers (See Photo 10, below). Reconnect the red power wire eyelets to the circuit breaker (See Photo 10, below).
9. Reinstall the battery.
10. Crimp the supplied eyelet to the red power wire (See Photo 11, below) and connect it to the positive battery cable. **NOTE: Do not connect the power until the installation is complete.**

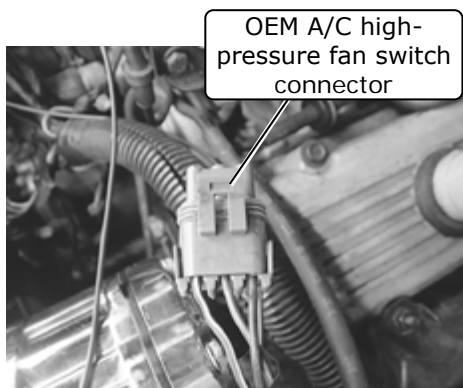


Photo 6

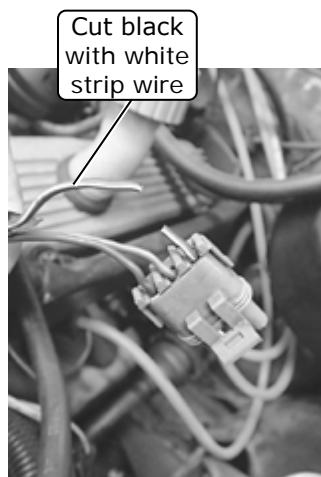


Photo 7

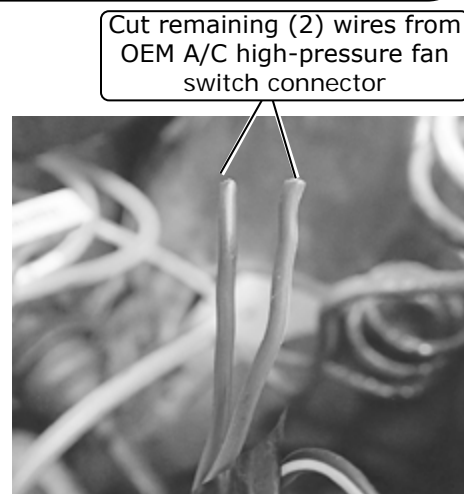


Photo 8

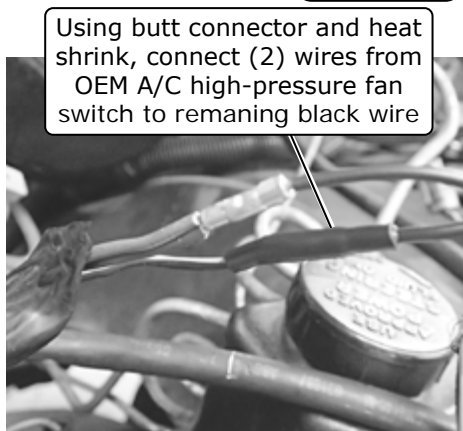


Photo 9

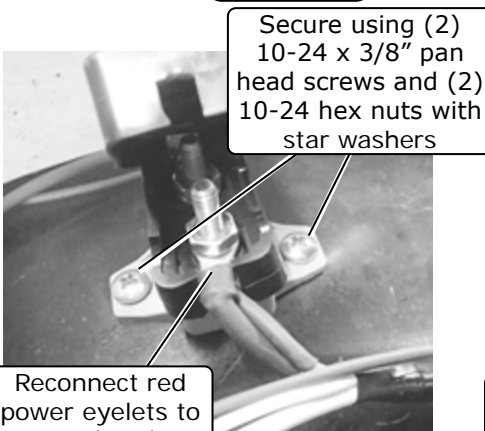


Photo 10



Photo 11



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Engine Compartment Wiring (Final)

11. Crimp the supplied eyelet to the white ground wires (See Photo 12, below) and connect it to the negative battery cable.



