



Installation Manual

1966-67 Chevelle/Malibu

Factory Air

DOCUMENT #1-3048FA

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Congratulations...

**You have just purchased the highest quality, best performing
A/C system ever designed for the
1966, 1967 Chevelle and 1966, 1967 Malibu.**

To obtain the high level of performance and dependability our systems are known for, please pay close attention to the following instructions. Our installation steps and procedures are derived from a long history of research and development and the combined experience achieved thru thousands of successful installations (and feedback from customers like you). Please remember that our #1 goal is that you'll have a successful installation and a system that performs at a very high level for many years to come.

Before starting, read the instructions carefully, from beginning to end, and follow the proper sequence. On the next page you'll find a safety and general checklist that you should read before starting your installation.

Again, thank you from our entire staff.



Check List, Pre-Installation:

- ☐ Before beginning the installation check the shipping box for the correct components. YOUR BOXED UNIT INCLUDES A LIST OF MAJOR COMPONENTS AND A LIST OF BAGGED PARTS. We have a 5 stage check process to make sure you have everything you'll need.
- ☐ **If your vehicle has been or is being modified, some procedures will need to be adjusted to fit your particular application.**
- ☐ A basic cleaning of the engine compartment and interior before beginning will make things go more smoothly.
- ☐ Check condition of engine mounts. Excessive engine movement can damage hoses to A/C and/or heater.
- ☐ Before starting, check vehicle interior electrical functions (interior lights, radio, horn, etc). Make a note of anything that does not work as it's supposed to. During the installation you might find the opportunity to repair or upgrade non-working or out of date components. When you're ready to start the installation, **DISCONNECT THE BATTERY FIRST.**
- ☐ Drain the radiator. Retain the coolant and reuse, or dispose of properly.
- ☐ SAFETY FIRST: Wear eye protection while drilling/cutting, deburr sharp edges, and never get in a hurry or force a part.
- ☐ Tools: Your installation only requires the basic tools everyone has in their garage, nothing exotic or specific to A/C or Heat equipment.

Procedures, During Installation:

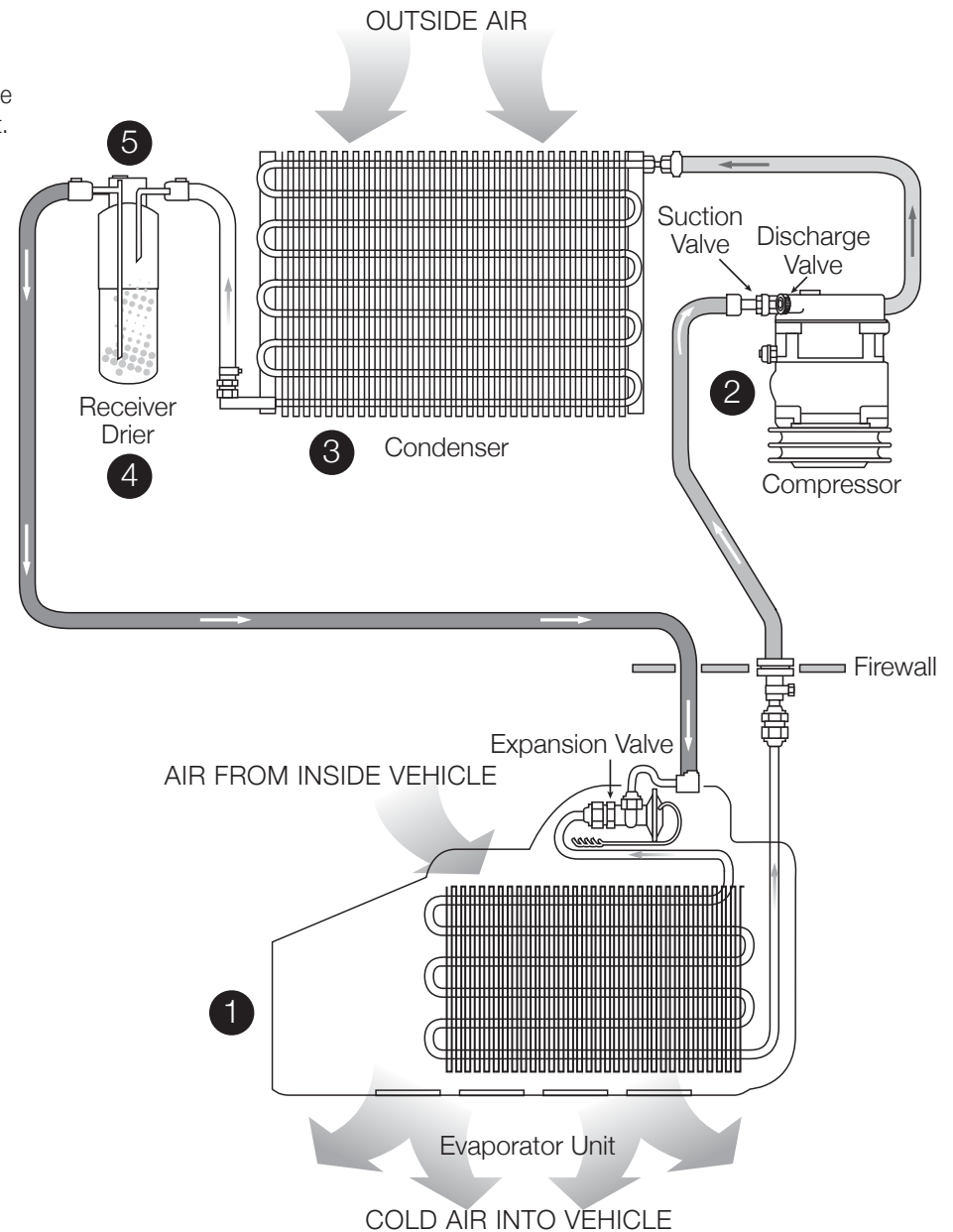
- ☐ Fittings: Use one or two drops of mineral oil (supplied with your kit) on ALL rubber o-rings, threads and rear of bump for o-ring where female nut rides. Do not use thread tape or sealants.
- ☐ Measure twice (or more), cut once
- ☐ **Should you have any technical questions, or feel you have defective components (or missing items), call us immediately, we will be glad to assist you. Our toll-free number is listed on every page, we're here to help!**

YOU CAN NOW BEGIN THE INSTALLATION...

A Basic Overview of Automotive A/C....

- 1 Evaporator with Blower Fan** In order to remove the heat from the air in the vehicle, the A/C evaporator allows the refrigerant to absorb the heat from the air passing over it. The blower fan moves cool air out into the car interior.
- 2 Compressor** The compressor pumps and circulates the refrigerant through the system.
- 3 Condenser** The condenser is a heat exchanger mounted at the front of the vehicle. Heat drawn out of the interior of the car is expelled here.
- 4 Receiver/Drier** The drier not only dries refrigerant, it also filters the refrigerant and stores it under certain operating conditions.
- 5 High Pressure Switch** A pressure switch is used to shut down the system if high or low pressure is detected, basically it acts as a safety switch.

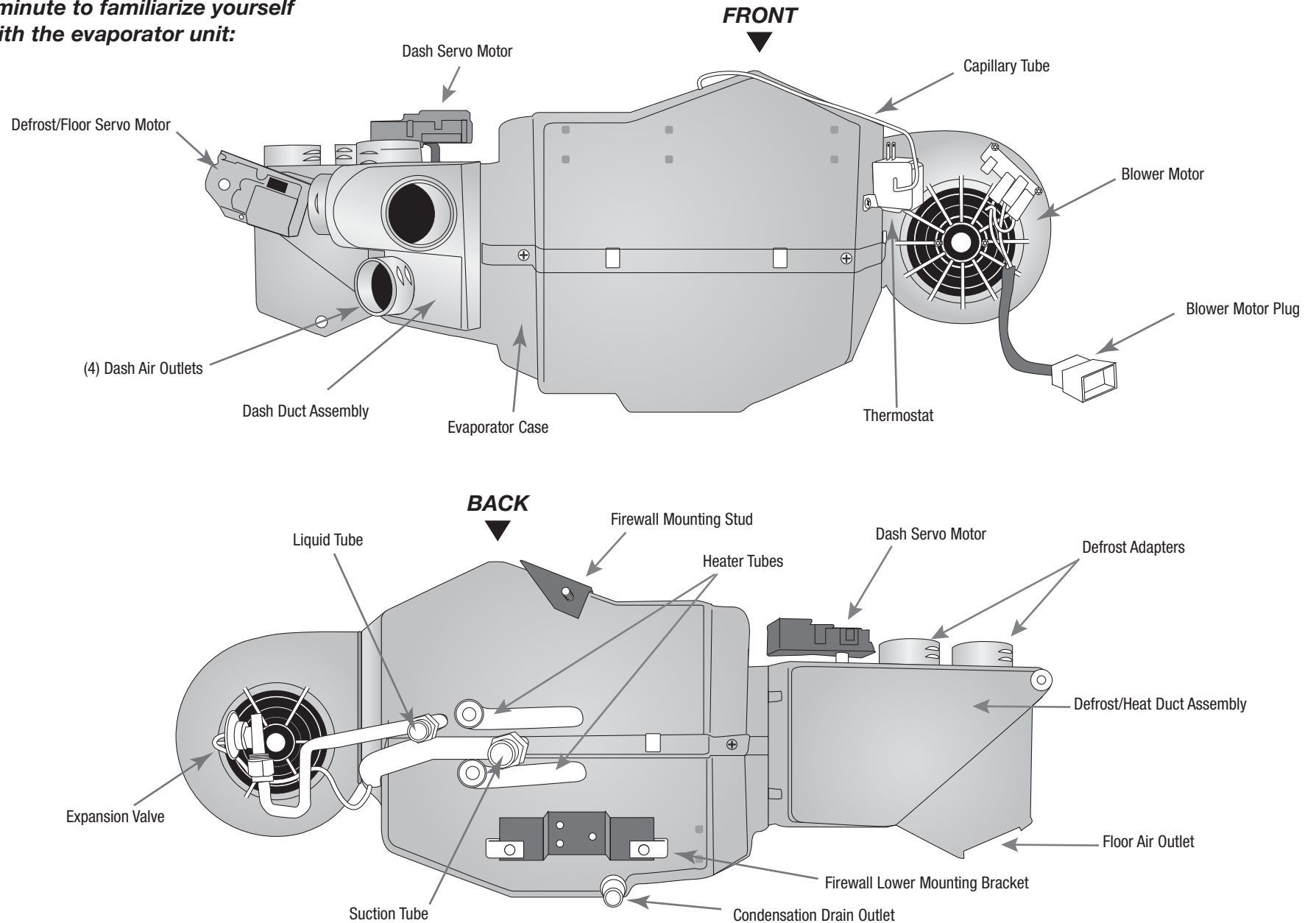
The air conditioning system in your vehicle is comprised of a compressor, condenser, expansion valve, receiver/drier, and evaporator. Refrigerant (also known as Freon) is compressed in the compressor. In the condenser, gas is cooled to a liquid state and travels to the expansion valve. As the liquid refrigerant goes through the expansion valve it rapidly cools in the evaporator. A fan blows over the evaporator and cools the air that blows out your vents.



Familiarize yourself with the Evaporator

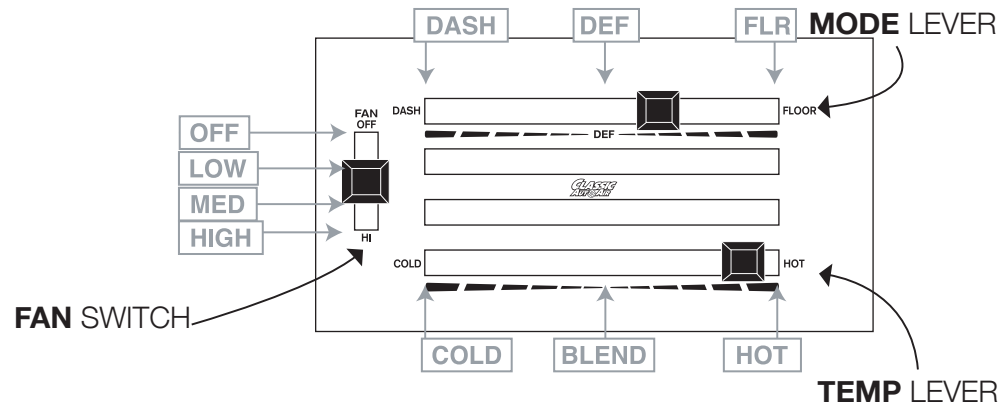


**Take a minute to familiarize yourself
with the evaporator unit:**



Control & Operating Instructions

Your new **Smart Series A/C** system offers complete comfort capabilities in virtually every driving condition. This includes temperature control in all of the modes. This system also provides the ability to blend the air between Face, Heat, and Defrost modes simultaneously. To illustrate the various ways you can adjust the airflow direction and temperature - we've provided these handy illustrations and chart to show exactly how you can adjust your **Smart Series A/C** for maximum comfort...



There are 11 levels of adjustment within the range of the DASH/DEF lever

TEMP	COLD HOT										
VALVE POSITION	CLOSED - 0%	OPEN - 10%	OPEN - 20%	OPEN - 30%	OPEN - 40%	OPEN - 50%	OPEN - 60%	OPEN - 70%	OPEN - 80%	OPEN - 90%	OPEN - 100%
COMPRESSOR	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	OFF

MODE	DASH						DEF						FLOOR
POSITION	Dash A/C 100%	Dash A/C 80% Defrost 20%	Dash A/C 60% Defrost 40%	Dash A/C 40% Defrost 60%	Dash A/C 20% Defrost 80%	Defrost 100%	Floor Defrost 20%	Floor Defrost 40%	Floor Defrost 60%	Floor Defrost 80%	Floor Defrost 20%	Floor 100%	
COMPRESSOR	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	

There are 11 levels of adjustment within the range of the DASH - DEF - FLOOR lever

FAN	UP  DOWN			
BLOWER	OFF	LOW	MED	HIGH



Remove glovebox and door, console (if equipped) radio , and OEM A/C Control head and set them aside for modification and reinstallation in later steps (see figure 1).

The removal of the OEM A/C assembly can be accomplished by first disconnecting all cables that run to the unit. You will also need to unplug OEM power cord. Next, remove all eight screws around the A/C housing. Carefully pull the assembly out of the passenger fender well. You will not be reusing any of the OEM A/C assembly (see figure 2).

Next, remove the heater and air distribution assembly from under the dash (do not remove the center louver factory duct assembly, or remove or modify the defrost duct assembly).

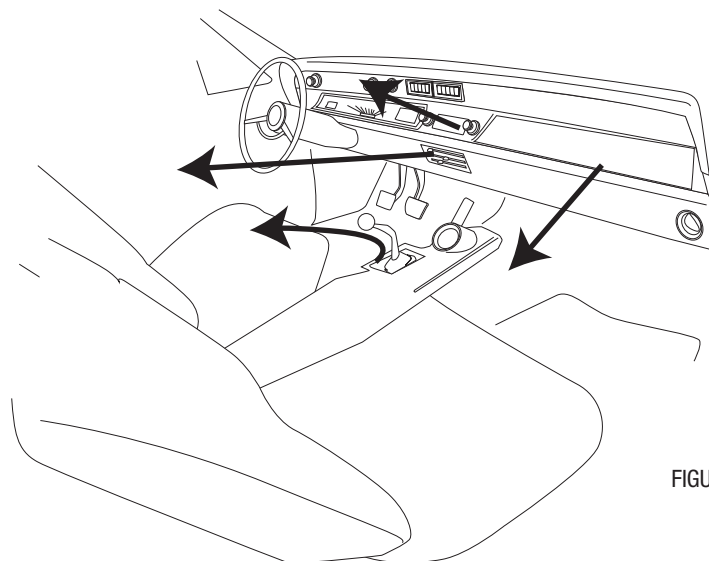


FIGURE 1



When retaining parts it's a good idea to store parts in a zip lock bag, labeled with info where the parts came from and what size/type of tool is needed to reinstall. Cleaning the parts before you need to reinstall them is a good idea too.

