

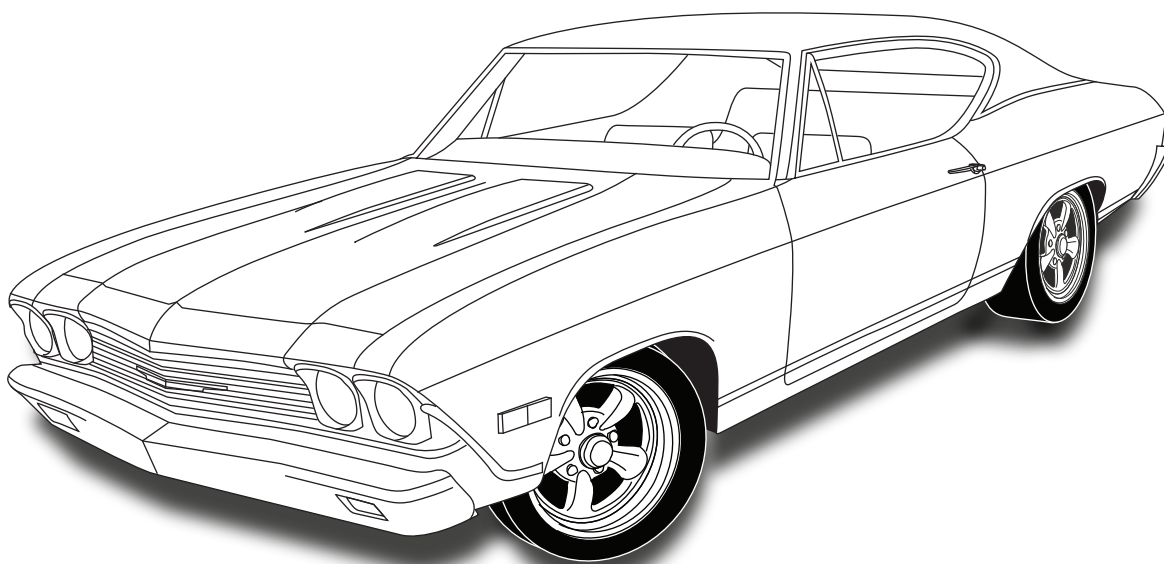


an ISO 9001: 2008 Registered Company

# **1968-69 CHEVELLE**

w/ FACTORY AIR

**564471**





## ***Table of Contents***

### PAGES

1. COVER
2. TABLE OF CONTENTS
3. PACKING LIST / PARTS DISCLAIMER
4. INFORMATION PAGE
5. WIRING NOTICE
6. ENGINE COMPARTMENT  
FIGURE 1
7. CONDENSER ASSEMBLY, COMPRESSOR & BRACKET, PULLEYS, & PASSENGER  
COMPARTMENT  
FIGURES 2, 2a & 3
8. DEFROST DUCT INSTALLATION & HOSE ADAPTER INSTALLATION  
FIGURES 4 & 5
9. FRESH AIR COVER INSTALLATION & KICK PANEL FRESH AIR CAP INSTALLATION  
FIGURES 6, 7, 7a & 7b
10. FIREWALL COVER INSTALLATION & EVAPORATOR INSTALLATION  
FIGURES 8 & 9
11. BRACKET INSTALLATION  
FIGURE 10
12. EVAPORATOR INSTALLATION CONT.  
FIGURES 11, 12 & 12a
13. CENTER LOUVER INSTALLATION  
FIGURES 13 & 13a
14. DRAIN HOSE INSTALLATION LUBRICATING O-RINGS, A/C HOSE INSTALLATION, &  
FIGURES 14 & 15
15. AC & HEATER HOSE ROUTING 68 CHEVELLE  
FIGURE 16
16. AC & HEATER HOSE ROUTING 69 CHEVELLE  
FIGURE 16a
17. FINAL STEPS, GLOVE BOX AND KICK PANEL MODIFICATION  
FIGURES 17,18 & 19
18. CONTROL PANEL & DUCT HOSE ROUTING  
FIGURE 20
19. WIRING DIAGRAM
20. GEN IV WIRING CONNECTION INSTRUCTIONS
21. OPERATION OF CONTROLS
22. TROUBLE SHOOTING INFORMATION
23. TROUBLE SHOOTING INFORMATION CONT.
24. 68-69 CHEVELLE w/ AC EVAP REAR BRKT TEMPLATE
25. EVAPORATOR KIT PACKING LIST

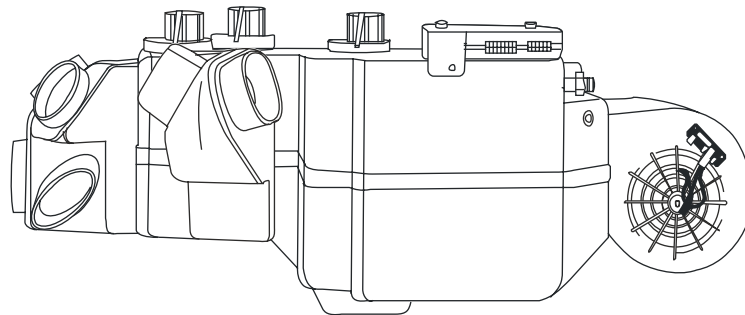
## EVAPORATOR KIT 564471

## EVAPORATOR KIT PACKING LIST

| No. | QTY. | PART No. | DESCRIPTION                             |
|-----|------|----------|---|
| 1.  | 1    | 762169   | GEN IV 4 VENT w/ 2 & 2 ½ EVAP. SUB CASE |
| 2.  | 1    | 784166   | 1968-69 CHEVELLE w/ AC ACC. KIT         |

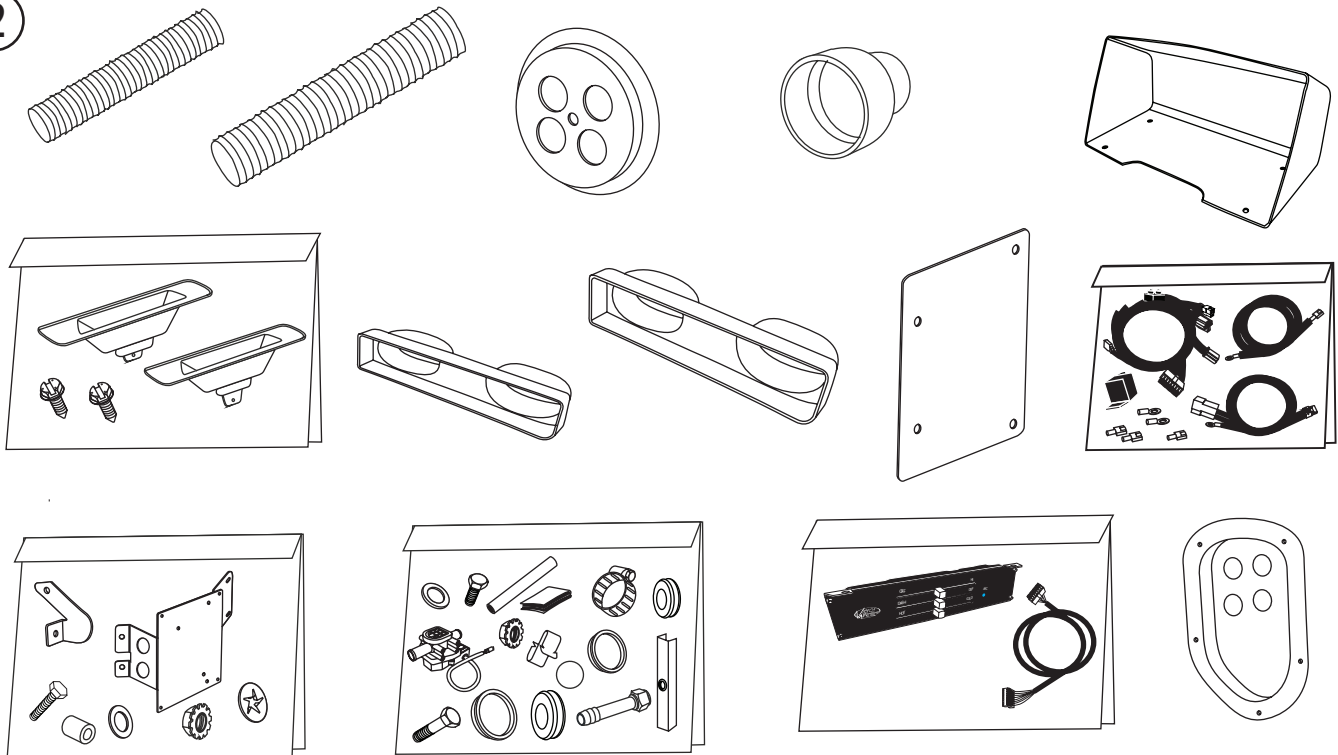
**\*\* BEFORE BEGINNING INSTALLATION OPEN ALL PACKAGES AND CHECK CONTENTS OF SHIPMENT. PLEASE REPORT ANY SHORTAGES DIRECTLY TO VINTAGE AIR WITHIN 15 DAYS. AFTER 15 DAYS, VINTAGE AIR WILL NOT BE RESPONSIBLE FOR MISSING OR DAMAGED ITEMS.**

1



**GEN IV 4 VENT  
w/ 2 & 2 1/2 EVAP  
SUB CASE  
762169**

2



3

## ACCESSORY KIT 784166

**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:***

### **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.

### **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.

### **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:**

**Attention:** The following system components are capped: Compressor, evaporator, condenser & drier. Caps may be under pressure with dry nitrogen. Be careful removing caps. Do not remove caps prior to installation. Removing caps prior to installation will cause components to collect moisture and lead to premature failure and reduced performance.

Evacuate the system for 35-45 minutes with system components (Drier, compressor, evaporator and condenser) 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.

***Vintage Air Systems Are Designed to Operate With R134a Refrigerant Only! Use of Any Other Refrigerants Is a Fire Hazard and Could Damage Either Your Air Conditioning System or Your Vehicle.***

***Use of Any Other Refrigerants Will Void All Warranties of the Air Conditioning System and Components. Use of the Proper Type and Amount of Refrigerant Is Critical to Proper System Operation. Vintage Air Recommends Our Systems Be Charged By Weight With a Quality Charging Station or Scale.***

### **Refrigerant Capacity for Vintage Air Systems:**

*(For other systems, consult manufacturer's guidelines)*

#### **R134a System**

Charge with 1.8 lbs. (1 lb., 12 oz.) of refrigerant.

