Chevrolet OBS Pickup

with **Factory Air Evaporator Kit (755740)**

Fits:
1995-98 (All)
1999-2000 (2500-3500)

<u>IMPORTANT:</u> For vehicles equipped with air bags and/or rear window defroster, please see Page 6.

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Table of Contents

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Packing List: Evaporator Kit (755740)

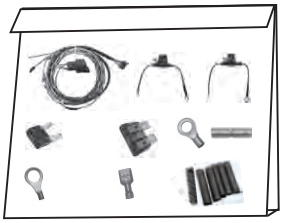
No.	Qty.	Part No.	Description
1.	1	765200	Gen 5 Magnum Max Module with 404 ECU
2.	1	795740	Accessory Kit

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

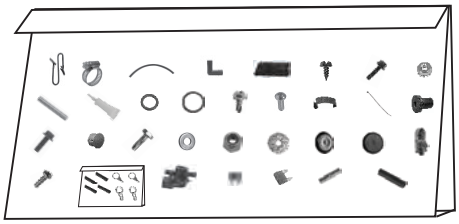
1

Gen 5 Magnum Max Module with 404 ECU 765200

2



Accessory Kit 795740



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

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Important Notice—Please Read

For Maximum System Performance, Vintage Air Recommends the Following:

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

Refrigerant Capacities:

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

Other Systems: Consult manufacturer's guidelines.

Lubricant Capacities:

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

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

Safety Switches

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

Service Info:

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

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

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

Bolts Passing Through Cowl and/or Firewall:

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

Heater Hose (not included with this kit):

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

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Important Wiring Notice—Please Read

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

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

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

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

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

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

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

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

IMPORTANT SAFETY & LIABILITY NOTICE

This kit is designed for vehicles within the specified year range. However, some vehicles produced during these years may be equipped with factory-installed airbag components in or around the HVAC/AC assembly area.

Before beginning the disassembly:

- It is the installer's responsibility to verify whether the vehicle is equipped with airbags or related safety restraint components in the work area.
- Improper removal or handling of airbag systems can cause serious injury, death, or unintended airbag deployment.
- If airbags are present, refer to the vehicle manufacturer's official service manual and safety procedures before proceeding.
- If you are not certified or trained to work with supplemental restraint systems (SRS), professional installation is strongly recommended.

By installing or attempting to install this kit, the installer assumes all responsibility and liability related to the removal, handling, or modification of factory airbag or SRS components. The manufacturer of this kit is not responsible for injury, damage, or loss resulting from improper installation or failure to follow safety precautions.

REAR WINDOW DEFROSTER FUNCTIONALITY NOTICE

The new control panel included with the kit does not include a rear window defroster switch. As a result:

- The factory rear defrost feature will no longer function once this kit is installed.
- If your vehicle currently uses an electric rear window defroster, this feature will be disabled unless you install a separate aftermarket switch or alternate control solution.

Installers and vehicle owners should be aware of this limitation before proceeding with the installation.

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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, photos & diagrams. Retain OEM bolts, washers and nuts, as some hardware will be reused.

Perform the following:

1. Disconnect the battery.
2. Evacuate the A/C system (if necessary).
3. Drain the radiator.
4. Remove the (2) bolts holding the coolant overflow reservoir (See Photo 1, below), then remove the reservoir to gain access to the bolts securing the OEM evaporator unit.
5. Unclip the connection going to the accumulator (See Photo 2, below).
6. Remove the #10 hose from the front of the accumulator, then remove the nut on the line coming from the firewall (See Photo 2, below). Next, remove the hardware securing the accumulator bracket to the firewall, then remove the bracket and accumulator.
7. Remove the heater hoses from the firewall, front of the intake, and the radiator (See Photos 3 and 4, below).
8. Remove the fuse relay center to gain access to the wiring bulkhead connection on the driver's side (See Photo 5, below). Remove the (3) screws from the underside of the inner fender (See Photo 6, below).

Photo 1

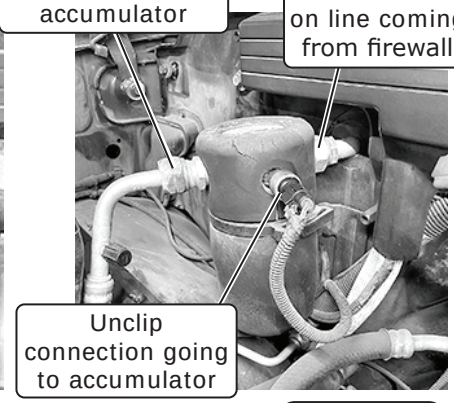
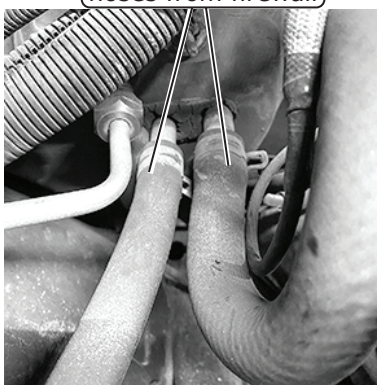


Photo 2



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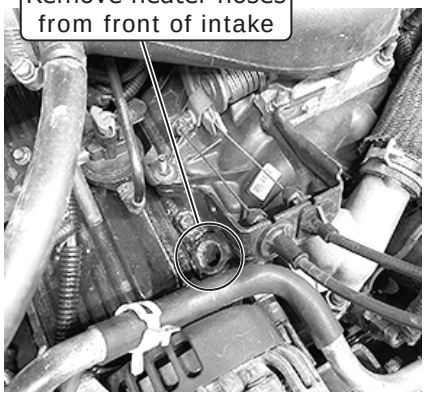

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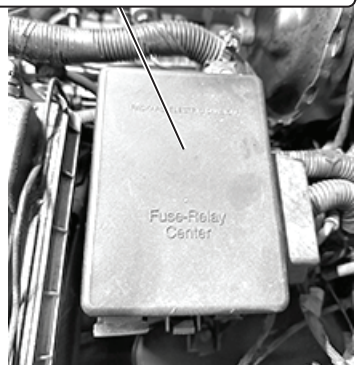

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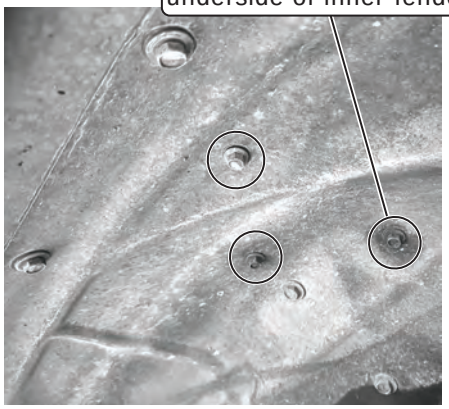


Photo 6

Engine Compartment Disassembly

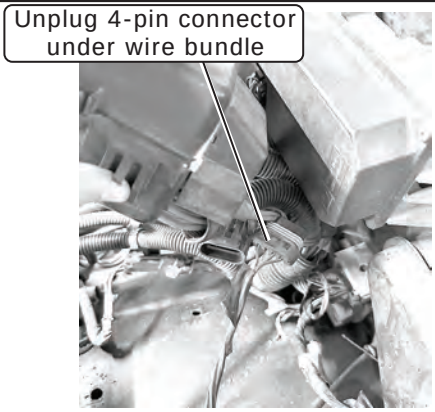
9. Remove the bolt located at the top corner of the fuse relay center (See Photo 7, below).

10. Separate the fuse relay center from its mounting bracket. Unplug the 4-pin connector under the wire bundle and move it to the side to gain access to the wiring bulkhead (See Photo 8, below).

11. After loosening the screw located in the center of the plug, unplug the bottom half of the bulkhead connection (See Photo 9, below).

12. The top portion of the bulkhead consists of several pigtails, follow them to their nearest connection and unplug. The 1996 Chevrolet 1500 used for development had (1) round connection near the inner fender (See Photo 10, below), (1) yellow connection on the bracket near the brake master cylinder (See Photo 11, below), (1) connection into the cruise control module (See Photo 12, below), (1) connection into the windshield wiper motor (See Photo 13, below), and (2) connections under the brake booster (See Photos 14 and 15, below).

Photo 7



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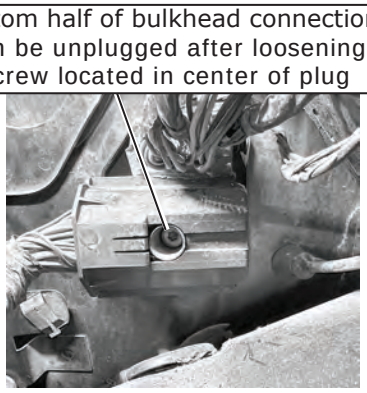

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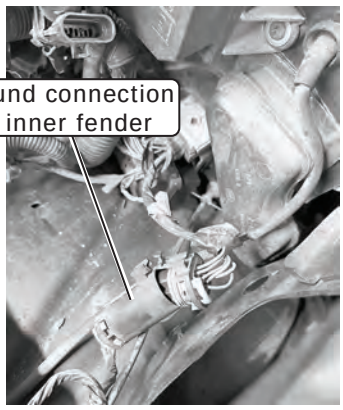

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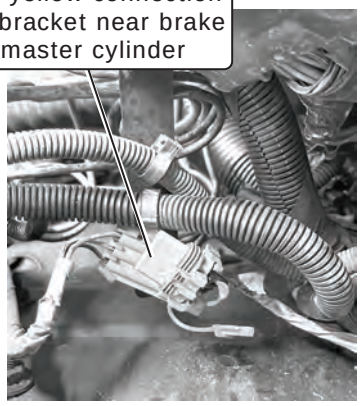

Photo 11

Photo 12

Photo 13

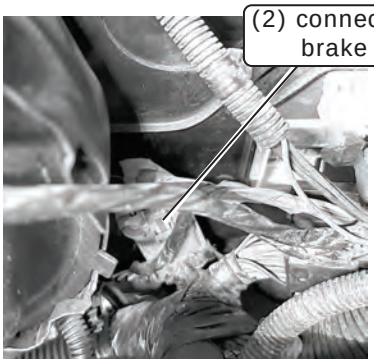

Photo 14

Photo 15

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Passenger Compartment Disassembly

NOTE: The removal of the dash is required to remove the OEM evaporator module 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 (2) screws from the lower door trims. Unclip and remove the kick panels (See Photo 1, below).
2. Remove the (4) screws securing the trim underneath the steering column (See Photo 2, below). Disconnect the duct hose (See Photo 3, below).
3. Remove the (4) bolts securing the steering column cover (See Photo 4, below).
4. Remove the (2) screws securing the lower brace (See Photo 5, below).
5. Remove the (4) nuts securing the brace under the steering column (See Photo 6, below).
6. Disconnect the wiring harness connections on the steering column.
7. Remove the clip and shift cable on the side of the steering column (See Photos 7 and 8, below), then unclip the linkage.
8. Remove the bolt at the base of the column.