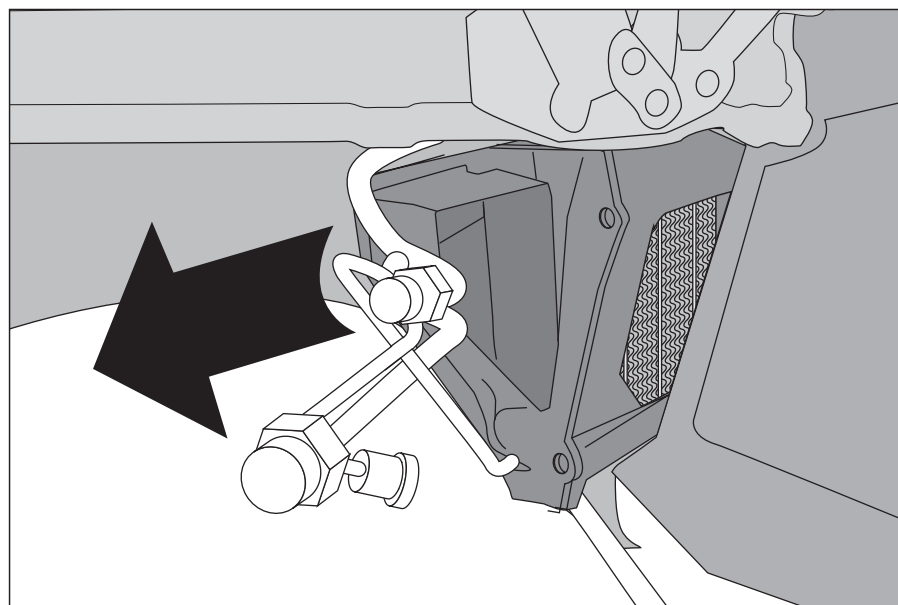
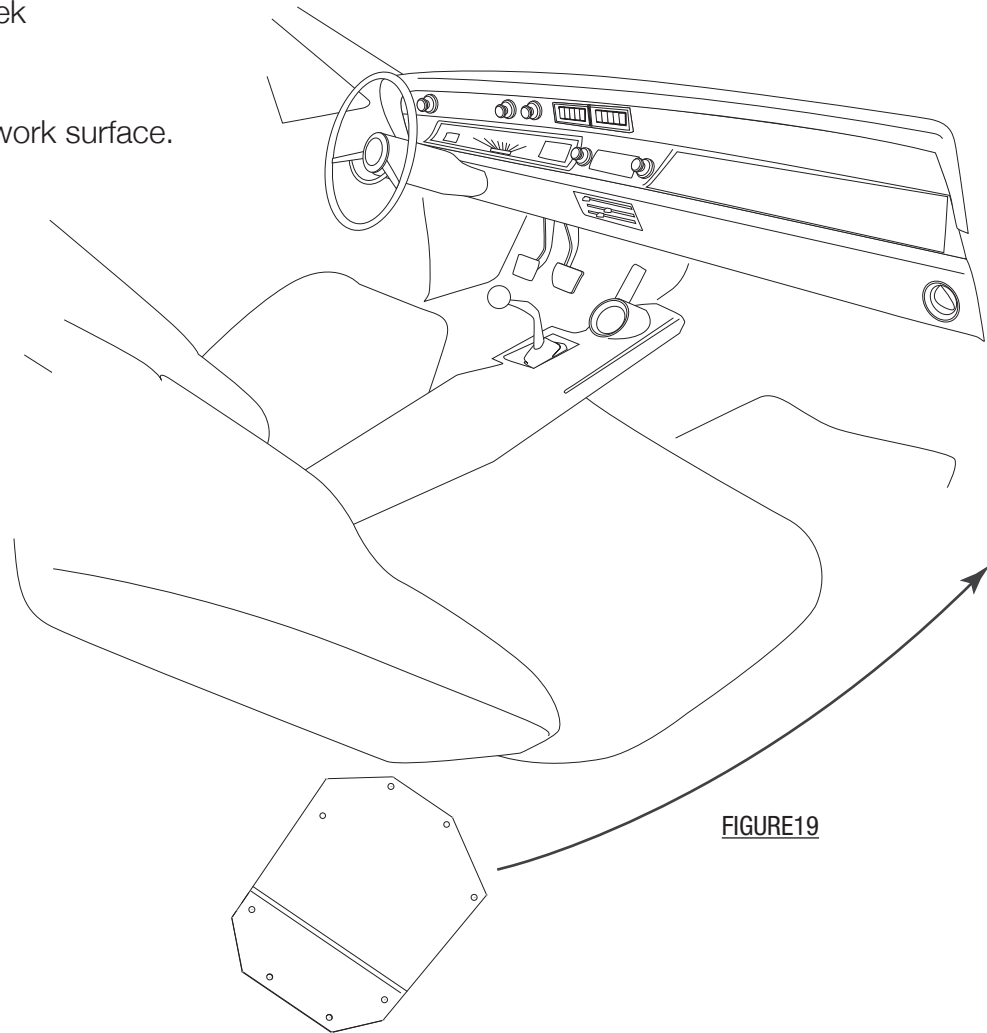


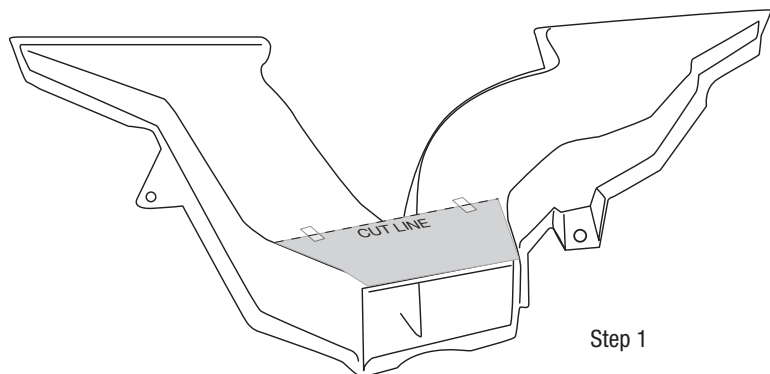
FIGURE 2

Remove the passenger side plastic kick panel. Next, install the fresh air block plate over the air inlet hole using eight tek screws.(fig 19) Reinstall the kick panel.

Remove evaporator unit from box and place on a flat work surface.



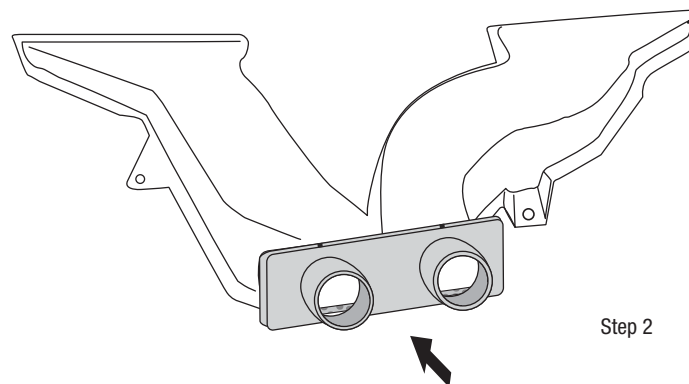
OEM Heater and Defrost System Removal, continued



Step 1

Step 1: Locate the template in back of instruction and line it up with cut (dashed) line as shown above.

Make sure to mock the cut with the provided adaptor so its as close to the adaptor's size and that the foam is compacted for a proper seal.

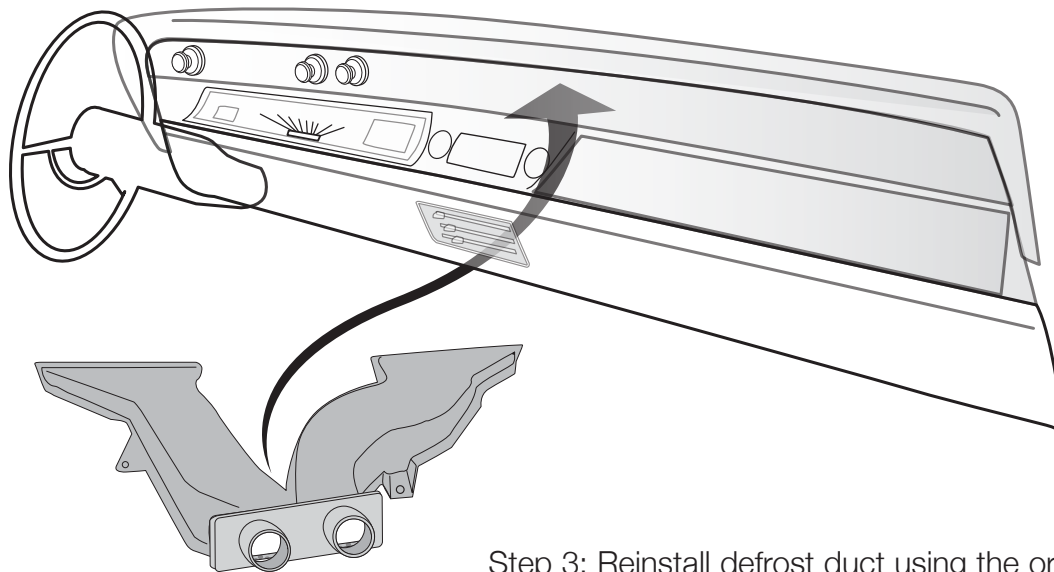


Step 2

Step 2: Locate defroster adaptor in bag kit E. Attach the defrost adaptor over the opening the OEM defrost duct using the clips on the new defrost adaptor.

ALERT! GM part# 3870273

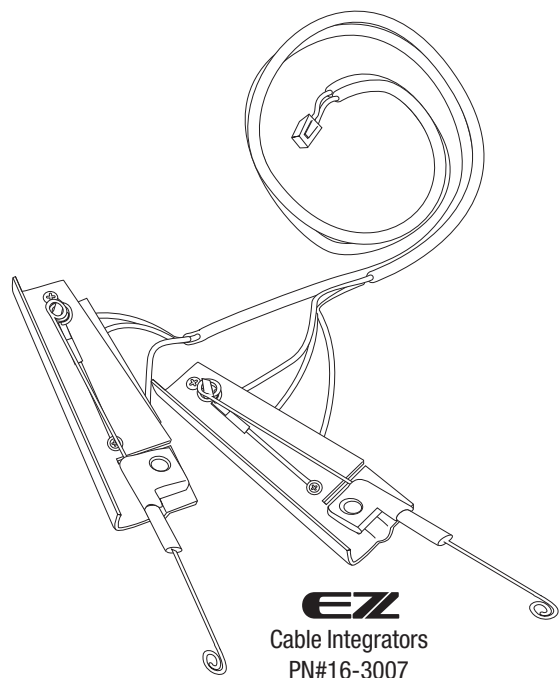
GM PART NUMBER
3870273



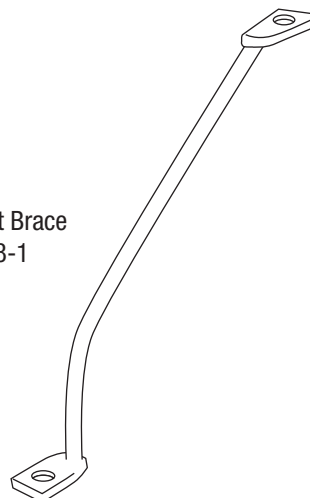
Step 3: Reinstall defrost duct using the original hardware.

THESE ARE THE PARTS YOU WILL FIND IN BAG KIT A

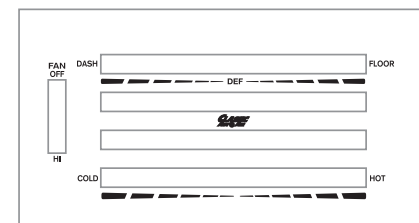
You will use all of these parts and hardware during the next series of installation steps.



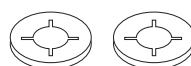
Dash Support Brace
PN# 0048-1



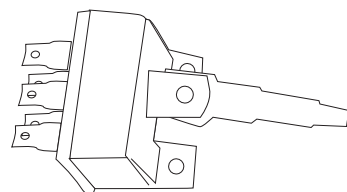
Two #6 x 3/8" Phillips Screws



Faceplate Sticker
PN# 0118-14



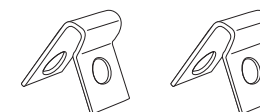
Two Pushnuts



Blower Switch
PN#4M-235



Blower Switch Knob
PN#525235



Two - Cable Clips
PN#25-1015

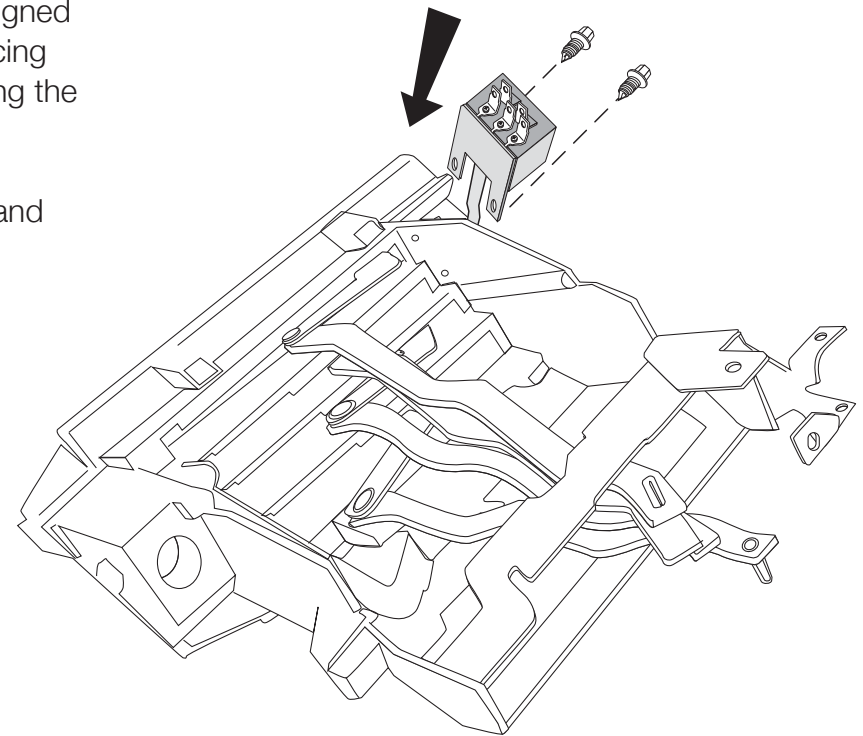
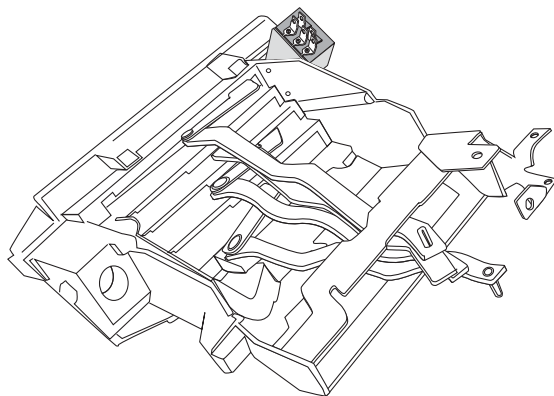
BLOWER SWITCH INSTALLATION:

1) Remove the four control cables, the original blower switch and set aside. These will not be reused, retain the OEM screws, as they will be reused.

2) Using the included template, tape the template in place (it's aligned with the two OEM holes), and drill two 7/64" holes in the side facing close to where the OEM blower switch was (test the position using the new blower switch first).

Place your new blower switch into place thru the OEM opening and secure with the two #6 x 3/8" screws from bag kit A.

Attach included chrome blower switch knob.



VIEW FROM BACK OF CONTROL HEAD**Preparing the EZ Cable Integrators for**

installation: First place a cable clip over the ends of the **EZ Integrators** (see figure 10). Test fit these on the final mounting location to make sure you have the cable clips installed in the correct direction so that the integrators can be mounted flush with edge of control head. Prepare both integrators the same way. It is very important that you place the cable clips over the end of the integrators very securely and evenly. Place the cable clip over the end, press it firmly into place using needle-nose pliers.

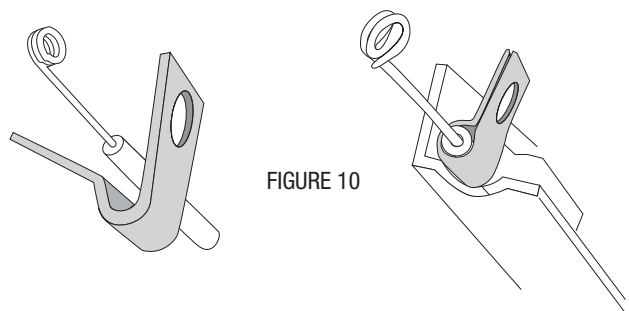
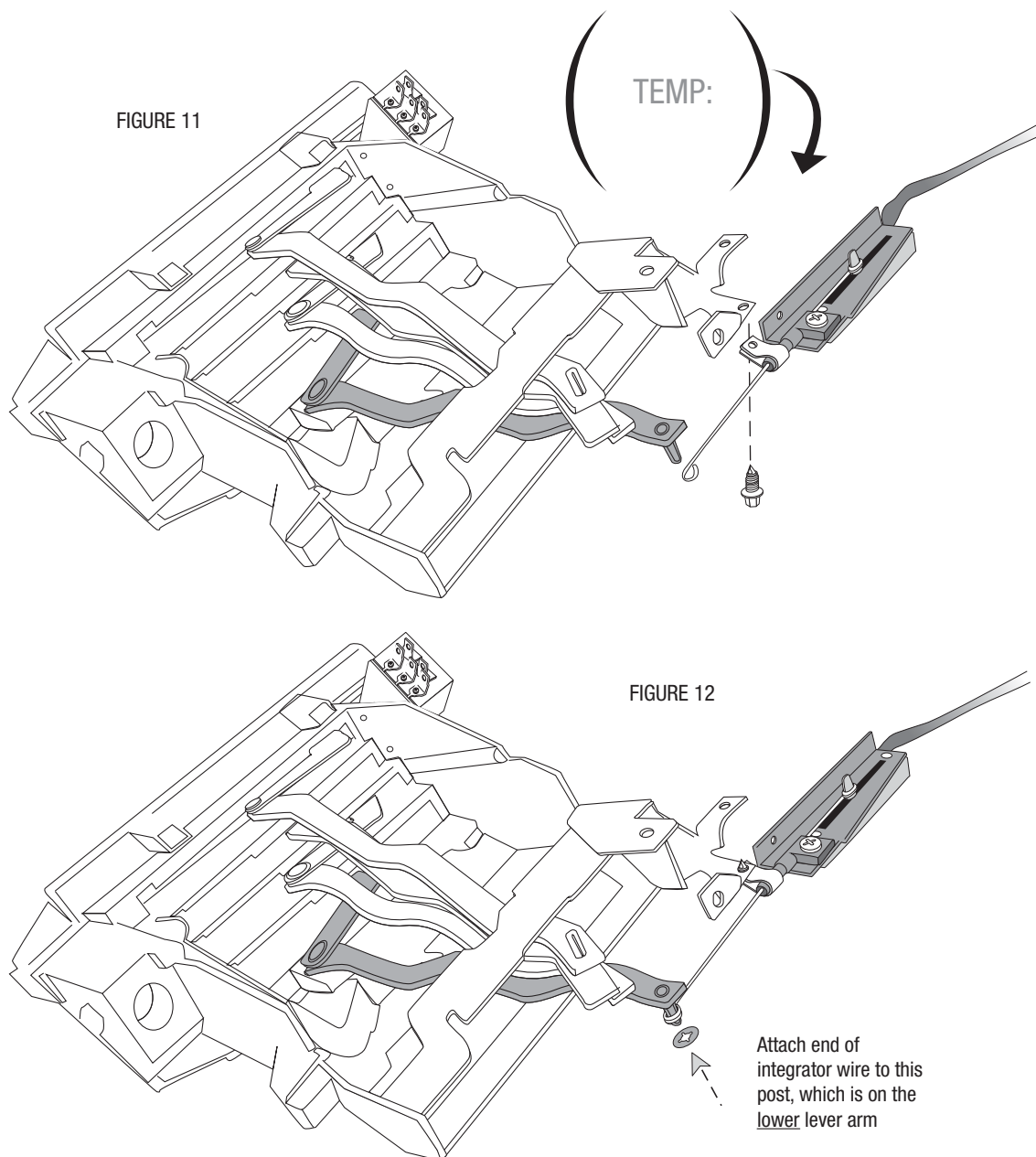


FIGURE 10

Next, attach the **TEMP EZ Cable Integrator** to the body of the control head, as shown to the right and secure with the OEM screw upwards from the bottom. The loop ends of the integrator wire will be secured with a push nut (see figures 11 and 12).



