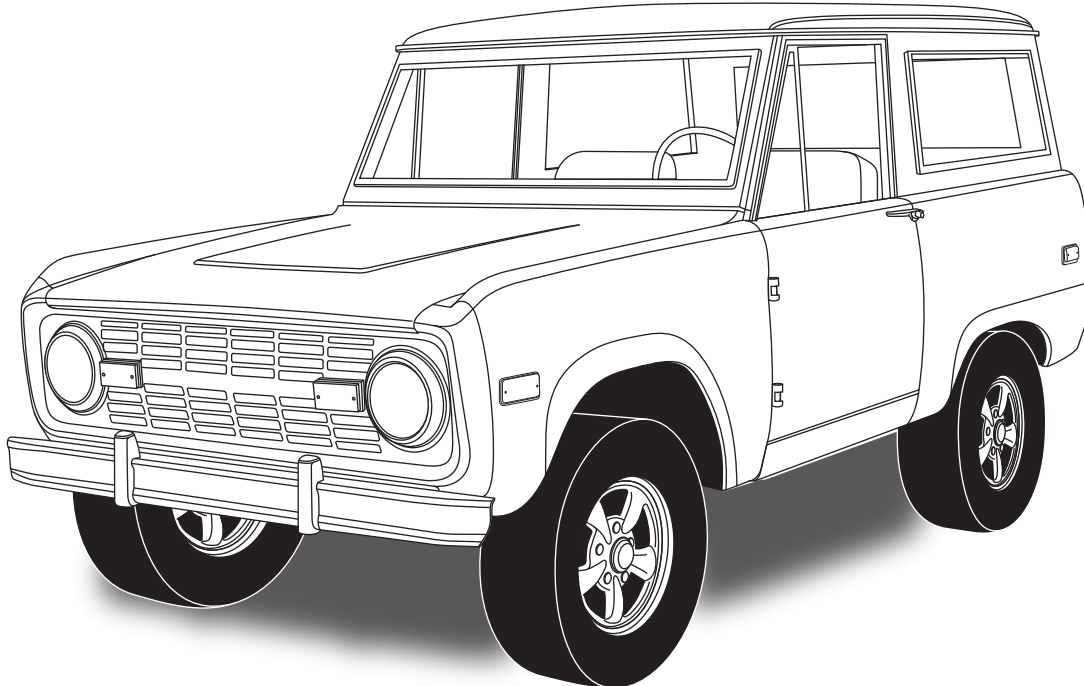




an ISO 9001:2008 Registered Company

1966-77 Ford Bronco

Evaporator Kit 751150



18865 Goll St. San Antonio, TX 78266 ph: 210-654-7171 fax: 210-654-3113



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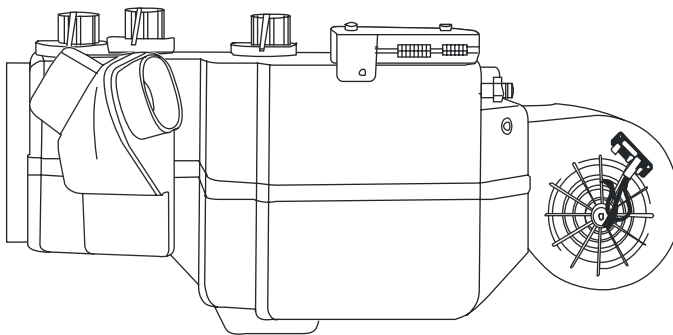
Packing List Evaporator Kit (751150)

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1.	1	768006	Gen IV Evaporator Sub Case w/ 204 ECU
2.	1	791176	Accessory Kit 66-77 Bronco

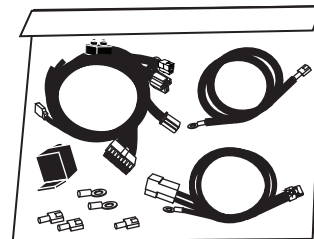
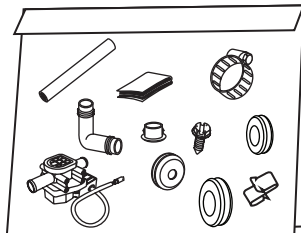
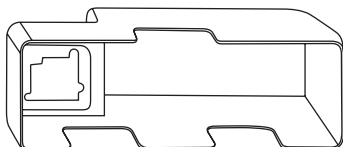
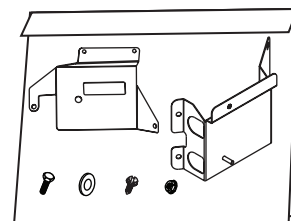
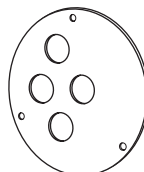
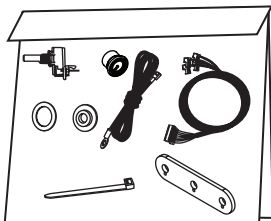
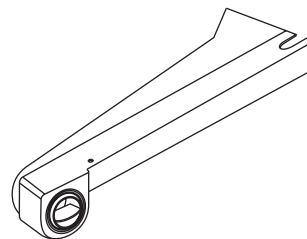
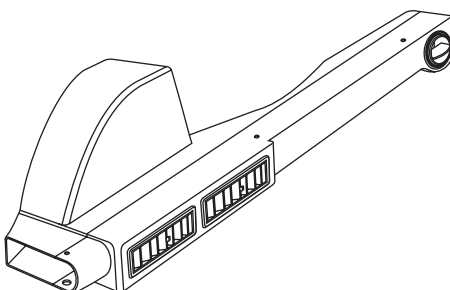
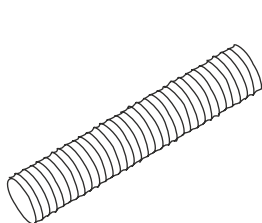
**** Before beginning installation, open all packages and check contents of shipment. Please report any shortages directly to Vintage Air within 15 days. After 15 days, Vintage Air will not be responsible for missing or damaged items.**

①

**Gen IV Evaporator
Sub Case w/ 204 ECU
768006**



②



**Accessory Kit
791176**

**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.



Engine Compartment

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

Perform the Following:

1. Disconnect battery.
2. Remove battery and battery tray (retain).
3. Remove OEM fan & fan shroud (retain).
4. Drain and remove radiator (retain).
5. Remove all OEM heater hoses (discard).

