

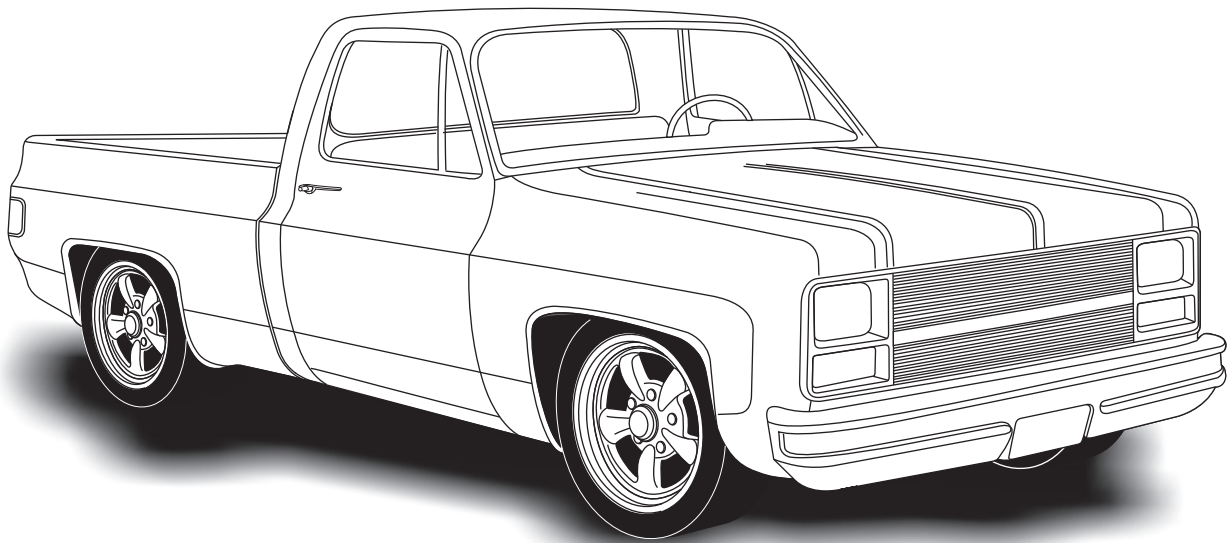


an ISO 9001:2015 Registered Company

# 1981-87 CHEVROLET PICKUP

with FACTORY AIR

754181



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## EVAPORATOR KIT PACKING LIST

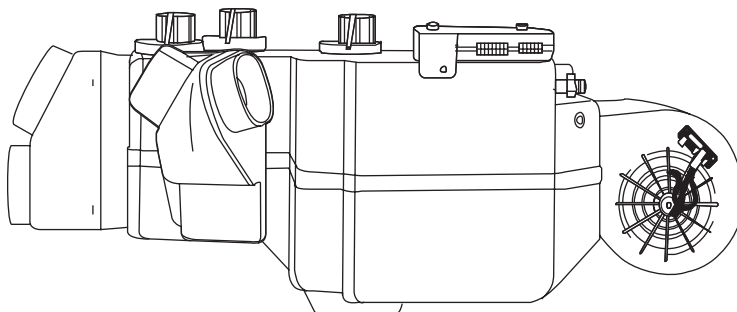
EVAPORATOR KIT  
754181

No.	QTY.	PART No.	DESCRIPTION
1.	1	744004-VUE	GEN IV 4-VENT EVAP SUB CASE with 204 ECU
2.	1	794180	ACCESSORY KIT 1981-87 CHEVROLET PICKUP with A/C

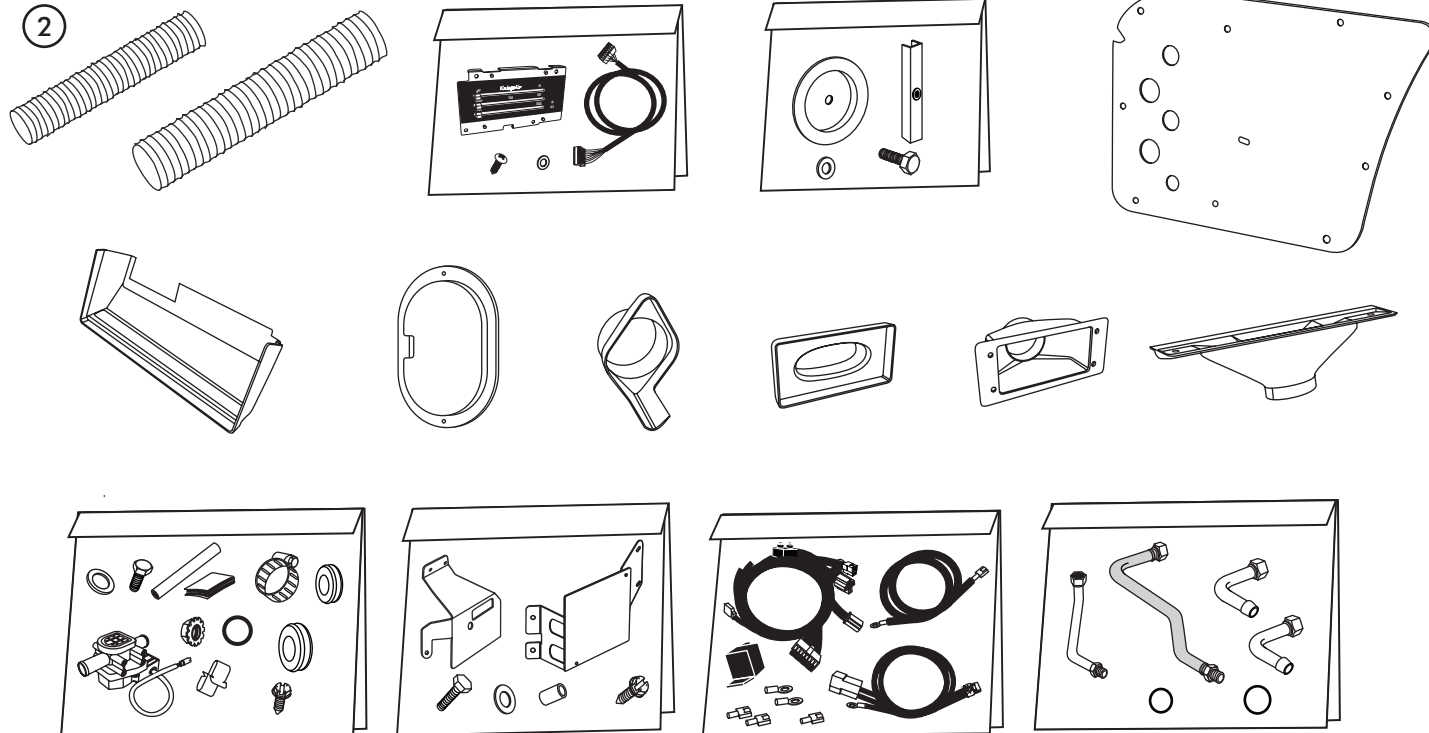
**\*\* BEFORE BEGINNING INSTALLATION, OPEN ALL PACKAGES AND CHECK CONTENTS OF SHIPMENT. PLEASE REPORT ANY SHORTAGES DIRECTLY TO VINTAGE AIR WITHIN 15 DAYS. AFTER 15 DAYS, VINTAGE AIR WILL NOT BE RESPONSIBLE FOR MISSING OR DAMAGED ITEMS.**

①

**GEN IV 4-VENT  
EVAP SUB CASE  
with 204 ECU  
744004-VUE**



②



**ACCESSORY KIT  
794180**

**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 remain capped. Removing caps prior to assembly will allow moisture, insects and debris into the components, possibly leading to reduced performance and/or premature failure of your A/C system. This is especially important with the receiver/drier.

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

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

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

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

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

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



## Important Wiring Notice—Please Read

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

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

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

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

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

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

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

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



**BEFORE STARTING THE INSTALLATION, CHECK THE FUNCTION OF THE VEHICLE (HORN, LIGHTS, ETC.) FOR PROPER OPERATIONS. STUDY THE INSTRUCTIONS, ILLUSTRATIONS & DIAGRAMS.**

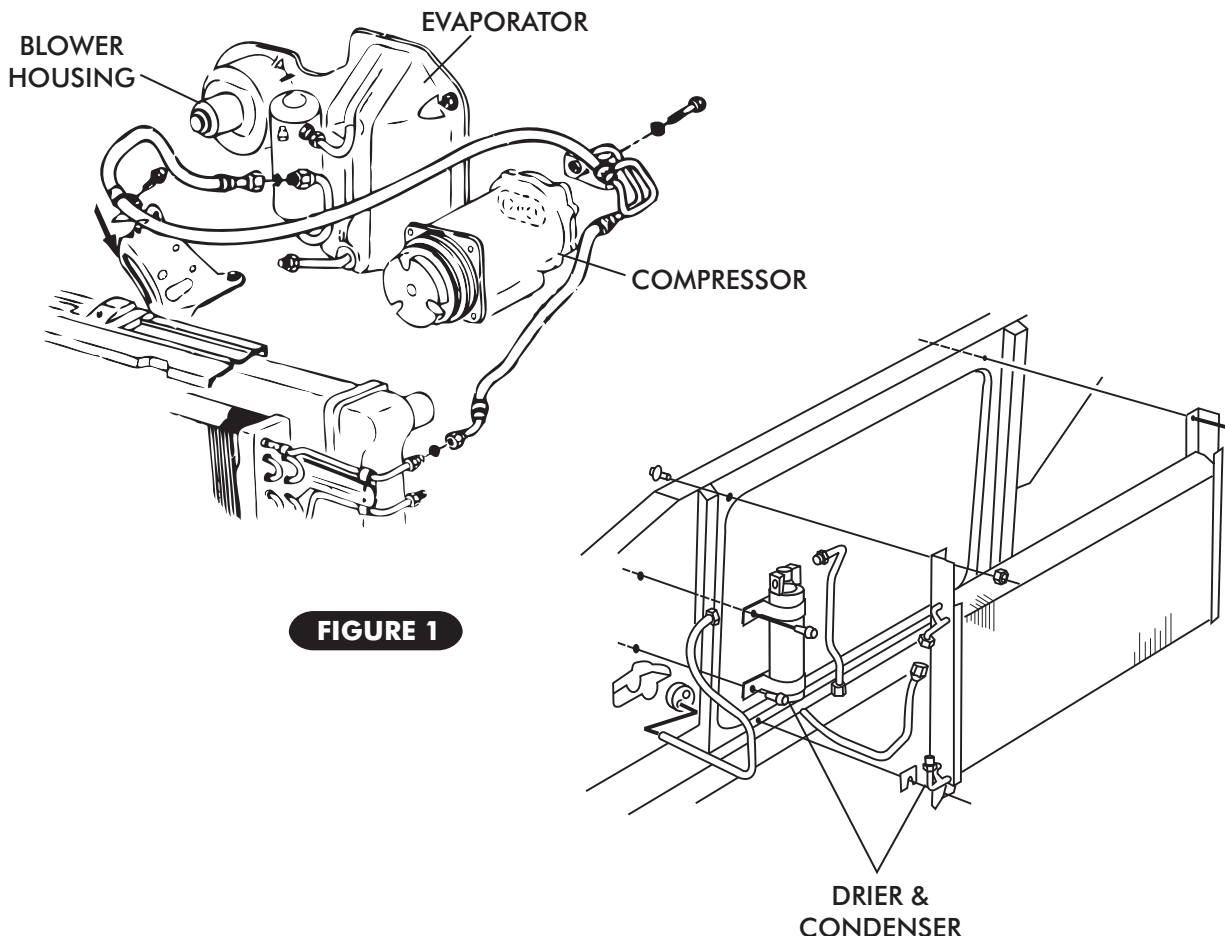
## ENGINE COMPARTMENT

### REMOVE THE FOLLOWING:

- ☐ DISCONNECT BATTERY.
- ☐ DRAIN RADIATOR, REMOVE RADIATOR (RETAIN).
- ☐ EVACUATE THE A/C SYSTEM IF NECESSARY.
- ☐ OEM CONDENSER AND DRIER (DISCARD). SEE FIGURE 1.
- ☐ OEM A/C LINES FROM COMPRESSOR TO EVAPORATOR (DISCARD).
- ☐ OEM COMPRESSOR AND BRACKET (DISCARD).
- ☐ EVAPORATOR BLOWER ASSEMBLY (DISCARD).

**NOTE: TO REMOVE THE EVAPORATOR AND BLOWER ASSEMBLY (UNDER HOOD) AND THE AIR DISTRIBUTION SYSTEM (UNDER DASH), THE FACTORY MANUAL RECOMMENDS THAT YOU REMOVE RIGHT INNER FENDER FOR ACCESSIBILITY.**

- ☐ OEM HEATER HOSES, A/C HOSES AND HARDLINES (DISCARD). SEE FIGURE 1.



