an ISO 9001:2008 Registered Company

1968-76 CORVETTE

without FACTORY AIR

561174-PCZ

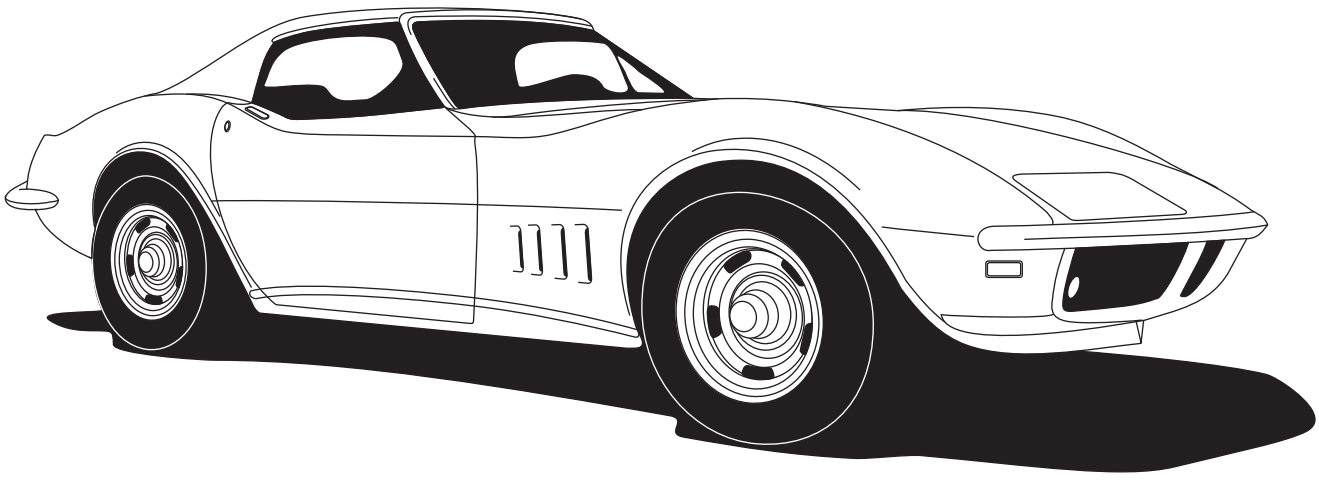

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Table of Contents

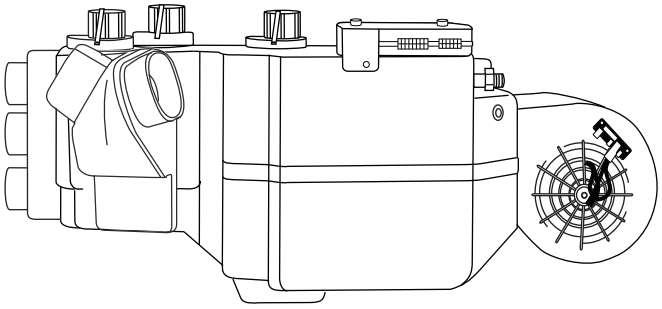
EVAPORATOR KIT PACKING LIST

EVAPORATOR KIT
561174-PCZ

No.	QTY.	PART No.	DESCRIPTION
1.	1	761174-VCE	1968-76 CORVETTE without A/C EVAP. SUB CASE
2.	1	781174-PCN	1968-76 CORVETTE without A/C ACCESSORY KIT

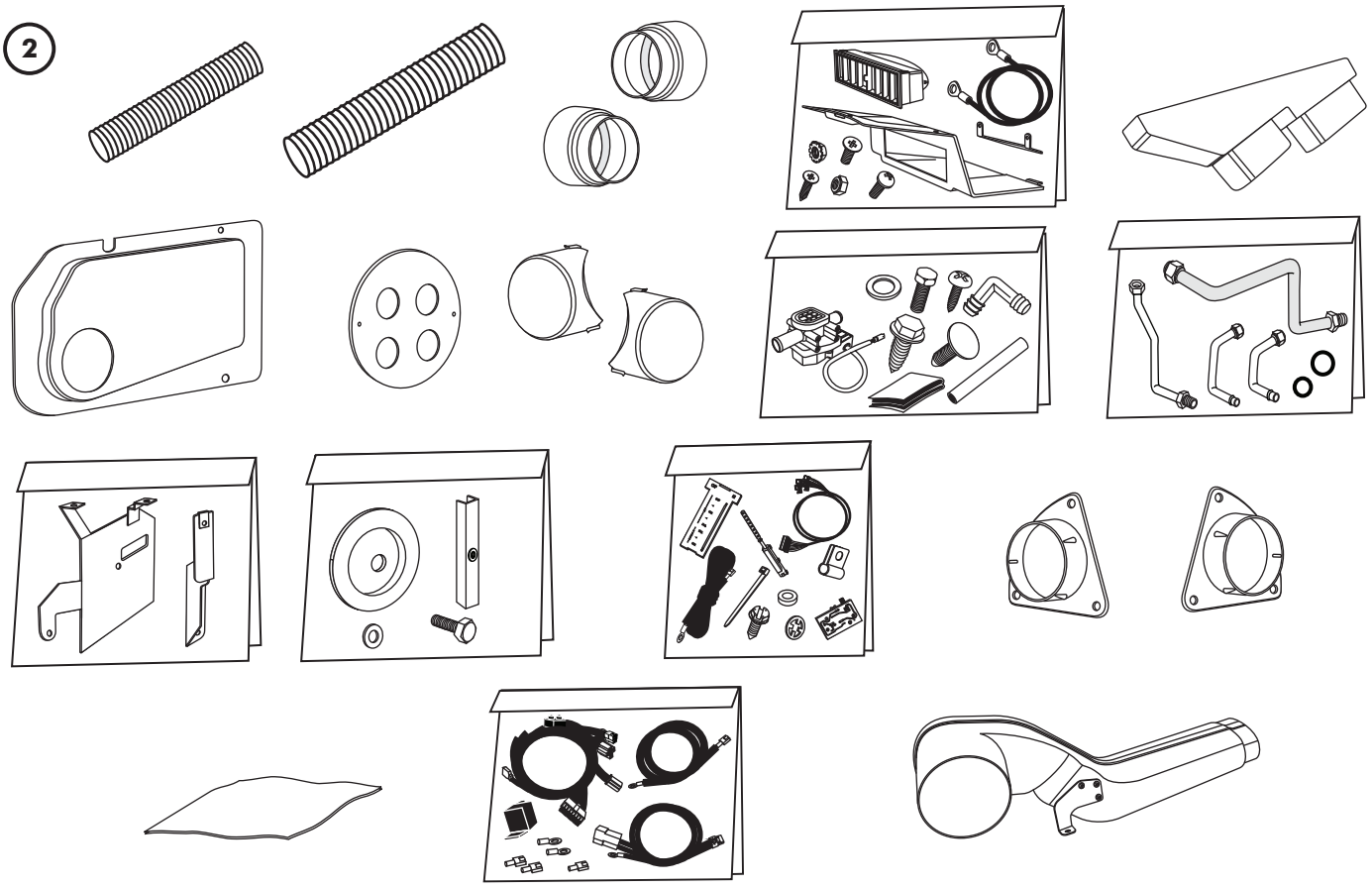
***** BEFORE BEGINNING INSTALLATION, OPEN ALL PACKAGES AND CHECK CONTENTS OF SHIPMENT. PLEASE REPORT ANY SHORTAGES DIRECTLY TO VINTAGE AIR WITHIN 15 DAYS. AFTER 15 DAYS, VINTAGE AIR WILL NOT BE RESPONSIBLE FOR MISSING OR DAMAGED ITEMS.***

(1)



1968-76 CORVETTE
without A/C EVAP. SUB CASE
761174-VCE

(2)



ACCESSORY KIT
781174-PCN

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.

INSTALLATION INSTRUCTIONS FOR 1968-76 CORVETTE

BEFORE STARTING THE AIR CONDITIONER INSTALLATION, CHECK FOR PROPER OPERATION OF ALL COMPONENTS (RADIO, LIGHTS, WIPERS, ETC.). STUDY THE INSTRUCTIONS, ILLUSTRATIONS AND DIAGRAMS. FOR EASE OF INSTALLATION, CHECK OFF (☑) EACH PROCEDURE PRIOR TO MOVING ON TO THE NEXT STEP.

ENGINE COMPARTMENT

- ☐ DISCONNECT BATTERY.
- ☐ REMOVE HOOD TO EASE INSTALLATION.
- ☐ DRAIN RADIATOR.
- ☐ REMOVE OEM BLOWER ASSEMBLY AND COVER.
- ☐ REMOVE OEM HEATER CORE AND COVER.

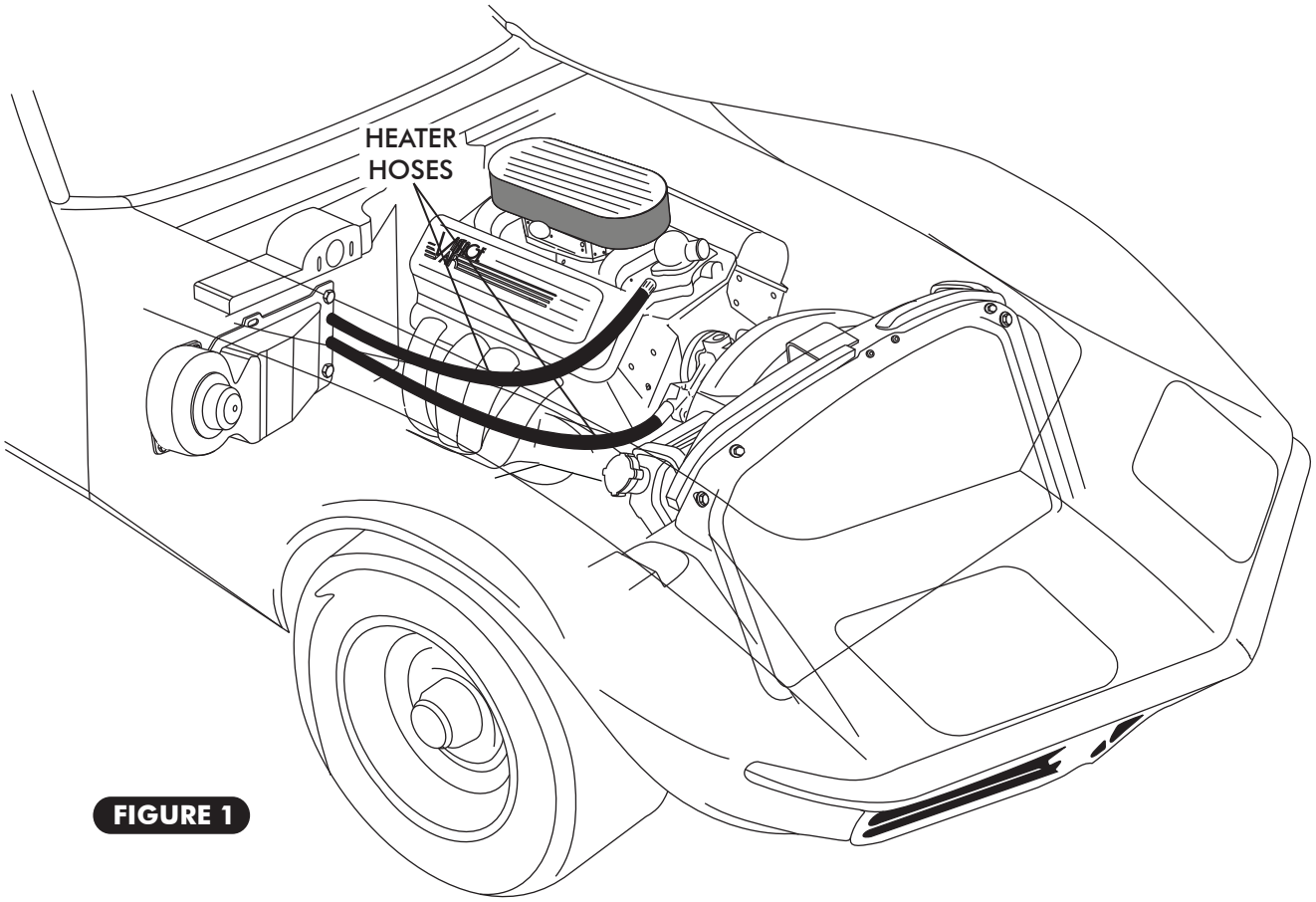


FIGURE 1

PASSENGER COMPARTMENT

- ☐ REMOVE PASSENGER SIDE DASH.
- ☐ DISCONNECT CENTER DASH AND PULL FORWARD TO REMOVE OEM CENTER DASH BEZEL.
- ☐ REMOVE OEM RADIO.
- ☐ REMOVE CONTROL PANEL (RETAIN). REFER TO CONTROL PANEL CONVERSION KIT TO ASSEMBLE CONTROL PANEL.
- ☐ DROP STEERING COLUMN.
- ☐ DISCONNECT DRIVER SIDE DASH AND PULL FORWARD.

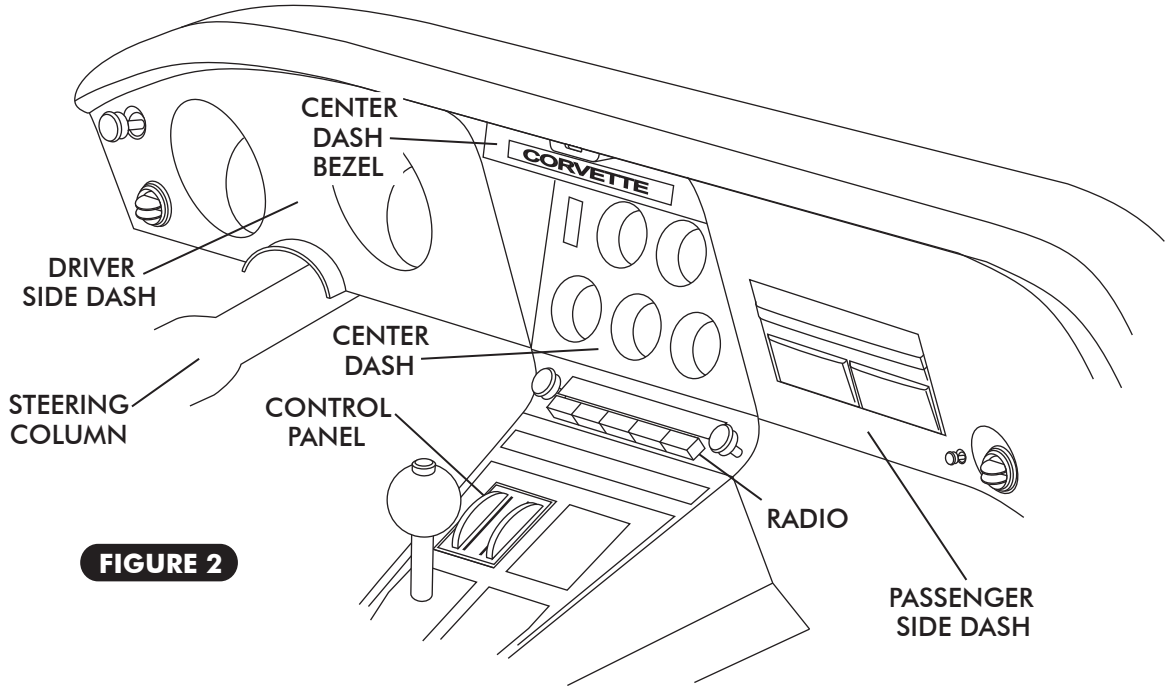


FIGURE 2

- ☐ REMOVE THE DEFROST DUCT (RETAIN), FLOOR HEATER DUCT AS SHOWN IN FIGURE 3, BELOW.
- ☐ REMOVE THE HEATER AS SHOWN.

