

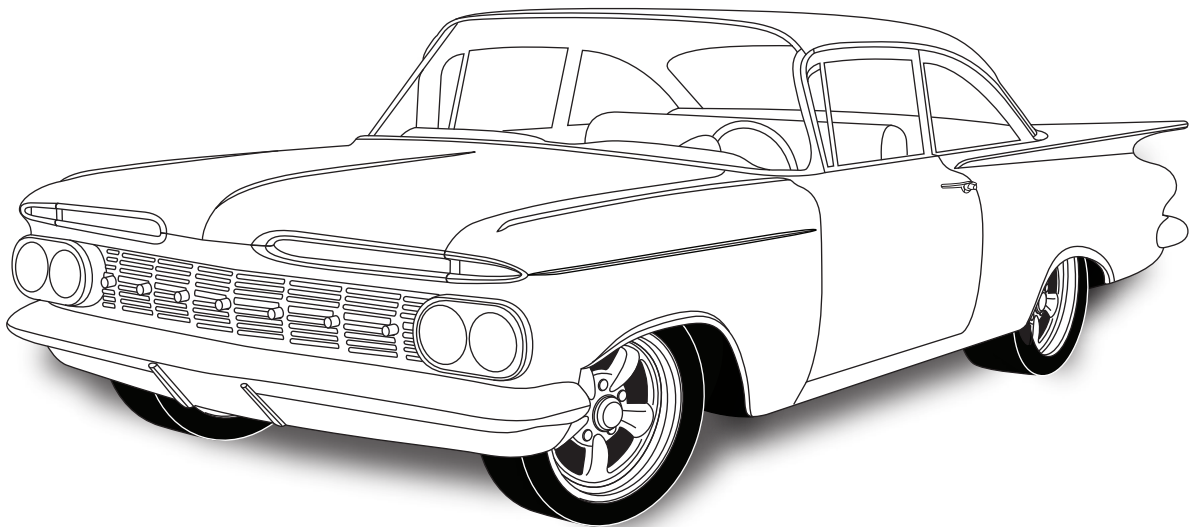


# 1959-60 Impala/El Camino

Gen 5 Evaporator Kit

2-Lever Controls (561343)

4-Lever Controls (561344)



18865 Goll St. San Antonio, TX 78266

Phone: 800-862-6658

Sales: [sales@vintageair.com](mailto:sales@vintageair.com)

Tech Support: [tech@vintageair.com](mailto:tech@vintageair.com)

[www.vintageair.com](http://www.vintageair.com)



www.vintageair.com

# Table of Contents

Cover.....	1
Table of Contents.....	2
Packing List/Parts Disclaimer.....	3
Information Page.....	4
Wiring Notice.....	5
Engine Compartment Disassembly, Condenser Assembly and Installation, Compressor and Brackets, Pulleys.....	6
Passenger Compartment.....	7
Firewall Cover Installation, Lubricating O-rings.....	8
Evaporator Plenums, Bracket & Heater Hose Fitting Installation.....	9
Properly Seated O-ring Land, Fresh Air Cap Installation.....	10
Wiring Installation.....	11
Kick Panel Fresh Air Plate Installation.....	12
Evaporator Installation.....	13
Drain Hose Installation, A/C Hose Installation, Control Panel Installation.....	14
Passenger Compartment Wiring.....	15
Heater Hose & Heater Control Valve Installation, A/C and Heater Hose Routing.....	16
Driver-Side Under Dash Louver Installation, Center/Passenger-Side Under Dash Louver Installation.....	17
Duct Hose Routing.....	18
Wiring Final Steps.....	19
Engine Compartment Wiring.....	20-21
Final Steps: Installation Check.....	22
Glove Box Installation, Final Steps: Completing the Install.....	23
Quality Crimp Guideline.....	24
Gen 5 Wiring Diagram.....	25
Gen 5 Wiring Connection Instruction.....	26
2-Lever Operation of Controls.....	27
4-Lever Operation of Controls.....	28
Troubleshooting Guide.....	29
Troubleshooting Guide (Cont.), Advanced Diagnostics and Troubleshooting Guide.....	30
Packing List.....	31



www.vintageair.com

## Packing List: Evaporator Kit (561343)

No.	Qty.	Part No.	Description
1.	1	765200	Gen 5 Magnum Max Module with 404 ECU
2.	1	781343	Accessory Kit

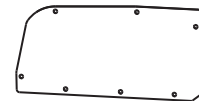
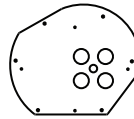
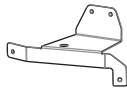
**\*\* Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

1

Gen 5 Magnum Max  
Module with 404 ECU  
765200



2



626682

Accessory Kit  
781343  
2-Lever

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

## Packing List: Evaporator Kit (561344)

No.	Qty.	Part No.	Description
1.	1	765200	Gen 5 Magnum Max Module with 404 ECU
2.	1	781344	Accessory Kit

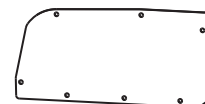
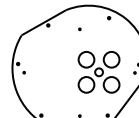
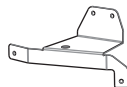
**\*\* Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

1

Gen 5 Magnum Max  
Module with 404 ECU  
765200



2



626682

Accessory Kit  
781344  
4-Lever

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



www.vintageair.com

## 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.





www.vintageair.com

## 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.



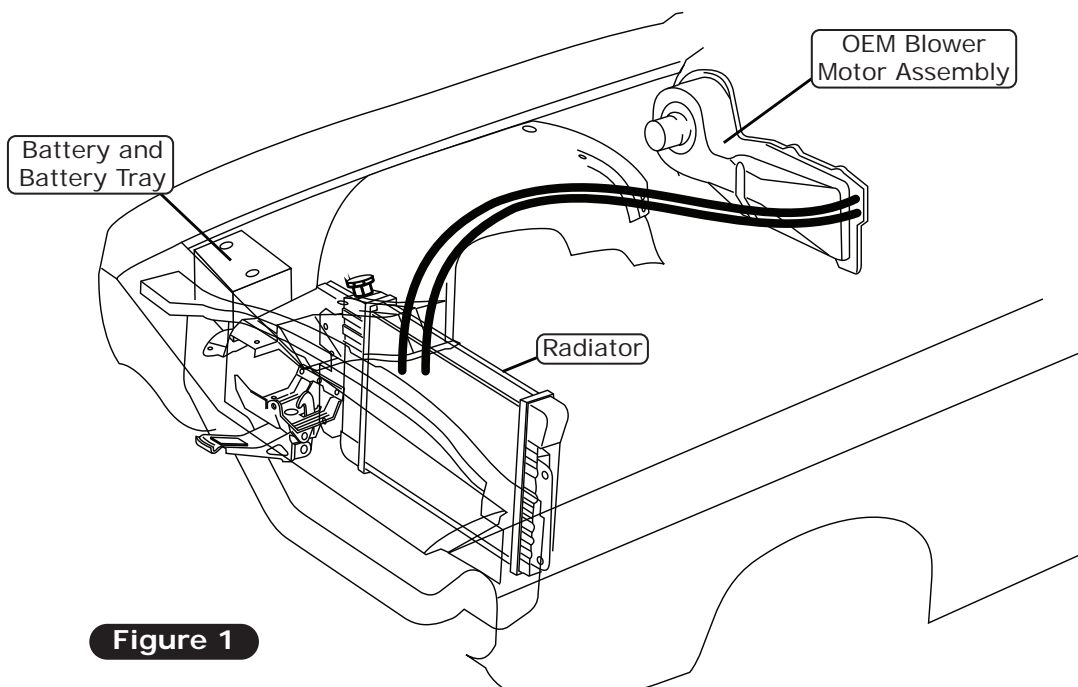
www.vintageair.com

## Engine Compartment Disassembly

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

**Perform the following:**

1. Remove the battery and battery tray (retain) (See Figure 1, below).
2. Drain the radiator.
3. Remove the heater blower motor assembly (discard) (See Figure 1, below).
4. Remove the OEM heater hoses (discard) (See Figure 1, below).
5. Remove the OEM heater wiring.



**Figure 1**

## Condenser Assembly and Installation

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

## Compressor and Brackets

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

## Pulleys

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



www.vintageair.com

## Passenger Compartment Disassembly

### Perform the following:

1. Remove the glove box door (retain) and the glove box (discard) (See Figure 1, below).
2. Disconnect all wires and cables from the OEM control panel.
3. Remove the OEM control panel (retain) (See Figure 1, below).
4. Remove the OEM heater assembly (discard) (See Figure 1a, below).
5. Remove the OEM duct hoses from the defrost ducts (discard) (See Figure 1a, below).
6. Remove the passenger-side OEM kick panel fresh air grille and door (discard) (See Figure 1a, below).