1966 Chevelle ONLY

For 1966 Chevelles, attach the **MODE EZ Cable Integrator** to the control head as shown to the right. The loop end of the integrator wire will be secured with a push nut (see figure 13 and 14).

FIGURE 13

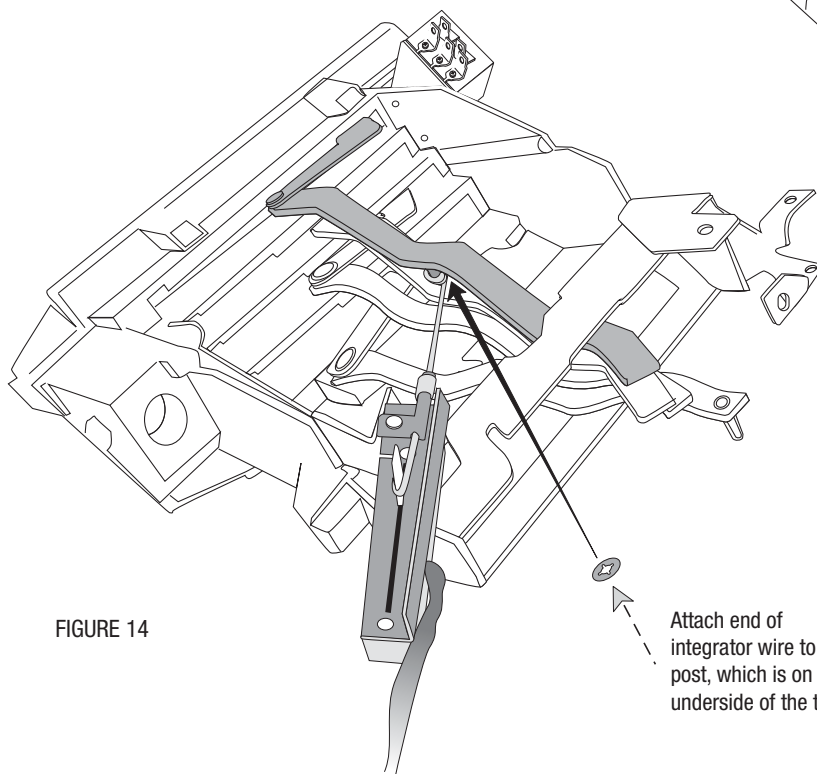
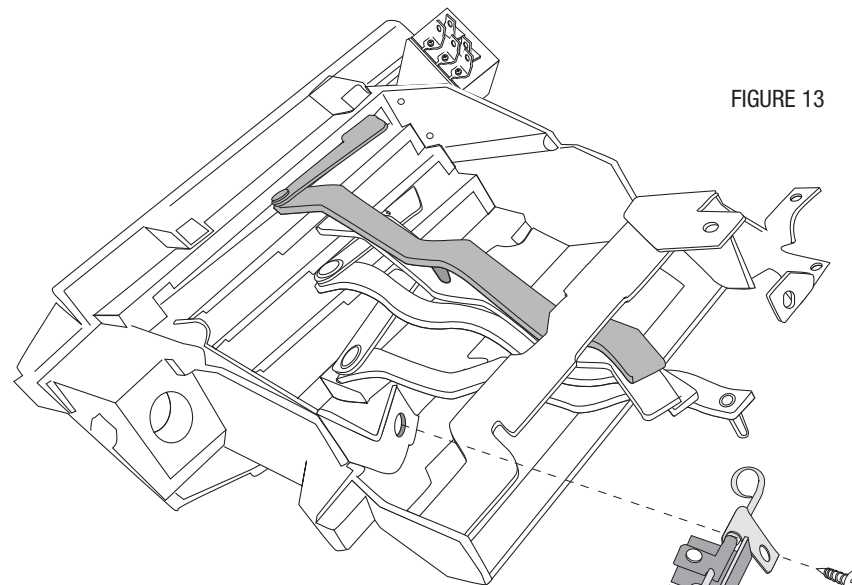
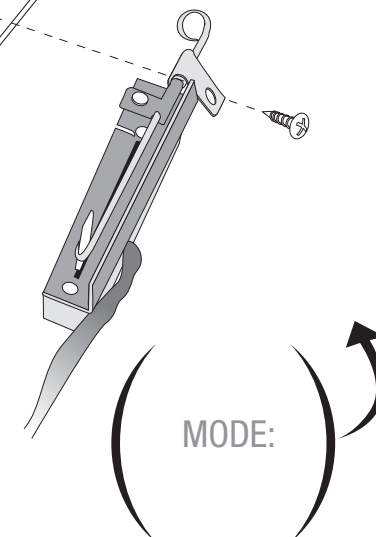


FIGURE 14

Attach end of integrator wire to post, which is on the underside of the top lever arm



Move all the levers back and forth several times to insure smooth operation, and check all the pushnuts one last time for tightness.

1967 Chevelle ONLY

For 1967 Chevilles, attach the **MODE EZ Cable Integrator** to the control head as shown to the right. The loop ends of the integrator wire will be secured with a push nut (see figure 15 and 16).

FIGURE 15

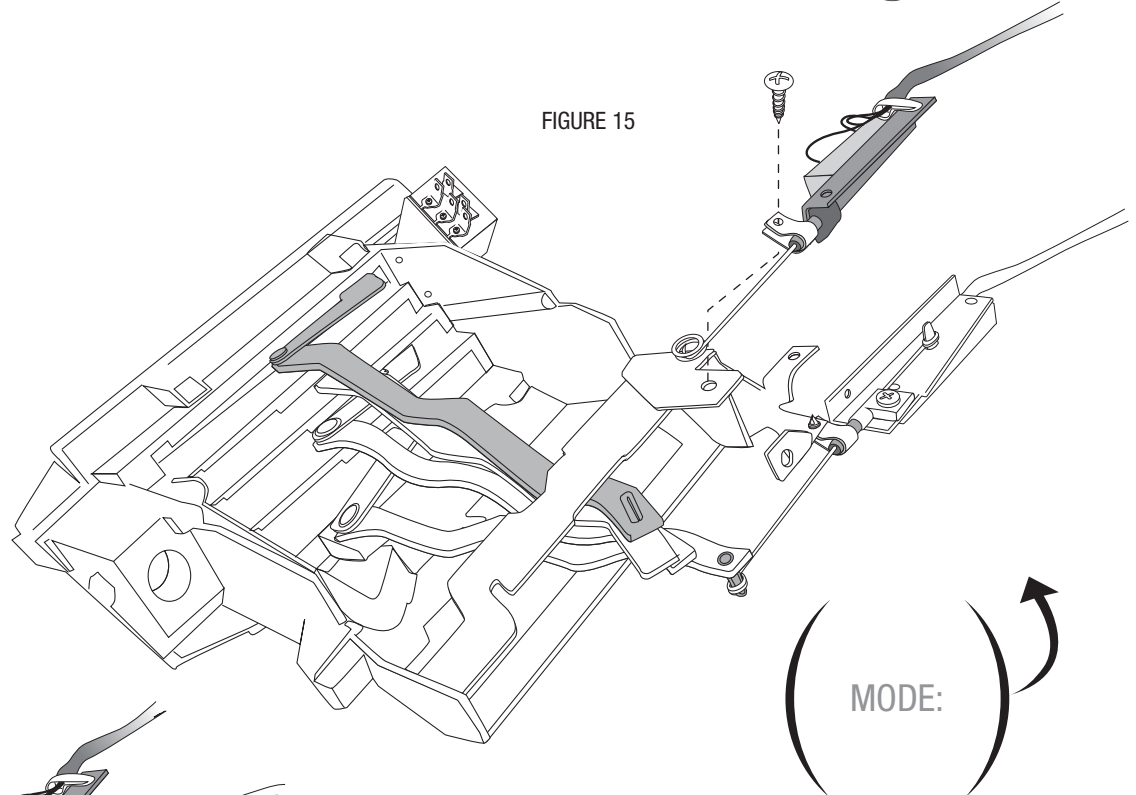
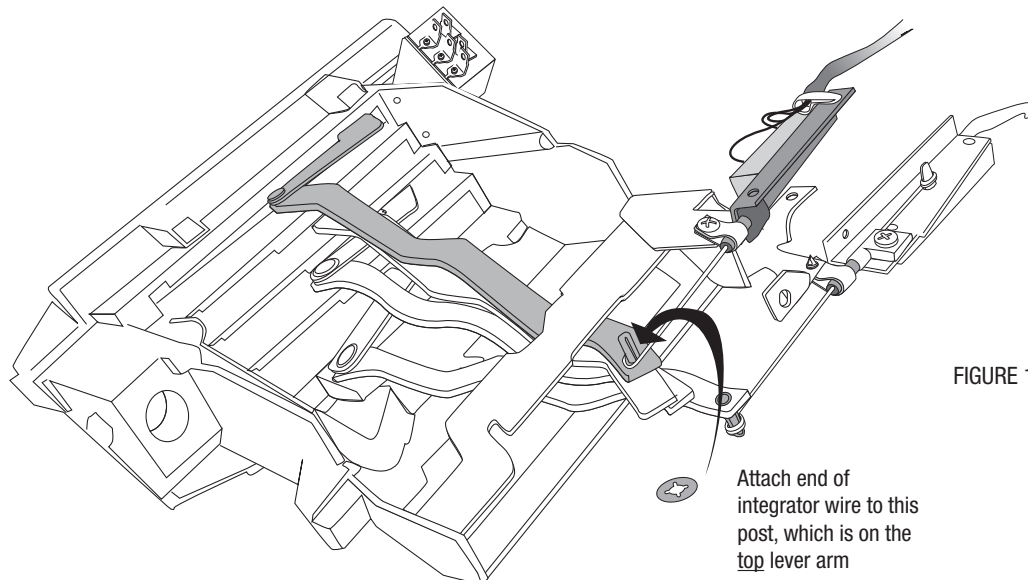


FIGURE 16

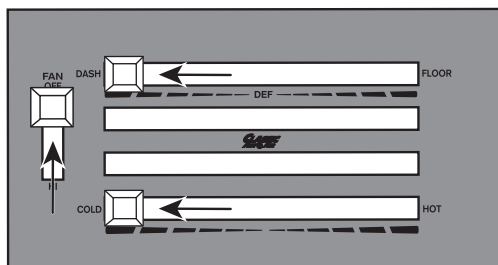


Move all the levers back and forth several times to insure smooth operation, and check all the pushnuts one last time for tightness.

CALIBRATION

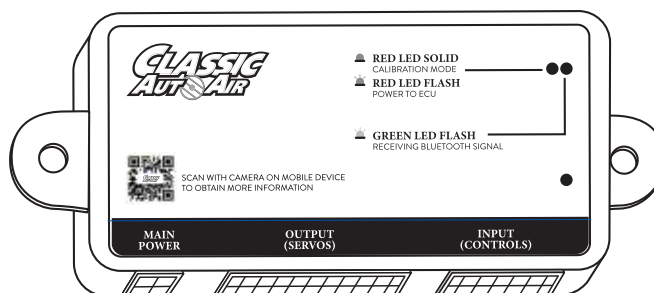
•Steps 1 thru 5

1



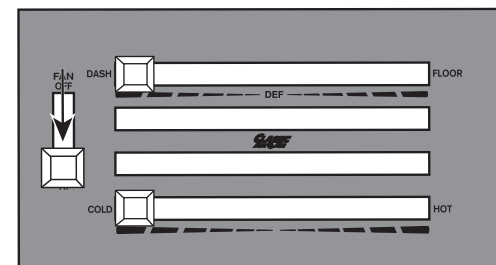
- A) Start with all your levers **UP** and to the **LEFT**.
- B) **Power** your ignition on.

2



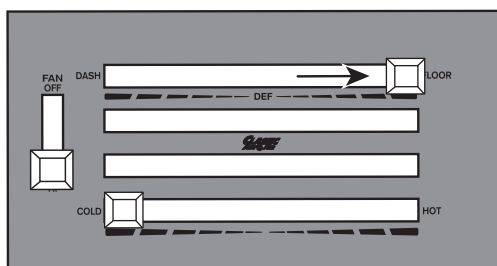
- A) Using a paper clip, insert into the hole and hold the calibration button until the **FAN** pulses.
- B) **Release** when you hear the fan!

3



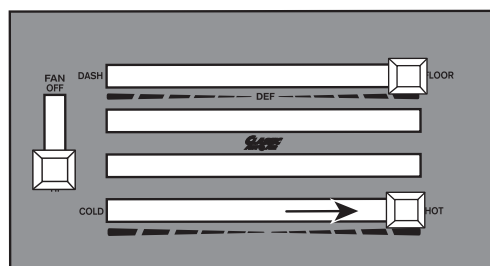
Move first lever **DOWN**

4



Move top lever **RIGHT**

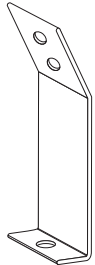
5



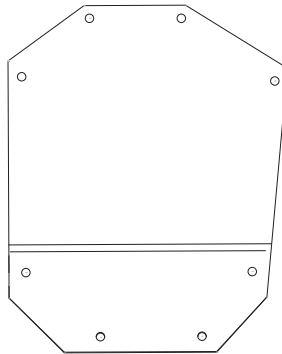
- A) Move bottom lever **RIGHT**
- B) Wait until red LED flashes & fan is on.
- C) Calibration is complete.

THESE ARE THE PARTS YOU WILL FIND IN BAG KIT B

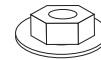
You will use all of these parts and hardware during the next series of installation steps.