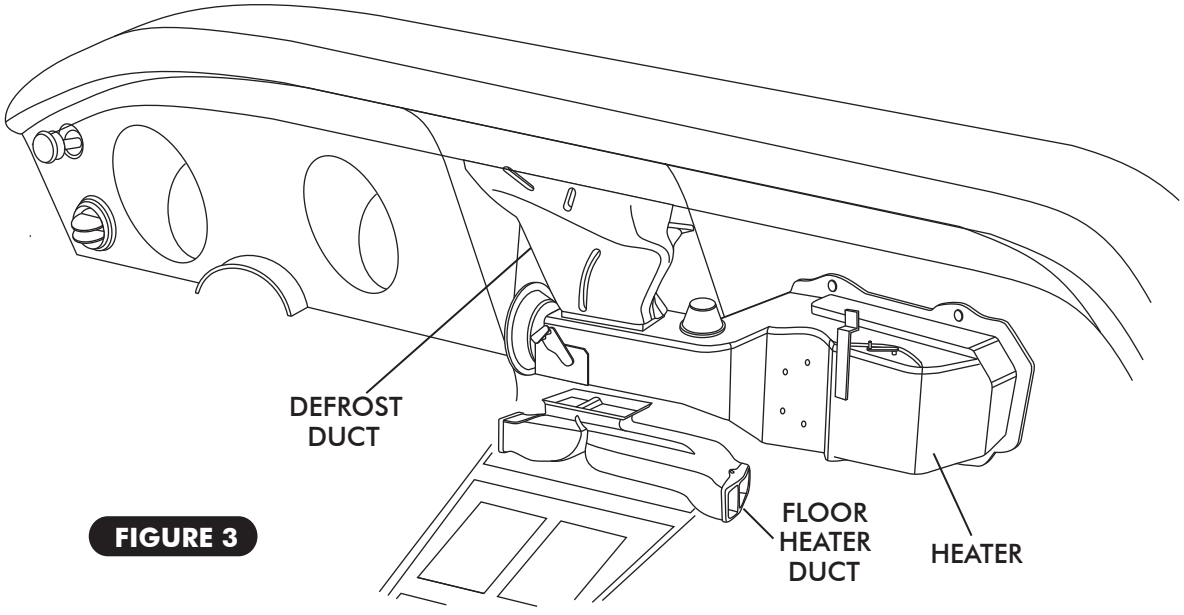


FIGURE 3

ASTRO AIR VENTILATION DUCTS REMOVAL

- ☐ REMOVE DRIVER SIDE & PASSENGER SIDE ASTRO AIR VENTILATION DUCTS AND DISCARD. SEE FIGURE 4, BELOW.
- ☐ REMOVE PASSENGER SIDE DASH SUPPORT BRACE (DISCARD) AND CUT OFF MOUNTING TAB ON THE KICK PANEL AS SHOWN IN FIGURE 4.
- ☐ REMOVE THE DRIVER SIDE & PASSENGER SIDE ASTRO AIR VENTILATION DUCT MOUNTING BRACKETS AS SHOWN IN FIGURE 4.
- ☐ INSTALL (2) S-CLIPS ON INSIDE FRESH AIR CAPS AS SHOWN BELOW IN FIGURE 4a. INSTALL INSIDE FRESH AIR CAPS ON DRIVER & PASSENGER SIDE AS SHOWN IN FIGURE 4a, BELOW.

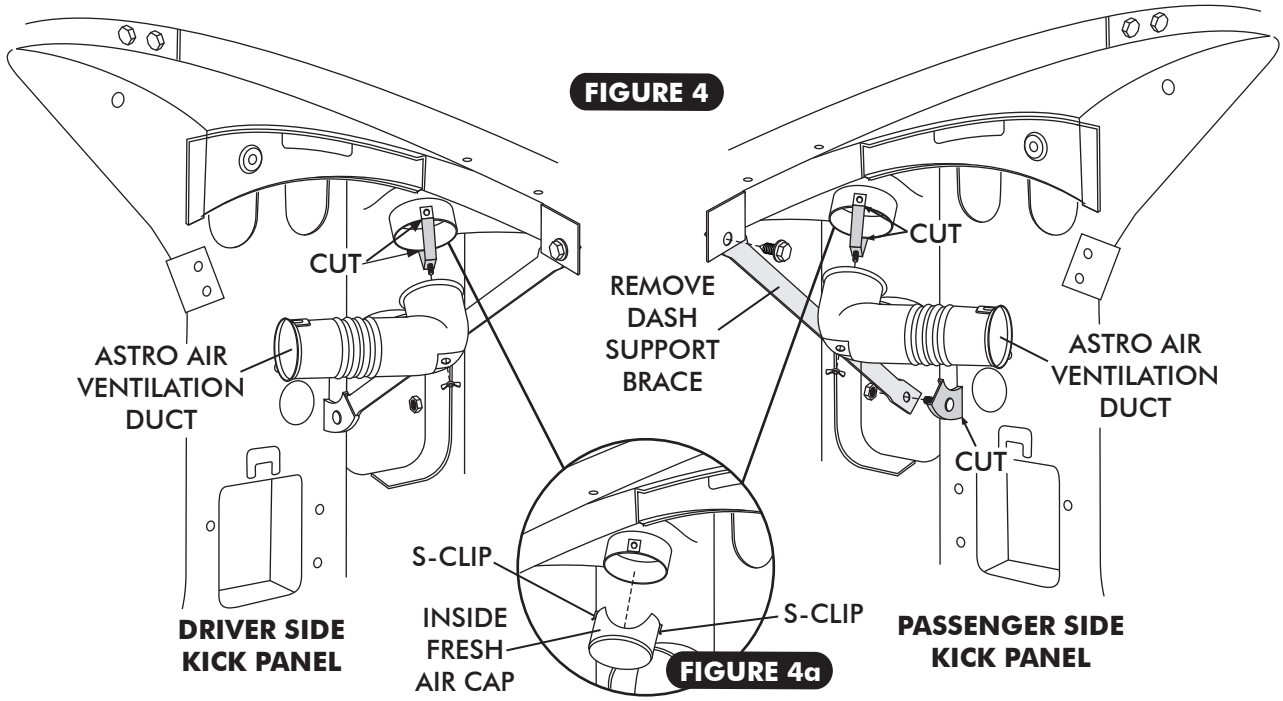
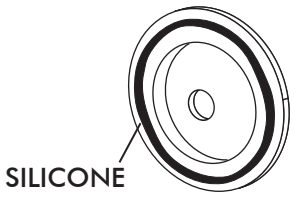


FIGURE 4

FIGURE 4a

FRESH AIR COVER INSTALLATION

- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FRESH AIR CAP AS SHOWN IN FIGURE 4b, BELOW.
- ☐ ATTACH FRESH AIR CAP TO FIREWALL USING A 1/4-20 x 1" BOLT AND WASHER. SEE FIGURE 4b.



BACK SIDE OF FRESH AIR CAP

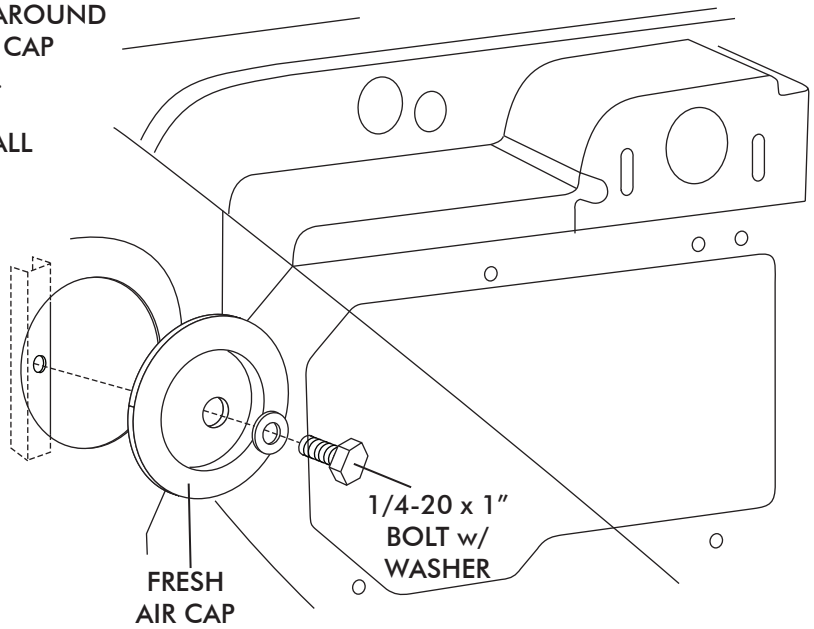


FIGURE 4b

CONDENSER ASSEMBLY & INSTALLATION

☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH THE CONDENSER KIT TO INSTALL THE CONDENSER. REFER TO FIGURE 5, BELOW, FOR CONDENSER LOCATION.

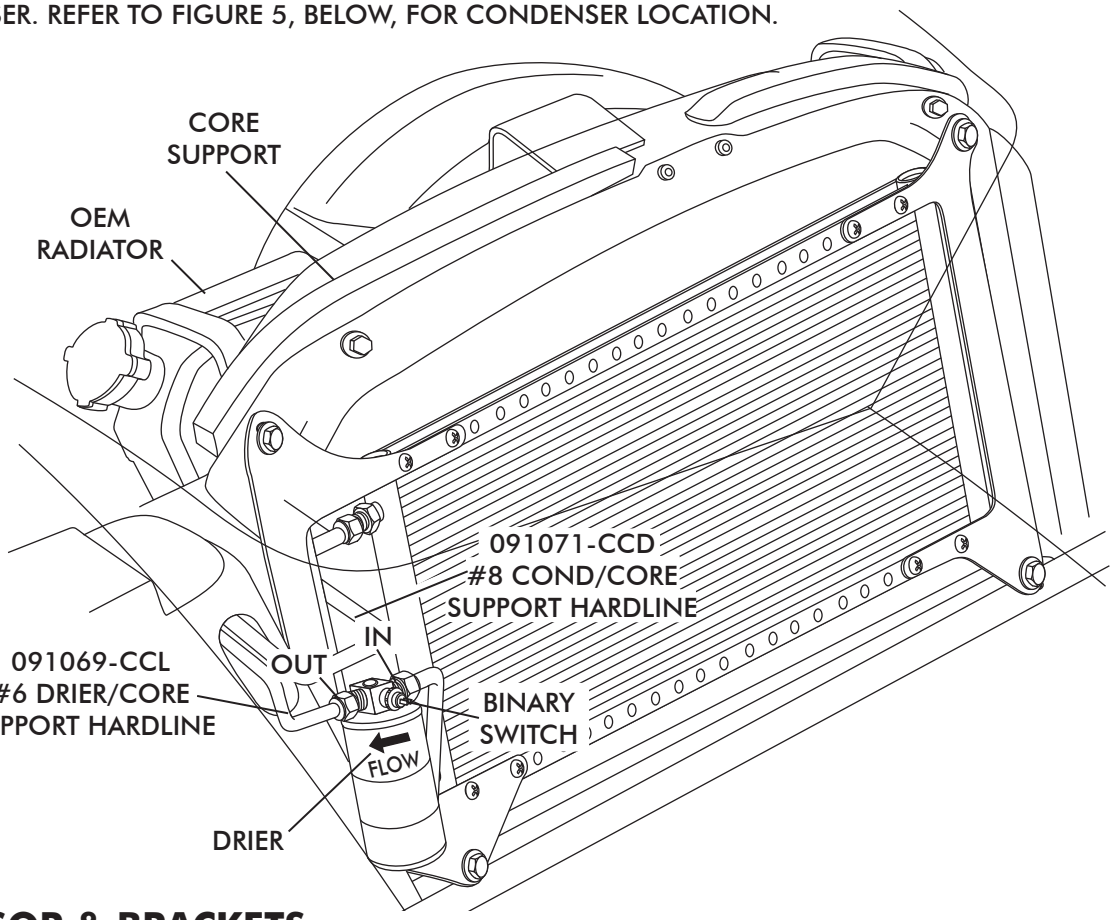


FIGURE 5

COMPRESSOR & BRACKETS

☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH THE BRACKET KIT TO INSTALL THE COMPRESSOR BRACKET. REFER TO FIGURE 6, BELOW, FOR COMPRESSOR MOUNTING LOCATION.

PULLEYS

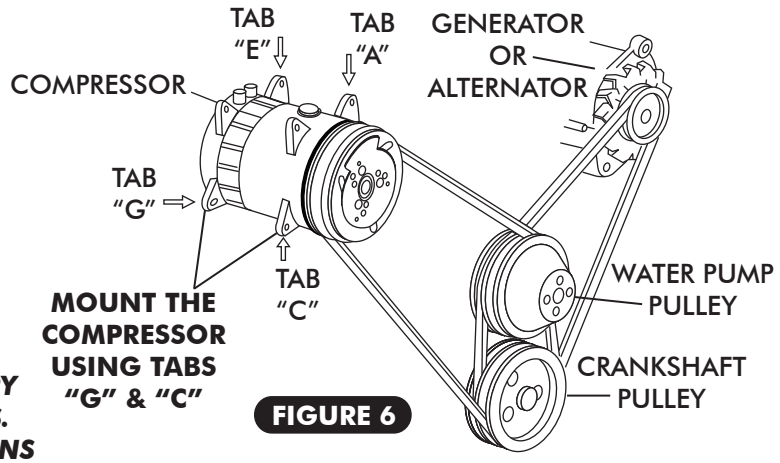
☐ IN MOST INSTANCES, EXISTING BELT LENGTHS WILL REMAIN THE SAME. SEE FIGURE 6, BELOW.

