



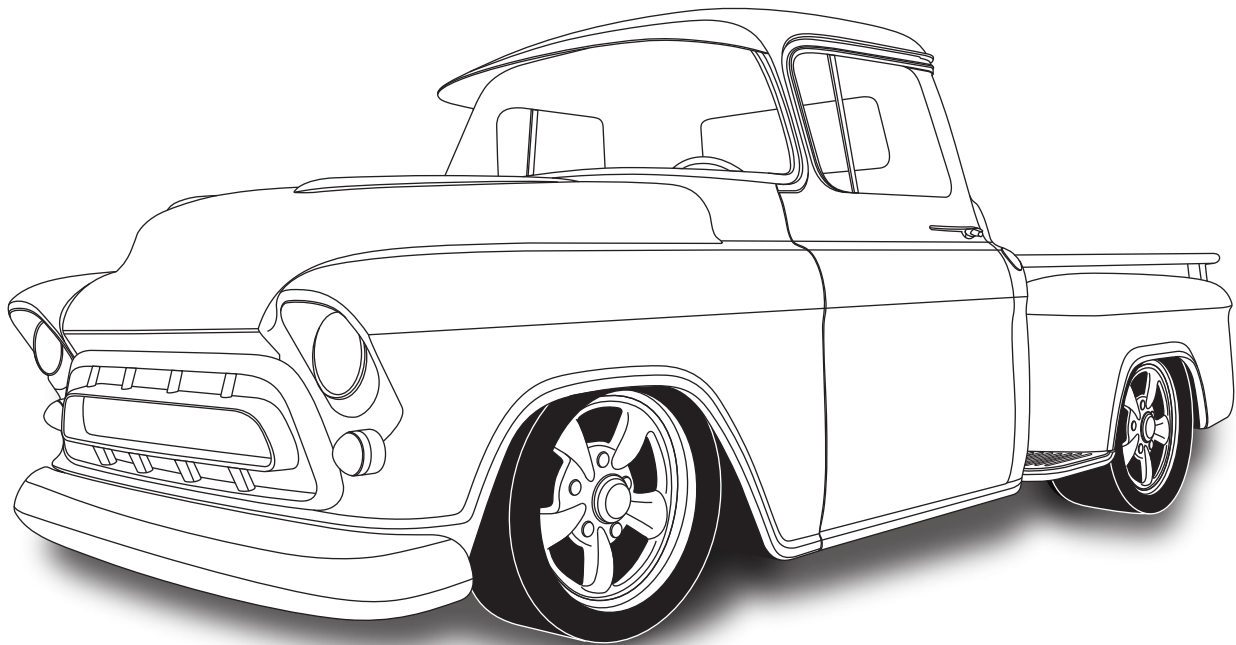
# 1955-59 Chevrolet Pickup

*without* Factory Air

Gen 5 Evaporator Kit

Standard Controls (751569)

Deluxe Controls (751570)



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## Packing List: Evaporator Kit (751569)

No.	Qty.	Part No.	Description
1.	1	765125	Gen 5 Magnum Module with 444 ECU
2.	1	791569	Accessory Kit

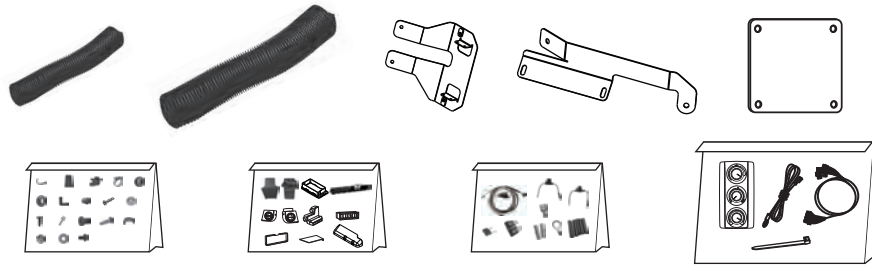
**\*\* Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

1

Gen 5 Magnum Module  
with 444 ECU  
765125



2



Accessory Kit  
791569

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

## Packing List: Evaporator Kit (751570)

No.	Qty.	Part No.	Description
1.	1	765125	Gen 5 Magnum Module with 444 ECU
2.	1	791570	Accessory Kit

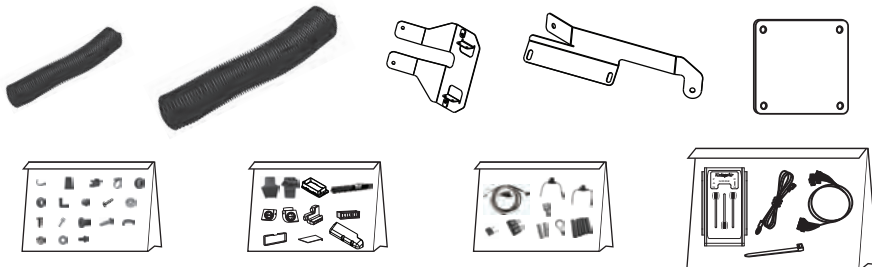
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1

Gen 5 Magnum Module  
with 444 ECU  
765125



2



Accessory Kit  
791570  
Deluxe

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



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## Important Notice—Please Read

*For Maximum System Performance, Vintage Air Recommends the Following:*

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

### Refrigerant Capacities:

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

**Other Systems:** Consult manufacturer's guidelines.

### Lubricant Capacities:

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

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

### Safety Switches

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

### Service Info:

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

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

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

### Bolts Passing Through Cowl and/or Firewall:

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

### Heater Hose (not included with this kit):

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



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## Important Wiring Notice—Please Read

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

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

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

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

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

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

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

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



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## 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. Disconnect the battery.
2. Remove the battery and battery tray (retain).
3. Remove the top cover on the radiator core support (retain).
4. Remove the OEM fan and fan shroud (retain).
5. Drain and remove the radiator (retain).
6. Remove the passenger-side horn (retain).
7. Remove all OEM heater hoses (discard).

## 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.

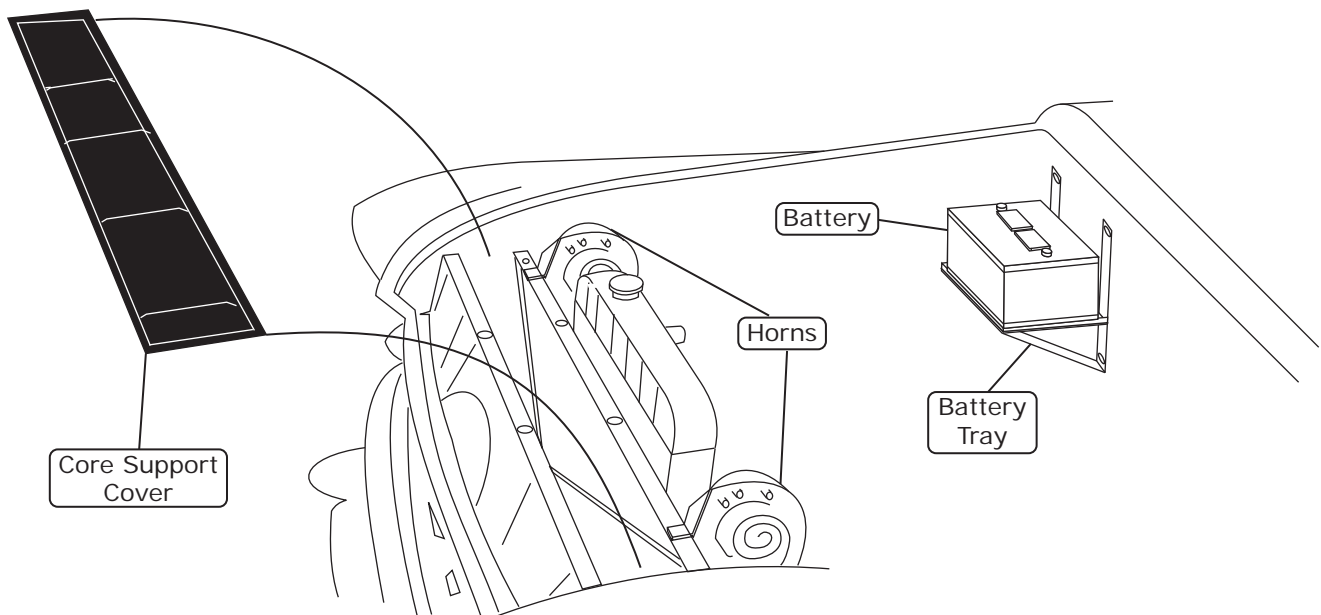


Figure 1



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## Passenger Compartment Disassembly

### Perform the following:

1. Remove the glove box door (retain) and glove box (discard).
2. Disconnect all wires and cables from the OEM control panel (retain).
3. Remove the OEM control panel assembly (discard).
4. Remove the passenger-side OEM vent control (discard). Close and seal the kick panel vent with silicone (See Figure 1b, below).
5. Relocate the driver-side OEM vent control next to the steering column using OEM screws (See Figure 1, below).
6. Remove the OEM heater assembly (discard).
7. Remove the OEM duct hoses from defrost ducts (discard).
8. Remove the OEM defrost ducts (discard).
9. Remove the blower inlet flange (discard) and reuse the OEM screws to mount the fresh air cap (See Figure 1b, below). Seal with silicone (See Figure 1b, below).
10. Modify the passenger-side glove box door arm as shown in Figure 1a, below. **NOTE: The glove box door travel will be restricted to prevent interference with evaporator case assembly.**
11. Remove and discard the driver-side glove box door arm.