**FIGURE 1**

## CONDENSER ASSEMBLY & INSTALLATION

- ☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH THE CONDENSER KIT TO INSTALL THE CONDENSER.
- ☐ BINARY SWITCH INSTALLATION (REFER TO CONDENSER INSTRUCTIONS).

## COMPRESSOR & BRACKETS

- ☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH THE BRACKET KIT TO INSTALL THE COMPRESSOR AND BRACKET.

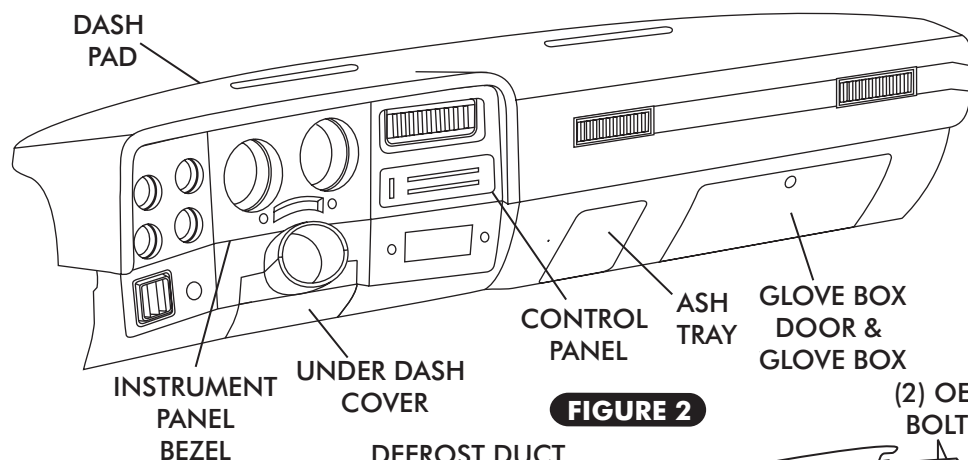




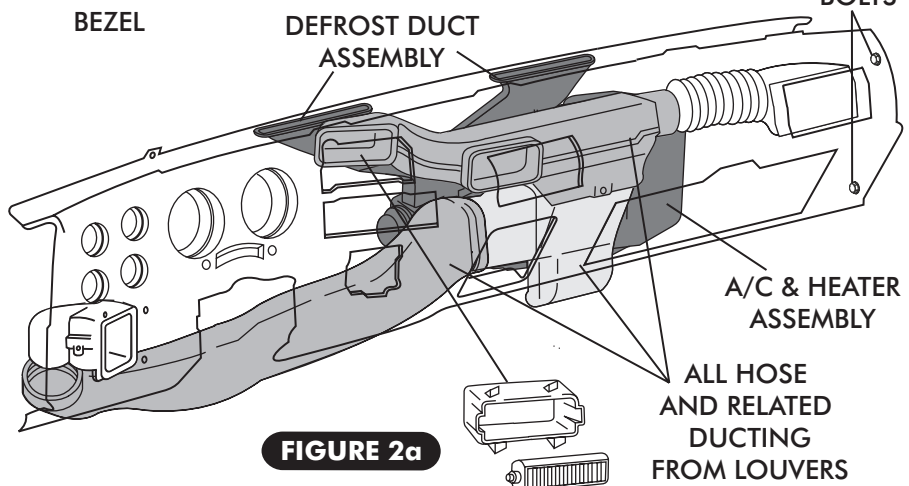
## PASSENGER COMPARTMENT

### REMOVE THE FOLLOWING:

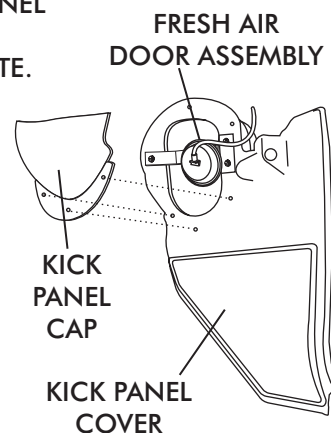
- ☐ GLOVE BOX DOOR AND GLOVE BOX ASSEMBLY (RETAIN) (SEE FIGURE 2, BELOW).
- ☐ UNDER DASH STEERING COLUMN COVER (RETAIN) (SEE FIGURE 2).
- ☐ INSTRUMENT PANEL BEZEL (RETAIN).
- ☐ DASH PAD (RETAIN) (SEE FIGURE 2).
- ☐ DISCONNECT ALL WIRES AND CABLES FROM CONTROL PANEL.
- ☐ REMOVE CONTROL PANEL (DISCARD). REFER TO CONTROL PANEL CONVERSION KIT INSTRUCTIONS.
- ☐ ASH TRAY (RETAIN).
- ☐ ALL HOSE AND DUCTING FROM OEM LOUVERS (SEE FIGURE 2, BELOW).
- ☐ A/C & HEATER ASSEMBLY (DISCARD) (SEE FIGURE 2a).
- ☐ DEFROST DUCT ASSEMBLY (DISCARD) (SEE FIGURE 2a, BELOW).
- ☐ PASSENGER SIDE KICK PANEL ASSEMBLY (RETAIN KICK PANEL COVER & KICK PANEL CAP, BUT DISCARD DOOR & ACTUATOR). SEE FIGURE 2b.
- ☐ APPLY 1/4" BEAD OF SILICONE ON BACK SIDE OF KICK PANEL BLOCK-OFF PLATE.
- ☐ INSTALL KICK PANEL BLOCK-OFF PLATE USING (2) #8 x 1/2" PH PAN HEAD SCREWS (SEE FIGURE 2c).
- ☐ **NOTE: FOR EASE OF INSTALLING EVAPORATOR UNDER DASH, IT MAY BE HELPFUL TO REMOVE THE (2) OEM BOLTS UNDER THE DASH ON THE PASSENGER SIDE DOOR PILLAR AND PULL BACK DASH.**



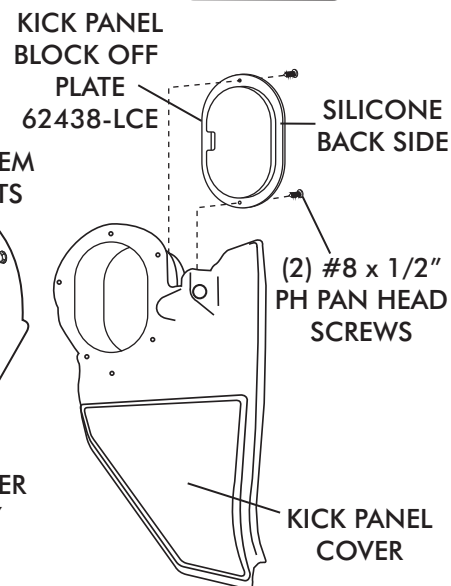
**FIGURE 2**



**FIGURE 2a**



**FIGURE 2b**

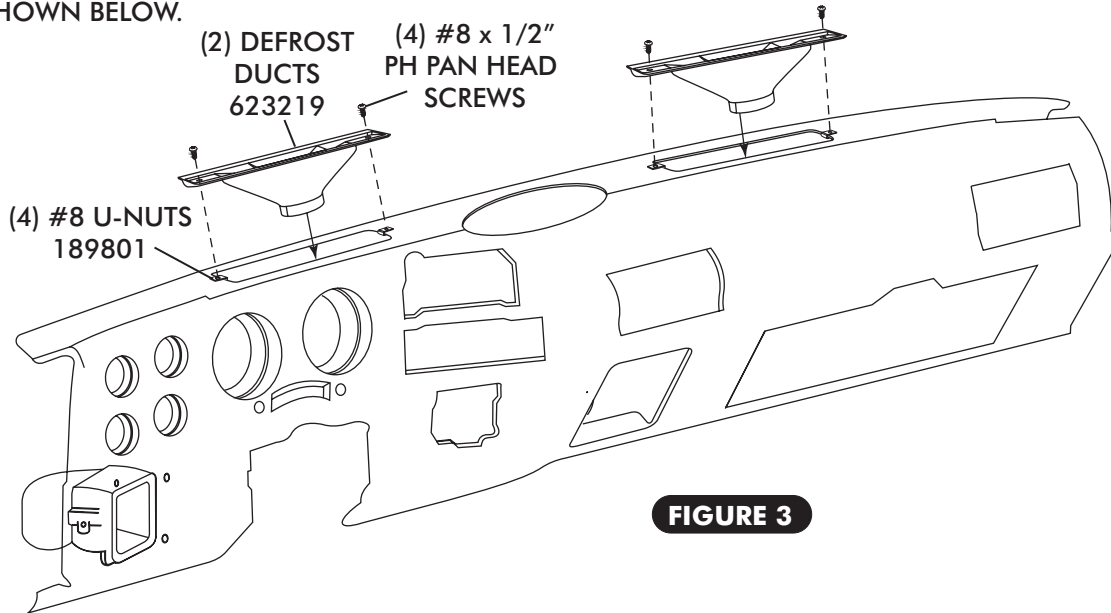


**FIGURE 2c**



## DEFROST DUCT INSTALLATION

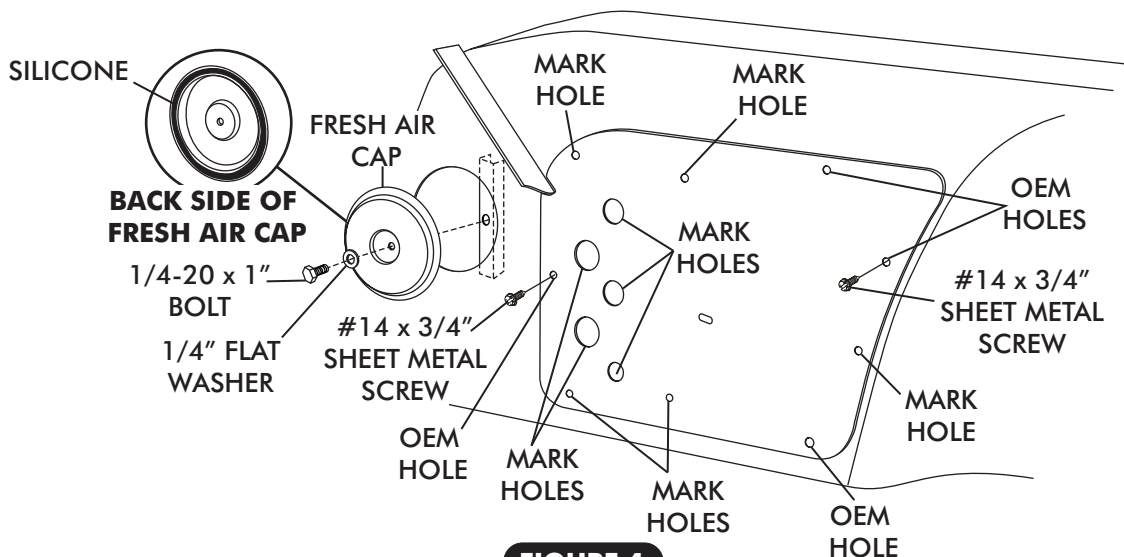
- ☐ INSTALL (4) #8 U-NUTS IN OEM DEFROST DUCT OPENINGS AS SHOWN BELOW IN FIGURE 3.
- ☐ INSTALL DRIVER AND PASSENGER SIDE DEFROST DUCTS USING (4) #8 x 1/2" PH PAN HEAD SCREWS AS SHOWN BELOW.



**FIGURE 3**

## FRESH AIR CAP AND FIREWALL MODIFICATION

- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FRESH AIR CAP AS SHOWN IN FIGURE 4, BELOW.
- ☐ ATTACH FRESH AIR CAP TO FIREWALL USING A 1/4-20 x 1" BOLT AND WASHER. SEE FIGURE 4, BELOW.
- ☐ PLACE FIREWALL COVER ON FIREWALL AND SECURE USING (2) #14 x 3/4" SHEET METAL SCREWS AS SHOWN BELOW.
- ☐ USING FIREWALL COVER AS TEMPLATE, MARK THE HOLES ON FIREWALL AS SHOWN BELOW.
- ☐ REMOVE FIREWALL COVER.