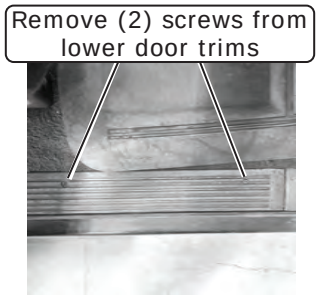


Photo 1

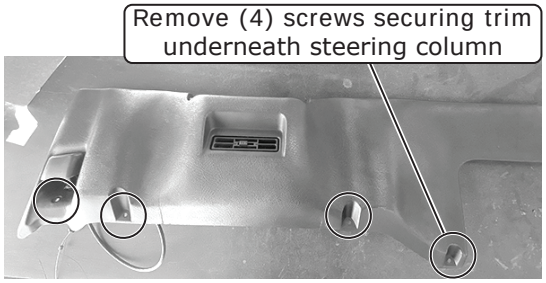
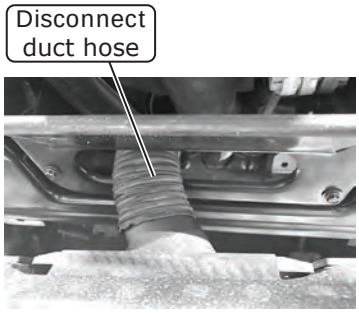


Photo 2



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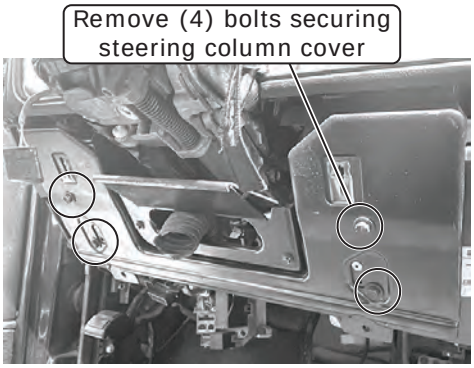

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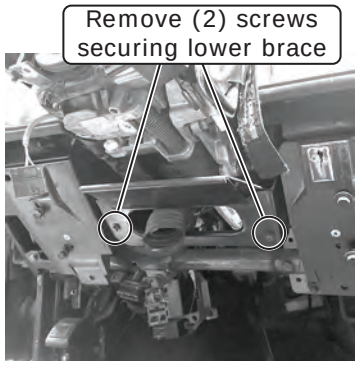

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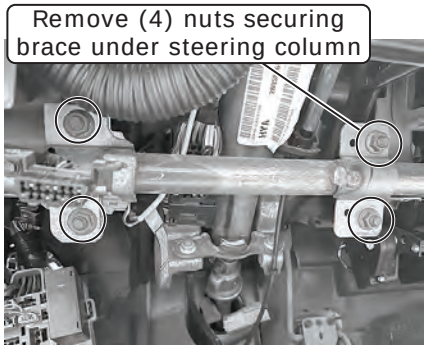

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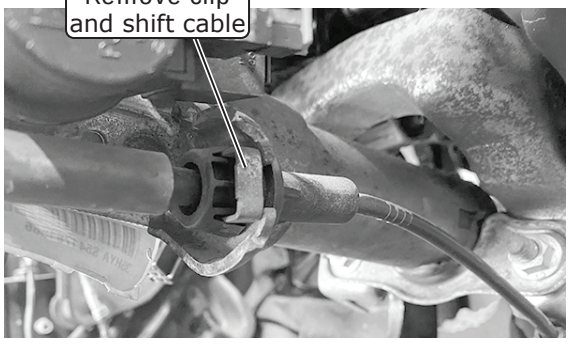
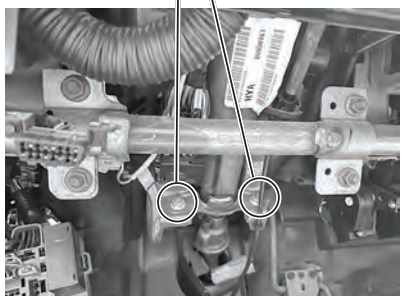


Photo 7

Photo 8

Passenger Compartment Disassembly (Cont.)

9. Remove the steering column by removing the (2) nuts on the lower steering column bracket (See Photo 9, below), and the (2) nuts on the upper steering column bracket (See Photo 10, below).
10. Remove the connection to the airbag module (See Photo 11, below).
11. On the passenger side, unclip the glove box cables, then remove the glove box.
12. Unclip the connections to the OEM evaporator unit from the wiring harness.
13. Remove the (2) lower bolts on either side of the dash (See Photo 12 and 13, below).
14. Remove the (3) bolts on top of the dash, then remove the dash (See Photo 14, below).



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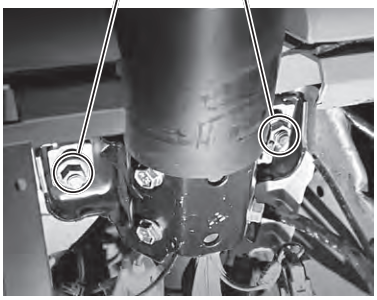

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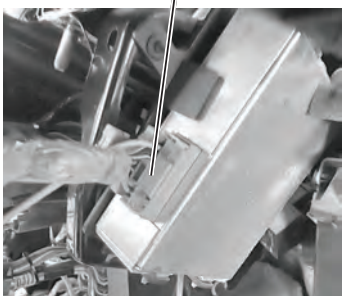

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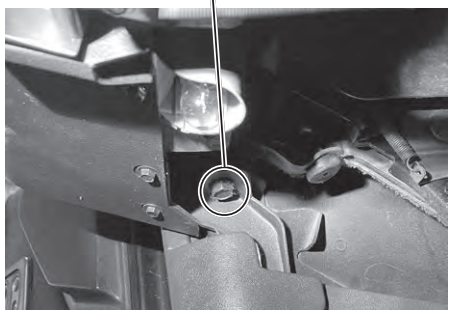

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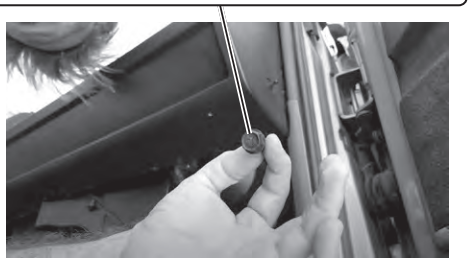

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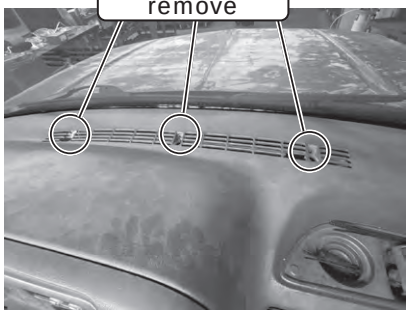

Photo 14

Condenser Assembly and Installation

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

Compressor and Brackets

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

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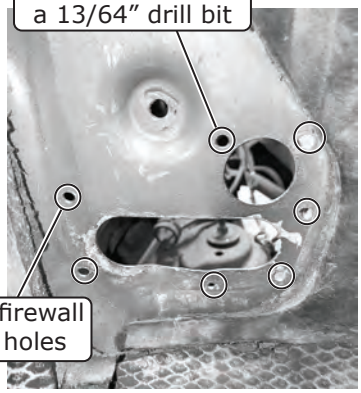
Firewall Modification and Insulation

NOTE: The OEM insulation won't need to be removed, but will need to be trimmed in some areas. If you do not have insulation, Vintage Air recommends using heat blocking insulation around the evaporator.

1. Align the firewall template with the stock opening, then secure it with a clamp. Mark the (7) spots to drill out for the firewall cover, drain hose and wiring holes (See Photos 1 and 2, below).
2. Drill the holes out with a 13/64" drill bit, then remove the template (See Photo 2, below).
3. The wiring hole on the template is designated with a "W" and will need to be drilled out to 1/2" (See Photo 3, below).
4. The drain hose hole on the template is designated with a "D" and will need to be drilled to 5/8" (See Photo 3, below). **NOTE: To ensure a tight fit for the drain hose, do not enlarge the drain hose hole more than 5/8".**
5. Between the stock holes on the firewall, cut out about 3/4" of the firewall to ease the installation of the new hoses (See Photos 4 and 5, below).

Photo 1



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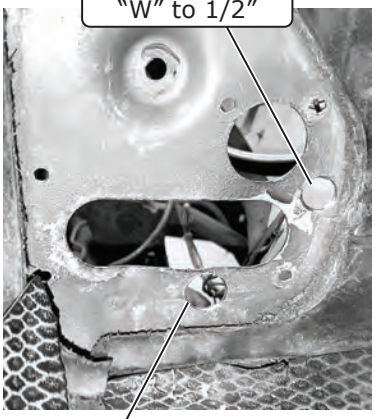

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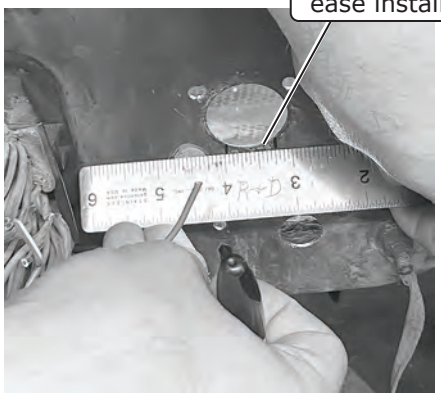

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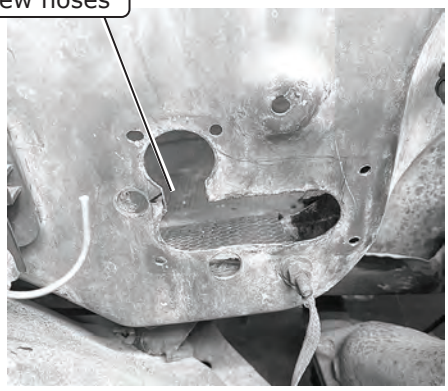
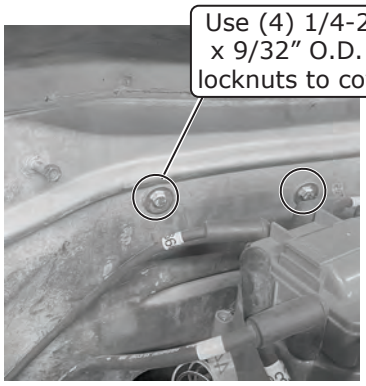


Photo 5

Firewall Modification and Insulation (Cont.)

6. Use (4) 1/4-20 x 3/4" hex bolts, (8) 1/4" I.D. x 9/32" O.D. fender washers, and (4) 1/4-20 locknuts to cover the holes that are no longer used (See Photos 6 and 7, below).
7. Use either the 1 ¾" or 2" plastic plug to cover the opening that the previous line for the accumulator came through (See Photo 8, below).