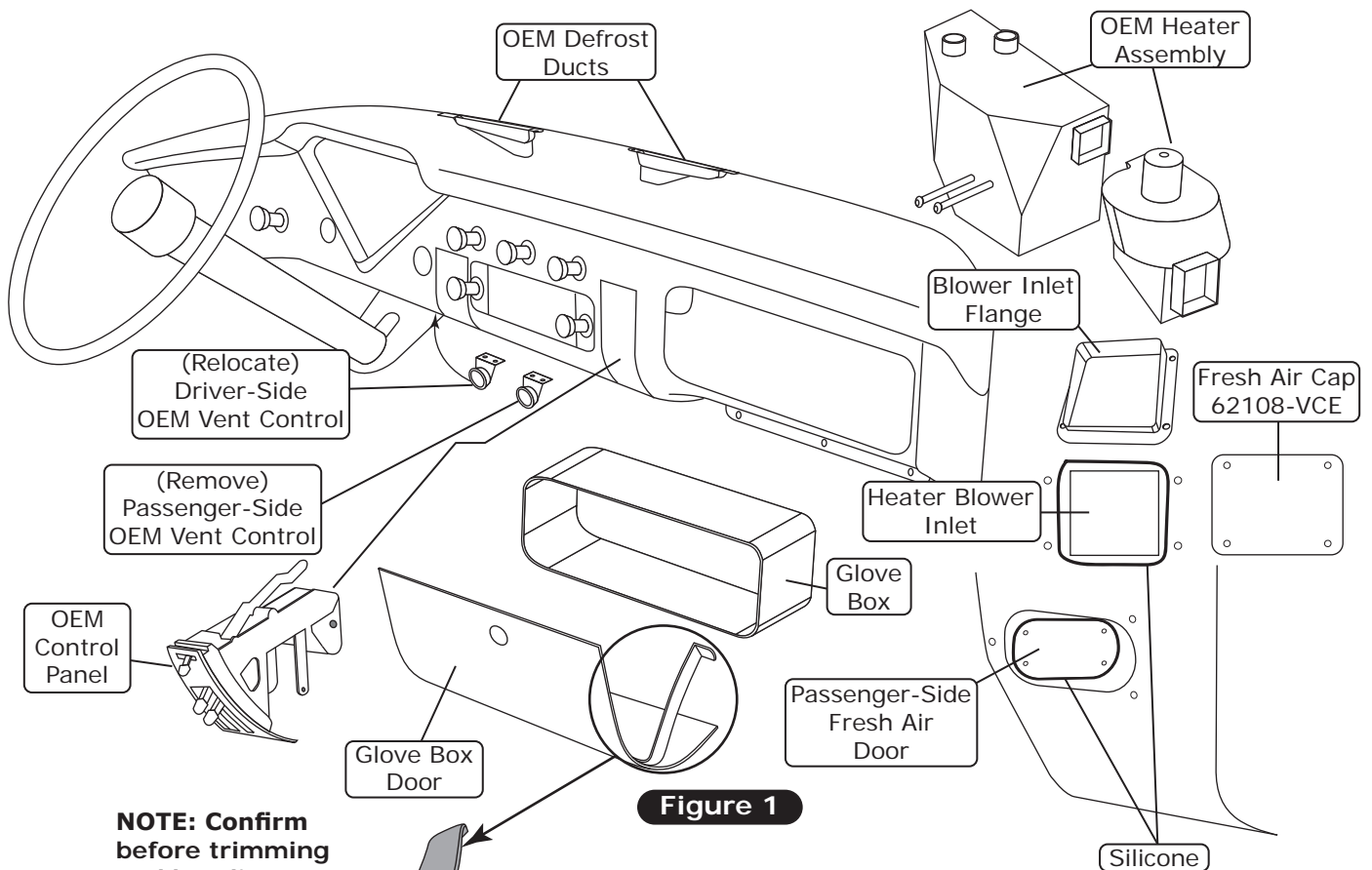


Figure 1

**NOTE: Confirm before trimming and bending**

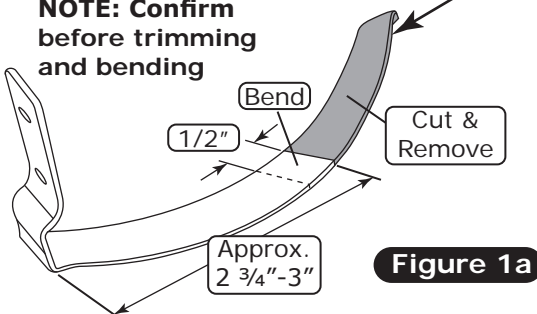


Figure 1a

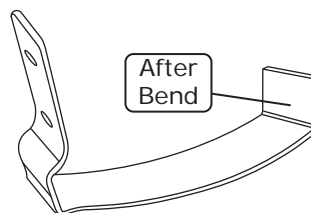


Figure 1b



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## Defrost Duct Installation

1. Install the driver- and passenger-side defrost ducts using (2) #8 x 1/2" pan head screws as shown in Figure 1, below.
2. Install the defrost duct hose sections as shown in Figure 1, below and Figure 1, Page 20.

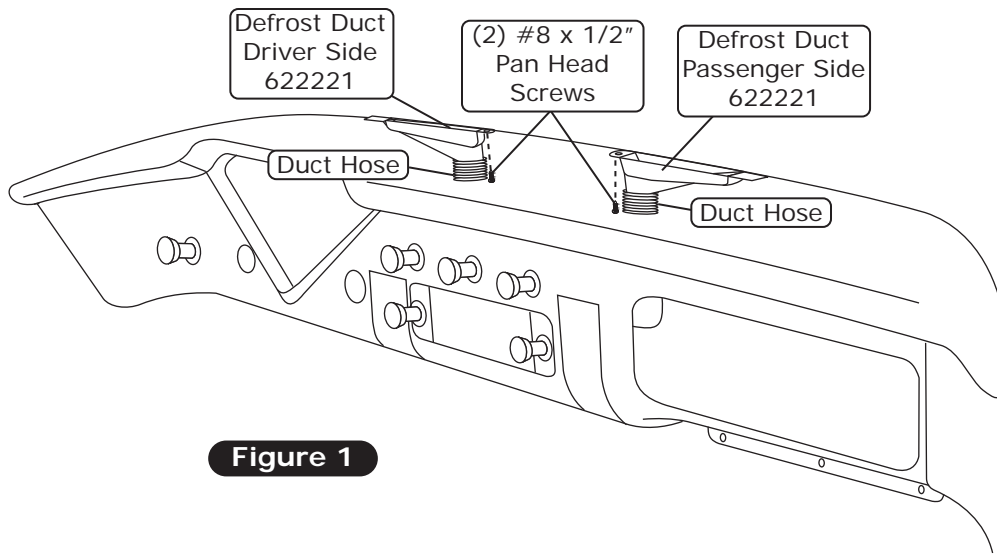


Figure 1

## Plenums, Brackets & Evaporator Hardlines Installation

1. On a workbench, install the center vent plenum adapter and floor plenum using spring clips as shown in Figure 1, below.
2. Insert (2) 1/4-20 well nuts at locations shown in Figure 1, below.

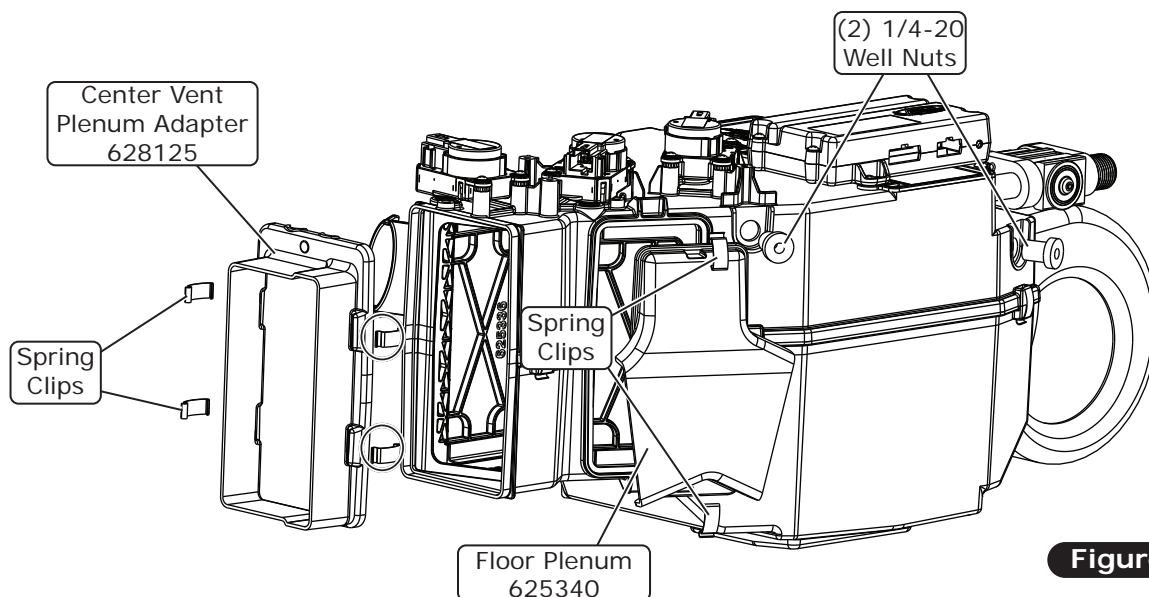


Figure 1

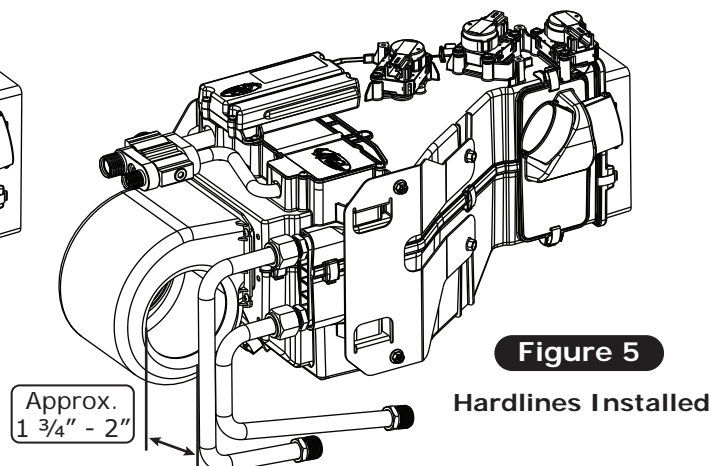
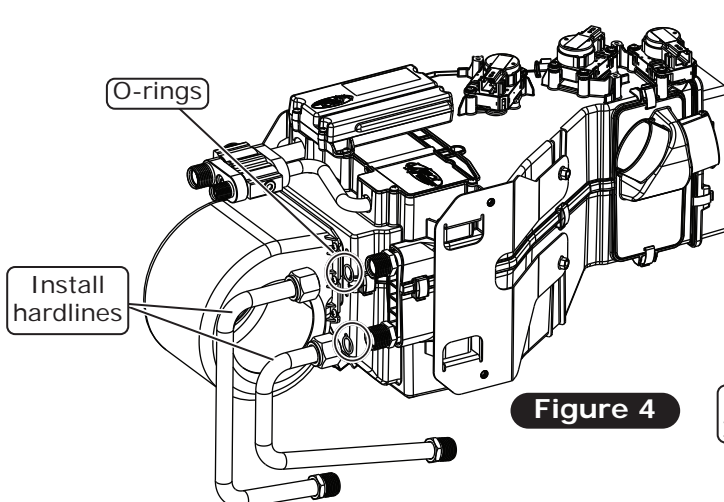
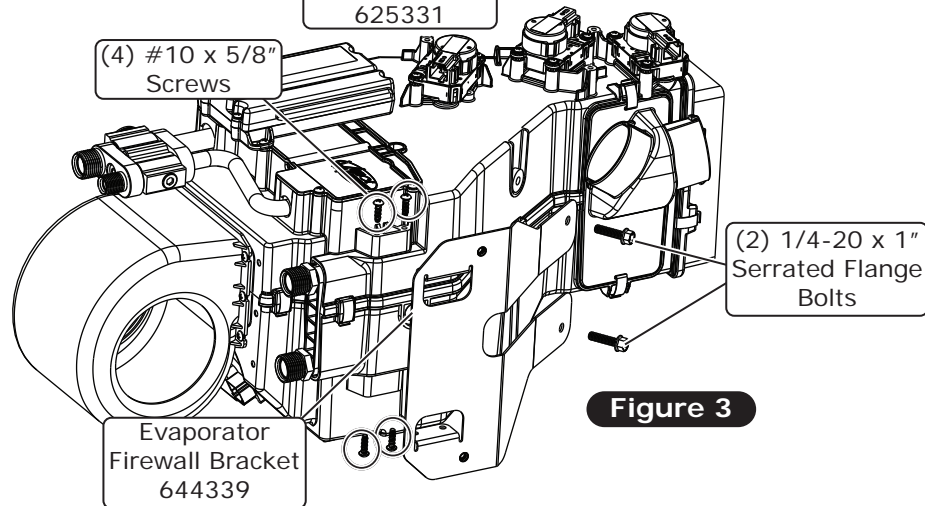
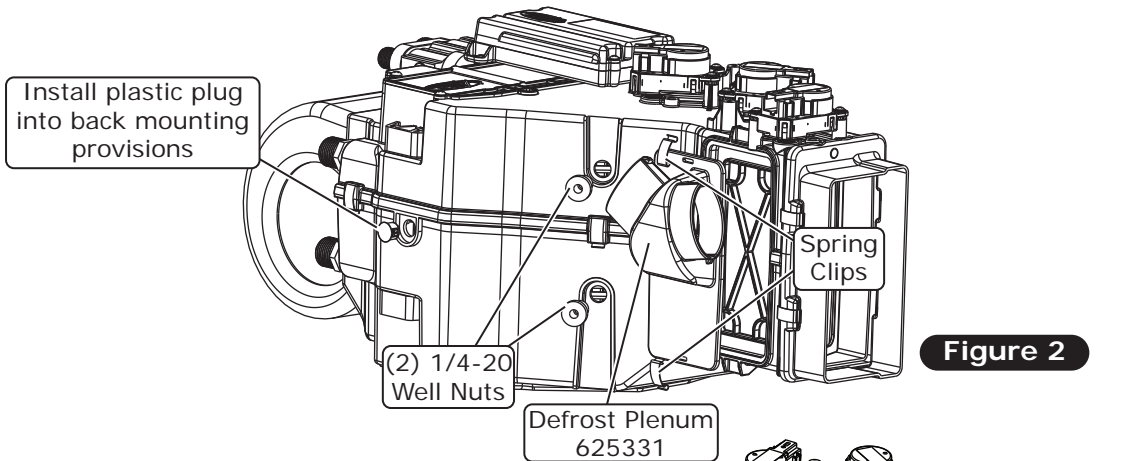




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## Plenums, Brackets & Evaporator Hardlines Installation (Cont.)