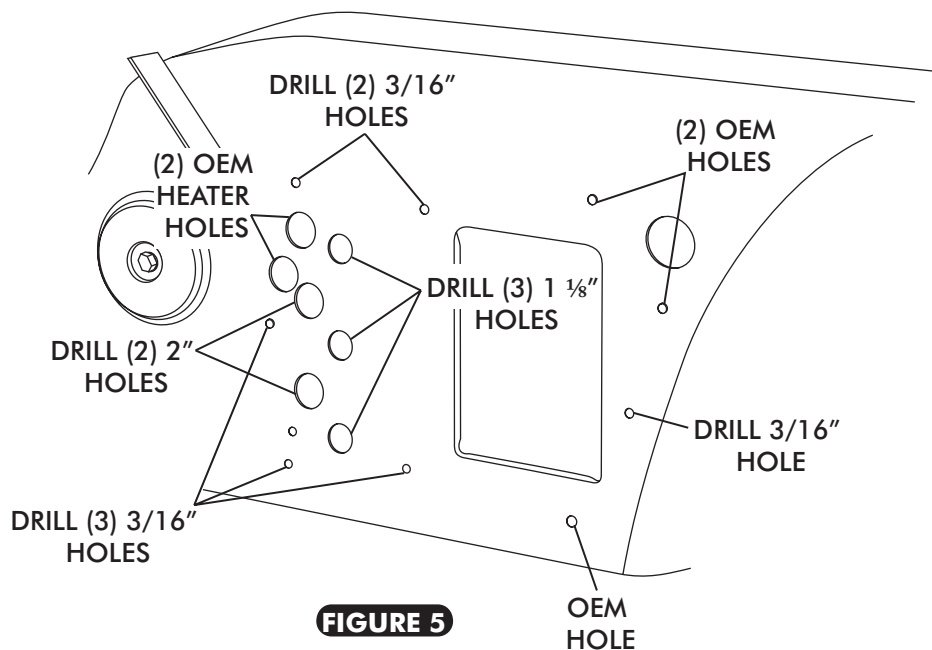
**FIGURE 4**





## FIREWALL MODIFICATION CONT.

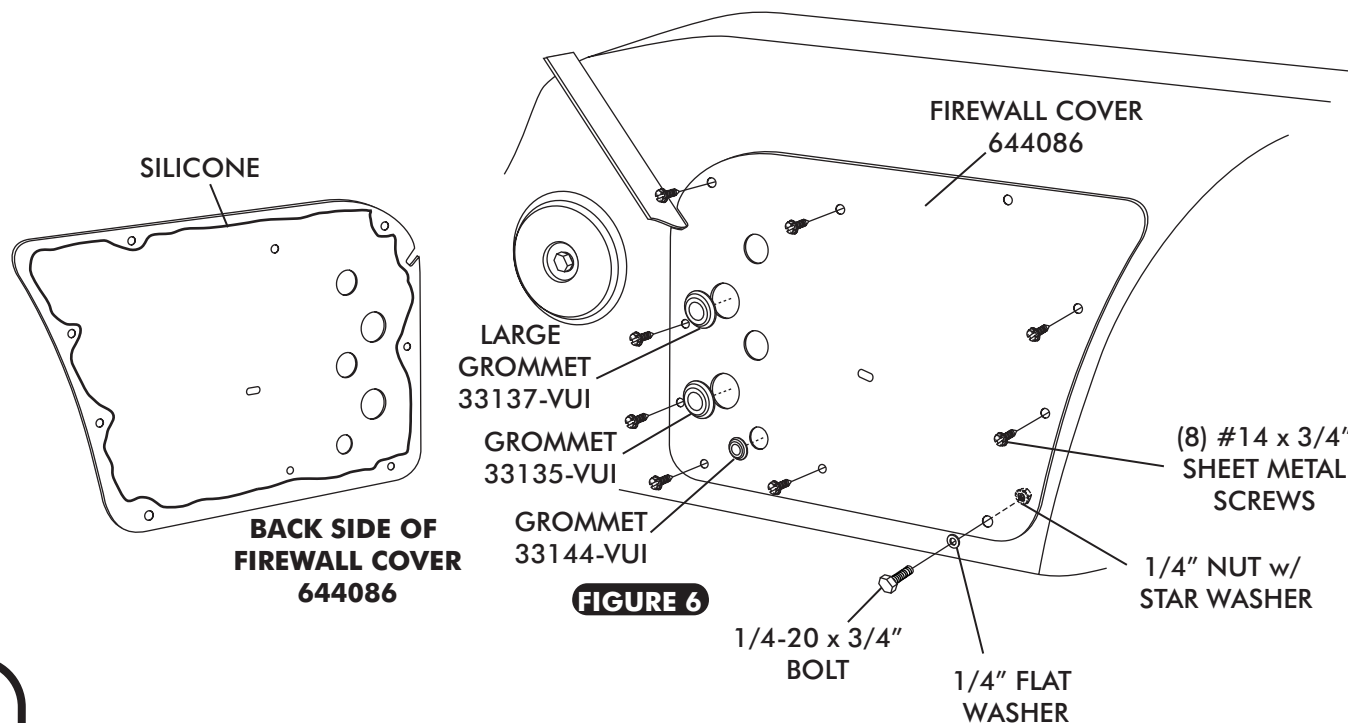
- DRILL HOLES INTO FIREWALL AS SHOWN BELOW IN FIGURE 5.



**FIGURE 5**

## FIREWALL COVER INSTALLATION

- APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FIREWALL COVER AS SHOWN BELOW.
- INSTALL THE FIREWALL COVER ONTO THE FIREWALL USING A 1/4-20 x 3/4" HEX BOLT, 1/4" FLAT WASHER, 1/4" NUT WITH STAR WASHER AND (8) #14 x 3/4" SHEET METAL SCREWS AS SHOWN BELOW.
- INSTALL GROMMETS INTO THE FIREWALL COVER AS SHOWN BELOW.

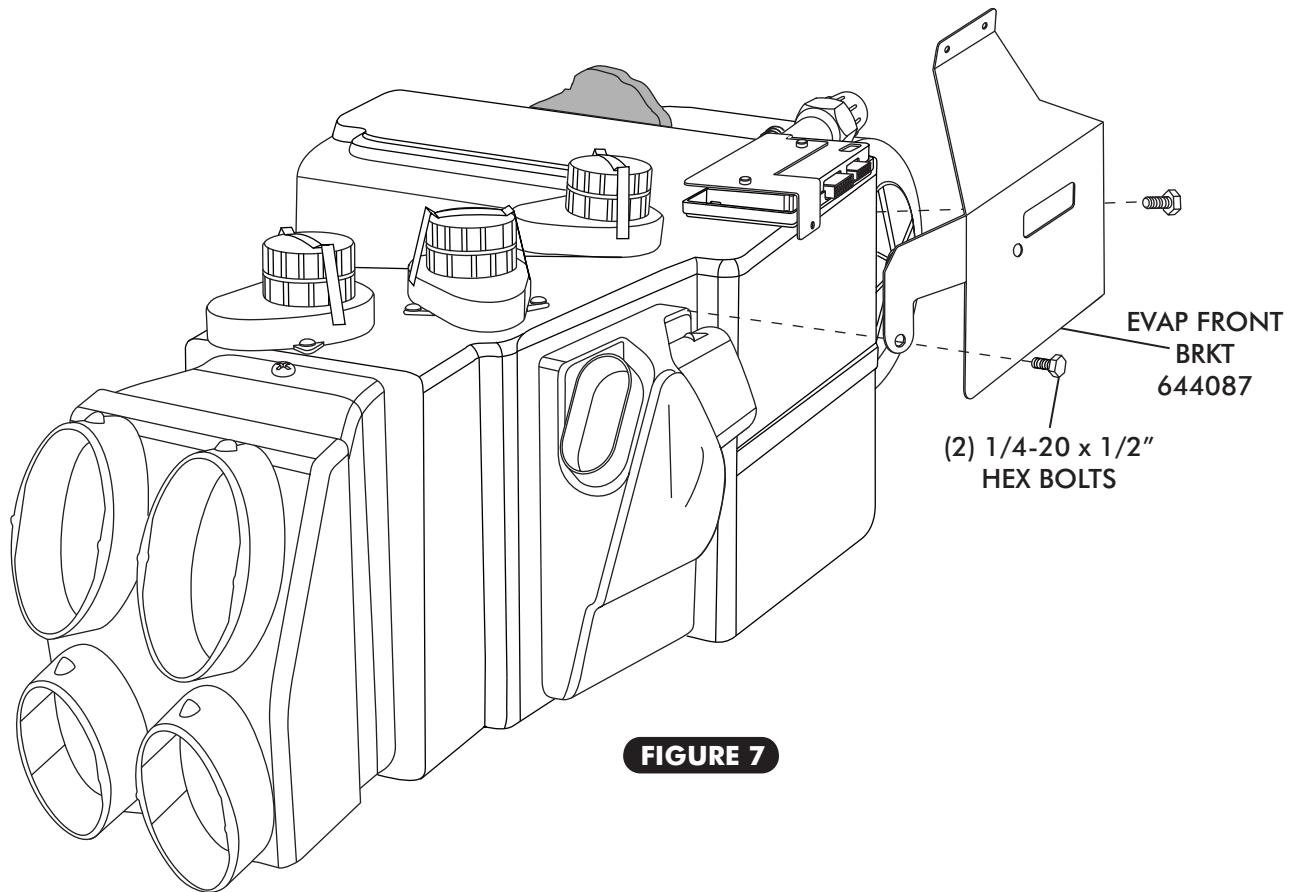


**FIGURE 6**



## BRACKET & EVAPORATOR HARDLINE INSTALLATION

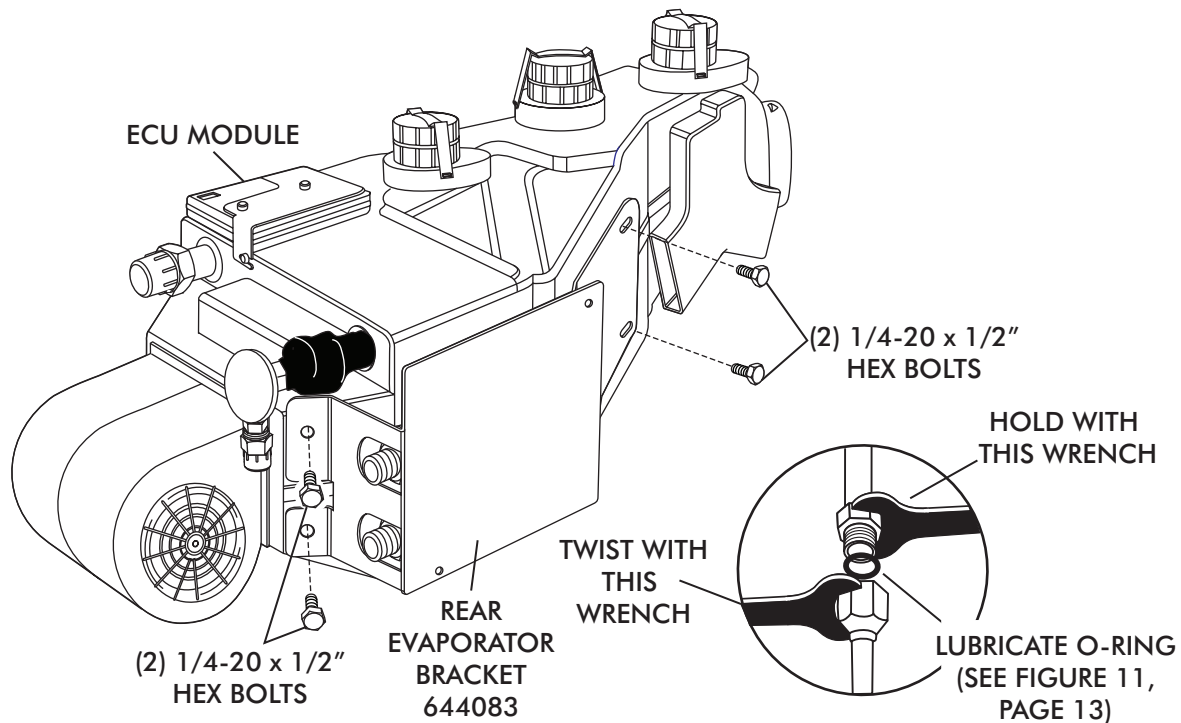
- ❑ ON A WORKBENCH, INSTALL EVAPORATOR REAR BRACKET USING (4) 1/4-20 x 1/2" HEX BOLTS (SEE FIGURE 8, PAGE 11).
- ❑ INSTALL #6 EVAP HARDLINE AND (2) HEATER HARDLINES WITH PROPERLY LUBRICATED O-RINGS (SEE FIGURE 8, PAGE 11, AND FIGURE 11, PAGE 13).
- ❑ INSTALL EVAPORATOR FRONT BRACKET ON EVAPORATOR USING (2) 1/4-20 x 1/2" HEX BOLTS AND TIGHTEN AS SHOWN IN FIGURE 7, BELOW.