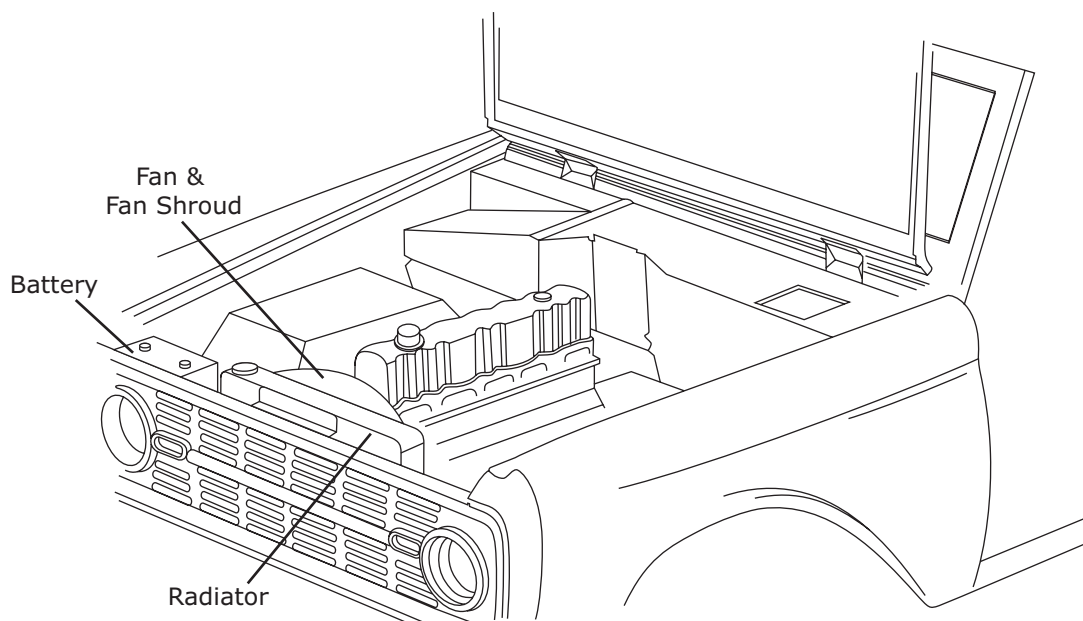


Figure 1

Condenser Assembly and Installation

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

Compressor and Bracket

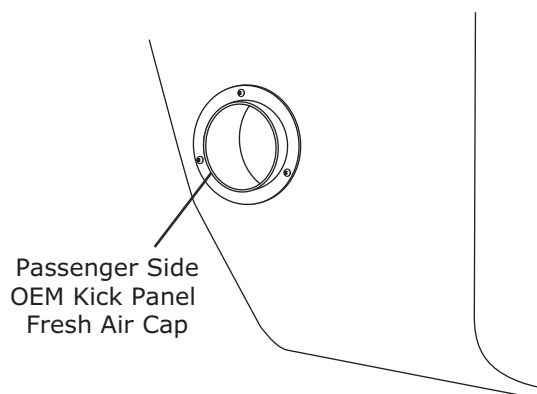
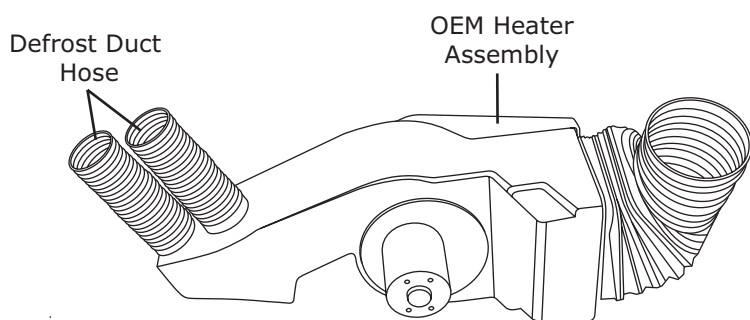
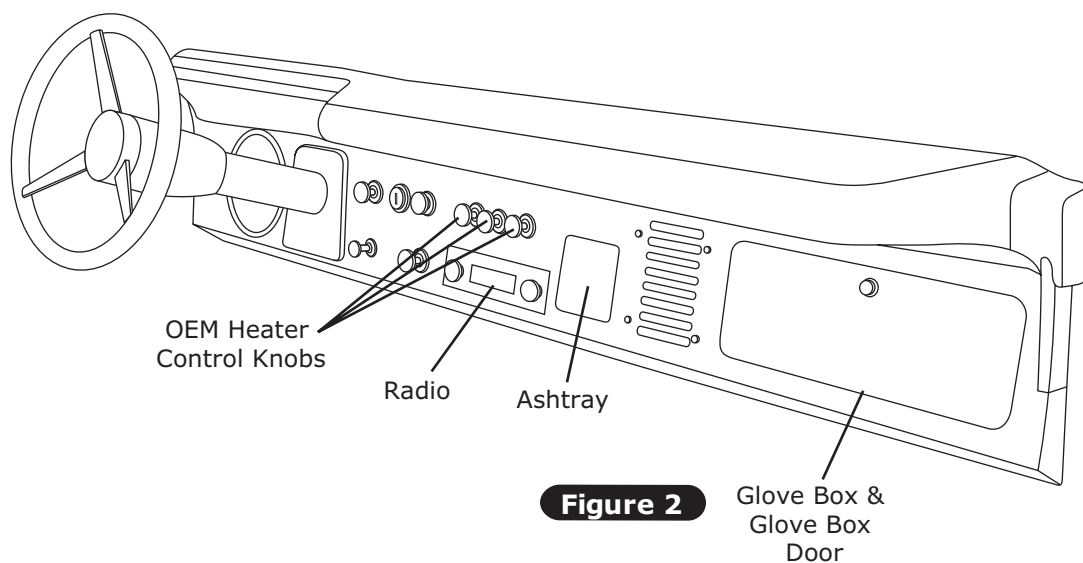
1. Refer to separate instructions included with the bracket kit to install the compressor and bracket.



Passenger Compartment

Perform the Following:

1. Remove glove box door (retain) and glove box (discard).
2. Disconnect all wires and cables from OEM heater control knobs.
3. Remove OEM heater control knobs.
4. Remove OEM heater assembly (discard).
5. Remove OEM duct hose from defrost ducts (discard).
6. Remove passenger side OEM kick panel fresh air cap (discard).





Defrost Duct Hose Adapter Installation

1. Install (2) S-clips onto driver and passenger side hose adapters (See Figure 3a, below).
2. Install driver and passenger side hose adapters onto OEM defrost ducts as shown in Figure 3, below.

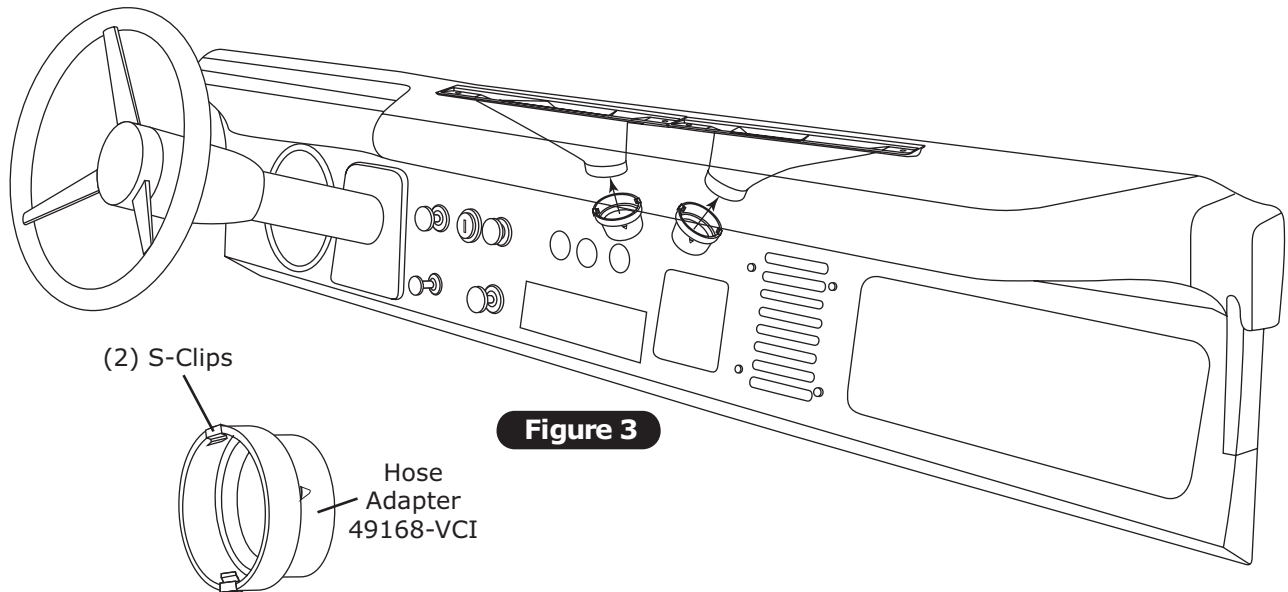


Figure 3

Figure 3a

Evaporator Bracket and Heater Hose Fitting Installation

1. On a workbench, install evaporator rear bracket and heater hose fittings with properly lubricated O-rings (See Figure 5, Page 9, and Figure 10, Page 12).
2. Install front mounting bracket onto evaporator using (2) 1/4-20 x 1/2" hex bolts, and tighten as shown in Figure 4, below.