PULLEYS (VINTAGE AIR) SHORT PUMP SMALL BLOCK CHEVY (STEEL PULLEY)

22503-VCA - WATER PUMP PULLEY (DOUBLE GROOVE)

22506-VCA - CRANKSHAFT PULLEY (DOUBLE GROOVE) (WITH POWER STEERING, A 3-GROOVE CRANK PULLEY IS REQUIRED)

22507-VCA - CRANKSHAFT PULLEY (TRIPLE GROOVE)



MOUNT THE COMPRESSOR USING TABS "G" & "C"

FIGURE 6

NOTE: BELT ROUTING MAY VARY WITH DIFFERENT BRACKET SETS. ALWAYS REFER TO INSTRUCTIONS INCLUDED WITH BRACKETS.

OEM DEFROST DUCT MODIFICATION

- ☐ MEASURE 6" FROM THE TOP OF THE DEFROST DUCT AND MARK AS SHOWN IN FIGURE 7, BELOW.
- ☐ CUT OFF THE BOTTOM PORTION OF THE DEFROST DUCT AS SHOWN.

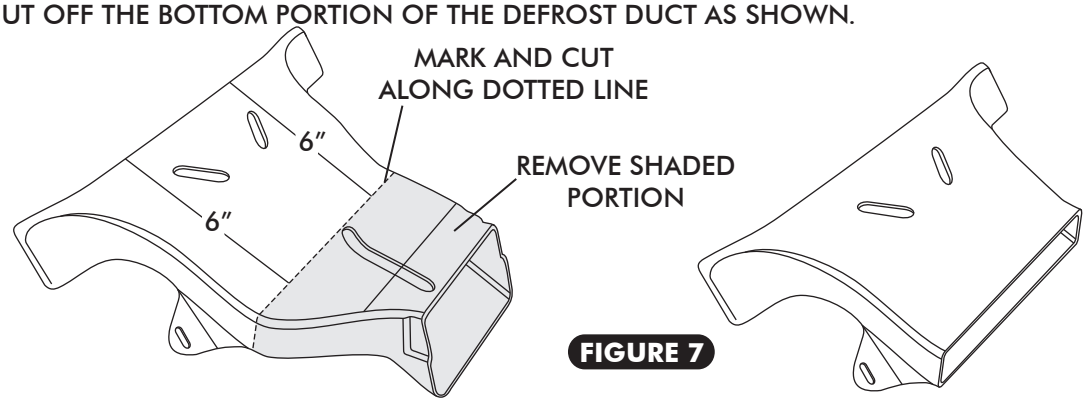
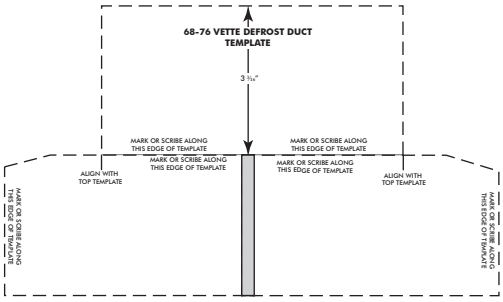


FIGURE 7

- ☐ LOCATE THE DEFROST DUCT TEMPLATE ON PAGE 28 AND TAPE TOGETHER AS SHOWN BELOW IN FIGURE 7a.
- ☐ PLACE THE TEMPLATE OVER THE OVER THE DEFROST DUCT AS SHOWN IN FIGURE 7a, BELOW.
- ☐ USING A PENCIL OR SCRIBE, MARK ALONG THE EDGE OF THE TEMPLATE AS SHOWN.
- ☐ REMOVE THE TEMPLATE AND CUT ALONG THE DOTTED LINE AND REMOVE THE TOP PORTION OF THE DEFROST DUCT AS SHOWN IN FIGURE 7a. **NOTE: DO NOT CUT COMPLETELY THROUGH THE DEFROST DUCT. ONLY REMOVE THE SHADED PORTION AS SHOWN.**



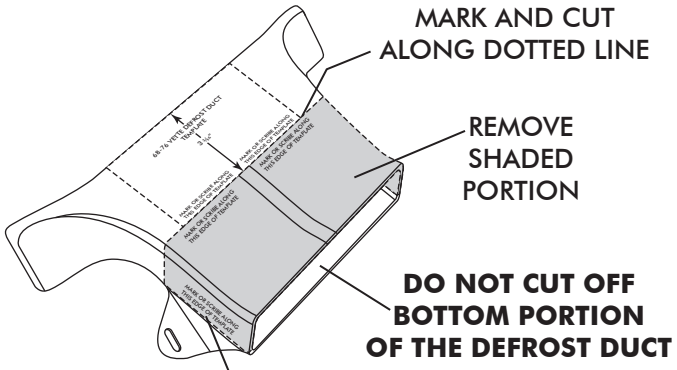


FIGURE 7a

- ☐ INSTALL THE DEFROST DUCT ASSEMBLY AS SHOWN IN FIGURE 8, BELOW.
- ☐ INSTALL (3) S-CLIPS ON DEFROST DUCT ASSEMBLY AS SHOWN IN FIGURE 8, BELOW.

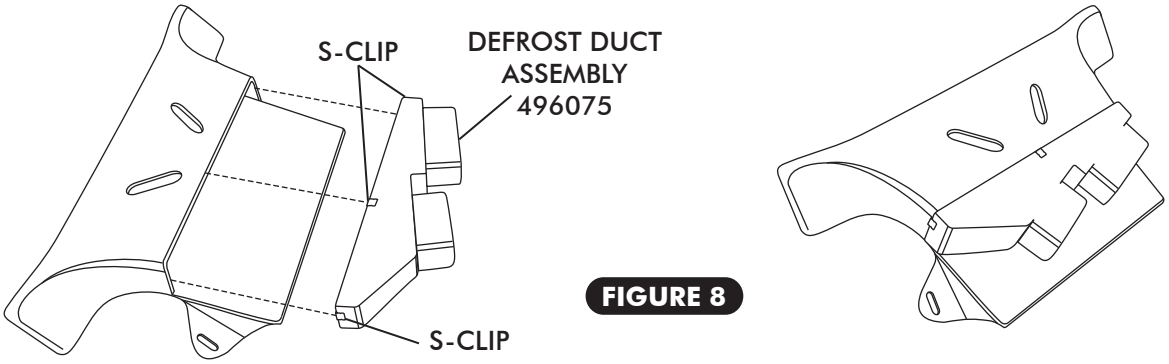


FIGURE 8

DEFROST DUCT & PASSENGER AND DRIVER SIDE A/C DUCT HOSE ADAPTER INSTALLATION

- ☐ USING THE OEM DEFROST DUCT MOUNTING SCREWS, INSTALL THE DEFROST DUCT WITH HOSE ADAPTER AS SHOWN IN FIGURE 9, BELOW.
- ☐ REMOVE VENT KNOBS AND RETAIN.

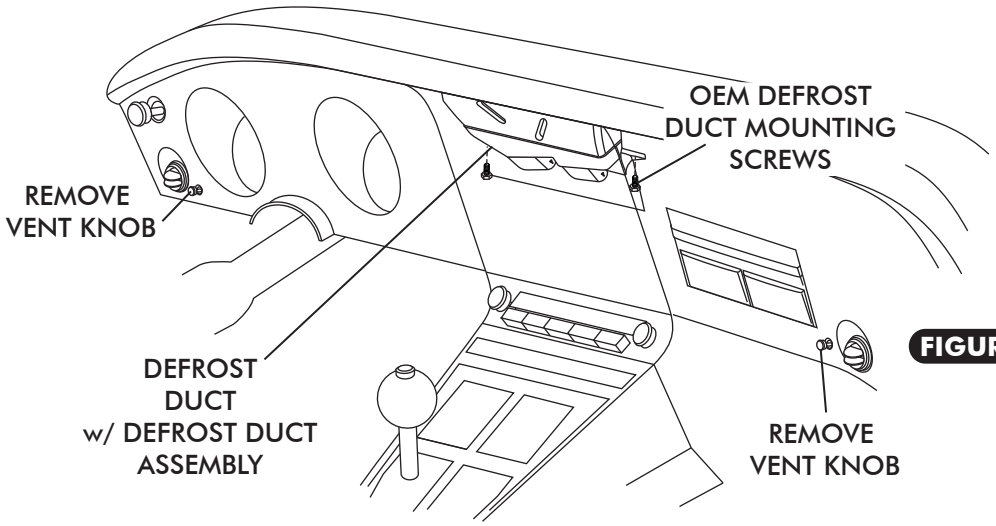


FIGURE 9

- ☐ REMOVE THE PASSENGER AND DRIVER SIDE VENT ADAPTERS (DISCARD) AS SHOWN IN FIGURE 10, BELOW. **NOTE: RETAIN MOUNTING HARDWARE.**
- ☐ INSTALL THE INNER AND OUTER A/C DUCT HOSE ADAPTERS AS SHOWN IN FIGURE 10, BELOW. USE OEM SCREWS TO SECURE ADAPTERS TO DASH.
- ☐ INSTALL THE VENT KNOB, AS SHOWN, USING A 10-24 x 1 ¼" PH PAN HEAD SCREW AND 3/16" FLAT WASHER. **NOTE: THE PASSENGER SIDE INSTALLATION IS SHOWN BELOW IN FIGURE 10. REPEAT THE SAME STEPS FOR THE DRIVER SIDE INSTALLATION.**

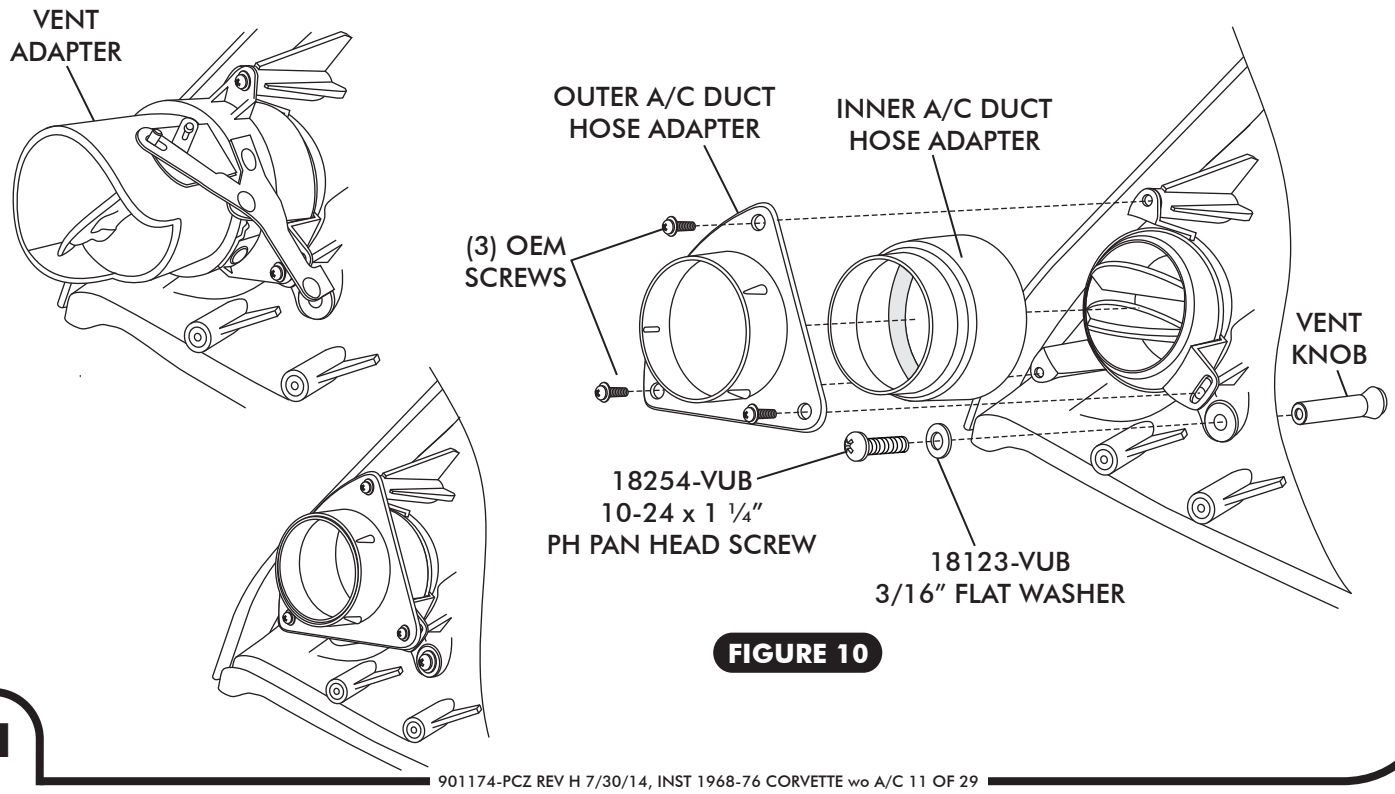


FIGURE 10

CENTER LOUVER ADAPTER INSTALLATION

☐ REMOVE THE OEM CENTER DASH BEZEL & OEM WIPER SWITCH AS SHOWN IN FIGURE 11, BELOW.

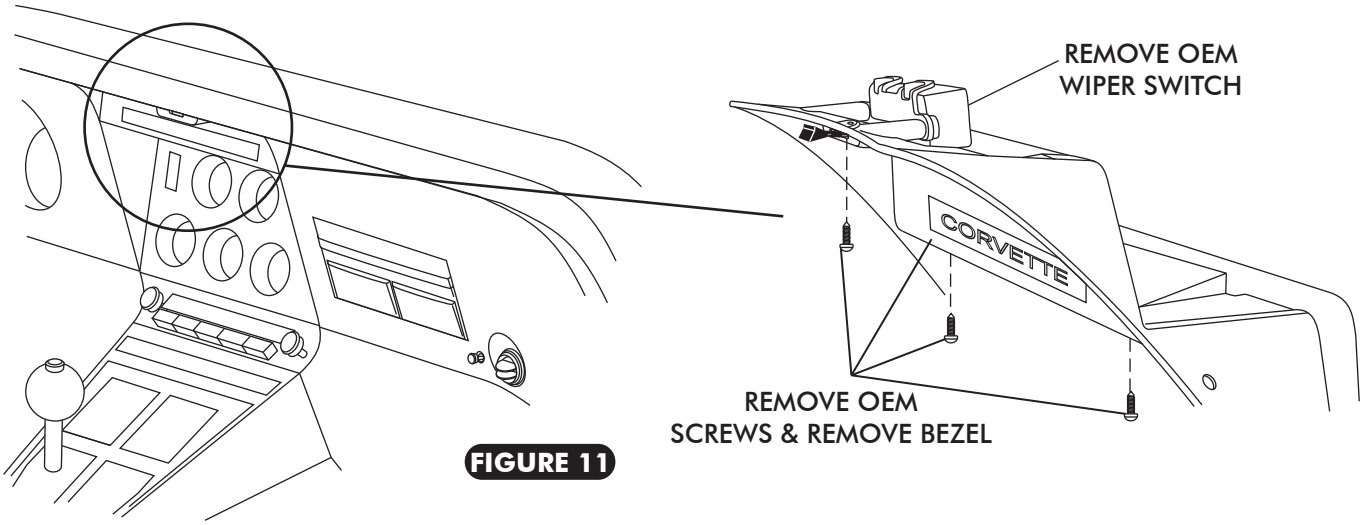


FIGURE 11

☐ INSTALL THE WIPER SWITCH BRACKET & GROUND WIRE USING (2) 10-32 x 1/2" PH PAN HEAD SCREWS & (2) NUTS w/ STAR WASHERS AS SHOWN IN FIGURE 11a, BELOW.