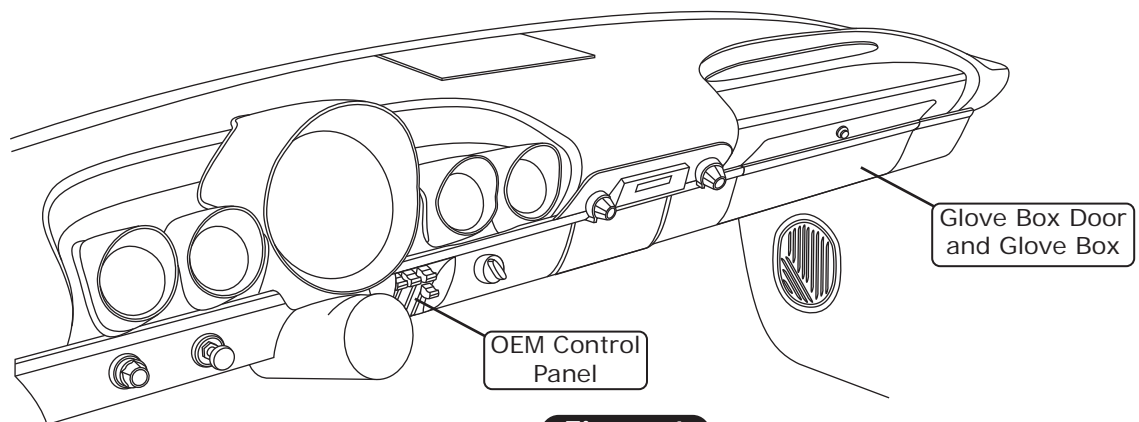


Figure 1

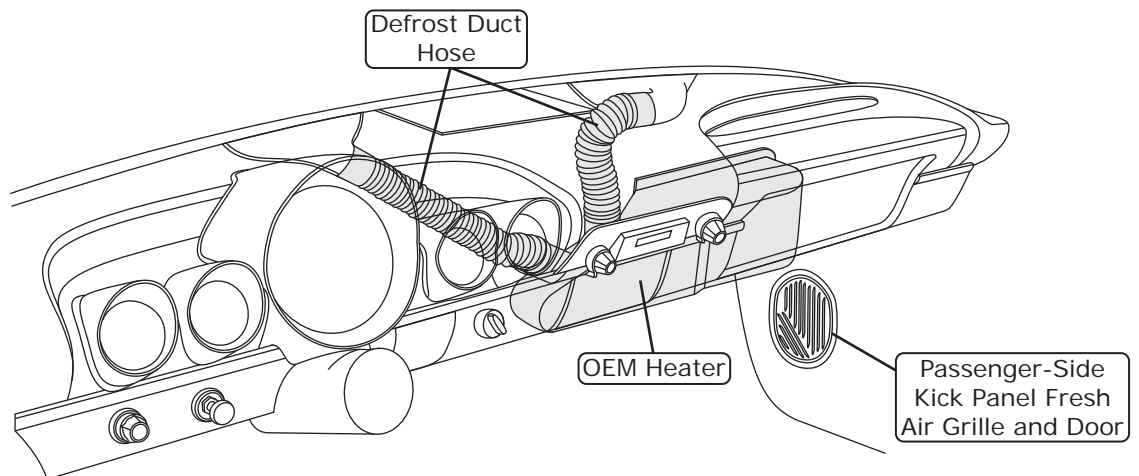


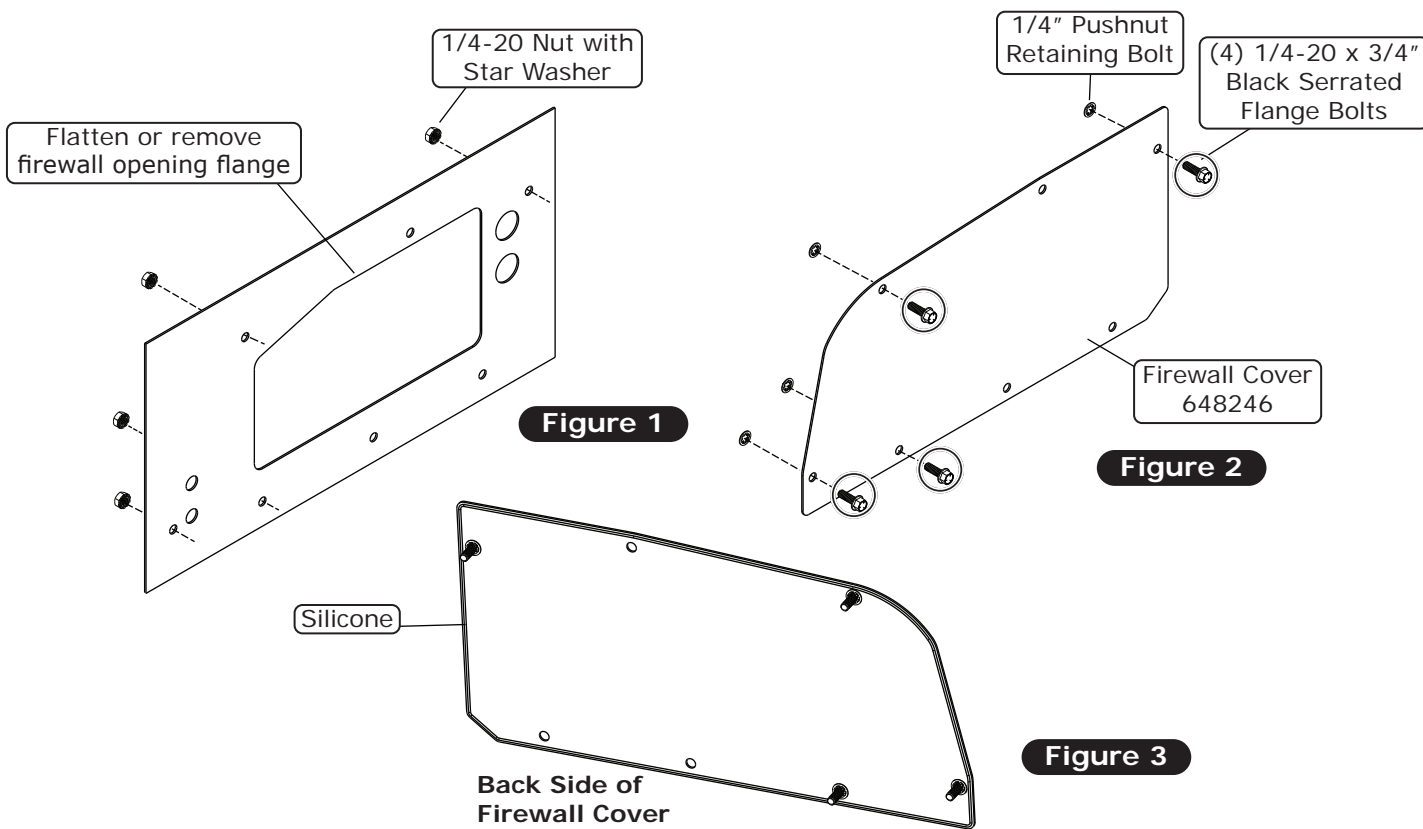
Figure 1a



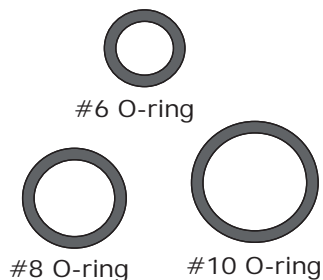
www.vintageair.com

## Firewall Cover Installation

1. Flatten or remove the firewall opening flange (See Figure 1, below).
2. Install (4) 1/4-20 x 3/4" black serrated flange bolts onto the firewall cover in the holes shown in Figure 2, below.
3. Secure the bolts in place with (4) 1/4" pushnut retaining bolts from the opposite side of the firewall cover (See Figure 2, below).
4. Add a bead of silicone around the back side of the firewall cover as shown in Figure 3, below.
5. From the engine compartment side of the car, install the firewall cover onto the firewall as shown in Figure 1, below.
6. From the inside of the car, secure the firewall cover to the firewall with (4) 1/4-20 nuts with star washers.

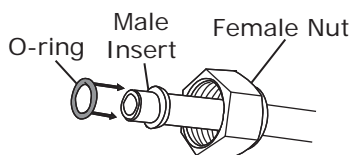


## Lubricating O-rings

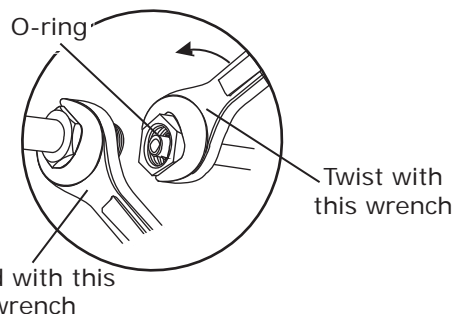
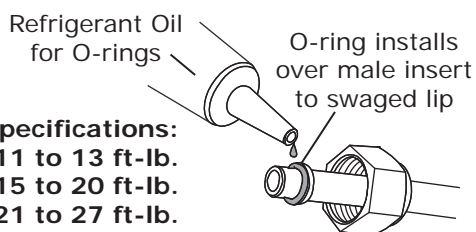


**NOTE: Standard torque specifications:**

- #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.**

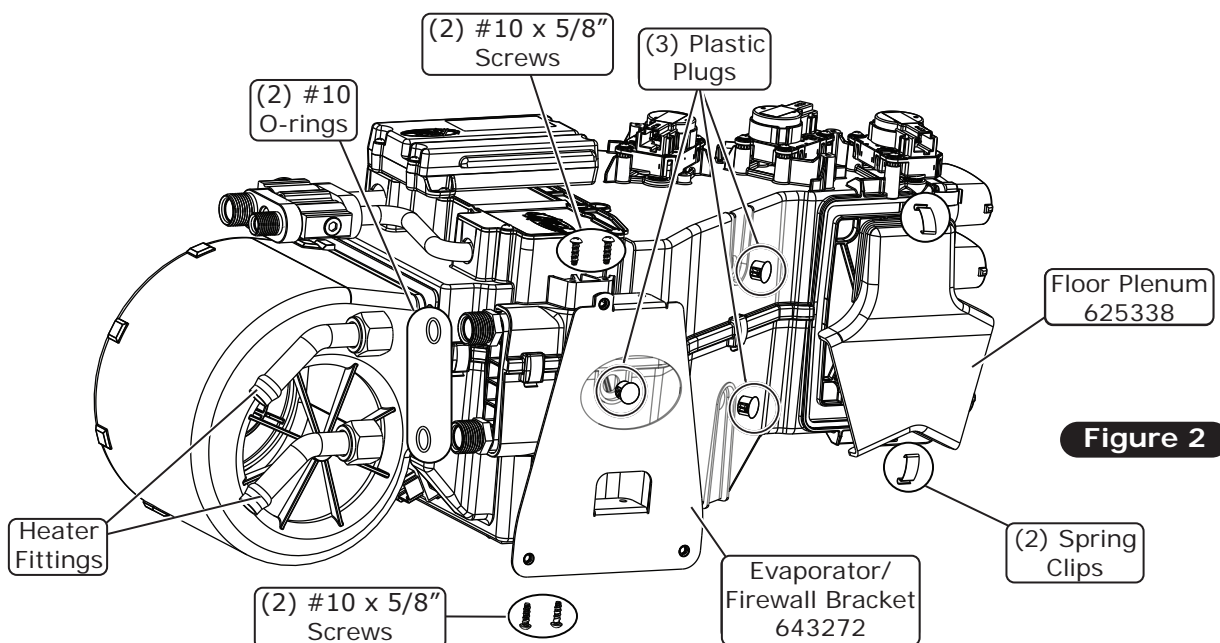
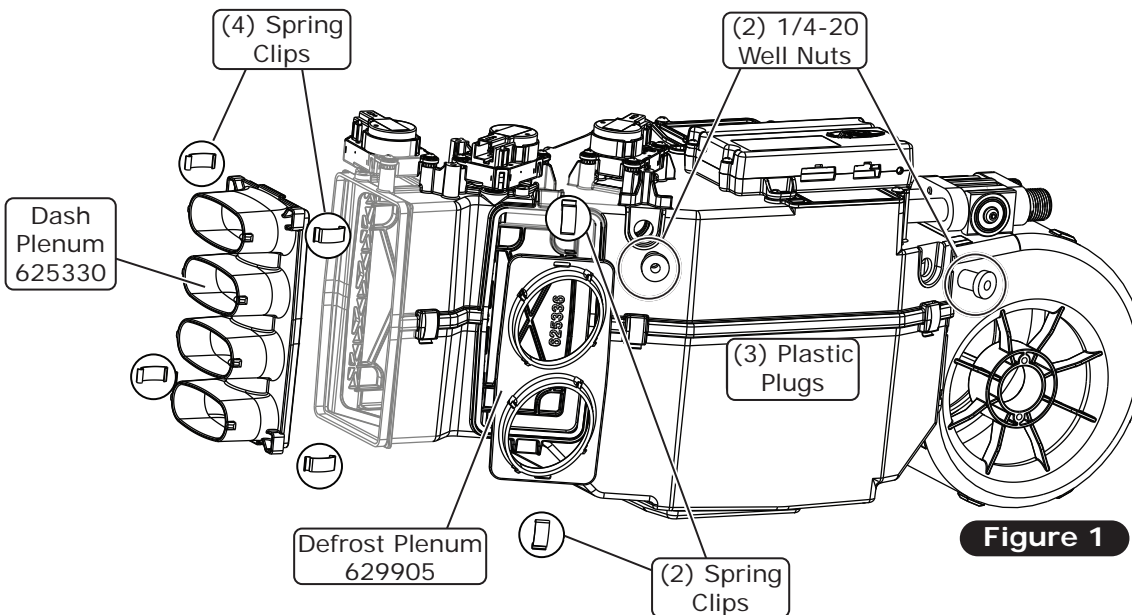




www.vintageair.com

## Evaporator Plenums, Bracket & Heater Hose Fitting Installation

1. On a workbench, install the dash plenum using (4) spring clips and the defrost plenum using (2) spring clips as shown in Figure 1, below.
2. Insert (2) 1/4-20 well nuts at the locations shown in Figure 1, below.
3. Install the floor plenum as shown in Figure 2, below, using (2) spring clips.
4. Install the (3) plastic plugs at the locations shown in Figure 2, below.
5. Install the evaporator/firewall bracket using (4) #10 x 5/8" screws (See Figure 2, below).
6. Install the heater fittings with properly lubricated O-rings (See Lubricating O-rings, Page 8) as shown in Figure 2, below.







www.vintageair.com

## Properly Seated O-ring Land

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

Properly Seated O-ring Land



Photo 1

Improperly Seated O-ring Land

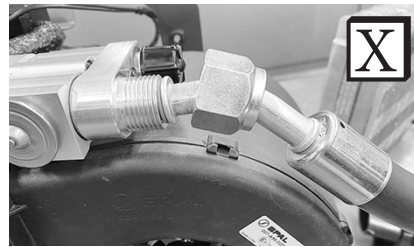


Photo 2

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

## Fresh Air Cap Installation

1. Install (3) large grommets, a 1 1/4" with 3/8" hole grommet and a 7/8" O.D. x 3/8" I.D. grommet into the fresh air cap (See Photos 1 and 2, below).
2. On the inside of the fresh air cap, the letter "T" indicates the top mounting hole for the firewall (See Photo 3, below).
3. Slide the fresh air cap into position and secure it to the firewall using (2) #14 x 3/4" washer head screws (See Photo 4, below). **NOTE: The fresh air cap installs on the engine side of the firewall.**
4. Apply silicone around the outer edge of the fresh air cap.