Evaporator Bracket
PN#0040-11



Fresh Air Inlet Block Off
PN#10-2048FA-2



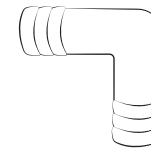
Flange Nut



Two #10 - 10 x 5/8" Phillips Screws



Refrigerant Tape



90 Degree Elbow



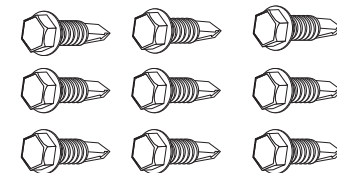
Clear Plastic Drain Tube



Two 1/4" 20 x 5/8" Bolts



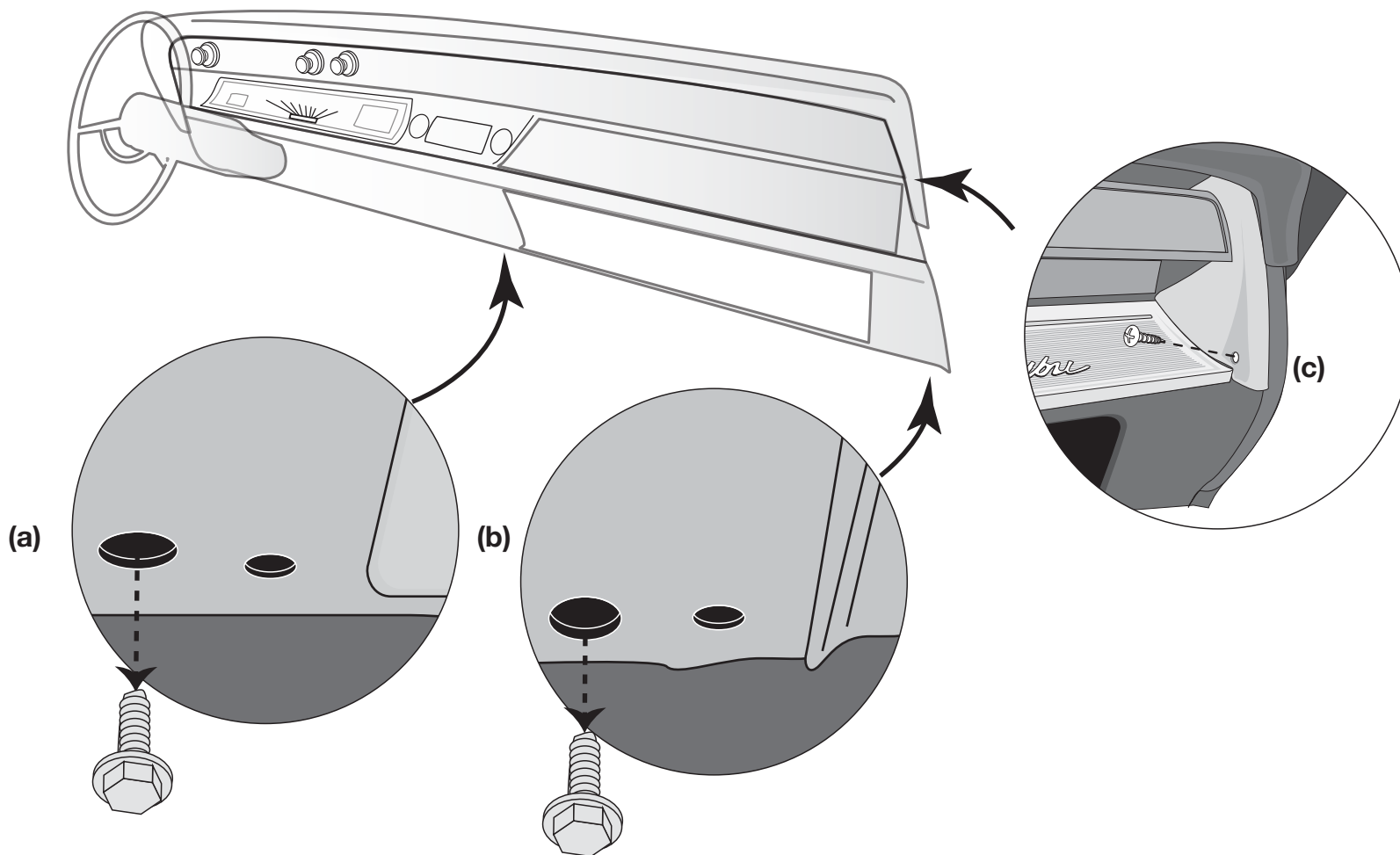
Two 1/4" Washers



Nine #10 - 16 x 3/4" Tek Screws

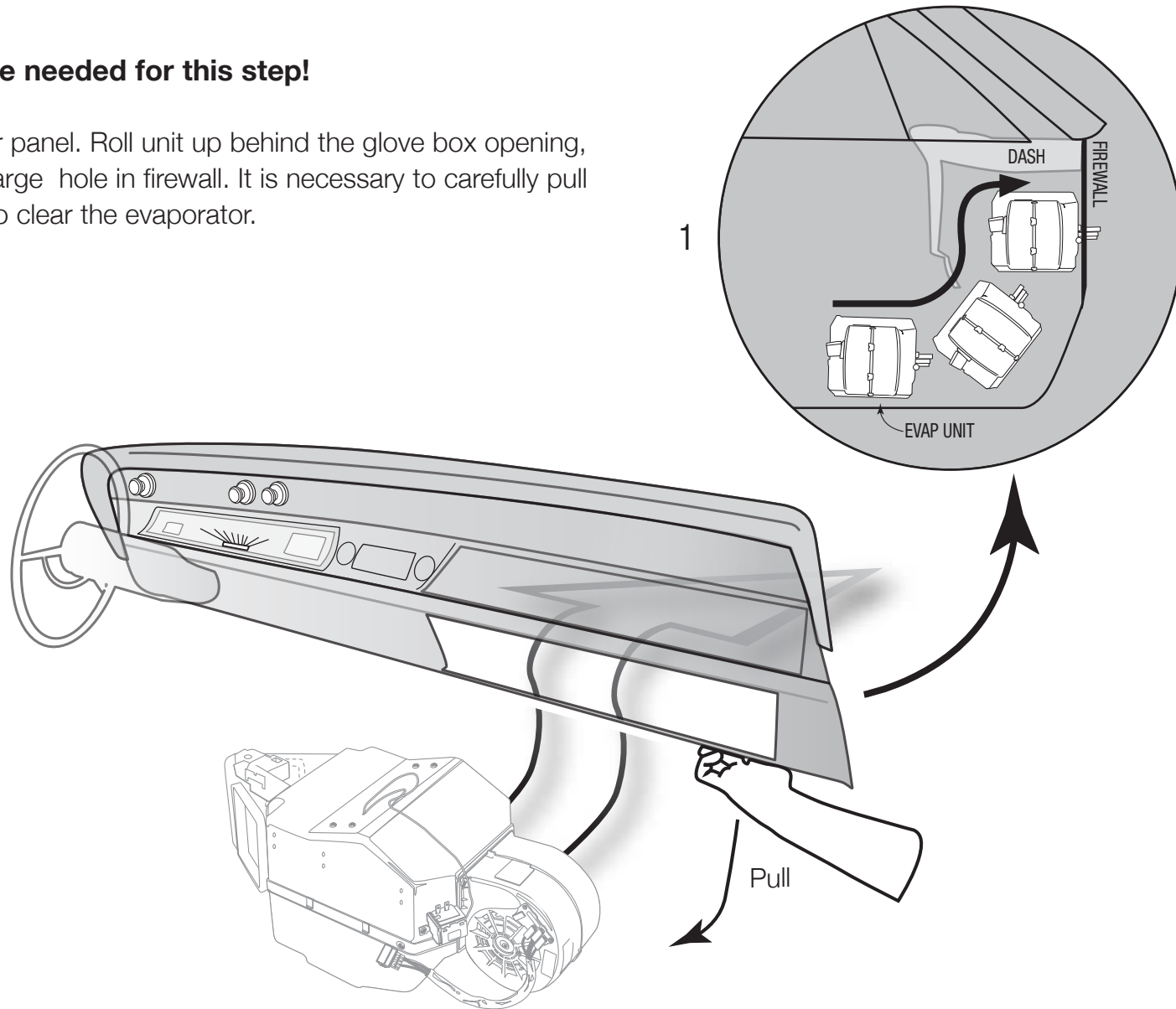
Installing the complete evaporator unit under the dash will go much easier with the help of a friend.

It will be necessary to loosen the dash on the passenger side in order to slide the evaporator into place. Located below the dash to the left **(a)** and right **(b)** of the glove box opening are two bolts that will be removed and reused. It will also be necessary to remove the screw holding the trim panel as shown **(c)**.



NOTE: Two people are needed for this step!

Place evaporator on floor panel. Roll unit up behind the glove box opening, inserting tubes thru the large hole in firewall. It is necessary to carefully pull the bottom of the dash to clear the evaporator.



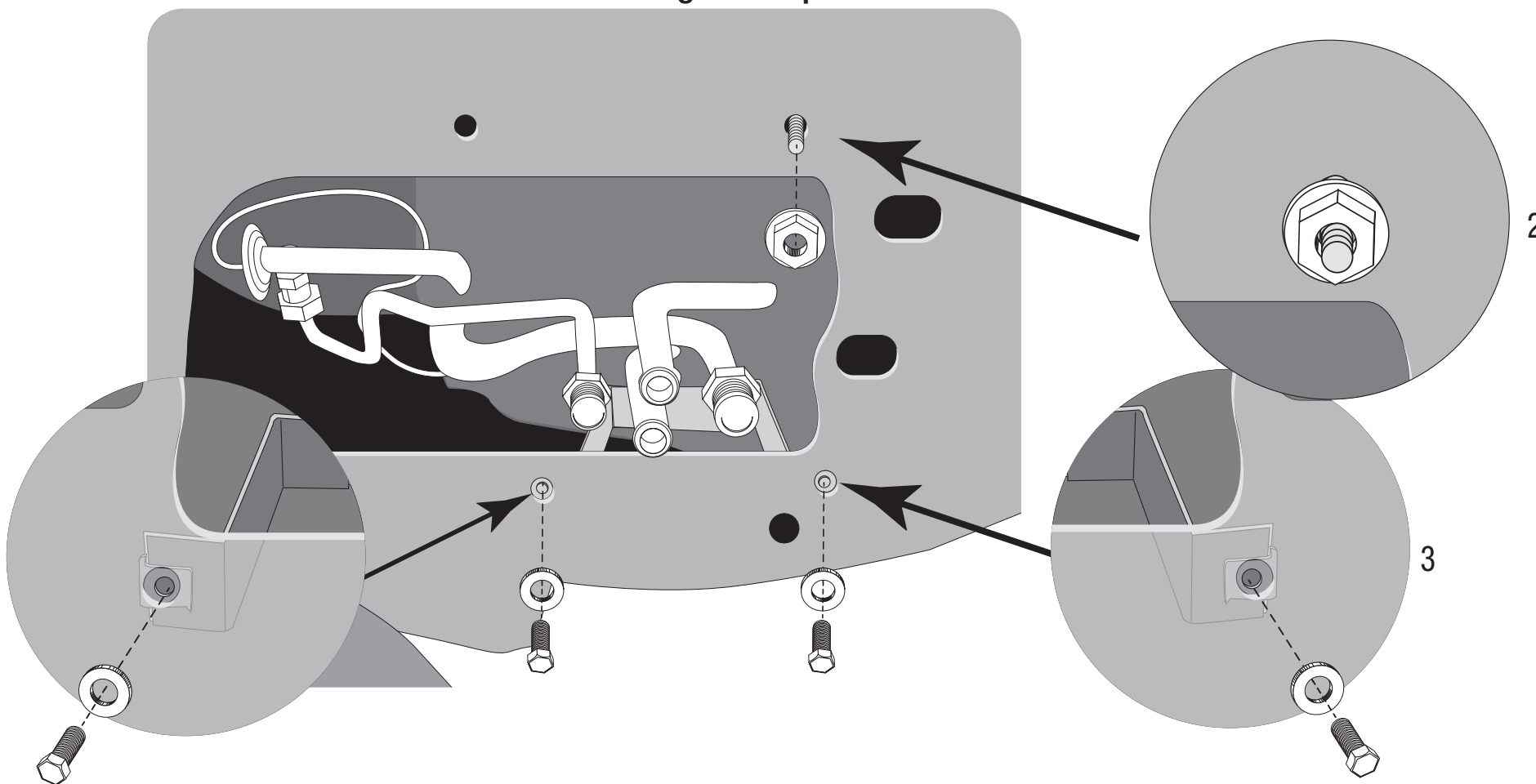
Insert upper rear firewall mounting stud through the OEM hole as shown. Attach using one ¼" – 20 flange nut provided .

NOTE: leave nut loose at this time!

Locate in Bag Kit B the two ¼" – 20 bolts and washers. Attach to lower mounting bracket through OEM existing holes.

NOTE: leave bolts loose at this time!

View from the inside of the engine compartment

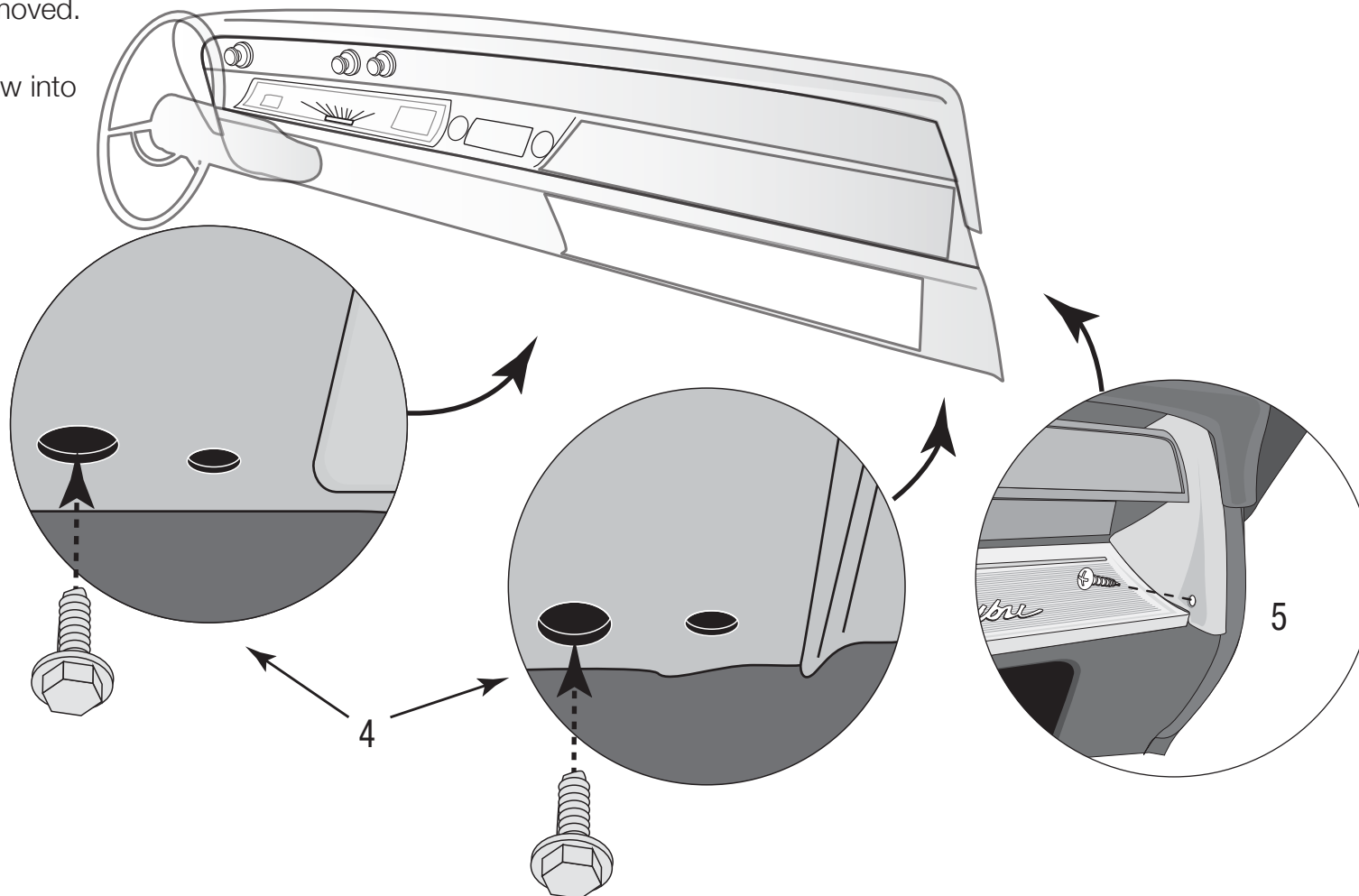


Mounting the Evaporator - Steps 4 thru 5



Reinstall lower dash bolts in support braces with bolts previously removed.

Reinstall Screw into trim piece.



Locate in bag kit B the right evaporator support bracket (PN#0040-11). Using a non powered screwdriver attach the brace through the holes provided on the evaporator (see figure 1 for EVAP hole location) using (2) #10 x 5/8" pan head screws provided in bag kit B (see Step 4). Attach brace to the dash panel using one #10 x 16 -3/4" Tek screw provided in bag kit B (see Step 5).

Tighten mounting stud nut and lower mounting bracket on firewall.

**CLASSIC
AUTO-AIR**

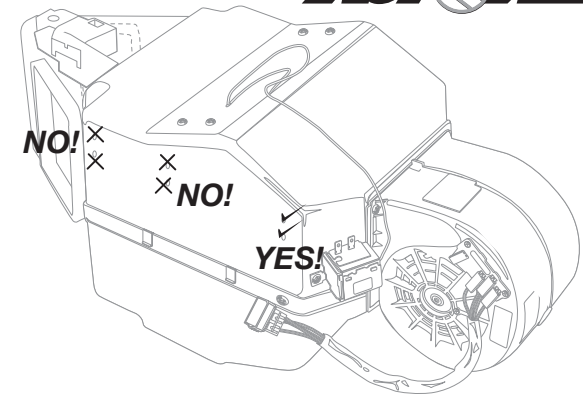
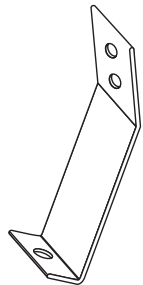
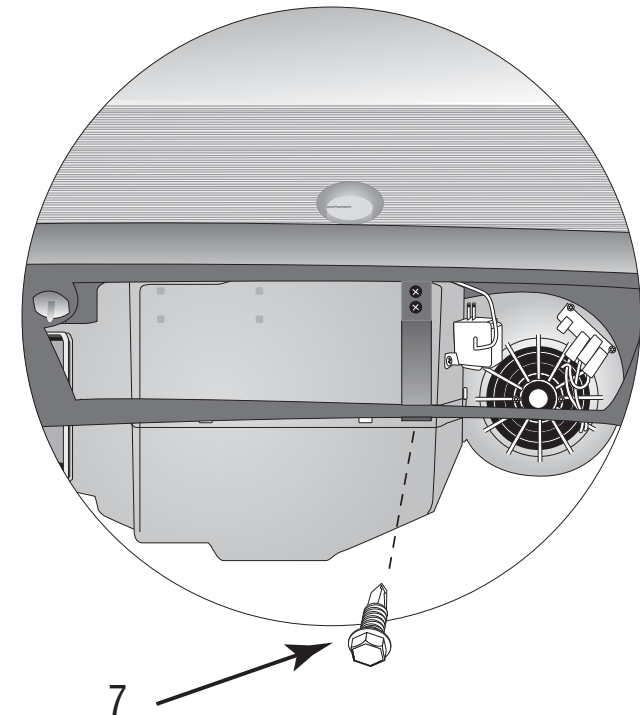
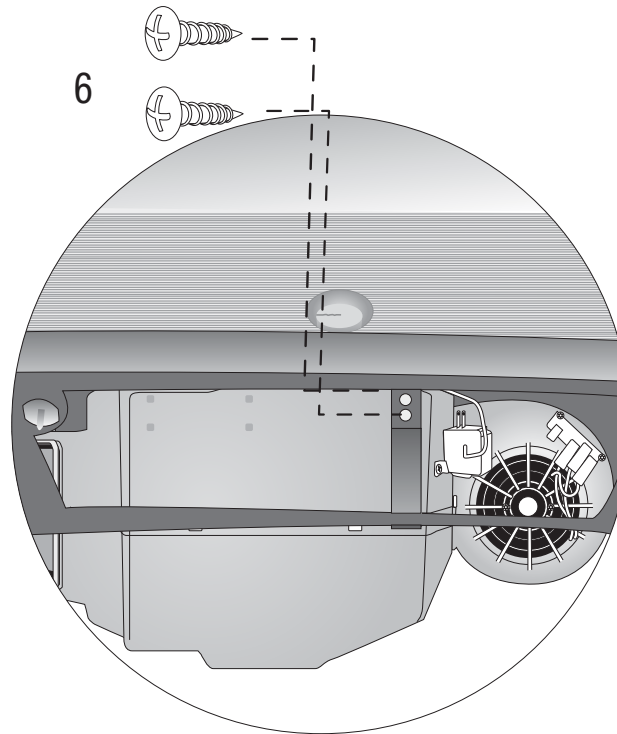