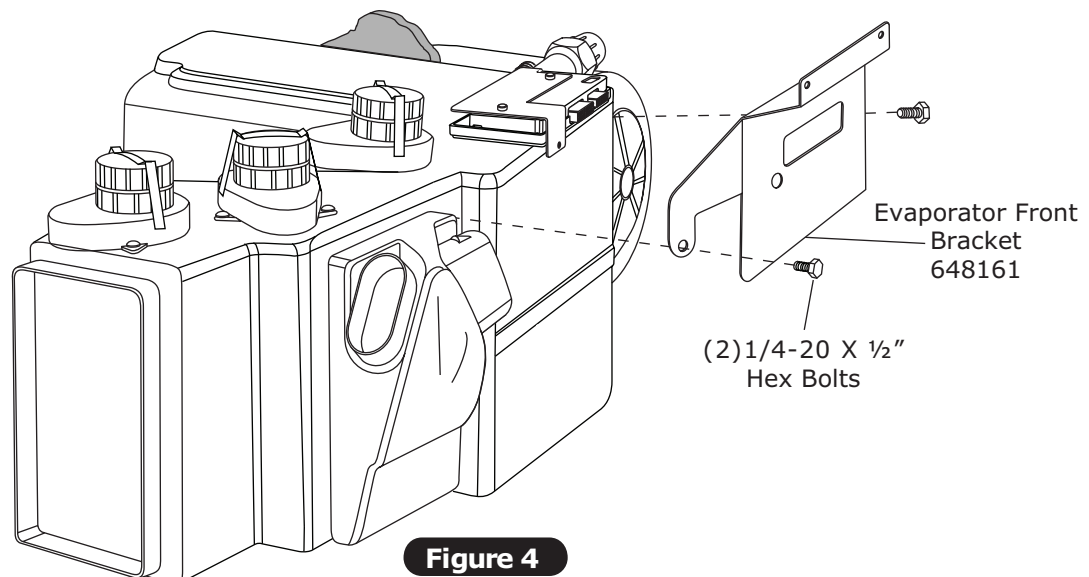


Figure 4



Evaporator Bracket and Heater Hose Fitting Installation (Cont.)

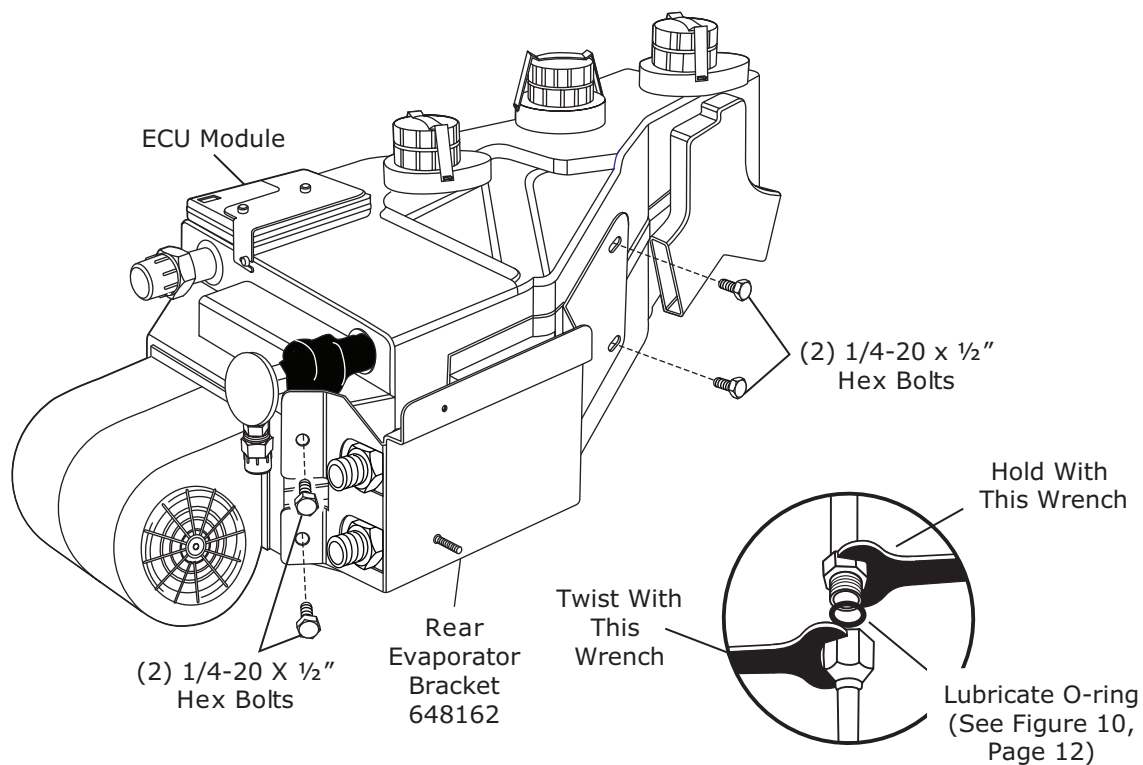
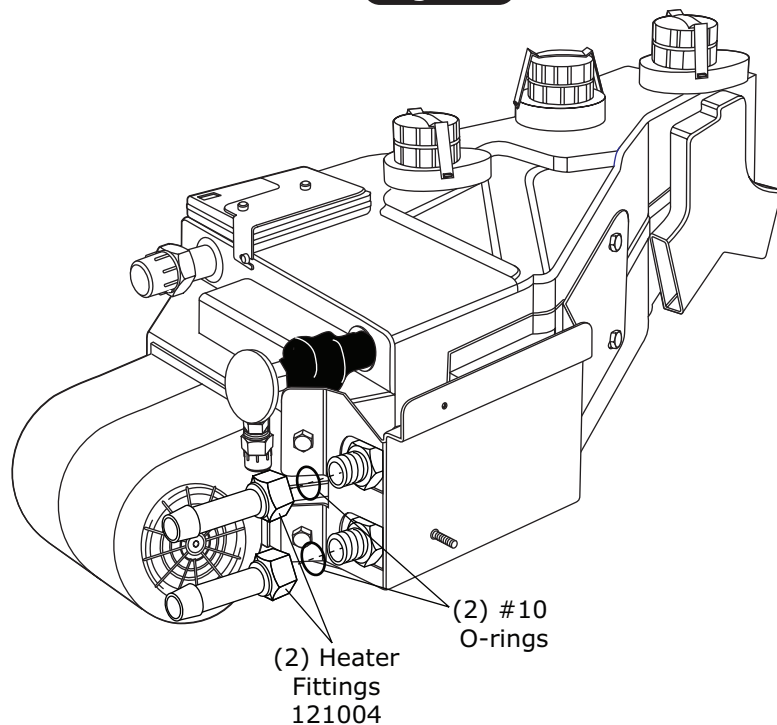


Figure 5





Airbox Modification

1. Drill (4) 1 1/4" holes in airbox (See Figure 6, below).
2. Install (4) 1 1/4" grommets in airbox. (See Figure 6a, below).