### **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).



## **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.



## 1968-69 CHEVELLE w/AC

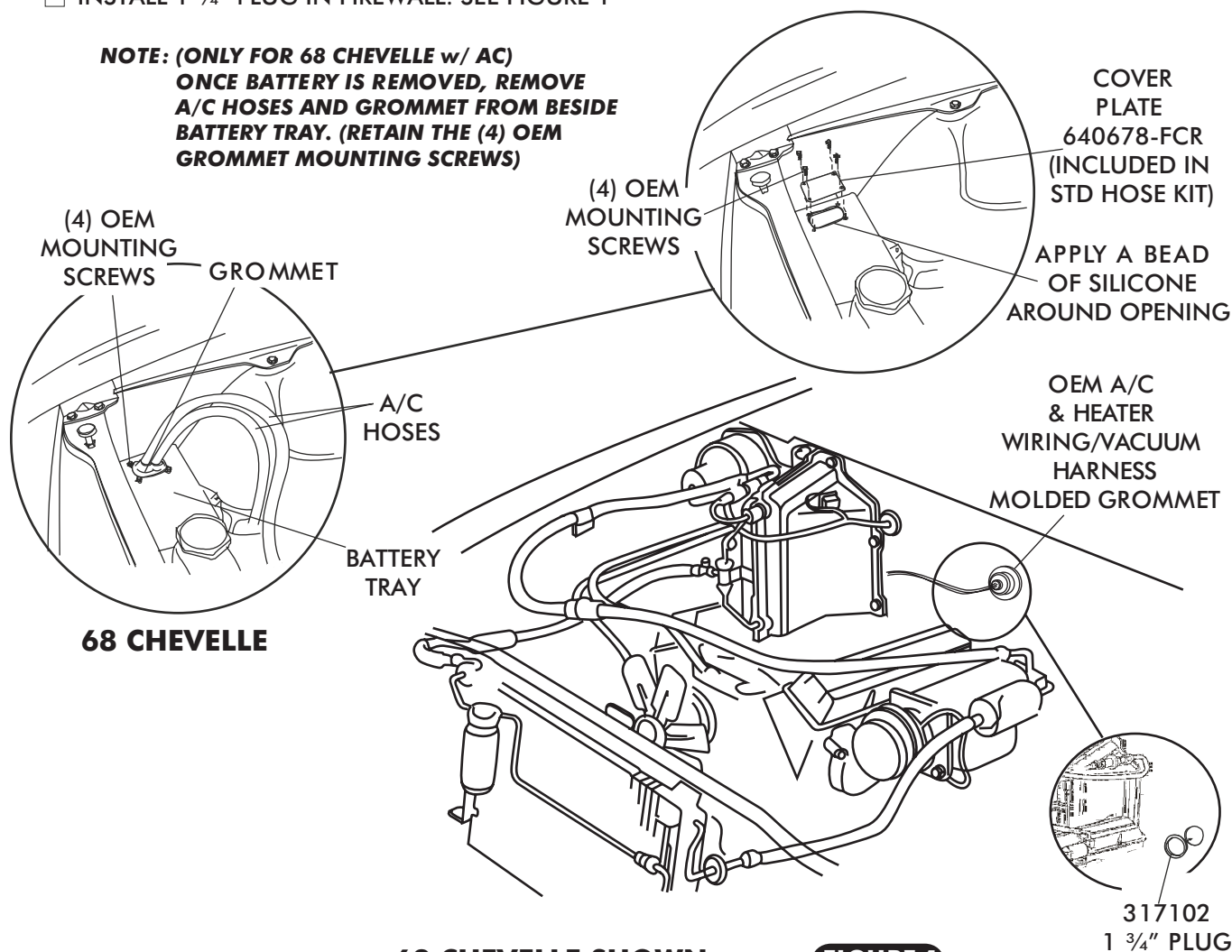
**BEFORE STARTING THE INSTALLATION, CHECK THE FUNCTION OF THE VEHICLE (HORN, LIGHTS, ETC.) FOR PROPER OPERATION. STUDY THE INSTRUCTIONS, ILLUSTRATIONS, & DIAGRAMS.**

### ENGINE COMPARTMENT

#### REMOVE THE FOLLOWING

- ☐ BATTERY, BATTERY TRAY (RETAIN)
  - ☐ DRAIN RADIATOR
  - ☐ EVACUATE THE A/C SYSTEM IF NECESSARY
  - ☐ O.E.M. CONDENSER AND DRIER (DISCARD) SEE FIGURE 1
  - ☐ O.E.M. A/C LINES FROM COMPRESSOR TO EVAPORATOR (DISCARD) SEE FIGURE 1
  - ☐ O.E.M. COMPRESSOR AND BRACKET (DISCARD) SEE FIGURE 1
  - ☐ EVAPORATOR BLOWER ASSEMBLY (DISCARD)
- TO REMOVE THE EVAPORATOR AND BLOWER ASSEMBLY (UNDER HOOD) AND THE AIR DISTRIBUTION SYSTEM (UNDER DASH) THE FACTORY MANUAL INDICATES DOING THE FOLLOWING, **REMOVE RIGHT INNER FENDER.**
- ☐ OEM HEATER HOSES, A/C HOSES, HARDLINES AND DRIER (DISCARD). SEE FIGURE 1.
  - ☐ OEM A/C & HEATER WIRING/VACUUM HARNESS MOLDED GROMMET. SEE FIGURE 1.
  - ☐ INSTALL 1 3/4" PLUG IN FIREWALL. SEE FIGURE 1

**NOTE: (ONLY FOR 68 CHEVELLE w/ AC)**  
**ONCE BATTERY IS REMOVED, REMOVE A/C HOSES AND GROMMET FROM BESIDE BATTERY TRAY. (RETAIN THE (4) OEM GROMMET MOUNTING SCREWS)**



69 CHEVELLE SHOWN

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 BRACKET.

## PULLEYS

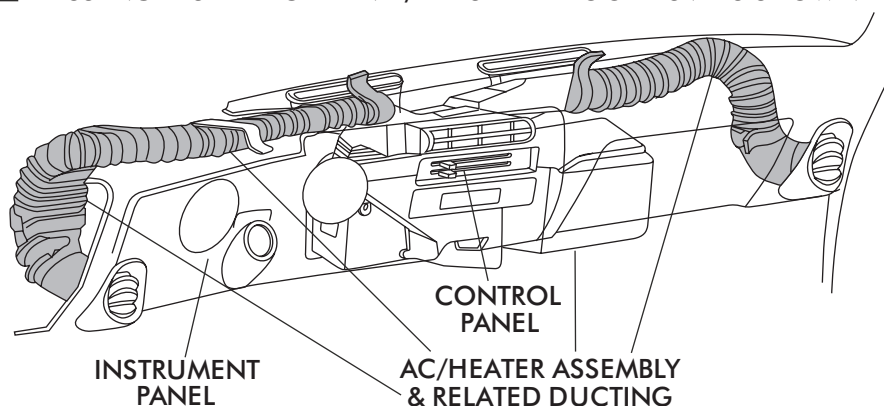
- ☐ IN MOST INSTANCES THE BELT LENGTHS WILL REMAIN THE SAME.

## PASSENGER COMPARTMENT

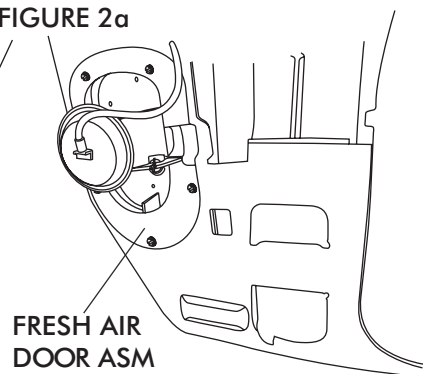
**NOTE:** REMOVAL OF DASHBOARD REQUIRED TO INSTALL THE EVAPORATOR. VINTAGE AIR RECOMMENDS THAT YOU UTILIZE THE FACTORY SERVICE MANUAL WHEN YOU DISASSEMBLE AND REASSEMBLE THE DASHBOARD.

### REMOVE THE FOLLOWING:

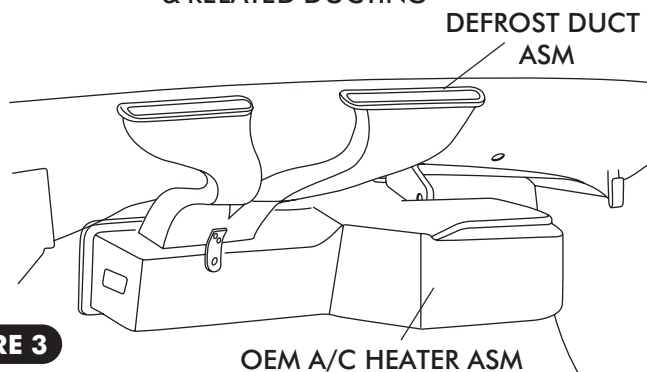
- ☐ REMOVE THE DASH PAD BY REMOVING (6) OEM SCREWS.(RETAIN), SEE FIGURE 2 BELOW.
- ☐ LOWER STEERING COLUMN, PROTECT STEERING COLUMN WITH A CLOTH.
- ☐ DISCONNECT ALL WIRE AND CABLES FROM INSTRUMENT PANEL, SPEEDOMETER, CONTROL PANEL, AND RADIO.
- ☐ REMOVE INSTRUMENT PANEL RETAINING SCREWS AT TOP, BOTTOM, AND SIDE OF PANEL.
- ☐ ALL HOSE AND DUCTING FROM O.E.M LOUVERS, SEE FIGURE 2 BELOW
- ☐ THE (2) O.E.M UNDER DASH LOUVER ASM (DISCARD), SEE FIGURE 2 BELOW
- ☐ O.E.M DEFROST DUCT ASSEMBLY BY REMOVING THE (4) SCREWS, SEE FIGURE 3 BELOW.
- ☐ O.E.M AC/ HEATER ASM SEE FIGURE 3 BELOW
- ☐ PASSENGER SIDE KICK PANEL/ FRESH AIR DOOR ASM AS SHOWN IN FIGURE 2a



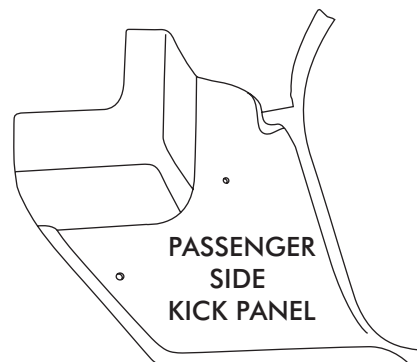
**FIGURE 2**



**FIGURE 2a**



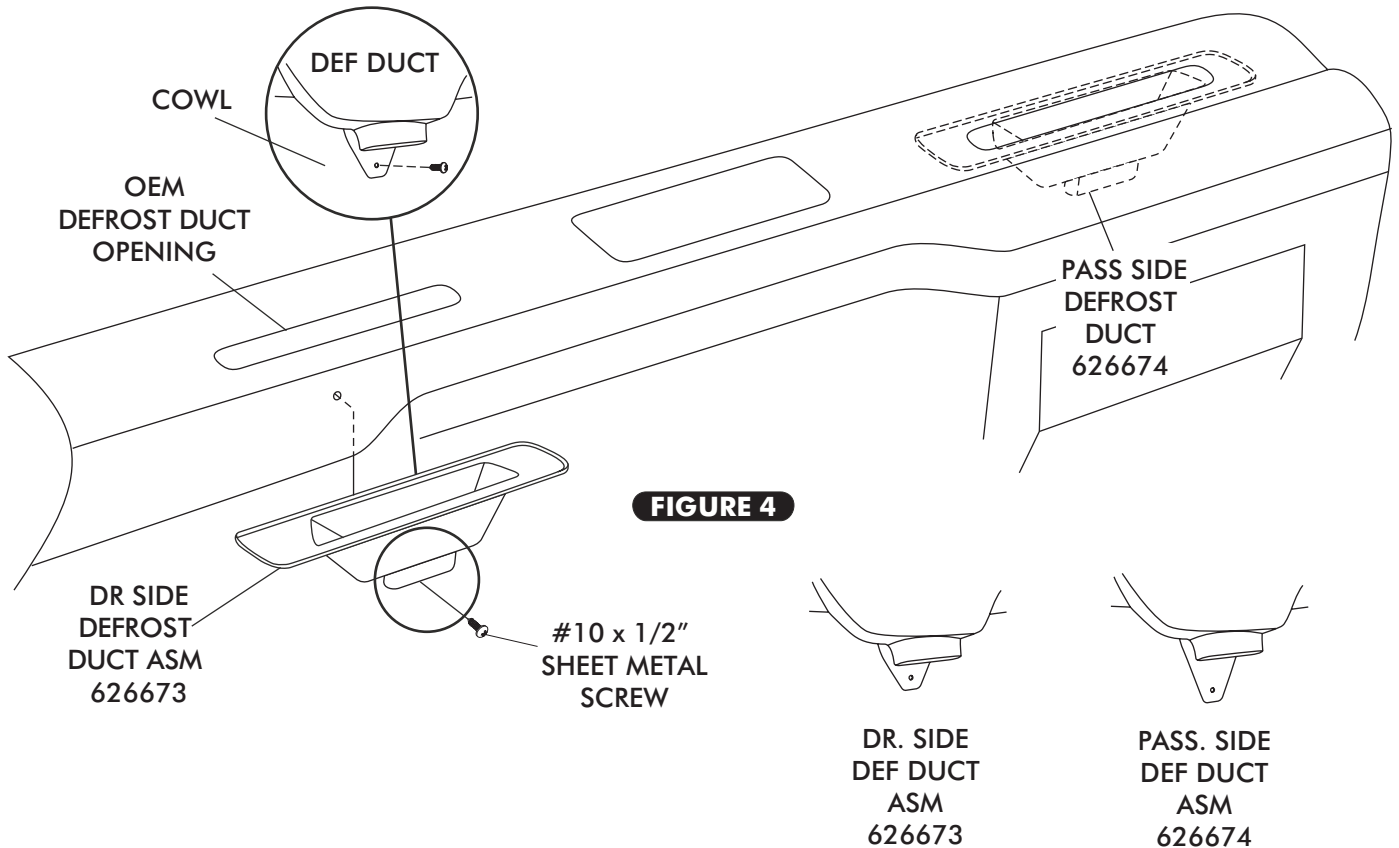
**FIGURE 3**





## DEFROST DUCT INSTALLATION

- INSTALL DEFROST DUCTS UNDER DASH AND ALIGN WITH OEM OPENING. SECURE USING #10 x 1/2" SHEET METAL SCREWS AND ATTACH TO COWL. SEE FIGURE 4.