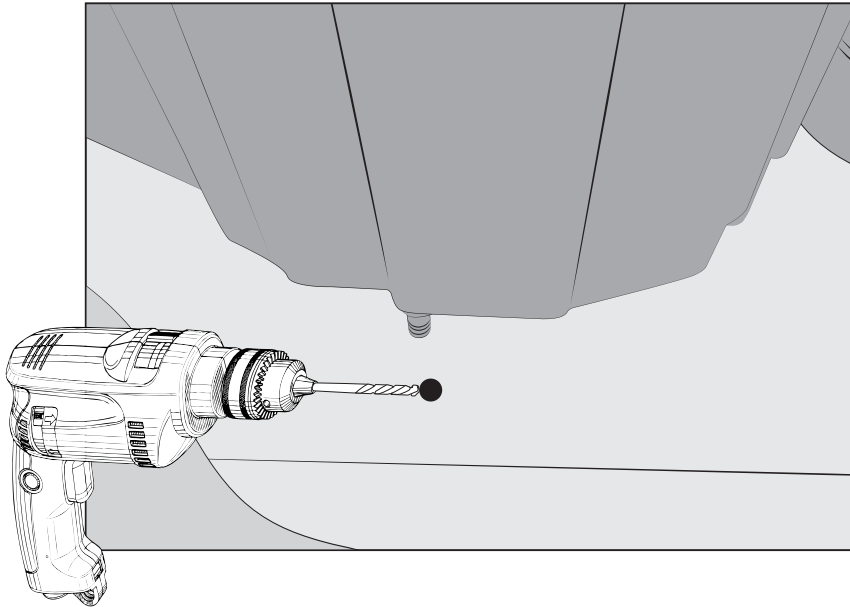
Figure 1



Right Evaporator Support Bracket
PN#0040-11

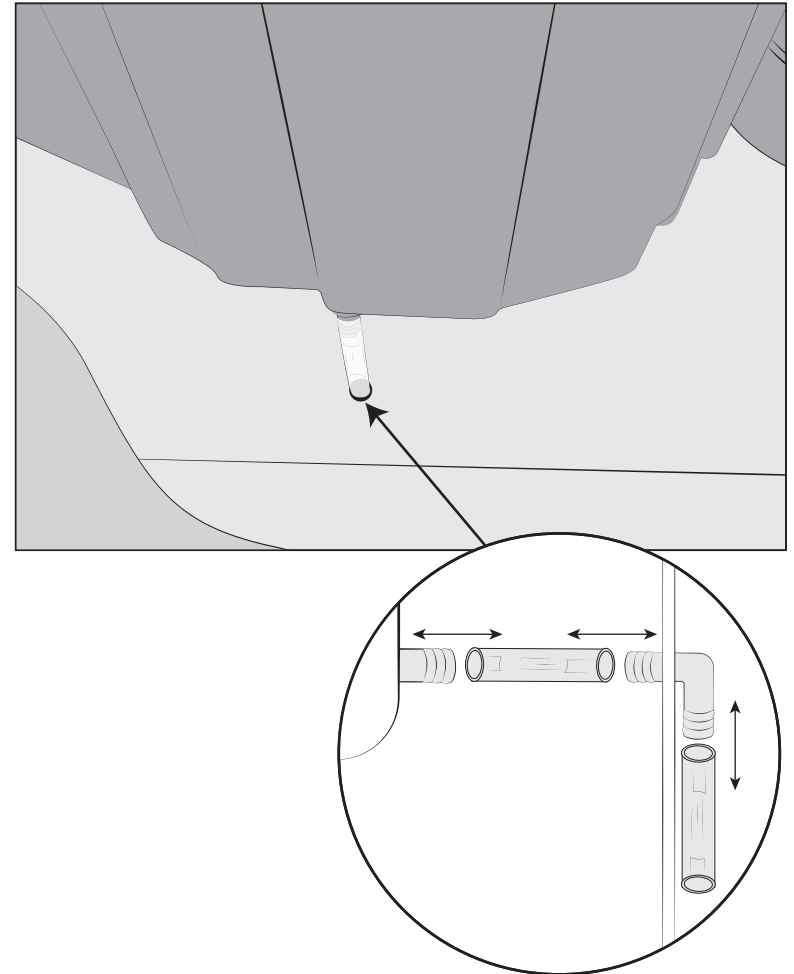


THIS IS FROM INSIDE THE VEHICLE!



Mount Evaporator level to firewall.

Locate Drain nipple on Evaporator and drill a 3/4" hole below the nipple on the firewall. This will allow condensation to drain properly.



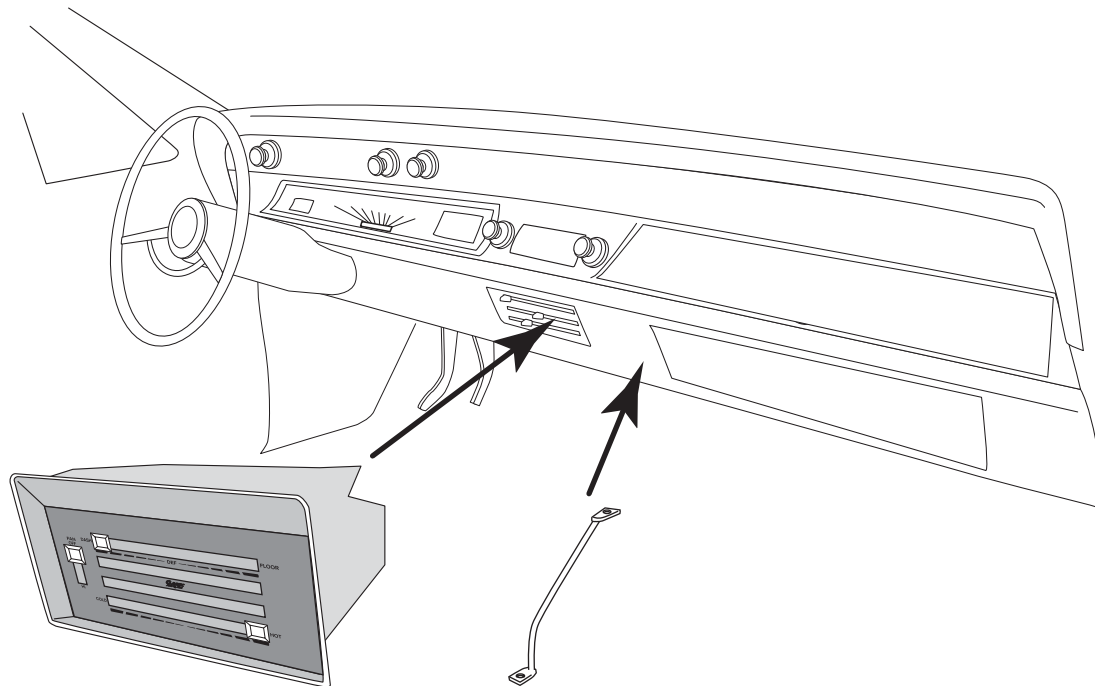
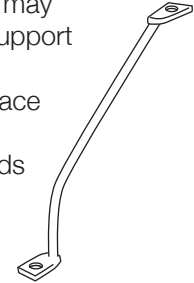
Attach drain tube as shown.

All condensation will now drain out into the engine bay.

Locate your previously modified A/C controls and install back into dash using original hardware.

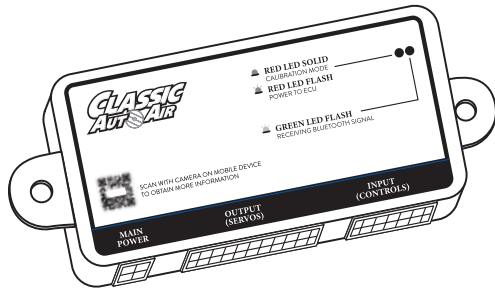
Locate the dash support brace from your bag kit and replace the OEM brace located to the left of the govebox opening.

NOTE: The cable integrators may interfere with the OEM dash support brace. We've included a replacement dash support brace that you use in place of your factory brace. Our brace bends differently to clear the cable integrators.

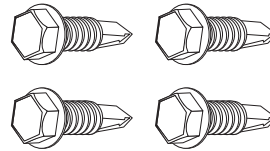


THESE ARE THE PARTS YOU WILL FIND IN BAG KIT C

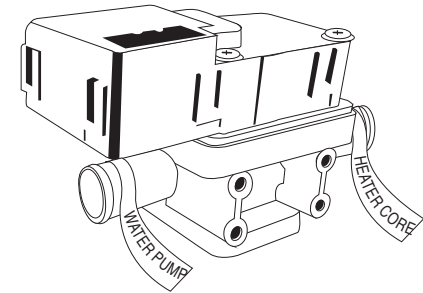
You will use all of these parts and hardware during the next series of installation steps.



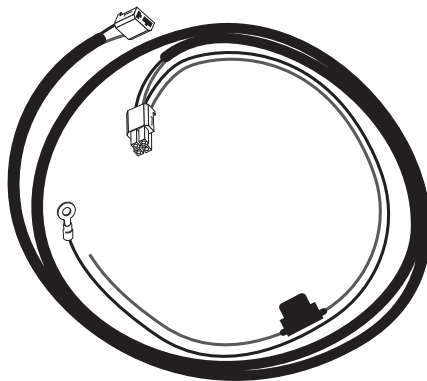
*ECU
16-2500*



Four #10 - 16 x 3/4" Tek Screws



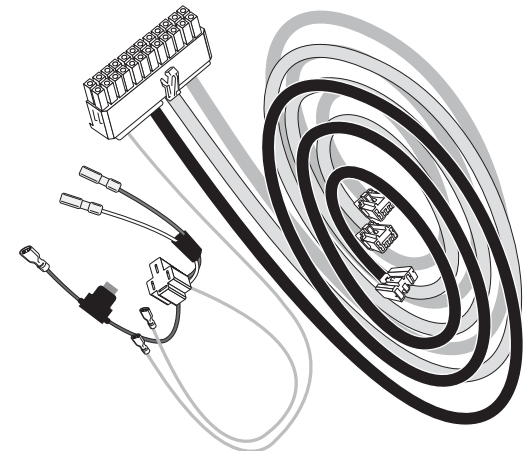
*Electronic Water Control Valve
PN# 16-1023*



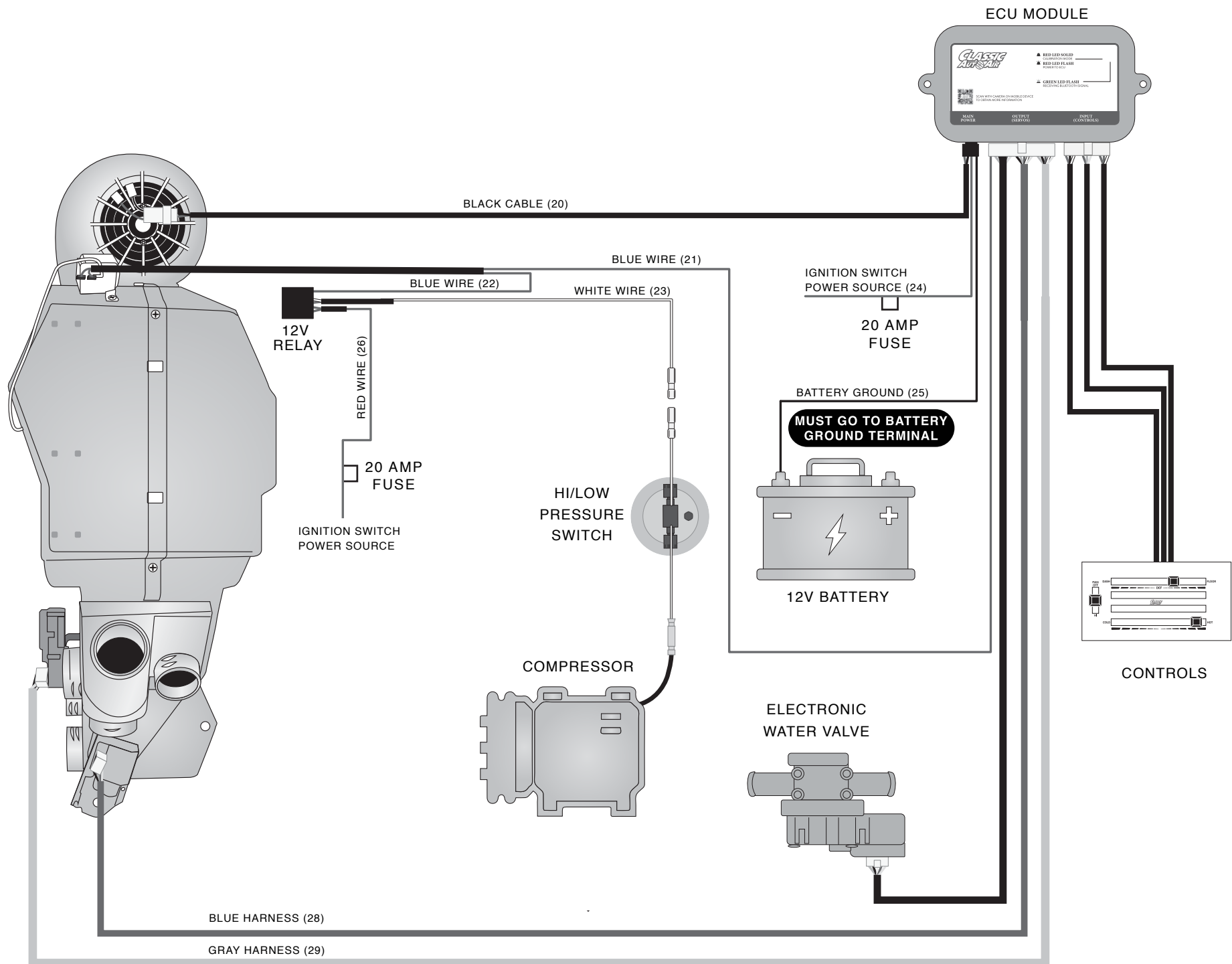
*HARNESS POWER SUPPLY
0125-5*



*Relay
30-13373*

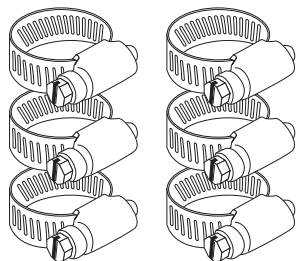


*HARNESS
0125-6A*

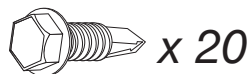


THESE ARE THE PARTS YOU WILL FIND IN BAG KIT D

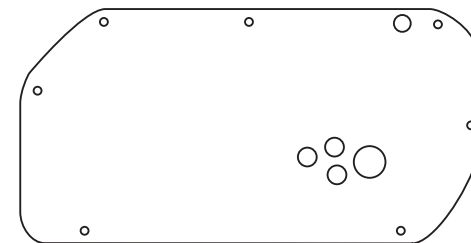
You will use all of these parts and hardware during the next series of installation steps.



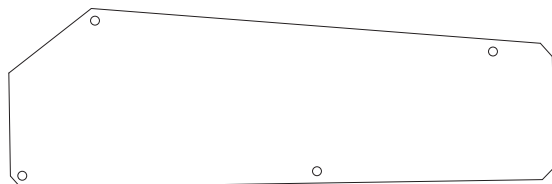
Six Worm Gear Clamps



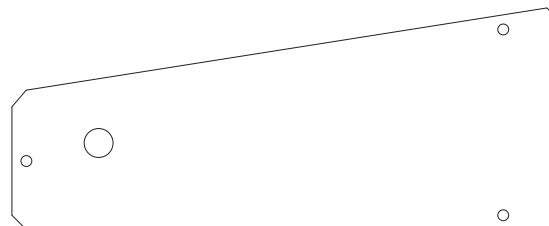
Twenty #10 - 16 x 3/4" Tek Screws



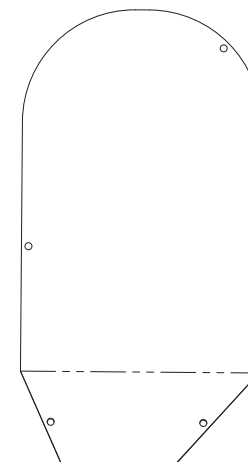
Firewall Block Off
PN#10-1048-1



Upper Firewall Blockoff
PN#10-2048FA-4



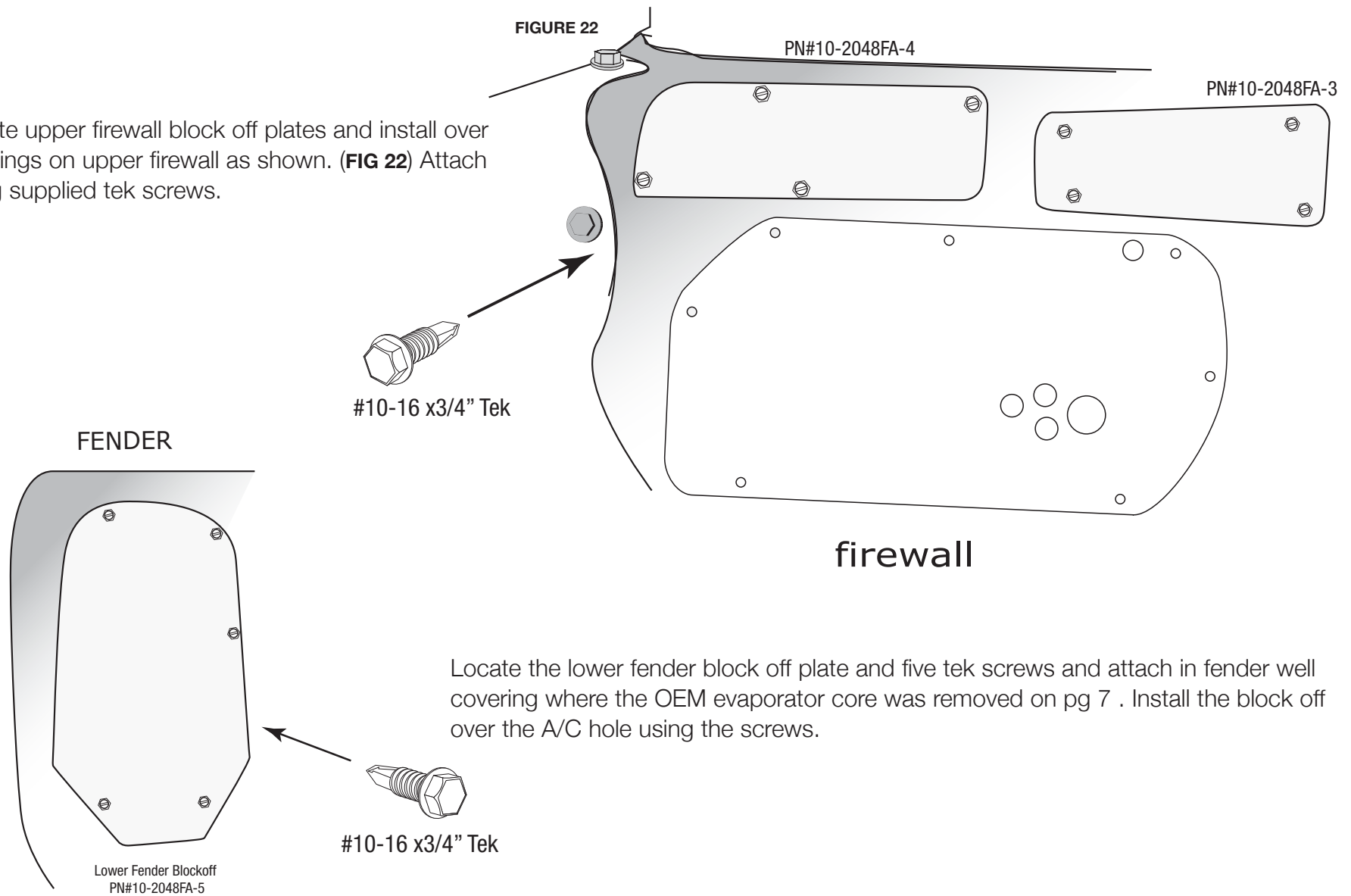
Upper Firewall Blockoff
PN#10-2048FA-3



Lower Fender Blockoff
PN#10-2048FA-5

FIGURE 22

Locate upper firewall block off plates and install over openings on upper firewall as shown. (FIG 22) Attach using supplied tek screws.