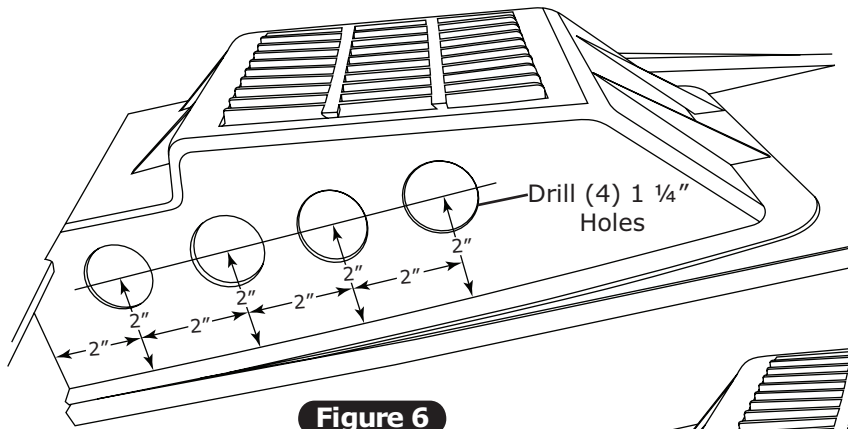


Figure 6

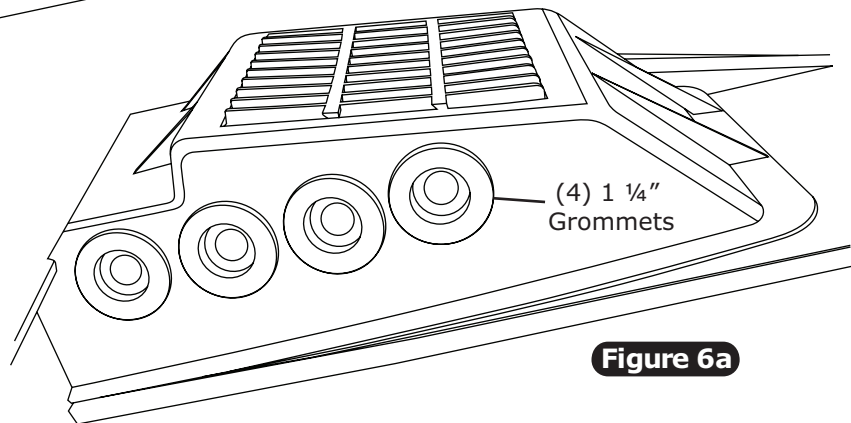


Figure 6a

Kick Panel Fresh Air Cap Installation

1. Install (4) grommets in kick panel fresh air cap (See Figure 7b, below).
2. Route A/C and heater hoses through fresh air box and kick panel fresh air cap as shown in Figures 7 and 7a, below.
3. Apply a 1/4" bead of silicone around the back side of the kick panel fresh air cap as shown in Figure 7b, below.
4. Secure kick panel fresh air cap using (3) OEM screws as shown in Figure 7a, below.

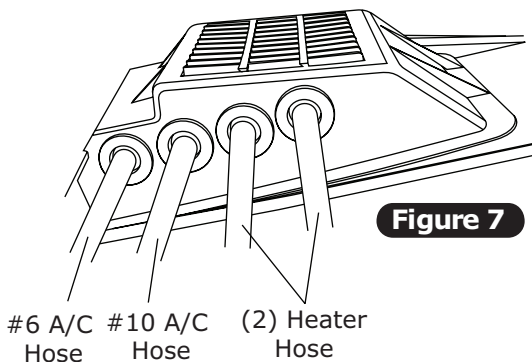


Figure 7

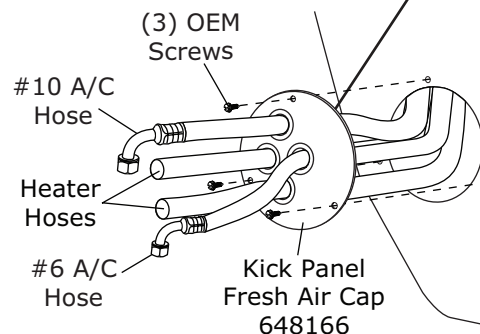


Figure 7a

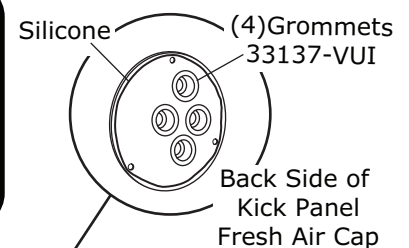
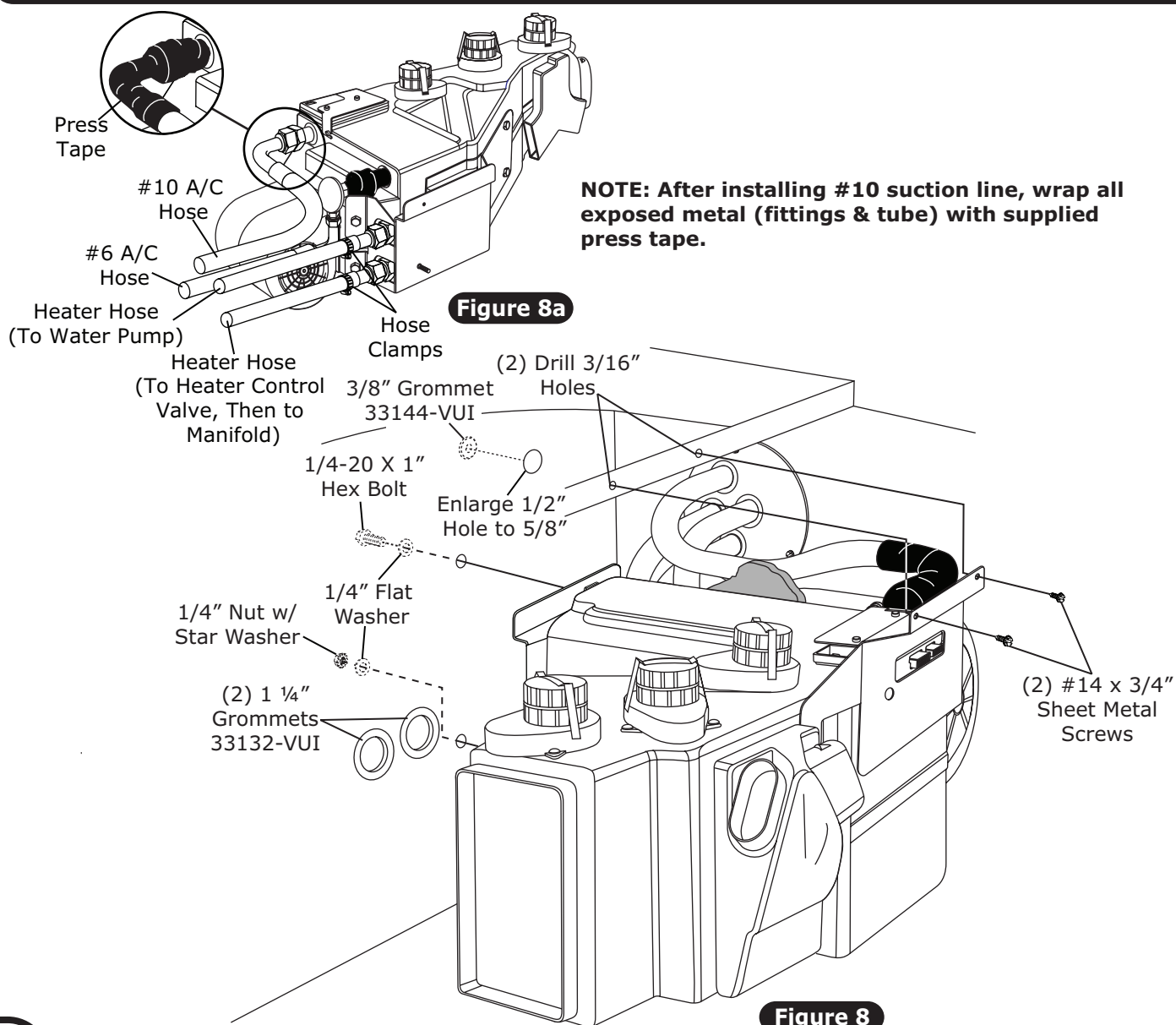


Figure 7b



Evaporator Installation

1. Install (2) 1 1/4" grommets in firewall (See Figure 8, below).
2. Enlarge 1/2" hole on firewall to 5/8" and install 3/8" grommet as shown in Figure 8, below.
3. Install A/C & heater hoses as shown in Figure 8a, below.
4. Lift evaporator unit up under the dashboard. Secure loosely to the firewall using a 1/4-20 x 1" hex bolt, (2) flat washers and a 1/4" nut with star washer (See Figure 9, below). **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.**
5. Using front evaporator bracket as a guide, mark and drill (2) 3/16" holes in cowl (See Figure 8, below).
6. Using (2) #14 x 3/4" sheet metal screws, secure the front evaporator mounting bracket to the inner cowl (See Figure 8, below).
7. Verify that evaporator unit is level and square to the dash; then tighten all mounting bolts. **NOTE: Tighten the bolt on the firewall first. Then tighten the front mounting bracket.**





Drain Hose Installation

1. Locate evaporator drain on bottom of evaporator case.
2. 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 9, below).
3. Install drain hose to bottom of evaporator unit and route through firewall (See Figure 9, below).