3. Install the defrost plenum using spring clips as shown in Figure 2, below.
4. Insert (2) 1/4-20 well nuts in the locations shown in Figure 2, below.
5. Install a plastic plug at the location shown in Figure 2, below.
6. On a workbench, install the evaporator firewall bracket using (2) 1/4-20 x 1" serrated flange bolts and (4) #10 x 5/8" screws (See Figure 3, below).
7. Install the hardlines with properly lubricated O-rings (See Lubricating O-rings, Page 13, and Figures 4 and 5, below).



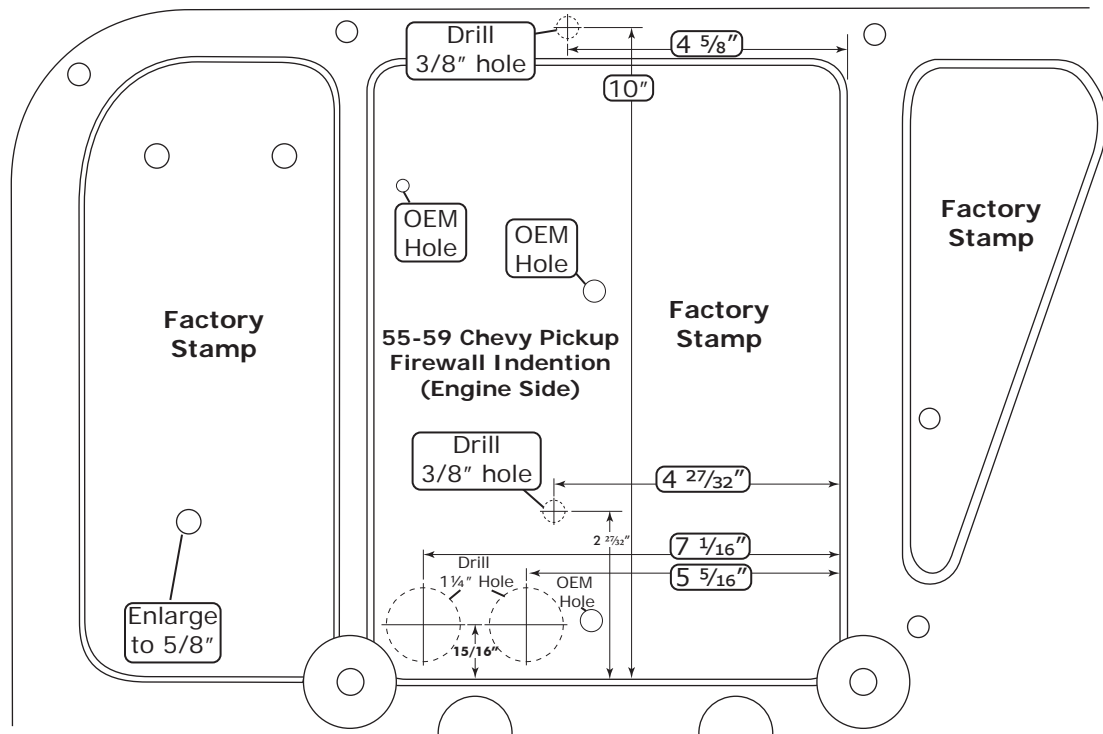
**NOTE: Hardlines inline with each other and parallel with blower face.**



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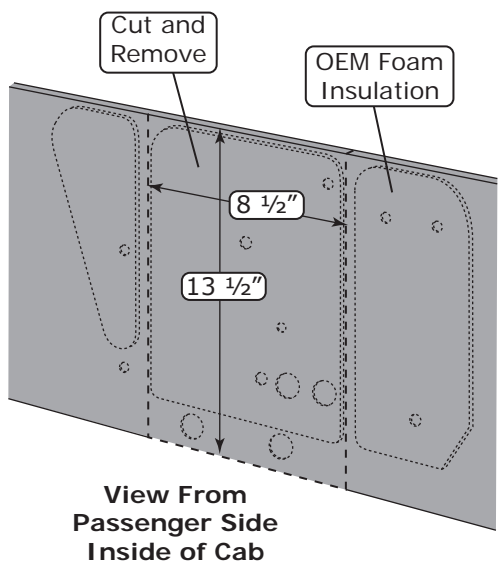
## Firewall Modification

1. Drill (2) 1 1/4" holes and (2) 3/8" holes into the firewall (See Figure 1, below).
2. Enlarge an OEM hole in the firewall to 5/8" as shown in Figure 1, below.
3. Cut and remove the OEM foam insulation as shown in Figure 2, below.
4. Install (4) large grommets as shown in Figure 2, below.

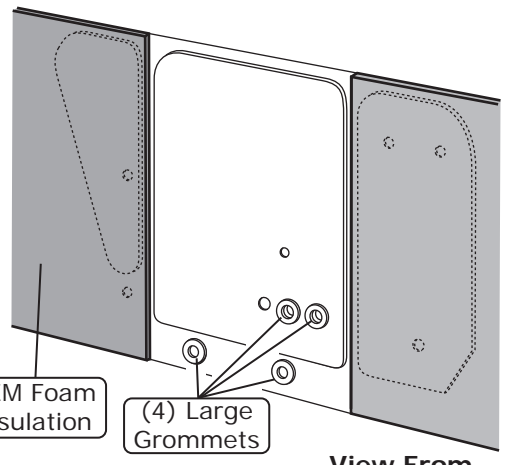


**Figure 1**

OEM holes  
(enlarge to 1 1/4" if necessary)



**View From Passenger Side Inside of Cab**



**View From Passenger Side Inside of Cab**

**Figure 2**



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## 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. Before installing the evaporator assembly under the dashboard, the glove box door hinge needs to be reinstalled (if removed). Once the evaporator assembly is installed, there will be insufficient clearance to reinstall the glove box door hinge.

1. Position the evaporator module at the passenger-side foot well.
2. Route the #6 and #10 A/C hoses through the firewall (See Figure 1, Page 14).
3. Attach the #6 and #10 A/C hoses to the evaporator.
4. Lift the evaporator unit up under the dashboard. Secure loosely to the firewall using (2) 1/4-20 x 1/2" serrated flange bolts (See Figure 1, below). **NOTE: To ensure proper drainage, it is very important that the evaporator is level, both left-right and fore-aft (See Photo 1, below). Check for level on the flat portions of the case around the drain (See Photo 1, below).**
5. Install the evaporator dash bracket onto the evaporator using (2) 1/4-20 x 1" serrated flange bolts as shown in Figure 1, below, then tighten.
6. Remove the OEM screws in the glove box mounting brackets. Replace with (2) 10-32 x 1" pan head screws (See Figure 1, below).
7. Secure the evaporator dash bracket to the OEM glove box mounting bracket using (2) 3/16" x 1/2" flat washers and (2) 10-32 nuts with star washers (See Figure 1, below).

