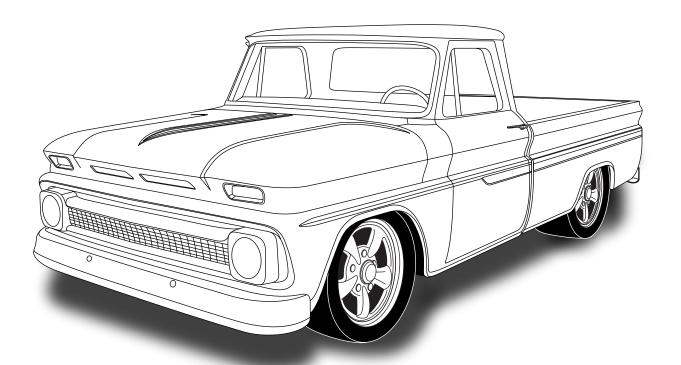


### 1960-63 Chevrolet Pickup

without Factory Air **Evaporator Kit** (751163)



18865 Goll St. San Antonio, TX 78266

Phone: 800-862-6658 Sales: sales@vintageair.com Tech Support: tech@vintageair.com

www.vintageair.com



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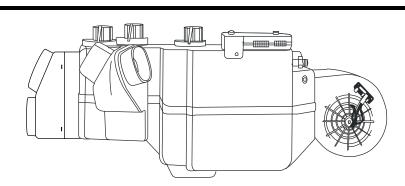
### Packing List: Evaporator Kit (751163)

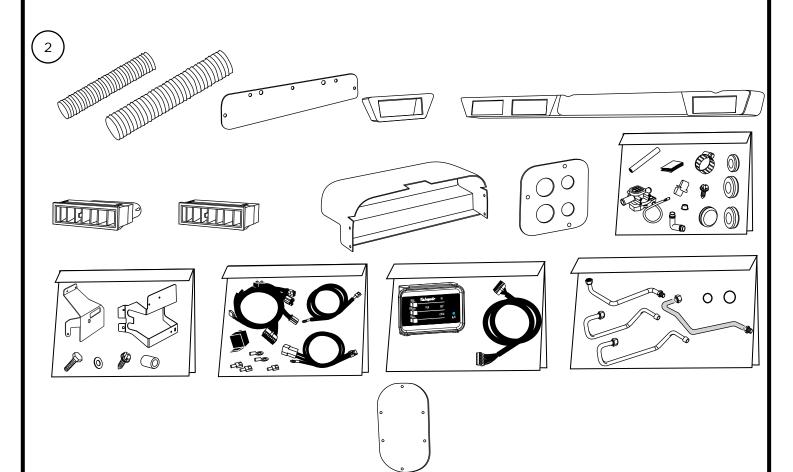
No.	Qty.	Part No.	Description
1.	1	744004-VUE	Gen IV 4-Vent Evaporator Sub Case
2	1	791163	Accessory Kit

\*\* 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.



Gen IV 4-Vent Evaporator Sub Case 744004-VUE





Accessory Kit 791163 NOTE: Images may not depict actual parts and quantities. Refer to packing list for actual parts and quantities.



### Important Notice—Please Read

For Maximum System Performance, Vintage Air Recommends the Following:

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

### **Refrigerant Capacities:**

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

Other Systems: Consult manufacturer's guidelines.

### **Lubricant Capacities:**

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

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

### Safety Switches

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

### Service Info:

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

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

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

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

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

### Heater Hose (Not Included With This Kit):

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



### **Important Wiring Notice—Please Read**

Some Vehicles May Have Had Some or All of Their Radio Interference Capacitors Removed. There Should Be a Capacitor Found At Each of the Following Locations:

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

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

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

If these precautions are not observed, it is possible for voltage spikes to be present on the battery leads. These spikes come from ignition systems, 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, 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, the compressor relay, and/or cause a
  malfunction.
- When installing ground leads on Gen IV systems, the blower control ground and ECU ground must be connected directly to the negative battery post.
- For proper system operation, the heater control valve must be connected to the ECU.