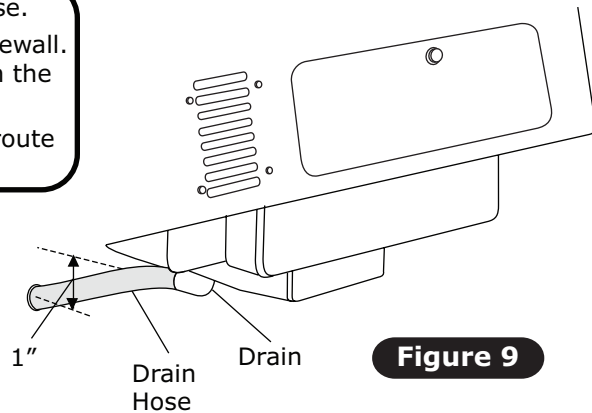
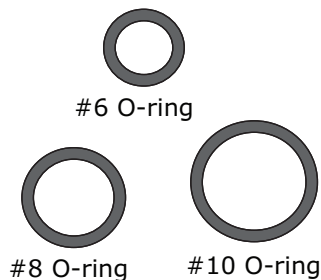
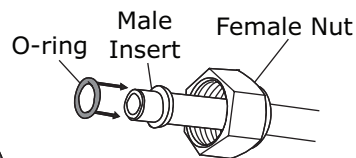


Figure 9

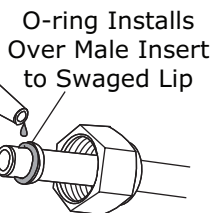
Lubricating O-rings



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



Supplied Oil
for O-rings



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

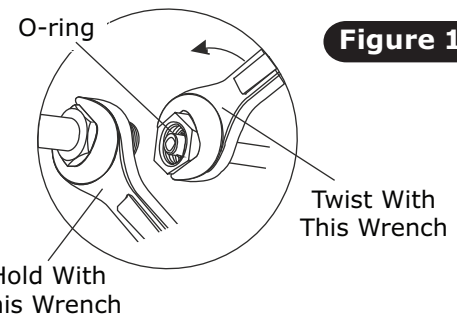


Figure 10

A/C Hose Installation

Standard Hose Kit:

1. Locate the #8 compressor A/C hose. Lubricate (2) #8 O-rings (See Figure 10, above) and connect the 135° female fitting with 134a service port to the #8 discharge port on the compressor. Route the 90° female fitting to the #8 condenser hardline (See Figure 11, Page 13). Tighten each fitting connection as shown in Figure 10, above.
2. Locate the #10 compressor A/C hose. Lubricate (2) #10 O-rings (See Figure 10, above) and connect the #10 135° female fitting with 134a service port to the #10 suction port on the compressor. Route the 90° female fitting to the #10 fitting on evaporator (See Figure 8a, Page 11, and Figure 11, Page 13). Tighten each fitting connection as shown in Figure 10, above.
3. Locate the #6 evaporator A/C hose. Lubricate (2) #6 O-rings (See Figure 10, above) and connect the 90° female fitting to the drier. Route the 90° female fitting to the #6 fitting on evaporator (See Figure 8a, Page 11, and Figure 11, Page 13). Tighten each fitting connection as shown in Figure 10, above.

Modified A/C Hose Kit:

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

Heater Hose & Heater Control Valve Installation

1. Route a piece of heater hose from the water pump to the top heater fitting of the heater core as shown in Figure 8a, Page 11, and Figure 11, below. Secure using hose clamps.
2. Route a piece of heater hose from the intake to the bottom heater fitting of the heater core as shown in Figure 8a, Page 11, and Figure 11, below. **NOTE: Install heater control valve in line with intake manifold (pressure side) heater hose, and secure using hose clamps as shown in Figure 11, below. Also note proper flow direction.**

A/C & Heater Hose Routing

NOTE: Vintage Air systems require (2) 5/8" hose nipples (not supplied)

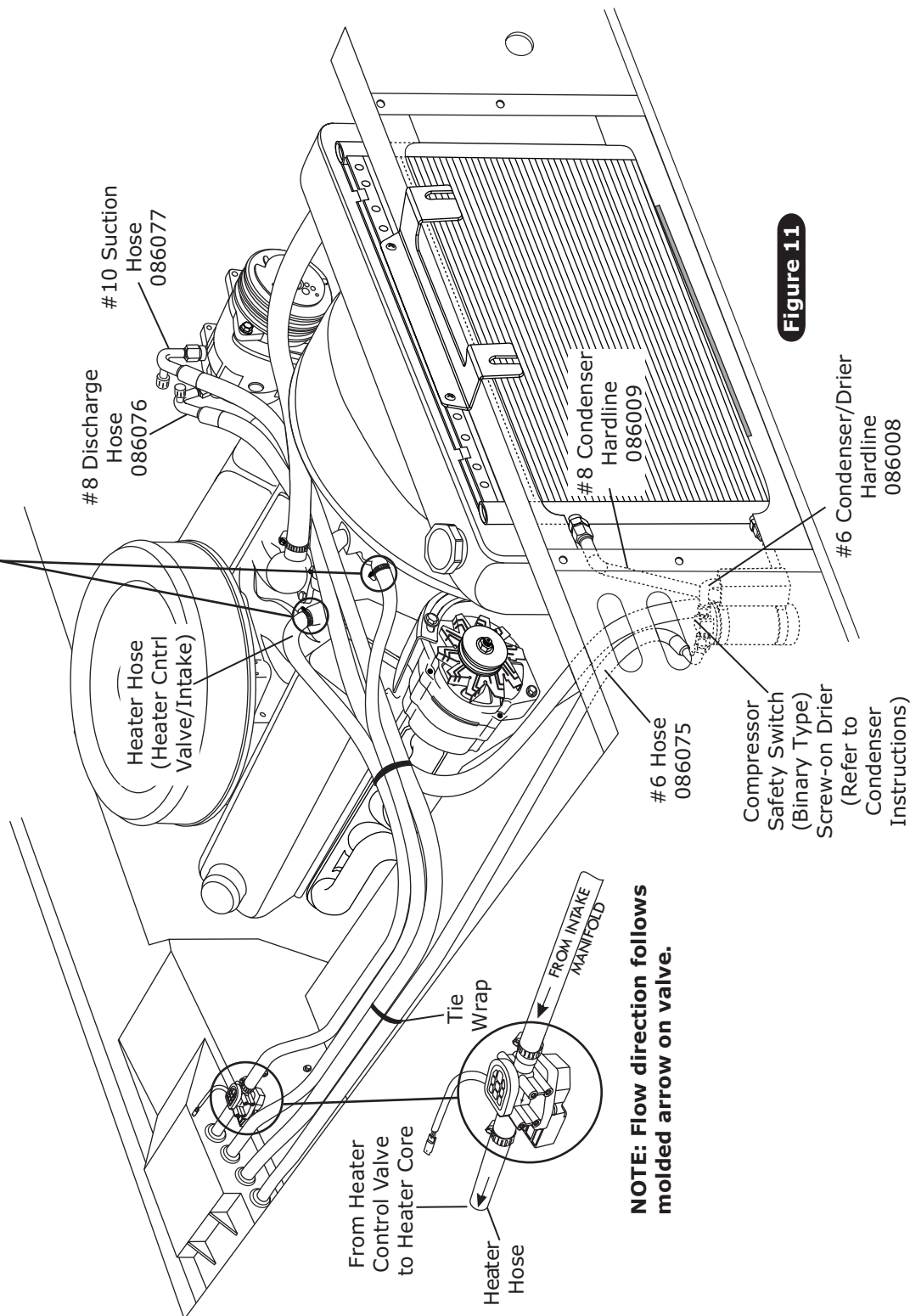


Figure 11

NOTE: Flow direction follows molded arrow on valve.



Louver Assembly Installation

1. Install center/passenger side louver assembly onto evaporator, and secure to bottom of dash using (2) OEM screws as shown in Figure 12, below.
2. Install driver side louver assembly onto center/passenger side louver assembly, and secure to bottom of dash using OEM screw as shown in Figure 12, below.
3. Drill 1/8" hole in bottom of dash through existing hole in right side of center/passenger side louver assembly as shown in Figure 12, below. Install #10 x 1/2" hex sheet metal screw into drilled hole as shown.
4. Insert (4) 1/2" plastic plugs into louver assemblies as shown in Figure 12, below.