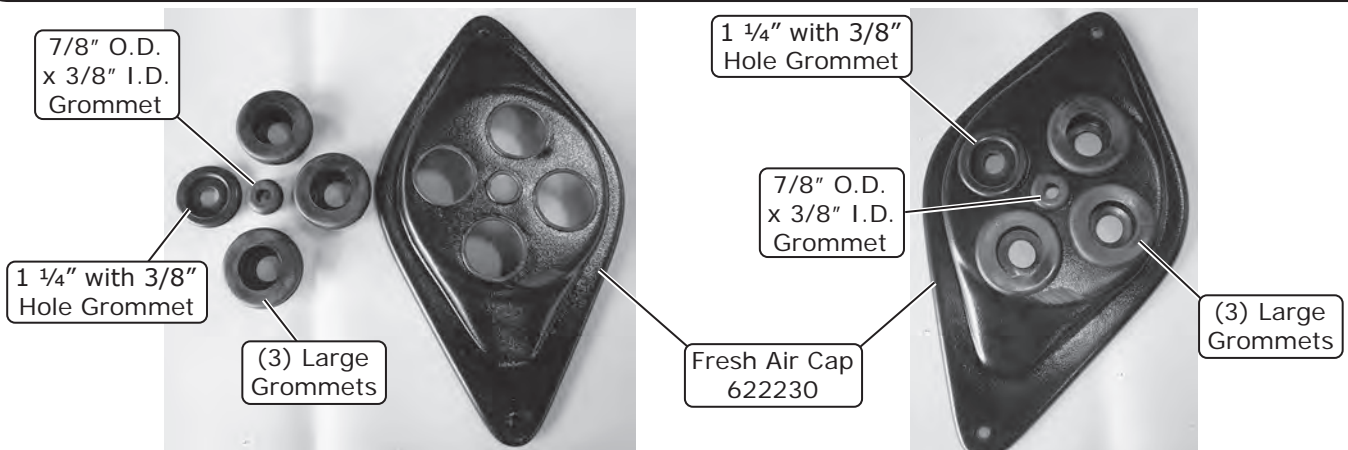


Photo 1

Photo 2

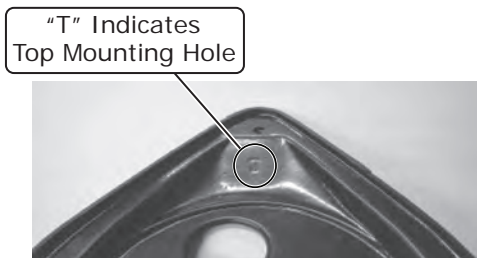


Photo 3

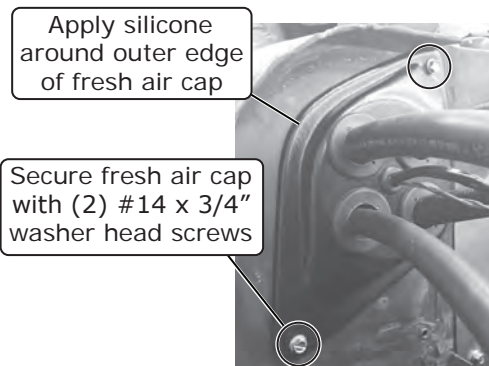


Photo 4



www.vintageair.com

## Wiring Installation

1. Install (3) large grommets, a 1 1/4" with 3/8" hole grommet, and a 7/8" O.D. x 3/8" I.D. grommet into the kick panel (See Photo 1, below).
2. Locate the heater control valve plug on the main wiring harness (white/yellow/purple). Route it through the 7/8" wiring grommet on the kick panel (See Photo 1, below) and into the kick panel opening. Then, through the wiring grommet on the fresh air cap (See Photo 2, below) and into the engine compartment.
3. Route the red, white and blue wires from the main harness through the 7/8" wiring grommet on the kick panel cover (See Photo 3, below) and into the kick panel opening. Then, through the wiring grommet on the fresh air cap and into the engine compartment (See Photo 4, below).
4. Leave approximately 16" of wiring between the kick panel and relay.
5. Place the evaporator module on the passenger-side floorboard.
6. Route the heavy gauge orange and white wires through the wiring grommet in the kick panel (See Photo 5, below) and into the kick panel opening. Then, through the wiring grommet on the fresh air cap and into the engine compartment (See Photo 6, below).