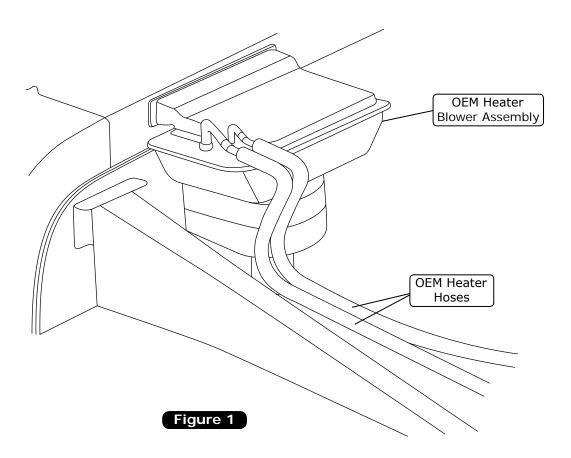


### Engine Compartment Disassembly

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

### Perform the Following:

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



### Condenser Assembly and Installation

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

### Compressor and Brackets

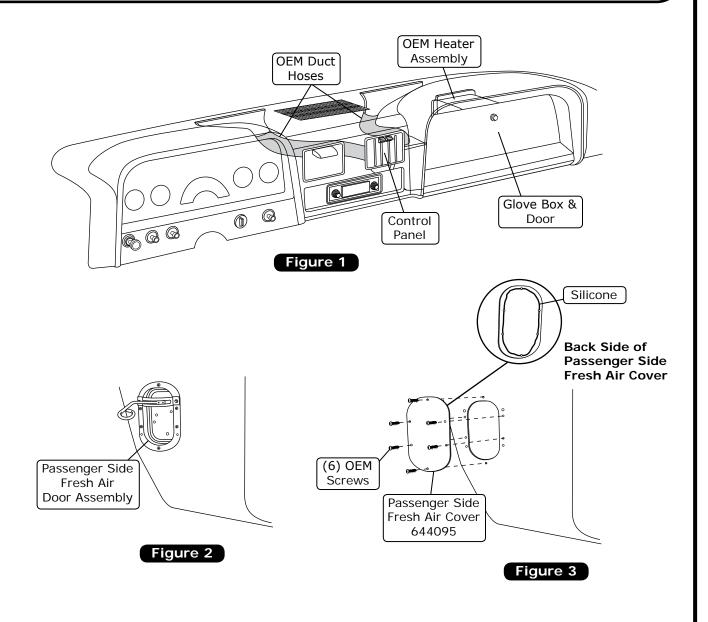
1. Refer to separate instructions included with the bracket kit to install the compressor bracket.



### Passenger Compartment Disassembly

### Perform the Following:

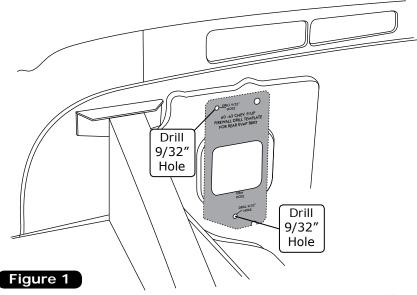
- 1. Remove the glove box door (retain) (See Figure 1, below).
- 2. Remove the glove box (discard).
- 3. Disconnect all wires and cables from the OEM control panel.
- 4. Remove the control panel (discard) (See Figure 1, below).
- **5**. Remove the OEM duct hoses from defrost ducts (See Figure 1, below).
- 6. Remove the OEM heater assembly.
- 7. Remove the passenger side fresh air door assemby (discard) (retain screws) (See Figure 2, below).
- 8. Install the passenger side fresh air cover using the OEM screws as shown in Figure 3, below.





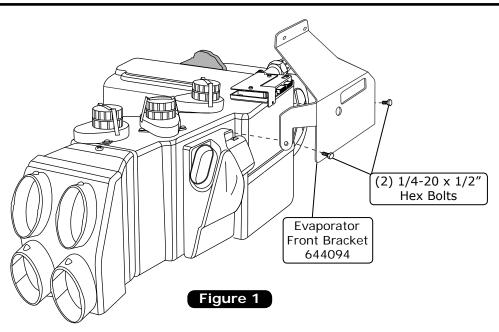
### Firewall Modification

1. Using the template provided on page 23, align the template on the engine side of the firewall with the OEM holes. Mark and drill a 9/32" hole in the firewall (See Figure 1, below).