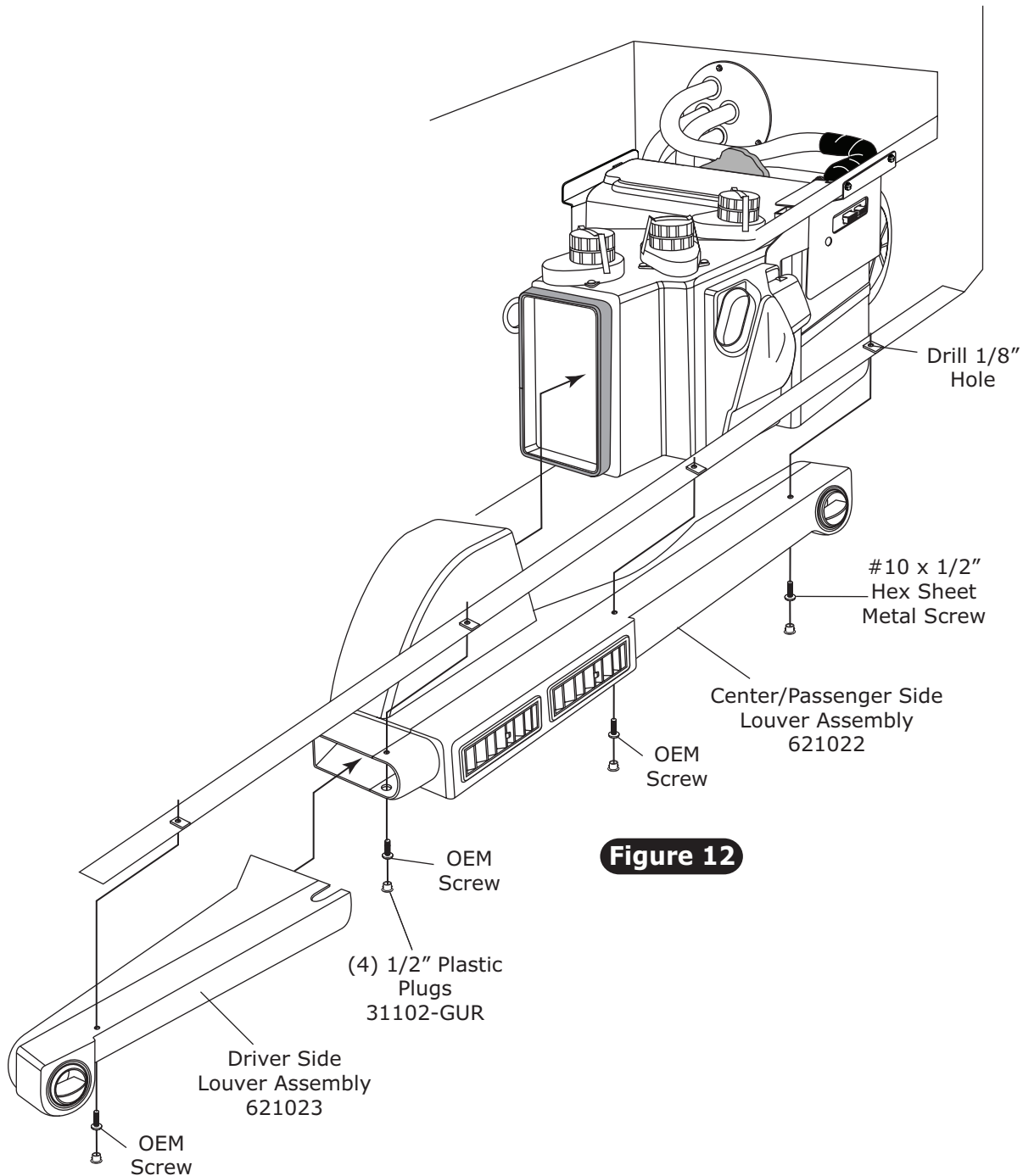


Figure 12



Final Steps

1. Install duct hoses as shown in Figure 15, Page 16.
2. Route A/C wires (12 volt/grounds/binary switch/heater valve) through 3/8" grommet as shown in Figure 13, below.
3. Install control panel assembly. Refer to control panel instructions.
4. Plug the wiring harnesses into the ECU module on the sub case as shown in Figure 15, Page 16 (Wire according to wiring diagrams on Pages 17 and 18).
5. Trim the driver side of the new glove box insert for the OEM fuse panel (See Figure 14, below). **NOTE: Applies to 1972-77 Bronco only.**
6. Install glove box into opening. **NOTE: Carefully squeeze glove box to fit into opening in dash. Then insert glove box and allow it to spring back into shape. Install fuse panel using OEM screws. Secure glove box with OEM screws.**
7. Install glove box door using OEM screws.
8. Reinstall all previously removed items.
9. 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.
10. Double check all fittings, brackets and belts for tightness.
11. Vintage Air recommends that all A/C systems be serviced by a certified automotive air conditioning technician.
12. Evacuate the system for a minimum of 45 minutes prior to charging, and perform a leak check prior to servicing.
13. Charge the system to the capacities stated on Page 4 of this instruction manual.
14. See Operation of Controls procedures on Page 19.

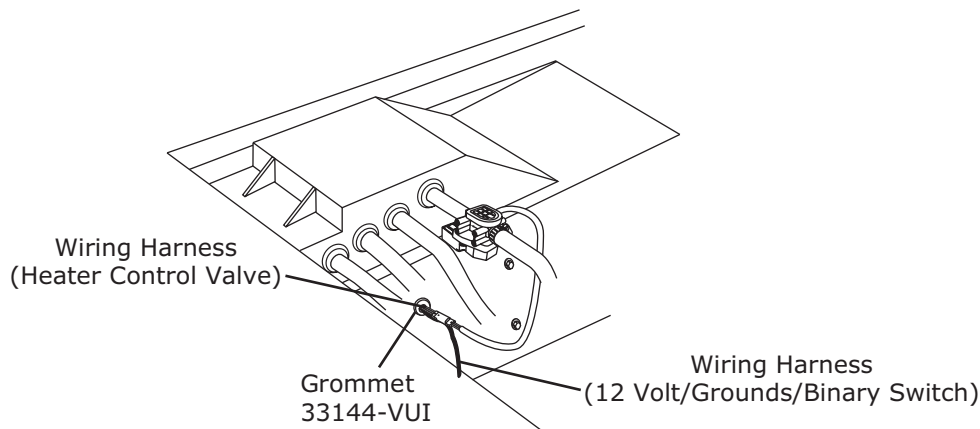


Figure 13

NOTE: On 1972-77 Bronco Only, Trim Glove Box for OEM Fuse Panel.