## HOSE ADAPTER INSTALLATION

- INSTALL S-CLIPS ON HOSE ADAPTERS AS SHOWN IN FIGURE 5 BELOW.
- INSTALL DRIVER & PASSENGER SIDE HOSE ADAPTERS OUTSIDE OEM LOUVERS. SEE FIGURE 5 BELOW

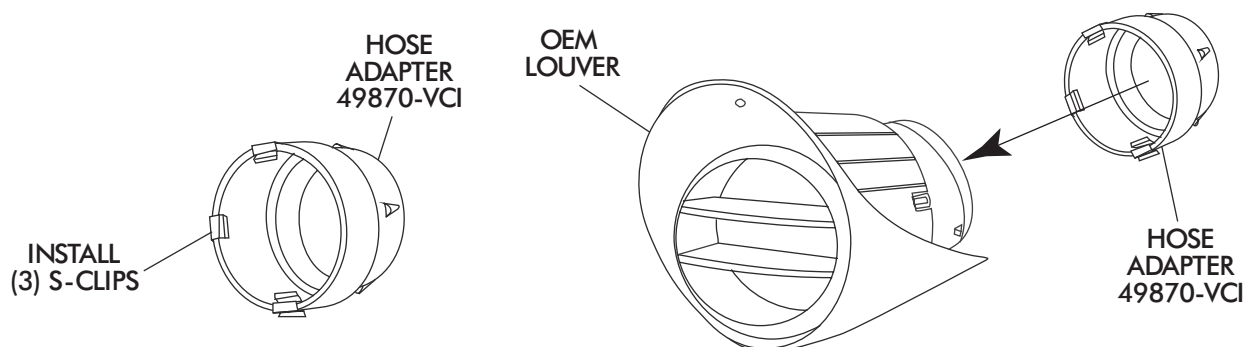


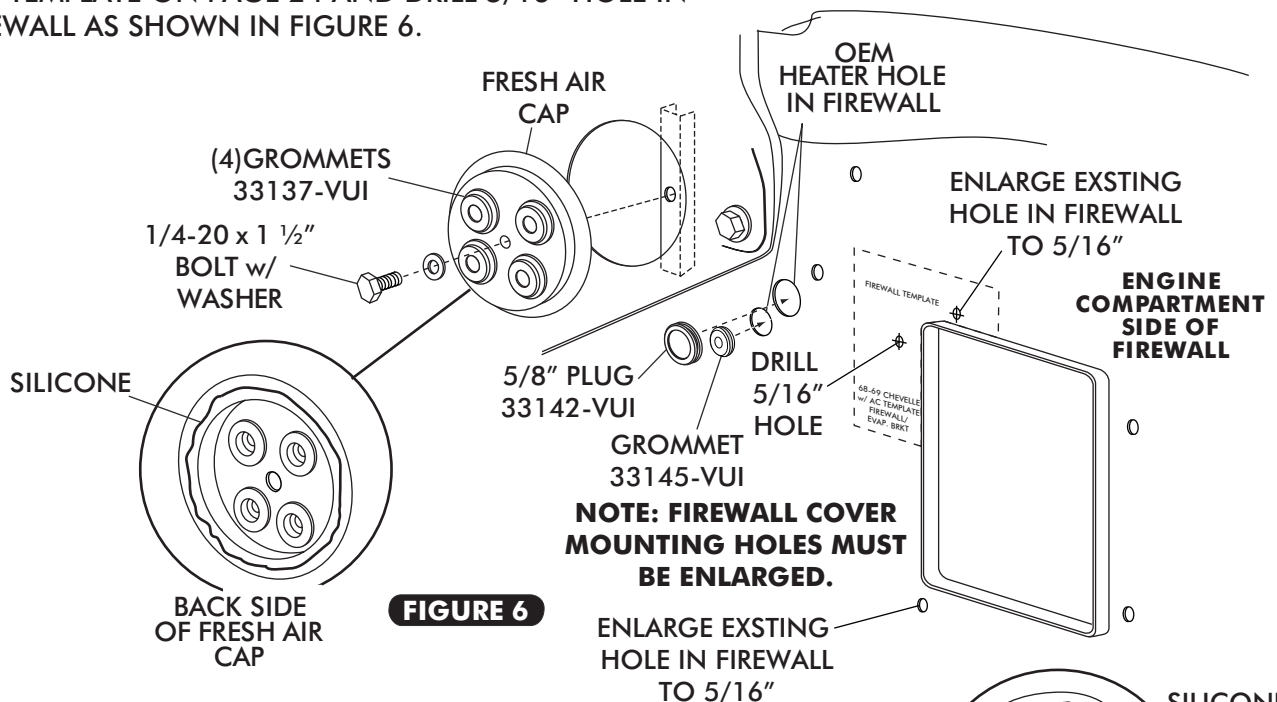
FIGURE 5





## FRESH AIR COVER INSTALLATION

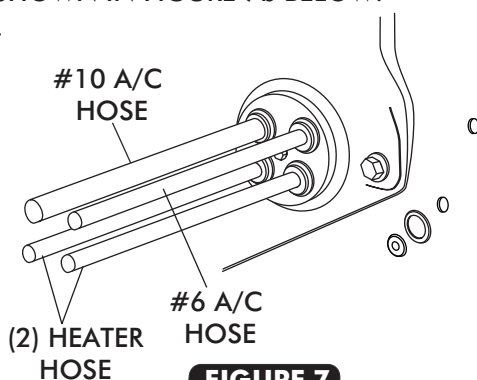
- ☐ INSTALL (4) GROMMETS IN FRESH AIR CAP. SEE FIGURE 6 BELOW
- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FRESH AIR CAP AS SHOWN IN FIGURE 6 BELOW.
- ☐ ATTACH FRESH AIR CAP TO FIREWALL USING A 1/4-20 x 1 1/2" BOLT AND WASHER, SEE FIGURE 6 BELOW. (NOTE: FRESH AIR CAP INSTALLS ON ENGINE SIDE OF FIREWALL.)
- ☐ INSTALL 5/8" PLUG AND GROMMET IN FIREWALL SEE FIGURE 6.
- ☐ USE TEMPLATE ON PAGE 24 AND DRILL 5/16" HOLE IN FIREWALL AS SHOWN IN FIGURE 6.



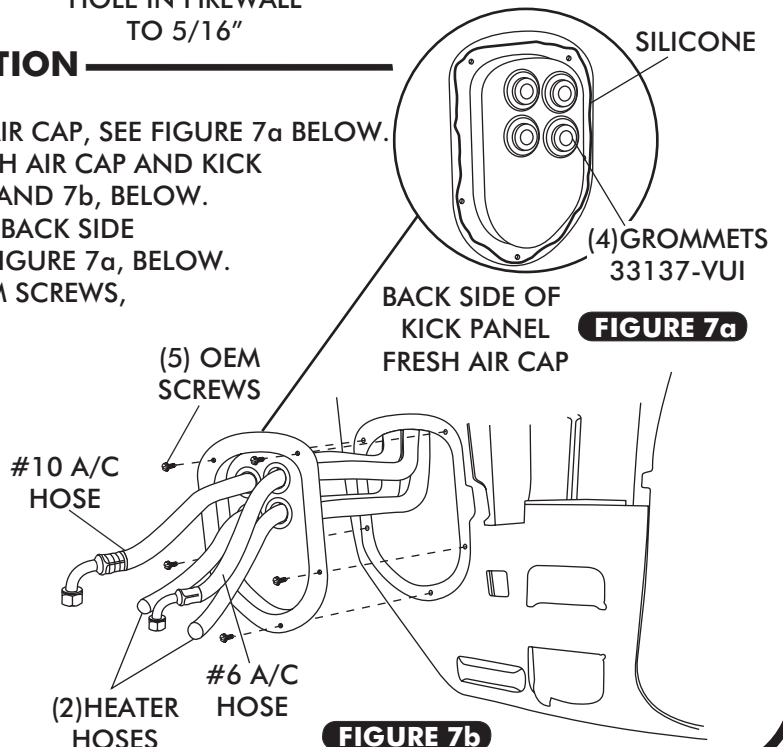
**FIGURE 6**

## KICK PANEL FRESH AIR CAP INSTALLATION

- ☐ INSTALL (4) GROMMETS IN KICK PANEL FRESH AIR CAP, SEE FIGURE 7a BELOW.
- ☐ ROUTE A/C AND HEATER HOSE THROUGH FRESH AIR CAP AND KICK PANEL FRESH AIR CAP AS SHOWN IN FIGURE 7 AND 7b, BELOW.
- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF KICK PANEL FRESH AIR CAP AS SHOWN IN FIGURE 7a, BELOW.
- ☐ SECURE KICK PANEL FRESH AIR CAP USING OEM SCREWS, AS SHOWN IN FIGURE 7b BELOW.



**FIGURE 7**



**FIGURE 7a**

**FIGURE 7b**



## FIREWALL COVER INSTALLATION

- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FIREWALL COVER AS SHOWN IN FIGURE 8, BELOW.
- ☐ FROM INSIDE THE CAR, INSTALL FIREWALL COVER ON FIREWALL USING (3) 1/4-20 x 1" HEX BOLTS, FLAT WASHERS AND 1/4-20 NUT WITH STAR WASHER, SEE FIGURE 8, BELOW.