Crimp supplied eyelet to white ground wires

Photo 12

Drain Hose Installation

1. Cut the drain hose at 9" (See Photo 1, below). Install the drain tube elbow and the remainder of the hose. Install the 9" piece of drain hose through the pre-drilled hole in the firewall from the engine compartment (See Photo 2, below), and connect the drain hose to the drain outlet on the evaporator unit (See Photo 3, below). In the engine compartment, route the drain hose away from the exhaust. **NOTE: Carpet may need to be trimmed.**

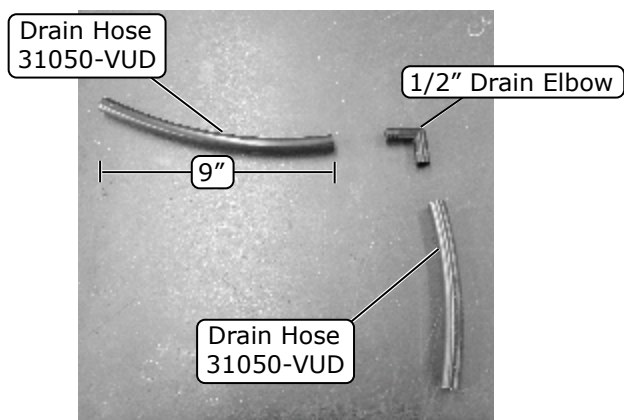


Photo 1

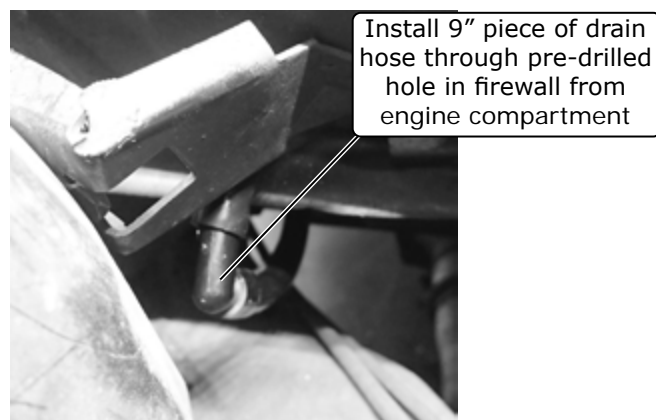


Photo 2

Connect drain hose to drain outlet on evaporator unit



Photo 3



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Glove Box Modification and Installation (Style 1)

1. Using the template, mark and cut the glove box (See Photos 1, and 2, below).
2. Install the glove box cap over the trimmed area. Using the (2) bottom holes, drill (2) small pilot holes onto the glove box, then secure the cap using (4) 6 x 3/8" pan head screws (See Photo 3, below).
3. Reinstall the glove box/door using the OEM hardware.



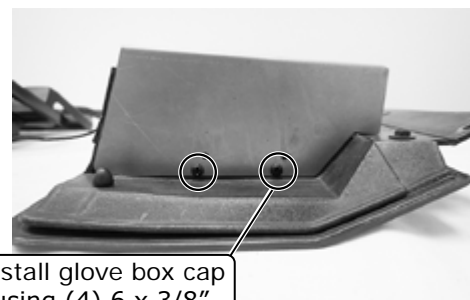
Glove Box
Template
649626

Photo 1



Cut Glove Box

Photo 2

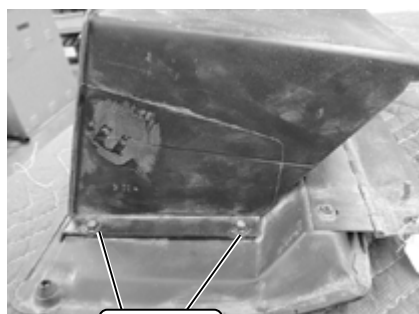


Install glove box cap
using (4) 6 x 3/8"
pan head screws

Photo 3

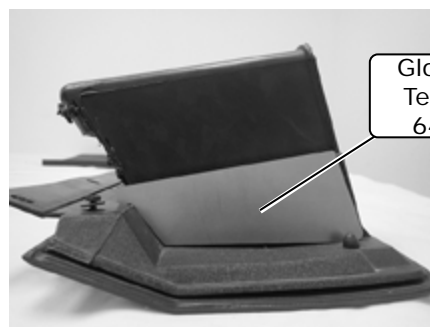
Glove Box Modification and Installation (Style 2)

1. For glove boxes that mount to the door with OEM screws (See Photo 1, below), use the template to mark and cut the glove box (See Photos 2 and 3, below).



OEM
Screws

Photo 1



Glove Box
Template
649626

Photo 2



Cut Glove Box

Photo 3



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Glove Box Modification and Installation (Style 2) (Cont.)

2. Install the glove box cap over the trimmed area. Using the (2) upper holes (See Photo 4, below), drill (2) small pilot holes onto the glove box, then secure the cap using (4) pop rivets, ((2) per side) (See Photos 5 and 6, below).
3. Reinstall the glove box/door using the OEM hardware.