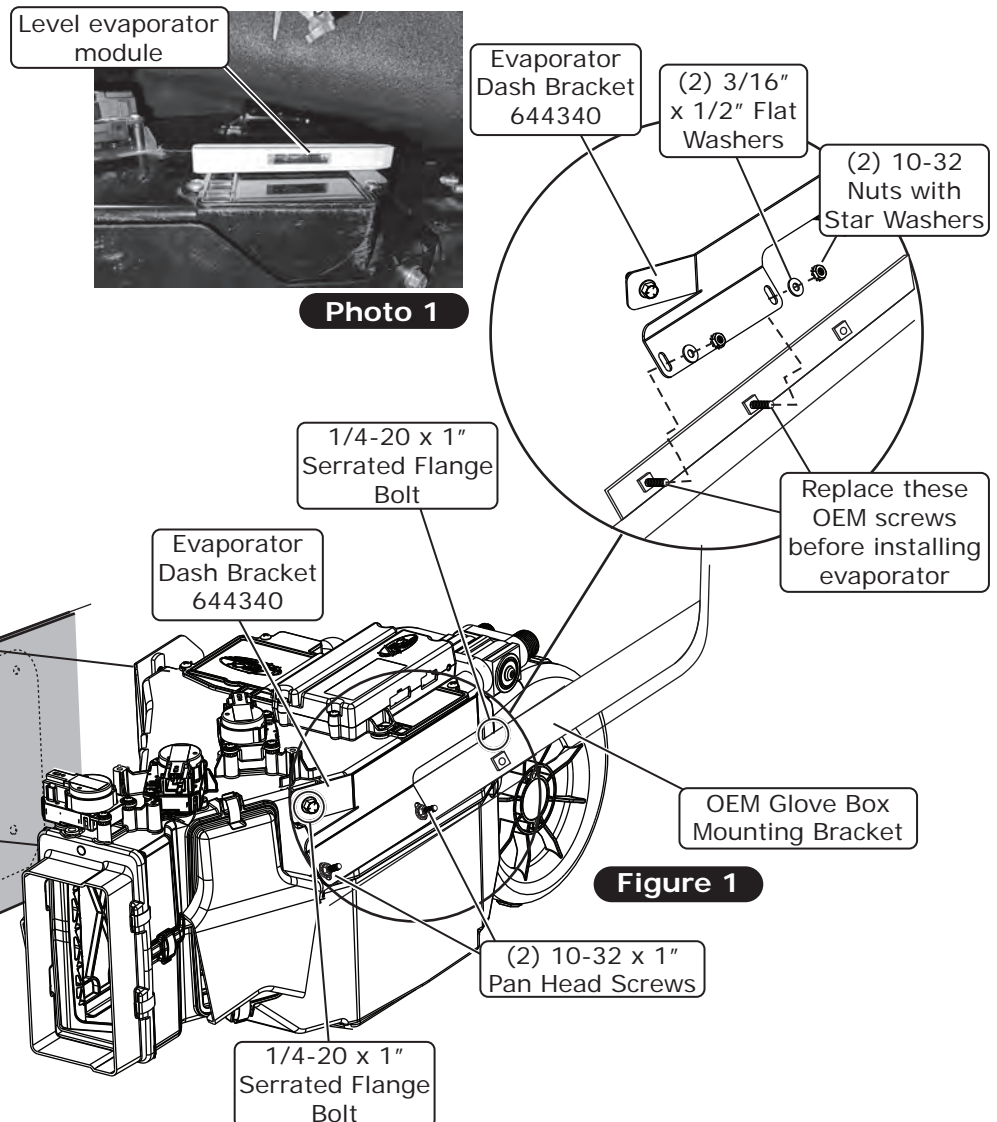


Photo 1

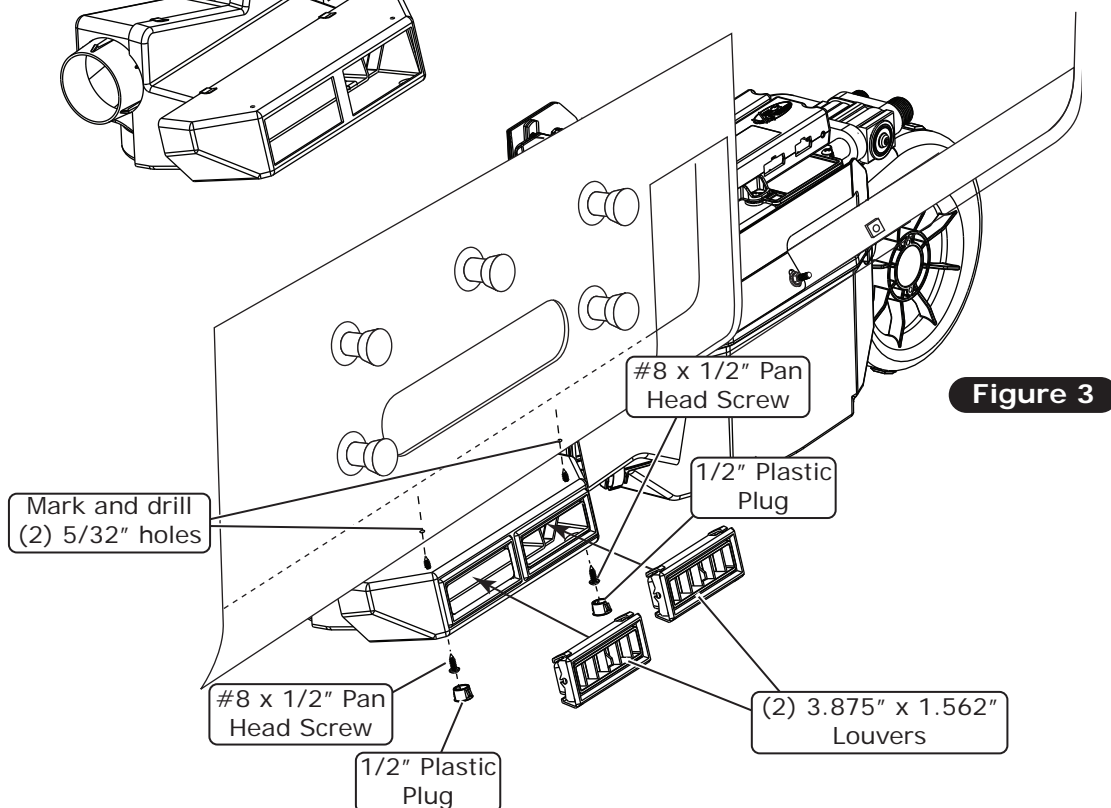
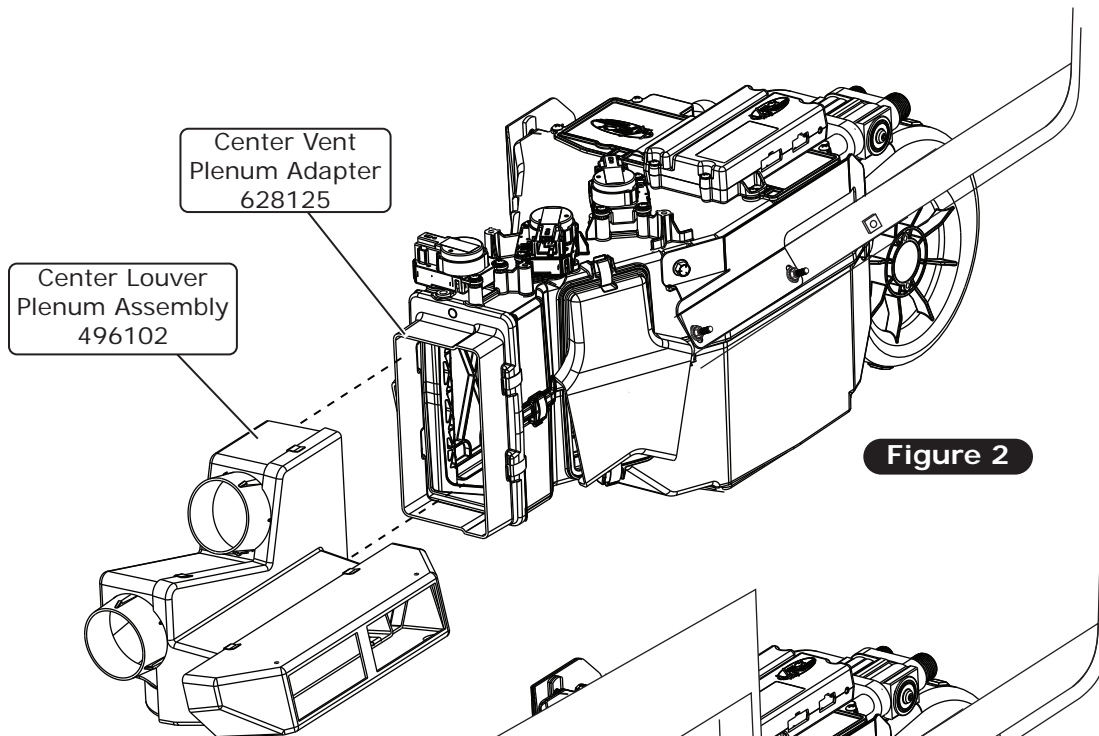
Figure 1



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## Evaporator Installation (Cont.)

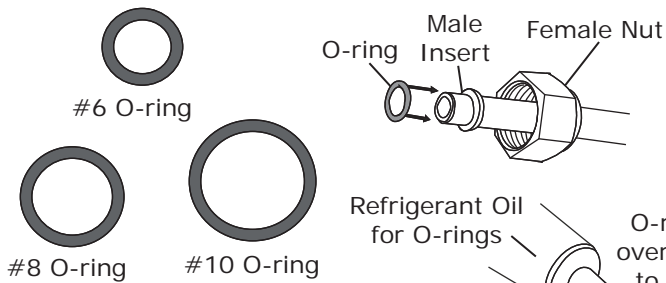
8. Install the center louver plenum assembly into the center vent plenum adapter (See Figure 2, below). Adjust until the louver openings are centered with the dash.
9. Using the center louver plenum assembly as a guide, mark and drill (2) 5/32" holes into the dash bottom (See Figure 3, below).
10. Secure the center louver plenum assembly to the dash using (2) #8 x 1/2" pan head screws, and install (2) 1/2" plastic plugs into the holes as shown in Figure 3, below.
11. Install the (2) 3.875" x 1.562" louvers into the center louver plenum as shown in Figure 3, below.
12. Verify that the evaporator module is level and square to the dash; then tighten all mounting bolts.  
**NOTE: Tighten the bolt on the firewall first. Then tighten the front mounting bracket. Wrap the #10 fitting connections with press tape.**





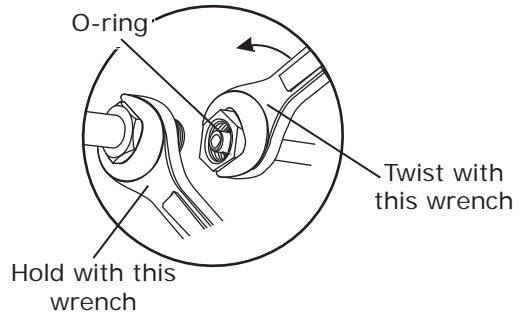
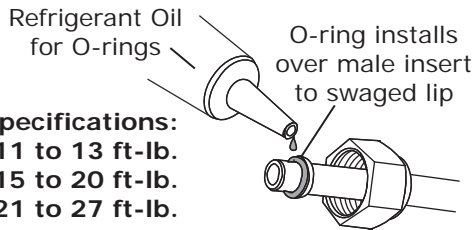
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## Lubricating O-rings



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

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



## 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

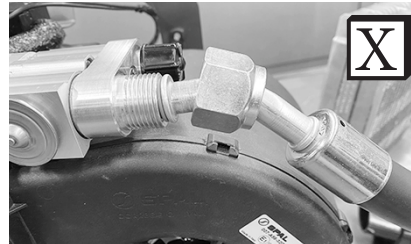


Photo 2

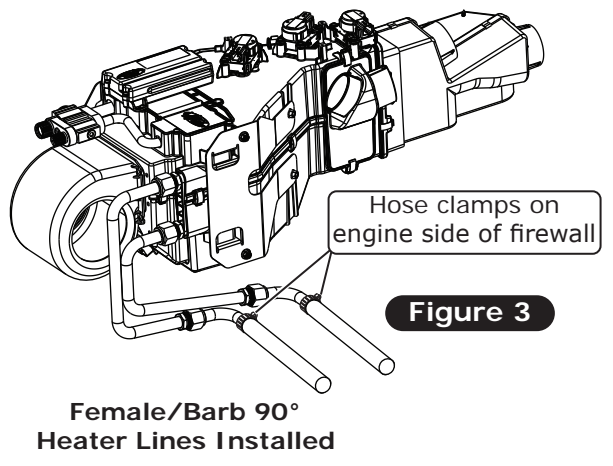
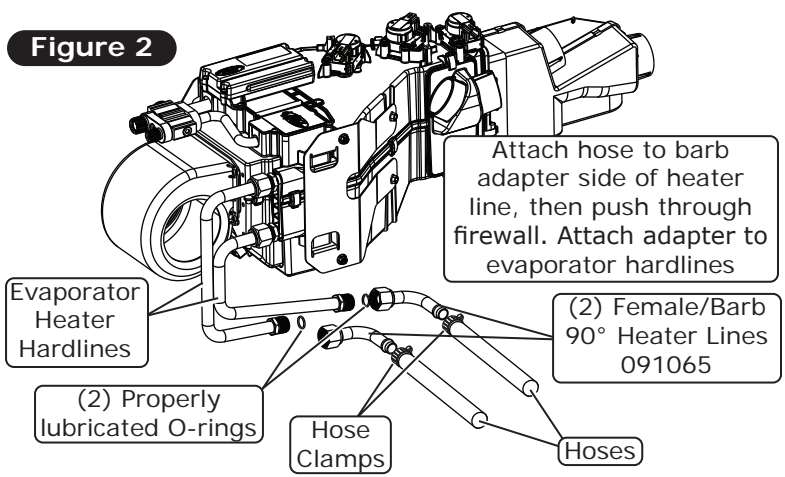
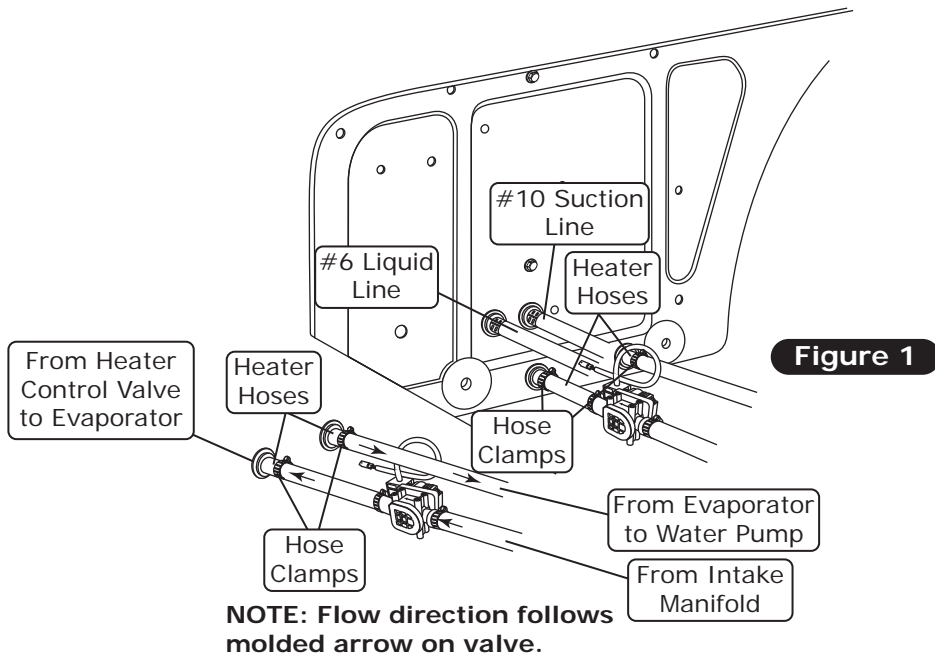
**NOTE:** Photos shown are for reference only. Fittings may vary depending on kit received.