☐ INSTALL THE OEM WIPER SWITCH ON THE CENTER LOUVER BEZEL USING (2) 6-32 x 3/8" PH FLAT HEAD SCREWS w/ NYLOC NUTS AS SHOWN IN FIGURE 11a, BELOW.

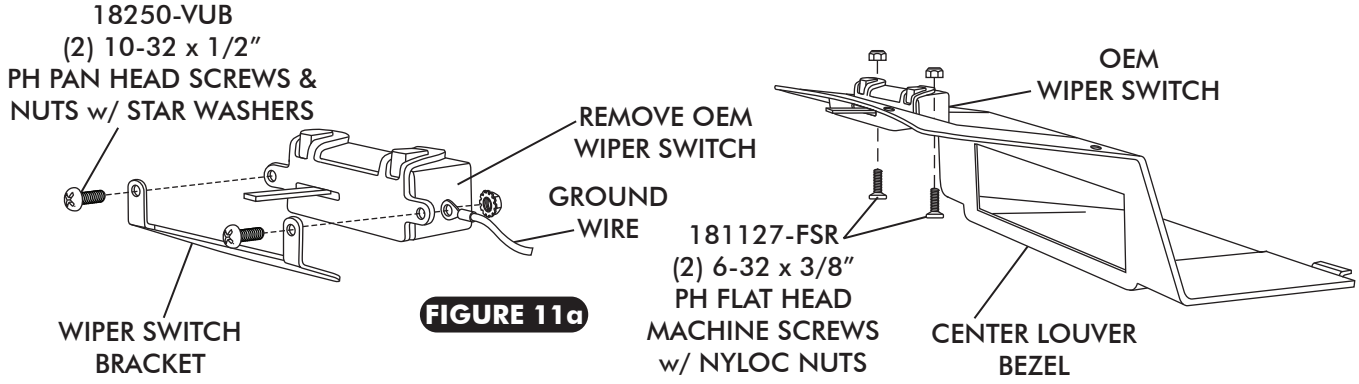


FIGURE 11a

☐ INSTALL RECTANGLE LOUVER, AS SHOWN IN FIGURE 11b, TO CENTER LOUVER BEZEL.

☐ USING (2) 8-15 x 3/4" PH FLAT HEAD TAP SCREWS INSTALL THE CENTER LOUVER BEZEL IN THE CENTER DASH BEZEL AS SHOWN IN FIGURE 11b. **NOTE: SECURE THE GROUND WIRE BETWEEN THE CENTER LOUVER BEZEL AND THE DASH.**

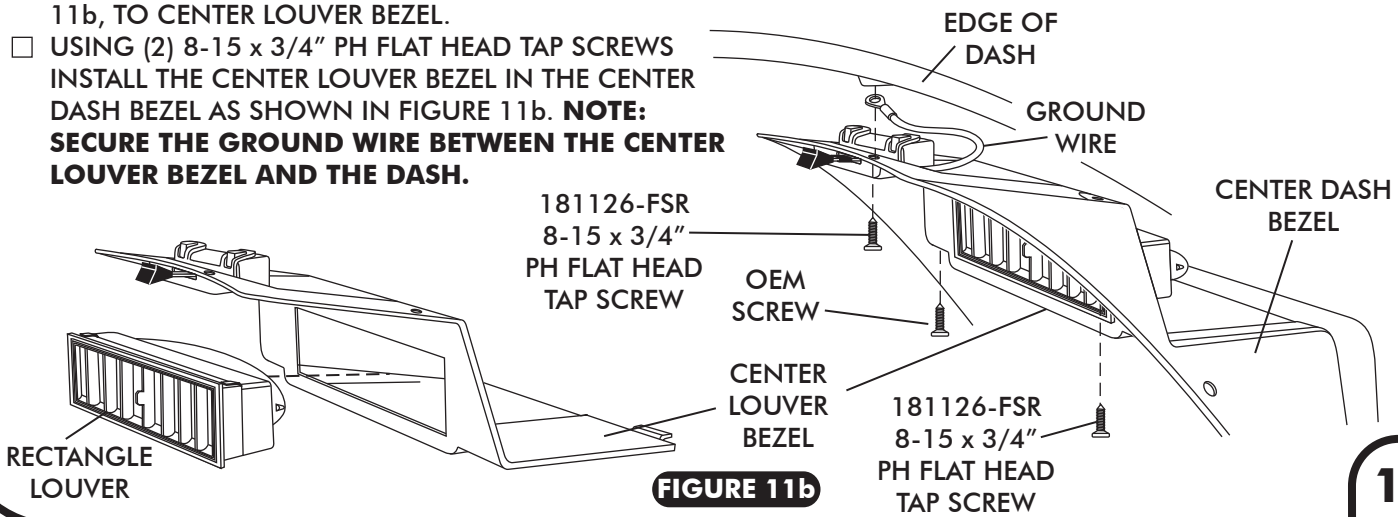


FIGURE 11b

FIREWALL MODIFICATION

- ☐ CUT OUT FIREWALL MODIFICATION TEMPLATE ON PAGE 29.
- ☐ ALIGN AND TAPE INTO PLACE AS SHOWN IN FIGURE 11c, AND MARK AROUND THE DOTTED LINE.
- ☐ REMOVE THE TEMPLATE. CUT ALONG THE DOTTED LINE TO REMOVE THE SHADED PORTION OF THE FIREWALL AS SHOWN IN FIGURE 11d.

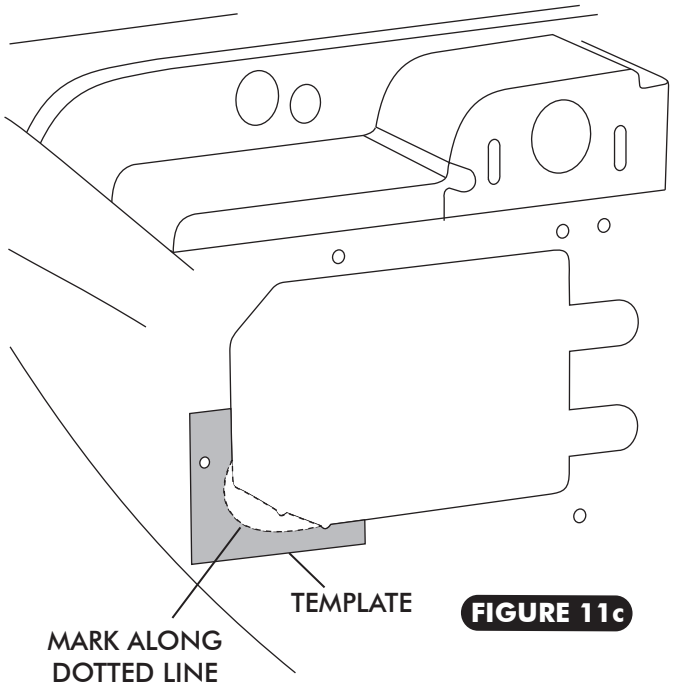


FIGURE 11c

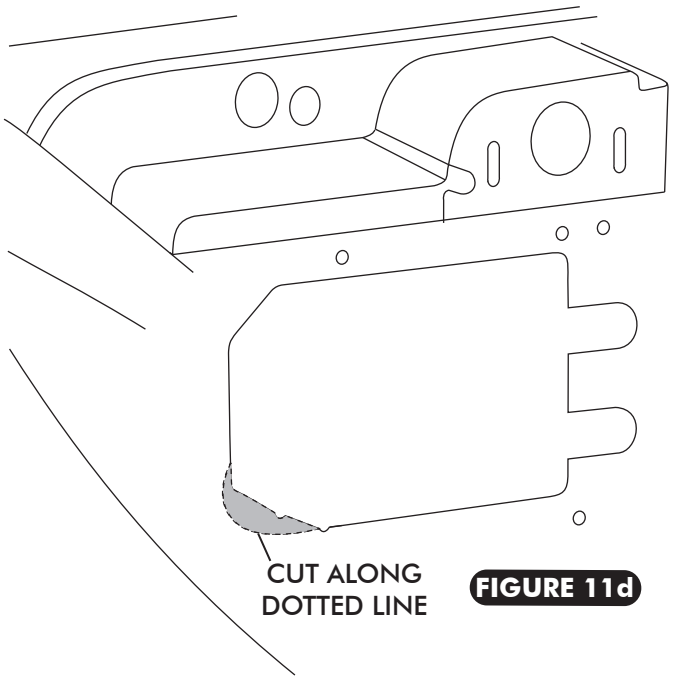


FIGURE 11d

EVAPORATOR INSTALLATION

- ☐ ON A WORKBENCH, INSTALL EVAPORATOR REAR BRACKET, AND INSTALL EVAPORATOR HARDLINES WITH PROPERLY LUBRICATED O-RINGS (SEE FIGURE 16, PAGE 18, AND FIGURE 22, PAGE 21).
- ☐ INSTALL FRONT MOUNTING BRACKET ON EVAPORATOR USING (2) 1/4-20 x 1/2" HEX BOLTS, AND TIGHTEN AS SHOWN IN FIGURE 12, PAGE 14.
- ☐ PLACE POLYETHYLENE SHEET OVER THE STEPPER MOTORS. SEE FIGURE 13, PAGE 14.
- ☐ LIFT EVAPORATOR UNIT UP UNDER THE DASHBOARD. SEE FIGURE 13, PAGE 14. SECURE LOOSELY TO THE FIREWALL FROM THE ENGINE COMPARTMENT SIDE USING A 1/4-20 x 1" BOLT AND WASHER. SEE FIGURE 13, PAGE 14.
- ☐ USING A #14 x 3/4" SHEET METAL SCREW, SECURE THE FRONT EVAPORATOR MOUNTING BRACKET TO THE INNER COWL BY ALIGNING THE RIGHT HOLE IN THE FRONT EVAPORATOR MOUNTING BRACKET WITH THE OEM HOLE IN THE INNER COWL. SEE FIGURE 13, PAGE 14.
- ☐ TO SECURE THE LEFT SIDE OF THE FRONT MOUNTING BRACKET, WITH EVAPORATOR MOUNTING BRACKET IN PLACE, DRILL A 3/16" HOLE IN INNER COWL USING THE LEFT MOUNTING BRACKET HOLE AS A GUIDE. SECURE THE BRACKET TO THE INNER COWL USING A #14 x 3/4" SHEET METAL SCREW. SEE FIGURE 13, PAGE 14.
- ☐ 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 SCREWS.**

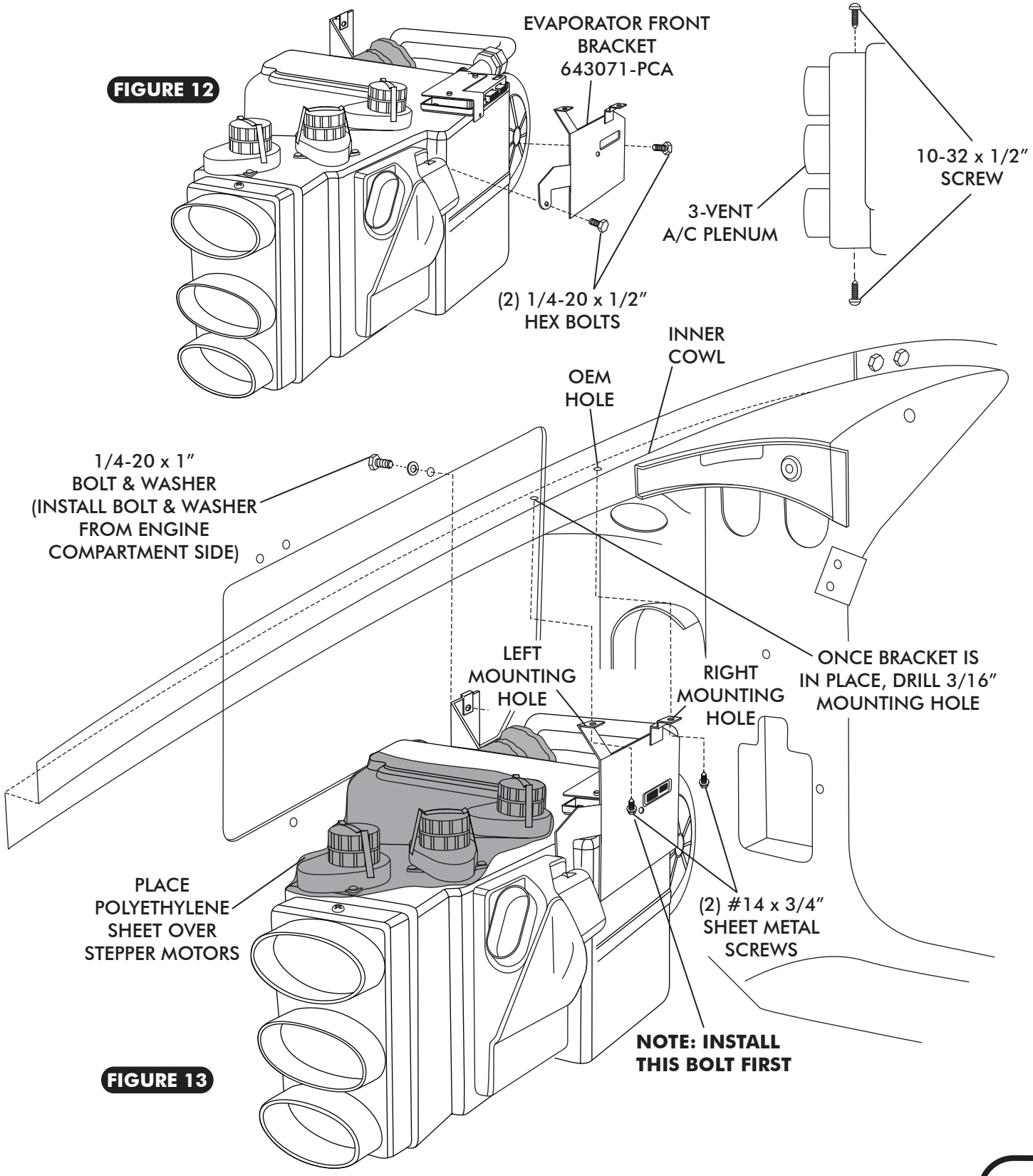


FIGURE 12

FIGURE 13

DRAIN HOSE INSTALLATION

☐ IN LINE WITH THE DRAIN, LIGHTLY MAKE A MARK ON THE FIREWALL. MEASURE ONE INCH 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, BELOW.