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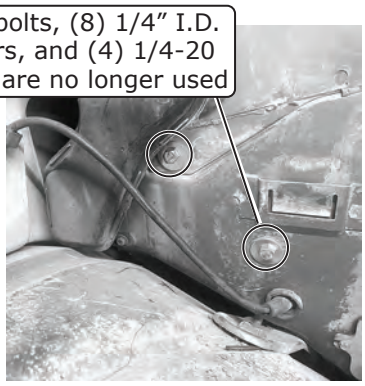

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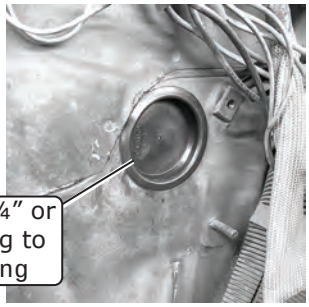
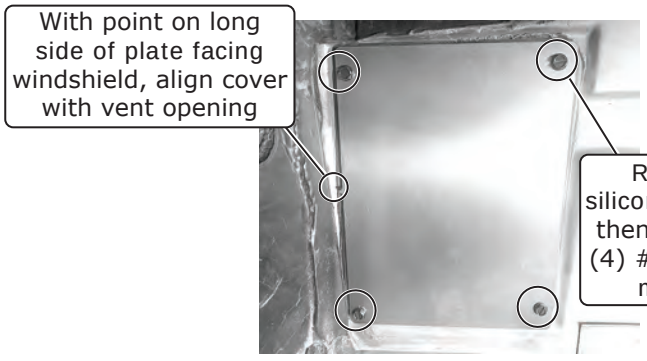


Photo 8

Fresh Air Vent Cover Installation

1. With the point on the long side of the plate facing the windshield, align the cover with the vent opening (See Photo 1, below). Mark and drill out the (4) holes with a 9/64" drill bit.
2. Run a bead of silicone around the cover, then secure it using (4) #10 x 1/2" sheet metal screws (See Photos 1 and 2, below).



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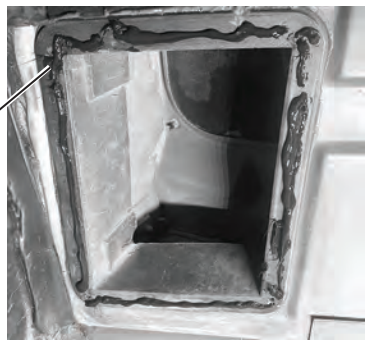

Photo 2

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Evaporator Module Preparation

On a workbench, perform the following:

1. Using (4) spring clips, install the dash plenum onto the front of the module (See Photo 1, below).
2. Using (2) spring clips, install the floor plenum onto the back of the module (See Photo 2, below).
3. Using (2) spring clips, install the defrost plenum onto the front of the module (See Photo 3, below).
4. With properly lubricated #10 O-rings (See Lubricating O-rings & Fitting Torque Specs, Page 14), install both heater fittings onto the module with the 90° fitting on top and the 135° fitting on the bottom (See Photo 4, below).
5. Using (4) #10 x 5/8" screws, install the evaporator bracket onto the module (See Photo 5, below).
6. Install (2) 1/4-20 x 1 ½" full-threaded studs into the lower and passenger-side weld nuts on the evaporator bracket (See Photo 6, below).

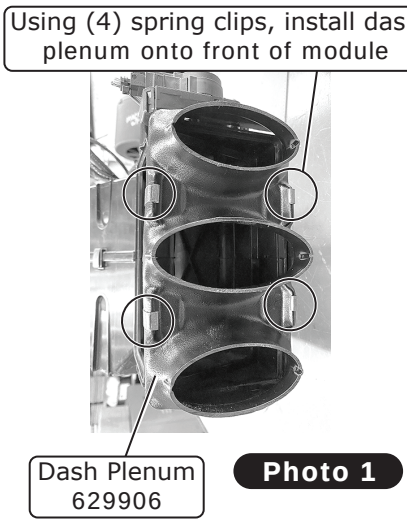

Photo 1

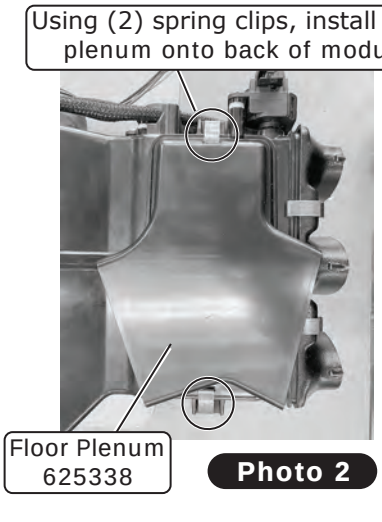

Photo 2

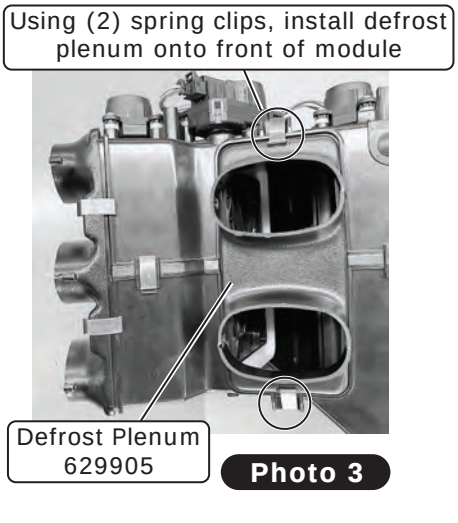

Photo 3

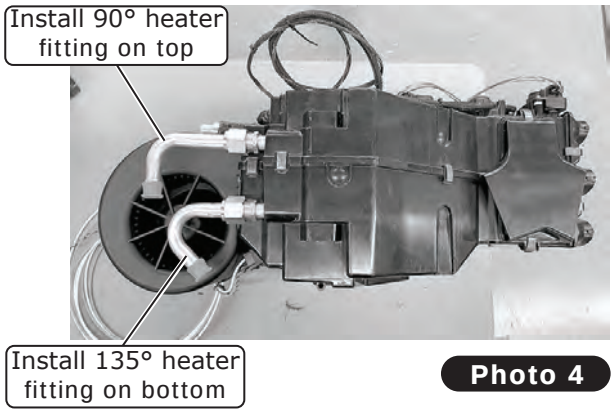

Photo 4

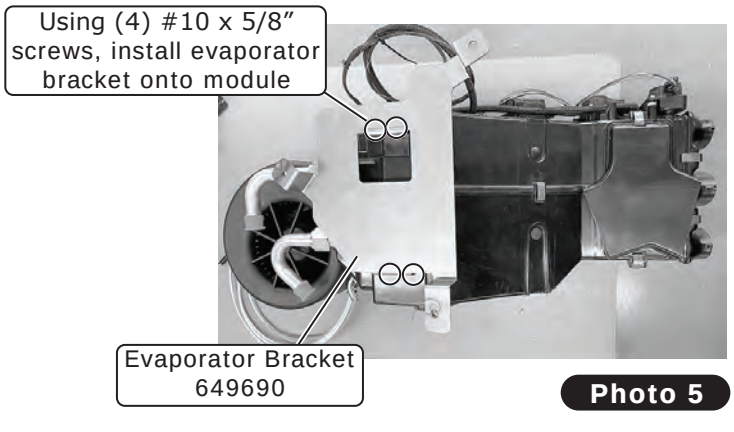

Photo 5

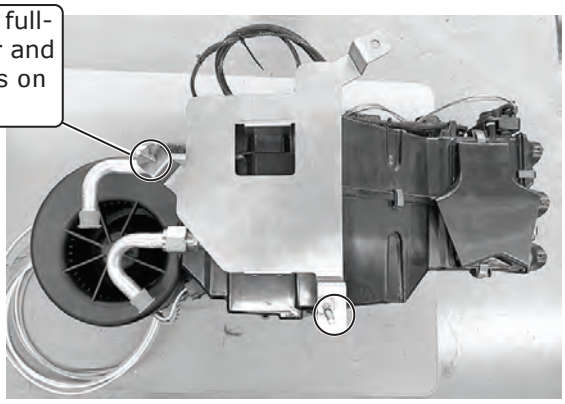

Photo 6

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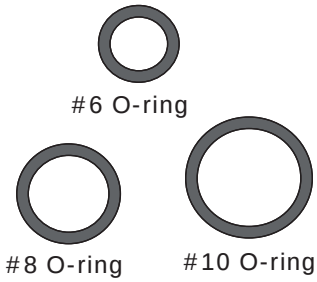
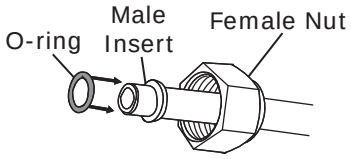
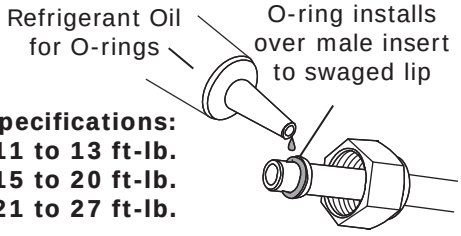
Lubricating O-rings & Fitting Torque Specs

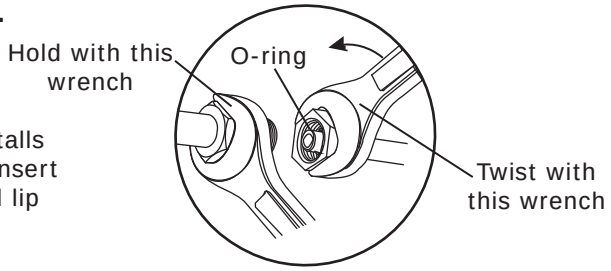






NOTE: Standard torque specifications:
#6: 11 to 13 ft-lb.
#8: 15 to 20 ft-lb.
#10: 21 to 27 ft-lb.

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



The use of a backup wrench is recommended to reduce the chance of damaging the fittings/hardline.

Passenger Compartment A/C Hose Installation

1. Run the 90° fitting of the #10 A/C hose through the firewall cover, the top hole of the rubber boot, then into the passenger compartment. Repeat the steps with the 90° fitting of the #6 A/C hose in the hole underneath the #10 A/C hose (See Photo 1, below).
2. With the evaporator module on the floorboard, install the #6 and #10 A/C hoses onto the expansion valve located on top of the module (See Photo 2, below).
3. Wrap the #10 A/C hose fitting separately with press tape (See Photo 3, below).

Run 90° fitting of #10 A/C hose through firewall cover, top hole of rubber boot, then into passenger compartment. Repeat steps with 90° fitting of #6 A/C hose in hole underneath #10 A/C hose

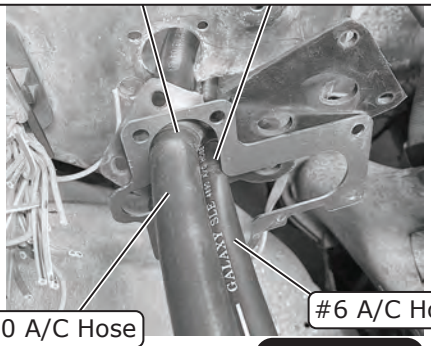


Photo 1

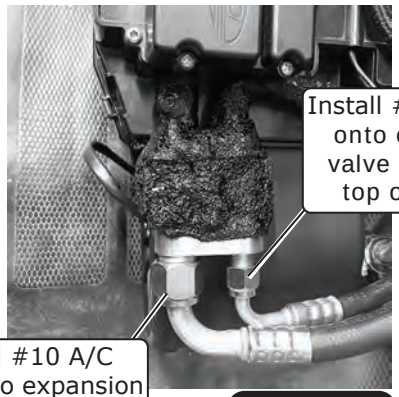


Photo 2

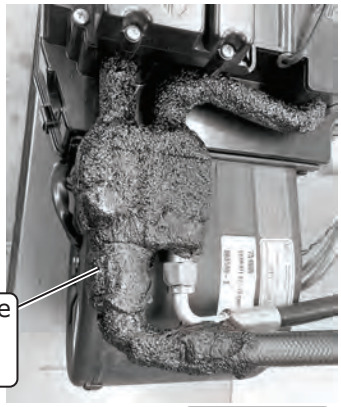
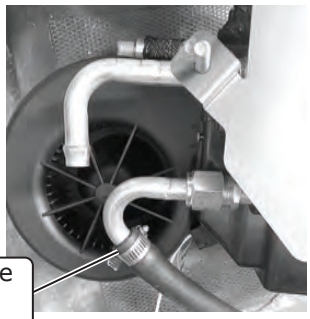


Photo 3

Heater Hose Installation

NOTE: With the evaporator module on the floorboard, perform the following:

1. Run heater hose through the driver-side opening of the rubber boot on the firewall. Install the heater hose onto the lower heater fitting, then secure it with a hose clamp (See Photo 1, below).
2. Run a second heater hose through the middle hole in the rubber boot on the firewall. Install the heater hose onto the upper heater fitting, then secure it with a hose clamp (See Photo 2, below).