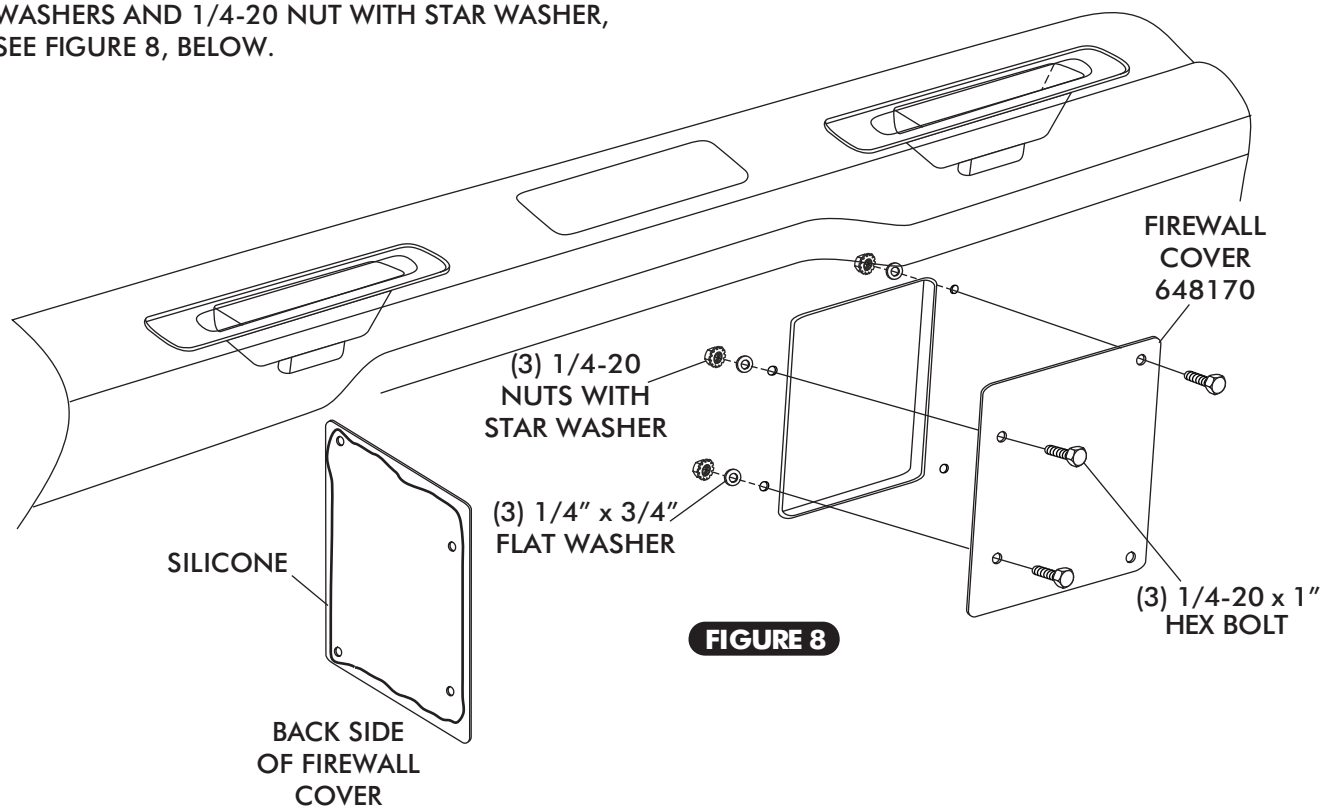


FIGURE 8

## EVAPORATOR INSTALLATION

- ☐ ON A WORK BENCH INSTALL (2) HEATER FITTINGS WITH PROPERLY LUBRICATED O-RINGS. (SEE FIGURE 15 PAGE 14, AND FIGURE 10 PAGE 11.)
- ☐ INSTALL 1/4-20 x 1" HEX BOLT AND 1/4-20 x 1 1/2" HEX BOLT w/ 1/2" ALUM SPACER AND (2) 1/4" PUSH NUT BOLT RETAINER ON EVAP REAR BRKT AS SHOWN IN FIGURE 10, PAGE 11.
- ☐ INSTALL EVAPORATOR FRONT & REAR MOUNTING BRACKETS ON EVAPORATOR USING (5) 1/4-20 x 1/2" HEX BOLTS AND TIGHTEN AS SHOWN IN FIGURE 9 BELOW & FIGURE 10, PAGE 11.
- ☐ LAY EVAPORATOR SUBCASE ON PASSENGER SIDE FLOOR BOARD. INSTALL A/C & HEATER HOSE ON EVAPORATOR AS SHOWN IN FIGURE 11, PAGE 12 AND HOSE INSTALLATION ON PAGE 14.
- ☐ (NOTE: WRAP THE #10 FITTING CONNECTIONS WITH PRESS TAPE. SEE FIGURE 11, PAGE 12.)

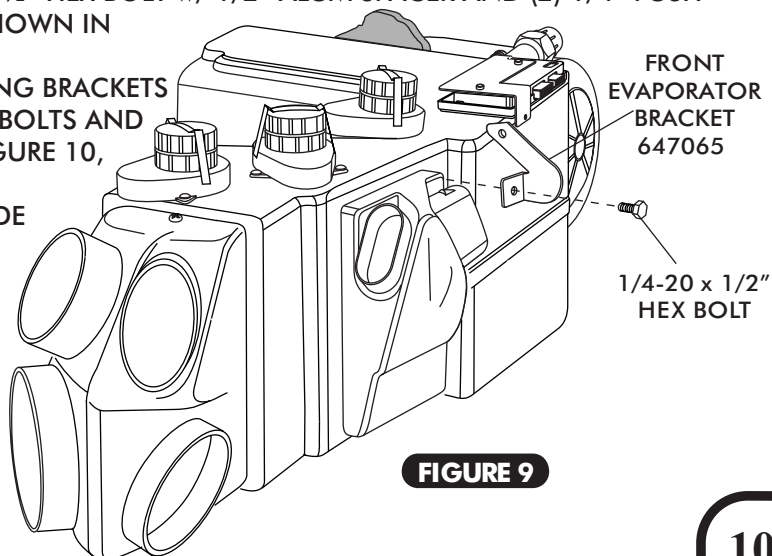


FIGURE 9



BRACKET INSTALLATION CONT.

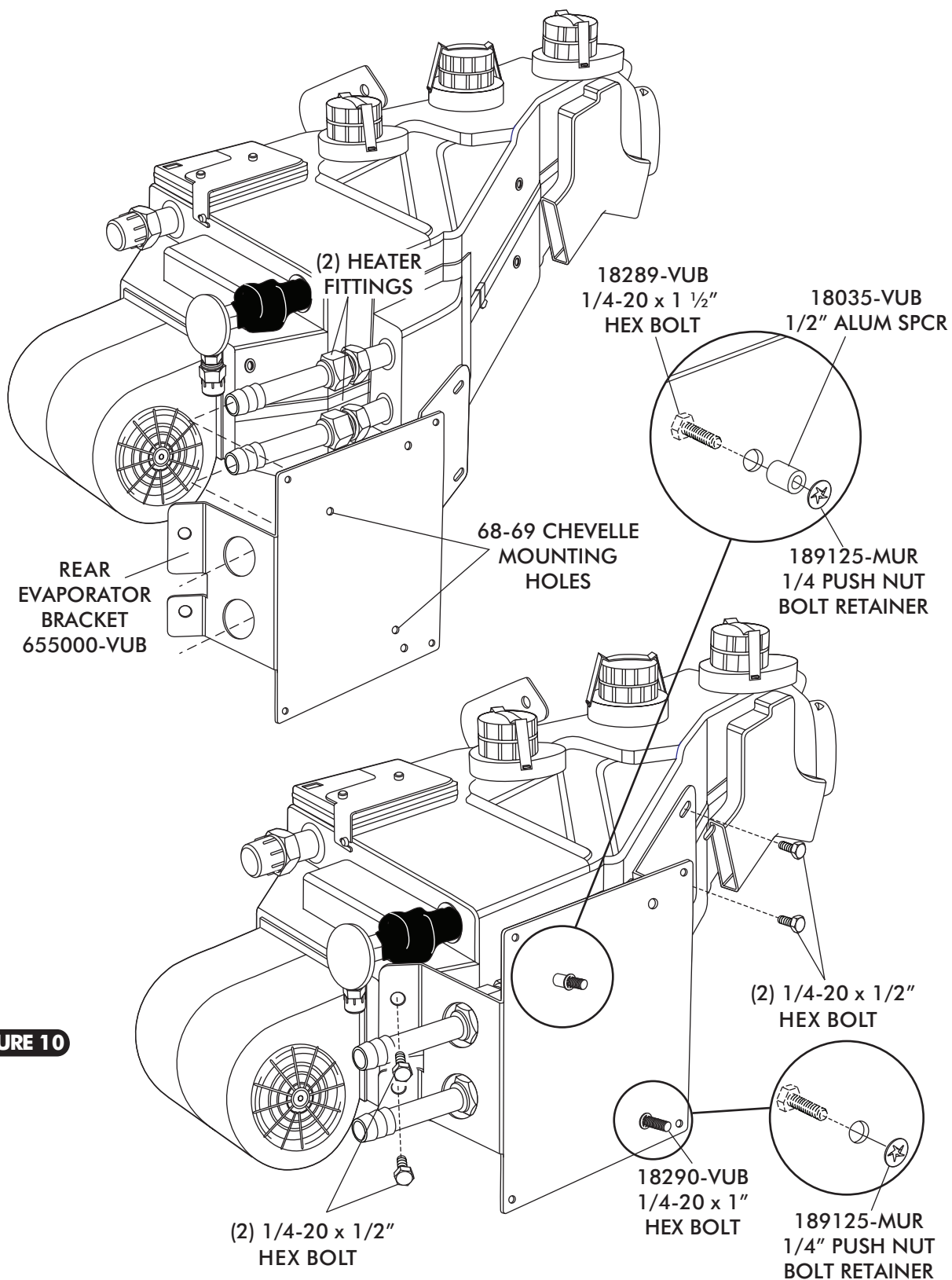


FIGURE 10



## EVAPORATOR INSTALLATION CONT.

- ❑ LIFT EVAPORATOR UNIT UP UNDER THE DASHBOARD. SECURE LOOSELY TO THE FIREWALL FROM THE ENGINE COMPARTMENT SIDE USING (2) 1/4-20 NUT AND FLAT WASHER, SEE FIGURE 12.
- ❑ SECURE THE FRONT EVAPORATOR MOUNTING BRACKET BETWEEN THE DASH BRACKET AND COWL BRACKET USING OEM SCREW. SEE FIGURE 12a.
- ❑ VERIFY THAT EVAPORATOR UNIT IS LEVEL AND SQUARE TO THE DASH, THEN TIGHTEN ALL MOUNTING BOLTS. (**NOTE: TIGHTEN THE BOLT ON FIREWALL FIRST, THEN THE FRONT MOUNTING BRACKET OEM BOLT.**)
- ❑ ONCE EVAPORATOR IS IN PLACE. ROUTE A/C & HEATER HOSE OUT KICK PANEL FRESH AIR CAP AND THROUGH FRESH AIR CAP.

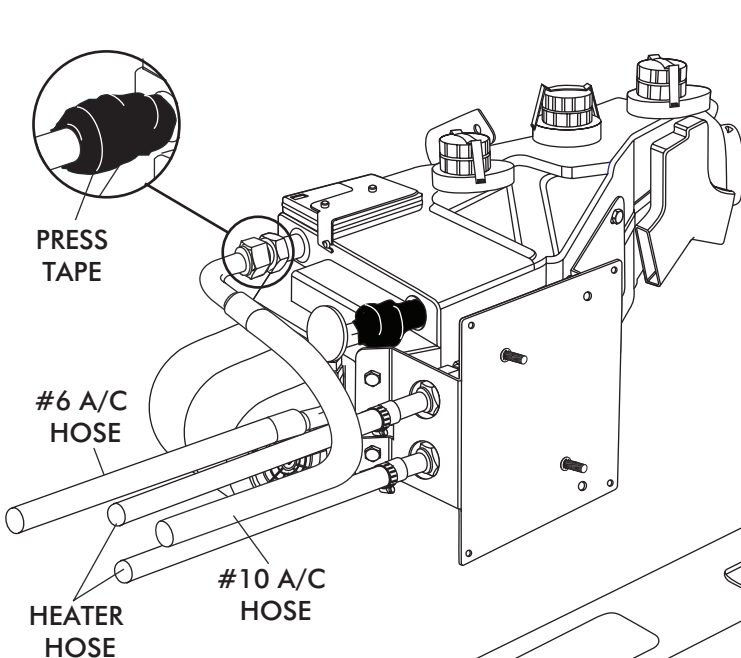
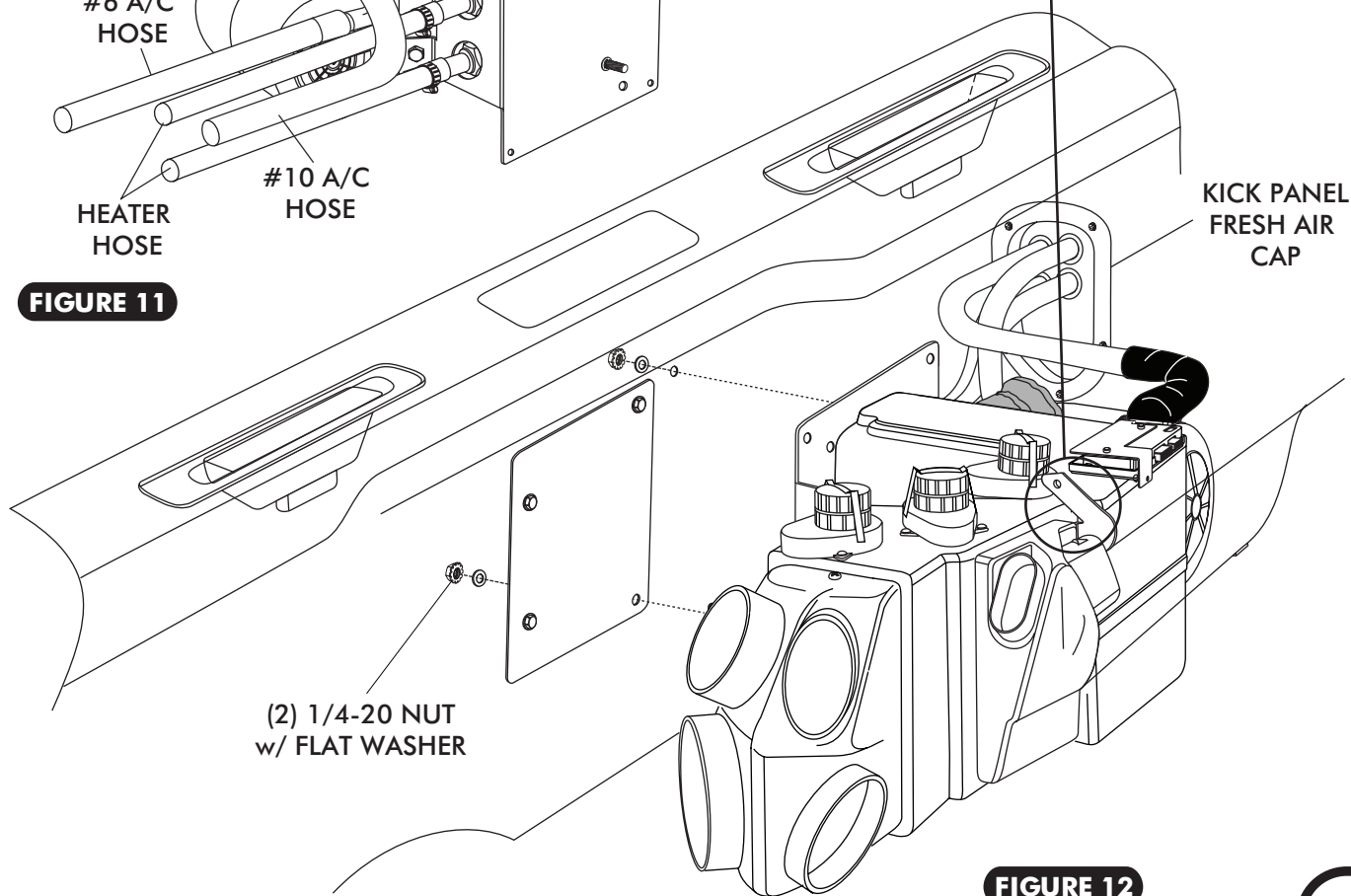
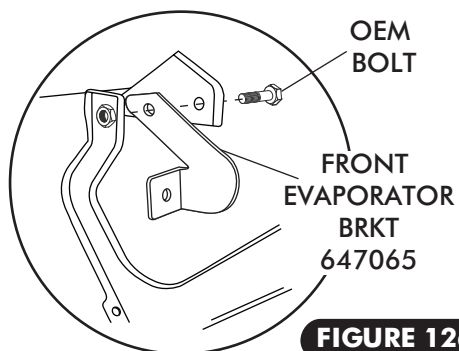