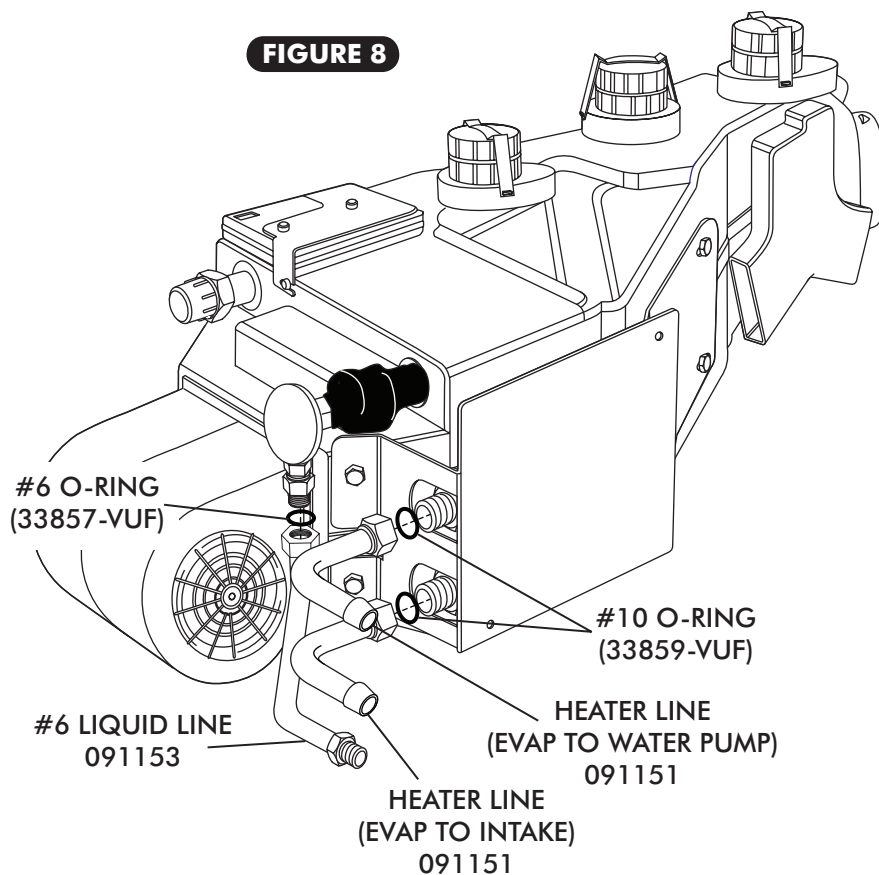
**FIGURE 7**



## BRACKET & EVAPORATOR HARDLINE INSTALLATION CONT.



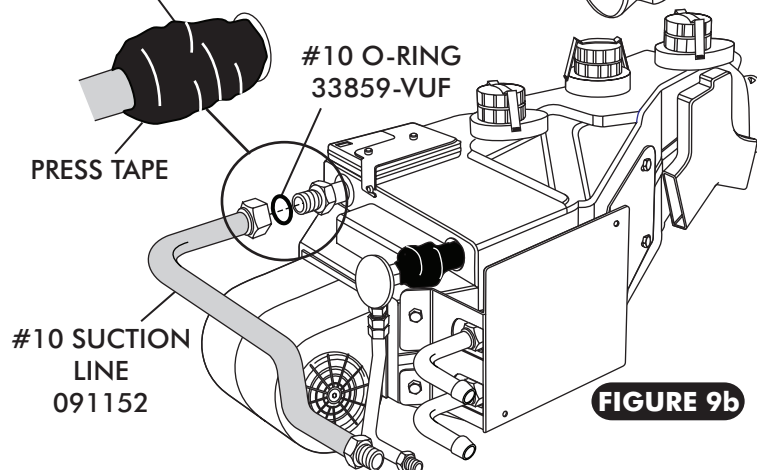
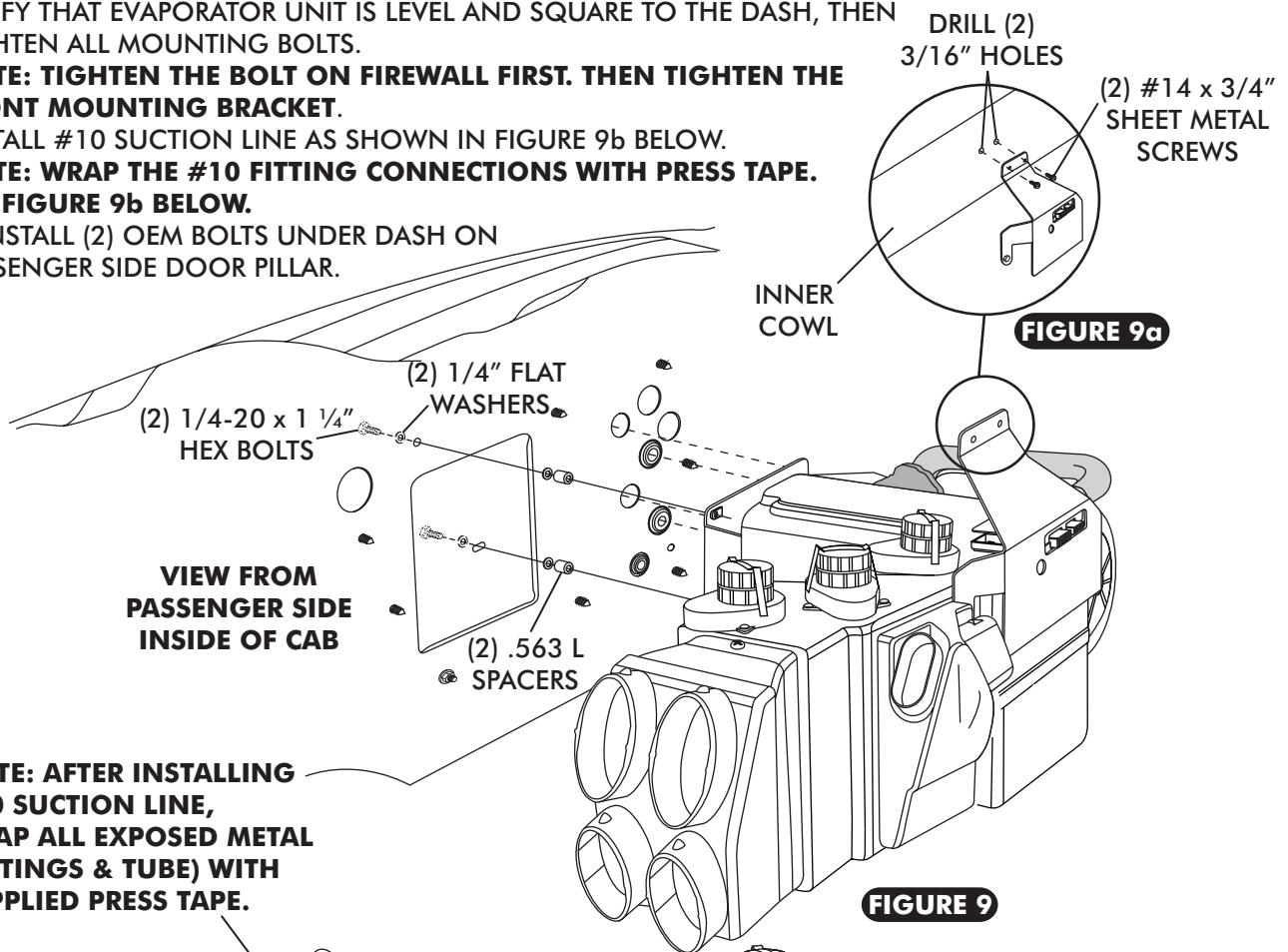
**FIGURE 8**





## EVAPORATOR INSTALLATION

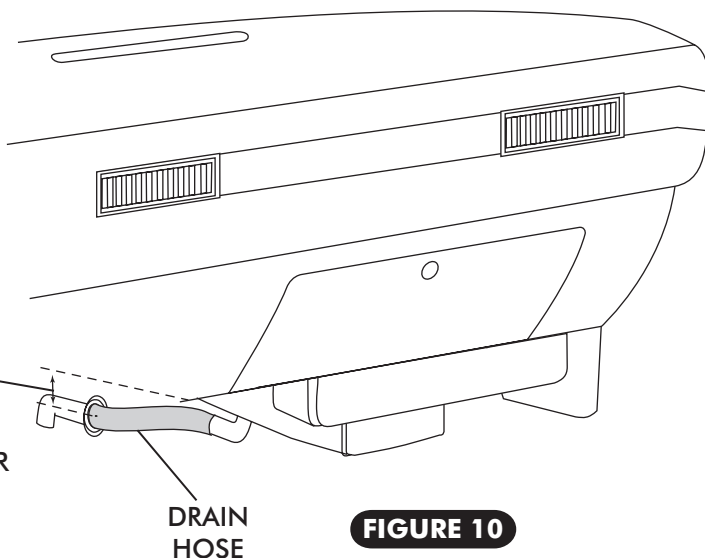
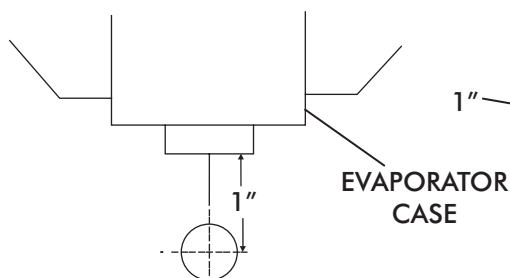
- ❑ LIFT EVAPORATOR UNIT UP UNDER THE DASHBOARD. SECURE LOOSELY TO THE FIREWALL USING (2) 1/4-20 x 1 1/4" HEX BOLTS, (2) FLAT WASHERS AND (2) .563 L SPACERS (SEE FIGURE 9).
- ❑ **NOTE: TO ENSURE PROPER DRAINAGE, IT IS VERY IMPORTANT THAT THE EVAPORATOR IS LEVEL, BOTH LEFT-RIGHT AND FORE-AFT. CHECK FOR LEVEL ON THE FLAT PORTIONS OF THE CASE AROUND THE DRAIN, BLOCK THE UNIT UP, THEN DRILL FOR FRONT BRACKET SCREWS.**
- ❑ SECURE THE FRONT EVAPORATOR MOUNTING BRACKET TO COWL USING (2) #14 x 3/4" HEX SHEET METAL SCREWS. SEE FIGURE 9a, BELOW.
- ❑ VERIFY THAT EVAPORATOR UNIT IS LEVEL AND SQUARE TO THE DASH, THEN TIGHTEN ALL MOUNTING BOLTS.
- ❑ **NOTE: TIGHTEN THE BOLT ON FIREWALL FIRST. THEN TIGHTEN THE FRONT MOUNTING BRACKET.**
- ❑ INSTALL #10 SUCTION LINE AS SHOWN IN FIGURE 9b BELOW.
- ❑ **NOTE: WRAP THE #10 FITTING CONNECTIONS WITH PRESS TAPE. SEE FIGURE 9b BELOW.**
- ❑ REINSTALL (2) OEM BOLTS UNDER DASH ON PASSENGER SIDE DOOR PILLAR.





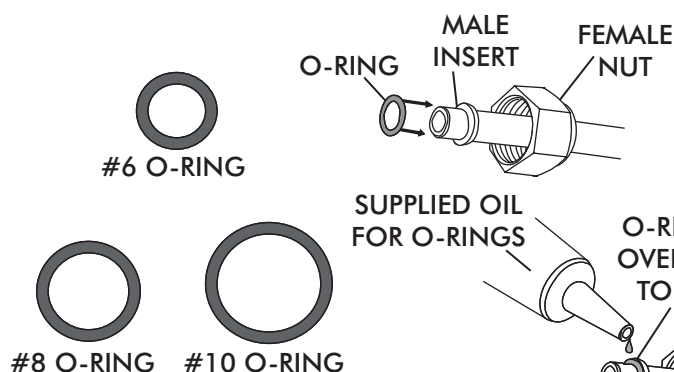
## DRAIN HOSE INSTALLATION

- ☐ LOCATE EVAPORATOR DRAIN ON BOTTOM OF EVAPORATOR CASE.
- ☐ IN LINE WITH DRAIN, LIGHTLY MAKE A MARK ON THE FIREWALL. MEASURE 1" DOWN AND DRILL A 5/8" HOLE THROUGH THE FIREWALL.
- ☐ INSTALL DRAIN HOSE TO BOTTOM OF EVAPORATOR UNIT AND ROUTE THROUGH FIREWALL. INSTALL 1/2" 90° DRAIN ELBOW ON DRAIN HOSE.