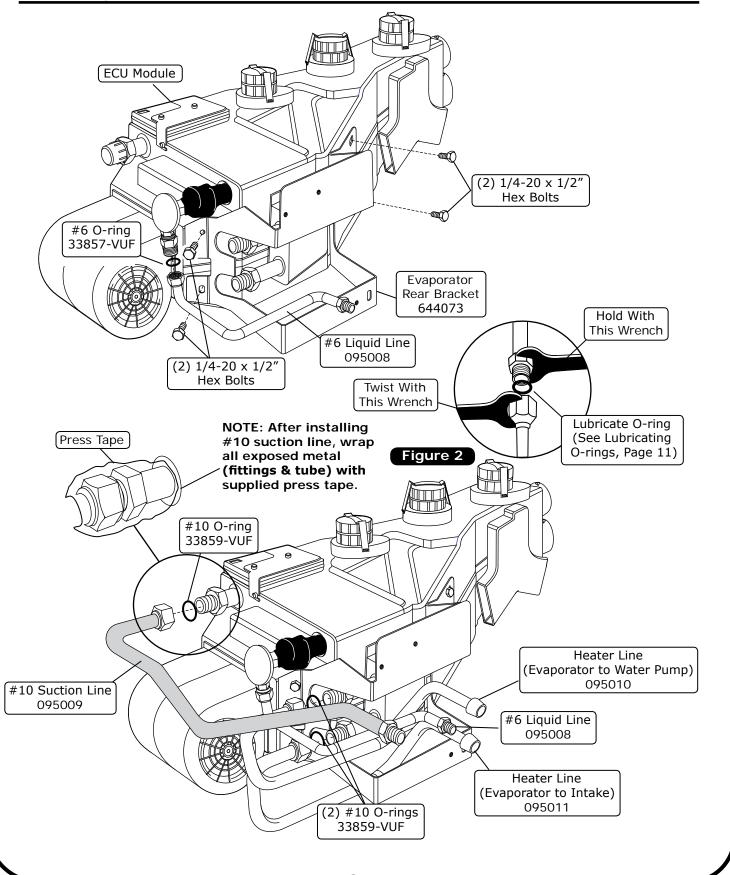
### Evaporator Bracket & Hardline Installation

- 1. On a workbench, install the evaporator rear bracket using (4) 1/4-20 x 1/2" hex bolts (See Figure 2, Page 9).
- 2. Install the hardlines with properly lubricated o-rings (See Figure 2, Page 9 and Lubricating O-rings, Page 11). NOTE: Wrap the #10 fitting connections with press tape (See Figure 2, Page 9).
- 3. Install the evaporator front bracket onto the evaporator using (2)  $1/4-20 \times 1/2''$  hex bolts (See Figure 1, below).





### Evaporator Bracket & Evaporator Hardline (Cont.)

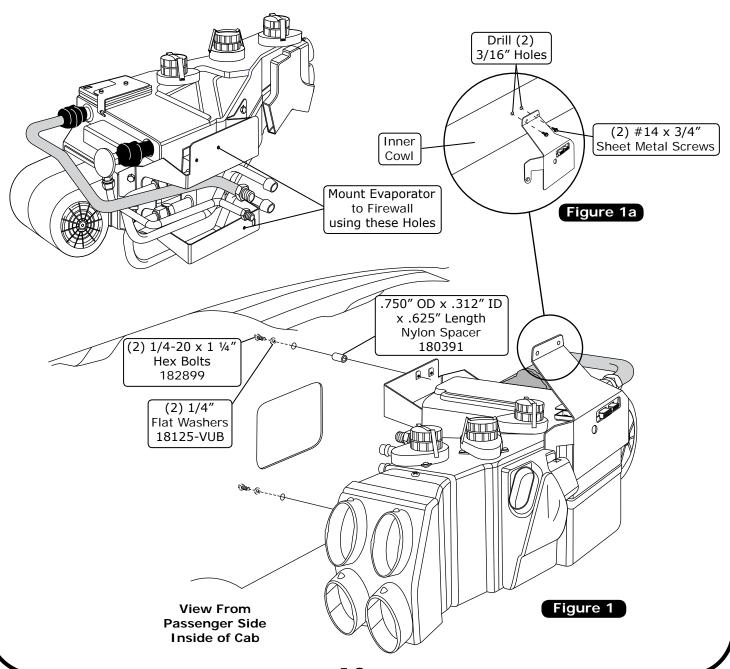




### **Evaporator Installation**

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.

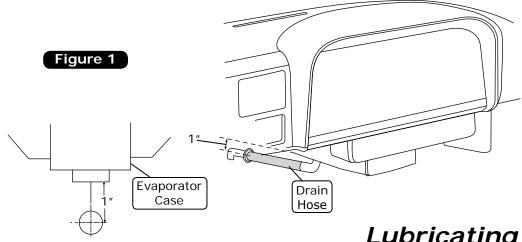
- 1. Lift the evaporator unit up under the dashboard. Secure it loosely to the firewall using (2) 1/4-20 x 1 ¼" hex bolts and 1/4" flat washers (See Figure 1, below). NOTE: To ensure proper drainage, it is very important that the evaporator unit is level, both left-right and fore-aft. Check leveling on the flat portions of the case around the drain. Block the unit up, then drill the holes for the evaporator front bracket screws.
- 2. Secure the evaporator front mounting bracket to the cowl using (2) #14 x 3/4" sheet metal screws (See Figure 1a, below).
- 3. Verify that the evaporator unit 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.**



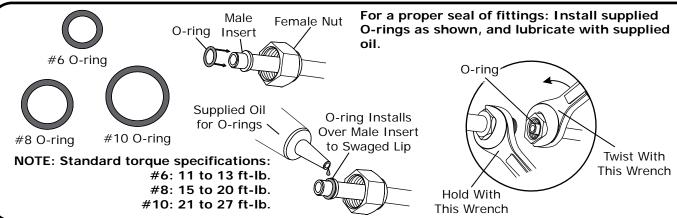


### **Drain Hose Installation**

- 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 1" down and drill a 5/8" hole through the firewall.
- 3. Install the drain hose to the bottom of the evaporator unit and route through the firewall. Install the 1/2" 90° drain elbow onto the drain hose.