Install heater hose on lower heater fitting, then secure it with a hose clamp

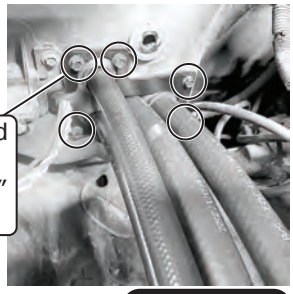
Photo 1

Install heater hose on upper heater fitting, then secure it with a hose clamp

Photo 2

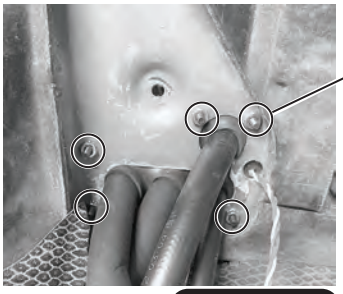
Rubber Boot Installation

1. Align the rubber boot and firewall cover plate with the previously drilled holes on the firewall, then secure both using (5) 10-24 x 3/4" serrated flange bolts (See Photo 1, below).
2. In the passenger compartment, secure the firewall using (5) 10-24 nuts with star washers (See Photo 2, below).



Install rubber boot and firewall cover plate using (5) 10-24 x 3/4" serrated flange bolts

Photo 1



Secure firewall using (5) 10-24 nuts with star washers

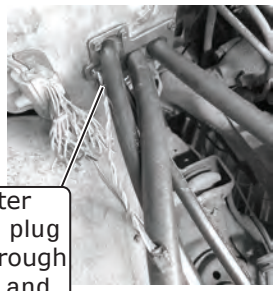
Passenger Compartment View

Photo 2

Wiring Installation

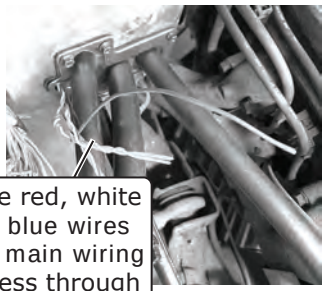
NOTE: Cut wires to length as necessary. Do not connect the power until the installation is complete.

1. Locate the main wiring harness. Route the heater control valve plug and wiring through the rubber boot and into the engine bay (See Photo 1, below).
2. Route the red, white, and blue wires from the main wiring harness through the rubber boot and into the engine bay (See Photo 2, below).
3. Route the orange and white wires from the main wiring harness through the rubber boot and into the engine bay (See Photo 3, below). Wrap these wires with the flexo sleeve.



Route heater control valve plug and wiring through rubber boot and into engine bay

Photo 1



Route red, white and blue wires from main wiring harness through rubber boot and into engine bay

Photo 2

Route orange and white wires from main wiring harness through rubber boot and into engine bay

Photo 3

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Evaporator Installation

1. From the passenger compartment, install the evaporator module by pushing the (2) 1/4-20 x 1 ½" full-threaded studs through the firewall, then on the top driver-side opening, reinstall the hardware.
2. From the engine bay, replace the (2) 1/4-20 x 1 ½" full-threaded studs with (2) 1/4-20 x 3/4" black serrated flange bolts (See Photo 1, below).
3. In the passenger compartment, ensure the hoses are pushed through all the way, then tie wrap them together (See Photo 2, below).

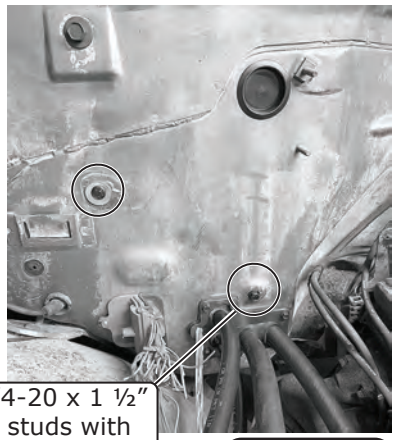

Photo 1

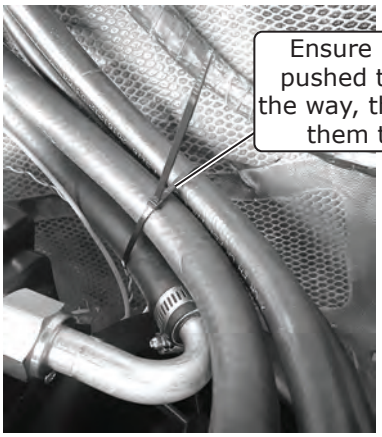

Photo 2

Evaporator Leveling

1. Remove the evaporator ECU from the top of the evaporator module and set it to the side without unplugging it.
2. Remove the (2) plugs from the front of the evaporator module and replace them with (2) 1/4-20 well nuts (See Photo 1, below).
3. Once the evaporator module is leveled, install the cowl bracket in front of the evaporator module using (2) 1/4-20 x 3/4" black serrated flange bolts (See Photo 2, below).
4. Mark where the bracket sits against the insulation. Cut a small piece of insulation out to be able to slide the cowl bracket behind it.
5. With the insulation gently pulled down, mark the top holes on the cowl bracket. Drill out (2) 9/64" pilot holes. Secure the cowl bracket with (2) #10 x 1/2" sheet metal screws (See Photo 2, below).

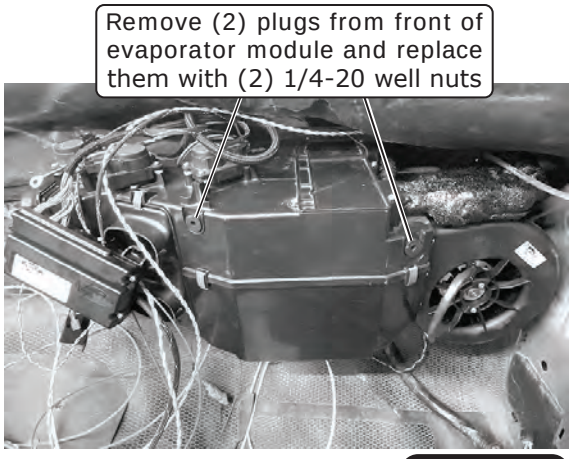

Photo 1

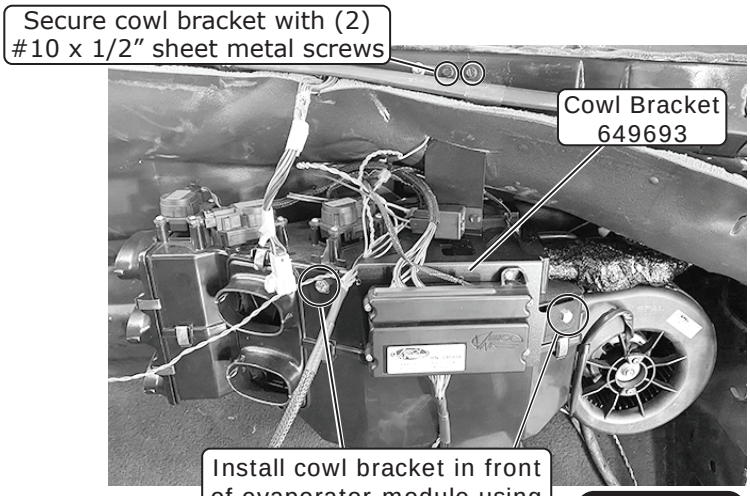

Photo 2

Evaporator Leveling (Cont.)

6. Install the ECU onto the cowl bracket using (2) 10-24 x 1/2” pan head screws (See Photo 3, below).

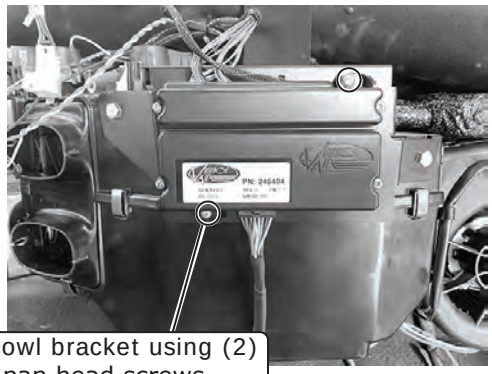

Photo 3

Drain Hose Installation

1. Cut the drain hose at 7 ½” (See Photo 1, below). From the engine compartment, install the drain hose through the previously drilled hole in the firewall, then connect it to the evaporator module (See Photo 2, below). In the engine compartment, connect the drain hose to the 1/2” drain elbow. Next, connect the remainder of the drain hose to the 1/2” drain elbow and route it away from the exhaust (See Photo 3, below).

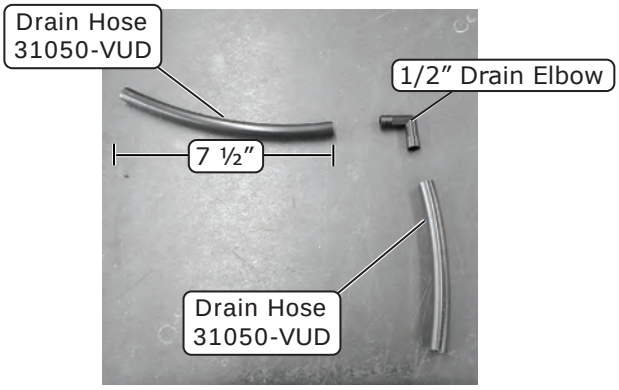

Photo 1

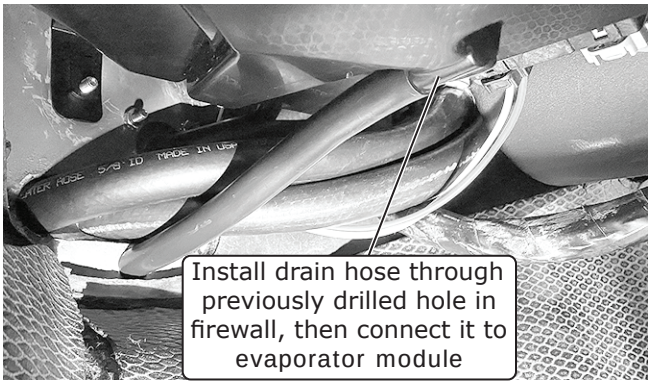

Photo 2

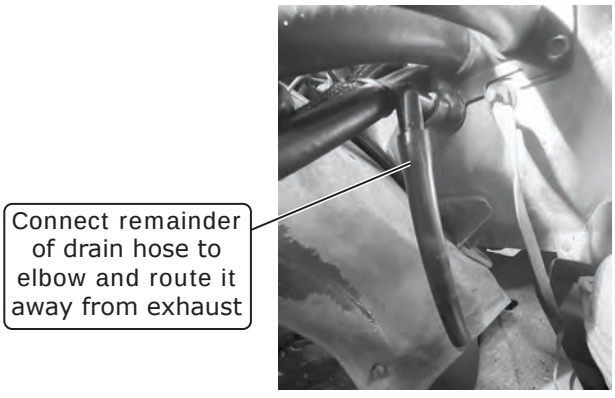

Photo 3

1995 Vehicles
A/C Hose Installation

1. Route the 45° fitting of the #6 A/C hose from the firewall, along the inner fender. With a properly lubricated #6 O-ring (See Lubricating O-rings, Page 14), install the fitting onto the outgoing port of the drier (See Photo 1, below).
2. Route the straight fitting with service port of the #10 A/C hose from the firewall. With a properly lubricated #10 O-ring (See Lubricating O-rings & Fitting Torque Specs, Page 14), install the fitting onto the suction port on the compressor (See Photo 2, below). **NOTE: Ensure the service port is pointing up.**
3. With a properly lubricated #8 O-ring (See Lubricating O-rings & Fitting Torque Specs, Page 14), install the straight fitting with service port of the #8 A/C hose onto the discharge port on the compressor (See Photo 3, below). **NOTE: Ensure the service port is pointing up.**
4. Route the straight fitting of the #8 A/C hose to the #8 hardline on the condenser. With a properly lubricated #8 O-ring (See Lubricating O-rings & Fitting Torque Specs, Page 14), install the fitting (See Photo 4, below).