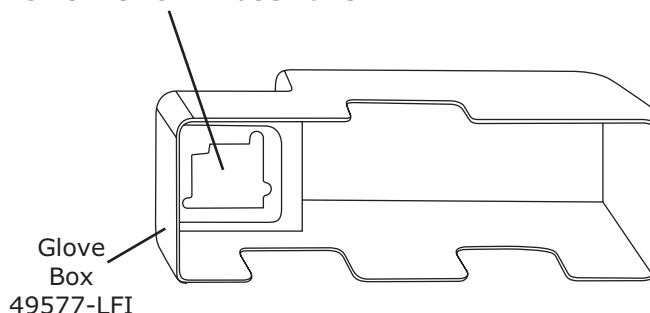


Figure 14



Control Panel and Duct Hose Routing

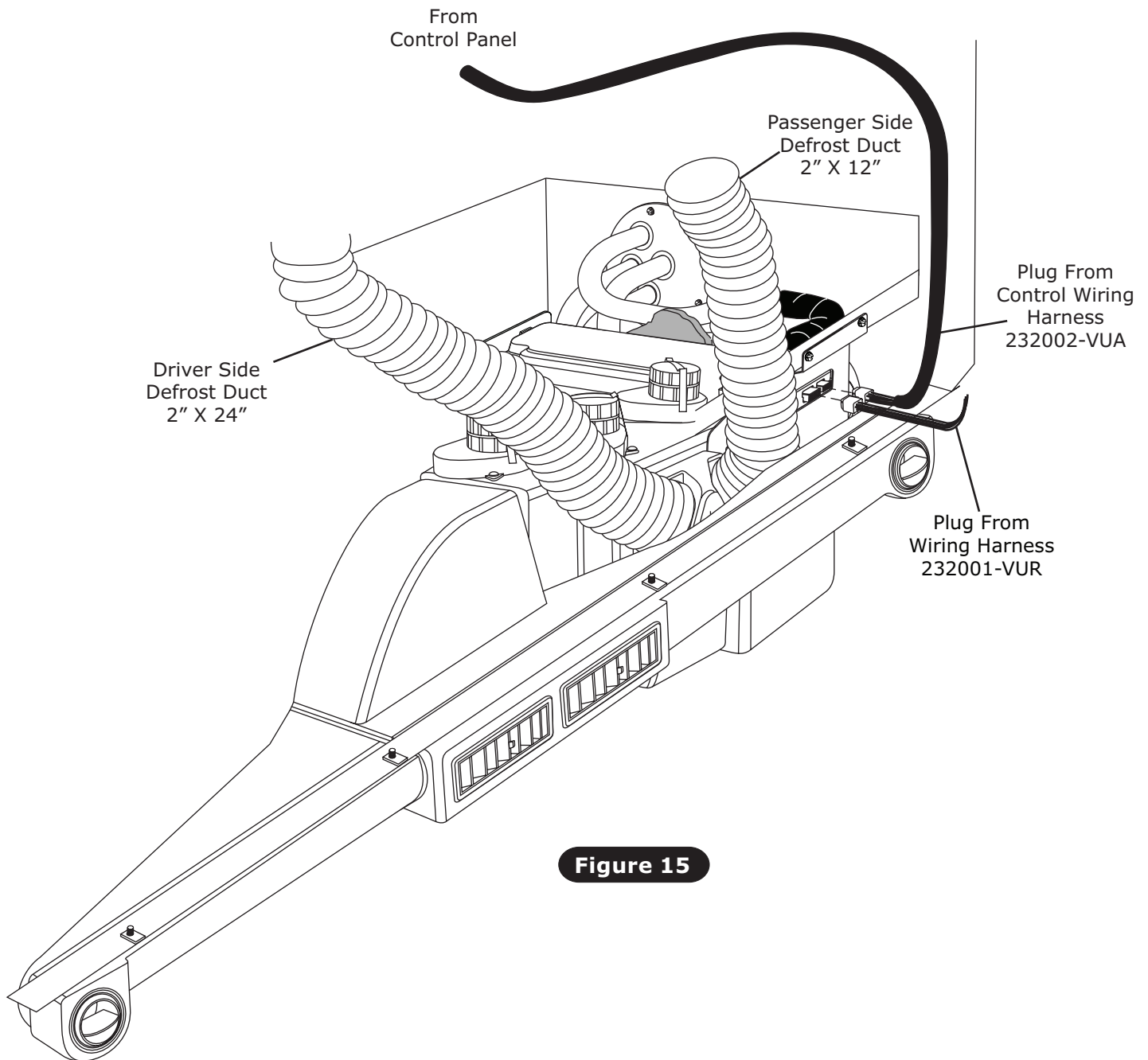
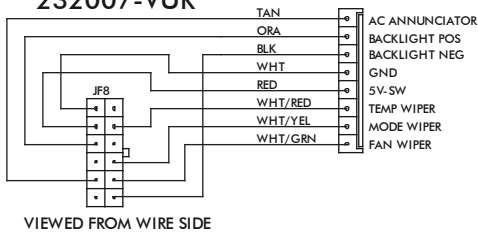


Figure 15

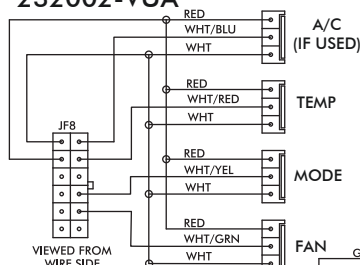


Wiring Diagram

232007-VUR

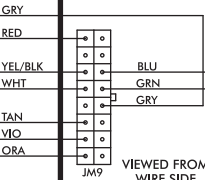


232002-VUA

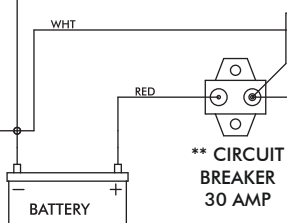
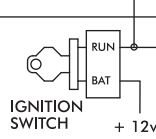
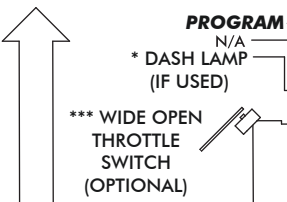
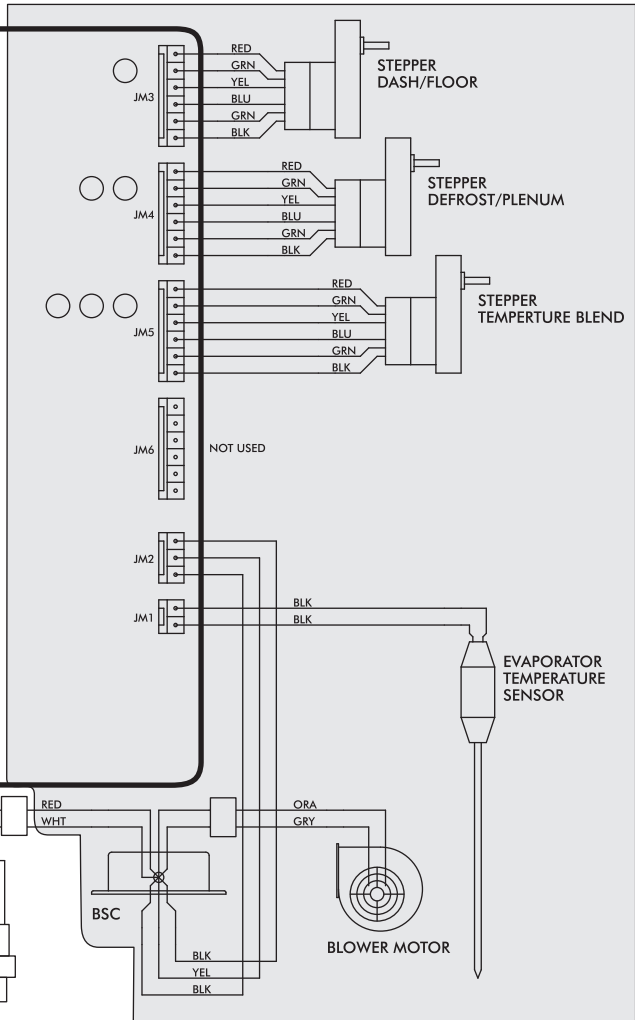