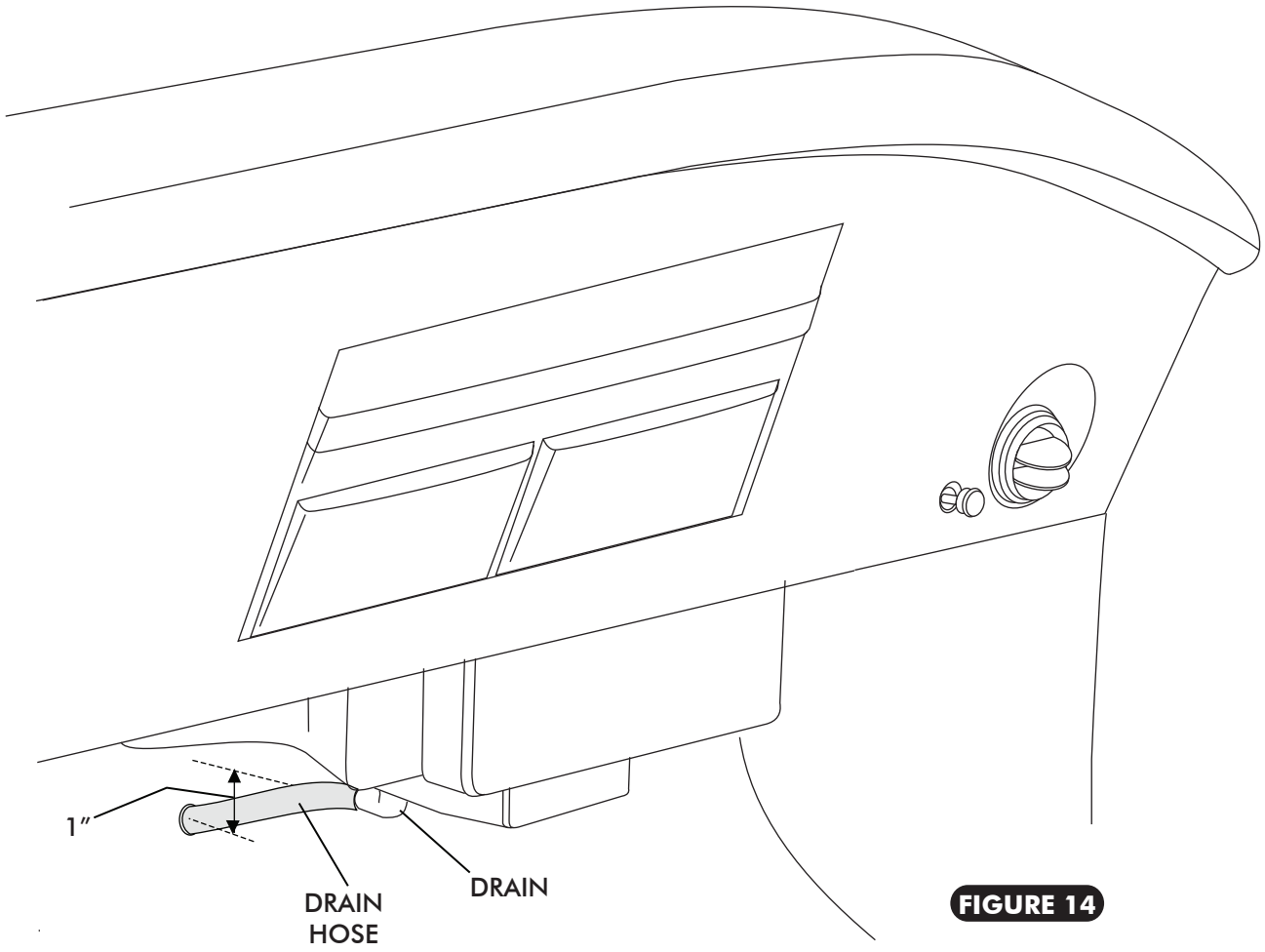


FIGURE 14

FIREWALL COVER

- ☐ LOCATE THE DIMPLE IN THE BACK SIDE OF THE FIREWALL COVER. USE A 1/2" DRILL BIT AND DRILL 1/2" HOLE IN FIREWALL COVER AS SHOWN IN FIGURE 15, BELOW.
- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FIREWALL COVER AS SHOWN IN FIGURE 15, BELOW.
- ☐ PASS LINES THROUGH FIREWALL COVER, AND SECURE WITH (2) 7/16" PANEL RETAINERS. SEE FIGURE 15, BELOW.
- ☐ ONCE THE FIREWALL COVER IS IN PLACE, LOCATE THE HOLE ON THE LEFT SIDE OF THE FIREWALL COVER AND DRILL A 3/8" HOLE THROUGH THE FIREWALL. INSTALL A 7/16" PANEL RETAINER TO SECURE THE LEFT SIDE OF THE FIREWALL COVER TO FIREWALL. SEE FIGURE 15, BELOW.
- ☐ INSTALL (2) GROMMETS IN FIREWALL COVER CAP AS SHOWN IN FIGURE 15, BELOW.
- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FIREWALL COVER CAP AS SHOWN IN FIGURE 15, BELOW. USING (2) #8 x 1/2" PAN HEAD SCREWS, INSTALL FIREWALL COVER CAP AS SHOWN IN FIGURE 15, BELOW.

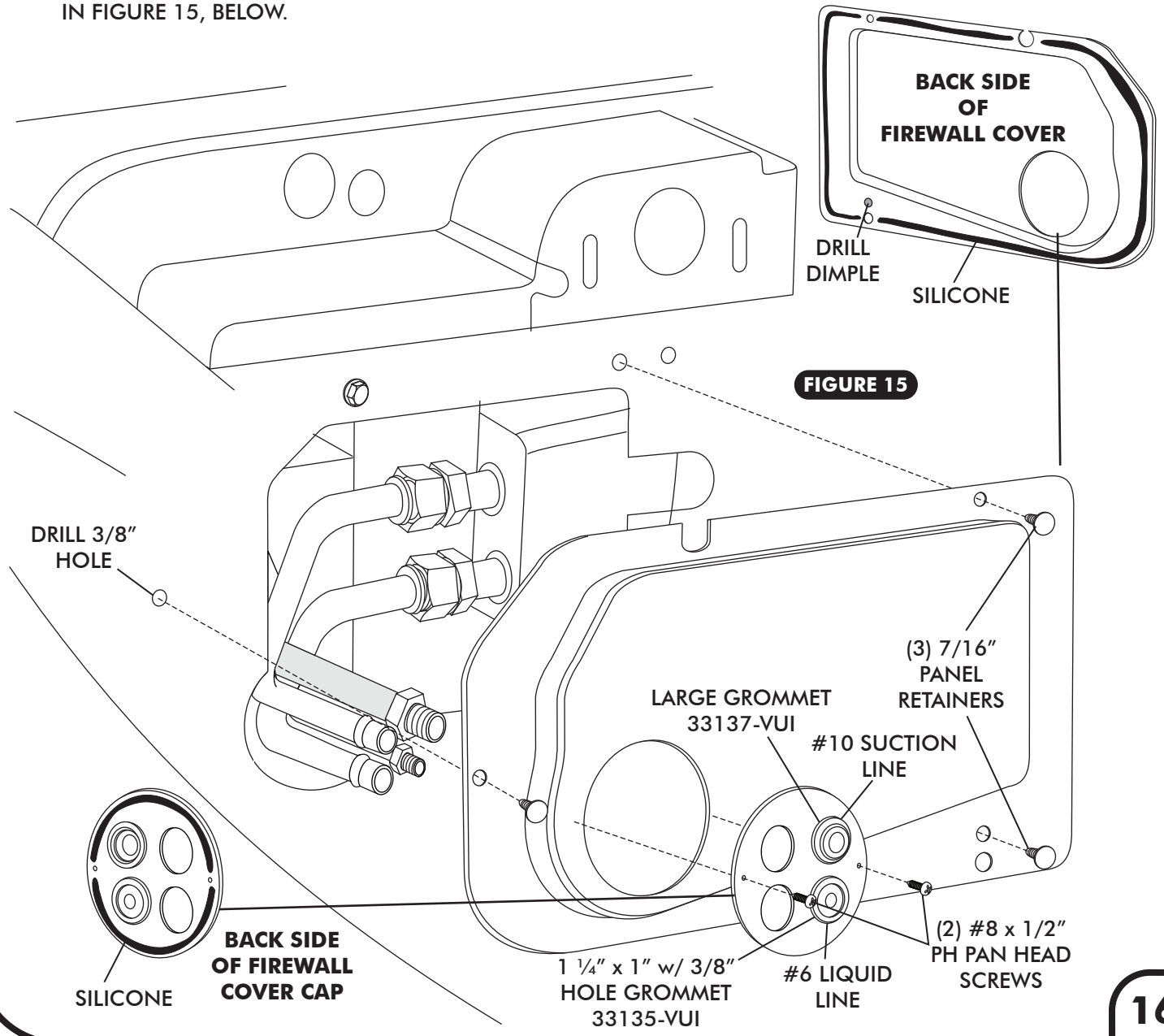


FIGURE 15

A/C HOSE INSTALLATION

STANDARD HOSE KIT

☐ LOCATE THE #8 COMPRESSOR A/C HOSE AND LUBRICATE (2) #8 O-RINGS (SEE FIGURE 16, PAGE 18). CONNECT THE 135° FITTING TO THE #8 DISCHARGE PORT ON THE COMPRESSOR AND ROUTE THE STRAIGHT FEMALE FITTING w/ 134a SERVICE PORT TO THE #8 CONDENSER HARDLINE COMING THROUGH THE CORE SUPPORT. SEE FIGURE 18, PAGE 18. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN FIGURE 17, PAGE 18.

☐ LOCATE THE #10 COMPRESSOR A/C HOSE AND LUBRICATE (2) #10 O-RINGS (SEE FIGURE 16, PAGE 18). CONNECT THE 45° FEMALE FITTING w/ 134a SERVICE PORT TO THE #10 SUCTION PORT ON THE COMPRESSOR AND ROUTE THE STRAIGHT FITTING TO THE #10 EVAPORATOR HARDLINE COMING THROUGH THE FIREWALL (SEE FIGURE 18, PAGE 18). TIGHTEN EACH FITTING CONNECTION AS SHOWN IN FIGURE 17, PAGE 18. **NOTE: WRAP THE #10 FITTING CONNECTIONS AT THE FIREWALL WITH PRESS TAPE. SEE FIGURE 18, PAGE 18.**

☐ LOCATE THE #6 EVAP/CORE HARDLINE AND LUBRICATE (2) #6 O-RINGS (SEE FIGURE 16, PAGE 18). CONNECT THE HARDLINE TO THE #6 HARDLINE COMING THROUGH THE CORE SUPPORT FROM DRIER. ATTACH THE OTHER END OF THE HARDLINE WITH LUBRICATED O-RINGS TO THE #6 EVAPORATOR HARDLINE COMING THROUGH THE FIREWALL. SEE FIGURE 18, PAGE 18. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN FIGURE 17, PAGE 18. USE A #2 ADEL CLAMP TO SECURE THE #6 EVAP/CORE HARDLINE TO THE INNER FENDER WELL AS SHOWN IN FIGURE 18, PAGE 18. SECURE THE ADEL CLAMP TO THE INNER FENDER USING A 10-32 x 1/2" MACHINE SCREW AND NUT.

MODIFIED A/C HOSE KIT

☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH MODIFIED HOSE KIT.

HEATER HOSE & HEATER CONTROL VALVE INSTALLATION

☐ ROUTE A PIECE OF HEATER HOSE FROM THE WATER PUMP TO THE HEATER LINE COMING THROUGH THE FIREWALL AS SHOWN IN FIGURE 19, PAGE 19. SECURE USING HOSE CLAMPS.

☐ ROUTE A PIECE OF HEATER HOSE FROM THE INTAKE TO THE HEATER LINE COMING THROUGH THE FIREWALL AS SHOWN IN FIGURE 19, PAGE 19. **NOTE: INSTALL HEATER CONTROL VALVE IN LINE WITH INTAKE MANIFOLD (PRESSURE SIDE) HEATER HOSE, AND SECURE USING HOSE CLAMPS AS SHOWN IN FIGURE 19, PAGE 19. ALSO NOTE PROPER FLOW DIRECTION.**