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# Heater Hose & Heater Control Valve Installation

1. Cut a section of heater hose measured from the water pump heater hose port to and past the firewall right-side heater hose opening, approximately 6" into the vehicle. Route a short portion of the hose in through the right-side heater hose opening. From with the vehicle attach one of the female/barb 90deg heater lines to the hose. Push the barb adapter side with the hose through the firewall and using a properly lubricated O-ring, attach the adapter to the evaporator heater hardline as shown in Figures 2 and 3, below. Secure the hose to the adapter with a hose clamp on the engine side of the firewall. Route the other end of the hose to the water pump heater hose port and secure using a hose clamp. **NOTE: A small amount of silicone spray will ease heater hose installation.**
2. Cut an 8" long section of heater hose. Attach the heater control valve to one end of the hose and secure it with a hose clamp. From the engine side, route the other end of the hose through the left-side heater hose opening. From the inside of the vehicle, attach the other female/barb 90deg heater line to the hose. Push the barb adapter side with the hose through the firewall and using a properly lubricated O-ring, attach the adapter to the evaporator heater hardline as shown in Figures 2 and 3, below. Secure the hose to the adapter with a hose clamp on the engine side of the firewall. Cut another section of heater hose measured from the intake manifold heater hose port to the heater control valve. Install the hose and secure it with heater hose clamps. **NOTE: Install heater control valve in line with intake manifold (pressure side) heater hose, and secure using hose clamps and shown. Also note proper flow directions.**





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# A/C and Heater Hose Routing (1955-57 Models Only)

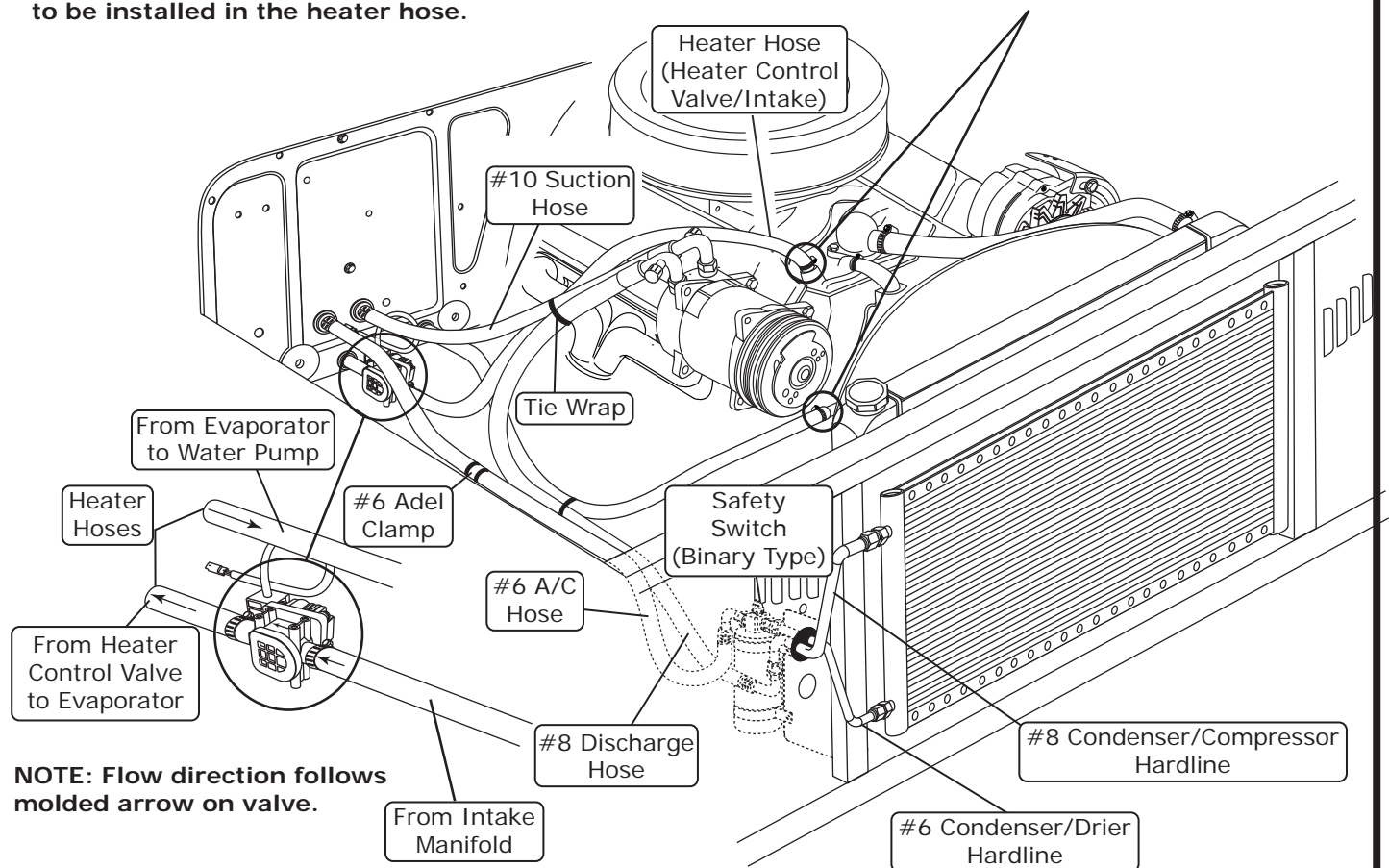
### Standard Hose Kit:

1. Locate the #8 compressor A/C hose. Lubricate (2) #8 O-rings (See Lubricating O-rings, Page 13) and connect the 135° female fitting with service port to the #8 discharge port on the compressor. Then route the 90° female fitting to the #8 condenser hardline coming through the core support (See Figure 1, below). Tighten each fitting connection as shown in Lubricating O-rings, Page 13.
2. Locate the #10 compressor A/C hose. Lubricate (2) #10 O-rings (See Lubricating O-rings, Page 13) and connect the 135° female fitting with service port to the #10 suction port on the compressor. Then route the 90° female fitting to the #10 evaporator hardline (See Heater Hose & Heater Control Valve Installation, Page 14, and Figure 1, below). Tighten each fitting connection as shown in Lubricating O-rings, Page 13.
3. Locate the #6 evaporator/drier hose. Lubricate (2) #6 O-rings (See Lubricating O-rings, Page 13) and connect the 90° female fitting to the drier. Then route the other 90° female fitting to the #6 evaporator hardline (See Heater Hose & Heater Control Valve Installation, Page 14, and Figure 1, below). Tighten each fitting connection as shown in Lubricating O-rings, Page 13.

### Modified Hose Kit:

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

**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) will need to be installed in the heater hose.**



**NOTE: Flow direction follows molded arrow on valve.**

**Figure 1**



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## A/C and Heater Hose Routing (1958-59 Models Only)

### Standard Hose Kit:

1. Locate the #8 compressor A/C hose. Lubricate (2) #8 O-rings (See Lubricating O-rings, Page 13) and connect the 135° female fitting to the #8 discharge port on the compressor. Then route the straight female fitting with service port to the #8 condenser hardline coming through the core support (See Figure 1, below). Tighten each fitting connection as shown in Lubricating O-rings, Page 13.
2. Locate the #10 compressor A/C hose. Lubricate (2) #10 O-rings (See Lubricating O-rings, Page 13) and connect the 135° female fitting with service port to the #10 suction port on the compressor. Then route the 90° female fitting to the #10 evaporator hardline (See Heater Hose & Heater Control Valve Installation, Page 14, and Figure 1, below). Tighten each fitting connection as shown in Lubricating O-rings, Page 13.
3. Locate the #6 evaporator/drier hose. Lubricate (2) #6 O-rings (See Lubricating O-rings, Page 13) and connect the straight female fitting with the binary switch service port to the #6 drier hardline coming through the core support. Then route the 90° female fitting to the #6 evaporator hardline (See Heater Hose & Heater Control Valve Installation, Page 14, and Figure 1, below). Tighten each fitting connection as shown in Lubricating O-rings, Page 13.