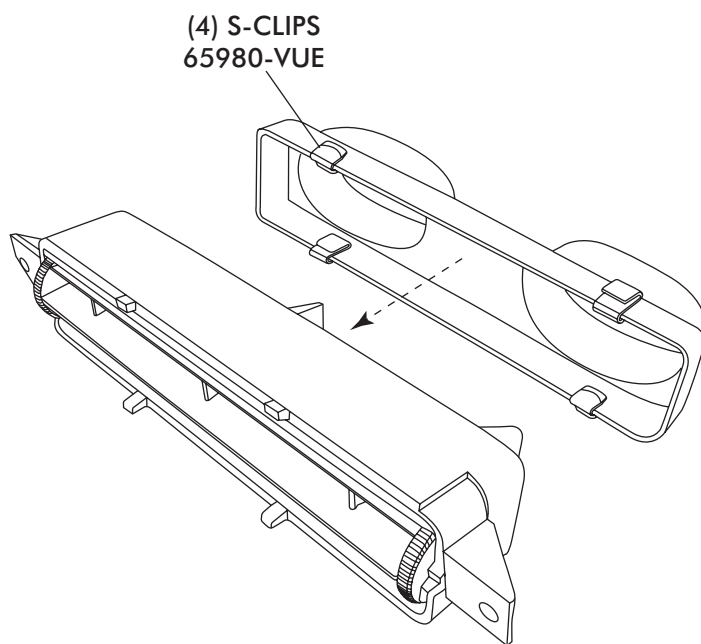
FIGURE 11





## 68 CENTER LOUVER INSTALLATION

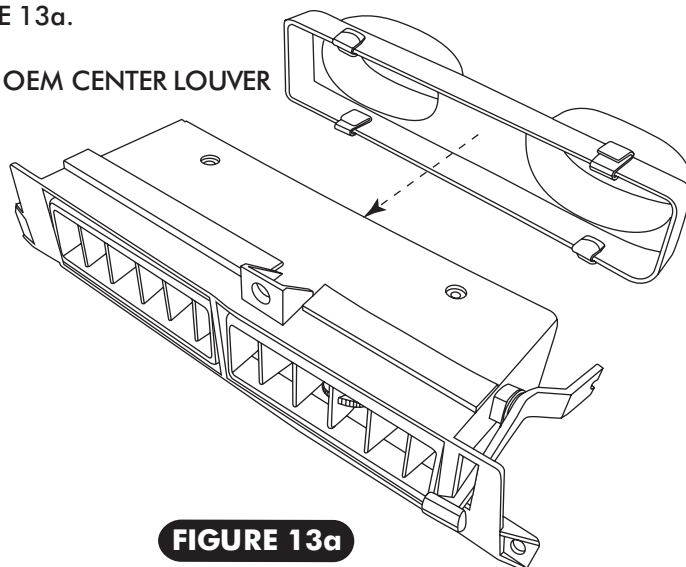
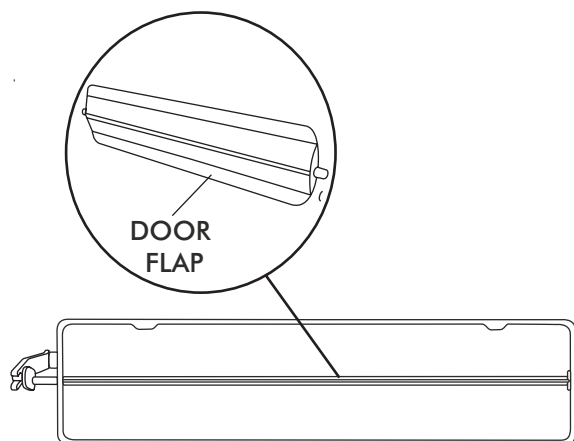
- ☐ INSTALL (4) S-CLIPS ON HOSE ADAPTER SEE FIGURE 13.
- ☐ INSTALL CENTER LOUVER HOSE ADAPTER OUTSIDE OEM CENTER LOUVER ASSEMBLY AS SHOWN IN FIGURE 13 BELOW.



**FIGURE 13**

## 69 CENTER LOUVER INSTALLATION

- ☐ REMOVE THE CENTER LOUVER DOOR FLAP. SEE FIGURE 13a
- ☐ INSTALL (4) S-CLIPS ON HOSE ADAPTER SEE FIGURE 13a.
- ☐ INSTALL CENTER LOUVER HOSE ADAPTER OUTSIDE OEM CENTER LOUVER ASSEMBLY AS SHOWN IN FIGURE 13a BELOW.



**FIGURE 13a**





## 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. SEE FIGURE 14 BELOW.
- ☐ INSTALL DRAIN HOSE TO BOTTOM OF EVAPORATOR UNIT AND ROUTE THROUGH FIREWALL. SEE FIGURE 14.

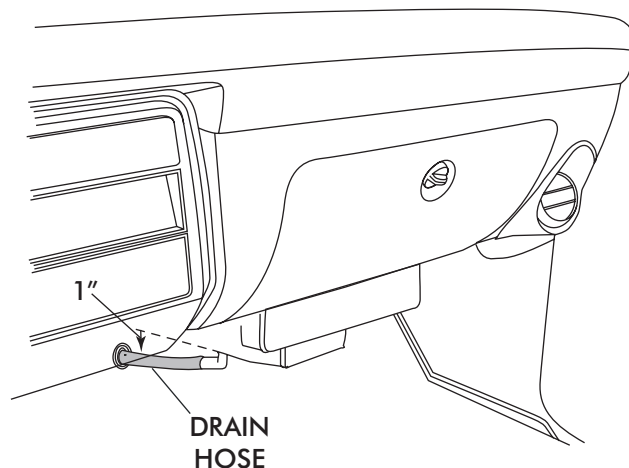
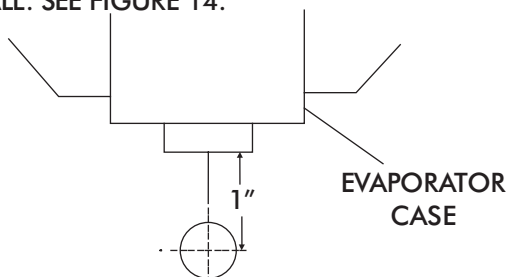


FIGURE 14

## LUBRICATING O-RINGS

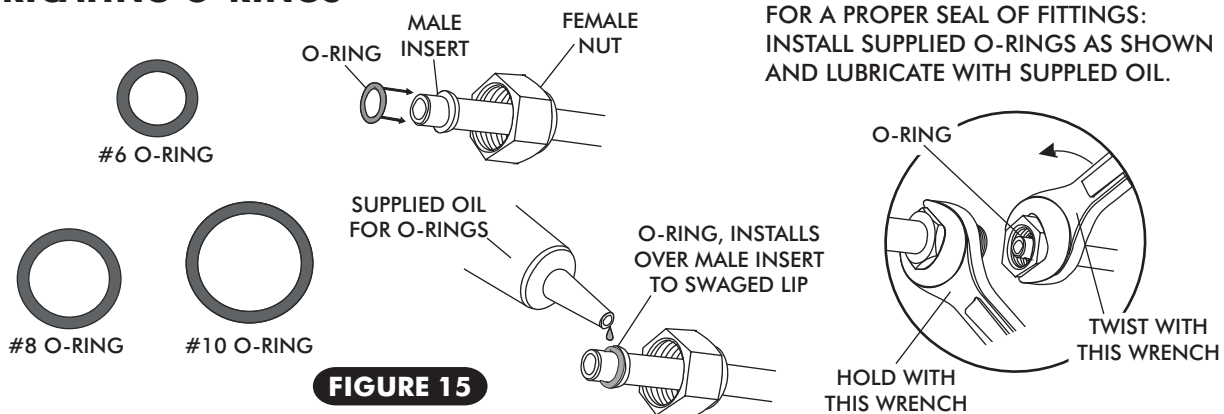


FIGURE 15

## A/C HOSE INSTALLATION STANDARD HOSE KIT

- ☐ LOCATE THE #8 COMPRESSOR A/C HOSE. LUBRICATE (2) #8 O-RINGS (SEE FIGURE 15, ABOVE) AND CONNECT THE 135° FEMALE FITTING w/ 134a SERVICE PORT TO THE #8 DISCHARGE PORT ON THE COMPRESSOR. ROUTE THE STRAIGHT FEMALE FITTING TO THE #8 CONDENSER HARDLINE COMING THROUGH CORE SUPPORT. SEE FIGURE 16 PAGE 15 AND FIGURE 16a PAGE 16. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN FIGURE 15 ABOVE.
- ☐ LOCATE THE #10 COMPRESSOR A/C HOSE. LUBRICATE (2) #10 O-RINGS (SEE FIGURE 15, ABOVE) AND CONNECT THE #10 135° FEMALE FITTING w/134a SERVICE PORT TO THE #10 SUCTION PORT ON THE COMPRESSOR. ROUTE THE 90° FEMALE FITTING TO THE #10 EVAPORATOR. SEE FIGURE 11 PAGE 12 AND FIGURE 16 PAGE 15 AND FIGURE 16a PAGE 16. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN 15 ABOVE.
- ☐ LOCATE THE #6 EVAPORATOR A/C HOSE. LUBRICATE (2) #6 O-RINGS (SEE FIGURE 15 , ABOVE) AND CONNECT THE STRAIGHT FEMALE FITTING TO THE #6 HARDLINE COMING THROUGH THE CORE SUPPORT FROM DRIER. ROUTE THE 90° FEMALE FITTING TO THE #6 EVAPORATOR. SEE FIGURE 11, PAGE 12 AND FIGURE 16 PAGE 15 AND FIGURE 16a PAGE 16. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN FIGURE 15, ABOVE.