SMALL BLOCK HOSE ROUTING

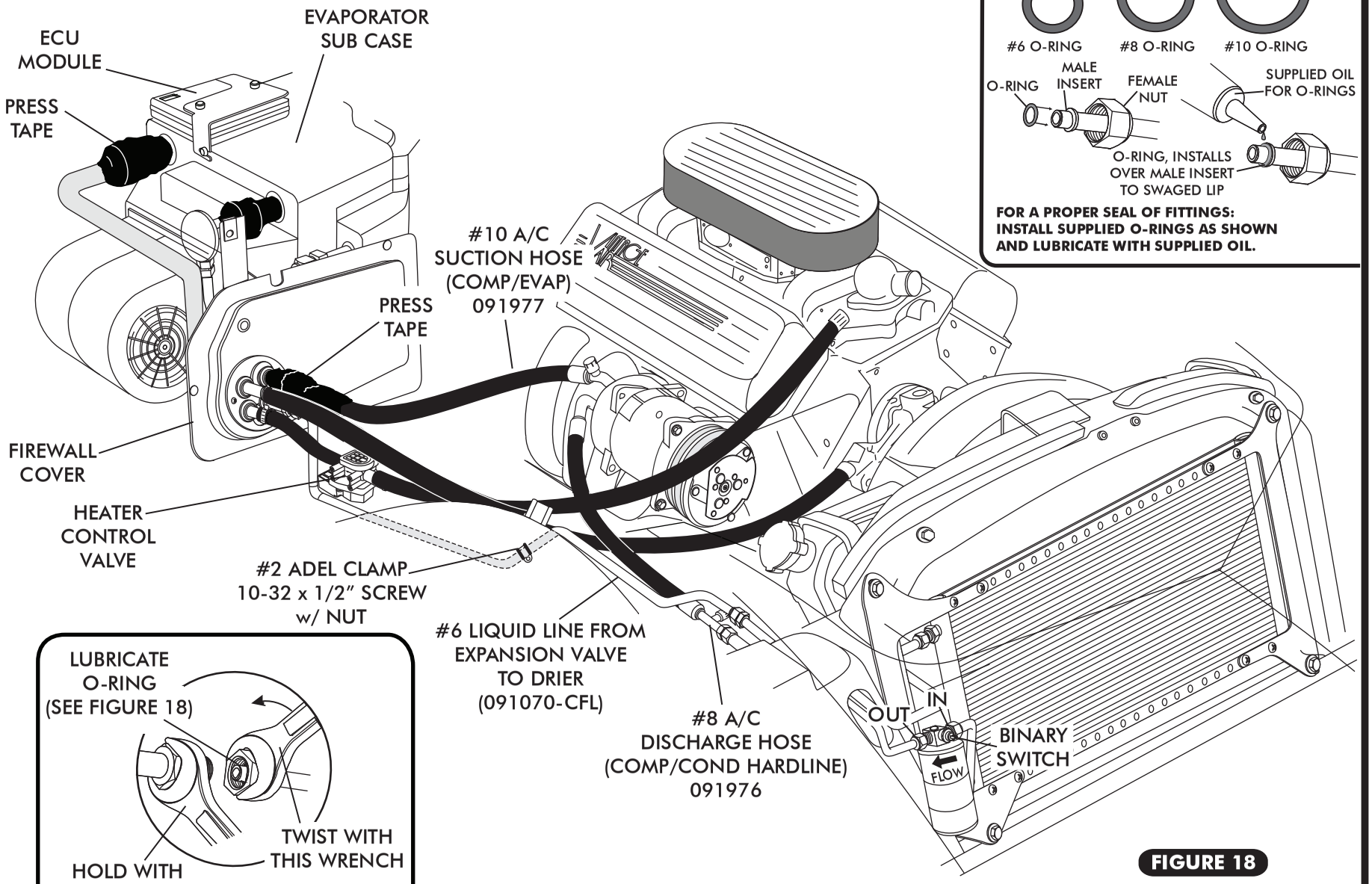


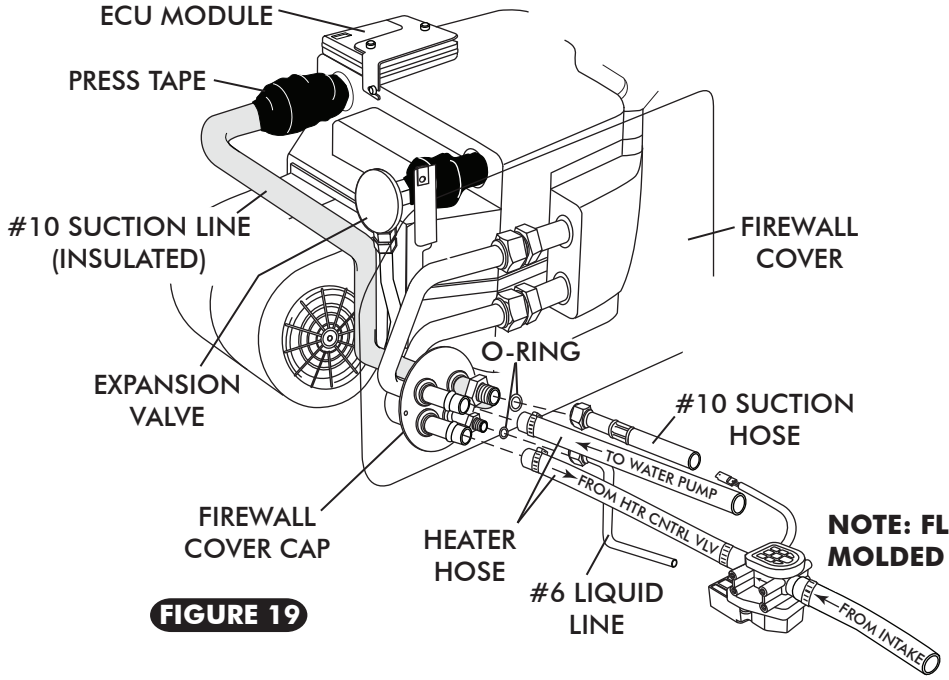
FIGURE 16

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

FIGURE 17

FIGURE 18

HEATER CONTROL VALVE INSTALLATION



NOTE: FLOW DIRECTION FOLLOWS MOLDED ARROW ON VALVE.

FIGURE 19

FINAL STEPS - DUCT HOSE ROUTING & CONTROL PANEL HARNESS

- ☐ INSTALL DRIVER SIDE LOUVER ADAPTER ASSEMBLY AS SHOWN IN FIGURE 20, BELOW.
- ☐ INSTALL DUCT HOSES AS SHOWN IN FIGURES 21 & 21a, PAGE 20.
- ☐ REINSTALL THE CENTER DASH ASSEMBLY.
- ☐ REINSTALL CONTROL PANEL.
- ☐ PLUG THE CONTROL PANEL HARNESS INTO THE ECU MODULE ON SUB CASE AS SHOWN. SEE FIGURE 21, PAGE 20.
- ☐ PLUG THE WIRING HARNESS INTO THE ECU MODULE ON SUB CASE AS SHOWN (WIRE ACCORDING TO WIRING DIAGRAM ON PAGES 22 & 23).
- ☐ **NOTE: CONTROLS MUST BE CALIBRATED FOR PROPER OPERATION. REFER TO CONTROL PANEL INSTRUCTIONS.**
- ☐ REINSTALL ALL PREVIOUSLY REMOVED ITEMS (BATTERY BOX & BATTERY).
- ☐ 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.