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

**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) will need to be installed in the heater hose.**

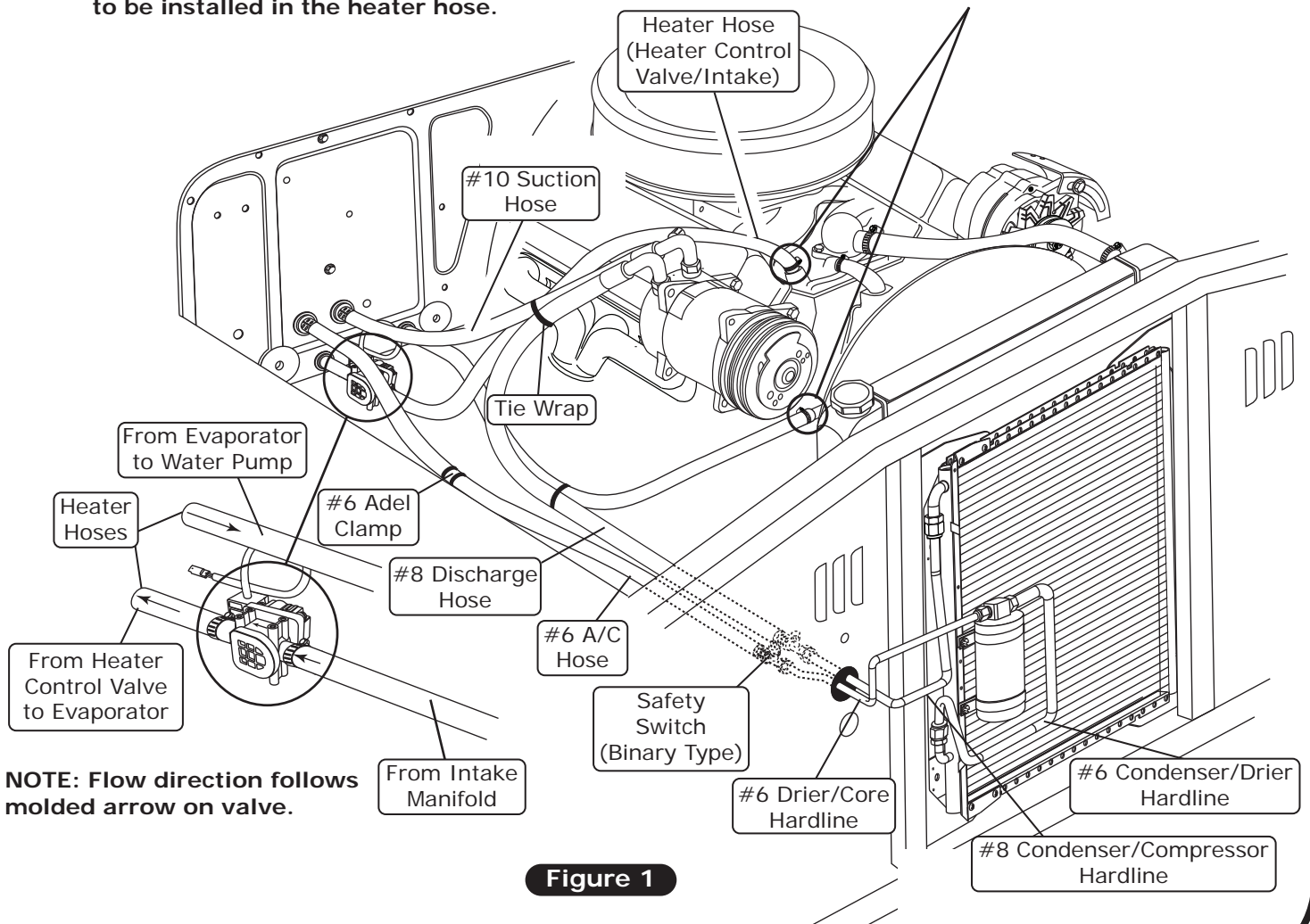


Figure 1

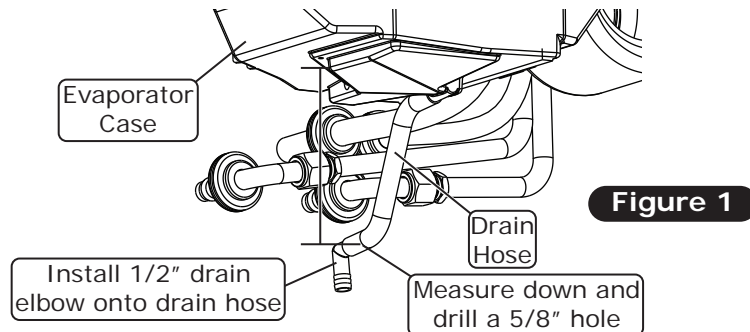




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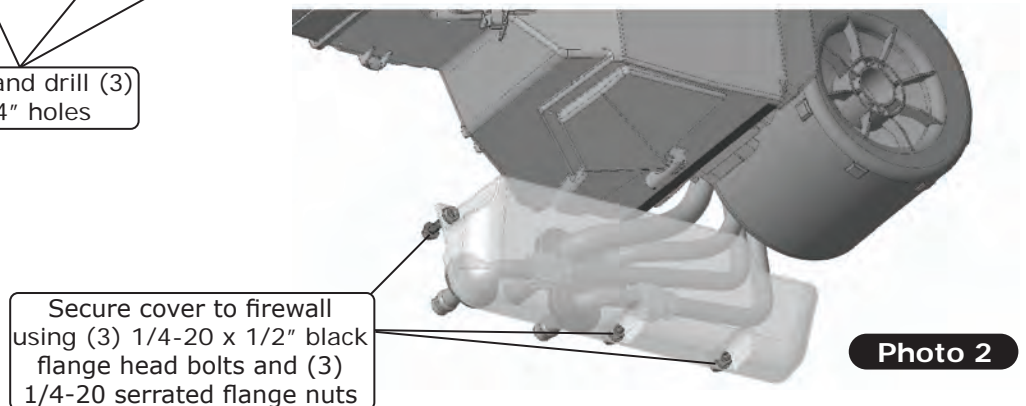
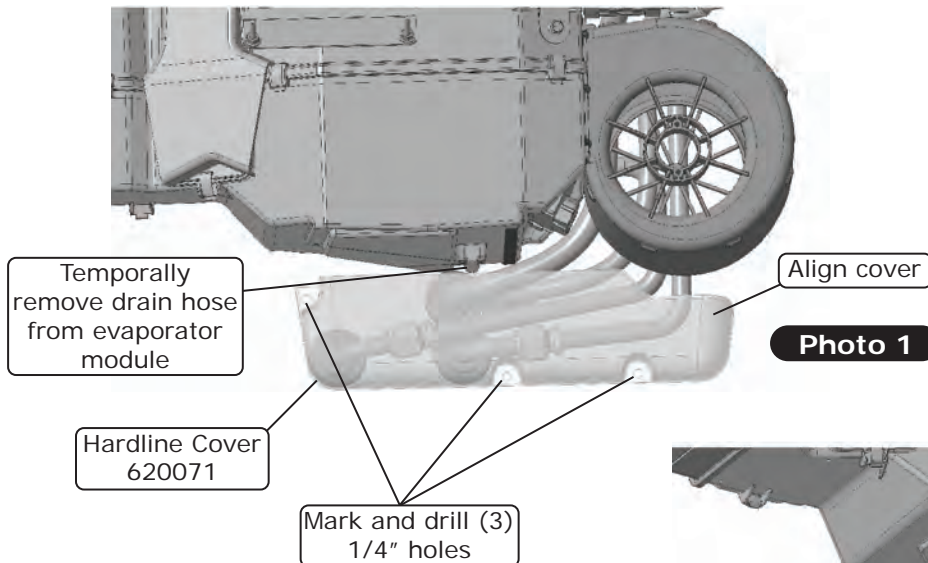
## Drain Hose Installation

1. Locate the evaporator drain on the bottom of the evaporator case.
2. In line with the drain, lightly make a mark on the firewall. Measure down and drill a 5/8" hole into the firewall (See Figure 1, below).
3. Install the drain hose onto the bottom of the evaporator module and route it through the firewall (See Figure 1, below). Install a 1/2" 90° drain elbow onto the drain hose (See Figure 1, below).



## Hardline Cover Installation

1. Before starting with the hardline cover installation, temporarily remove the drain hose from the evaporator module drain tube (See Photo 1, below).
2. Align the cover as shown in Photo 1, below, then mark and drill (3) 1/4" holes (See Photo 1, below).
3. Secure the cover to the firewall using (3) 1/4-20 x 1/2" black flange head bolts (passenger compartment) and (3) 1/4-20 serrated flange nuts (engine compartment) (See Photo 2, below).





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## Hardline Cover Installation (Cont.)

4. Reinstall the drain hose onto the evaporator module drain tube (See Photo 3, below).

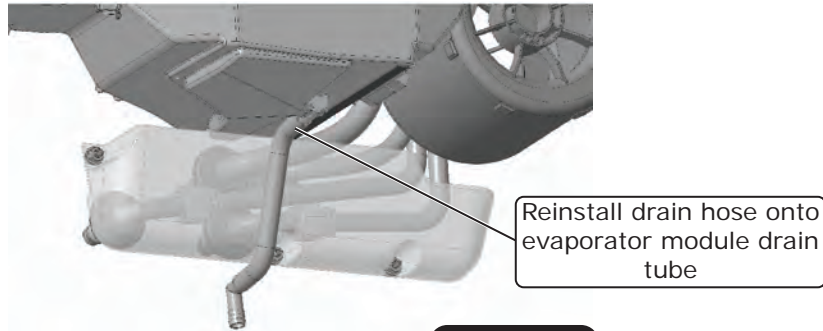


Photo 3

## Driver-Side Under Dash Louver Installation

1. Install the driver-side louver under the dash, then secure it using an OEM screw as shown in Figure 1, below.
2. Install a 1/2" plastic plug into the driver-side louver as shown in Figure 1, below.

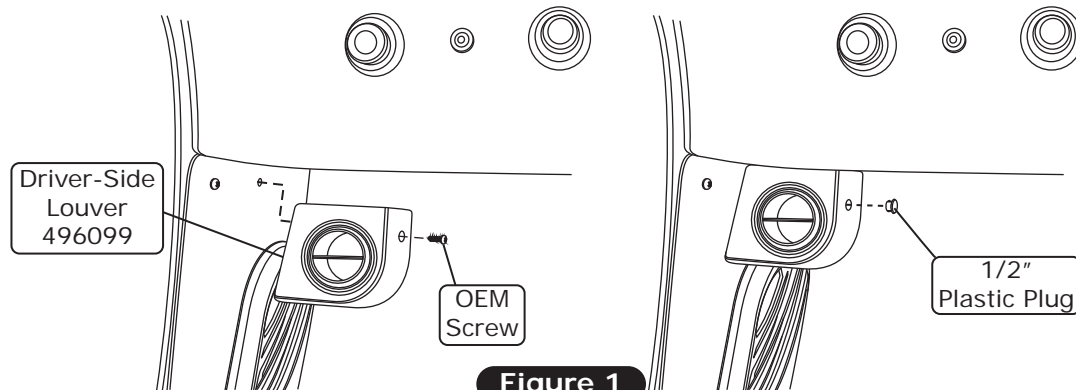


Figure 1

## Passenger-Side Under Dash Louver Installation

1. Install the passenger-side louver under the dash, then secure it using an OEM screw as shown in Figure 1, below.
2. Install a 1/2" plastic plug into the passenger-side louver as shown in Figure 1, below.

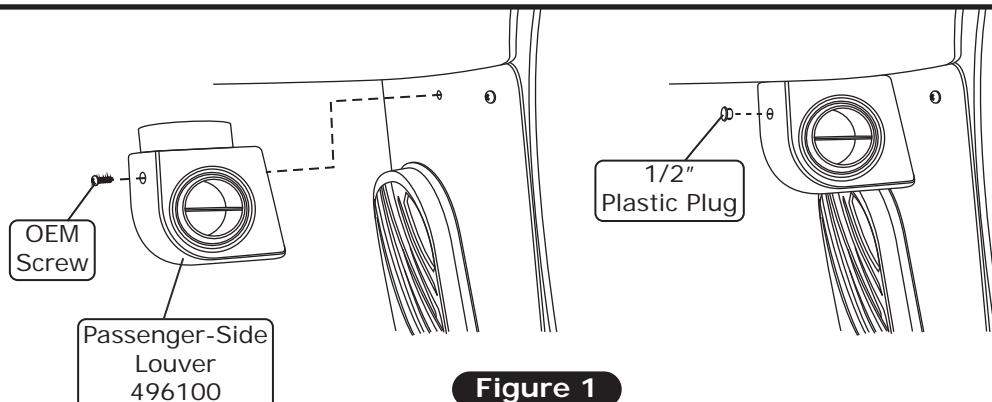


Figure 1



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# Final Steps: Installation Check

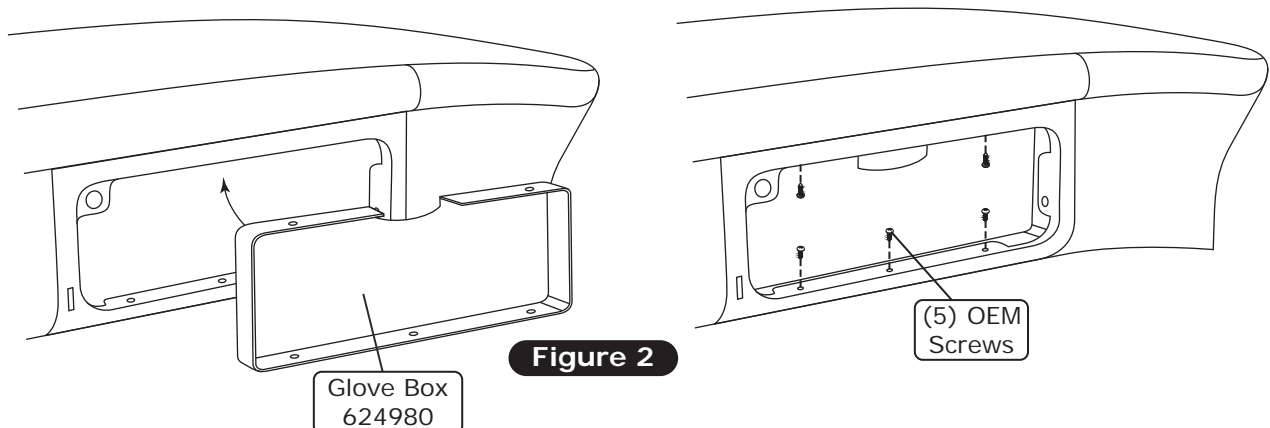
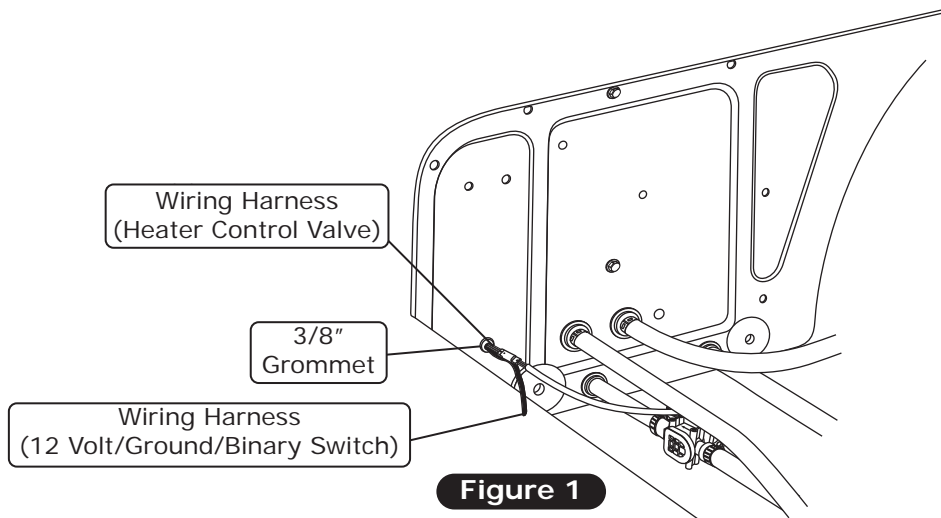
Installation Check	
ITEM TO CHECK	Procedure
<input type="checkbox"/>	<p>ECU</p> <p>If no blinking is observed after 1 minute of turning the ignition on, go to the next check.</p> <p>If repetitive blinking is observed, go to the <b>Advanced Diagnostics</b> Section to diagnose.</p>
<input type="checkbox"/>	<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>