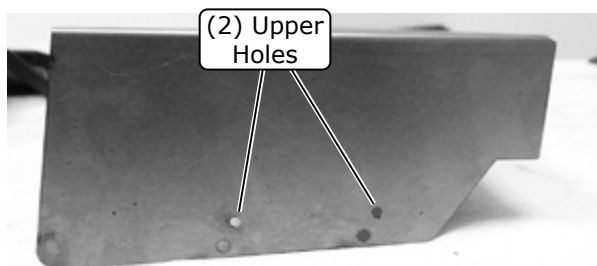


Photo 4

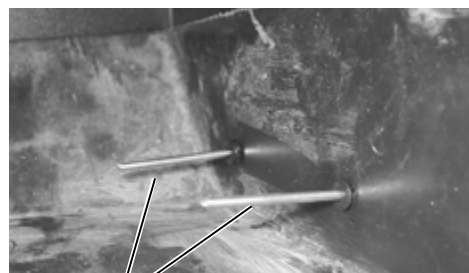
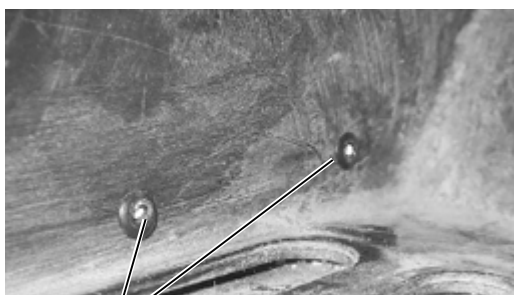
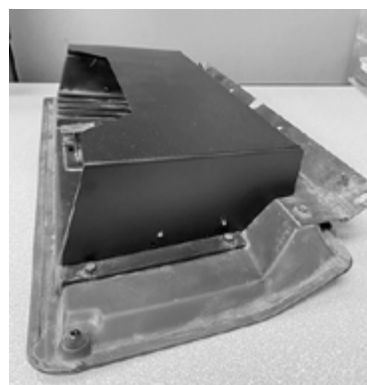