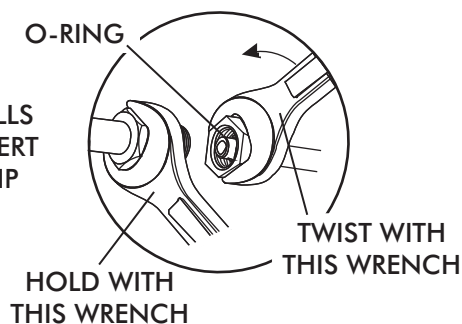
**FIGURE 10**

## LUBRICATING O-RINGS



**FIGURE 11**

**FOR A PROPER SEAL OF FITTINGS:  
INSTALL SUPPLIED O-RINGS AS SHOWN  
AND LUBRICATE WITH SUPPLIED OIL.**



## A/C HOSE INSTALLATION

### STANDARD HOSE KIT

- ☐ LOCATE THE #8 COMPRESSOR A/C HOSE. LUBRICATE (2) #8 O-RINGS (SEE FIGURE 11, ABOVE) AND CONNECT THE 90° FEMALE FITTING TO THE #8 DISCHARGE PORT ON THE COMPRESSOR. ROUTE THE STRAIGHT FEMALE FITTING w/ 134a SERVICE PORT TO THE #8 CONDENSER HARDLINE COMING THROUGH CORE SUPPORT. SEE FIGURE 13, PAGE 15. TIGHTEN EACH FITTING CONNECTION AS SHOWN.
- ☐ LOCATE THE #10 COMPRESSOR A/C HOSE. LUBRICATE (2) #10 O-RINGS (SEE FIGURE 11, ABOVE) AND CONNECT THE #10 135° FEMALE FITTING w/ 134a SERVICE PORT TO THE #10 SUCTION PORT ON THE COMPRESSOR. ROUTE THE STRAIGHT FEMALE FITTING TO THE #10 EVAPORATOR. SEE FIGURE 12, PAGE 14, AND FIGURE 13, PAGE 15. TIGHTEN EACH FITTING CONNECTION AS SHOWN.
- ☐ INSTALL #6 A/C LIQUID LINE AS SHOWN IN FIGURE 13, PAGE 15.

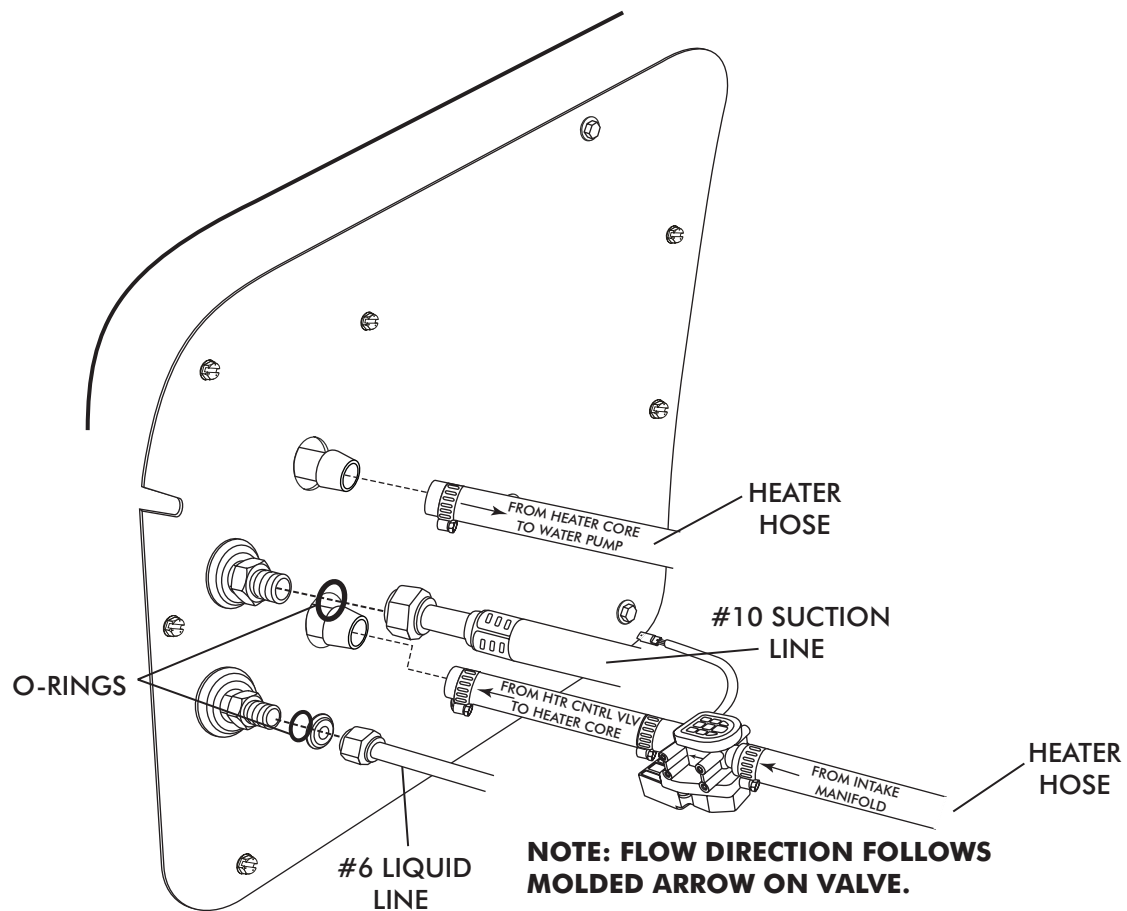
### MODIFIED A/C HOSE KIT

- ☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH MODIFIED HOSE KIT.



## HEATER HOSE & HEATER CONTROL VALVE INSTALLATION

- ☐ ROUTE HEATER HOSE FROM WATER PUMP TO THE HEATER LINE COMING THROUGH THE FIREWALL AS SHOWN IN FIGURE 12, BELOW. SECURE USING HOSE CLAMPS. **NOTE: A SMALL AMOUNT OF SILICONE SPRAY WILL EASE HEATER HOSE INSTALLATION.**
- ☐ ROUTE HEATER HOSE FROM THE INTAKE TO THE HEATER LINE COMING THROUGH THE FIREWALL AS SHOWN BELOW. **NOTE: INSTALL HEATER CONTROL VALVE IN LINE WITH INTAKE MANIFOLD (PRESSURE SIDE) HEATER HOSE. SECURE USING HOSE CLAMPS AS SHOWN. NOTE PROPER FLOW DIRECTION.**
- ☐ 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 RTV SILICONE.

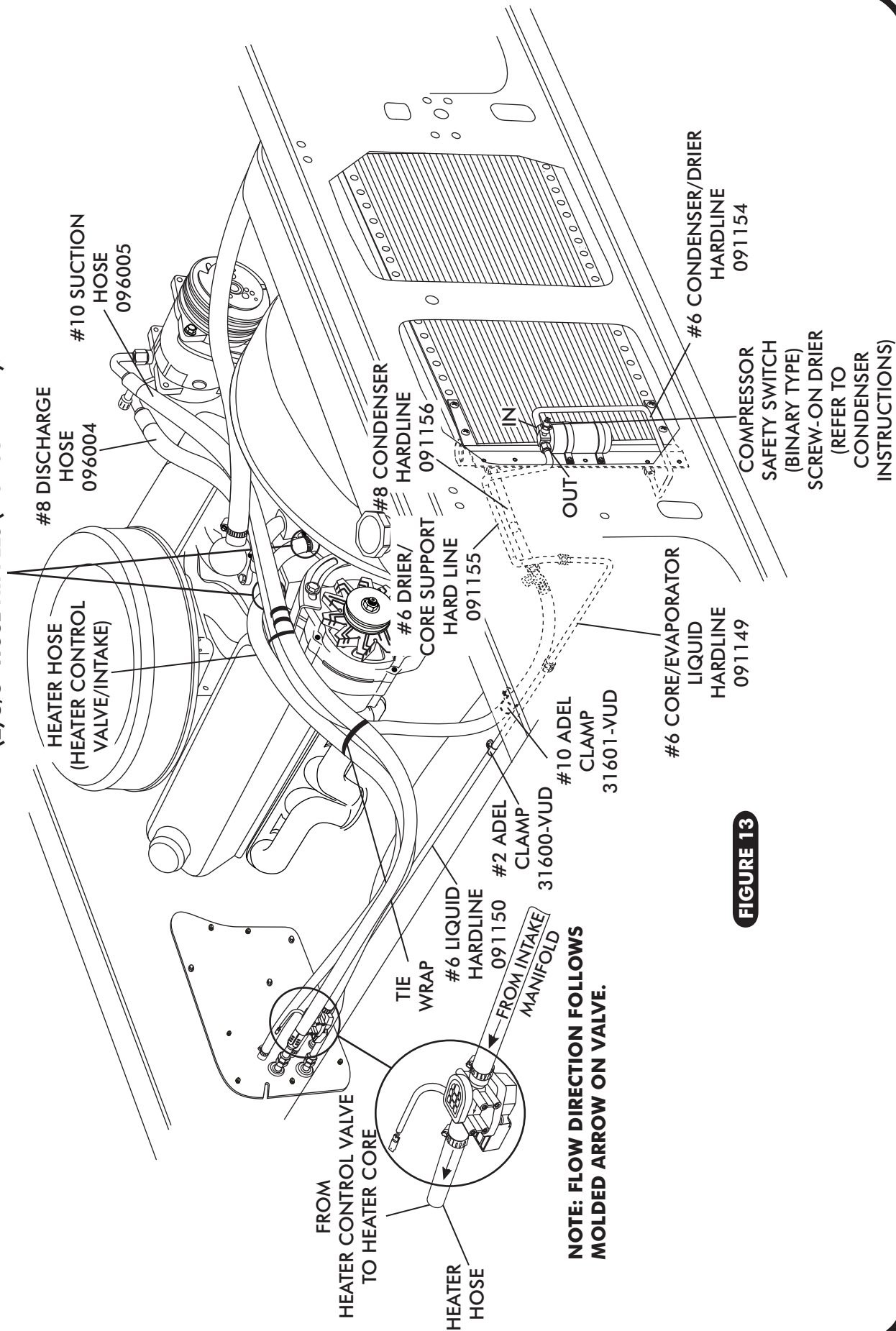


**FIGURE 12**



## A/C & HEATER HOSE ROUTING

**NOTE: VINTAGE AIR SYSTEMS REQUIRE (2) 5/8" HOSE NIPPLES (NOT SUPPLIED).**

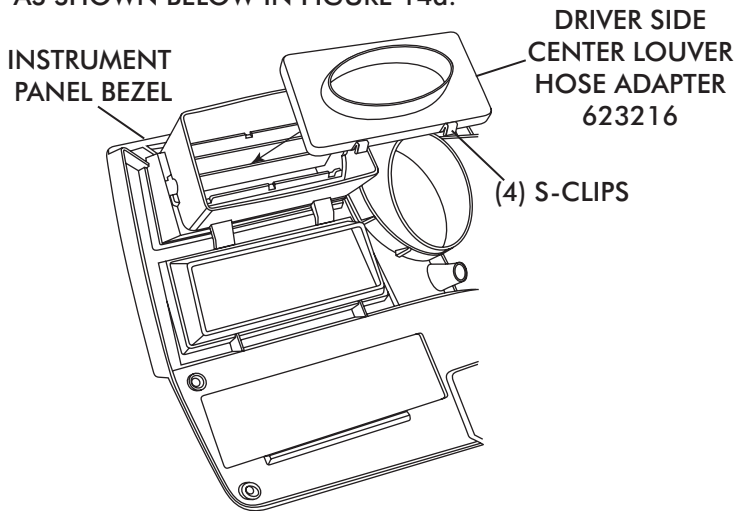


**FIGURE 13**

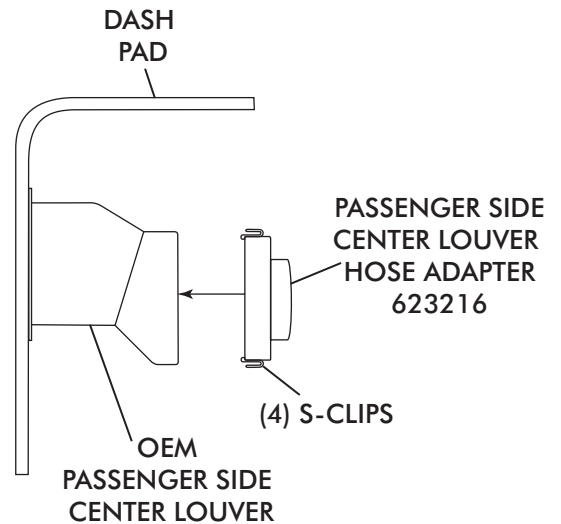


## DRIVER AND PASSENGER SIDE CENTER LOUVER HOSE ADAPTER INSTALLATION

- ☐ INSTALL (4) S-CLIPS ON DRIVER SIDE CENTER LOUVER HOSE ADAPTER (SEE FIGURE 14, BELOW).
- ☐ INSTALL DRIVER SIDE CENTER LOUVER HOSE ADAPTER IN CENTER LOUVER AS SHOWN BELOW IN FIGURE 14.
- ☐ INSTALL (4) S-CLIPS ON PASSENGER SIDE CENTER LOUVER HOSE ADAPTER (SEE FIGURE 14a, BELOW).
- ☐ INSTALL PASSENGER SIDE CENTER LOUVER HOSE ADAPTER IN OEM PASSENGER SIDE CENTER LOUVER AS SHOWN BELOW IN FIGURE 14a.