Lubricating O-rings



### A/C Hose Installation

### Standard Hose Kit:

- 1. Locate the #8 compressor A/C hose. Lubricate (2) #8 O-rings (See Lubricating O-rings, above) and connect the straight fitting to the #8 discharge port on the compressor. Route the straight fitting with the service port to the #8 condenser hardline coming through the core support (See Figure 1, Page 14.) Tighten each fitting connection as shown in Lubricating O-rings, above.
- 2. Locate the #10 compressor A/C hose. Lubricate (2) #10 O-rings (See Lubricating O-rings, above) and connect the #10 45° fitting with the service port to the #10 suction port on the compressor. Route the 45° fitting to the suction line coming from the #10 evaporator (See Figure 1, Page 13, and Figure 1, Page 14). Tighten each fitting connection as shown in Lubricating O-rings, above.
- 3. Locate the #6 evaporator/drier hardline. Lubricate (2) #6 O-rings (See Lubricating O-rings, above) and connect the hardline to the #6 drier hardline coming through the core support. Attach the other end of the hardline to the #6 liquid line coming from the evaporator through the firewall (See Figure 1, Page 13, and Figure 1, Page 14). Tighten each fitting connection as shown in Lubricating O-rings, above.

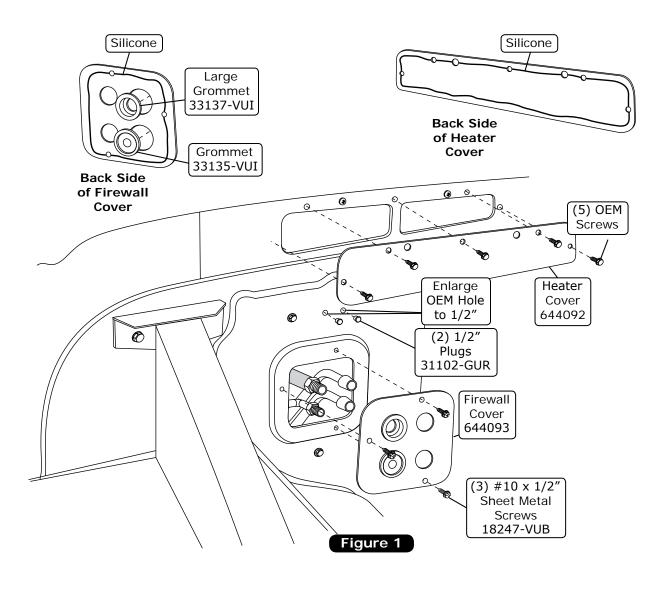
### **Modified Hose Kit:**

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



### Firewall & OEM Heater Cover Installation

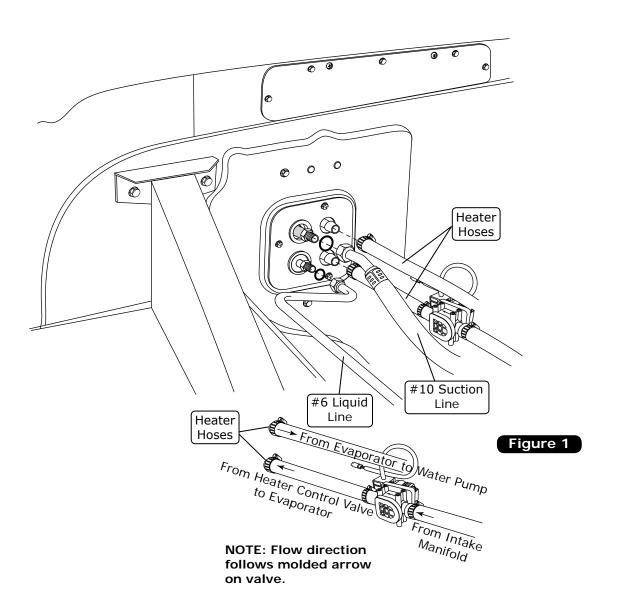
- 1. Enlarge the (2) OEM 7/16" holes on the firewall to 1/2" (See Figure 1, below).
- 2. Install (2) 1/2" plugs as shown in Figure 1, below.
- 3. Apply a 1/4" bead of silicone on the back side of the OEM heater cover as shown in Figure 1, below.
- 4. Install the OEM heater cover using (5) OEM screws as shown in Figure 1, below.
- 5. Install the grommets into the firewall cover as shown in Figure 1, below.
- 6. Apply a 1/4" bead of silicone on the back side of the firewall cover as shown in Figure 1, below.
- 7. Secure the firewall cover to the core support using (3)  $#10 \times 1/2"$  sheet metal screws as shown in Figure 1, below.