## MODIFIED A/C HOSE KIT

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



## A/C & HEATER HOSE ROUTING 68 CHEVELLE SHOWN

### HEATER HOSE & HEATER CONTROL VALVE INSTALLATION

- ☐
ROUTE A PIECE OF HEATER HOSE FROM THE WATER PUMP TO THE TOP HEATER FITTING OF HEATER CORE AS SHOWN IN FIGURE 11 PAGE 12 AND FIGURE 16 BELOW. SECURE USING HOSE CLAMPS
- ☐
ROUTE A PIECE OF HEATER HOSE FROM THE INTAKE TO THE BOTTOM HEATER FITTING OF HEATER CORE AS SHOWN IN FIGURE 11 PAGE 12 AND FIGURE 16 BELOW. NOTE: INSTALL HEATER CONTROL VALVE IN-LINE WITH INTAKE MANIFOLD (PRESSURE SIDE) HEATER HOSE, SECURE USING HOSE CLAMPS AS SHOWN IN FIGURE 16, BELOW. **NOTE: PROPER FLOW DIRECTION.**

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

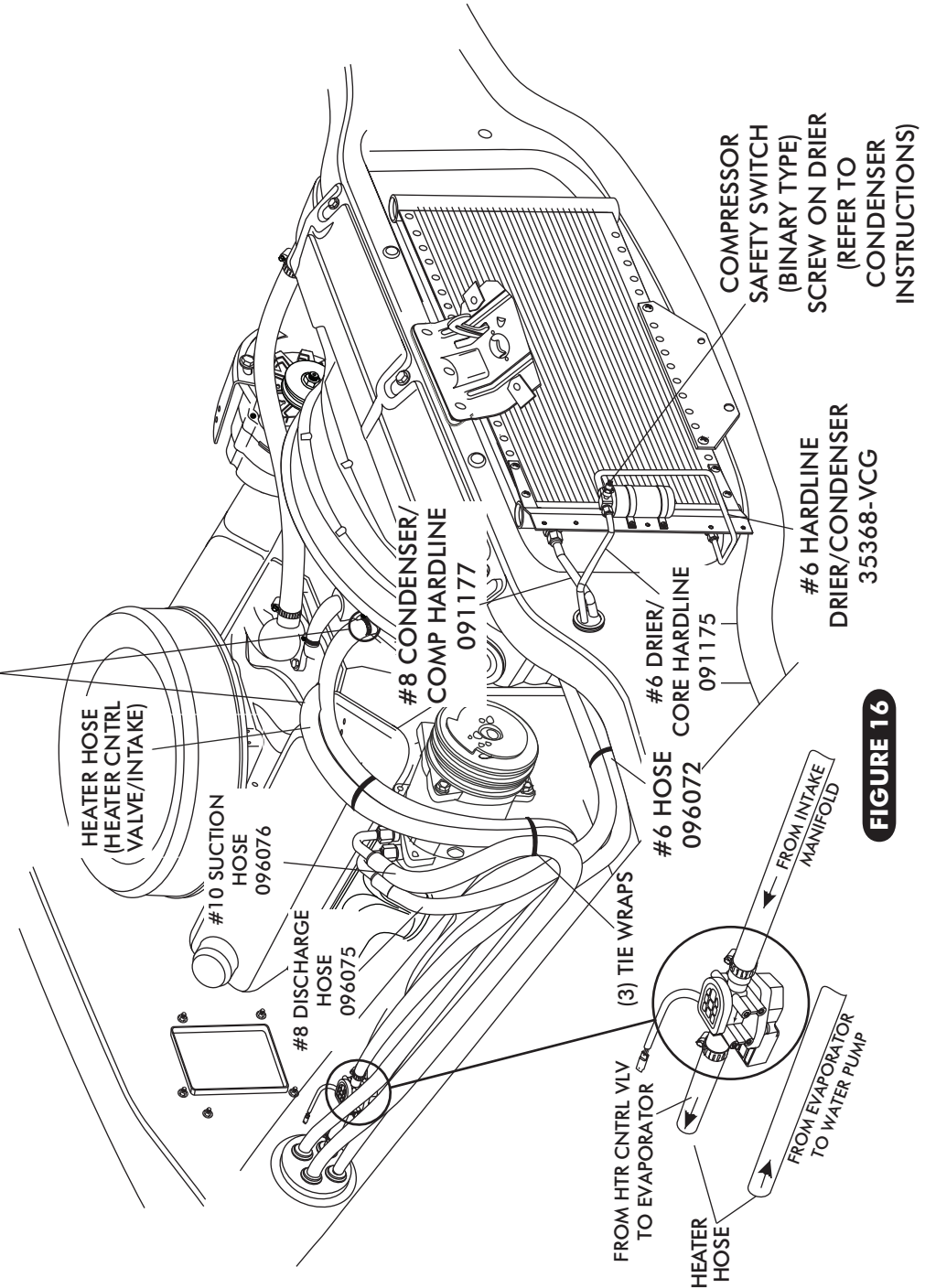
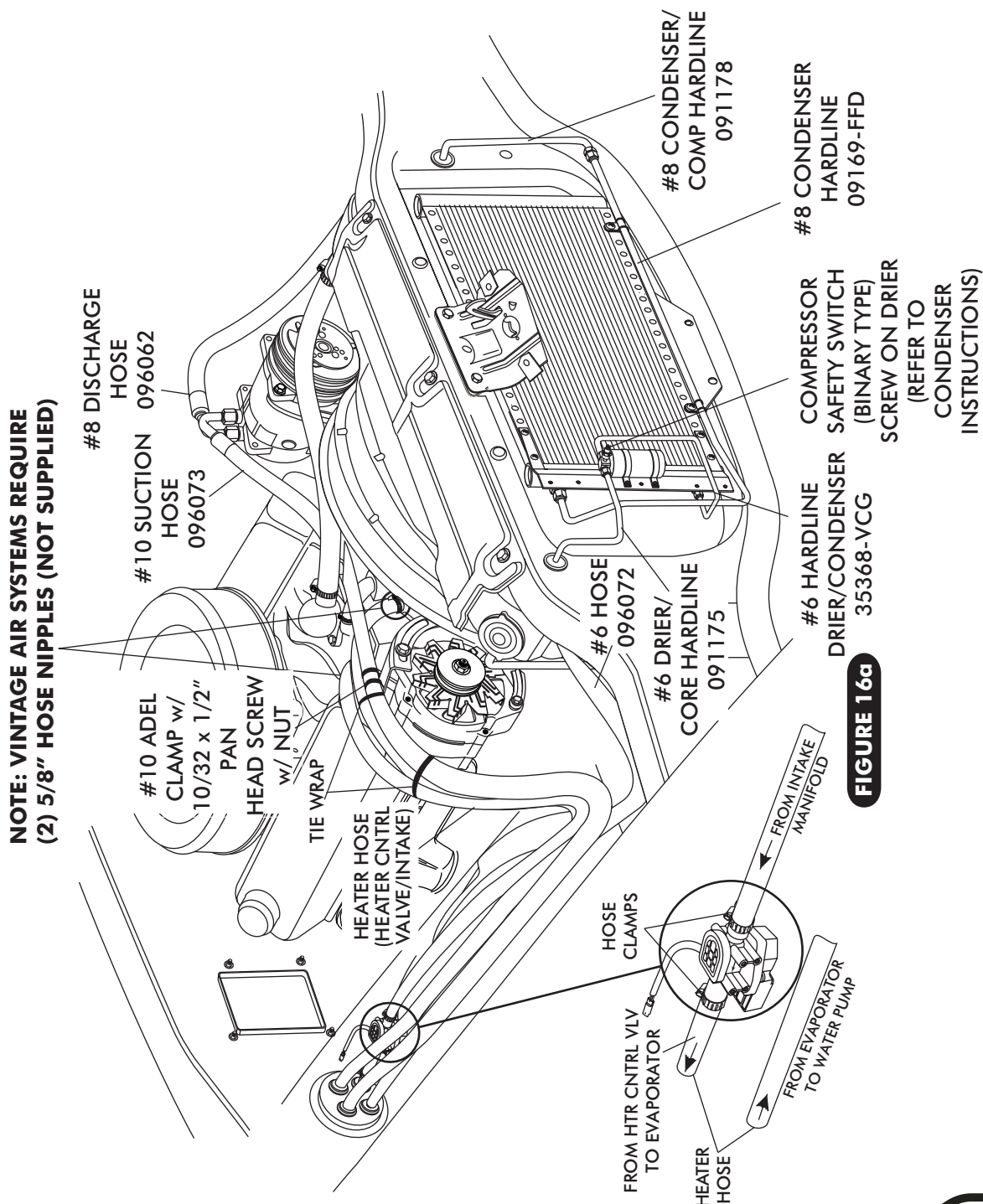


FIGURE 16

## A/C & HEATER HOSE ROUTING 69 CHEVELLE SHOWN

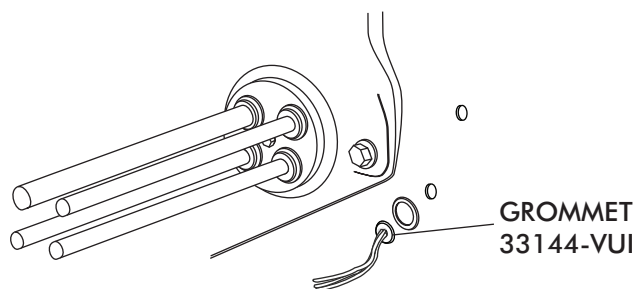
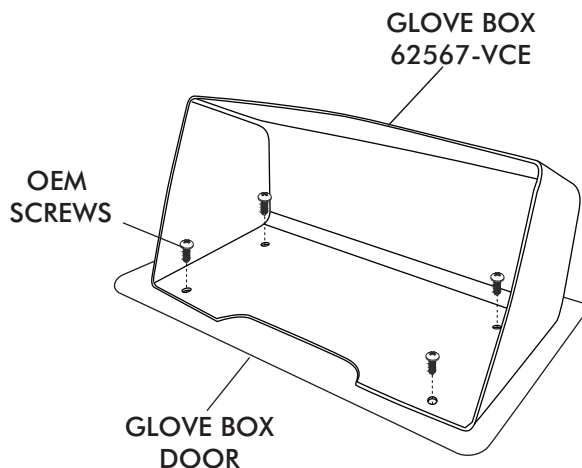
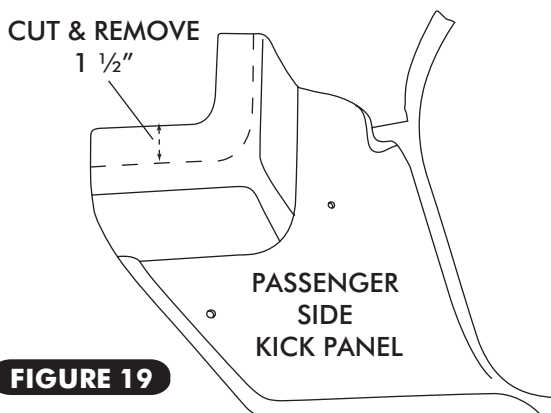
### HEATER HOSE & HEATER CONTROL VALVE INSTALLATION

- ROUTE A PIECE OF HEATER HOSE FROM THE WATER PUMP TO THE TOP HEATER FITTING OF HEATER CORE AS SHOWN IN FIGURE 11 PAGE 12 AND FIGURE 16a BELOW. SECURE USING HOSE CLAMPS
- ROUTE A PIECE OF HEATER HOSE FROM THE INTAKE TO THE BOTTOM HEATER FITTING OF HEATER CORE AS SHOWN IN FIGURE 11 PAGE 12 AND FIGURE 16a BELOW. NOTE: INSTALL HEATER CONTROL VALVE IN-LINE WITH INTAKE MANIFOLD (PRESSURE SIDE) HEATER HOSE, SECURE USING HOSE CLAMPS AS SHOWN IN FIGURE 16a, BELOW. **NOTE PROPER FLOW DIRECTION.**



**FINAL STEPS**

- ☐ INSTALL DUCT HOSES AS SHOWN IN FIGURE 20, PAGE 18
- ☐ ROUTE A/C WIRES THROUGH 3/8" GROMMET AS SHOWN IN FIGURE 17 (12 VOLT/ GROUND/ BINARY SWITCH/ HEATER VALVE).
- ☐ INSTALL CONTROL PANEL ASM.
- ☐ PLUG THE WIRING HARNESS IN THE ECU MODULE ON SUB CASE AS SHOWN IN FIGURE 20, PAGE 18 (WIRE ACCORDING TO WIRING DIAGRAM ON PAGE 19 AND 20.)
- ☐ INSTALL NEW GLOVE BOX
- ☐ MODIFY PASSENGER SIDE KICK PANEL AS SHOWN IN FIGURE 19 BELOW.
- ☐ REINSTALL ALL PREVIOUSLY REMOVED ITEMS (BATTERY TRAY, BATTERY & 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 AC MODE AND/OR FREEZING WEATHER, VOIDING YOUR WARRANTY.
- ☐ DOUBLE CHECK ALL FITTINGS, BRACKETS AND BELTS FOR TIGHTNESS.
- ☐ VINTAGE AIR RECOMMENDS THAT ALL AC 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 21.