Photo 5



(2) Pop Rivets

Photo 6



Final Install

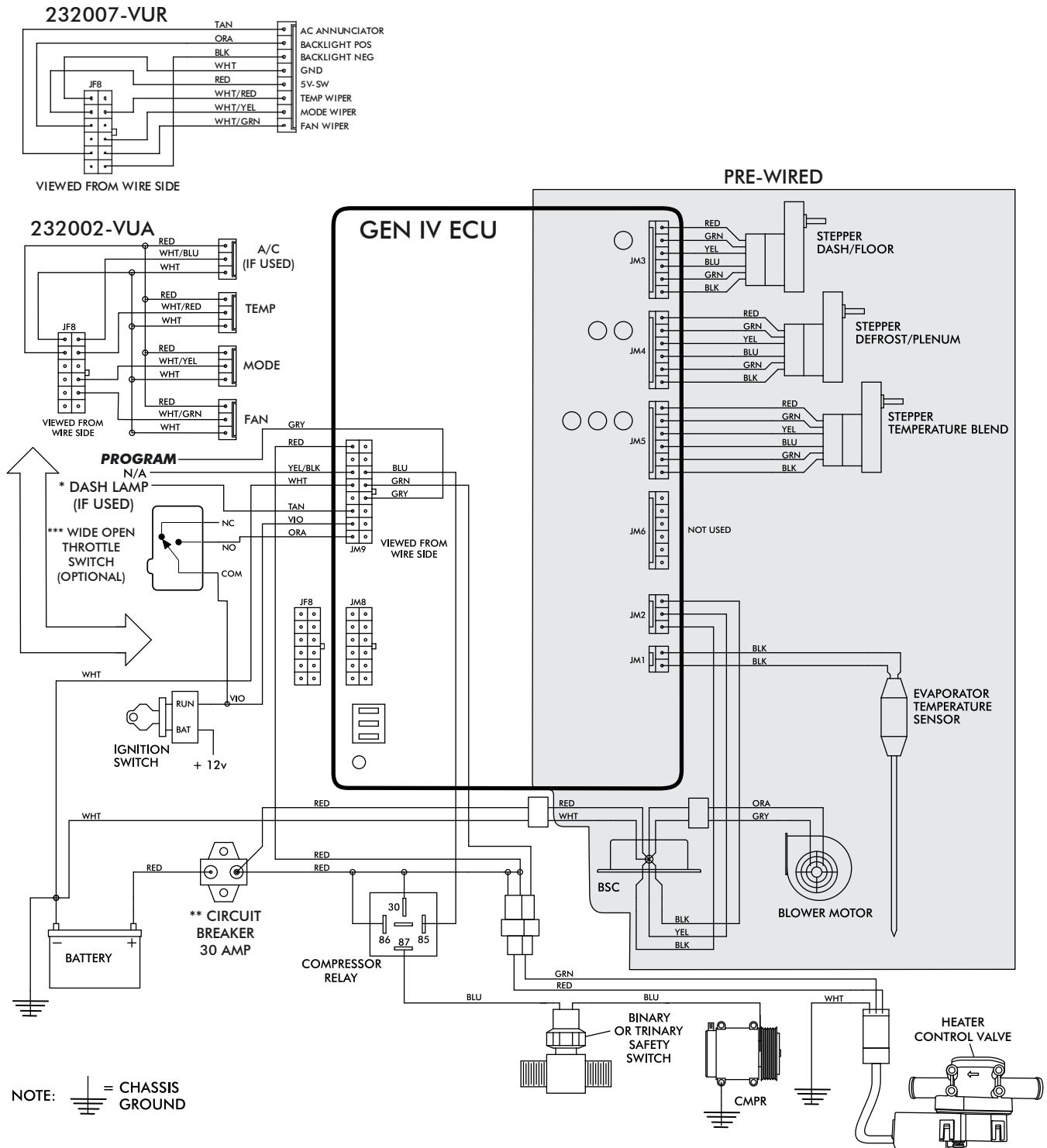
Final Steps

1. If using the OEM A/C power wire to connect to the violet power wire from the main harness, remove the fuse for the factory A/C from the fuse panel and replace it with the supplied 5 amp fuse.
2. Reinstall all previously removed items.
3. 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.
4. Double-check all fittings, brackets and belts for tightness.
5. Vintage Air recommends that all A/C systems be serviced by a licensed automotive A/C technician.
6. Evacuate the system for a minimum of 45 minutes prior to charging, and perform a leak check prior to servicing.
7. Charge the system to the capacities stated on Page 4 of this instruction manual.
8. See Operation of Controls procedures on Page 35.



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Gen IV 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).

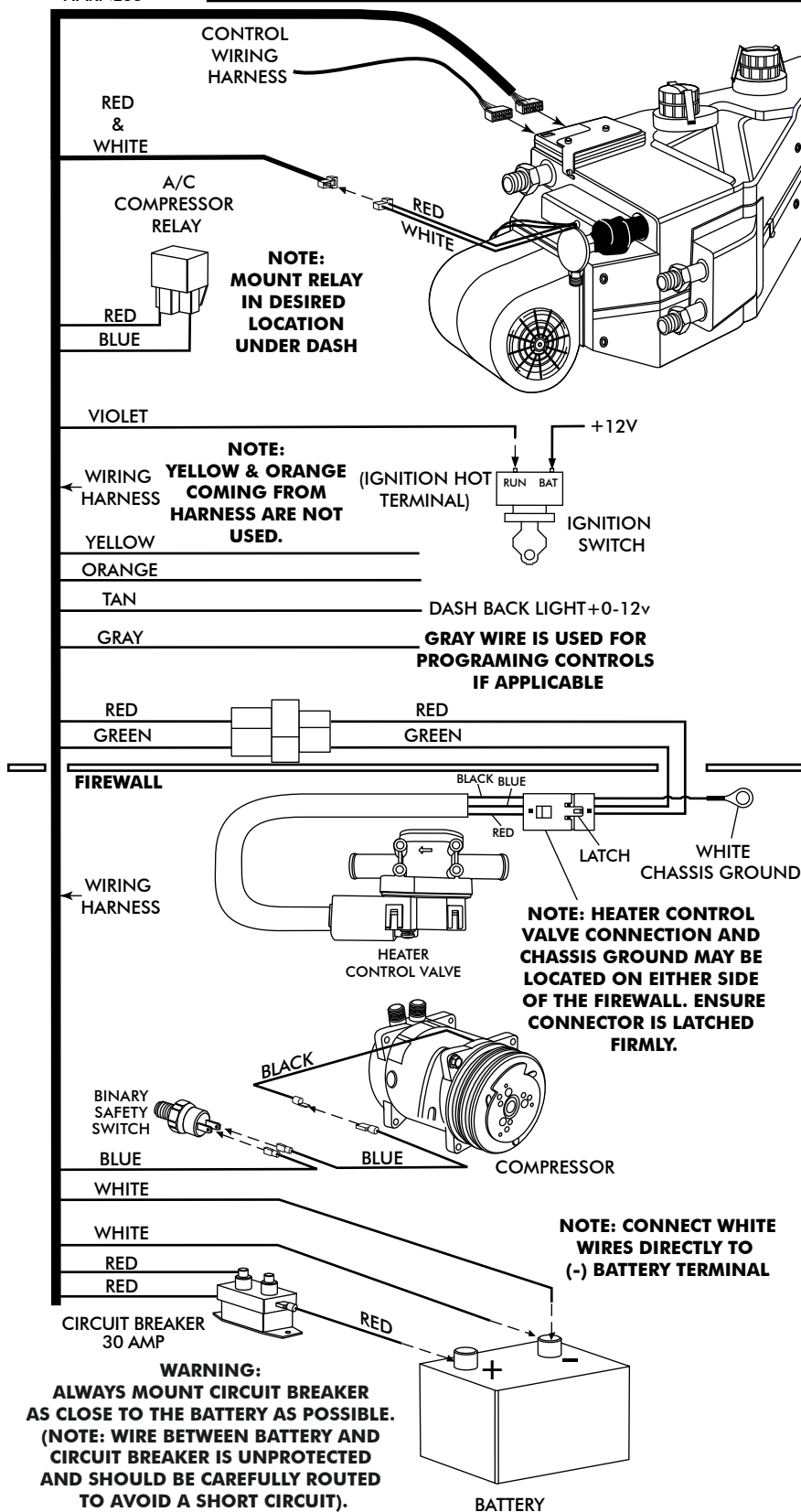
*** Wide open throttle switch contacts close only at full throttle, which disables A/C compressor.