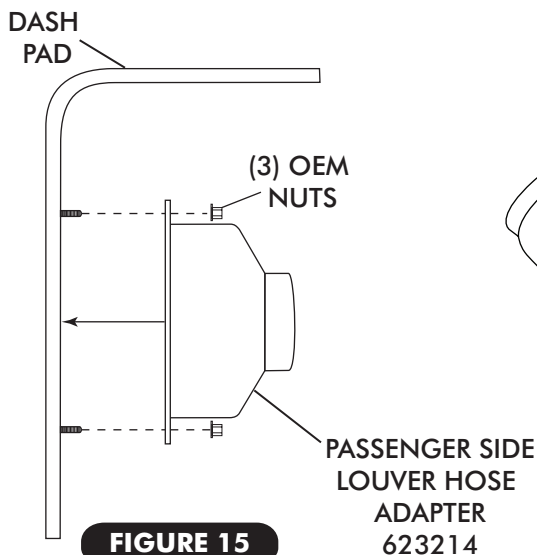
**FIGURE 14**



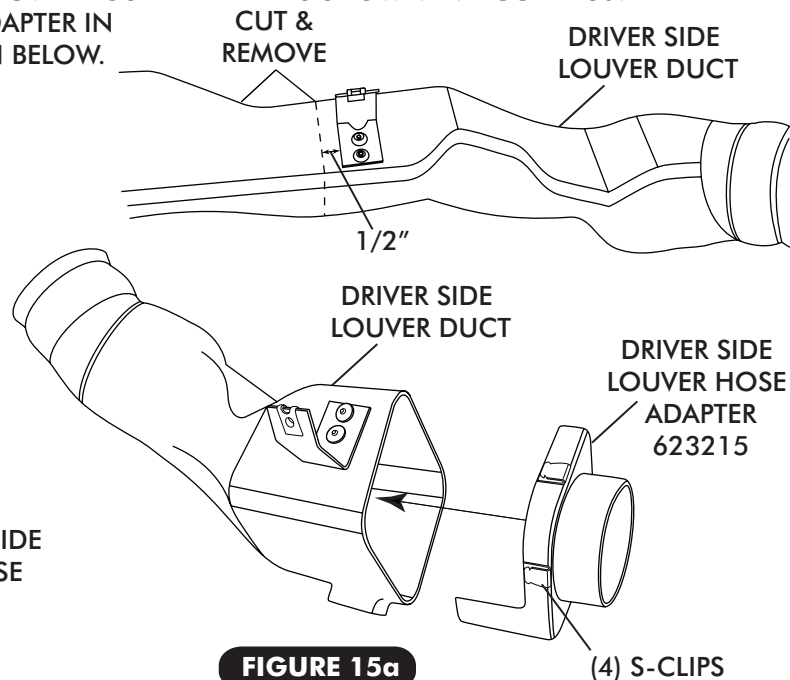
**FIGURE 14a**

## DRIVER AND PASSENGER SIDE LOUVER HOSE ADAPTER INSTALLATION

- ☐ REMOVE OEM PASSENGER SIDE HOSE ADAPTER FROM DASH PAD (DISCARD) (RETAIN 3 OEM NUTS).
- ☐ INSTALL PASSENGER SIDE LOUVER HOSE ADAPTER TO DASH PAD USING (3) OEM NUTS (SEE FIGURE 15, BELOW).
- ☐ CUT & REMOVE DRIVER SIDE LOUVER DUCT AS SHOWN IN FIGURE 15a.
- ☐ INSTALL (4) S-CLIPS ON DRIVER SIDE LOUVER HOSE ADAPTER AS SHOWN IN FIGURE 15a.
- ☐ INSTALL DRIVER SIDE LOUVER HOSE ADAPTER IN DRIVER SIDE LOUVER DUCT AS SHOWN BELOW.



**FIGURE 15**

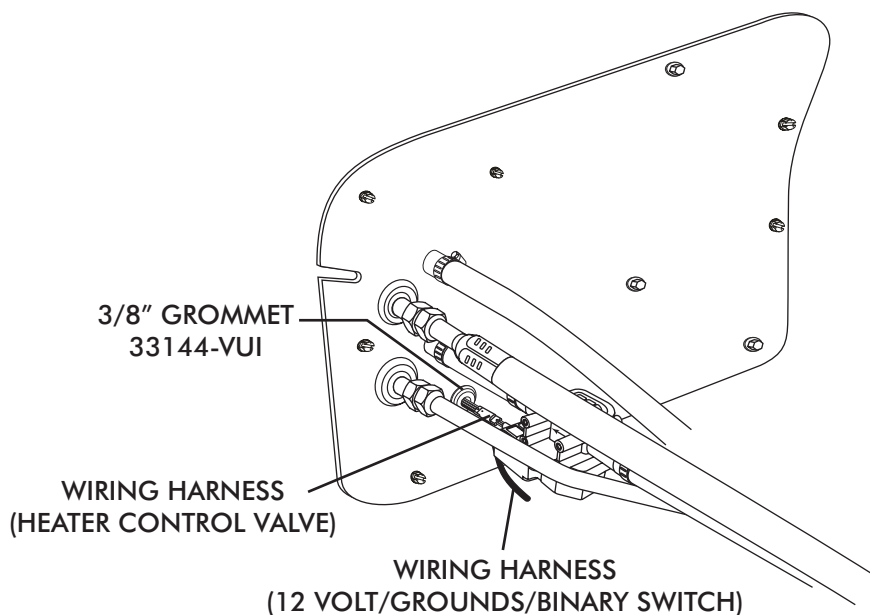


**FIGURE 15a**



## FINAL STEPS

- ☐ INSTALL DUCT HOSES AS SHOWN IN FIGURE 18, PAGE 19.
- ☐ ROUTE A/C WIRES THROUGH 3/8" GROMMET AS SHOWN IN FIGURE 16 (12 VOLT/GROUND/BINARY SWITCH/HEATER VALVE).
- ☐ INSTALL CONTROL PANEL ASSEMBLY.
- ☐ PLUG THE WIRING HARNESS INTO THE ECU MODULE ON SUB CASE AS SHOWN IN FIGURE 18, PAGE 19 (WIRE ACCORDING TO WIRING DIAGRAM ON PAGES 20 AND 21.)
- ☐ MODIFY GLOVE BOX AS SHOWN ON PAGE 18.
- ☐ REINSTALL GLOVE BOX.
- ☐ REINSTALL ALL PREVIOUSLY REMOVED ITEMS, INNER FENDER.
- ☐ 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.
- ☐ DOUBLE CHECK ALL FITTINGS, BRACKETS AND BELTS FOR TIGHTNESS.
- ☐ VINTAGE AIR RECOMMENDS THAT ALL A/C SYSTEMS BE SERVICED BY A CERTIFIED AUTOMOTIVE AIR CONDITIONING TECHNICIAN.
- ☐ EVACUATE THE SYSTEM FOR A MINIMUM OF 45 MINUTES PRIOR TO CHARGING, AND LEAK CHECK PRIOR TO SERVICING.
- ☐ CHARGE THE SYSTEM TO THE CAPACITIES STATED ON THE INFORMATION PAGE (PAGE 4) OF THIS INSTRUCTION MANUAL.
- ☐ SEE OPERATION OF CONTROLS PROCEDURES PAGE 22.

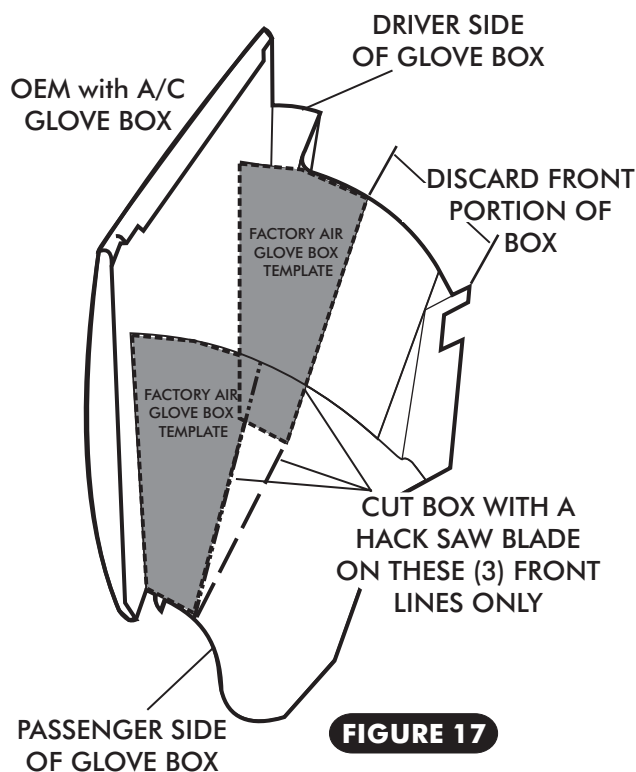


**FIGURE 16**

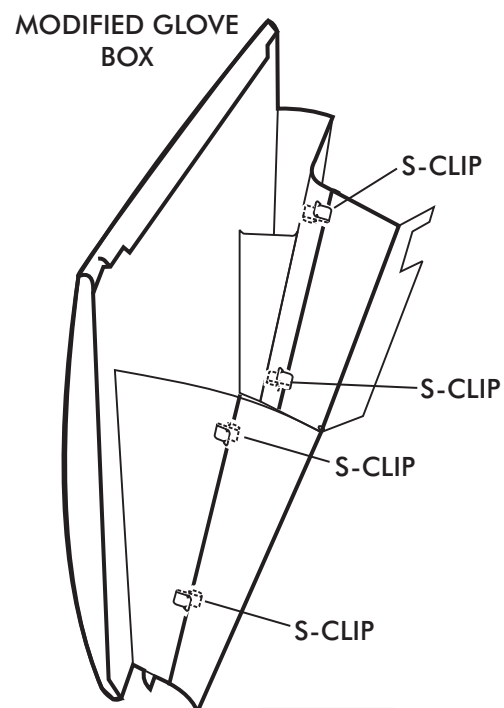


## GLOVE BOX MODIFICATION

- ☐ USE GLOVE BOX MODIFICATION TEMPLATE PROVIDED ON PAGE 25.
- ☐ PLACE THE TEMPLATE ON THE OUTSIDE OF THE GLOVE BOX ON THE PASSENGER SIDE. MARK THE OUTSIDE OF THE GLOVE BOX ALONG THE FRONT OF THE TEMPLATE AS SHOWN IN FIGURE 17, BELOW.
- ☐ PLACE THE SAME TEMPLATE ON THE INSIDE OF THE GLOVE BOX ON THE DRIVER SIDE. MARK THE INSIDE OF THE GLOVE BOX ALONG THE FRONT OF THE TEMPLATE AS SHOWN BELOW.
- ☐ CUT SIDES OF GLOVE BOX.
- ☐ MARK THE BOTTOM CONNECTING EACH SIDE OF GLOVE BOX THAT WAS JUST CUT AND DISCARD THE FRONT PORTION OF THE BOX.
- ☐ INSTALL THE NEW SUPPLIED GLOVE BOX BY PRESSING THE S-CLIPS ONTO THE OEM PORTION OF THE BOX AS SHOWN IN FIGURE 17a, BELOW.