**FIGURE 17**

**FIGURE 18**

**FIGURE 19**



## CONTROL PANEL & DUCT HOSE ROUTING

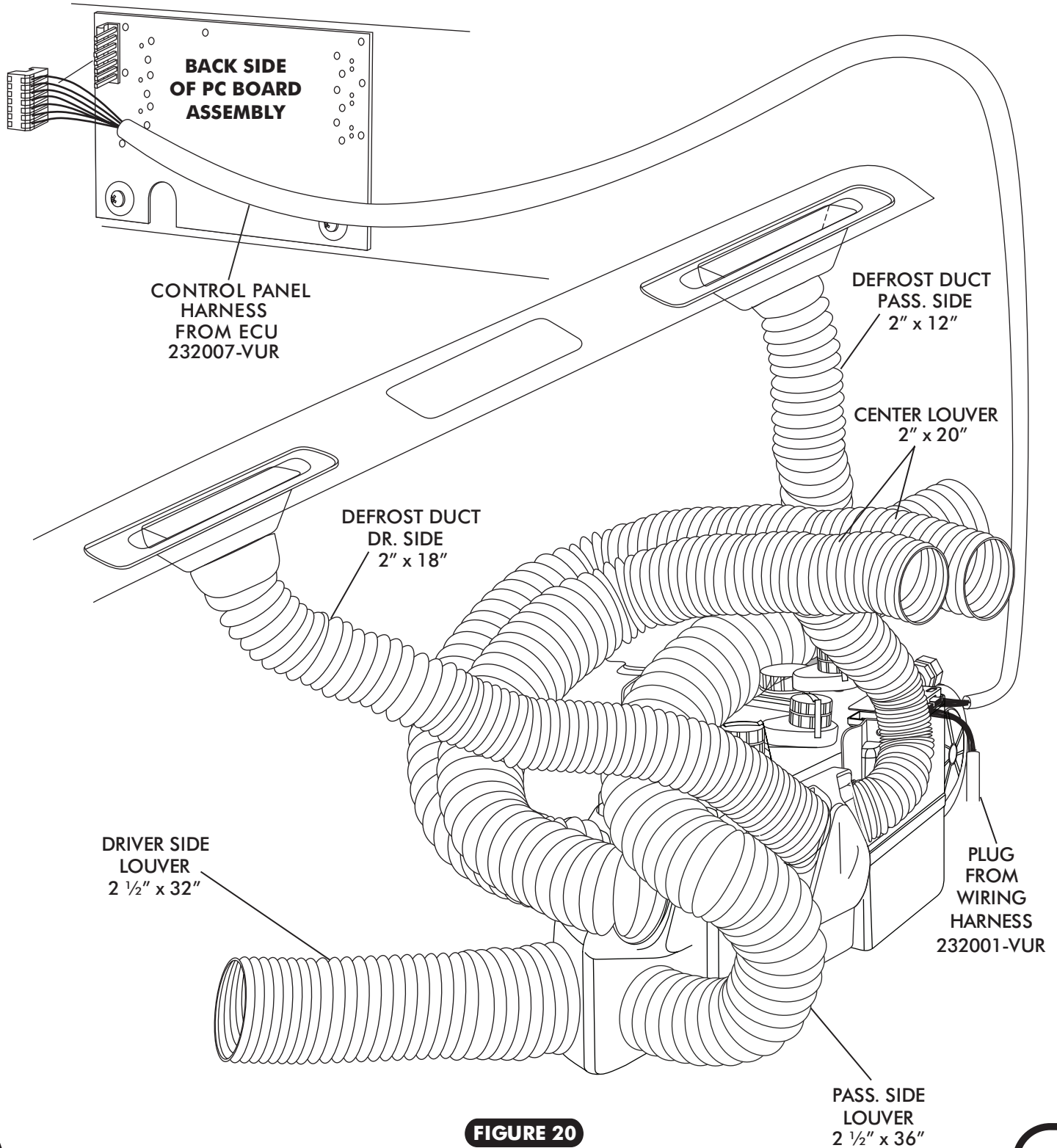
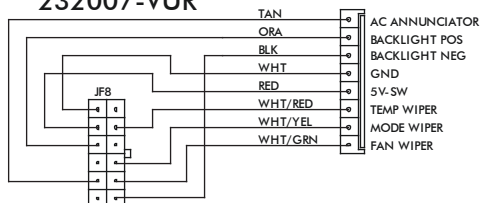


FIGURE 20



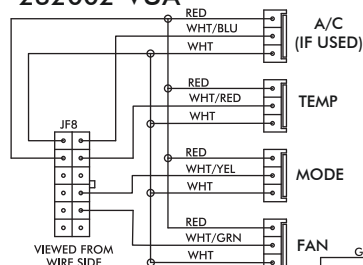
# Wiring Diagram

## 232007-VUR



VIEWED FROM WIRE SIDE

## 232002-VUA

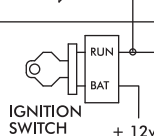


VIEWED FROM WIRE SIDE

### PROGRAM

N/A  
\* DASH LAMP (IF USED)

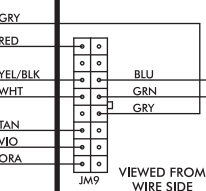
\*\*\* WIDE OPEN THROTTLE SWITCH (OPTIONAL)



IGNITION SWITCH + 12v

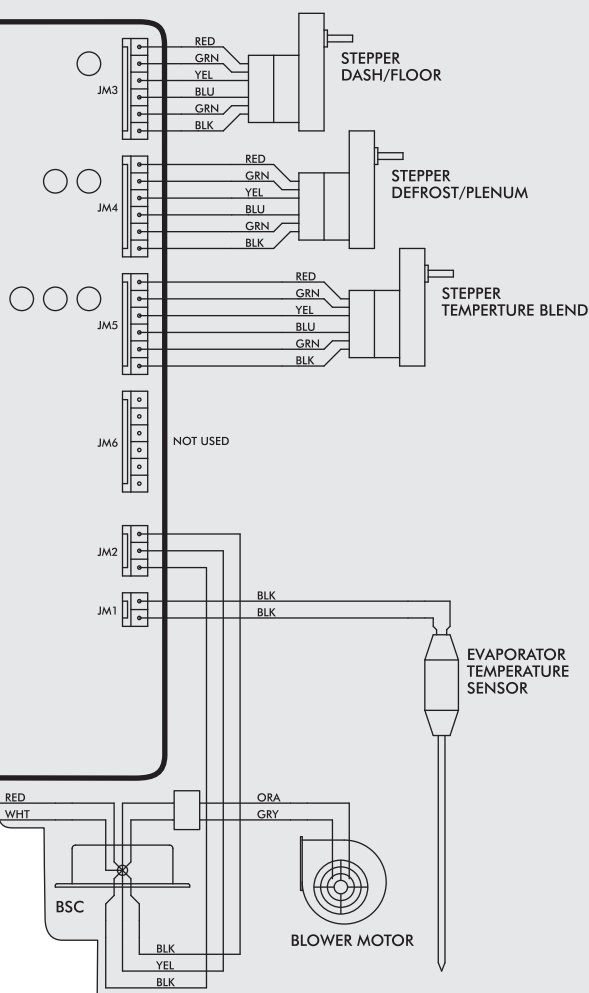
## GEN IV ECU

GEN IV WIRING DIAGRAM  
REV D, 5/6/2014



VIEWED FROM WIRE SIDE

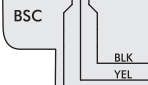
## PRE-WIRED



NOT USED

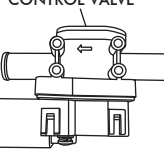
EVAPORATOR TEMPERATURE SENSOR

BLOWER MOTOR



CMPR

HEATER CONTROL VALVE



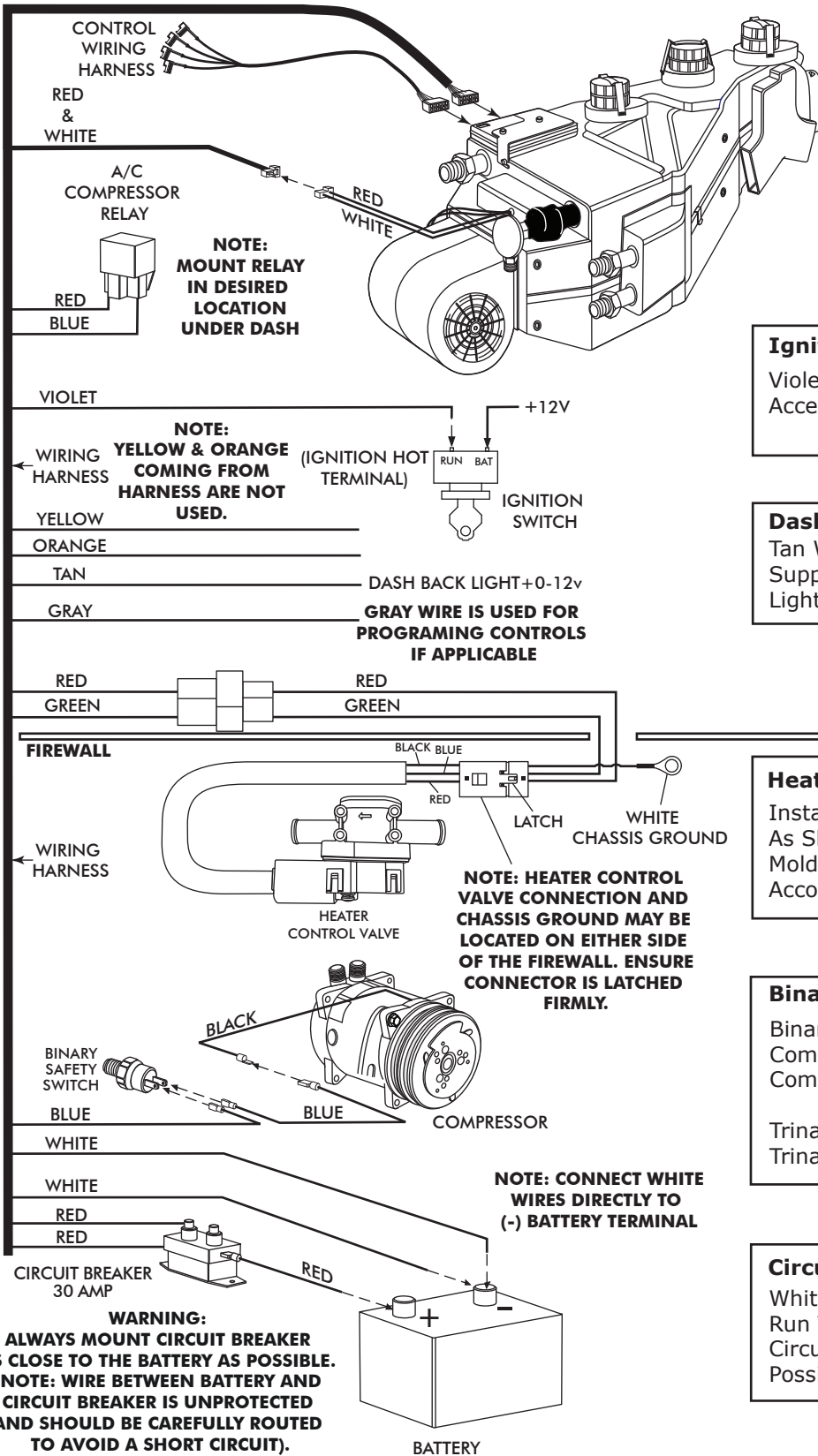
NOTE: = CHASSIS GROUND

- 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.