Locate the lower fender block off plate and five tek screws and attach in fender well covering where the OEM evaporator core was removed on pg 7 . Install the block off over the A/C hole using the screws.

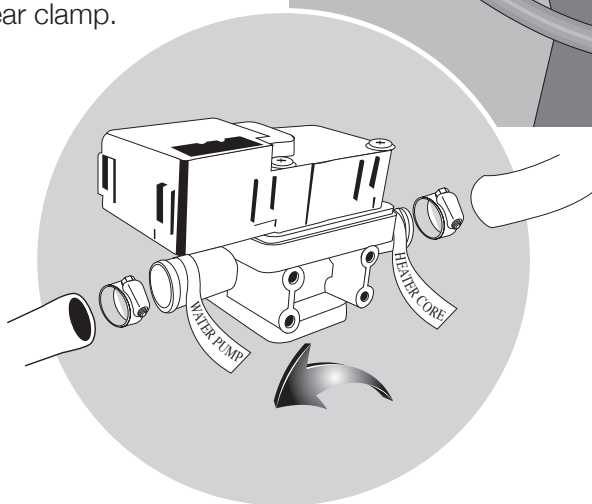
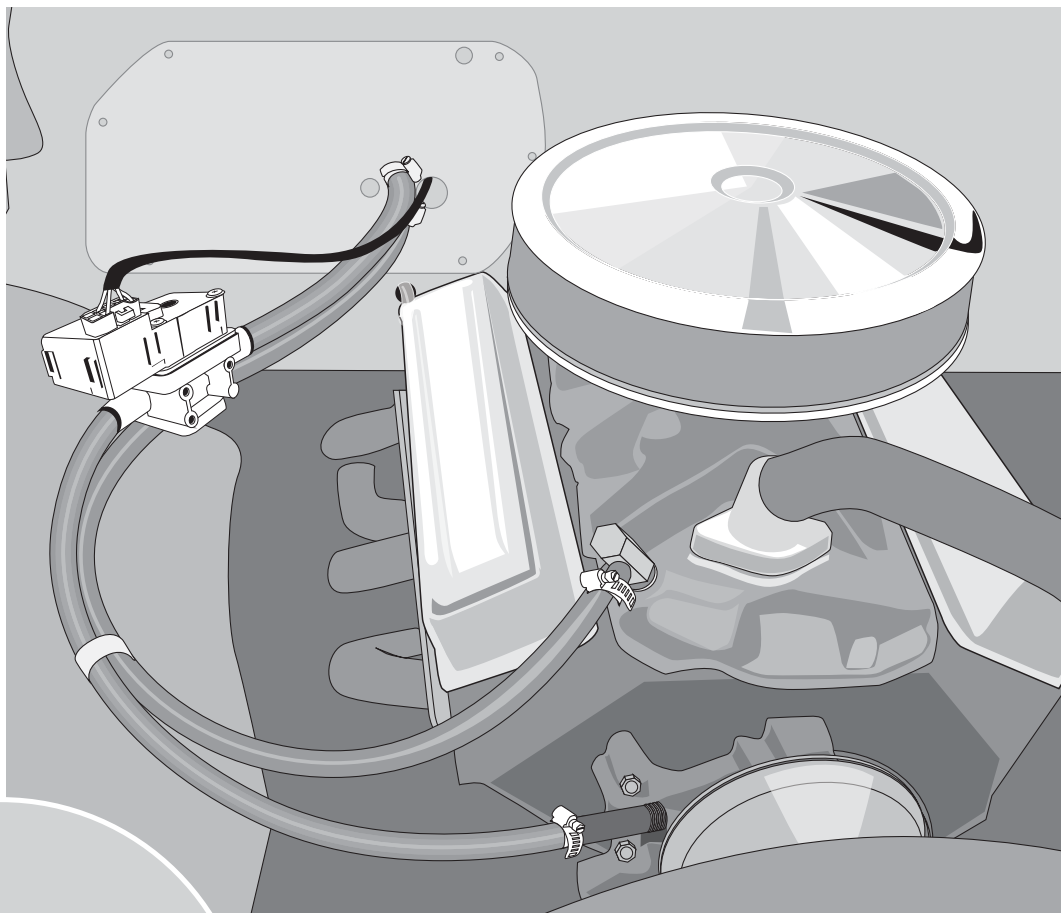
IMPORTANT NOTICE: PROPER INSTALLATION OF WATER VALVE

Your water valve **MUST be installed per these instructions!... (if not, your system will not work properly.)**

The **lower** heater tube connection on firewall will be routed to the water connection on intake manifold using 5/8" dia. heater hose with the supplied worm gear clamp.

The **upper** heater tube connection on the firewall will be routed to the water valve connection labeled **heater core**, using a 6" piece of 5/8" heater hose attached with supplied worm gear clamp.

Connect the remaining outlet on water valve labeled **water pump** to the water pump using 5/8" dia. heater hose with the supplied worm gear clamp.

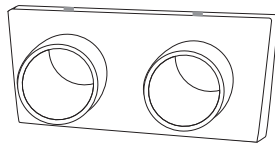


**FOLLOW THESE
TAGS... CHECK IT
TWICE BEFORE
PROCEEDING!**

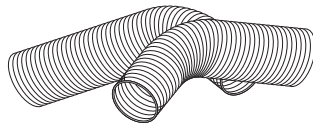
THESE ARE THE PARTS YOU WILL FIND IN BAG KITS E, F, and G

You will use all of these parts and hardware during the next series of installation steps.

Bag E



Defrost Adaptor
PN#2-2048-1

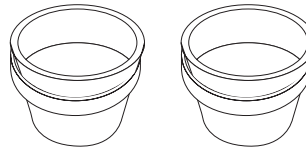


Two Duct Hoses, 2" I.D.

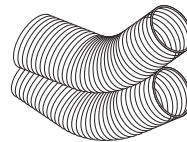


Four Zip-Ties

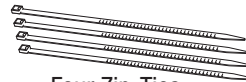
Bag F



Ball Louver Adaptors
(2 piece assembly)
PN#2-1055-1

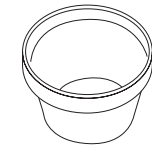


Two Duct Hoses, 2" I.D.



Four Zip-Ties

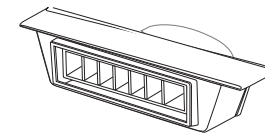
Bag G



Louver Adaptor
PN#2-2048FA-1



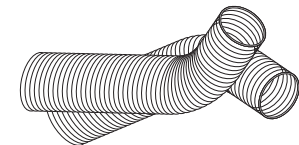
Cap Plug
PN#DM-2001



Lower Louver
(optional)
2-1038



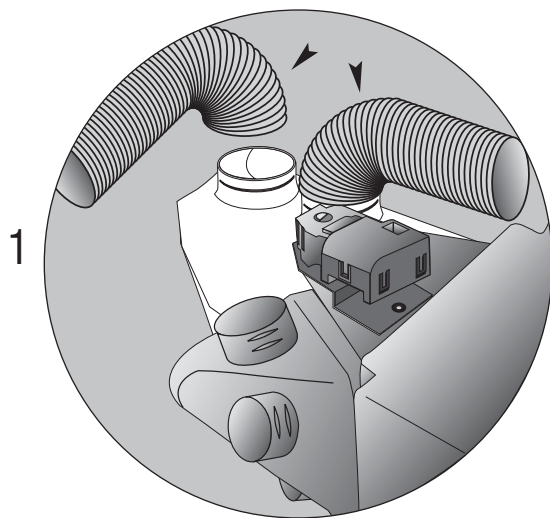
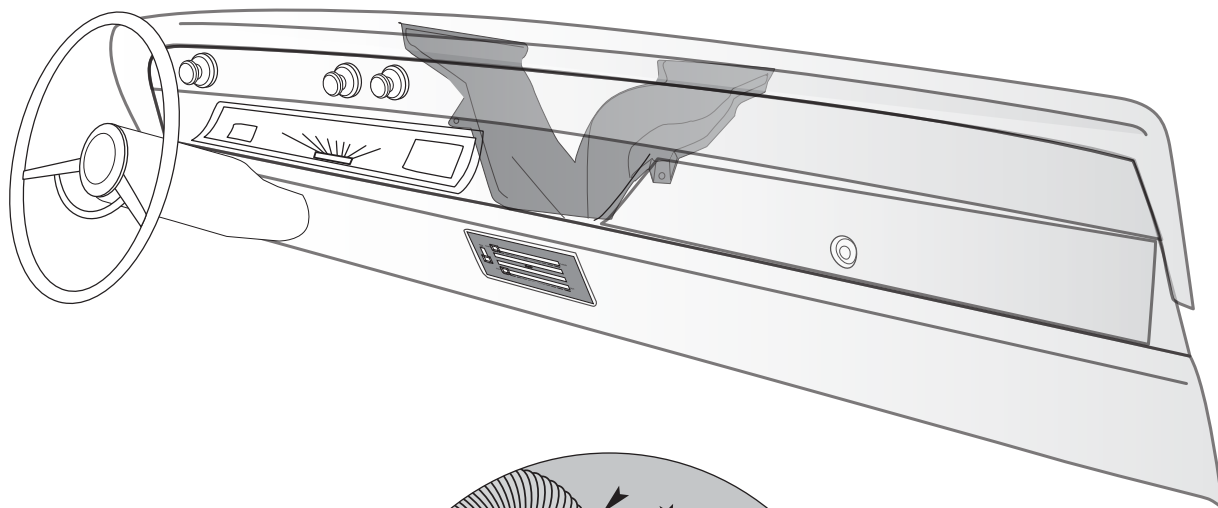
Two #10 - 16 x 3/4"
Tek Screws



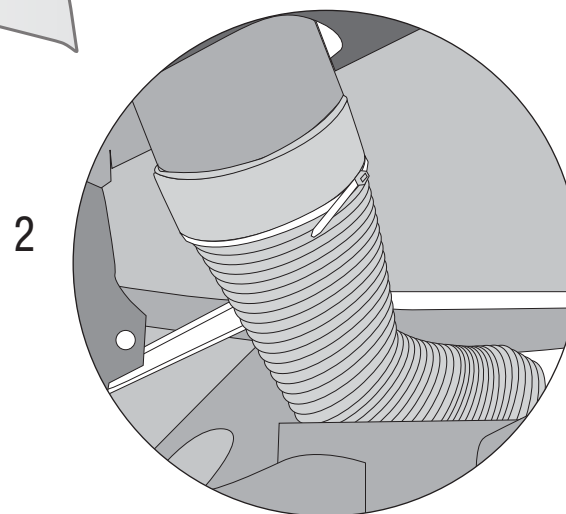
Two Duct Hoses, 2" I.D.



Four Zip-Ties



One end of the duct hose is installed over the defrost/heat duct assembly outlets on the main unit.

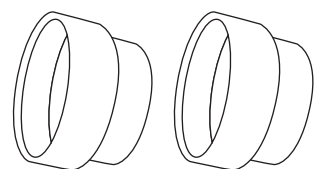
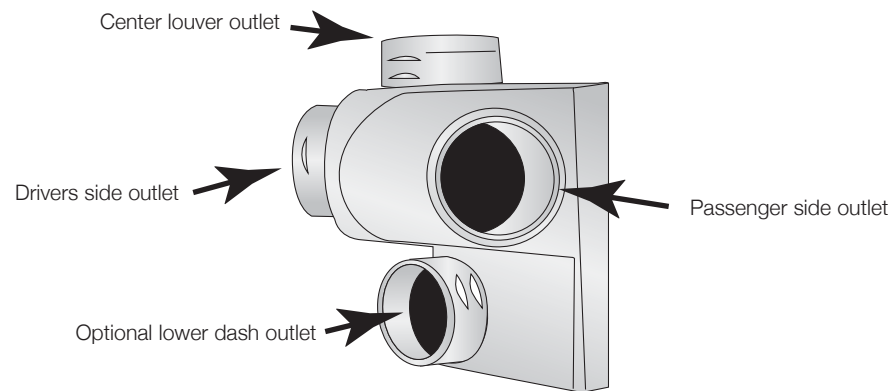


Next route the duct hoses from the defrost/heat duct assembly upward toward defrost vents. Attach the flex hose to the defrost diffuser using zip-ties on both ends.

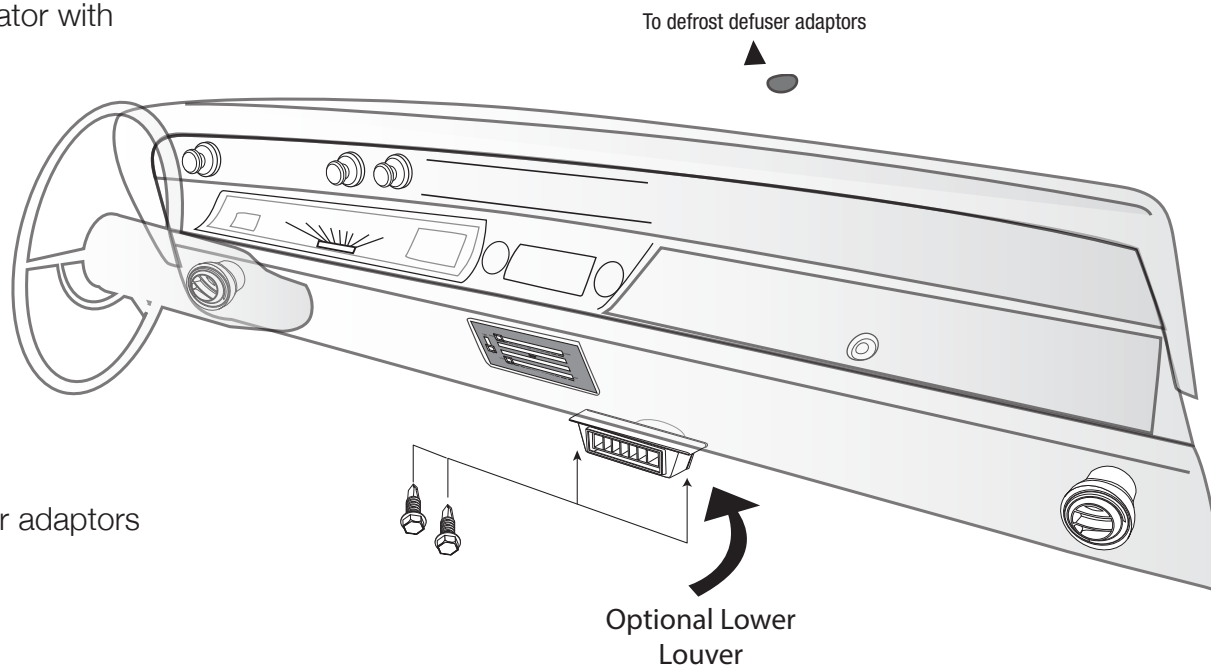
Bag Kit F: Take your time and routing flex hose so they don't become kinked or torn. Hoses are secured to the back of the louvers with the included tywraps.

We've also included an **OPTIONAL**, rectangular lower dash louver that can be used to provide extra cooling for the passenger side of your vehicle. If you want to utilize this vent, just mount onto the lower dash using the included tek-screws and route the included flex hose to it. If you decide not to use this louver, **BE SURE TO CAP THE OPEN PORT** of the face/floor assembly with the included cap plug.

Use the included side louver adaptors to attach flex hoses to your OEM side vents. Secure flexhoses at the evaporator with the included ty-wraps.



Side louver adaptors



Your OEM center vent has a plenum that you will connect to with the included hose adapter. Simply attach the flex hose to the evap unit, route the hose upward and insert into the center duct assembly.

Secure flexhoses at the evaporator with the included ty-wraps.



The smoother the route of the flex hoses the better the airflow.