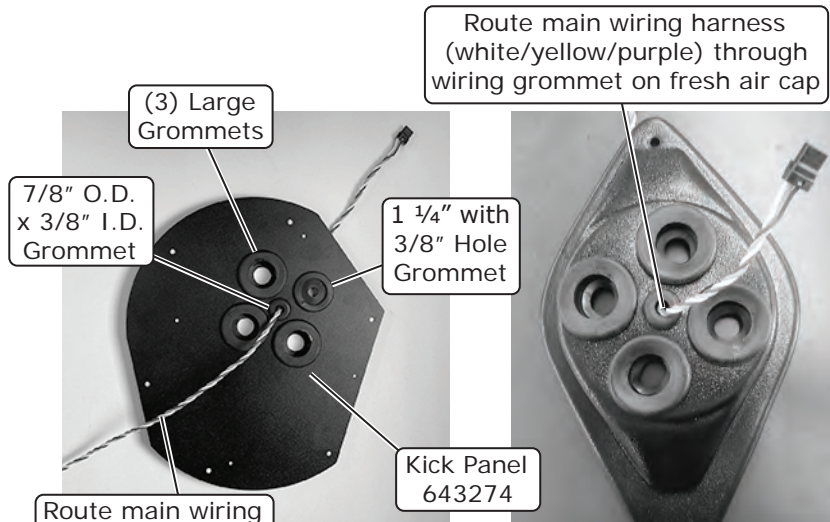


Photo 1

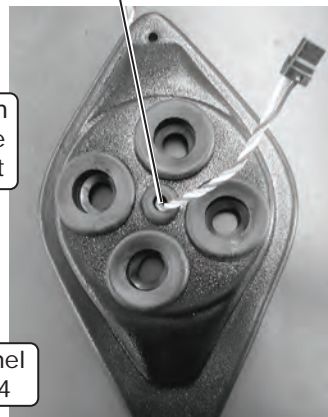


Photo 2

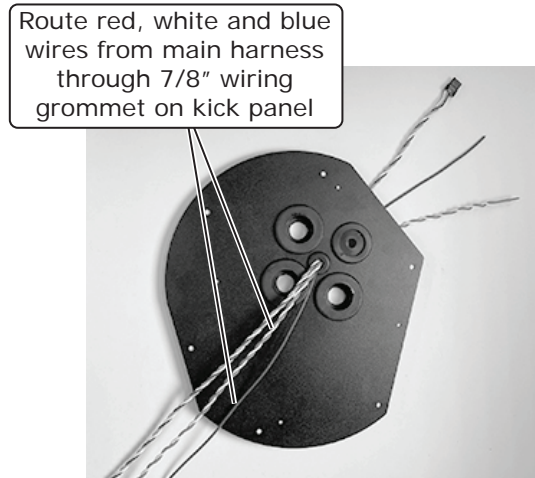


Photo 3



Photo 4

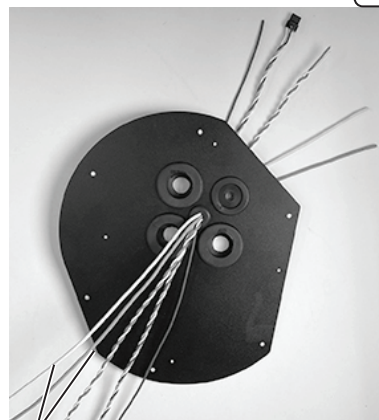


Photo 5

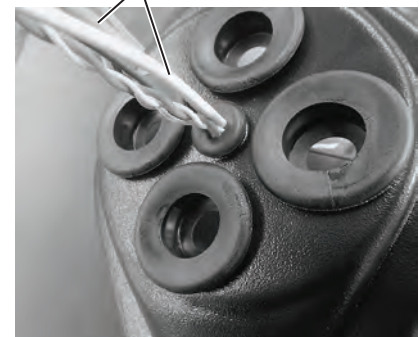


Photo 6

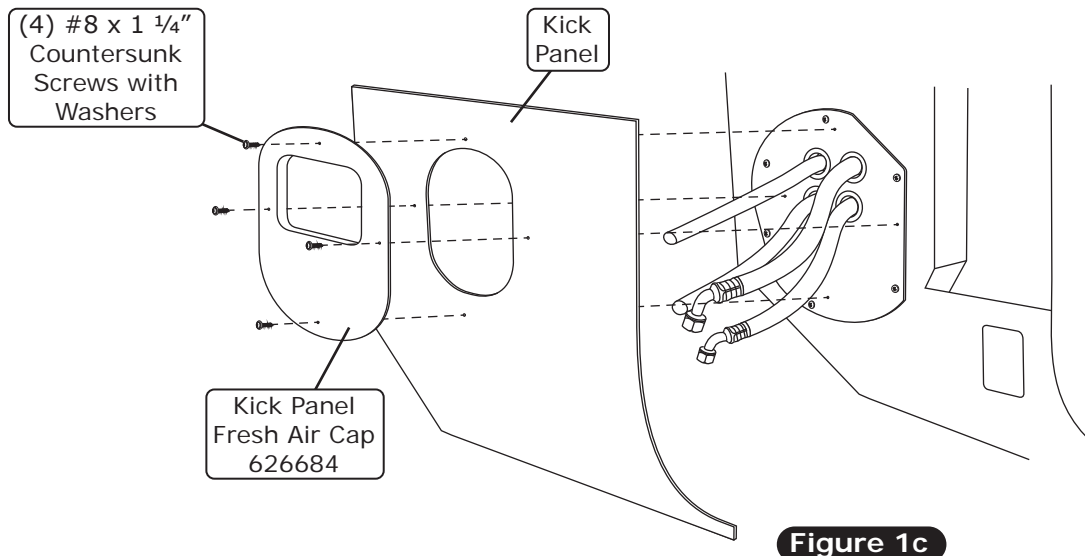
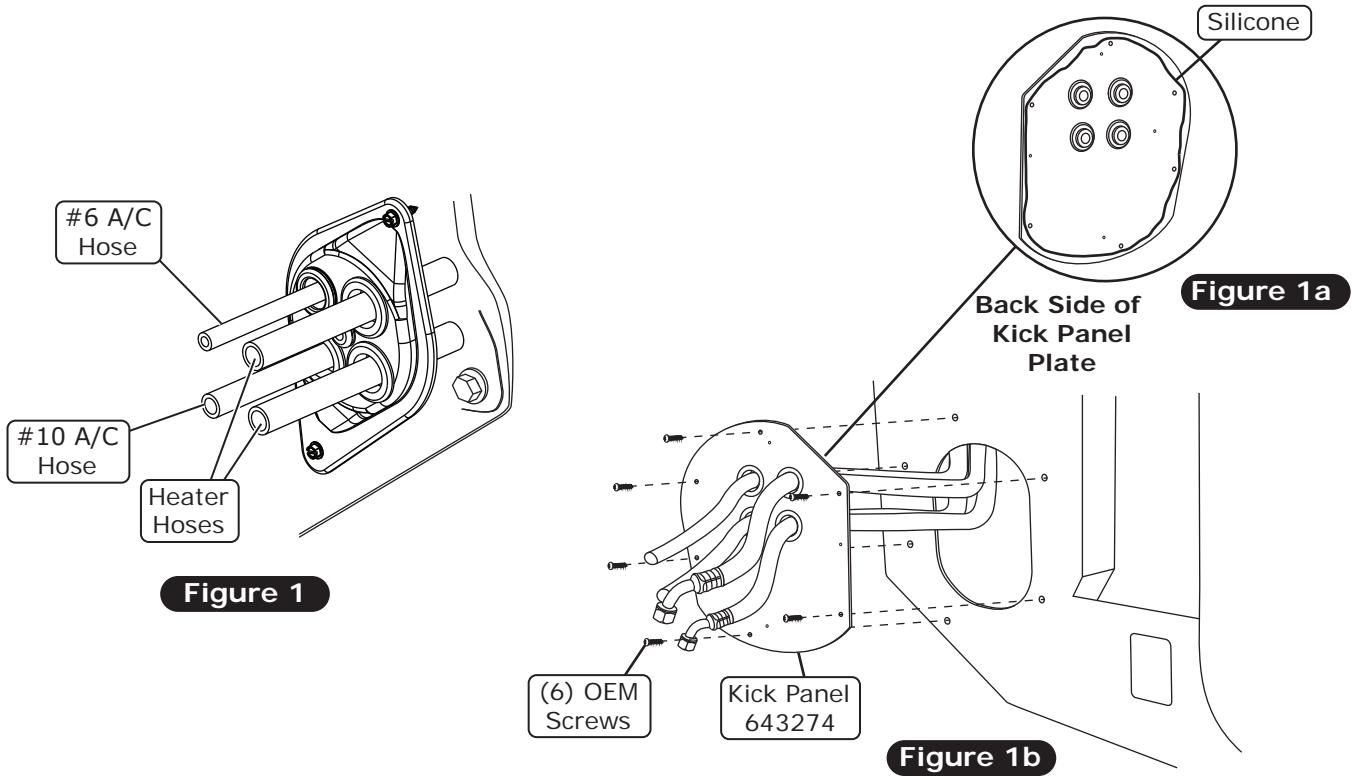




www.vintageair.com

## Kick Panel Fresh Air Plate Installation

1. Route A/C and heater hoses through fresh air cap and kick panel plate as shown in Figures 1 and 1b, below.
2. Apply a 1/4" bead of silicone around the back side of the kick panel plate as shown in Figure 1a, below.
3. Secure kick panel plate to kick panel using (6) OEM screws as shown in Figure 1b, below.
4. Reinstall kick panel (See Figure 1c, below).
5. Secure kick panel fresh air cap to kick panel using (4) #8 x 1 1/4" countersunk screws with washers as shown in Figure 1c, below.





www.vintageair.com

## 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.

1. Remove the ECU from the evaporator module by loosening the (2) ECU mounting screws (See Figure 2, below).
2. Carefully clip the tie wraps from the wires and retighten the ECU mounting screws to secure the evaporator coil service cap.
3. Apply (2) strips of Velcro to the bottom of the ECU as shown in Figure 3, below.
4. Install the A/C and heater hoses as shown in Figure 2, below.
5. Lift the evaporator module up under the dashboard. Secure the module loosely to the firewall cover using (3) 1/4-20 x 3/4" black serrated flange bolts as shown in Figure 2, below.
6. Install the evaporator to the evaporator/dash bracket onto the module using (2) 1/4-20 x 1" serrated flange bolts as shown in Figure 4, below.
7. Using the evaporator to the evaporator/dash bracket as a guide, mark and drill (2) 3/16" holes into the cowl (See Figure 5, below).
8. Use (2) #14 x 3/4" washer head screws to secure the evaporator to the evaporator/dash bracket to the inner cowl (See Figure 5, below).
9. Verify that the evaporator module is level and square to the dash, then tighten all the mounting hardware.

**NOTE:** Tighten the bolts on the firewall first, then tighten the cowl mounting bracket.

**NOTE:** After installing #6 and #10 lines, wrap all exposed metal (fittings & tube) with supplied press tape.

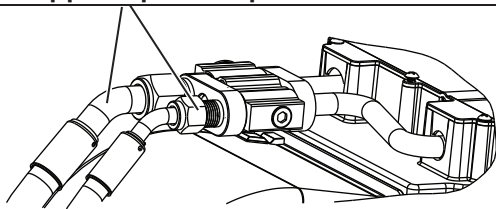


Figure 1

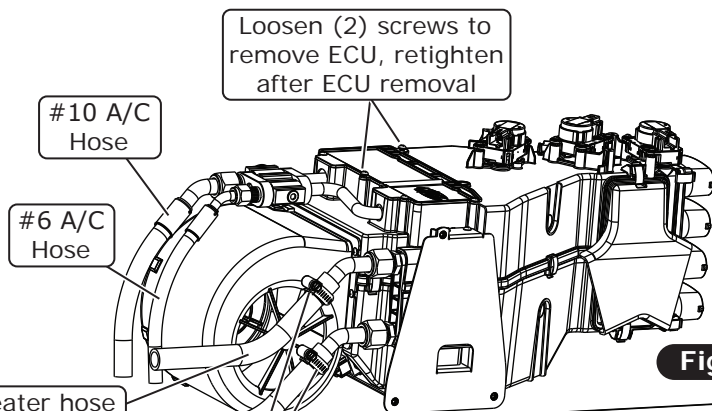


Figure 2

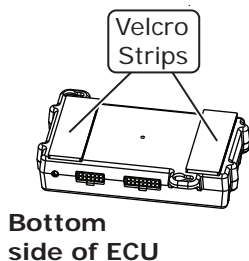


Figure 3

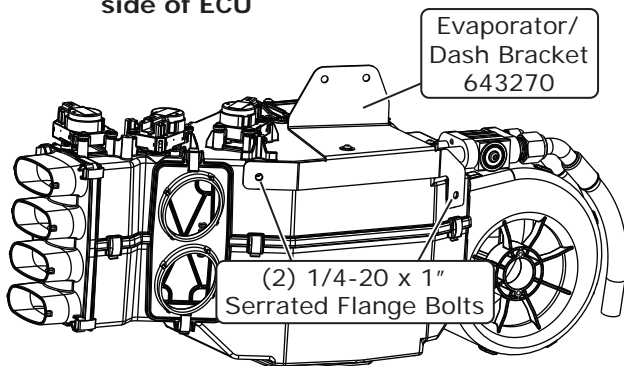


Figure 4

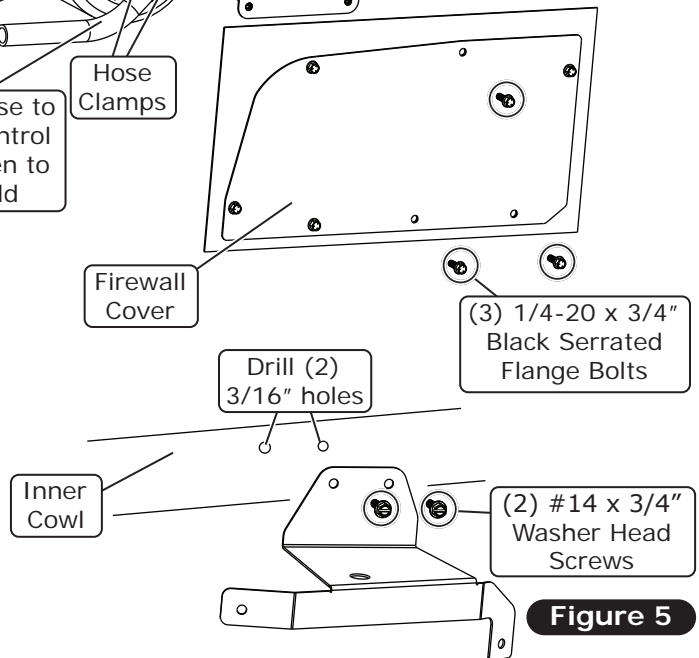


Figure 5



www.vintageair.com

## Drain Hose Installation

1. On the firewall, in line with the evaporator module drain, measure 1" down and drill a 5/8" hole (See Figure 1, below).
2. Install the drain hose to the outlet on the bottom of the evaporator module, and route through the firewall (See Figure 1, below).

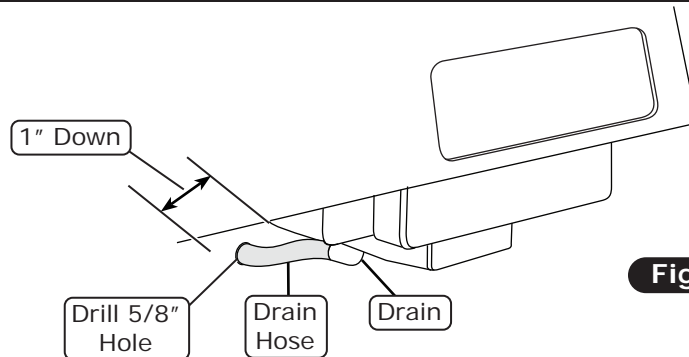


Figure 1

## A/C Hose Installation

### Standard Hose Kit:

1. Locate the #8 compressor A/C hose. Lubricate (2) #8 O-rings (See Lubricating O-rings, Page 8) and connect the 135° female fitting with 134a service port to the #8 discharge port on the compressor. Route the straight female fitting to the #8 condenser hardline (See A/C & Heater Hose Routing, Page 16). Tighten each fitting connection as shown in Lubricating O-rings, Page 8.
2. Locate the #10 compressor A/C hose. Lubricate (2) #10 O-rings (See Lubricating O-rings, Page 8) and connect the #10 90° female fitting with 134a service port to the #10 suction port on the compressor. Route the 45° female fitting to the #10 fitting on the evaporator (See Figure 2, Page 13, and A/C & Heater Hose Routing, Page 16). Tighten each fitting connection as shown in Lubricating O-rings, Page 8. Install a #10 Adel clamp on the #10 A/C hose, and secure to the passenger-side fender well using a 10-32 x 1/2" pan head screw and a 10-32 nut with star washer (See A/C & Heater Hose Routing, Page 16).
3. Locate the #6 evaporator A/C hose. Lubricate (2) #6 O-rings (See Lubricating O-rings, Page 8) and connect the straight female fitting to the drier. Route the 45° female fitting to the #6 fitting on the evaporator (See Figure 2, Page 13, and A/C & Heater Hose Routing, Page 16). Tighten each fitting connection as shown in Lubricating O-rings, Page 8. Install the #6 Adel clamp on the #6 A/C hose, and secure to the passenger-side fender well using a 10-32 x 1/2" pan head screw and 10-32 nut with star washer (See A/C & Heater Hose Routing, Page 16).