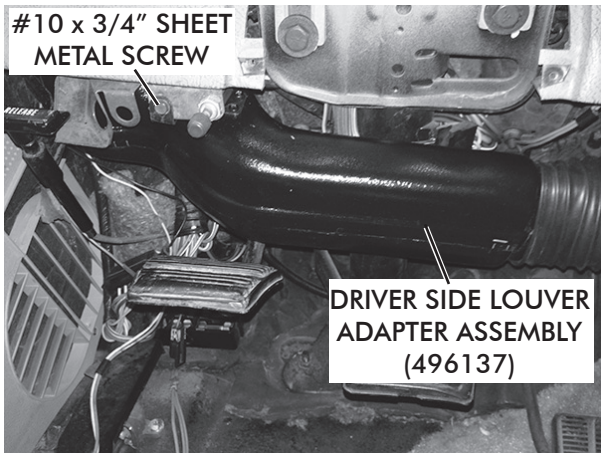


FIGURE 20

CONTROL PANEL & DUCT HOSE ROUTING

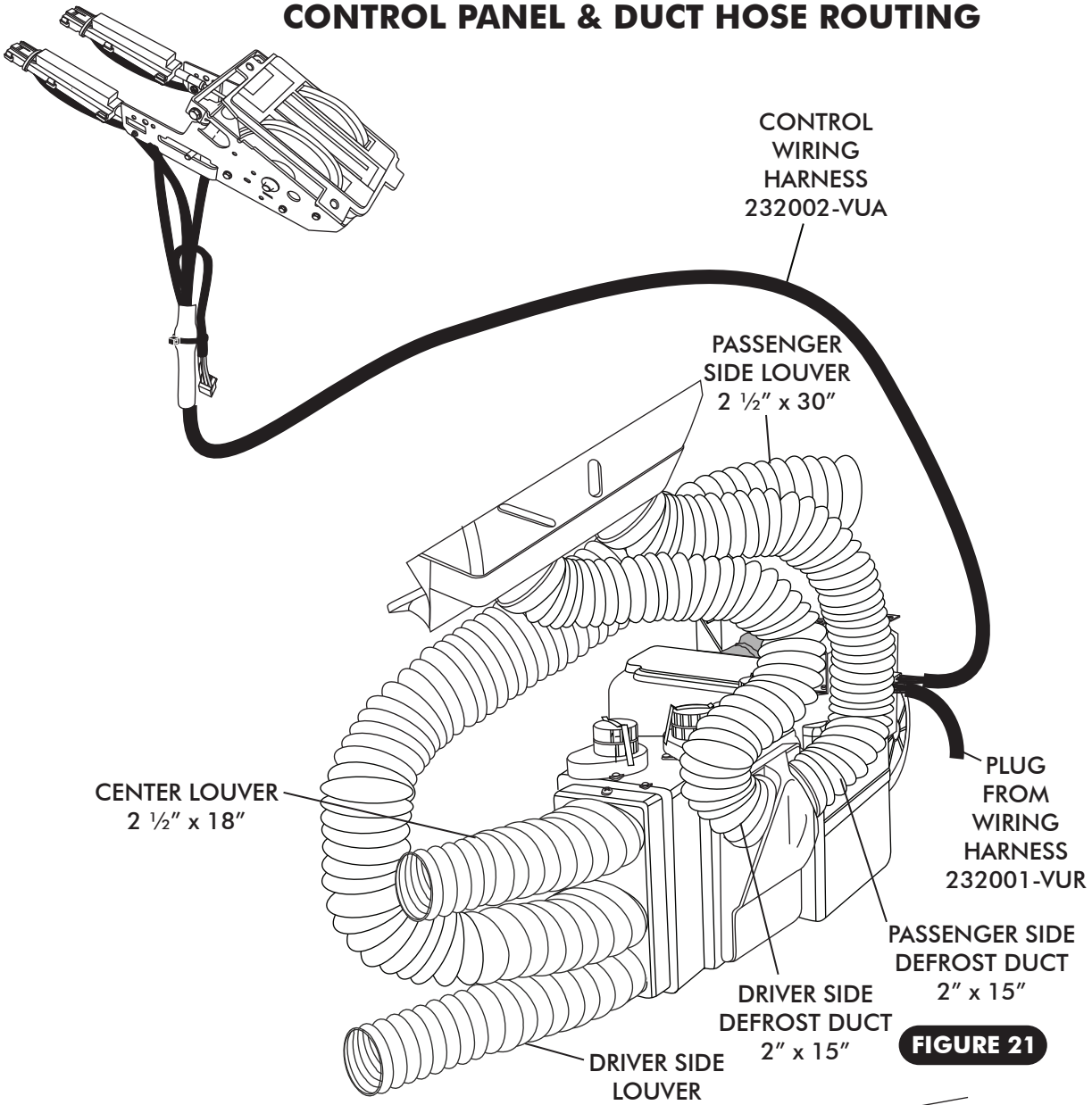


FIGURE 21

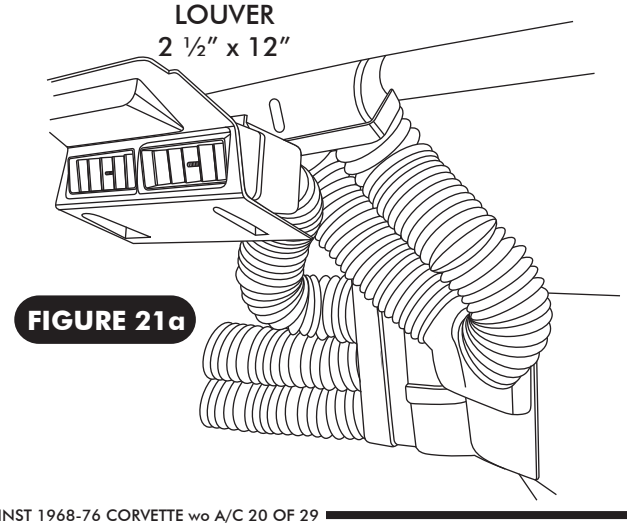


FIGURE 21a

EVAPORATOR HARDLINE INSTALLATION

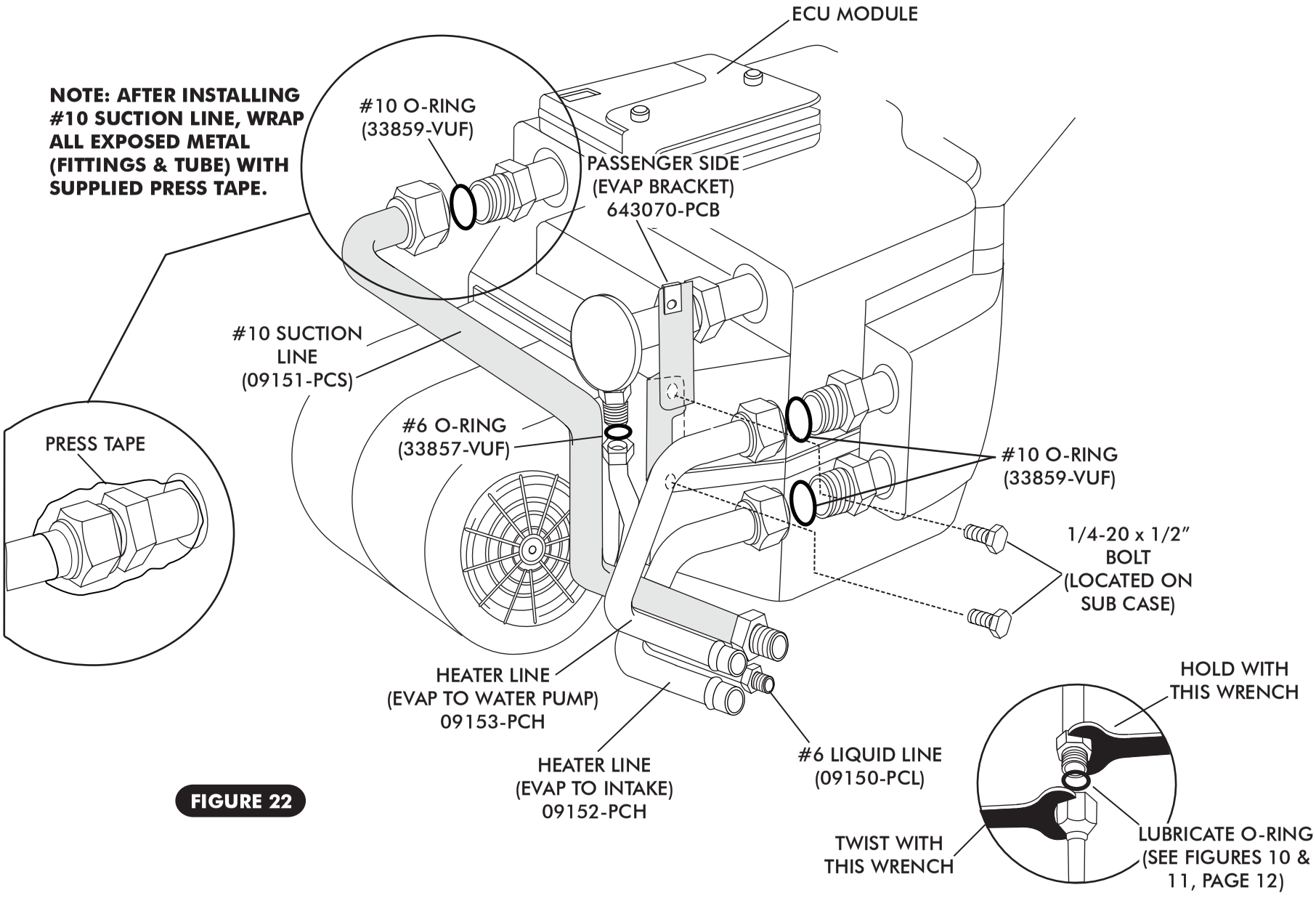
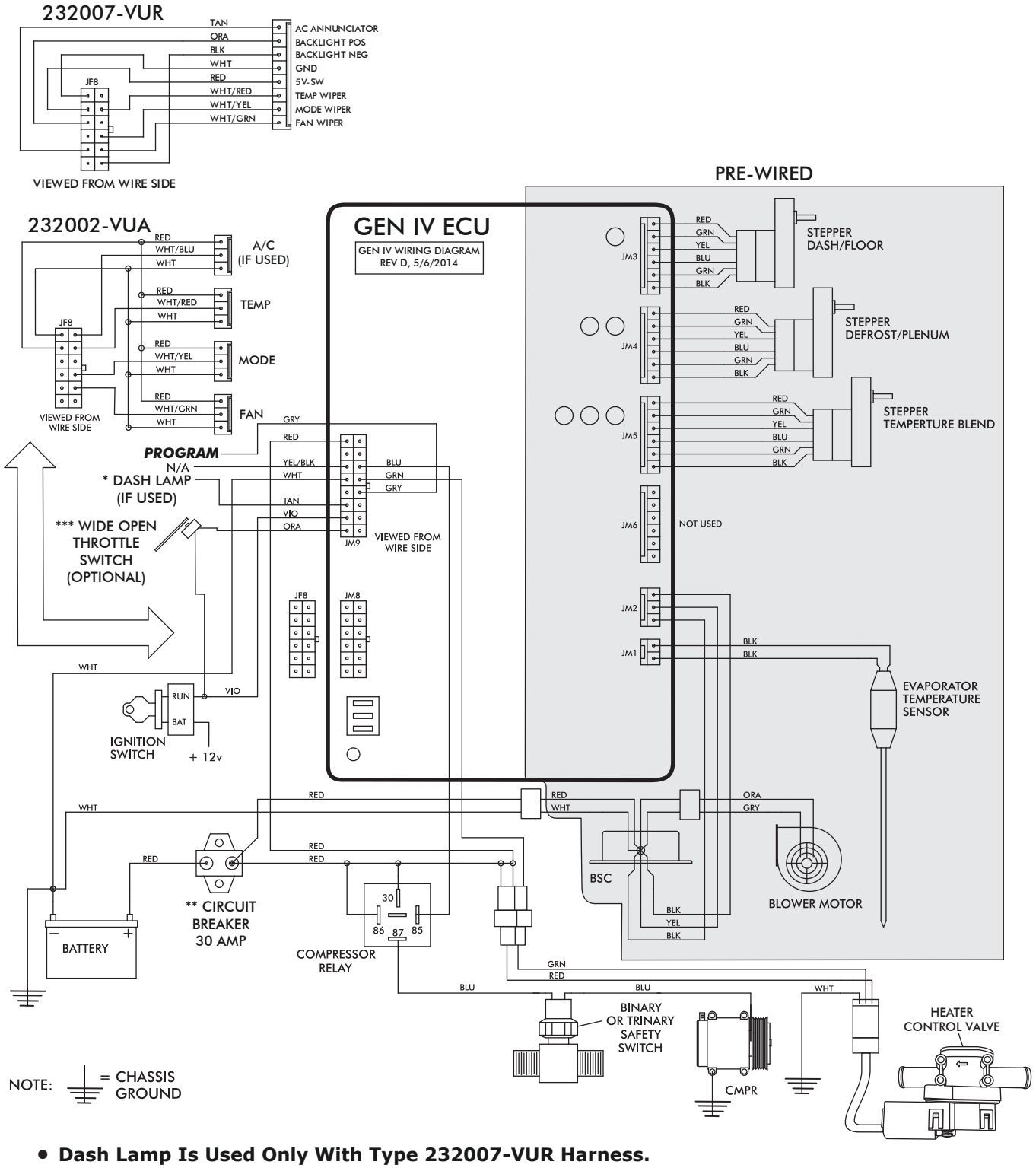


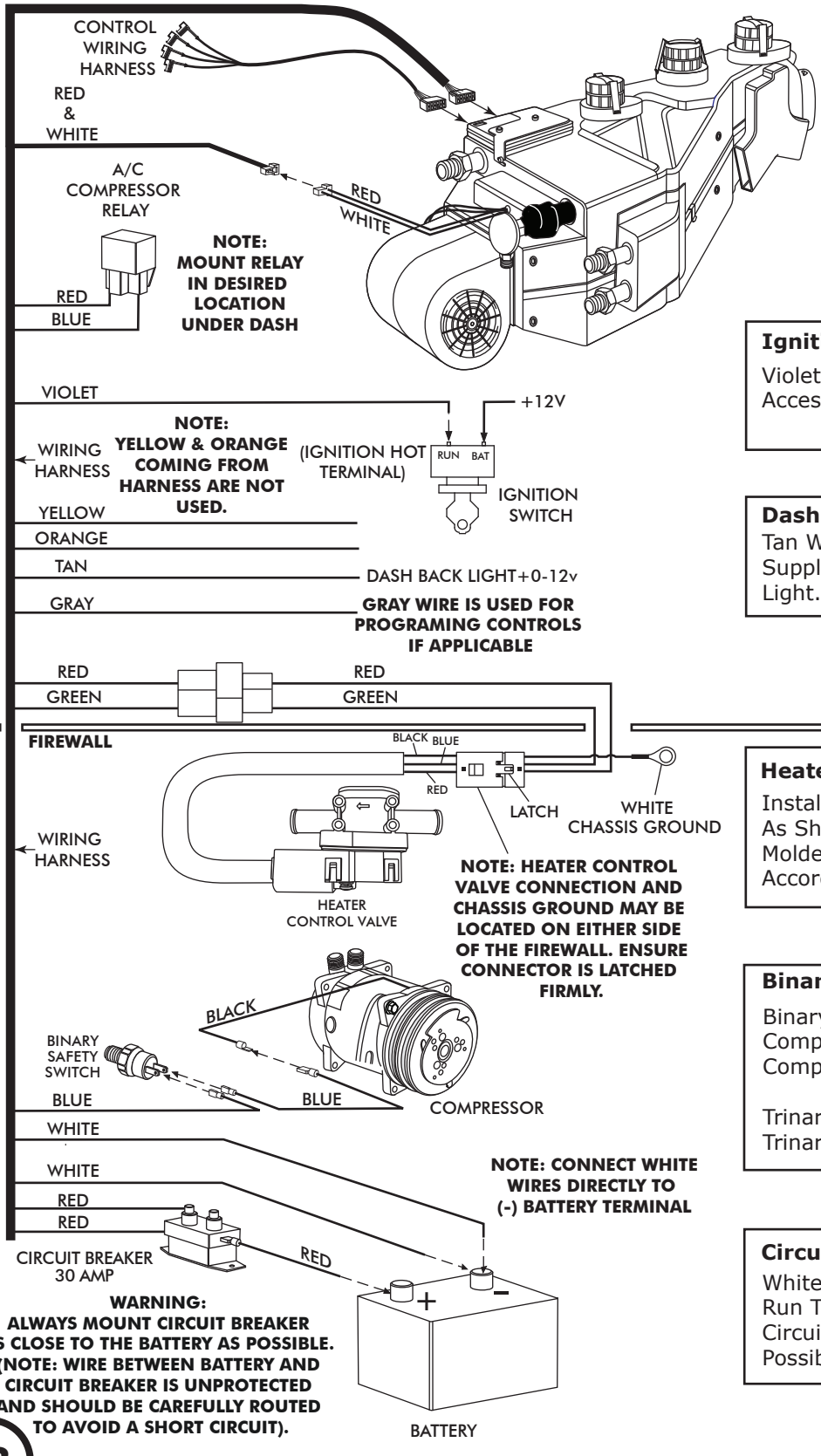
FIGURE 22

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



Ignition Switch:

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

Dash Light:

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

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

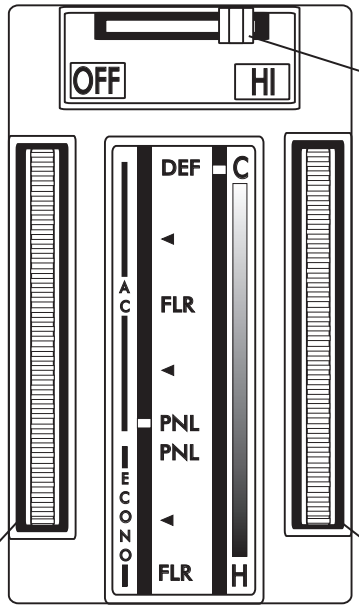
NOTE: FOR PROPER CONTROL PANEL FUNCTION, REFER TO CONTROL PANEL INSTRUCTIONS FOR CALIBRATION PROCEDURE.

A/C OPERATION

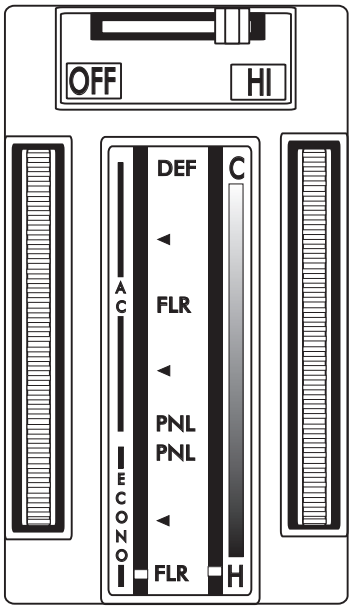
BLOWER SPEED
THIS LEVER CONTROLS THE BLOWER SPEED, FROM OFF TO HI

THERMOSTAT DIAL
ROLL THE THERMOSTAT DIAL ALL THE WAY UP FOR MAXIMUM COOLING. ROLL THE DIAL DOWN TO DECREASE THE AMOUNT OF COOLING.

MODE DIAL
ROLL THE DIAL UP OR DOWN TO THE "PNL", "FLR" OR "DEF" LEGENDS IN THE "AC" RANGE OF THE MODE DIAL.



HEAT OPERATION



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

THERMOSTAT DIAL
ROLL THE THERMOSTAT DIAL ALL THE WAY DOWN FOR MAXIMUM HEATING. ROLL THE DIAL UP TO DECREASE THE AMOUNT OF HEATING.

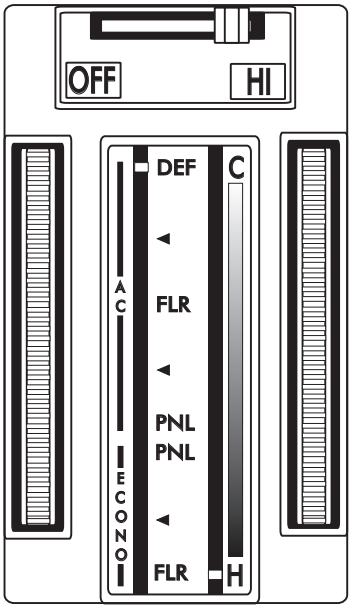
MODE DIAL
ROLL THE DIAL DOWN TO THE "PNL" OR "FLR" LEGENDS IN THE "ECONO" RANGE OF THE MODE DIAL.

DEFROST OPERATION

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

THERMOSTAT DIAL
ROLL THE THERMOSTAT DIAL ALL THE WAY DOWN FOR MAXIMUM HEATING. ROLL THE DIAL UP TO DECREASE THE AMOUNT OF HEATING.

MODE DIAL
ROLL THE DIAL UP TO THE "DEF" LEGEND IN THE "AC" RANGE OF THE MODE DIAL.



MODE DIAL: "AC" & "ECONO" RANGES
THE "AC" AND "ECONO" RANGES OF THE MODE DIAL OPERATE INDENTICALLY. HOWEVER, WHEN THE MODE DIAL IS IN THE "ECONO" RANGE, THE A/C COMPRESSOR IS SWITCHED OFF. **NOTE: WHEN THE MODE DIAL IS MOVED FROM ONE RANGE TO THE OTHER, THE BLOWER WILL MOMENTARILY CHANGE SPEEDS, BEFORE RETURNING TO NORMAL, TO INDICATE THE CHANGE.**