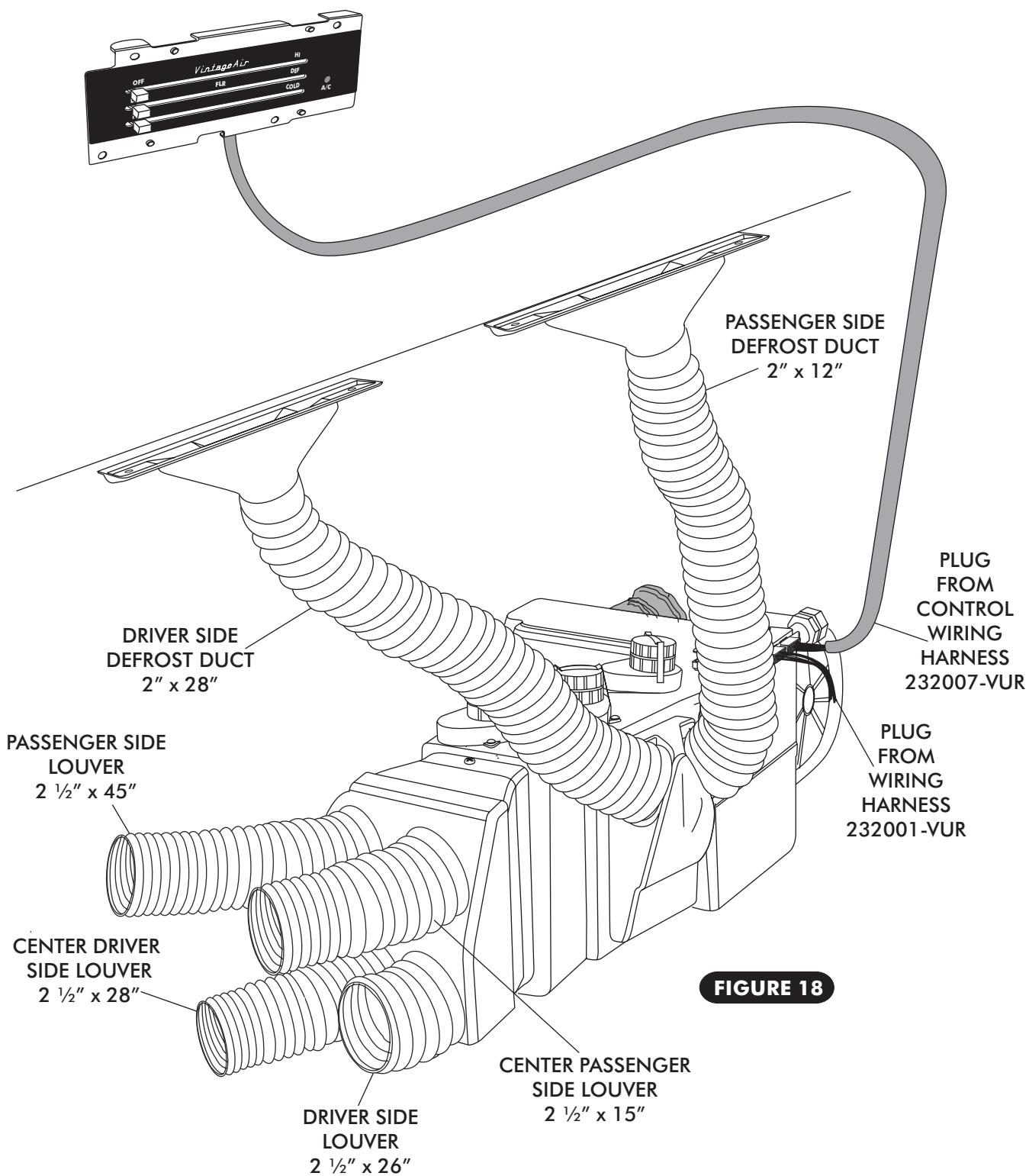
**FIGURE 17**



**FIGURE 17a**

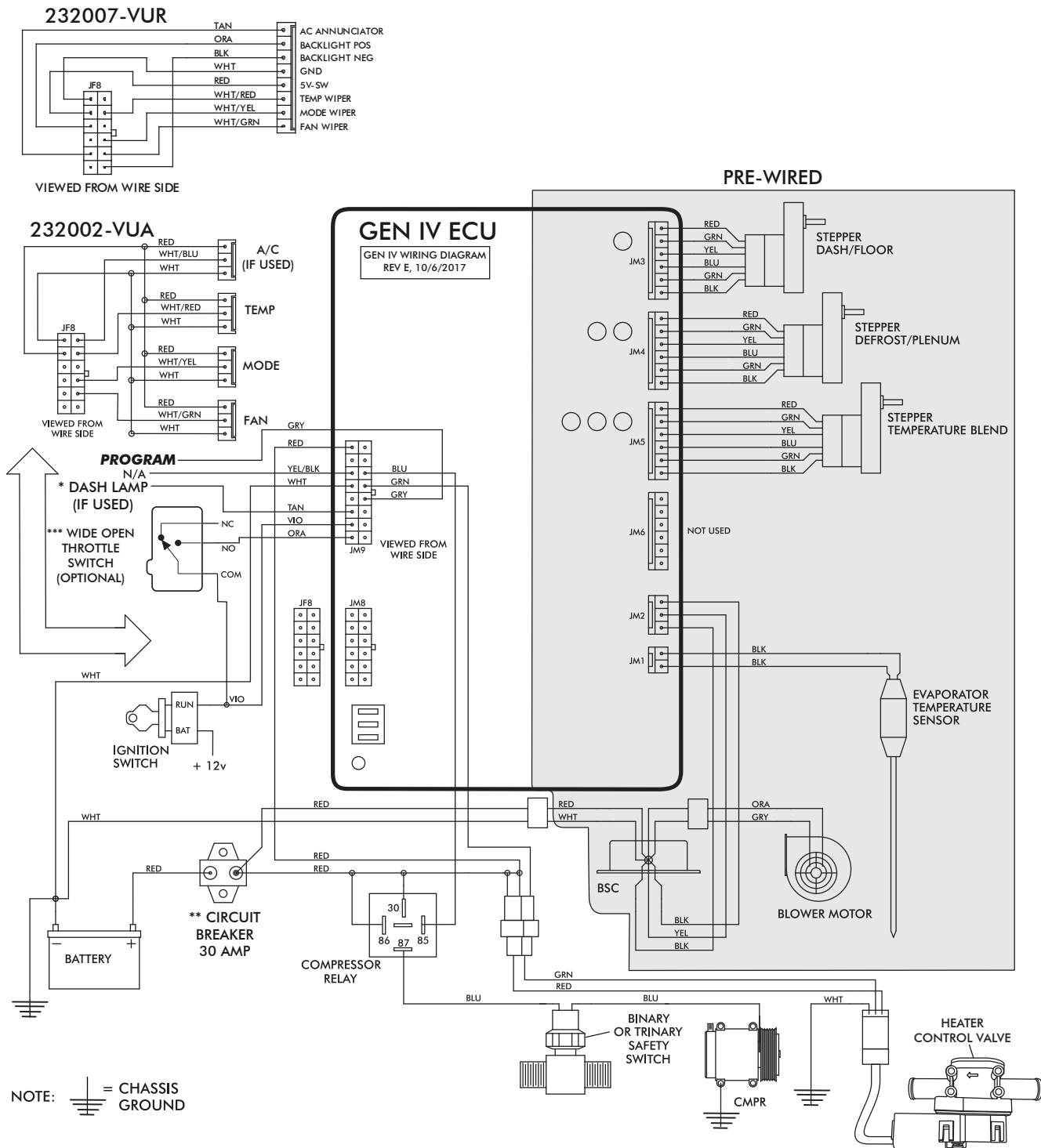


## CONTROL PANEL & DUCT HOSE ROUTING



**FIGURE 18**

## Wiring Diagram



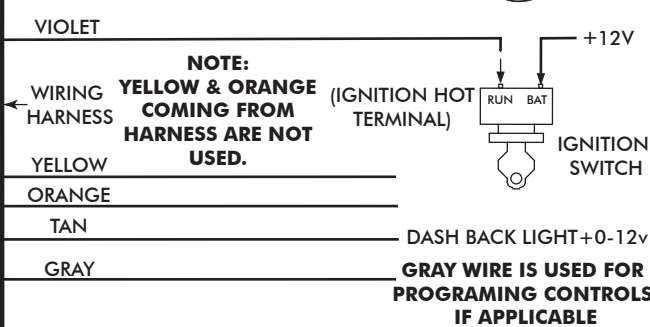
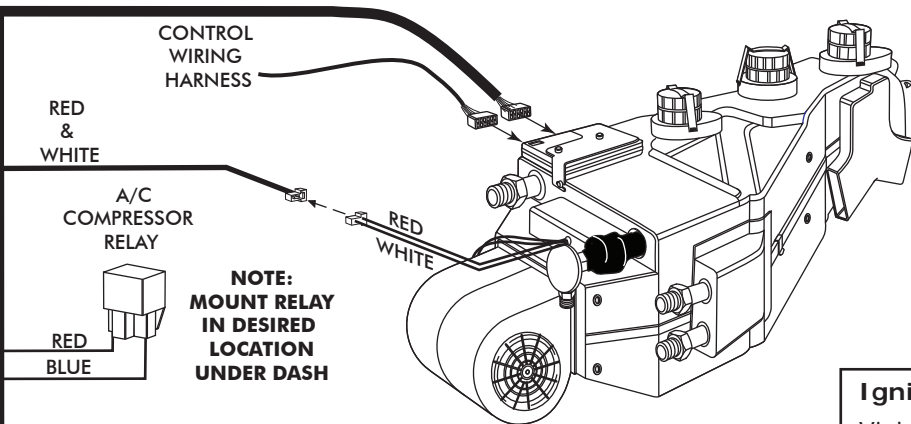
- \* Dash lamp is used only with type 232007-VUR harness.
- \*\* **Warning:** Always mount circuit breaker as close to the battery as possible. (NOTE: Wire between battery and circuit breaker is unprotected and should be carefully routed to avoid a short circuit).
- \*\*\* Wide open throttle switch contacts close only at full throttle, which disables A/C compressor.





# Gen IV Wiring Connection Instruction

WIRING  
HARNESS

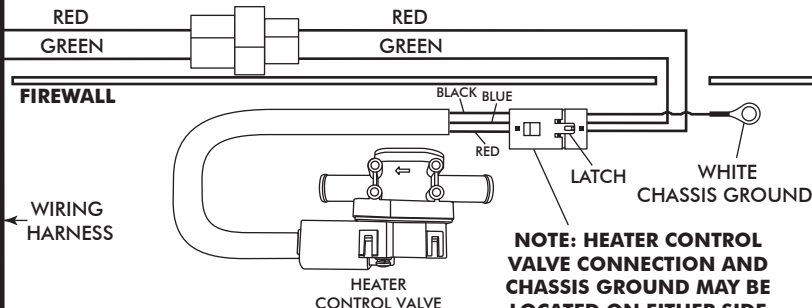


## Ignition Switch:

Violet 12V ignition switch source (key on accessory) position must be switched.

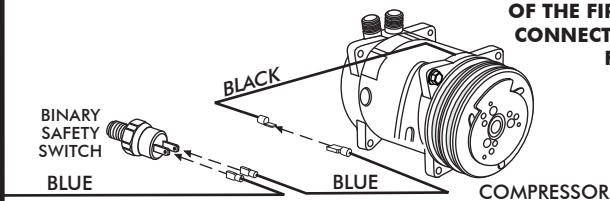
## Dash Light:

When using a Vintage Air-supplied control panel, connect the tan wire from the Gen IV evaporator wiring harness to the factory dash lights to enable panel backlighting.



## Heater Control Valve:

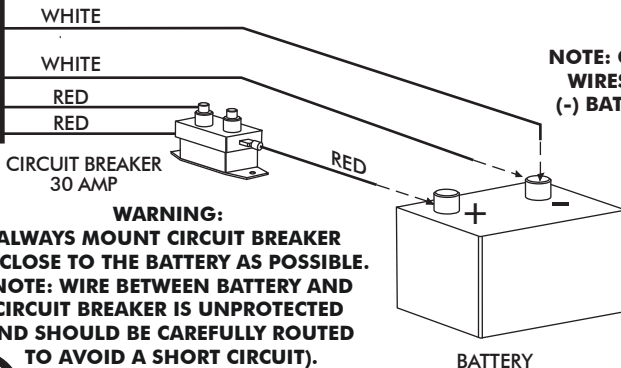
Install with servo motor facing down, as shown. Note flow direction arrow molded into valve body and install accordingly.



## Binary/Trinary & Compressor:

Binary: Connect as shown (typical compressor wiring). Be sure compressor body is grounded.

Trinary Switch: Connect according to trinary switch wiring diagram.



## Circuit Breaker/Battery:

White **must** run to (-) battery. Red may run to (+) battery or starter. Mount circuit breaker as close to battery as possible.