### Modified Hose Kit:

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

## Control Panel Installation

### 2-Lever Control Panel:

1. Install control panel assembly as shown in Figure 1, below. Refer to control panel assembly instructions.

### 4-Lever Control Panel:

1. Refer to control panel assembly instructions.

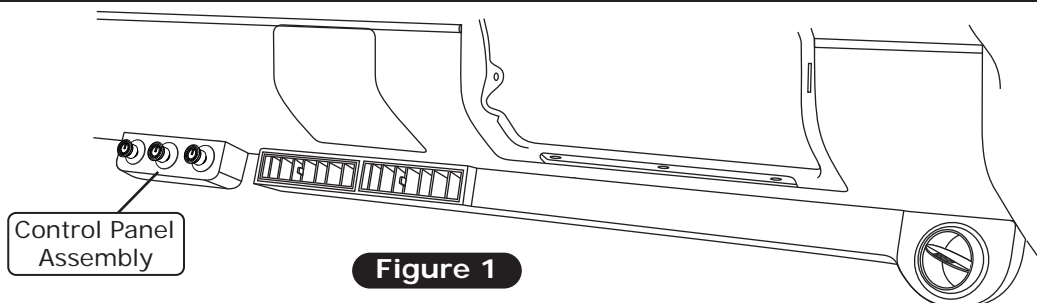


Figure 1



www.vintageair.com

## Passenger Compartment Wiring

1. Clean the area to the right of the passenger-side defrost duct.
2. Remove the plastic backing from the Velcro strips and mount the ECU to the underside of the dash using the defrost duct as a partial support for the ECU (See Photo 1, below).
3. Mount the relay and ground ring terminal in a suitable location. Secure each with a #10 x 1/2" sheet metal screw (See Photo 2, below).
4. Route the violet power wire to a switched 12V power source on the fuse panel (See Photo 3, below).  
**NOTE: This requires a male fuse extension (not supplied).**
5. Connect the BSC wiring to the main harness (See Photo 4, below).
6. Connect the main harness to the ECU (See Photo 1, below).
7. Connect the control panel harness to the ECU (See Photo 1, below).

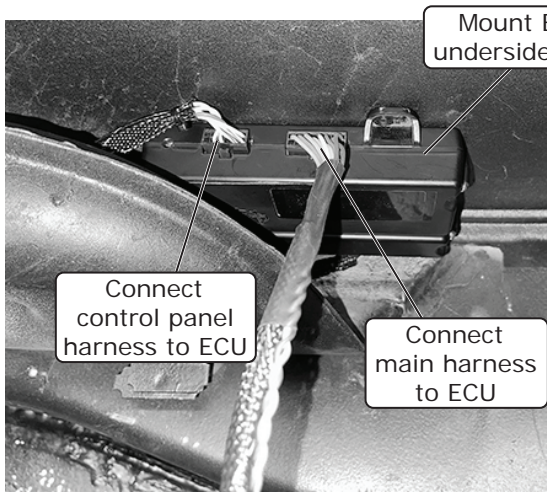


Photo 1

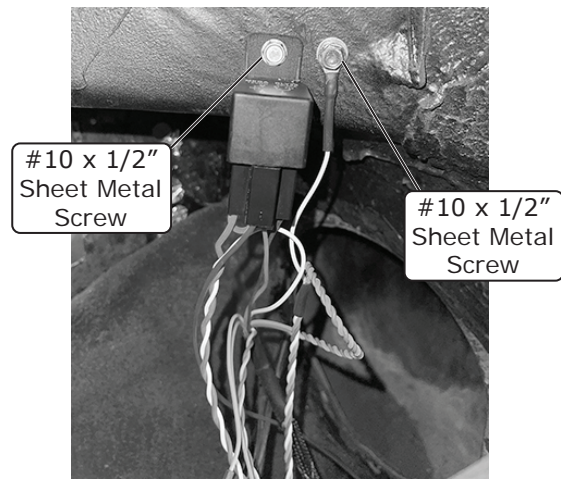


Photo 2



Photo 3

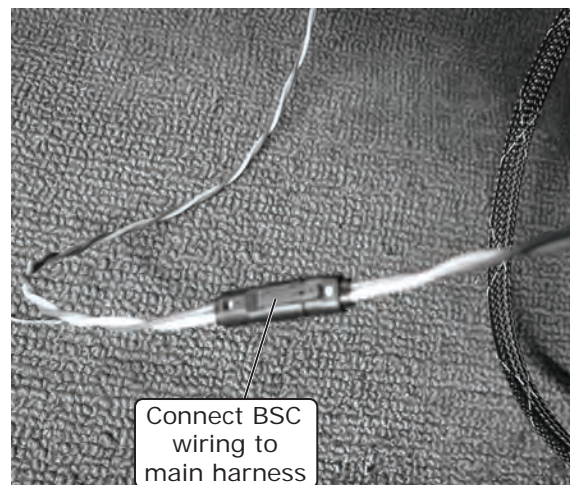


Photo 4

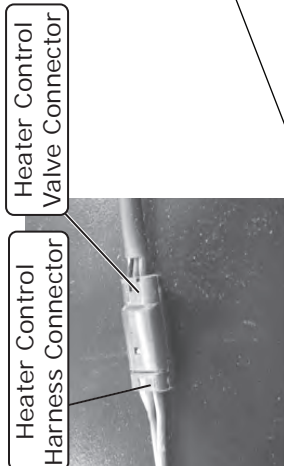




www.vintageair.com

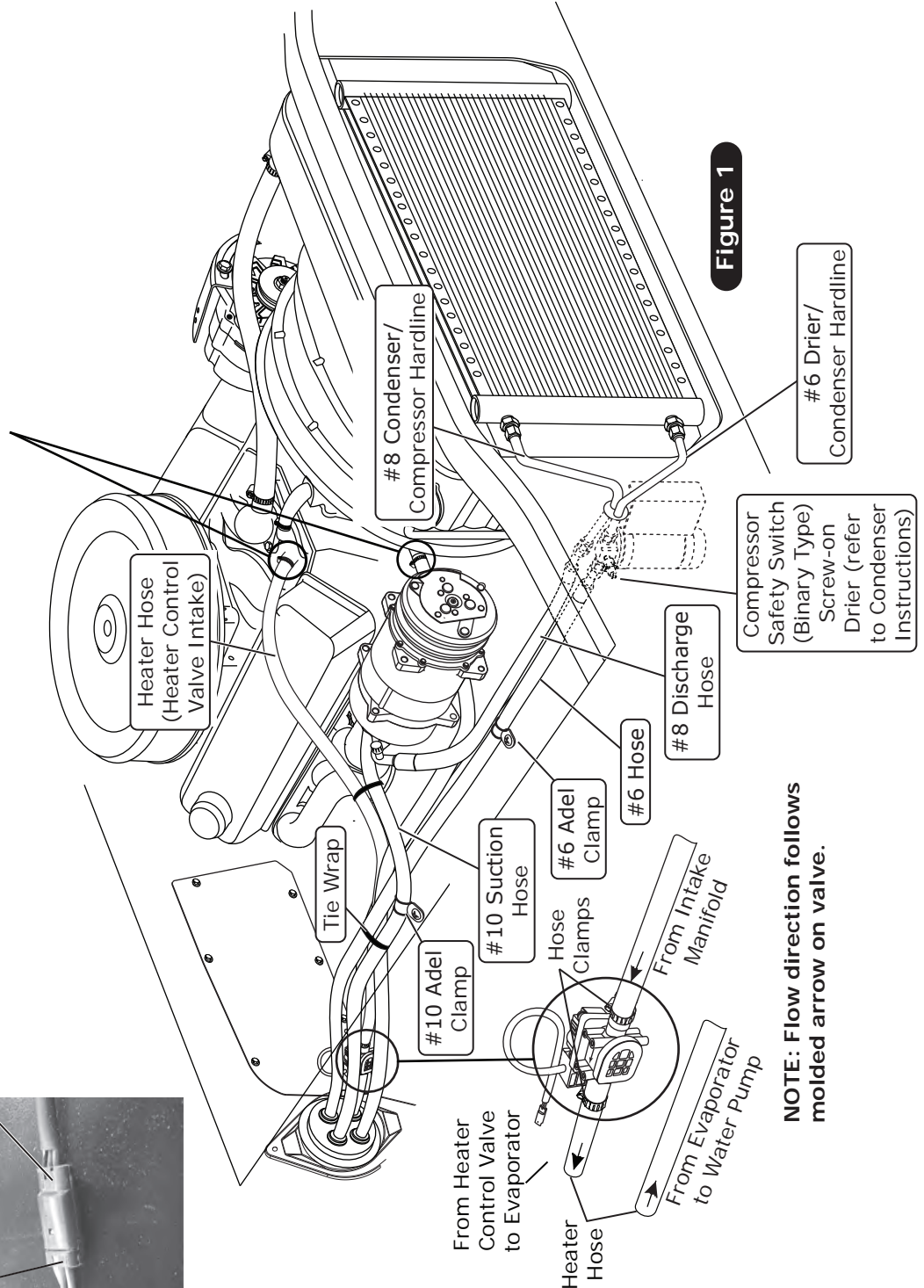
## A/C & Heater Hose Routing

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



# Heater Hose & Heater Control Valve Installation

1. Route a piece of heater hose from the water pump to the top heater fitting of the heater core as shown in Figure 2, Page 13, and Figure 1, below. Secure using hose clamps.
2. Route a piece of heater hose from the intake to the bottom heater fitting of the heater core as shown in Figure 2, Page 13, and Figure 1, below. **NOTE: Install the heater control valve in line with the intake manifold (pressure side) heater hose, and secure using hose clamps as shown in Figure 1, below. Also note proper flow direction.**

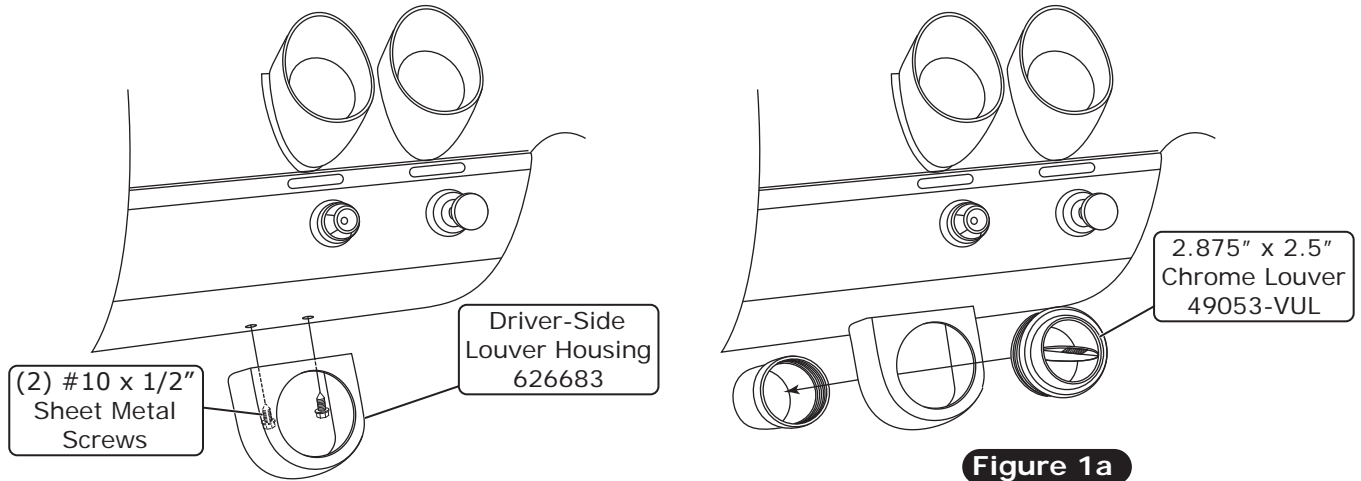




www.vintageair.com

## Driver-Side Under Dash Louver Installation

1. Place the driver-side louver housing under the dash. Mark and drill (2) 5/32" holes in the dash as shown in Figure 1, below.
2. Secure the louver housing under the dash using (2) #10 x 1/2" sheet metal screws as shown in Figure 1, below.
3. Install the louver into the housing as shown in Figure 1a, below.