### Heater Hose & Heater Control Valve Installation

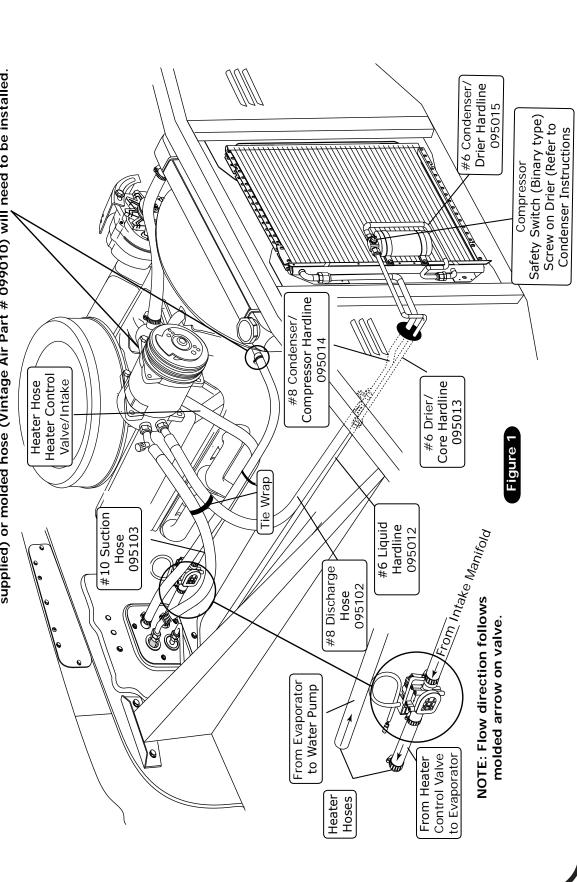
- Route the heater hose from the water pump to the heater line coming through the firewall as shown in Figure
  1, below. Secure using hose clamps. NOTE: A small amount of silicone spray will ease heater hose
  installation.
- 2. Route the heater hose from the intake to the heater line coming through the firewall as shown in Figure 1, below. NOTE: Install the heater control valve in line with the intake manifold (pressure side) heater hose. Secure using hose clamps as shown in Figure 1, below. Note proper flow direction.
- **3**. The hose should protrude through the firewall cover slightly to close the gap between the aluminum line and the firewall cover. Seal any remaining gap with silicone.



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# A/C and Heater Hose Routing

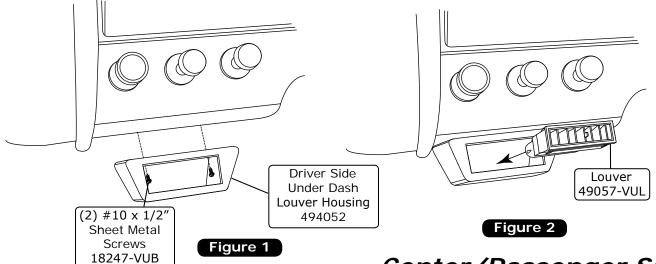
nipples, these will need to be removed and replaced with 5/8" nipples (not supplied). For water NOTE: Vintage Air Systems use 5/8" heater connections. On engines equipped with 3/4" hose pumps with a cast-in 3/4" heater outlet, a 3/4" x 5/8" reducer fitting in the heater hose (not supplied) or molded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





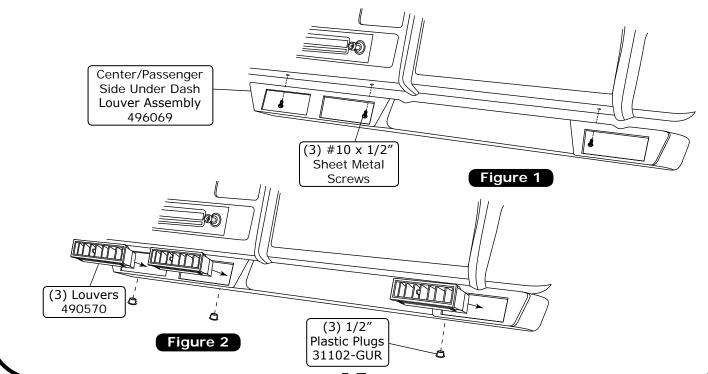
### Driver Side Under Dash Louver Installation

- 1. Place the driver side louver housing under the dash and drill (2) 1/8" holes.
- 2. Secure the louver housing to the dash using (2) #10 x 1/2" sheet metal screws as shown in Figure 1, below.
- 3. Install the louver into the under dash housing as shown in Figure 2, below.