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Gen IV Wiring Connection Instruction

WIRING
HARNESS



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.



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

Blower Speed

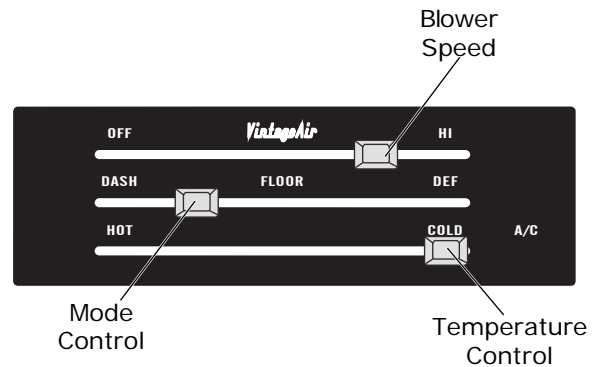
This lever/knob controls blower speed, from OFF to HI.

Mode Control

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

Temperature Control

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



A/C Operation

Blower Speed

Adjust to desired speed.

Mode Control

Adjust to desired mode position (DASH position recommended).

Temperature Control

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



Heat Operation

Blower Speed

Adjust to desired speed.

Mode Control

Adjust to desired mode position (FLOOR position recommended).

Temperature Control

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



Defrost/De-fog Operation

Blower Speed

Adjust to desired speed.

Temperature Control

Adjust to desired temperature.

Mode Control

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





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Troubleshooting Guide

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.
		All other functions work.	Check for damaged ground wire (white) in control head harness.	Verify continuity to chassis ground with white control head wire at various points.
			Check for damaged blower switch or potentiometer and associated wiring.	Loss of ground on this wire renders control head inoperable. 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.	No other part replacements should be necessary.
			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.	
		Unplug 3-wire BSC control connector from ECU. If blower stays running, BSC is either improperly wired or damaged.	Replace BSC (This will require removal of evaporator from vehicle).	
2.	Compressor will not turn on (All other functions work).	System is not charged.	System must be charged for compressor to engage.	Danger: Never bypass safety switch with engine running. Serious injury can result. 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. Disconnected or faulty thermistor will cause compressor to be disabled.
		System is charged.	Check for faulty A/C potentiometer or associated wiring (not applicable to 3-pot controls).	
			Check for disconnected or faulty thermistor.	
3.	Compressor will not turn off (All other functions work).	Check for faulty A/C potentiometer or associated wiring.	Check 2-pin connector at ECU housing.	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.
			Repair or replace pot/control wiring.	
		Check for faulty A/C relay.	Replace relay.	