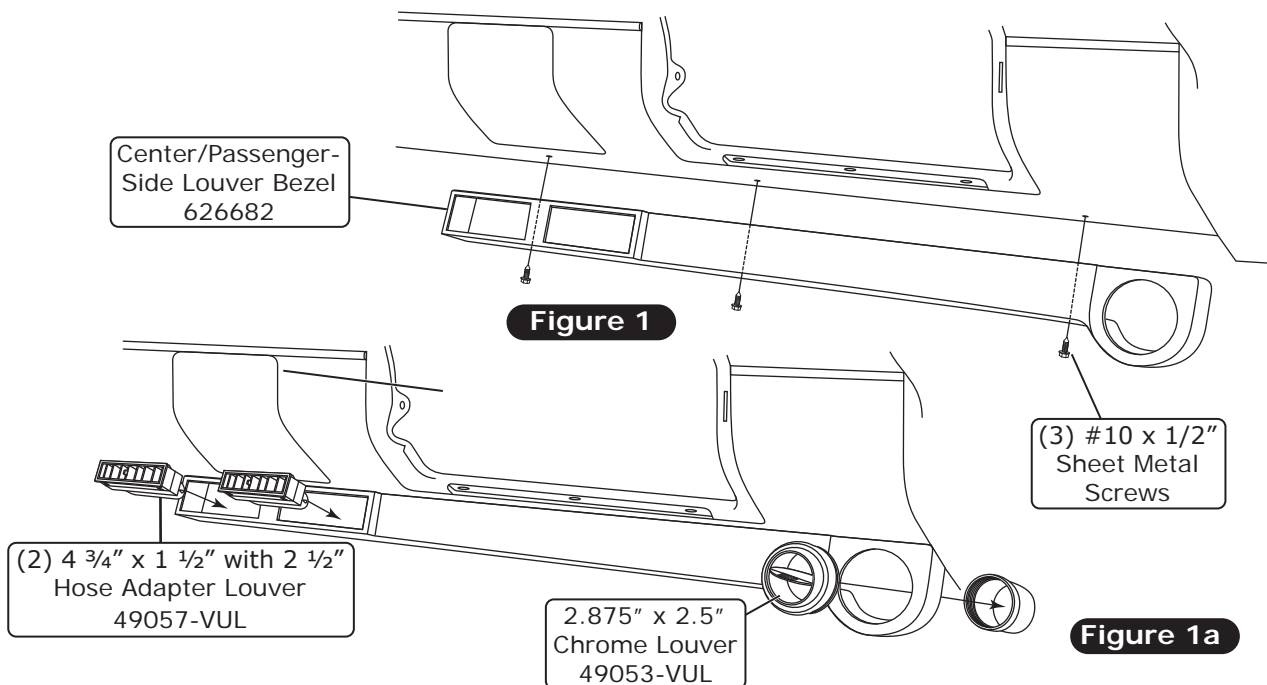


**Figure 1**

**Figure 1a**

## Center/Passenger-Side Under Dash Louver Installation

1. Place the louver housing under the dash. Align the center louvers with the center of the radio; then mark and drill (3) 5/32" holes in the dash as shown in Figure 1, below.
2. Secure the louver housing under the dash using (3) #10 x 1/2" sheet metal screws as shown in Figure 1, below.
3. Install the louvers into the housing as shown in Figure 1a, below.



**Figure 1**

**Figure 1a**



www.vintageair.com

## Duct Hose Routing

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

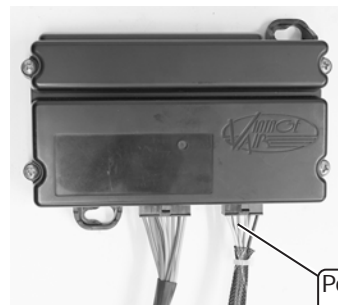
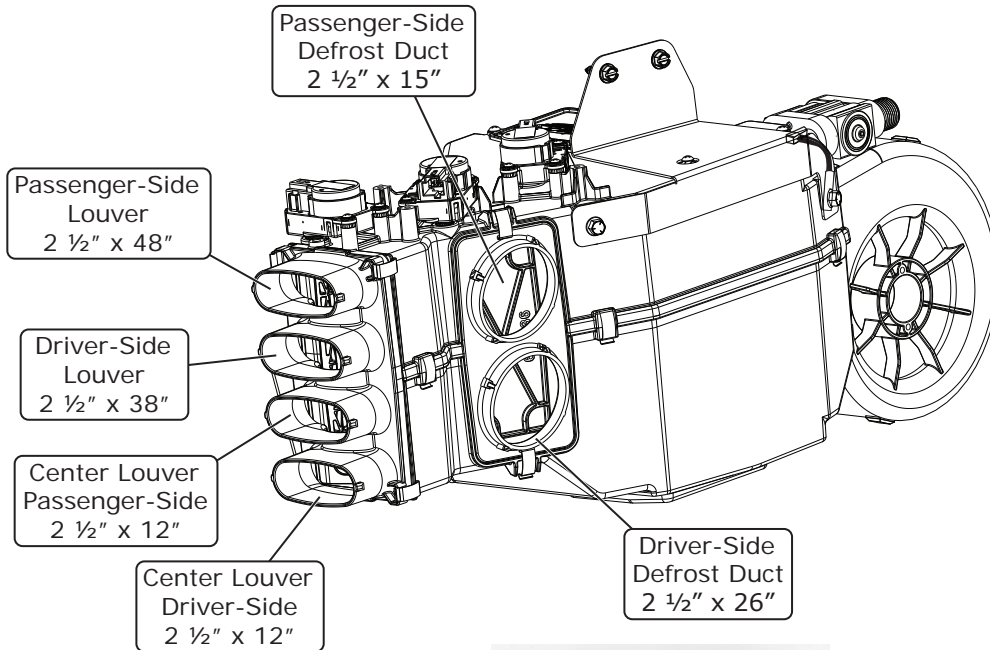
1. Stretch the duct hose until there is no slack, measure, mark and cut hose to size (See Photo 1, below).

Stretch, measure, mark and cut hose to size



Photo 1

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



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

Position connectors towards bottom





www.vintageair.com

## Wiring Final Steps

1. Locate the compressor lead wire.
2. Connect the bullet terminal of the compressor lead to the compressor bullet terminal (See Photo 1, below).
3. Route the compressor lead wire along the #10 A/C hose.
4. Route the compressor lead wire toward the drier and connect it to the safety switch (See Photo 2, below).
5. Secure the compressor lead to the #10 A/C hose with tie wraps.

Connect bullet terminal of compressor lead to compressor bullet terminal

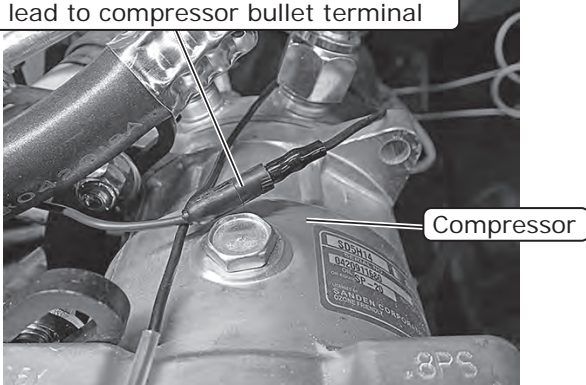


Photo 1

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

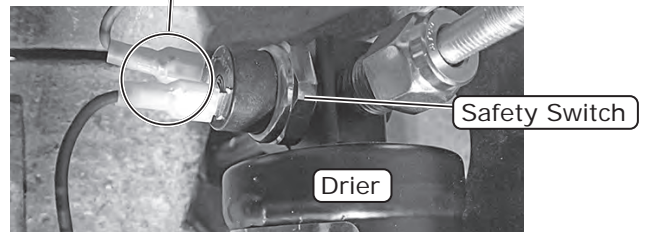


Photo 2

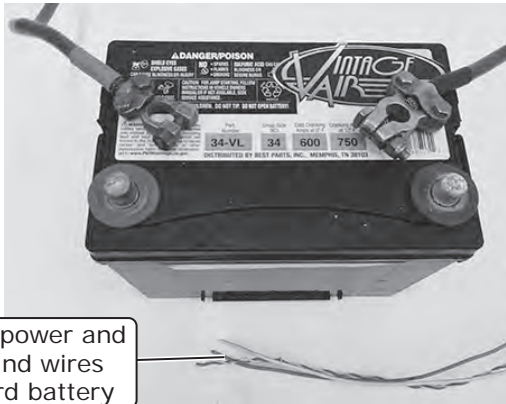


www.vintageair.com

# 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 24.**

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



Route power and ground wires toward battery

Photo 1

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



Photo 2

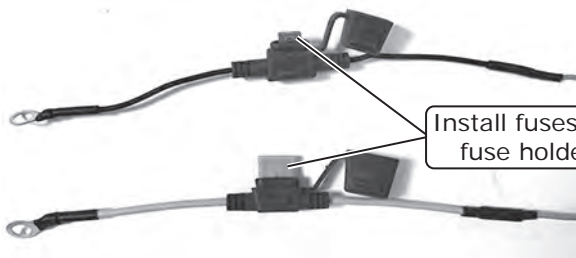
Install heat shrink over 12 AWG orange standard fuse holder assembly wire