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## Final Steps: Completing the Install

1. Install the duct hoses as shown in Figure 1, Page 21.
2. Route the A/C wires (12 volt/ground/binary switch/heater valve) through the 3/8" grommet as shown in Figure 1, below.
3. Install the control panel assembly. Refer to the control panel instructions.
4. Plug the wiring harnesses into the ECU module on the evaporator module as shown in Figure 1, Page 21 (Wire according to wiring diagrams on Pages 23 and 24).
5. Install the new glove box using (5) OEM screws (See Figure 2, below).
6. Install the glove box door. **NOTE: The glove box door opening and capacity will be very limited with the Gen 5 system.**
7. Reinstall all previously removed items.
8. 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.
9. Double check all fittings, brackets and belts for tightness.
10. Vintage Air recommends that all A/C systems be serviced by a certified automotive air conditioning technician.
11. Evacuate the system for a minimum of 45 minutes prior to charging, and perform a leak check prior to servicing.
12. Charge the system to the capacities stated on Page 4 of this instruction manual.
13. See Operation of Controls procedures on Page 25 or 26.





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# Duct Hose Routing

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

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

Stretch, measure, mark and cut hose to size



Photo 1

## End View of Glove Box Area

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

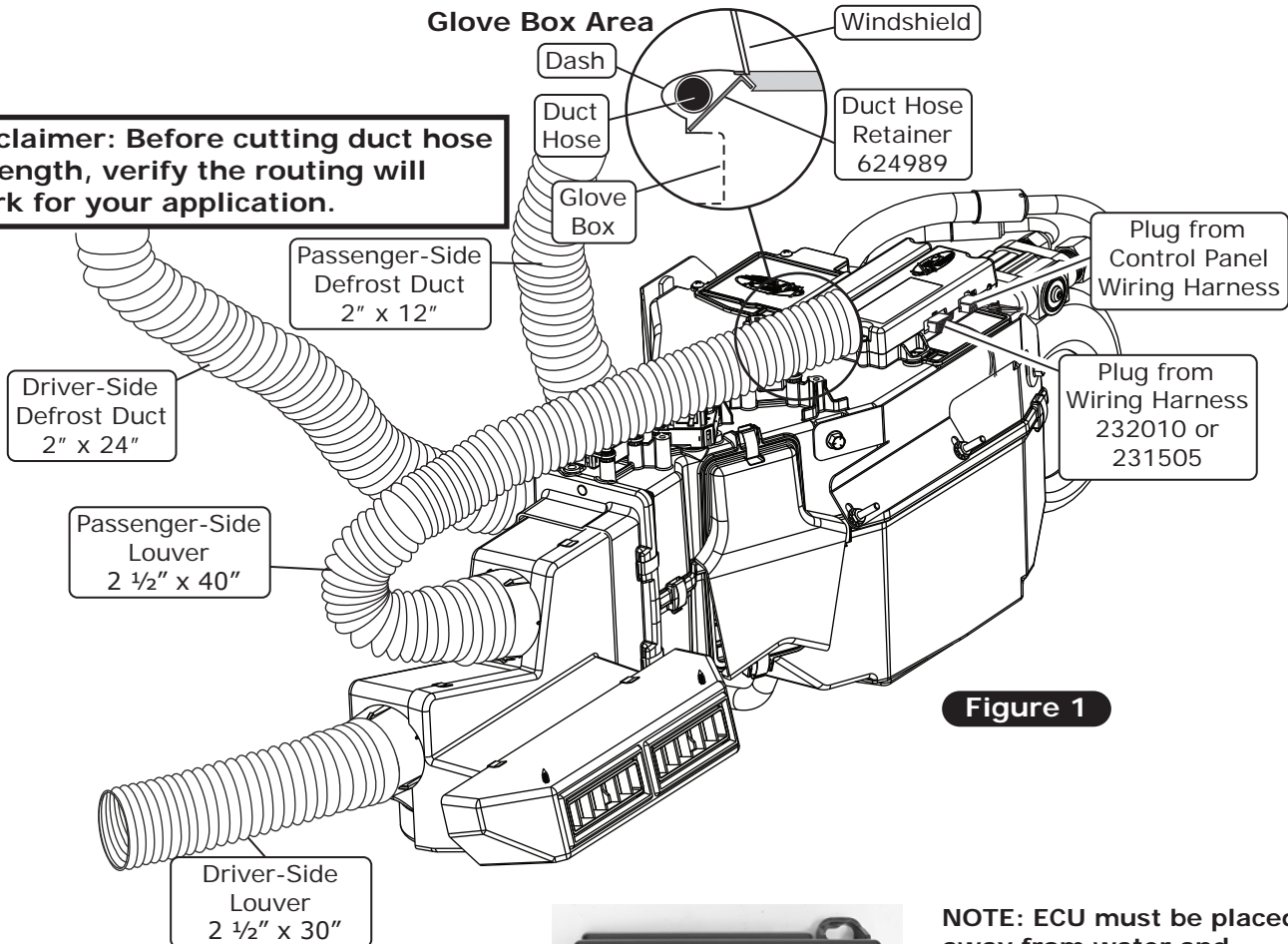


Figure 1



**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.

Position connectors towards bottom



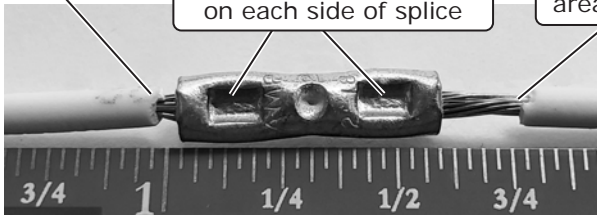
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# Quality Crimp Guideline

Acceptable strip length  
(Some copper visible)

Crimped area is centered  
on each side of splice

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



**Photo 1**

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



**Photo 2**

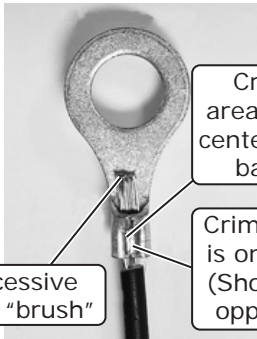
## Good Ring Terminal Crimp    Bad Ring Terminal Crimp



Crimped  
area is  
opposite  
of seam

**Photo 3**

Crimp  
area is  
centered  
on barrel



Crimp  
area is not  
centered on  
barrel

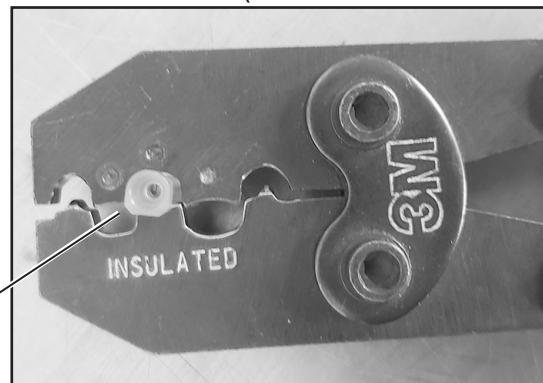
Excessive  
wire "brush"

Crimp area  
is on seam  
(Should be  
opposite)

**Photo 4**



**Photo 5**



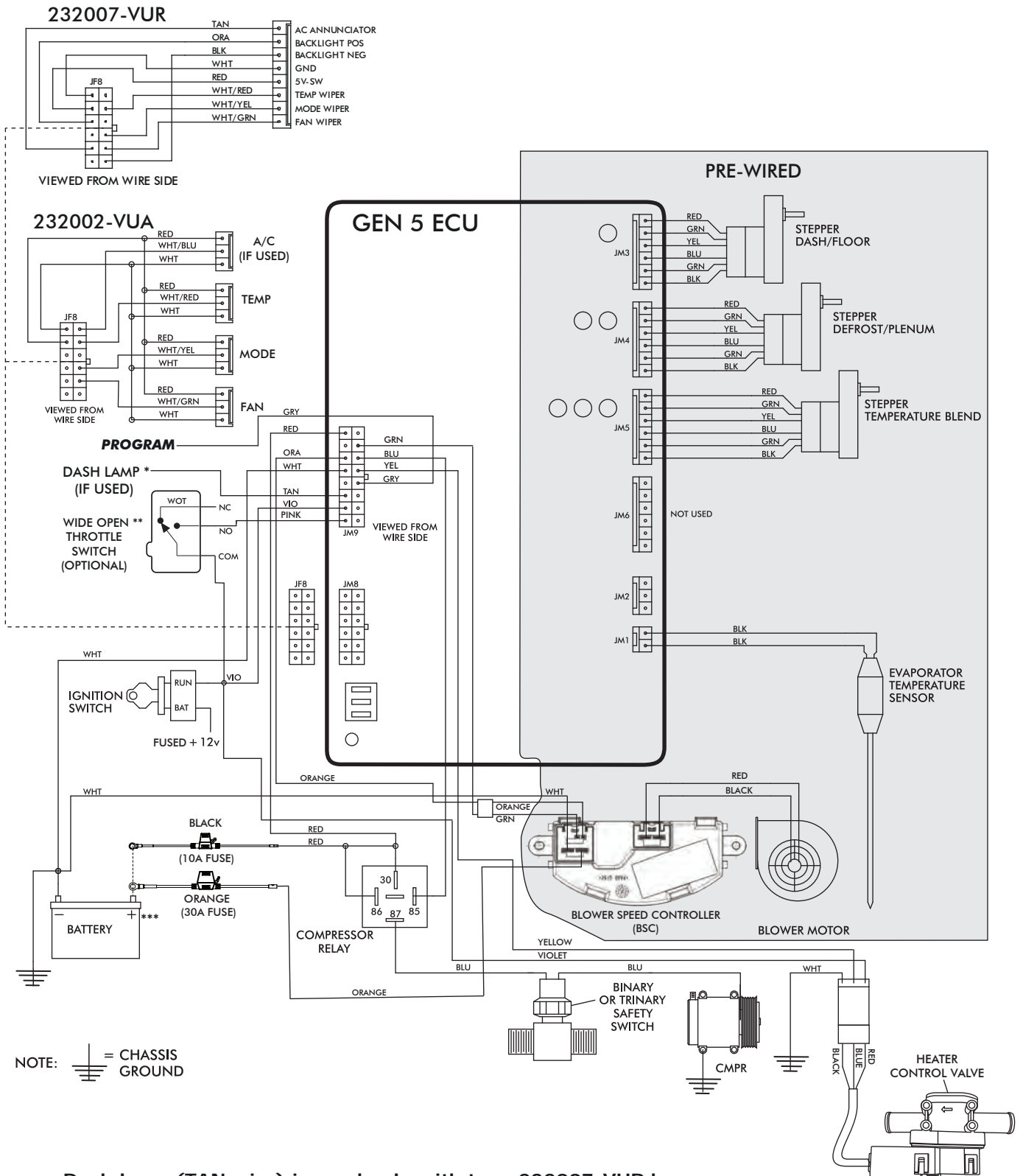
**Photo 5a**

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.