## OPERATION OF CONTROLS

**NOTE: WHEN BATTERY POWER IS FIRST CONNECTED TO THE ECU, THE MICROPROCESSOR GOES THROUGH AN INITIALIZATION SEQUENCE. THIS INITIALIZATION MAY TAKE UP TO 30 SECONDS. DURING INITIALIZATION, THE BLOWER WILL NOT OPERATE, BUT THE DOORS INSIDE THE UNIT WILL BE OPERATING. A LOW BATTERY OR DISCONNECTING THE BATTERY MAY ALSO TRIGGER A REINITIALIZATION. DURING START UP, A LOW BATTERY MAY DROP BELOW 7 VOLTS, TRIGGERING REINITIALIZATION.**

### A/C MODE

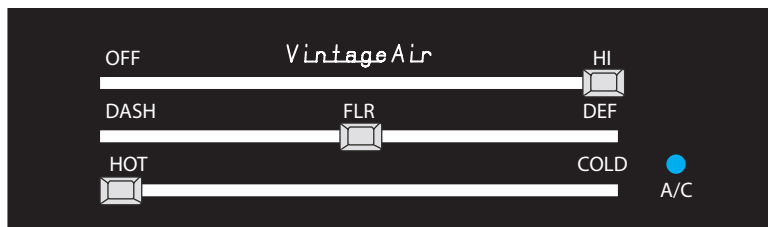


**BLOWER SPEED**  
ADJUST TO DESIRED  
SPEED

**MODE LEVER**  
SLIDE THE LEVER TO  
THE LEFT POSITION

**TEMPERATURE LEVER**  
IN A/C MODE SLIDE THE  
TEMPERATURE LEVER ALL  
THE WAY TO THE RIGHT  
TO ENGAGE COMPRESSOR.  
(SLIDE LEVER LEFT OR RIGHT  
TO ADJUST DESIRED  
TEMPERATURE)

### HEAT MODE



**BLOWER SPEED**  
ADJUST TO DESIRED  
SPEED

**MODE LEVER**  
SLIDE THE LEVER TO  
THE CENTER POSITION

**TEMPERATURE LEVER**  
SLIDE THE TEMPERATURE  
LEVER ALL THE WAY LEFT  
TO THE HOT POSITION.  
(SLIDE LEVER LEFT OR RIGHT  
TO DESIRED TEMPERATURE)

### DEFROST/ DE-FOG MODE



**BLOWER SPEED**  
ADJUST TO DESIRED  
SPEED

**MODE LEVER**  
SLIDE THE LEVER TO  
THE RIGHT POSITION

**TEMPERATURE LEVER**  
ADJUST LEVER TO  
DESIRED TEMPERATURE.  
(COMPRESSOR IS  
AUTOMATICALLY  
ENGAGED)



# Troubleshooting Guide

Symptom	Condition	Checks	Actions	Notes
1a. Blower stays on high speed when ignition is on.	No other functions work.	Check for damaged pins or wires in control head plug.	Verify that all pins are inserted into plug. Ensure that no pins are bent or damaged in ECU.	Loss of ground on this wire renders control head inoperable.  See blower switch check procedure.
	All other functions work.	Check for damaged ground wire (white) in control head harness.	Verify continuity to chassis ground with white control head wire at various points.	
		Check for damaged blower switch or potentiometer and associated wiring.		
1b. Blower stays on high speed when ignition is on or off.		Unplug 3-wire BSC control connector from ECU. If blower shuts off, ECU is either improperly wired or damaged.	Be sure the small, 20 GA white ground wire is connected to the battery ground post. If it is, replace the ECU.	No other part replacements should be necessary.
		Unplug 3-wire BSC control connector from ECU. If blower stays running, BSC is either improperly wired or damaged.	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.	
			Replace BSC (This will require removal of evaporator from vehicle).	
2. Compressor will not turn on (All other functions work).	System is not charged.	System must be charged for compressor to engage.	Charge system or bypass pressure switch.	<b>Danger: Never bypass safety switch with engine running. Serious injury can result.</b>  To check for proper pot function, check voltage at white/blue wire. Voltage should be between 0V and 5V, and will vary with pot lever position.  Disconnected or faulty thermistor will cause compressor to be disabled.
		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.	
	System is charged.	Check for disconnected or faulty thermistor.	Check 2-pin connector at ECU housing.	
		Check for faulty A/C potentiometer or associated wiring.	Repair or replace pot/control wiring.	
		Check for faulty A/C relay.	Replace relay.	
3. Compressor will not turn off (All other functions work).				Red wire at A/C pot should have approximately 5V with ignition on. White wire will have continuity to chassis ground. White/Blue wire should vary between 0V and 5V when lever is moved up or down.

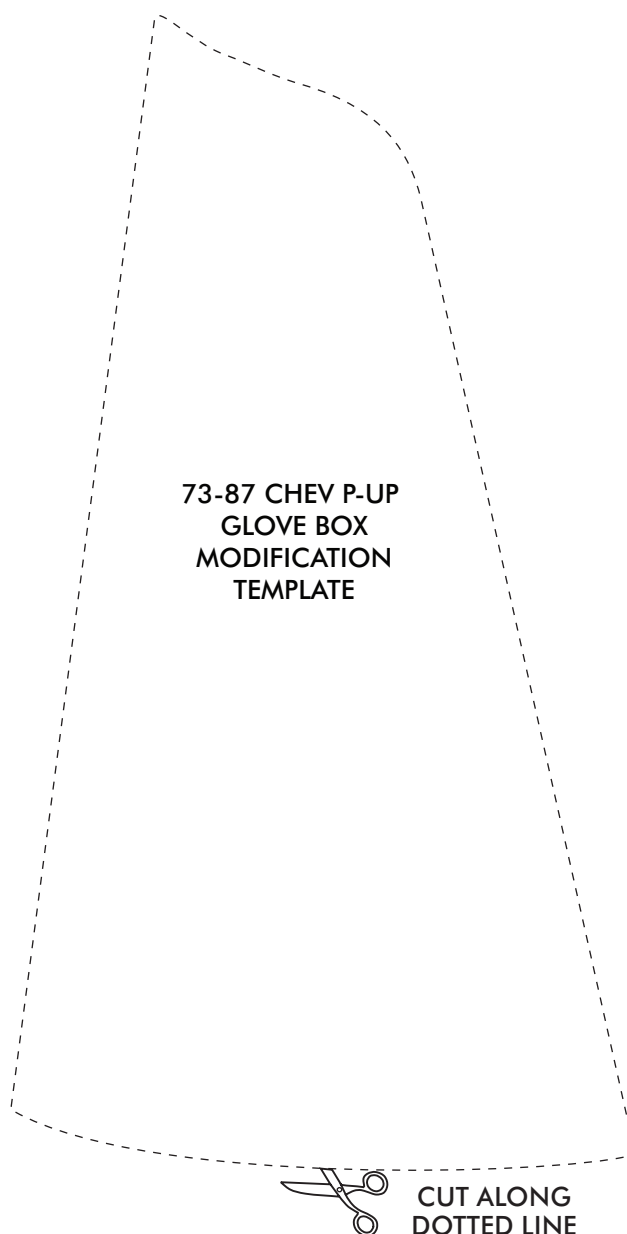


# Troubleshooting Guide (Cont.)

Symptom	Condition	Checks	Actions	Notes
4.	Works when engine is not running; shuts off when engine is started (typically early Gen IV, but possible on all versions).	Noise interference from either ignition or alternator.	Install capacitors on ignition coil and alternator. Ensure good ground at all points. Relocate coil and associated wiring away from ECU and ECU wiring. Check for burned or loose plug wires.	Ignition noise (radiated or conducted) will cause the system to shut down due to high voltage spikes. If this is suspected, check with a quality oscilloscope. Spikes greater than 16V will shut down the ECU. Install a radio capacitor at the positive post of the ignition coil (see radio capacitor installation bulletin). A faulty alternator or worn out battery can also result in this condition.
	System will not turn on, or runs intermittently.	Will not turn on under any conditions.	Check for positive power at heater valve green wire and blower red wire. Check for ground on control head white wire.	
		Verify battery voltage is greater than 10 volts and less than 16.	Verify proper meter function by checking the condition of a known good battery.	
5.	No mode change at all.	Check for damaged mode switch or potentiometer and associated wiring.		Typically caused by evaporator housing installed in a bind in the vehicle. Be sure all mounting locations line up and don't have to be forced into position.
	Partial function of mode doors.	Check for obstructed or binding mode doors. Check for damaged stepper motor or wiring.		
6.	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.	Battery voltage is less than 12V.	Check for faulty battery or alternator.	
7.	Erratic functions of blower, mode, temp, etc.	Check for damaged switch or pot and associated wiring.	Charge battery. Repair or replace.	
8.	When ignition is turned on, blower momentarily comes on, then shuts off. This occurs with the blower switch in the OFF position.	This is an indicator that the system has been reset. Be sure the red power wire is on the battery post, and not on a switched source. Also, if the system is pulled below 7V for even a split second, the system will reset.	Run red power wire directly to battery.	



## GLOVE BOX MODIFICATION TEMPLATE







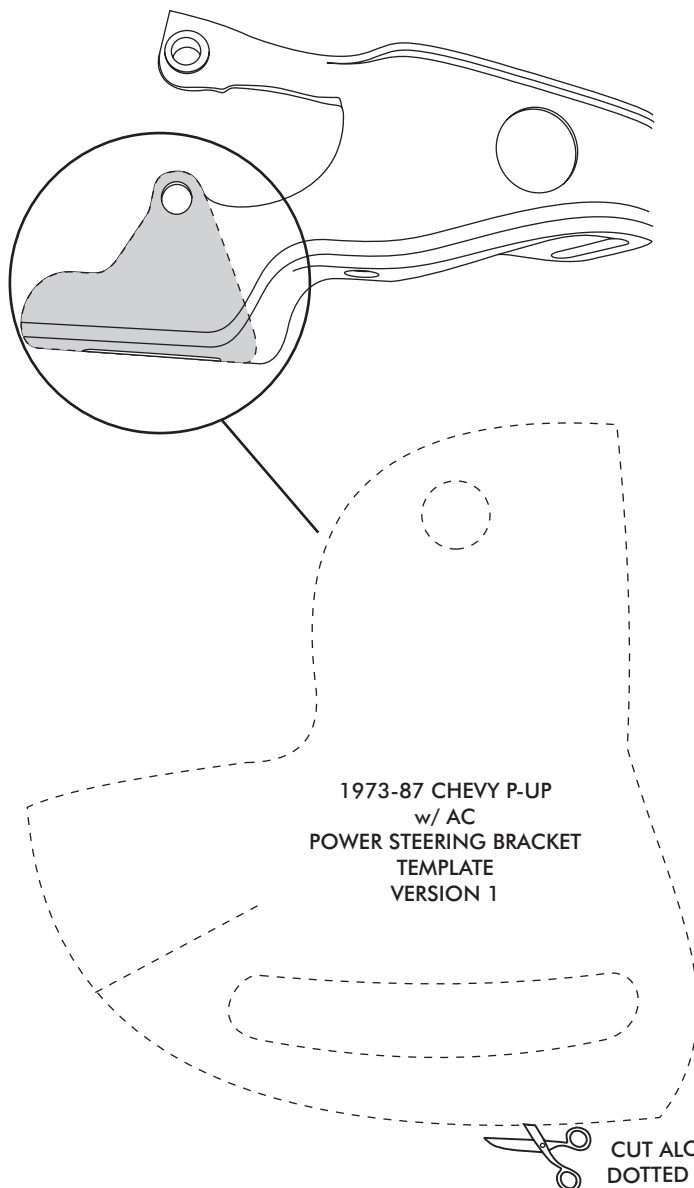


## POWER STEERING BRACKET MODIFICATION

**NOTE: USE ILLUSTRATIONS BELOW TO DETERMINE POWER STEERING BRACKET, VERSION 1 OR 2.**

- ☐ CUT ALONG DASHED LINES AND ALIGN THE TEMPLATE HOLE AND ADJUSTMENT SLOT WITH THE HOLE AND ADJUSTMENT SLOT ON THE POWER STEERING BRACKET.
- ☐ MARK THE BRACKET AROUND THE PERIMETER OF THE TEMPLATE.
- ☐ CUT AND REMOVE THE SHADED PORTION OF THE POWER STEERING BRACKET AS SHOWN BELOW.
- ☐ DISCARD THE A/C COMPRESSOR MOUNTING PORTION OF THE BRACKET.
- ☐ REINSTALL THE POWER STEERING BRACKET ON THE POWER STEERING PUMP.

VERSION 1



VERSION 2