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



Photo 3

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



Install fuses into fuse holders

Photo 4



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

Photo 5

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

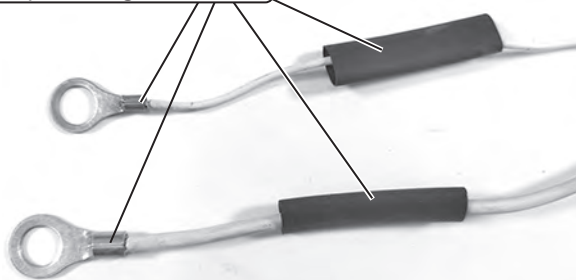


Photo 6

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



Photo 7

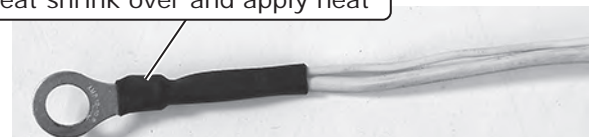


Photo 8



www.vintageair.com

## 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.**

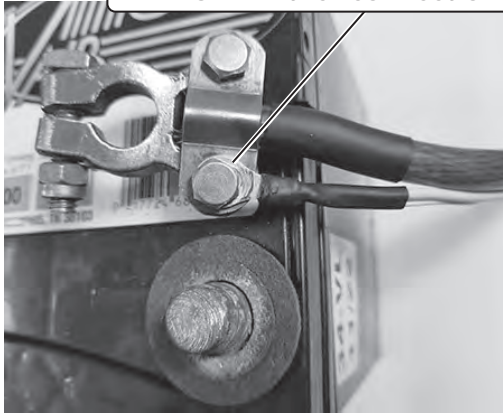


Photo 9

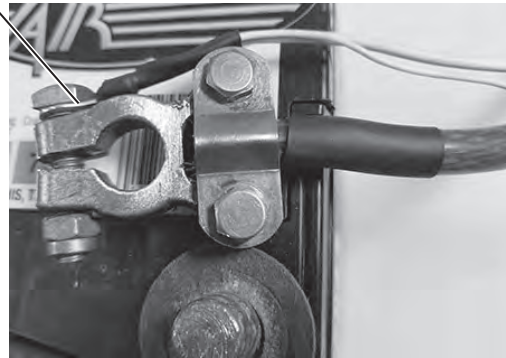


Photo 10

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

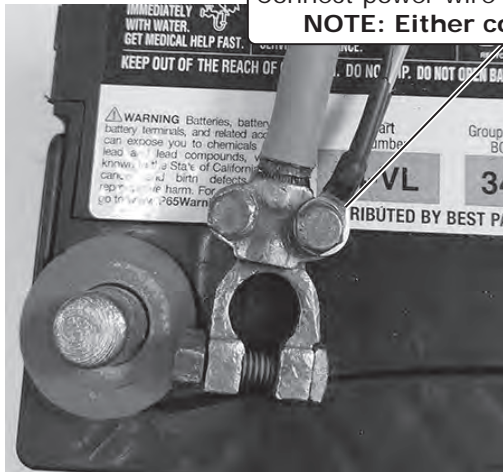
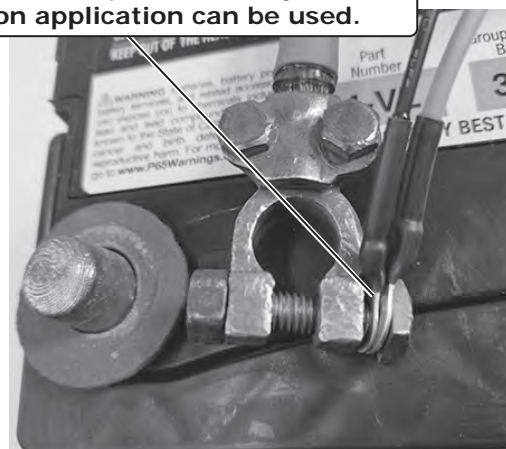


Photo 11



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

Photo 12



Completed Installation Shown

Photo 13



www.vintageair.com

# Final Steps: Installation Check

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



www.vintageair.com

## Glove Box Installation

1. Install (4) S-clips on glove box bottom (See Figure 1, below)
2. Install (4) #8 U-nuts on glove box bottom (See Figure 1, below).
3. The glove box is a two piece assembly. Install bottom piece first, and then the top. Secure assembly using OEM screws.
4. Install glove box door using OEM screws.

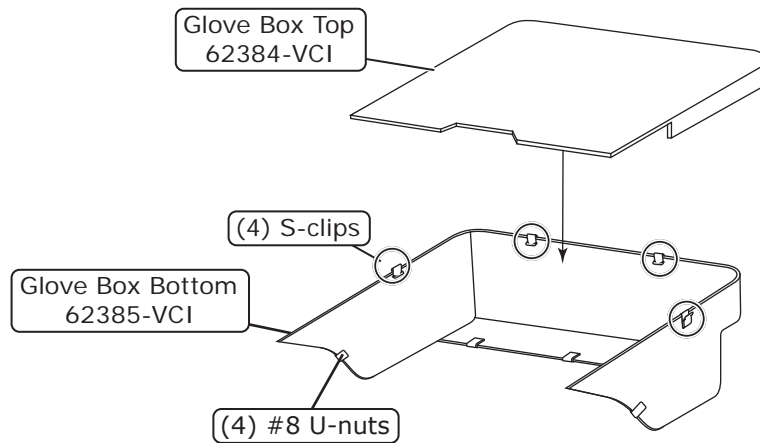


Figure 1

## Final Steps: Completing the Install

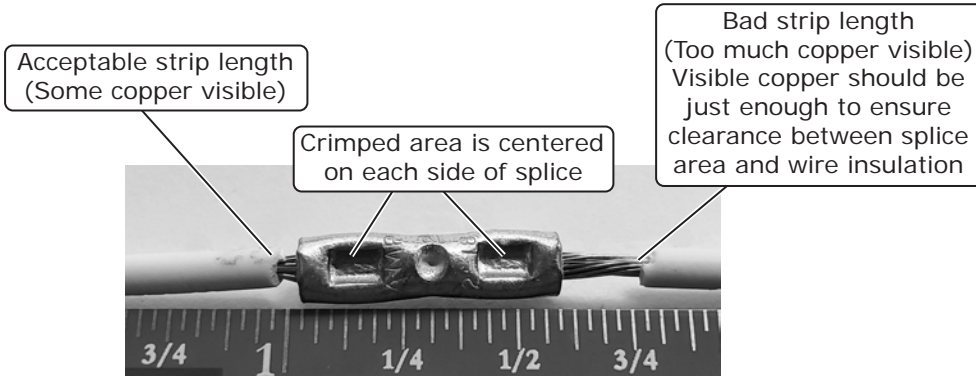
1. Reinstall all previously removed items.
2. Fill radiator with at least a 50/50 mixture of approved antifreeze and distilled water. It is the owner's responsibility to keep the freeze protection at the proper level for the climate in which the vehicle is operated. Failure to follow antifreeze recommendations will cause heated core to corrode prematurely and possibly burst in A/C mode and/or freezing weather, voiding your warranty.
3. Double check all fittings, brackets and belts for tightness.
4. Vintage Air recommends that all A/C systems be serviced by a licensed automotive A/C technician.
5. Evacuate the system for a minimum of 45 minutes prior to charging, and perform a leak check prior to servicing.
6. Charge the system to the capacities stated on Page 4 of this instruction manual.
7. See the Operation of Controls procedures on Page 27 or 28 of this instruction manual.