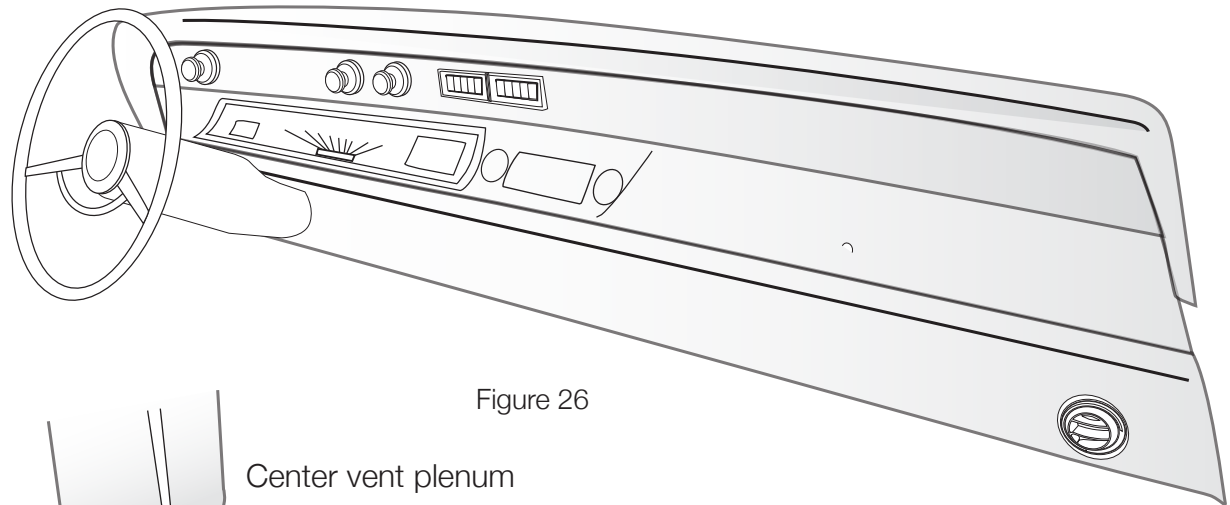
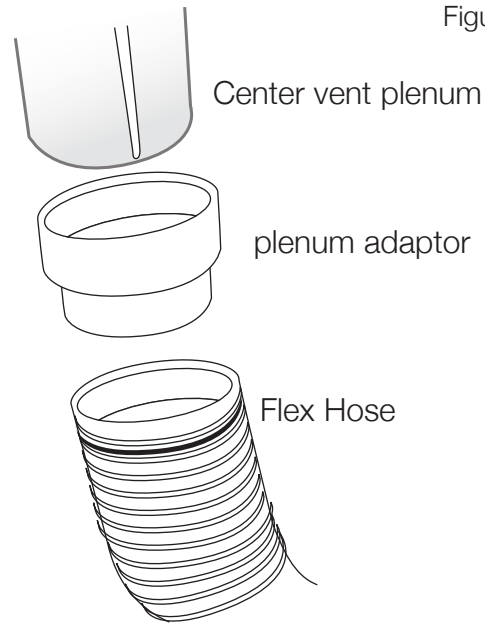


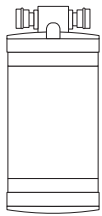
Figure 26



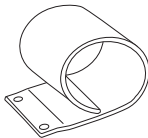


This completes the interior portion of the **Smart Series A/C** installation process. This is a good time to make a final check that all the controls still move freely and that nothing is loose or hanging down.

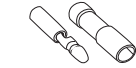
THESE ARE THE PARTS YOU WILL NEED FOR THE ENGINE COMPARTMENT INSTALLATION ON A 1966-1967 CHEVELLE



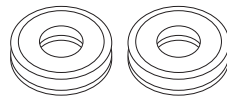
Drier



Drier Bracket



Splice and
Bullet Connector



Two 1" grommets PN#14-1098



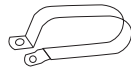
Eight #10 - 20x1/4" Screws



Two #10 - 32 x 1/2" Bolt and Lock Nut



One #10 - 20x3/4" TEK Screw



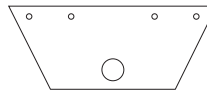
One Hose Clamp



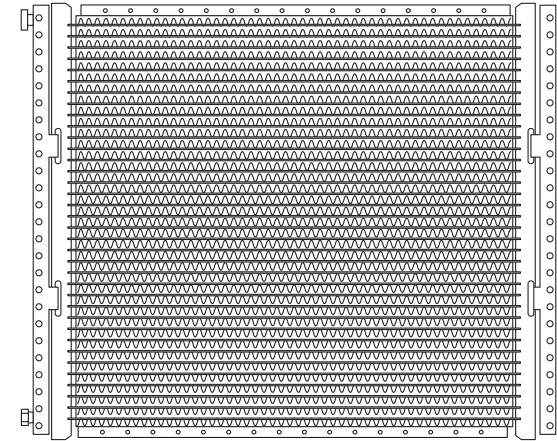
Pressure Switch and harness,
Bag of O-rings and Mineral Oil Tube



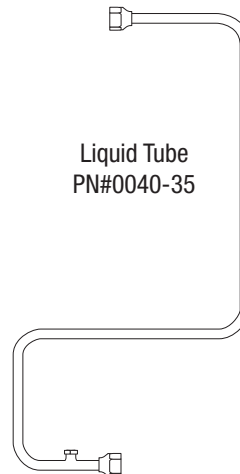
Condenser Braket
PN#0040-31



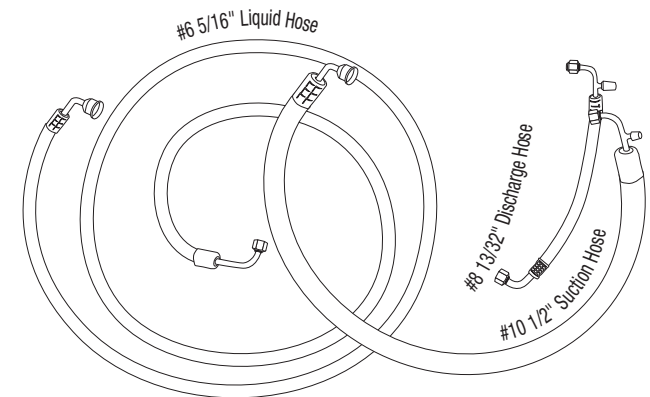
Condenser Braket
PN#0040-30



Condenser
PN# 11-1093



Liquid Tube
PN#0040-35

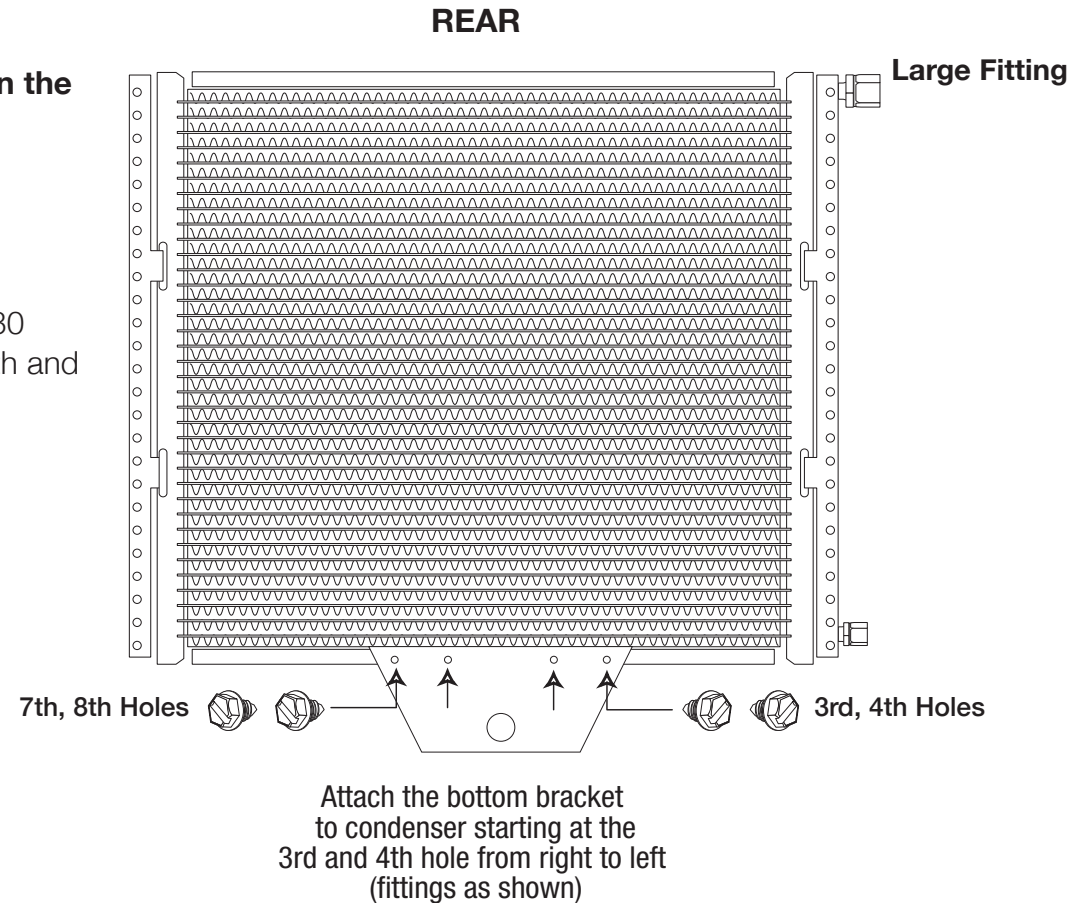
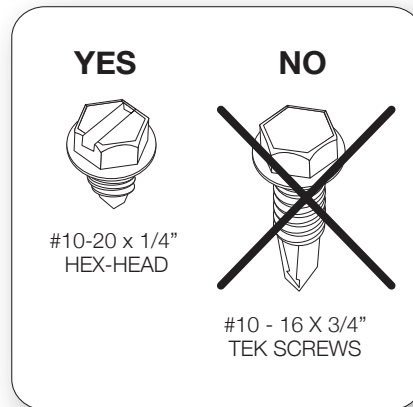


Three Refrigerant Hoses

Place condenser so that both hose connections are on the right side (**LARGER FITTING ON TOP**).

STEP 1:

BOTTOM BRACKET: Attach the lower bracket PN#0040-30 using four #10-20 x 1/4" HEX-HEAD screws into the 3rd, 4th and 7th, 8th from fittings. (**RIGHT SIDE**)



Flip condenser over so that both hose connections are now on the left side (LARGE FITTING ON TOP).

STEP 2:

Attach top bracket PN#0040-31 using four #10-20 X 1/4" HEX-HEAD screws into the 6th,7th and 9th,10th holes from fittings.(**LEFT SIDE**)

STEP 3:

Insert the drier into the drier mounting bracket. Attach the drier liquid tube to the "IN" (SEE Figure 1) port on drier and to the connection on the condenser (**using supplied o-rings on both ends and a few drops of mineral oil to each o-ring**). Use the two #10 - 32 x 1/2" Bolts and Lock Nuts (attach drier from the front of the condenser).

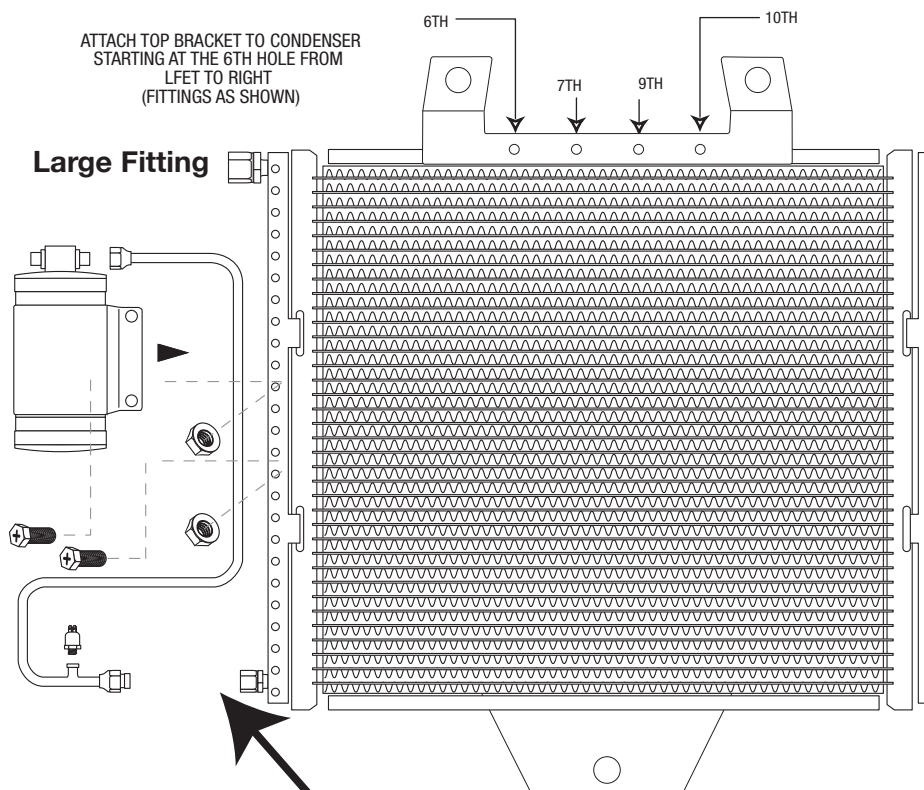
STEP 4:

Next install the pressure switch to the liquid tube PN#0040-35. (**using supplied o-ring and a few drops of mineral oil to o-ring**)

FINGER TIGHTEN ALL FITTINGS UNTIL THE DRIER IS IN PLACE!

Use two wrenches when tightening all o-ring connections. Place one wrench on condenser connection, and tighten other fitting connection with other wrench. Apply equal pressure to both wrenches - this will keep twisting force from damaging condenser parts.

FAILURE TO DO SO WILL DAMAGE CONDENSER.



Large Fitting

ATTACH TOP BRACKET TO CONDENSER
STARTING AT THE 6TH HOLE FROM
LEFT TO RIGHT
(FITTINGS AS SHOWN)

6TH 10TH

7TH 9TH



TECH TIPS

TWO WRENCH METHOD



Reminder... Use two wrenches to
tighten o-ring fittings

You can easily find
the correct position
for mounting the drier
to the condenser by
using the drier liquid
tube as a gauge.

TOP VIEW OF DRIER

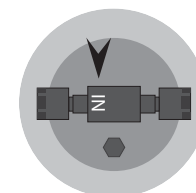
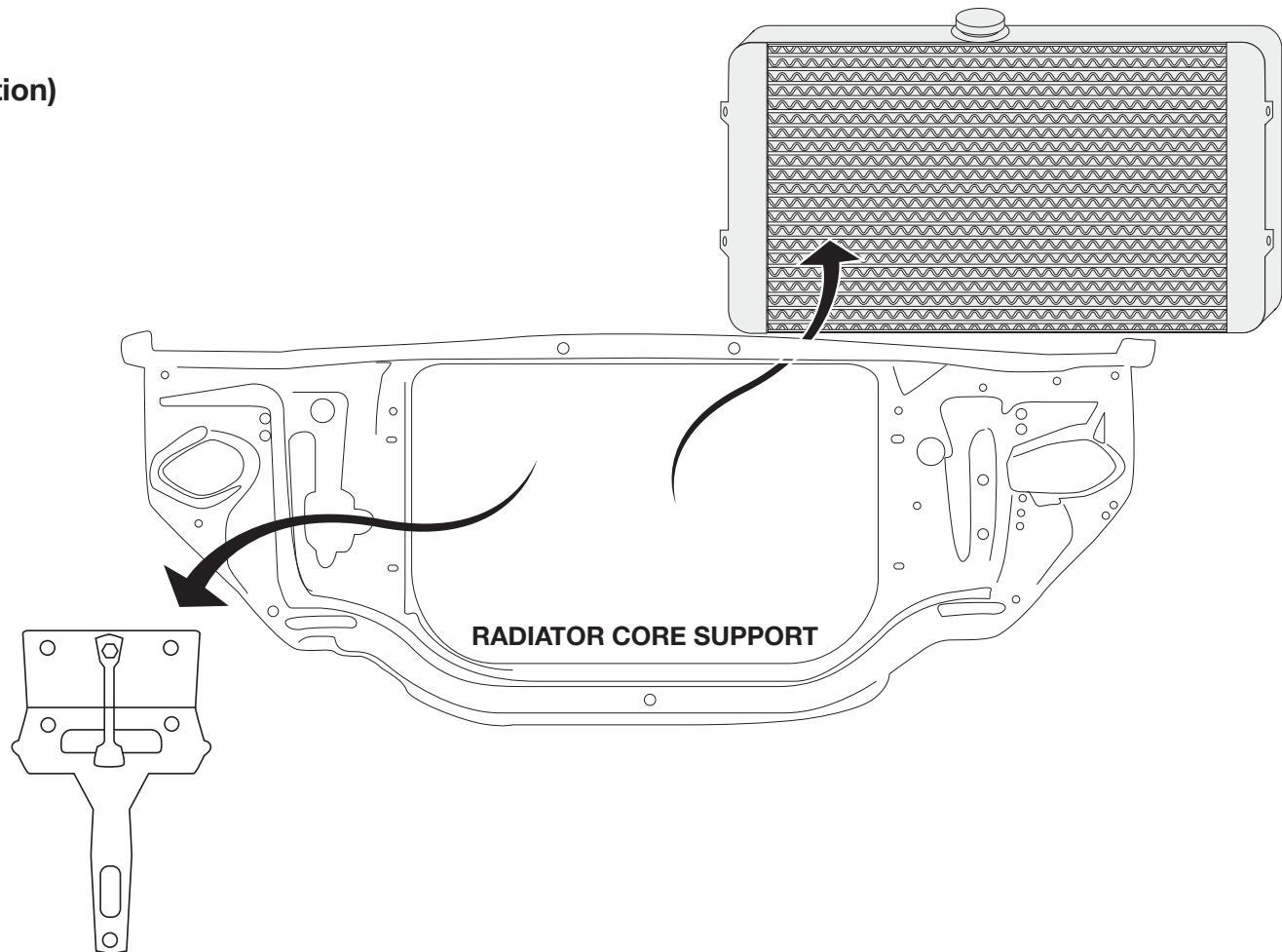


Figure 1

REMOVE THE FOLLOWING:

- Battery
- Radiator
- Hood latch
- Grill (for ease of installation)

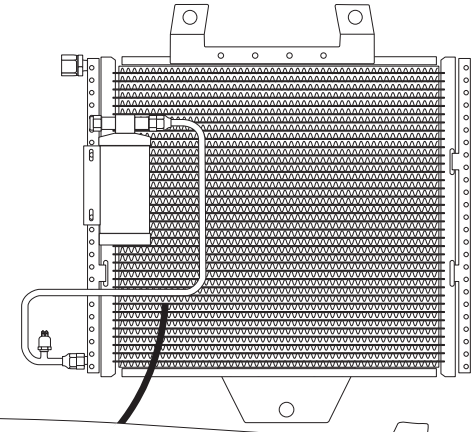
Retain all hardware



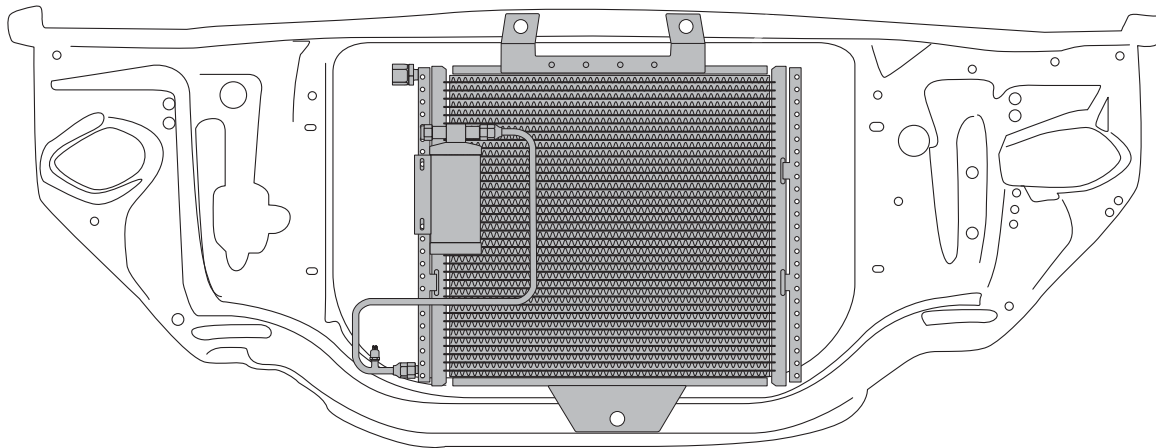
1: Place condenser assembly from engine side of radiator support carefully rotating assembly through radiator opening and placing on **FRONT** side of radiator support as shown.