GEN IV ECU

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



PRE-WIRED



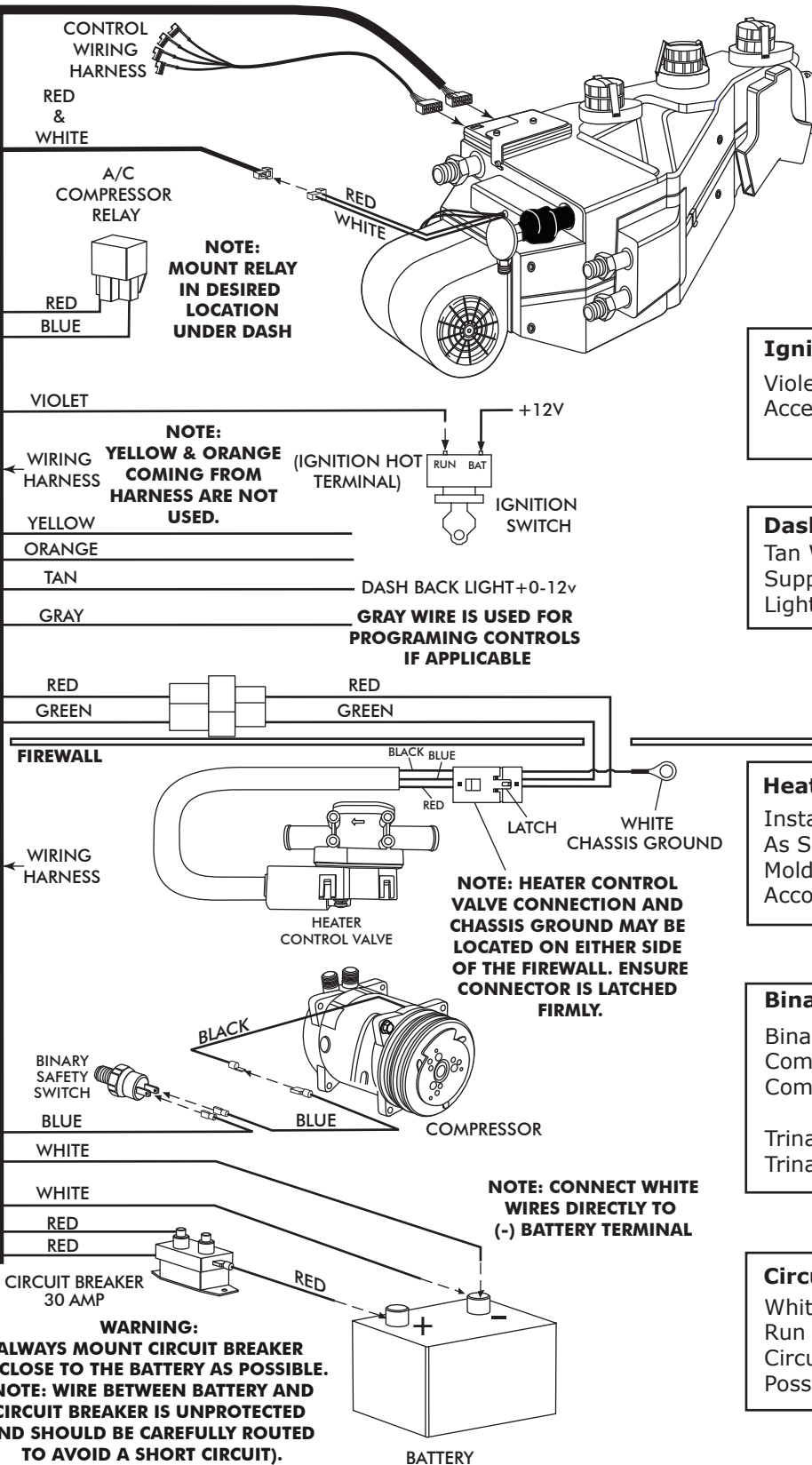
NOTE: = CHASSIS GROUND

- 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.



Gen IV Wiring Connection Instruction

WIRING HARNESS



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

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

Blower Speed

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

Mode Control

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

Temperature Control

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

Blower Speed



Mode Control



Temperature Control



A/C Operation

Blower Speed

Adjust to desired speed.

Mode Control

Adjust to desired mode position (DASH position recommended).

Temperature Control

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



Heat Operation

Blower Speed

Adjust to desired speed.

Mode Control

Adjust to desired mode position (FLOOR position recommended).

Temperature Control

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



Defrost/De-fog Operation

Blower Speed

Adjust to desired speed.

Temperature Control

Adjust to desired temperature.

Mode Control

Adjust to DEFROST position for maximum defrost, or between FLOOR and DEFROST positions for a bi-level blend (Compressor is automatically engaged).





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.
		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.	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.	Loss of ground on this wire renders control head inoperable.
			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.	
		Unplug 3-wire BSC control connector from ECU. If blower stays running, BSC is either improperly wired or damaged.	Replace BSC (This will require removal of evaporator from vehicle).	No other part replacements should be necessary.
2.	Compressor will not turn on (All other functions work).	System is not charged.	Charge system or bypass pressure switch.	Danger: Never bypass safety switch with engine running. Serious injury can result. 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.
		System is charged.	Check for faulty A/C potentiometer or associated wiring (Not applicable to 3-pot controls).	
			Check for disconnected or faulty thermistor.	
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.	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.	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.
	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.	



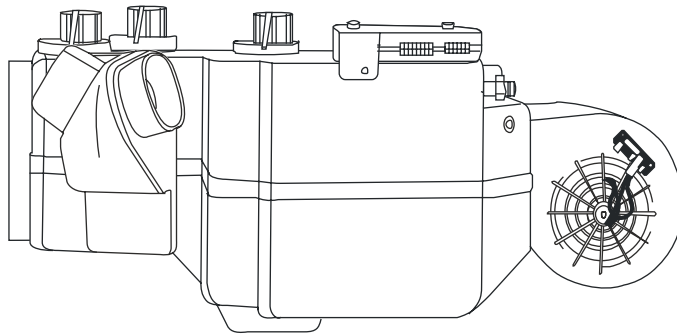
Packing List Evaporator Kit (751150)

No.	Qty.	Part No.	Description	
1.	1	768006	Gen IV Evaporator Sub Case w/ 204 ECU	_____
2.	1	791176	Accessory Kit 66-77 Bronco	_____

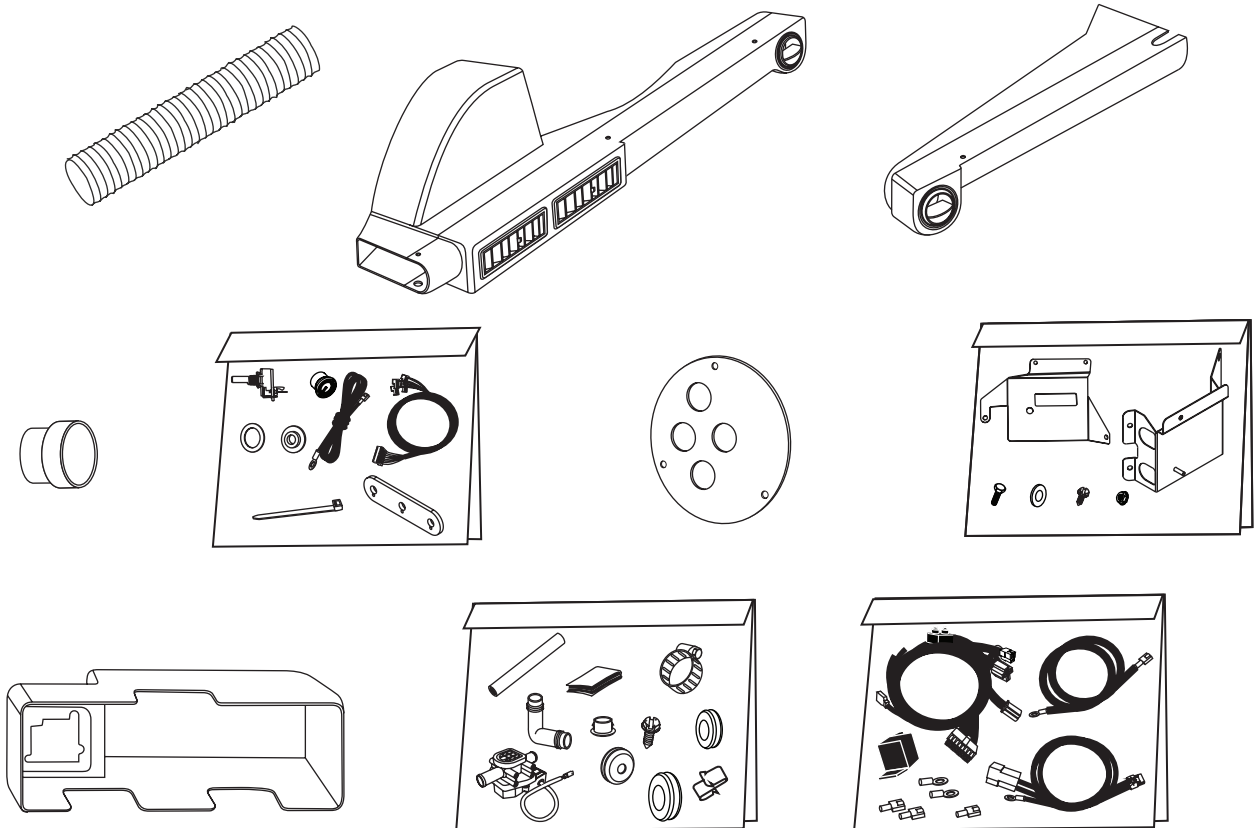
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①

**Gen IV Evaporator
Sub Case w/ 204 ECU
768006**



②



**Accessory Kit
791176**

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