### Center/Passenger Side Under Dash Louver Installation

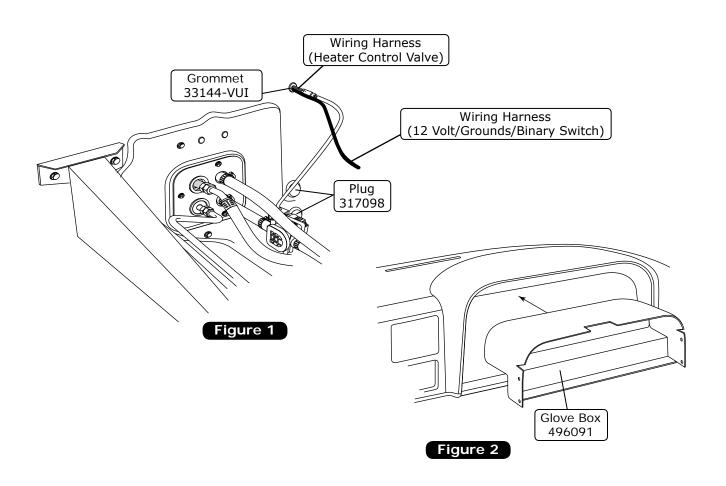
- 1. Place the center/passenger side louver assembly under the dash and drill (3) 1/8" holes.
- 2. Secure the louver assembly under the dash using (3)  $#10 \times 1/2"$  sheet metal screws as shown in Figure 1, below
- 3. Install louvers into the center/passenger side under dash louver assembly as shown in Figure 2, below.
- 4. Install (3) 1/2" plastic plugs as shown in Figure 2, below.





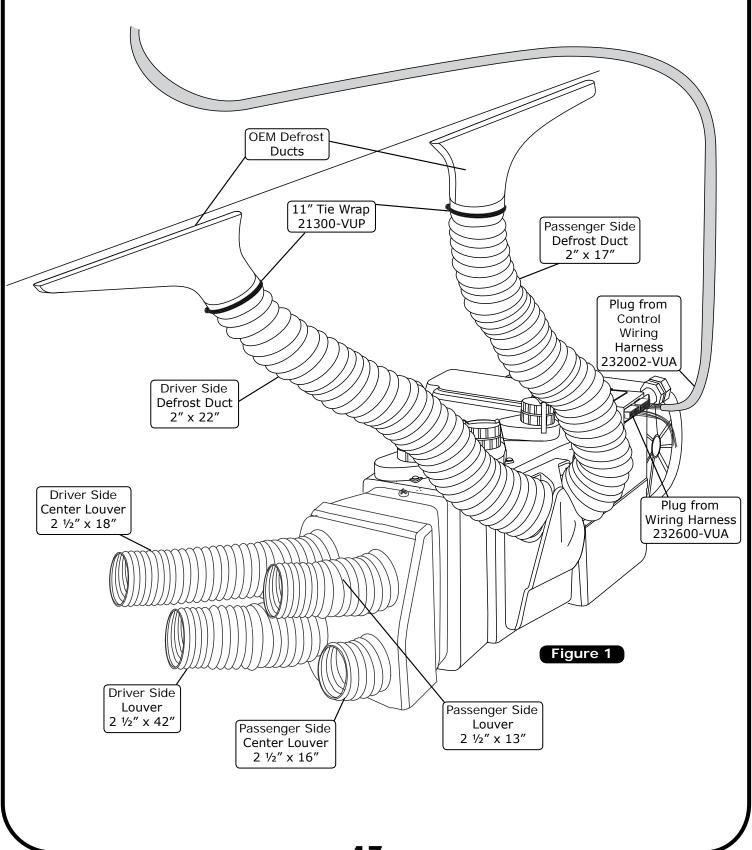
### Final Steps

- 1. Install the duct hoses as shown in Figure 1, page 17.
- 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 harness into the ECU module on the sub case as shown in Figure 1, page 17. **NOTE: Wire** according to the wiring diagrams on Pages 18 and 19.
- 5. Install the new glove box using the OEM screws (See Figure 2, below).
- 6. Install the glove box door.
- 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 licensed automotive A/C 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 20.