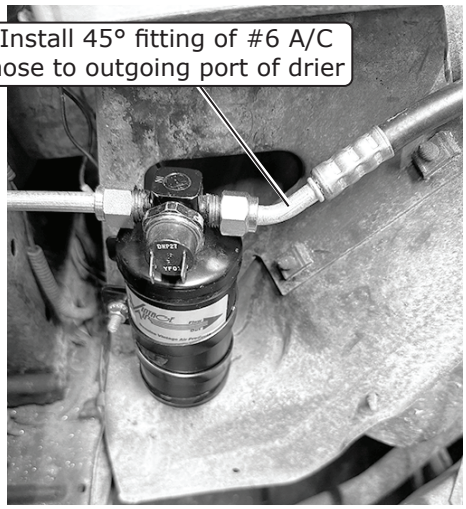

Photo 1

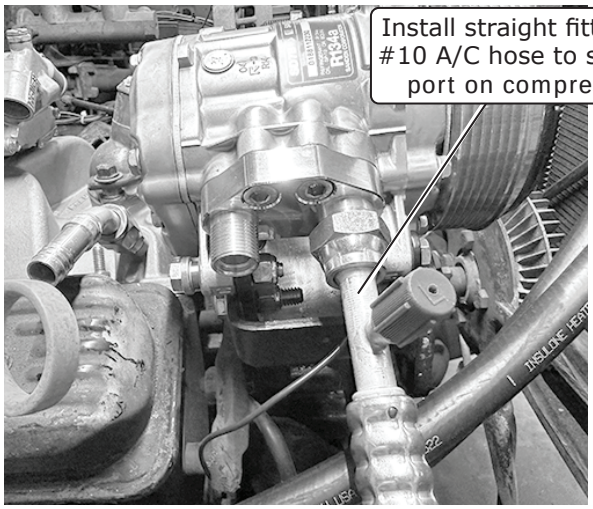

Photo 2

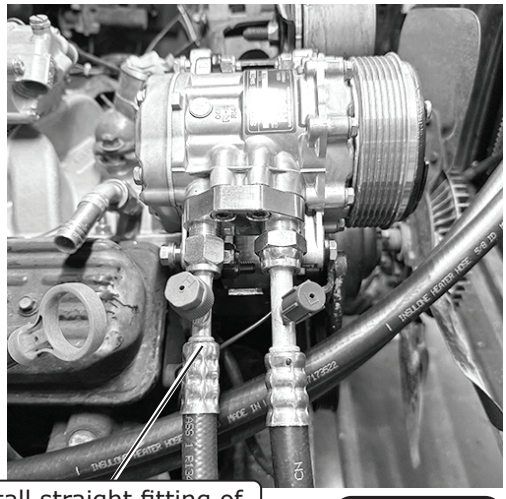

Photo 3

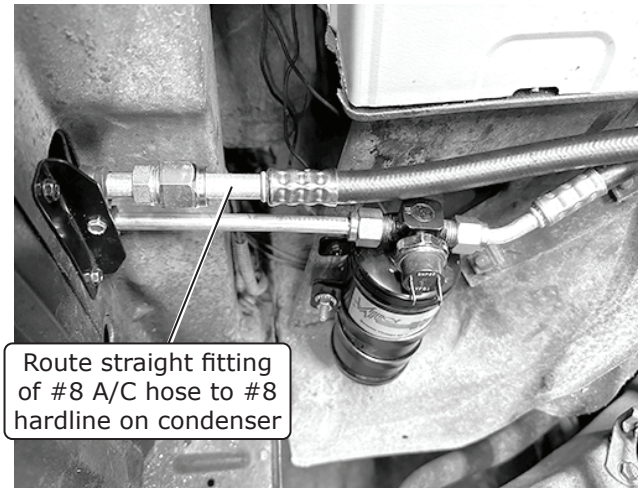

Photo 4

1996-98 (All)/99-00 (2500-3500) Vehicles A/C Hose Installation

1. Route the 45° fitting of the #6 A/C hose from the firewall, along the inner fender. With a properly lubricated #6 O-ring (See Lubricating O-rings & Fitting Torque Specs, Page 14), install the fitting onto the outgoing port of the drier (See Photo 1, below).
2. Route the 135° fitting with service port of the #10 A/C hose from the firewall. With a properly lubricated #10 O-ring (See Lubricating O-rings & Fitting Torque Specs, Page 14), install the fitting onto the suction port on the compressor (See Photo 2, below). **NOTE: Ensure the service port is pointing up.**
3. With a properly lubricated #8 O-ring (See Lubricating O-rings & Fitting Torque Specs, Page 14), install the 135° fitting with service port of the #8 A/C hose onto the discharge port on the compressor (See Photo 2, below). **NOTE: Ensure the service port is pointing up.**
4. Route the 45° fitting of the #8 A/C hose to the #8 hardline on the condenser. With a properly lubricated #8 O-ring (See Lubricating O-rings & Fitting Torque Specs, Page 14), install the fitting (See Photo 4, below).

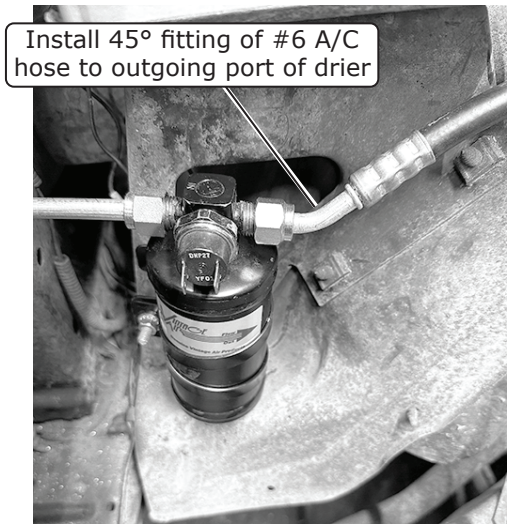

Photo 1

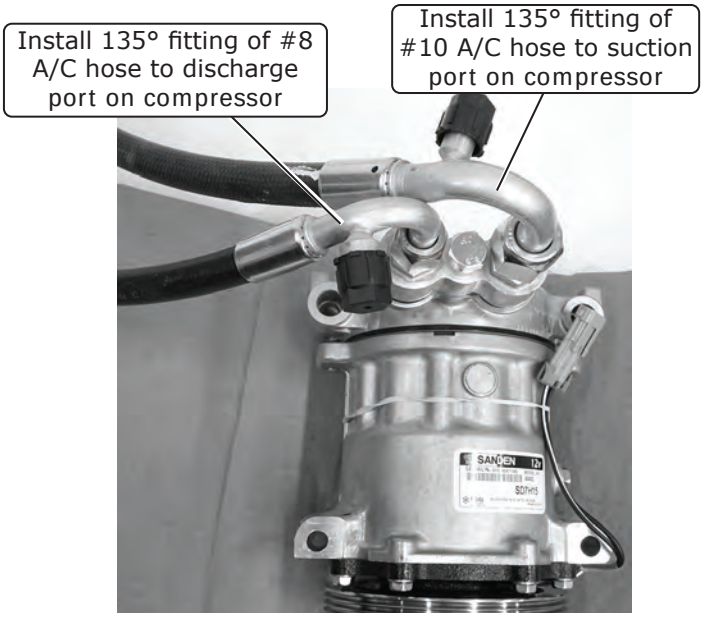

Photo 2

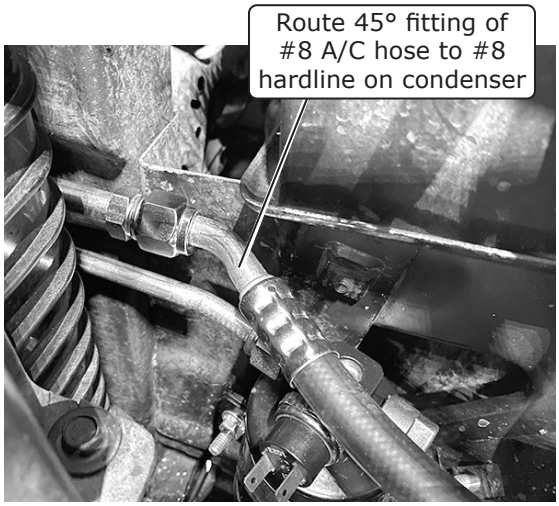

Photo 3

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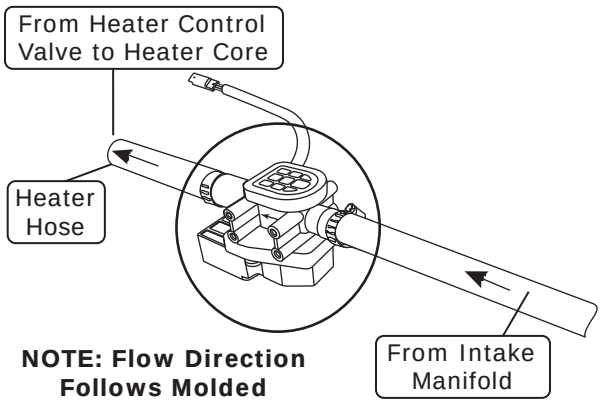
1995 Vehicles Heater Hose & Heater Control Valve Installation

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. Connect the heater hose coming from the passenger side of the firewall cover to the port on the intake, and secure with a hose clamp.
2. Cut a 5" section of heater hose about 2" from the firewall. Install the heater control valve, and secure it with (2) hose clamps (See Photo 1, below). Ensure the molded arrow is pointing towards the firewall. **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. Route the second heater hose coming from the firewall to the radiator. Secure it to the radiator using a hose clamp.
4. Use a tie wrap to secure the #6 A/C hose, #10 A/C hose and the heater hose back to the stock overflow hose located on the side of the passenger-side inner fender (See Photo 2, below).