## WIRING HARNESS



Violet 12V Ign Switch Source (Key On Accessory) Position Must Be Switched.

Tan Wire Used Only With Vintage Air  
Supplied Control Panel With LED Back  
Light.

Install With Servo Motor Facing Down, As Shown. Note Flow Direction Arrow Molded Into Valve Body, And Install Accordingly.

Binary: Connect As Shown (Typical Compressor Wiring). Be Sure Compressor Body Is Grounded.

Trinary Switch: Connect According To Trinary Switch Wiring Diagram.

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

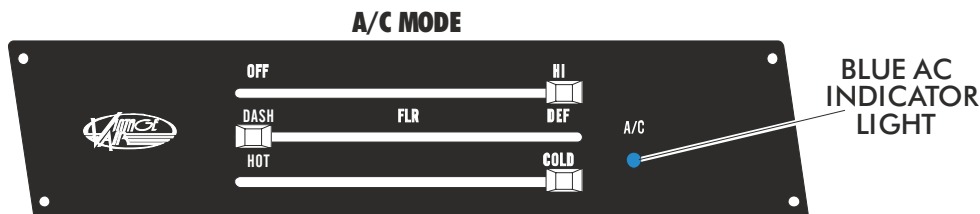
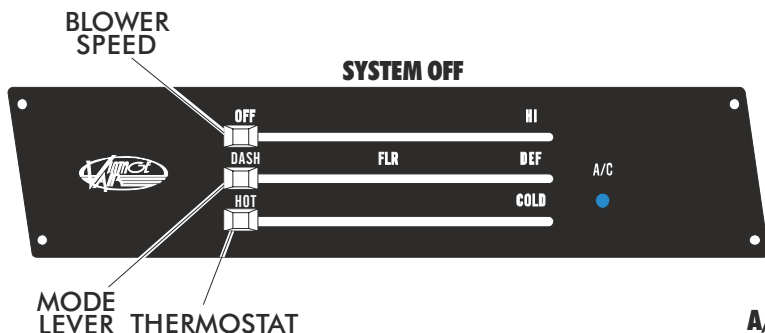




# 1968-69 CHEVELLE w/AC

## OPERATION OF CONTROLS

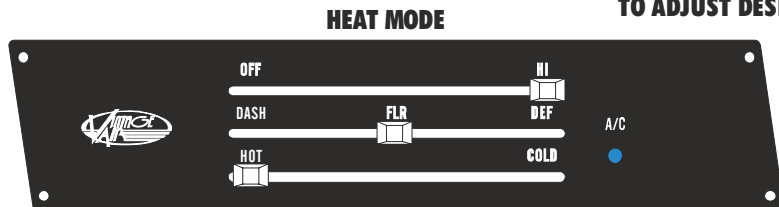
**NOTE: WHEN BATTERY POWER IS FIRST CONNECTED TO THE ECU, THE COMPUTER GOES THROUGH AN INITIALIZATION SEQUENCE. THIS INITIALIZATION MAY TAKE UP TO 30 SECONDS. DURING INITIALIZATION THE BLOWER WILL NOT OPERATE, BUT THE DOORS INSIDE THE UNIT WILL BE OPERATING. A LOW BATTERY OR DISCONNECTING THE BATTERY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



**BLOWER SPEED**  
THIS LEVER CONTROLS THE BLOWER SPEED, FROM OFF TO HI

**A/C THERMOSTAT LEVER**  
IN A/C MODE SLIDE THE THERMOSTAT LEVER ALL THE WAY RIGHT TO THE COLD POSITION, FOR MAXIMUM COOLING. BLUE AC INDICATOR LIGHT WILL COME ON ONLY WHEN AC COMPRESSOR IS ENGAGED (**SLIDE LEVER LEFT OR RIGHT TO ADJUST DESIRED TEMPERATURE**)

**MODE LEVER**  
SLIDE THE LEVER TO THE "DASH" POSITION



**A/C THERMOSTAT LEVER**  
IN HEAT MODE SLIDE THE THERMOSTAT LEVER ALL THE WAY TO THE LEFT TO THE HOT POSITION, FOR MAXIMUM HEATING (**SLIDE LEVER LEFT OR RIGHT TO ADJUST DESIRED TEMPERATURE**)

**MODE LEVER**  
SLIDE THE LEVER TO THE "FLR" POSITION (SLIDE THE LEVER TO THE LEFT OR RIGHT, TO ADJUST DESIRED DASH/FLR/ DEF LOCATION)



**A/C THERMOSTAT LEVER**  
IN DEF MODE SLIDE THE THERMOSTAT LEVER ALL THE WAY TO THE LEFT TO THE HOT POSITION, FOR MAXIMUM HEATING (**SLIDE LEVER LEFT OR RIGHT TO ADJUST DESIRED TEMPERATURE**)

**MODE LEVER**  
SLIDE THE LEVER TO THE "DEF" POSITION



# Troubleshooting Guide

| Symptom  | Condition                 | Checks  | Actions  | Notes  |
|--|---------------------------|---|--|--|
| 1a.<br>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.<br><br>See blower switch check procedure.   |
|  |                           | Check for damaged ground wire (white) in control head harness.  | Verify continuity to chassis ground with white control head wire at various points.  |  |
|  | All other functions work. | Check for damaged blower switch or potentiometer and associated wiring.   |  |  |
| 1b.<br>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.<br>Compressor will not turn on (All other functions work).  |                           | 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><br><br>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.<br><br>Disconnected or faulty thermistor will cause compressor to be disabled.<br><br>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. |
|  |                           | 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.  |  |
|  |                           | Check for disconnected or faulty thermistor.  | Check 2-pin connector at ECU housing.  |  |
|  |                           |   |  |  |
|  |                           |   |  |  |
| 3.<br>Compressor will not turn off (All other functions work). |                           | Check for faulty A/C potentiometer or associated wiring.  | Repair or replace pot/control wiring.  |  |
|  |                           | Check for faulty A/C relay.   | Replace relay.   |  |



## 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.                            | Verify connections on power lead, ignition lead, and both white ground wires.  |  |
|         |  | Verify battery voltage is greater than 10 volts and less than 16. | Check for positive power at heater valve green wire and blower red wire. Check for ground on control head white wire.  |  |
|         |  |   | Verify proper meter function by checking the condition of a known good battery.  |  |
| 5.      | Loss of mode door function.  | No mode change at all.  | Check for damaged mode switch or potentiometer and associated wiring.  | 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.      | Blower turns on and off rapidly.   | Battery voltage is at least 12V.                                  | Check for at least 12V at circuit breaker.   | 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.  |  |
| 7.      | Erratic functions of blower, mode, temp, etc.  |   | Check for damaged switch or pot and associated wiring.   |  |
|         |  |   | 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.  |  |





**1968-69 CHEVELLE w/AC**

**FIREWALL**

**ENLARGE OEM HOLE**

**5/16"**

**FIREWALL  
OPENING**

**DRILL  
5/16"**

**68-69 CHEVELLE  
w/ AC EVAP. REAR  
BRKT TEMPLATE**









1968-69 CHEVELLE w/AC

## EVAPORATOR KIT 564471

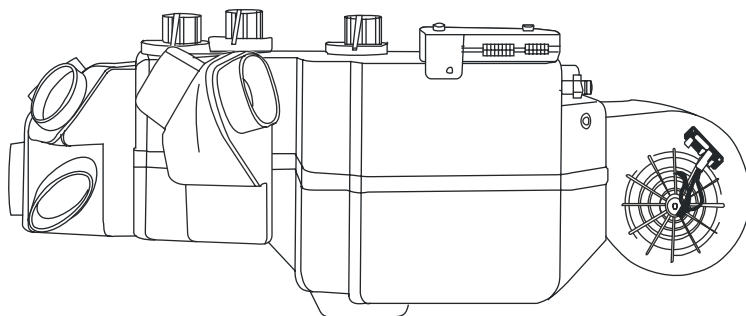
### EVAPORATOR KIT PACKING LIST

| No. | QTY. | PART No. | DESCRIPTION                             |
|-----|------|----------|---|
| 1.  | 1    | 762169   | GEN IV 4 VENT w/ 2 & 2 ½ EVAP. SUB CASE |
| 2.  | 1    | 784166   | 1968-69 CHEVELLE w/ AC ACC. KIT         |

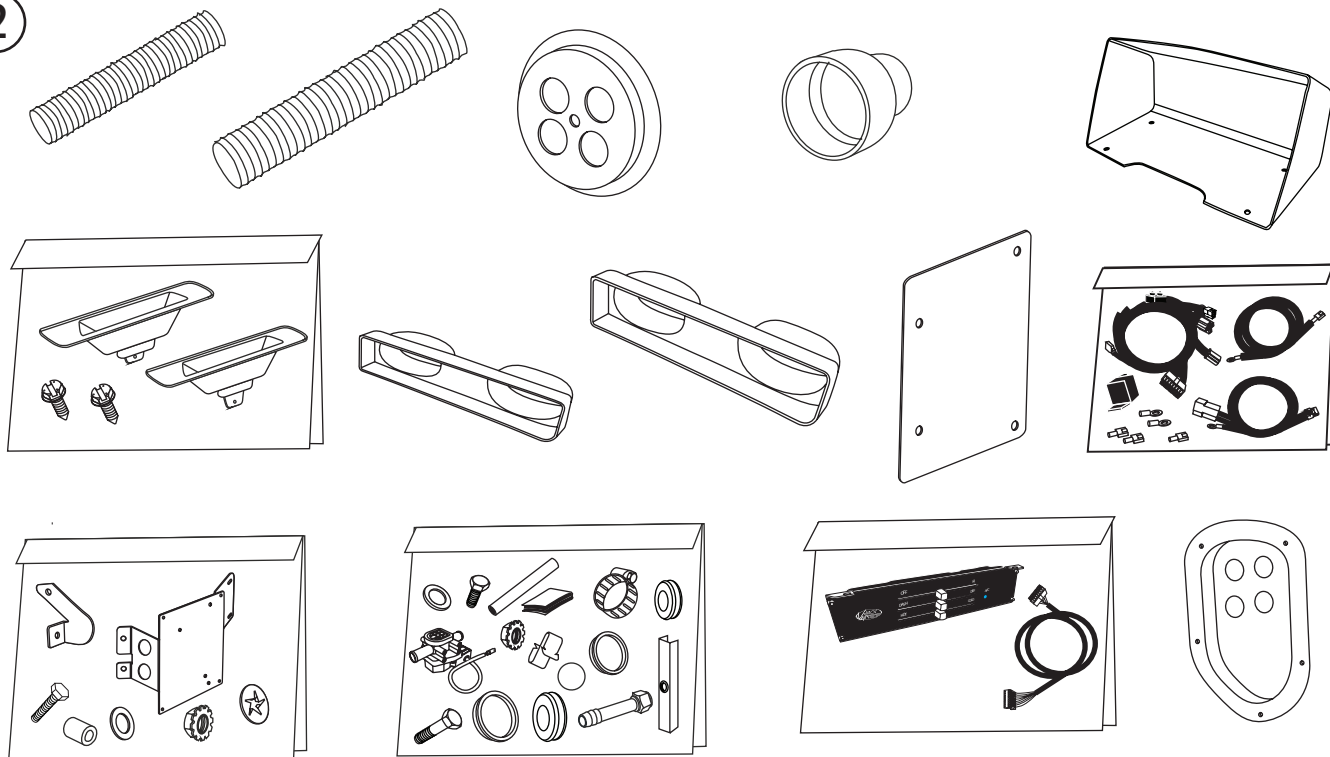
**\*\* BEFORE BEGINNING INSTALLATION OPEN ALL PACKAGES AND CHECK CONTENTS OF SHIPMENT. PLEASE REPORT ANY SHORTAGES DIRECTLY TO VINTAGE AIR WITHIN 15 DAYS. AFTER 15 DAYS, VINTAGE AIR WILL NOT BE RESPONSIBLE FOR MISSING OR DAMAGED ITEMS.**

①

**GEN IV 4 VENT  
w/ 2 & 2 ½ EVAP  
SUB CASE  
762169**



②



**ACCESSORY KIT  
784166**

**NOTE: IMAGES MAY NOT DEPICT ACTUAL PARTS AND QUANTITIES.  
REFER TO PACKING LIST FOR ACTUAL PARTS AND QUANTITIES.**