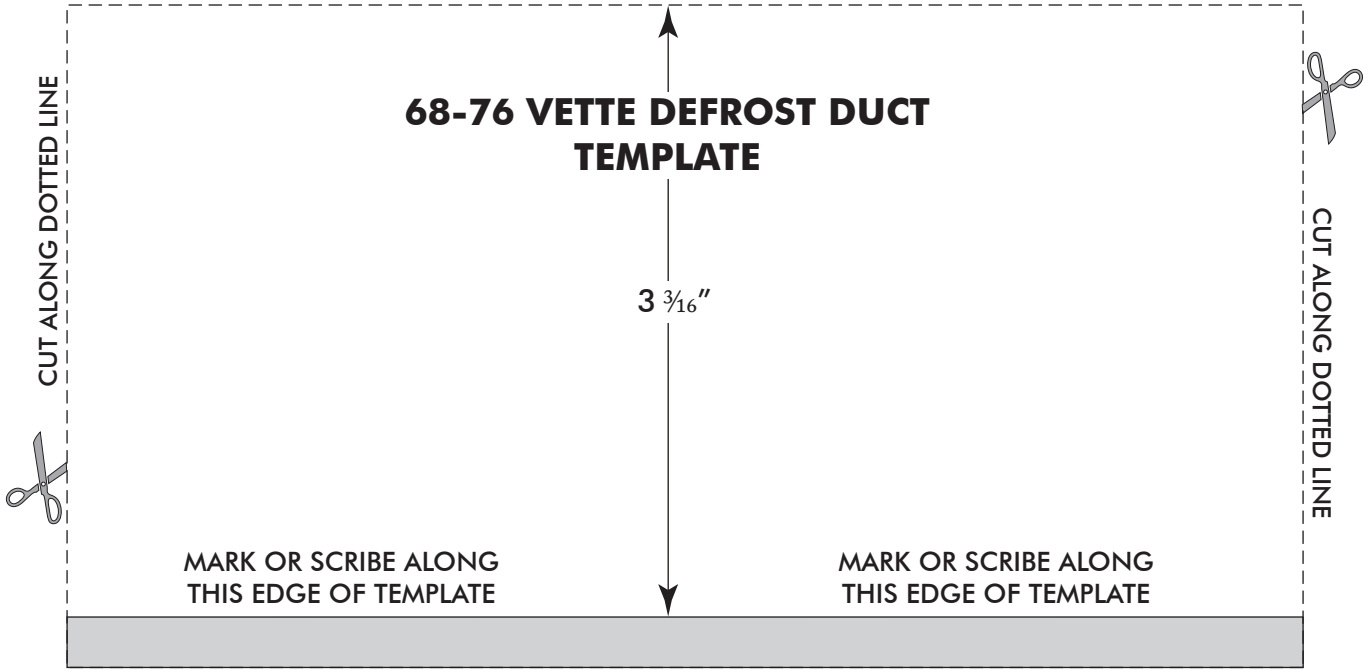
Troubleshooting Guide

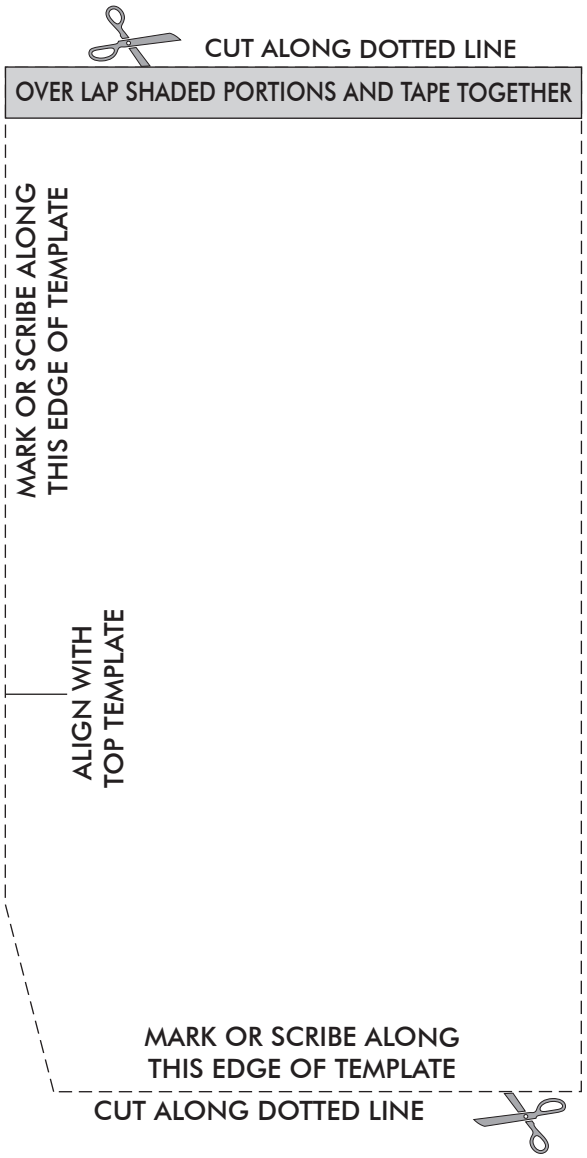
Symptom	Condition	Checks	Actions	Notes
1a. Blower stays on high speed when ignition is on.	No other functions work.	Check for damaged pins or wires in control head plug.	Verify that all pins are inserted into plug. Ensure that no pins are bent or damaged in ECU.	
		Check for damaged ground wire (white) in control head harness.	Verify continuity to chassis ground with white control head wire at various points.	Loss of ground on this wire renders control head inoperable.
	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.		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.	
		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).	No other part replacements should be necessary.
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.	**Danger: Never bypass safety switch with engine running. Serious injury can result.**
	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 0V and 5V, and will vary with pot lever position.
		Check for disconnected or faulty thermistor.	Check 2-pin connector at ECU housing.	Disconnected or faulty thermistor will cause compressor to be disabled.
3. Compressor will not turn off (All other functions work).		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 between 0V and 5V when lever is moved up or down.
		Check for faulty A/C relay.	Replace relay.	

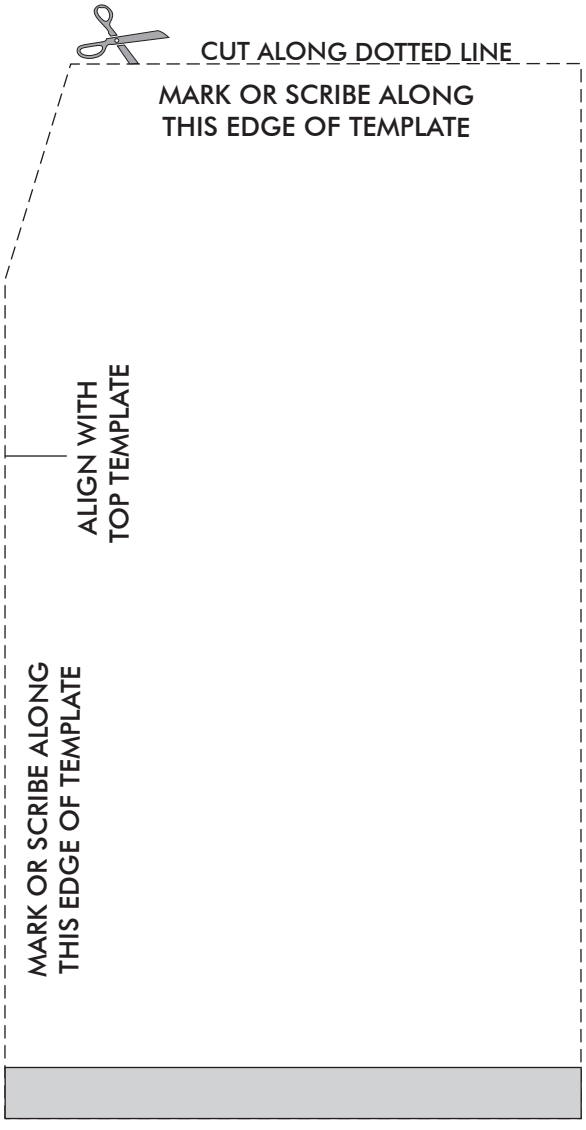
Troubleshooting Guide (Cont.)

Symptom	Condition	Checks	Actions	Notes
4. System will not turn on, or runs intermittently.	Works when engine is not running; shuts off when engine is started (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.
	Will not turn on under any conditions.	Verify connections on power lead, ignition lead, and both white ground wires.	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. 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.	Ensure all system grounds and power connections are clean and tight.	System shuts off blower at 10V. Poor connections or weak battery can cause shutdown at up to 11V.
	Battery voltage is less than 12V.	Check for faulty battery or alternator.	Charge battery.	
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.	

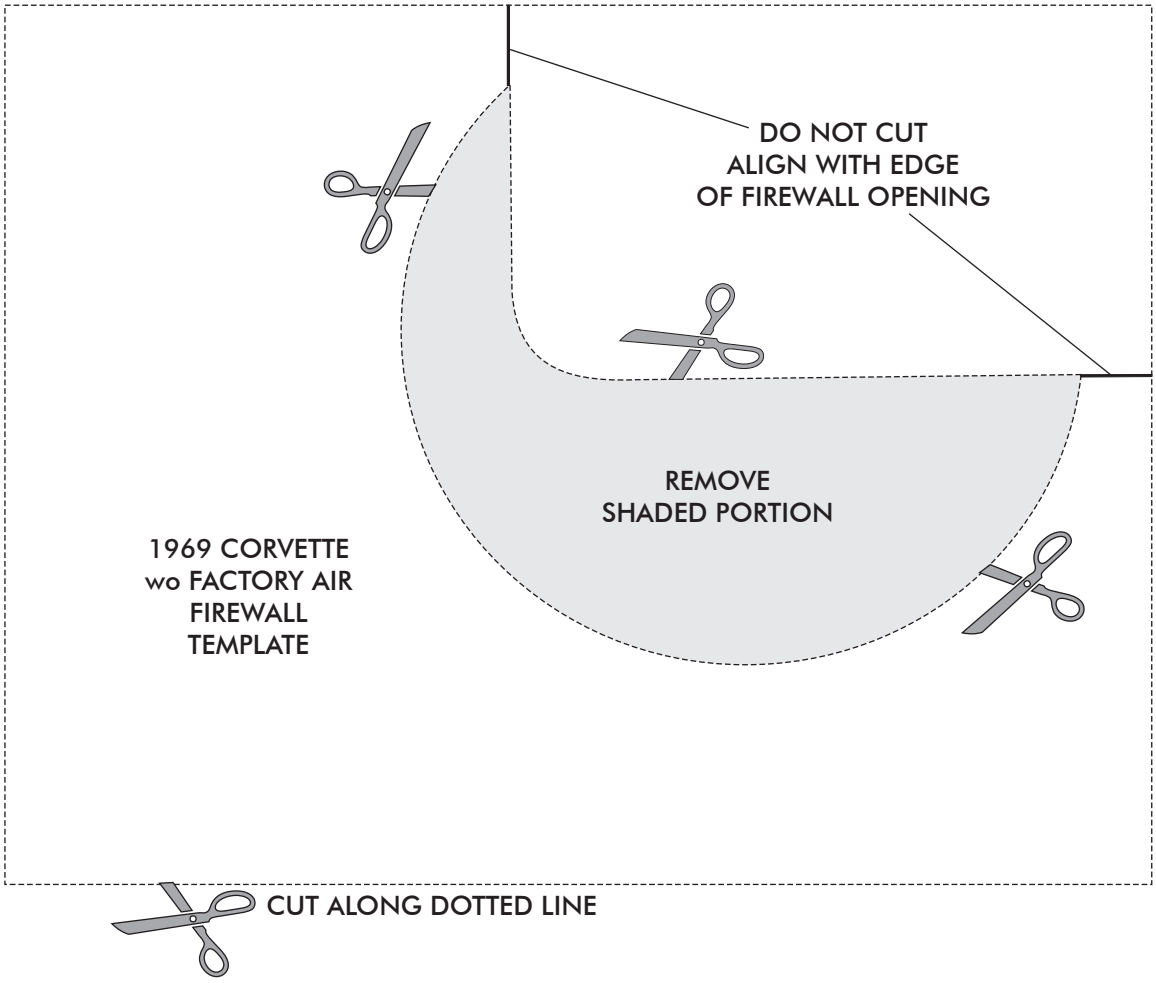
DEFROST DUCT TEMPLATE







FIREWALL MODIFICATION TEMPLATE



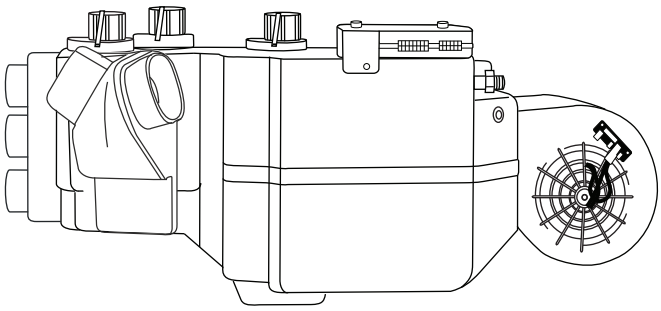
EVAPORATOR KIT PACKING LIST

EVAPORATOR KIT
561174-PCZ

No.	QTY.	PART No.	DESCRIPTION	
1.	1	761174-VCE	1968-76 CORVETTE without A/C EVAP. SUB CASE	_____
2.	1	781174-PCN	1968-76 CORVETTE without A/C ACCESSORY KIT	_____

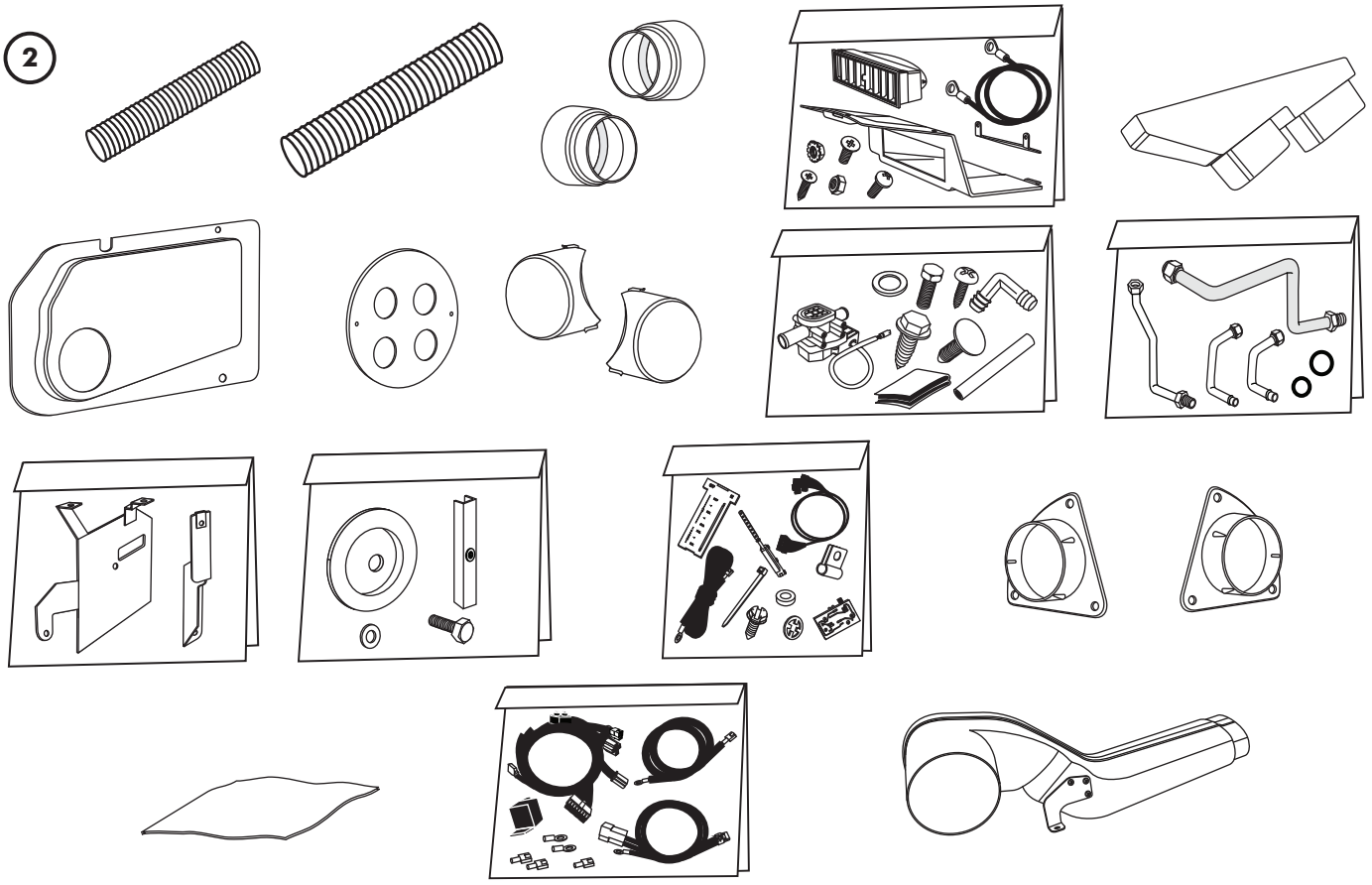
CHECKED BY: _____
PACKED BY: _____
DATE: _____

(1)



1968-76 CORVETTE
without A/C EVAP. SUB CASE
761174-VCE

(2)



ACCESSORY KIT
781174-PCN

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