NOTE: Flow Direction Follows Molded Arrow on Valve

Figure 1

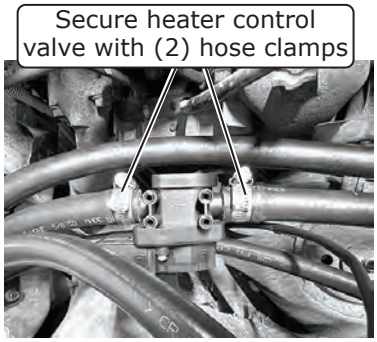


Photo 1

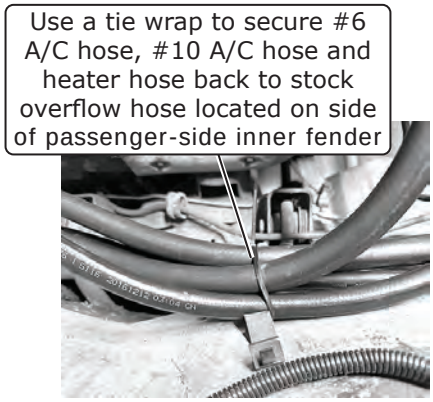


Photo 2

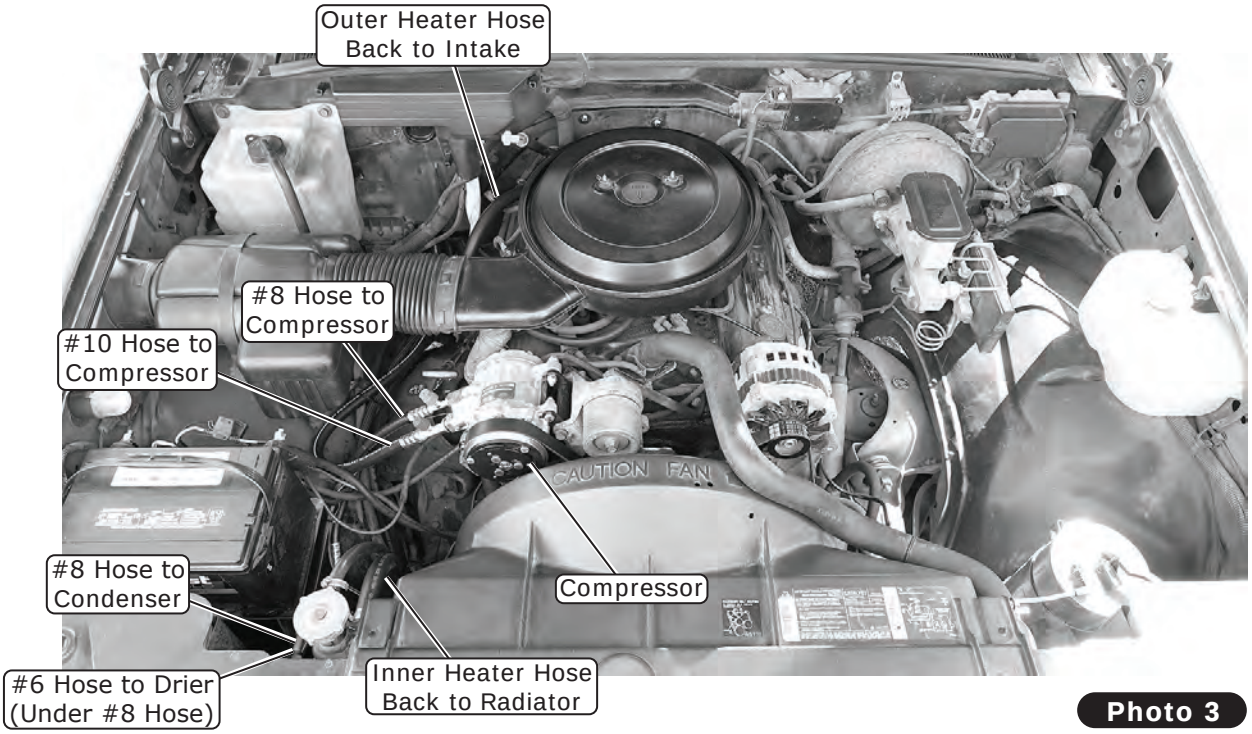


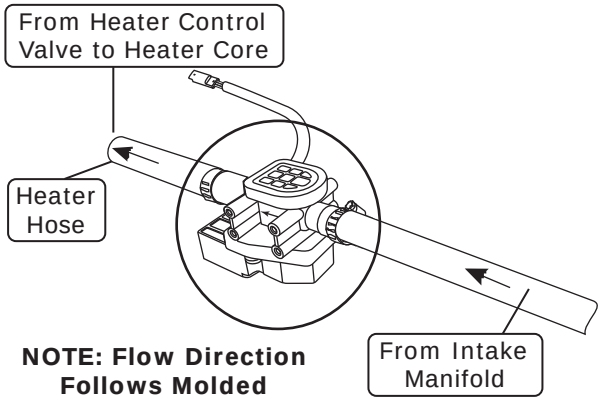
Photo 3

www.vintageair.com

1996-98 (All)/99-00 (2500-3500) Vehicles 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. Connect the heater hose coming from the passenger side of the firewall cover to the port on the intake, and secure it with a hose clamp.
2. Cut out a 5" section of heater hose about 2" from the firewall. Install the heater control valve, and secure it with (2) hose clamps (See Photo 1, below). Ensure the molded arrow is pointing towards the firewall. **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. Route the second heater hose coming from the firewall to the water pump. Secure it to the water pump using a hose clamp.
4. Use a tie wrap to secure the #6 A/C hose, #10 A/C hose and the heater hose back to the stock overflow hose located on the side of the passenger-side inner fender (See Photo 2, below).



NOTE: Flow Direction Follows Molded Arrow on Valve

Figure 1

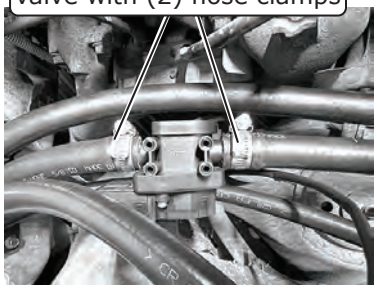


Photo 1

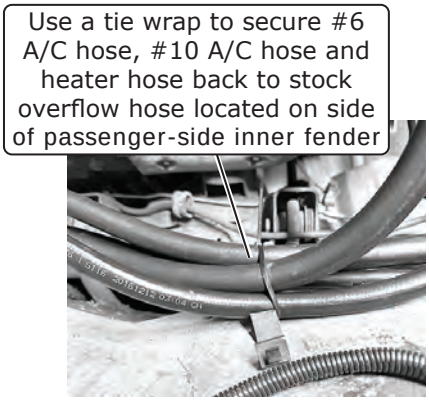


Photo 2

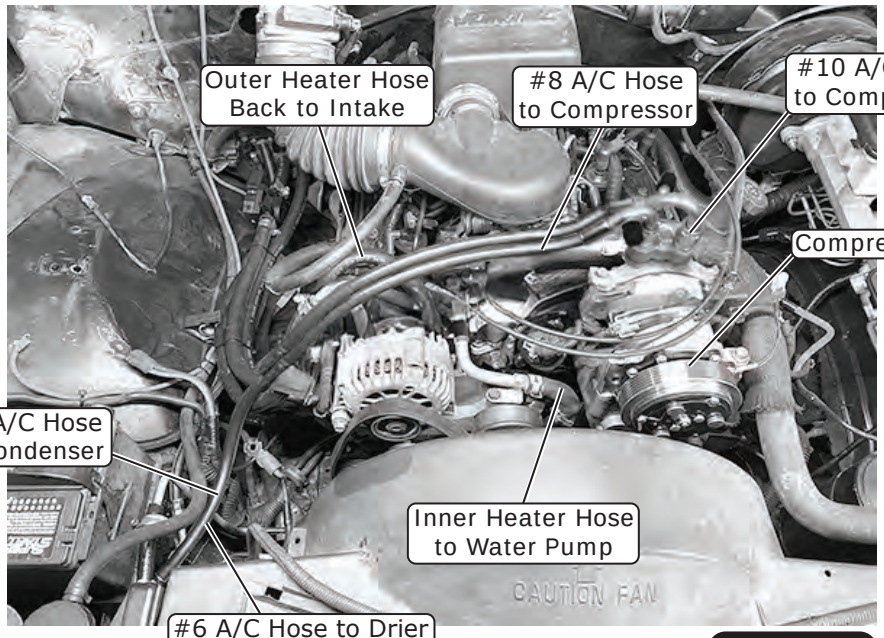


Photo 3

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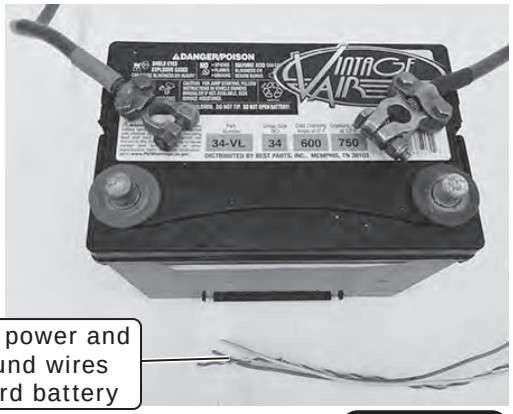
Engine Compartment Wiring

NOTE: The following connections are critical to the performance of the system. Before making connections, refer to the Quality Crimp Guidelines, Page 27.

1. Route power and ground wires toward the battery (See Photo 1, below).
2. Install the supplied heat shrink over the 12 AWG orange standard fuse holder assembly wire and crimp it to the 12 AWG orange wire from the main wiring harness (See Photo 2, below). Slide the heat shrink over the crimp, then apply heat.
3. Install the supplied heat shrink over the 16 AWG black mini fuse holder assembly wire and crimp it to the 16 AWG red wire from the main wiring harness (See Photo 3, below). Slide the heat shrink over the crimp, then apply heat.
4. Install the fuses into the holders (See Photos 4 and 5, below).
5. Install the supplied heat shrink over the white ground wires, then crimp on the supplied ring terminals (See Photo 6, below). Slide the heat shrink over the crimps, then apply heat. **NOTE: Both white wires can be crimped to the larger ring terminal. Install the heat shrink, then strip the wires, twist them together and trim to length. Crimp on the ring terminal, then slide the heat shrink over and apply heat (See Photos 7 and 8, below).**



Route power and ground wires toward battery

Photo 1

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

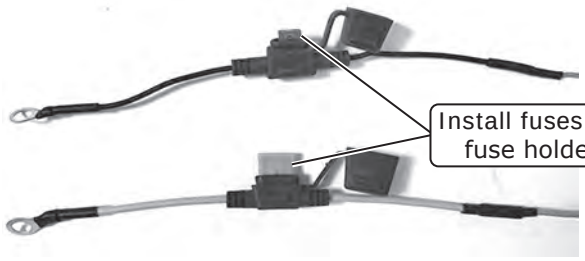
Install heat shrink over 12 AWG orange standard fuse holder assembly wire

Photo 2

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

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

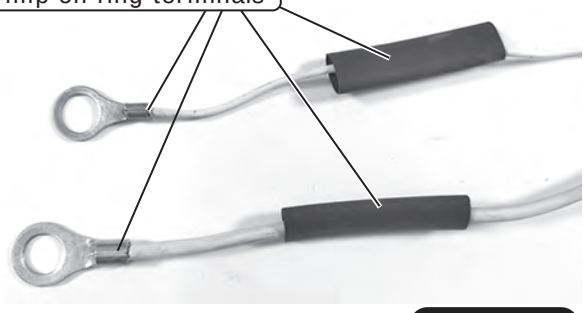
Photo 3



Install fuses into fuse holders

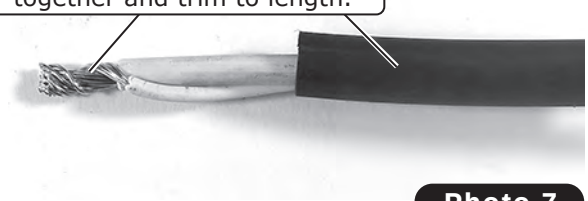
Photo 4

Photo 5



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

Photo 6



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

Photo 7

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

Photo 8

Engine Compartment Wiring (Cont.)