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Troubleshooting Guide (Cont.)

Symptom	Condition	Checks	Actions	Notes
4.	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.
	System will not turn on, or runs intermittently.	Will not turn on under any conditions.	Check for positive power at heater valve green wire and blower red wire. Check for ground on control head white wire.	
		Verify connections on power lead, ignition lead, and both white ground wires.		
		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.	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.	
			Ensure all system grounds and power connections are clean and tight.	
			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 (565085)

No.	Qty.	Part No.	Description
1.	1	744004-VUE	Gen IV Evaporator Sub Case
2.	1	785085	Accessory Kit

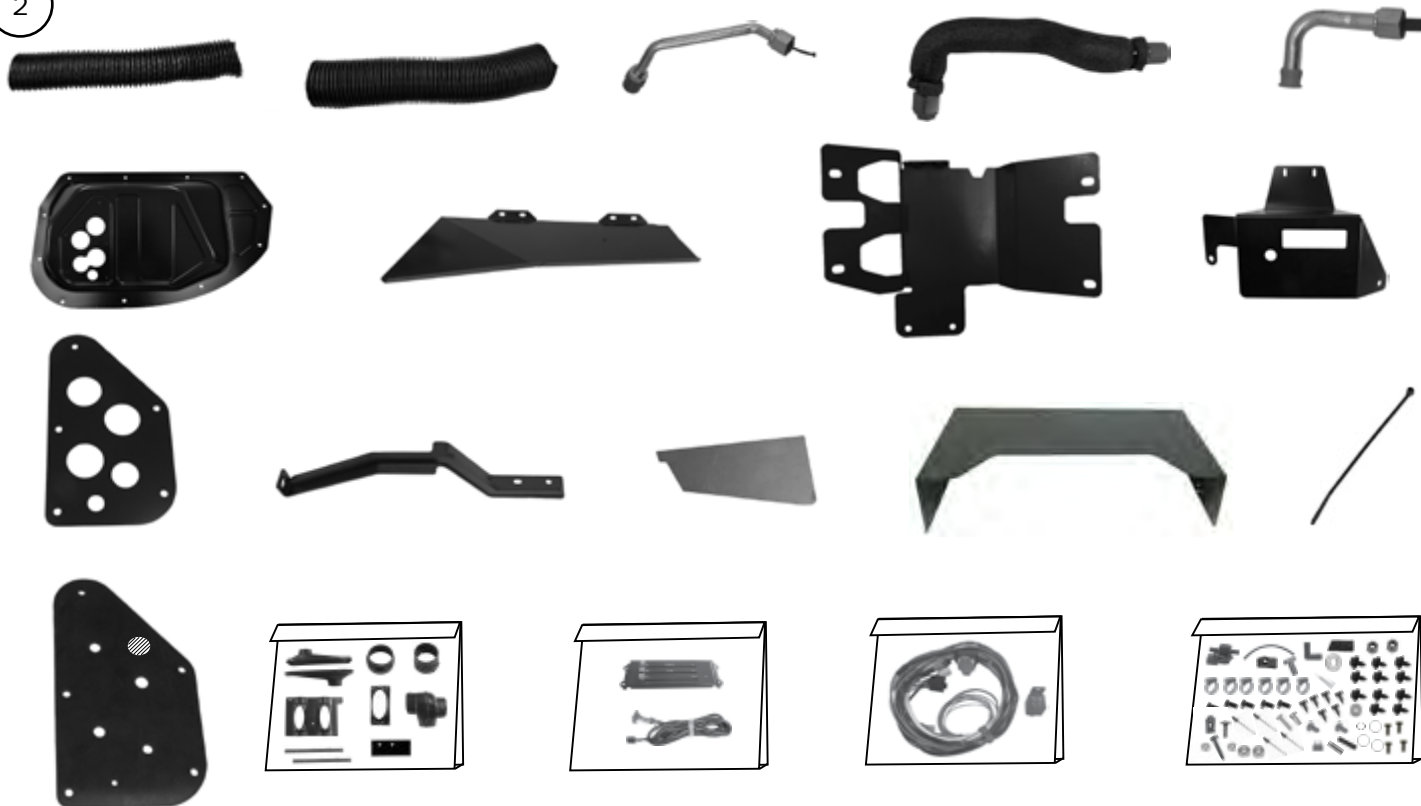
Checked By: _____
Packed By: _____
Date: _____

1



Gen IV Evaporator
Sub Case
744004-VUE

2



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

Accessory Kit
785085