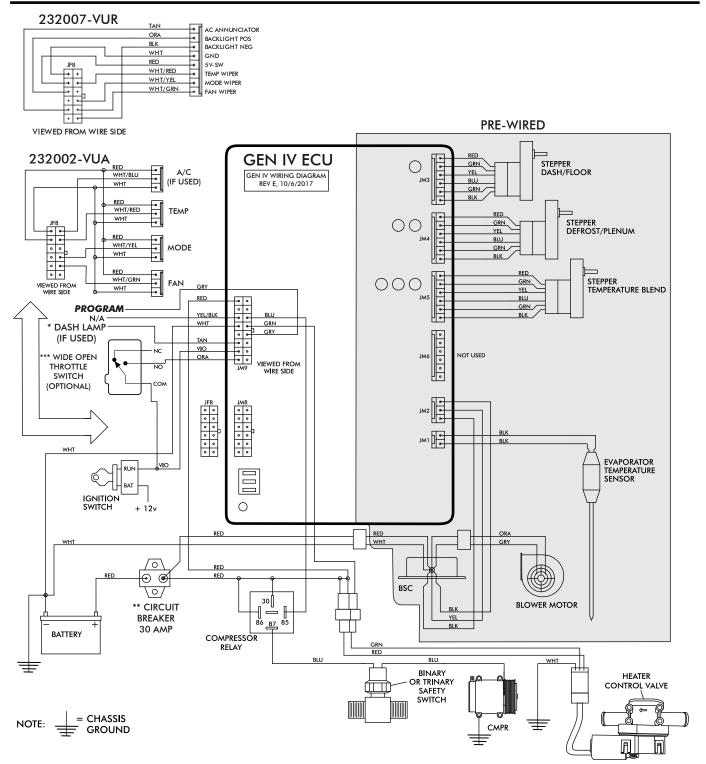


### Control Panel & Duct Hose Routing





### Wiring Diagram



- \* Dash Lamp Is Used Only With Type 232007-VUR Harness.
- \*\* Warning: Always Mount Circuit Breaker As Close to the Battery As Possible. (NOTE: Wire Between Battery and Circuit Breaker Is Unprotected and Should Be Carefully Routed to Avoid a Short Circuit).
- \*\*\* Wide Open Throttle Switch Contacts Close Only at Full Throttle, Which Disables A/C Compressor.

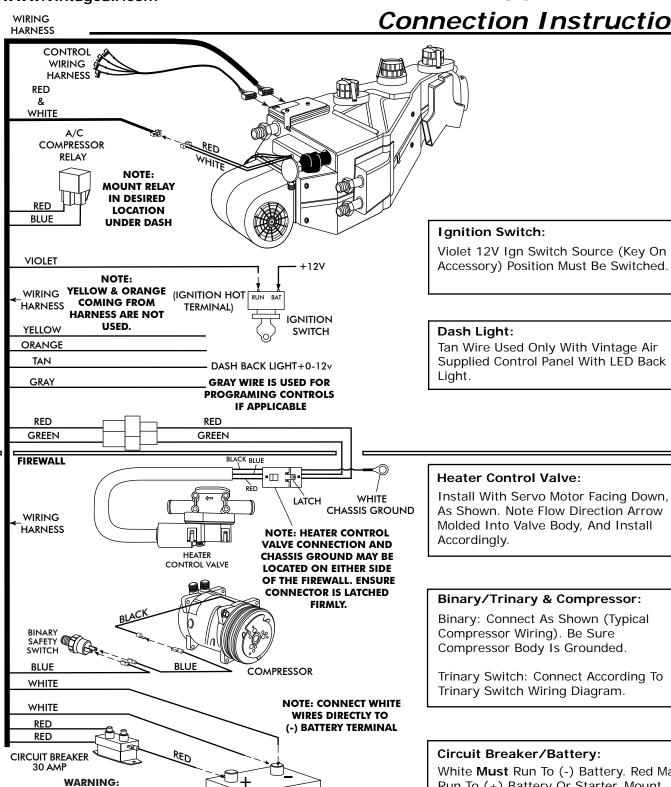


**ALWAYS MOUNT CIRCUIT BREAKER** 

AS CLOSE TO THE BATTERY AS POSSIBLE.

(NOTE: WIRE BETWEEN BATTERY AND CIRCUIT BREAKER IS UNPROTECTED AND SHOULD BE CAREFULLY ROUTED TO AVOID A SHORT CIRCUIT).

### Gen IV Wiring Connection Instruction



White Must Run To (-) Battery. Red May Run To (+) Battery Or Starter. Mount Circuit Breaker As Close to Battery As Possible.

**BATTERY** 



### Operation of Controls

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

### **Blower Speed**

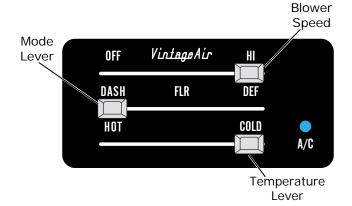
This lever/knob controls blower speed, from OFF to HI.

### **Mode Control**

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

### **Temperature Control**

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



### A/C Operation

### **Blower Speed**

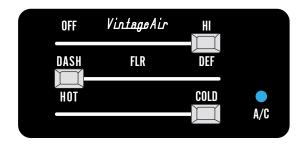
Adjust to desired speed.