6. Connect the ground wire ring terminals to the negative battery terminal connector (See Photos 9 and 10, below).

7. Connect the positive wire ring terminals to the positive battery terminal connector (See Photos 11 and 12, below). **NOTE: Do not connect power until the installation is completed.**

8. Wiring completed (See Photo 13, below).

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

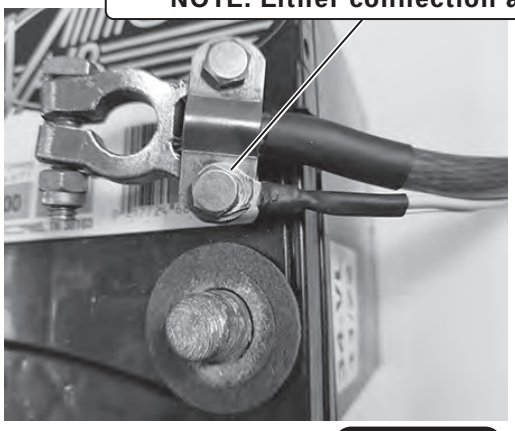


Photo 9

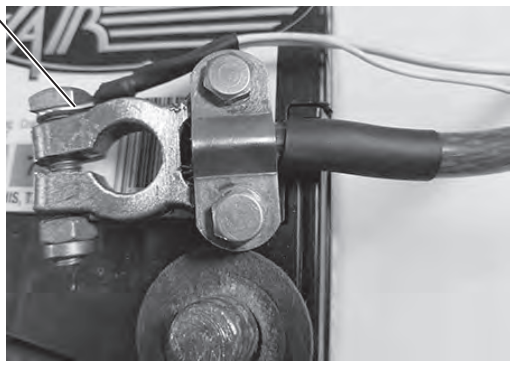


Photo 10

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

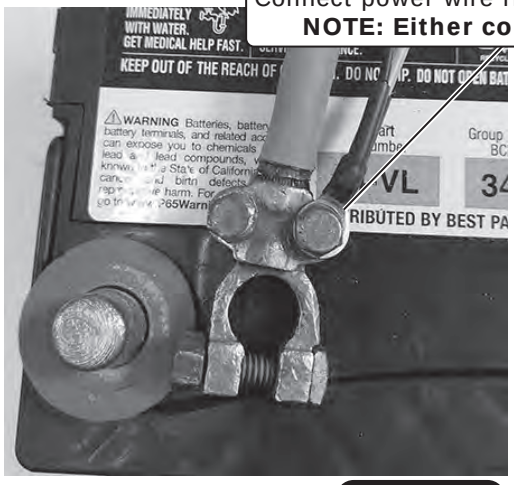
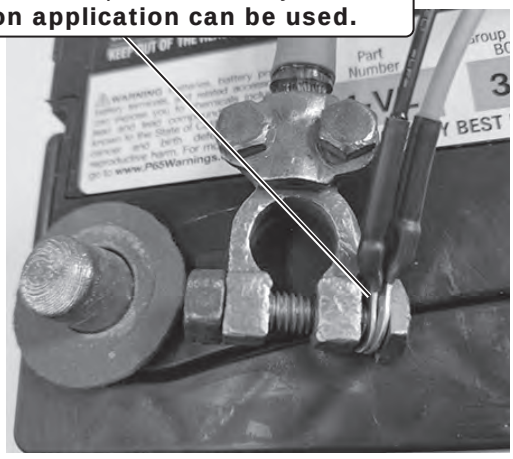


Photo 11



NOTE: Do not connect power until installation is completed.

Photo 12

Completed Installation Shown

Photo 13

Final Steps: Installation Check

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

Dash Reinstallation

1. Lower the dash back into place.
2. Reinstall the instrument cluster and radio.
3. Refer to the control panel instructions to install the control panel.
4. Reinstall the rest of the dash trim and pieces with the OEM hardware.

Final Steps: Completing the Install

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 26.

ECU, Control Panel & Duct Hose Routing

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

1. Stretch the duct hose until there is no slack, measure, mark and cut hose to size (See Photo 1, below).
2. Connect the 2 ½" duct hoses to Defrost 1 (DF1) and Defrost 2 (DF2) on the hose adapter as shown in Figure 1, below. Leave the other ends of the duct hoses disconnected on the driver-side floorboard.
3. Connect the 2 ½" and 3" duct hoses onto Dash 1 (D1), Dash 2 (D2) and Dash 3 (D3) on the hose adapter, then onto the dash plenum as shown in Figure 1, below.
4. Finally, connect the 2 ½ duct hoses from the hose adapter onto Defrost 1 (DF1) and Defrost 2 (DF2) on the defrost plenum as shown in Figure 1, below.

Photo 1

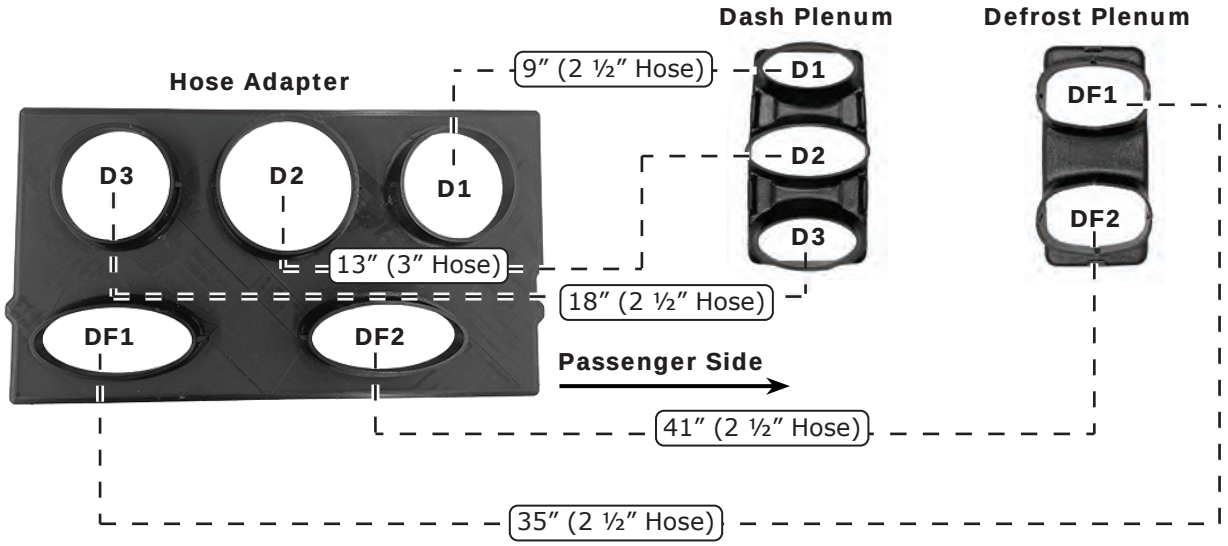
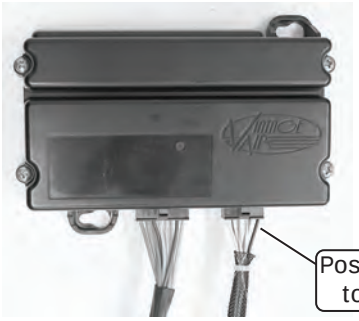


Figure 1



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

Quality Crimp Guideline

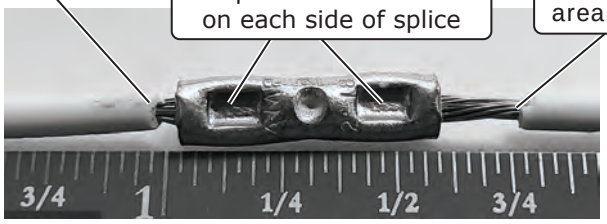


Photo 1

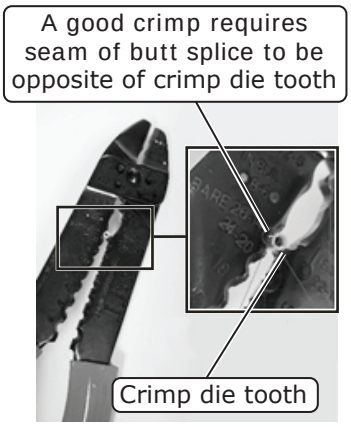


Photo 2

Good Ring Terminal Crimp

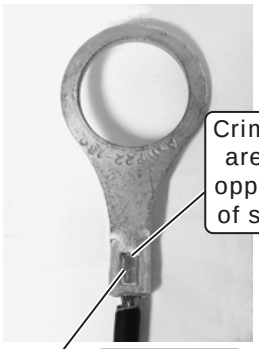


Photo 3

Bad Ring Terminal Crimp

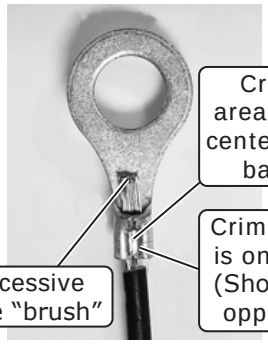


Photo 4

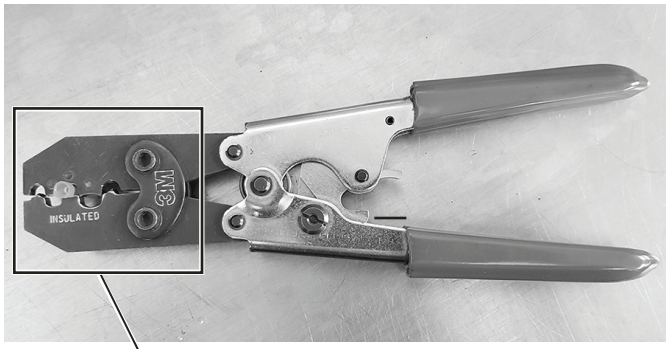
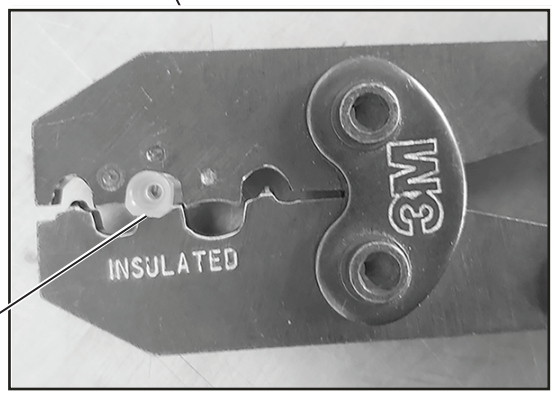