www.vintageair.com

# Quality Crimp Guideline



**Photo 1**



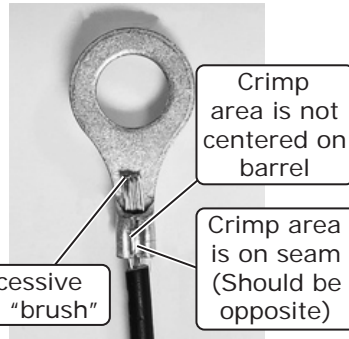
**Photo 2**

## Good Ring Terminal Crimp    Bad Ring Terminal Crimp



**Photo 3**

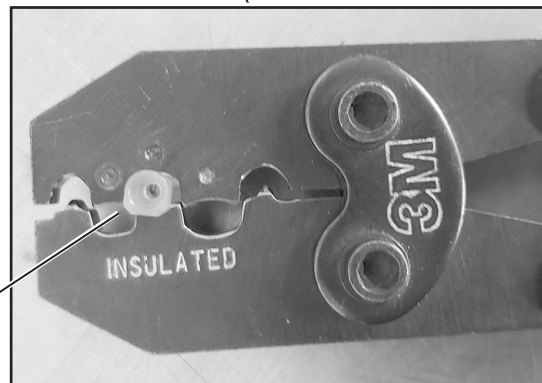
Crimp area is centered on barrel



**Photo 4**



**Photo 5**



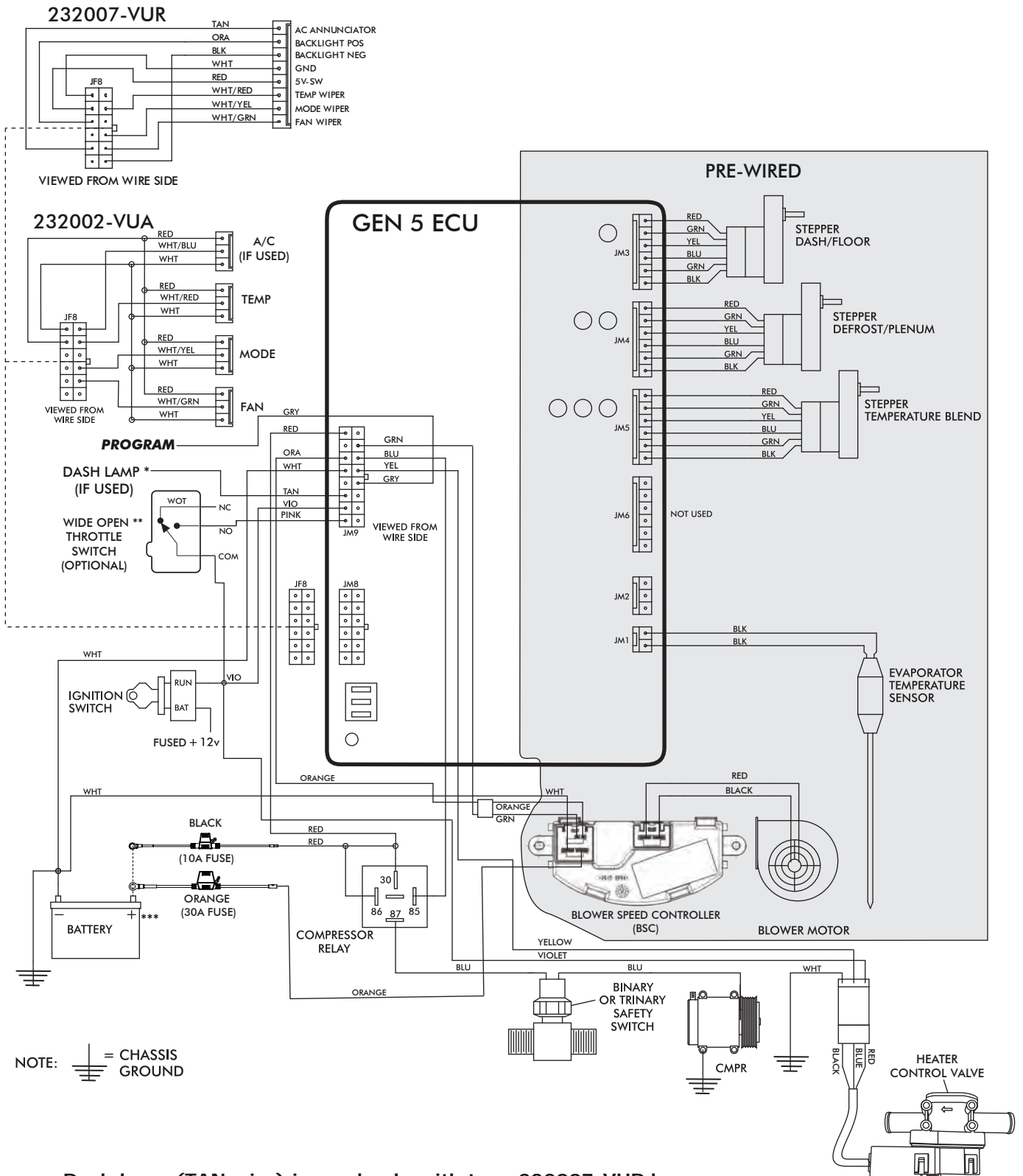
**Photo 5a**

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



www.vintageair.com

# 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.

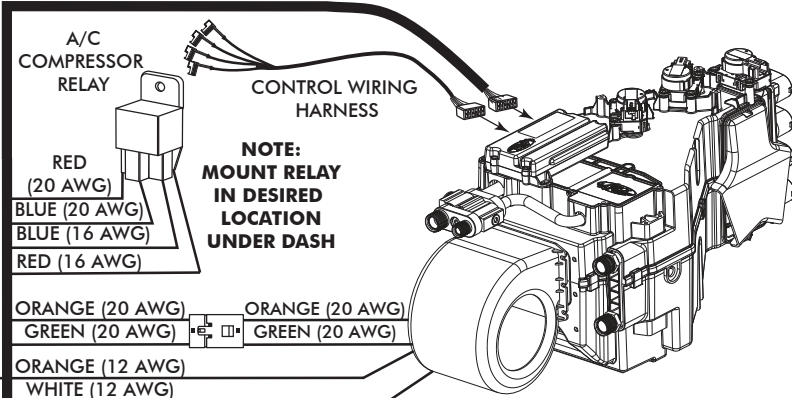




www.vintageair.com

# Gen 5 Wiring Instructions

WIRING HARNESS (231505) ↓



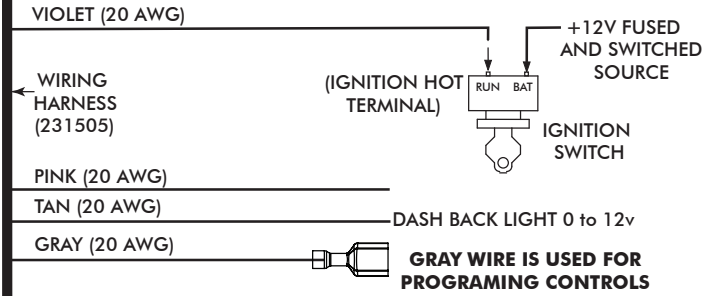
**NOTE:**  
MOUNT RELAY  
IN DESIRED  
LOCATION  
UNDER DASH

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

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

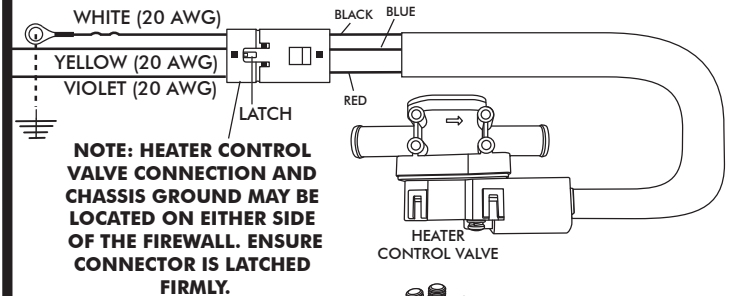
**Dash Light (Optional):**  
If using a Vintage Air control panel with back light, connect the 20 AWG tan wire to the vehicle's dash back light 0-12V using provided butt splice (PN 226004).

WIRING HARNESS (232020) →



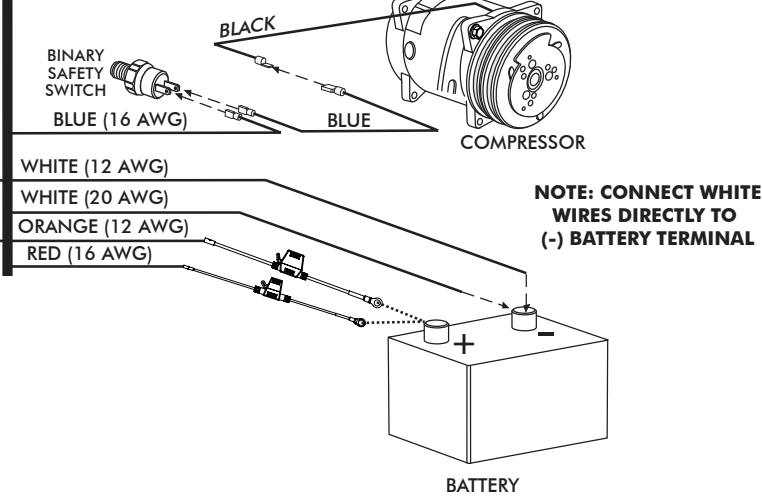
FIREWALL FIREWALL

WIRING HARNESS (232020) →



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

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



**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.



www.vintageair.com

## 2- Lever 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 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.

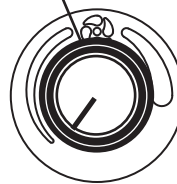
### Mode Control

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

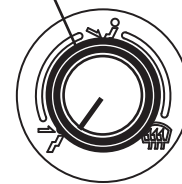
### Temperature Control

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

Blower Speed



Mode Control



Temperature Control



## A/C Operation

### Blower Speed

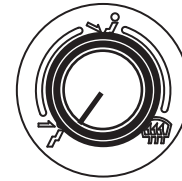
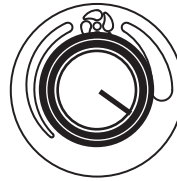
Adjust to desired speed.

### 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

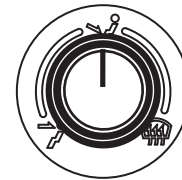
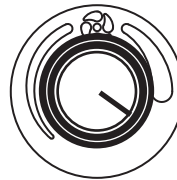
Adjust to desired speed.

### 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

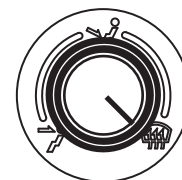
Adjust to desired speed.

### Mode Control

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

### Temperature Control

Adjust to desired temperature.





www.vintageair.com

## 4- Lever 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 between operations, to indicate the change. **NOTE: For proper control panel function, refer to control panel instructions for calibration procedure.**

### Blower Speed

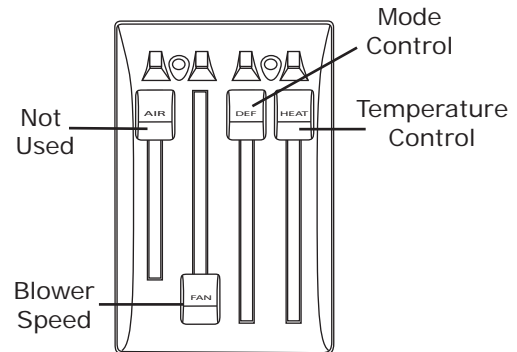
This lever/knob controls blower speed, from OFF to HI.

### Mode Control

This lever/knob controls the mode positions, from 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

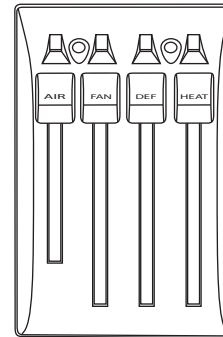
Adjust to desired speed.

### 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

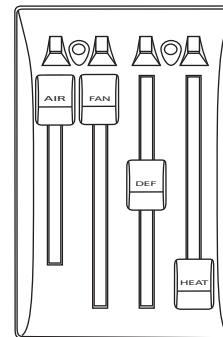
Adjust to desired speed.

### 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

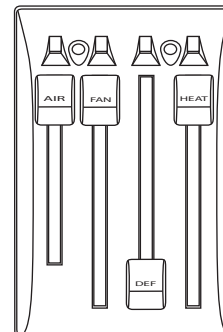
Adjust to desired speed.

### 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).





www.vintageair.com

# 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.	If fuse continues to blow, there is a serious problem in the wiring. Check all wiring and ensure the wire is not damaged and shorting out along its route.
	All other functions work.	Check for a bad ECU GND. Check for damaged pins or wires in the control panel wire assembly and mating header at ECU. Check if Blower power fuse is blown. Check for a bad ECU GND.	If found damaged, replace wire assembly or ECU. Replace fuse. Repair connection.	
2. Compressor will not turn on (All other functions work).	System is not charged.	System must be charged for compressor to engage.	Charge system.	<b>Danger: Never bypass safety switch with engine running. Serious injury can result.</b>
	System is charged.	Check for faulty A/C potentiometer or associated wiring (not applicable to 3-pot controls).	Check continuity to ground on white control head wire. Check for 5V on red control head wire.	To check for proper pot function, check voltage at white/red wire. Voltage should be between 0V and 5V, and will vary with pot lever position.
		Check for disconnected or faulty thermistor.	Check 2-pin connector at ECU housing.	Disconnected or faulty thermistor will cause compressor to be disabled.
3. Compressor will not turn off (All other functions work).	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.	



www.vintageair.com

# Troubleshooting Guide (Cont.)

Symptom	Condition	Checks	Actions	Notes
4. System will not turn on, or runs intermittently.	Works when engine is not running; shuts off when engine is started	Noise interference from either ignition or alternator.	Install capacitors on ignition coil and alternator. Ensure good ground at all points. Relocate coil and associated wiring away from ECU and ECU wiring. Check for burned or loose plug wires.	Ignition noise (radiated or conducted) will cause the system to shut down due to high voltage spikes. If this is suspected, check with a quality oscilloscope. Spikes greater than 16V will shut down the ECU. Install a radio capacitor at the positive post of the ignition coil (see radio capacitor installation bulletin). A faulty alternator or worn out battery can also result in this condition.
	Will not turn on under any conditions.	Verify connections on power lead, ignition lead, and both white ground wires.	Check for power at ECU, and confirm ignition is being applied to ECU properly.	
		Verify battery voltage is greater than 10 volts and less than 16 while engine is running.	Verify proper meter function by checking the condition of a known good battery.	
		No mode change at all.	Check for damaged mode switch or potentiometer and associated wiring.	
5. Loss of mode door function.	Battery voltage is at least 12V.	Check for at least 12V at circuit breaker.	Ensure all system grounds and power connections are clean and tight.	System shuts off blower at 10V. Poor connections or weak battery can cause shutdown at up to 11V.
	Blower turns on and off rapidly.	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](https://www.vintageair.com/instructions_pdf/905000.pdf)







www.vintageair.com

## Packing List: Evaporator Kit (561343)

No.	Qty.	Part No.	Description
1.	1	765200	Gen 5 Magnum Max Module with 404 ECU
2.	1	781343	Accessory Kit

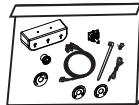
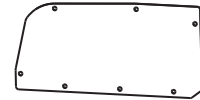
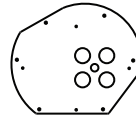
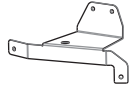
Checked By: \_\_\_\_\_  
Packed By: \_\_\_\_\_  
Date: \_\_\_\_\_

1

Gen 5 Magnum Max  
Module with 404 ECU  
765200



2



626682

Accessory Kit  
781343  
2-Lever

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

## Packing List: Evaporator Kit (561344)

No.	Qty.	Part No.	Description
1.	1	765200	Gen 5 Magnum Max Module with 404 ECU
2.	1	781344	Accessory Kit

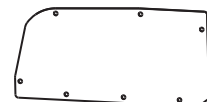
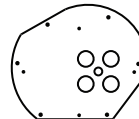
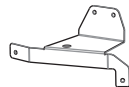
Checked By: \_\_\_\_\_  
Packed By: \_\_\_\_\_  
Date: \_\_\_\_\_

1

Gen 5 Magnum Max  
Module with 404 ECU  
765200



2



626682

Accessory Kit  
781344  
4-Lever

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