### **Mode Control**

Adjust to desired mode position (DASH position recommended).

### **Temperature Control**

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



### **Heat Operation**

### **Blower Speed**

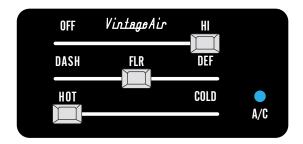
Adjust to desired speed.

### **Mode Control**

Adjust to desired mode position (FLOOR position recommended).

### **Temperature Control**

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



### Defrost/De-fog Operation

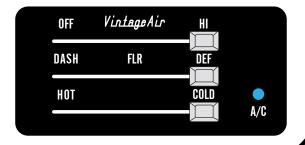
### Blower Speed

**Temperature Control** 

Adjust to desired speed. 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).



## **Troubleshooting Guide**

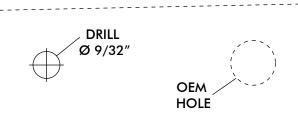
Symptom	Condition	Checks	Actions	Notes
1a. Blower stays on high speed when	No other functions work.	Check for damaged pins or wires in control head plug. Check for damaged ground wire (white) in control head harness	Verify that all pins are inserted into plug. Ensure that no pins are bent or damaged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



# Troubleshooting Guide (Cont.)

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Symptom	Condition	Checks	Actions	Notes
4.	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
:	(Typically early Gen IV, but possible on all		Check for positive power at heater valve green wire and	is suspected, check with a quality oscilloscope. Spikes greater than 16V will shut
System will not turn on, or runs intermittently.		Verify connections on power lead, ignition lead, and both white ground wires.	blower red wire. Check for ground on control head white wire.	down the ECU. Install a radio capacitor at the positive post of the ignition
	any conditions.		Verify proper meter function by checking the condition of a known good battery.	coil (See radio capacitor installation bulletin). A faulty alternator or worn out battery can also result in this condition.
5. Loss of mode door	No mode change at all.	Check for damaged mode  → switch or potentiometer and associated wiring.		Typically caused by evaporator housing installed in a bind in the
Tunction.	Partial function of mode doors.	Check for obstructed or binding mode doors.  Check for damaged stepper motor or wiring.		vehicle. Be sure all mounting locations line up and don't have to be forced into position.
6. Blower turns on	Battery voltage is at least	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
and off rapidly.	Battery voltage is less than 12V.	Check for faulty battery or alternator.	➤ Charge battery.	weak battery can cause  → shutdown at up to 11V.
7. Erratic functions of blower, mode, temp, etc.		Check for damaged switch or pot and associated wiring.	➤ Repair or replace.	
When ignition is turned on, blower momentarily comes on, then shuts off. This occurs with the blower switch in		This is an indicator that the system has been reset. Be sure the red power wire is on the battery post, and not on a switched source. Also, if the system is pulled below 7V for even a split second, the	→ Run red power wire directly to battery.	
the OFF position.		system will reset.		

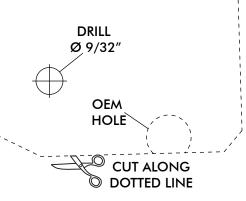




### 1960-63 CHEVROLET PICKUP FIREWALL TEMPLATE FOR REAR EVAP BRKT



NOTE: Due to printing variances, measure the line below before using this template. If template is scaled properly, the line should measure 6 inches.

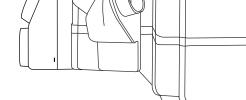




### Packing List: Evaporator Kit (751163)

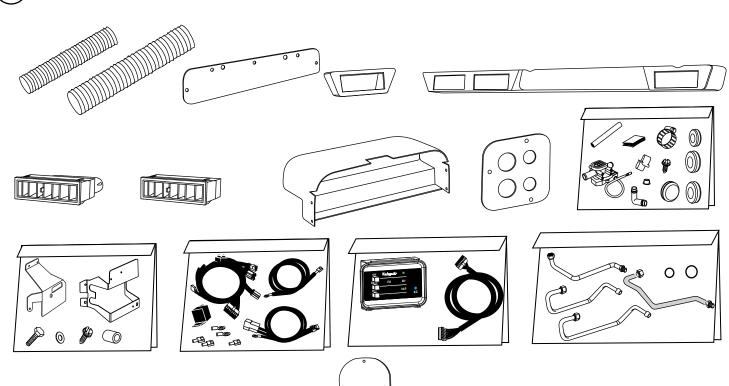
No.	Qty.	Part No.	Description		
1.	1	744004-VUE	Gen IV 4-Vent Evaporator Sub Case		
2.	1	791163	Accessory Kit	-	
				Checked By: Packed By: Date:	





Gen IV 4-Vent Evaporator Sub Case 744004-VUE





Accessory Kit 791163

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