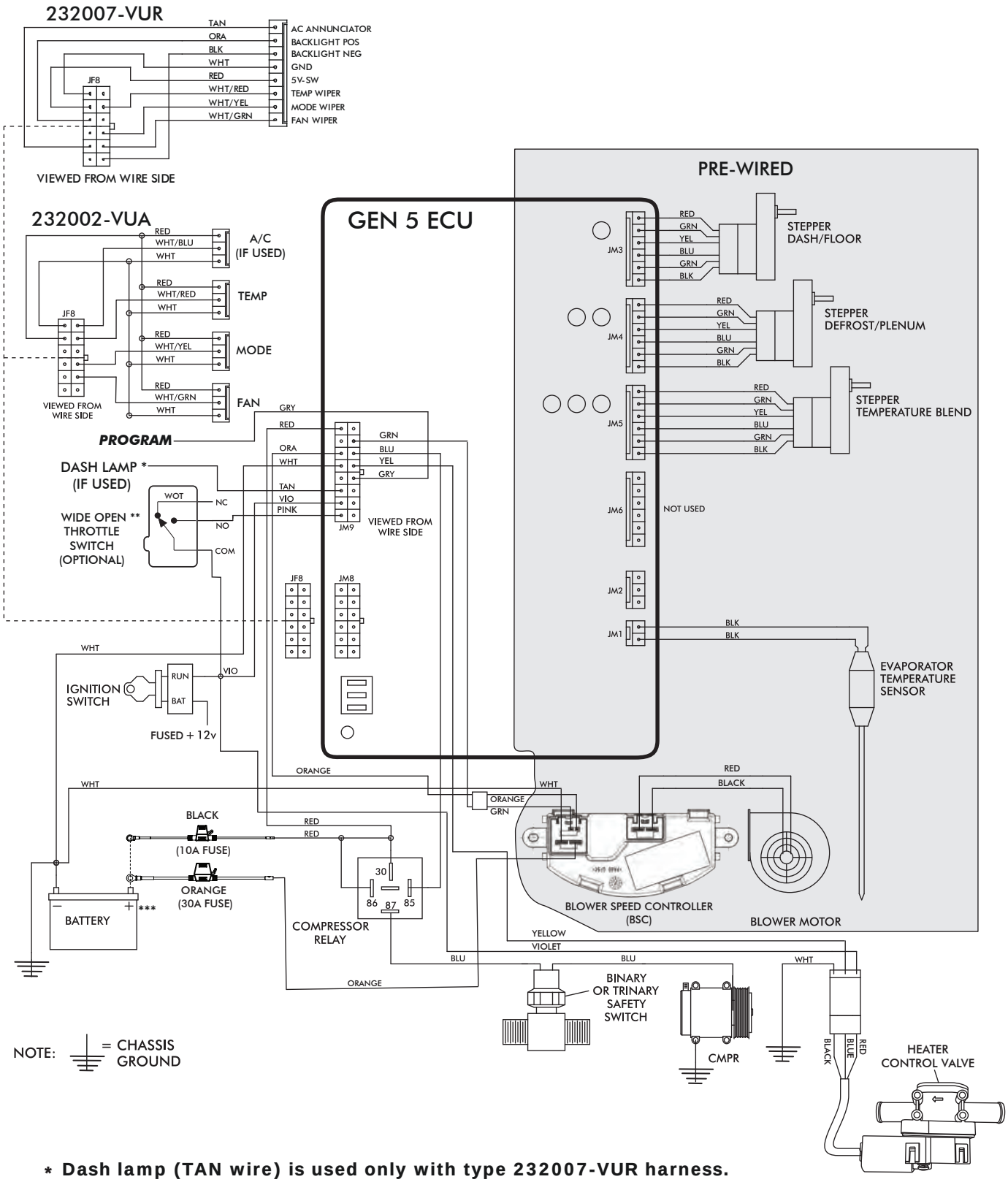
Photo 5



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

Photo 5a

Gen 5 Wiring Diagram

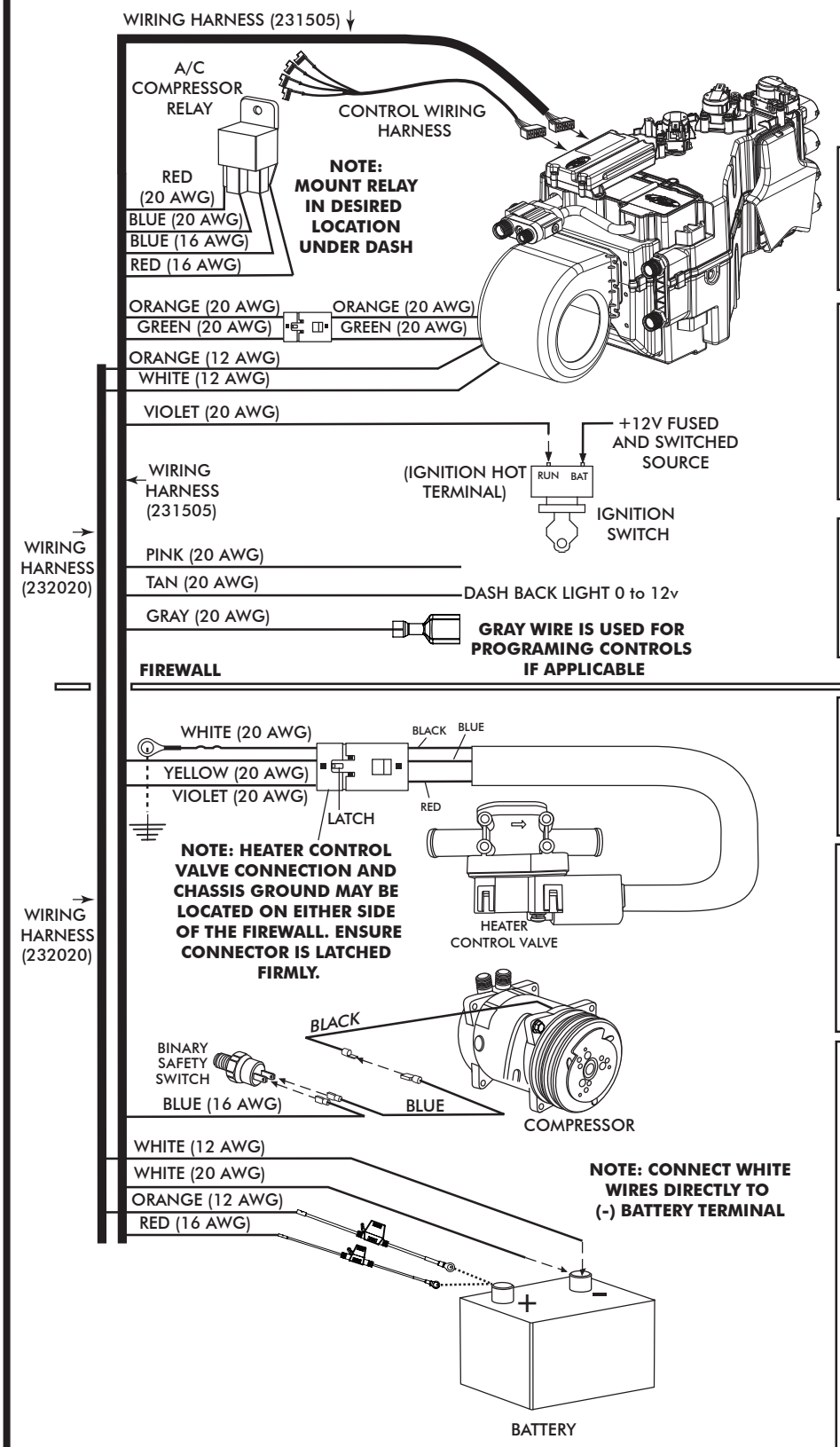


*** Dash lamp (TAN wire) is used only with type 232007-VUR harness.**

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

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

Gen 5 Wiring Instructions



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

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

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

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

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

Battery Connections:
ECU Ground: Terminate provided ring terminal (PN 226110) to 20 AWG white wire from the 231505 wire assembly and install at battery.
ECU PWR: Terminate provided fuse assembly with black leads (PN 233012) to the 16 AWG red wire from the 231505 wire assembly. Install provided 10A Red Mini Fuse (PN 226118). Install at battery.
Blower Speed Controller (BSC) Ground: Terminate provided ring terminal (PN 226111) to 12 AWG white wire from the 232020 wire assembly and install at battery.
Blower Speed Controller (BSC) PWR: Terminate provided fuse assembly with orange leads (PN 233008) to the 12 AWG orange wire from the 232020 wire assembly. Install provided 30A Green ATO/ATC Fuse (PN 226125). Install at battery.

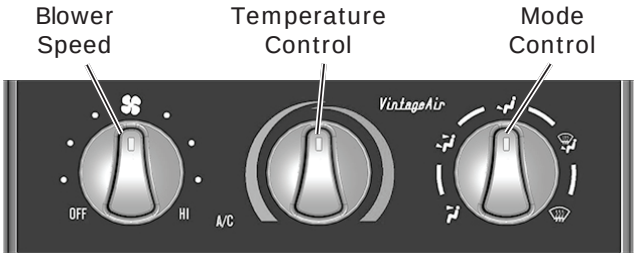
Operation of Controls

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

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

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

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



A/C Operation

Blower Speed
Adjust to desired speed.

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

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

Heat Operation

Blower Speed
Adjust to desired speed.

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

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

Defrost/De-fog Operation

Blower Speed
Adjust to desired speed.

Temperature Control
Adjust to desired temperature.

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

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Troubleshooting Guide

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

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

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

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

Troubleshooting Guide (Cont.)

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

Advanced Diagnostics and Troubleshooting Guide

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

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

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

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

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

www.vintageair.com

Packing List: Evaporator Kit (755740)

No.	Qty.		Part No.	Description
1.	1	_____	765200	Gen 5 Magnum Max Module with 404 ECU
2.	1	_____	795740	Accessory Kit

Checked By: _____
Packed By: _____
Date: _____

1

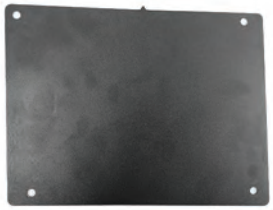
Gen 5 Magnum Max Module with 404 ECU 765200

2

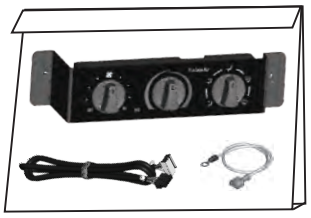
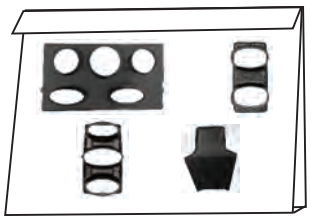
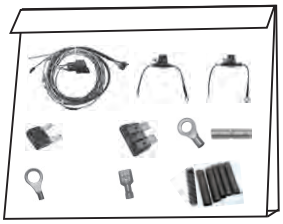
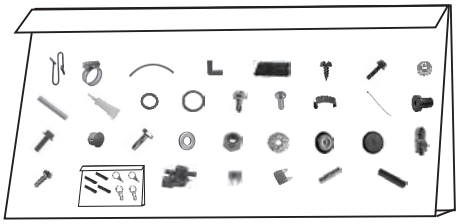










Accessory Kit 795740

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