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# Gen 5 Wiring Diagram



NOTE: = CHASSIS GROUND

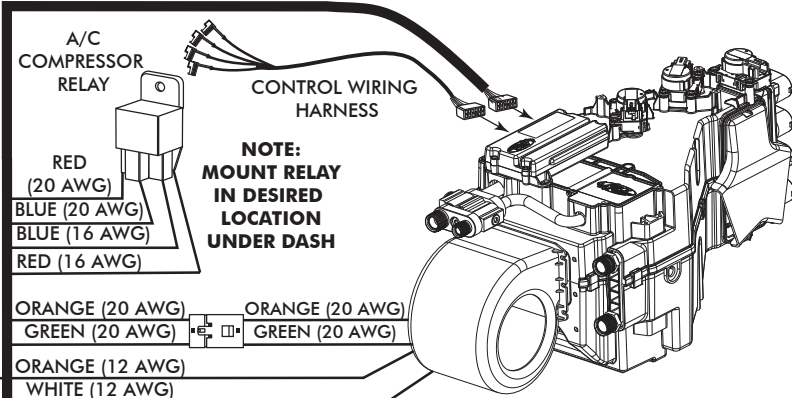
- \* Dash lamp (TAN wire) is used only with type 232007-VUR harness.
- \*\* Wide open throttle switch contacts close only at full throttle, which disables A/C compressor.
- \*\*\* Install fuse assemblies at or as near to the battery as possible.



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# Gen 5 Wiring Instructions

WIRING HARNESS (231505) ↓



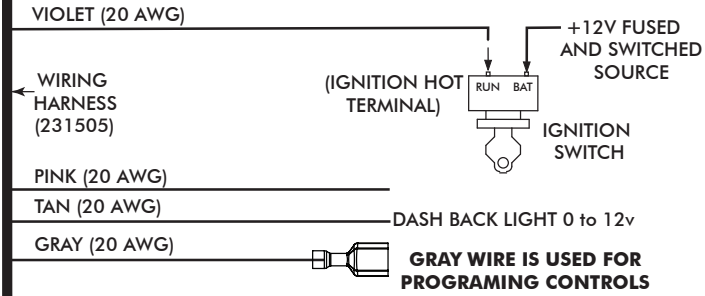
**NOTE:**  
MOUNT RELAY  
IN DESIRED  
LOCATION  
UNDER DASH

**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.

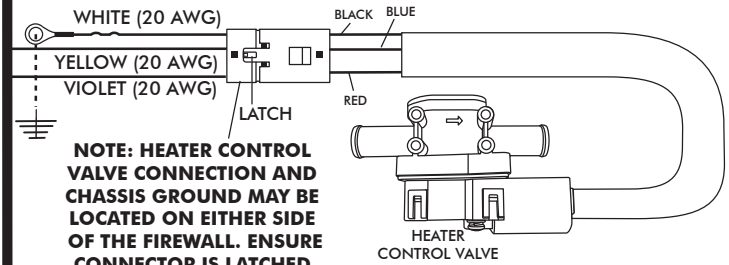
**Dash Light (Optional):**  
If using a Vintage Air control panel with back light, connect the 20 AWG tan wire to the vehicle's dash back light 0-12V using provided butt splice (PN 226004).

WIRING HARNESS (232020) →



FIREWALL FIREWALL

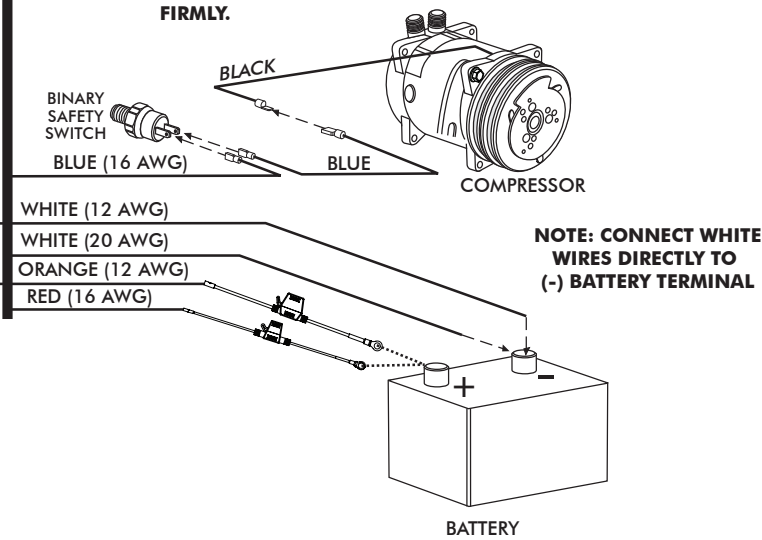
WIRING HARNESS (232020) →



**NOTE: HEATER CONTROL VALVE CONNECTION AND CHASSIS GROUND MAY BE LOCATED ON EITHER SIDE OF THE FIREWALL. ENSURE CONNECTOR IS LATCHED FIRMLY.**

**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.



**NOTE: CONNECT WHITE WIRES DIRECTLY TO (-) BATTERY TERMINAL**

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





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## Operation of Controls (Standard)

On 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 Kit calibration procedure.**

### Blower Speed

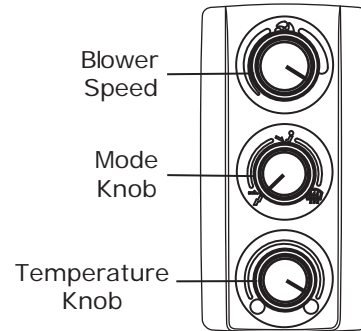
This lever/knob controls blower speed, from OFF to HI.

### 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

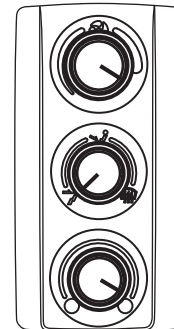
Adjust to desired speed.

### 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

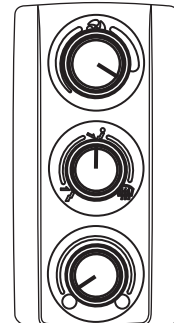
Adjust to desired speed.

### 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

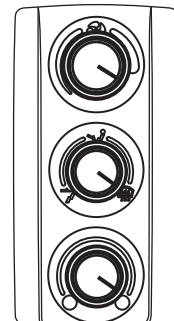
Adjust to desired speed.

### 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).





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## Operation of Controls (Deluxe)

On 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 Kit calibration procedure.**

### **Blower Speed**

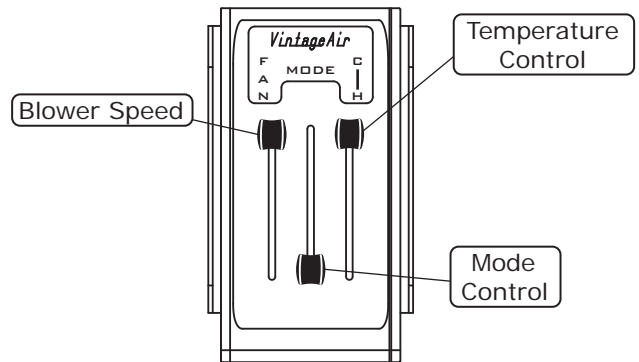
This lever/knob controls blower speed, from OFF to HI.

### **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**

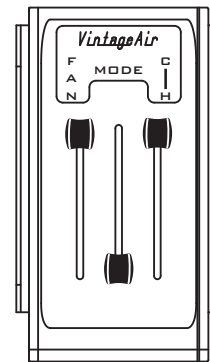
Adjust to desired speed.

#### **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**

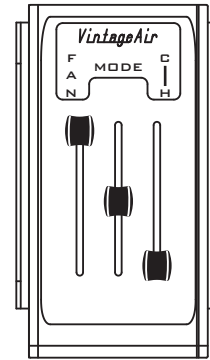
Adjust to desired speed.

#### **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**

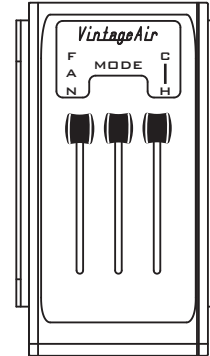
Adjust to desired speed.

#### **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).





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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.	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 for disconnected or faulty thermistor.	Check continuity to ground on white control head wire. Check for 5V on red control head wire. Check 2-pin connector at ECU housing.	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. Disconnected or faulty thermistor will cause compressor to be disabled.
	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.
3. Compressor will not turn off (All other functions work).	System is charged.	Check for faulty A/C relay.	Replace relay.	



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# Troubleshooting Guide (Cont.)

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

## Advanced Diagnostics and Troubleshooting Guide

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

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

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



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

[https://www.vintageair.com/instructions\\_pdf/905000.pdf](https://www.vintageair.com/instructions_pdf/905000.pdf)





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## Packing List: Evaporator Kit (751569)

No.	Qty.	Part No.	Description
1.	1	765125	Gen 5 Magnum Module with 444 ECU
2.	1	791569	Accessory Kit

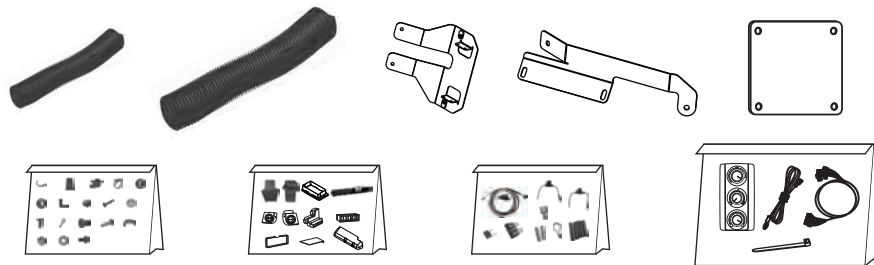
Checked By: \_\_\_\_\_  
Packed By: \_\_\_\_\_  
Date: \_\_\_\_\_

1

Gen 5 Magnum Module  
with 444 ECU  
765125



2



Accessory Kit  
791569

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

## Packing List: Evaporator Kit (751570)

No.	Qty.	Part No.	Description
1.	1	765125	Gen 5 Magnum Module with 444 ECU
2.	1	791570	Accessory Kit

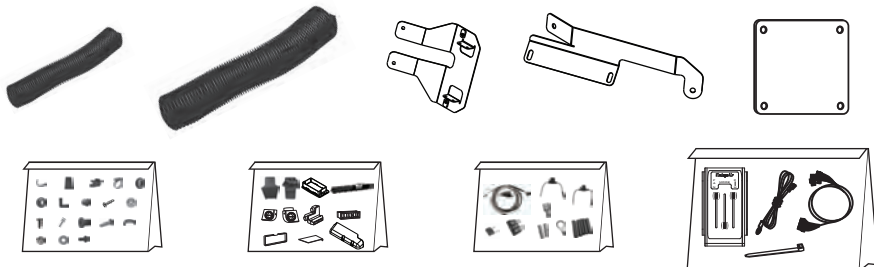
Checked By: \_\_\_\_\_  
Packed By: \_\_\_\_\_  
Date: \_\_\_\_\_

1

Gen 5 Magnum Module  
with 444 ECU  
765125



2



Accessory Kit  
791570  
Deluxe

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