2: Position the condenser/drier unit into place, locating it so that the holes in the condenser brackets align with the holes in the core support used to attach the hood latch.

1



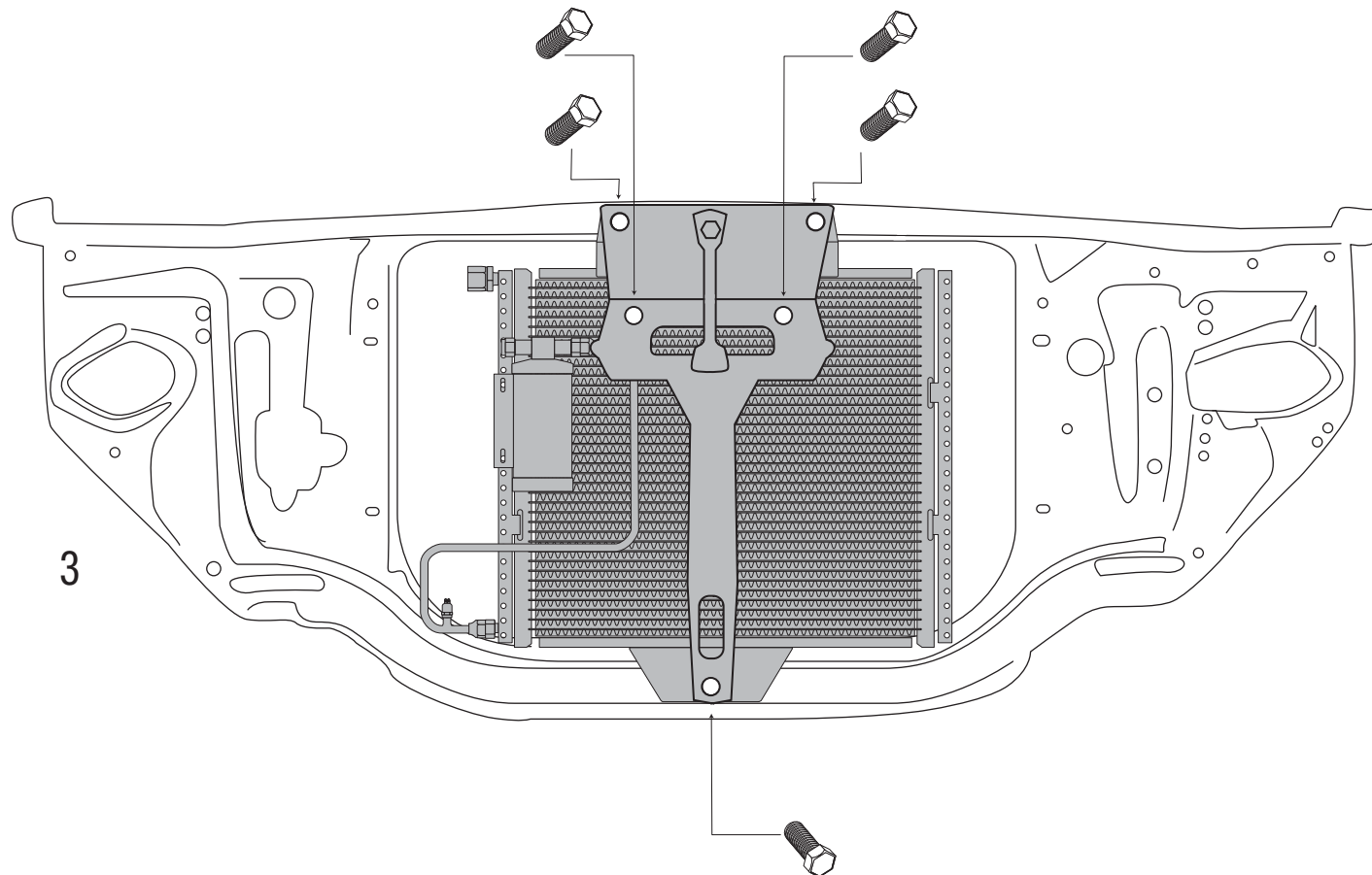
2



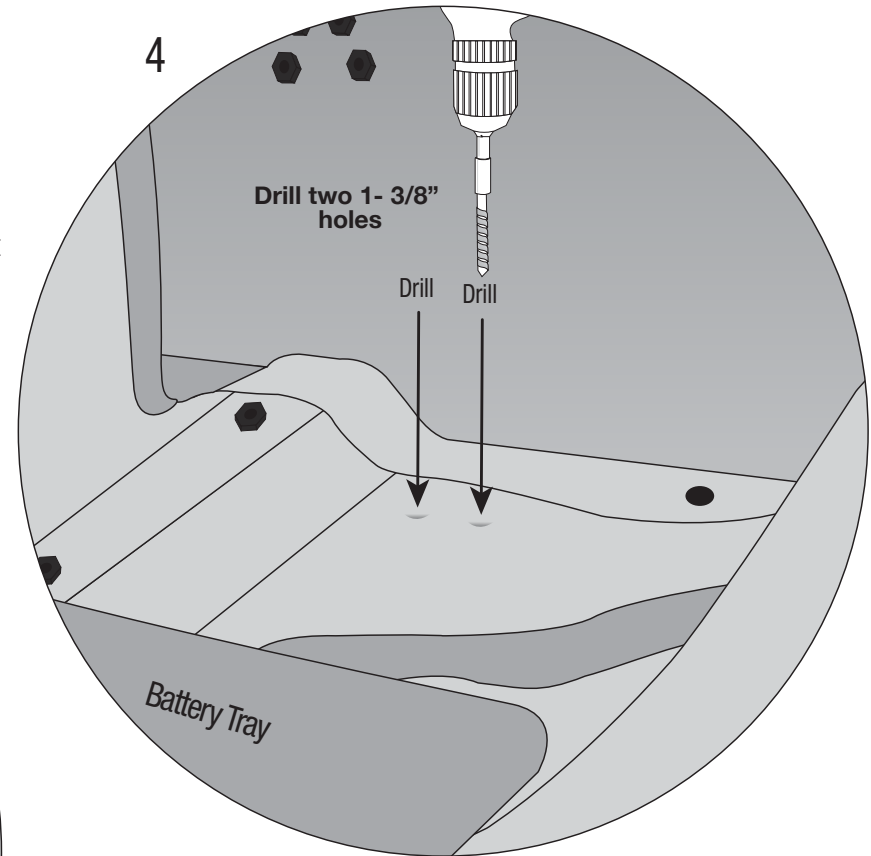
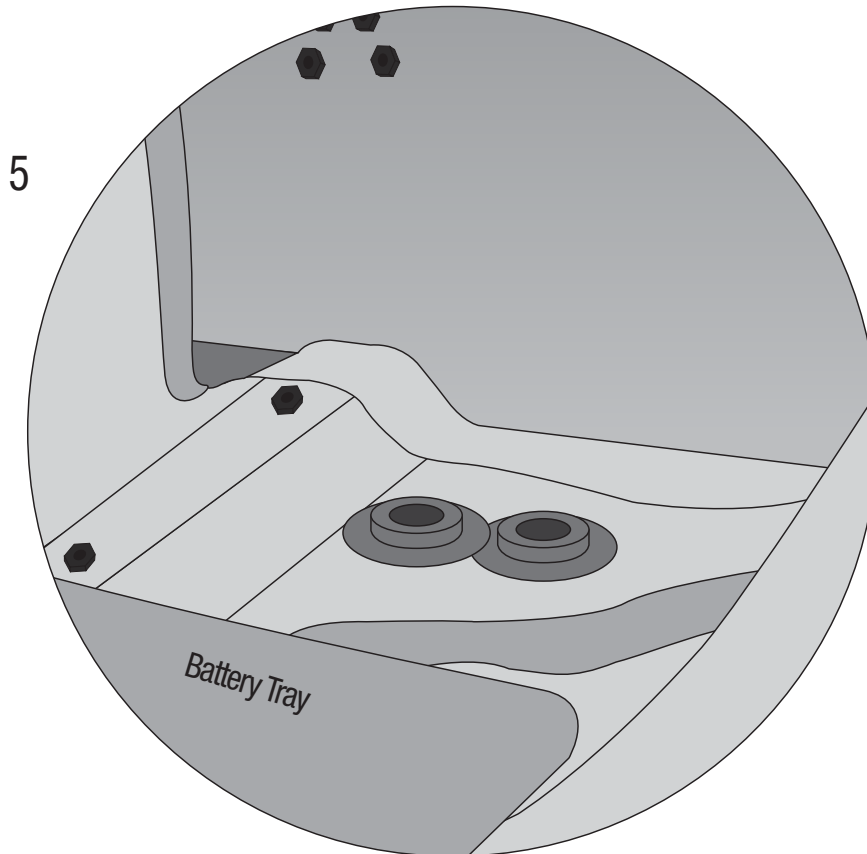
3: Reinstall the hood latch using original hardware.

(The condenser is held in place when the hood latch is reinstalled.)

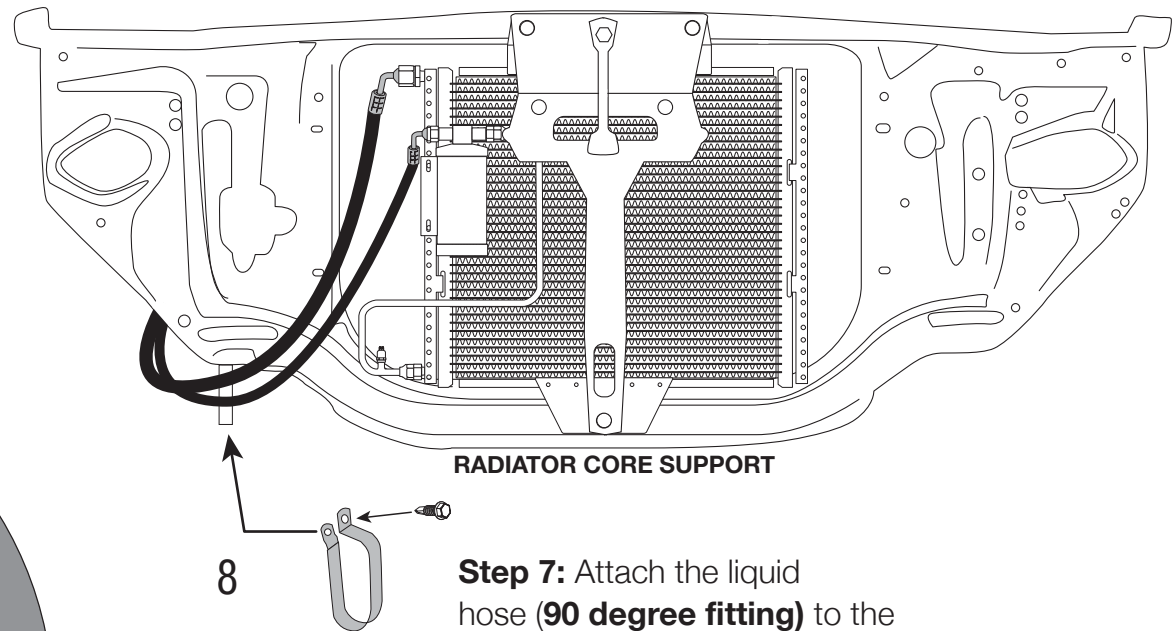
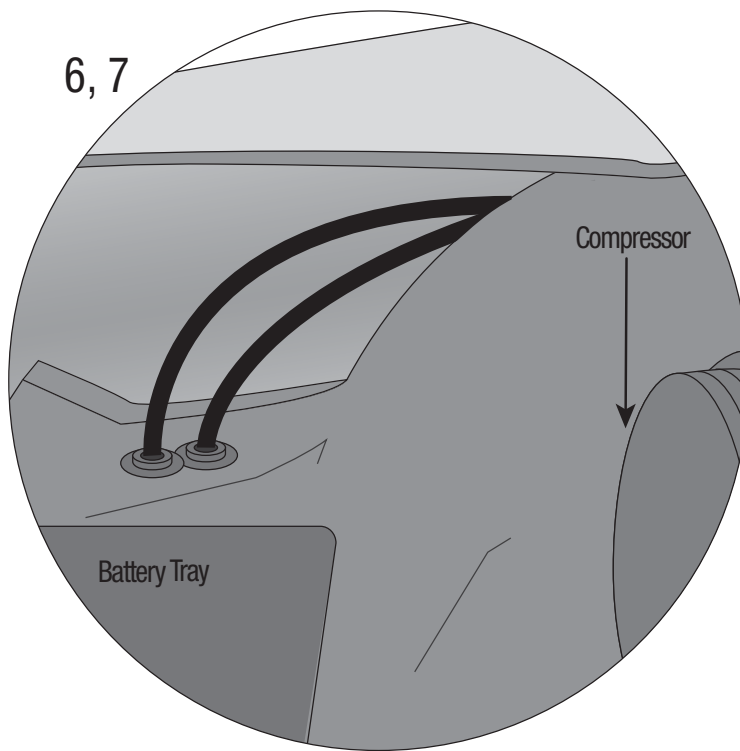
Reinstall the radiator using original hardware.



Step 4 Your OEM fender liner was designed to support A/C hose routing and conveniently has two small indentations on the passenger side behind battery (aftermarket fender liners may or may not have these indentations). Locate these two small indentations and drill a 1-3/8" hole thru each (be sure to check for any obstructions before drilling, and remove any sharp burrs from the drilling before continuing, **Step 5**, Insert two rubber grommets (Part # 14-1098). You'll route the discharge hose thru this hole, as well as the liquid hose and the wiring harness plug for the high-pressure switch.



Step 6: Attach the discharge hose (**45 degree fitting**) to the top of the condenser (**using supplied o-ring and a few drops of mineral oil**) and route around core support and thru the hole previously drilled in fender liner then continuing in towards firewall and connect to compressor.



Step 7: Attach the liquid hose (**90 degree fitting**) to the drier (**using supplied o-ring and a few drops of mineral oil**) and route around core support and thru the hole previously drilled in fender liner then continuing in towards firewall and connect to evaporator connection on firewall.

Step 8: Attach supplied hose clamp using one #10-20 x3/4" TEK screw to frame rail looking through bumper opening on passenger side as shown above.

Install the compressor kit. Included was a premium compressor kit with all the parts you'll need to install the compressor. This kit includes instructions specifically written for your engine. Once you've installed the complete compressor kit, continue on to connecting the hoses.

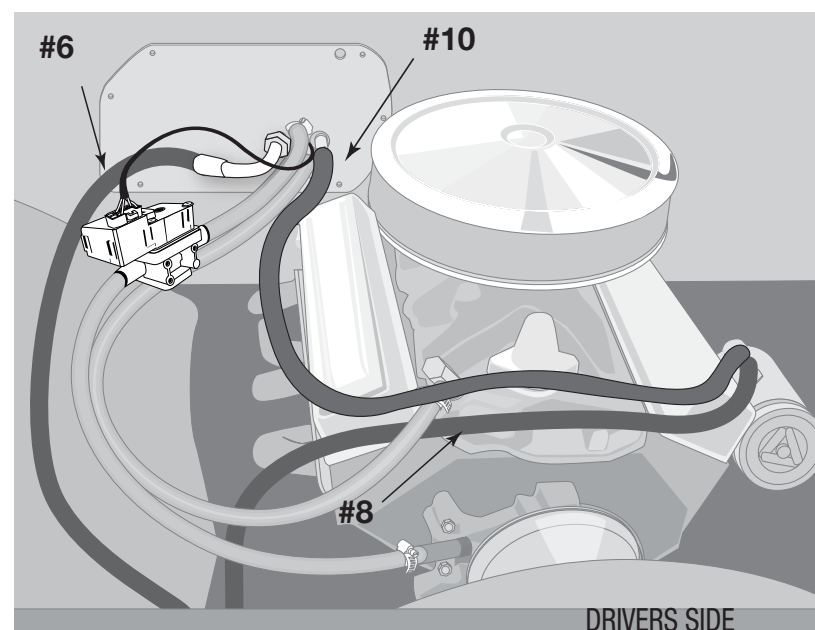
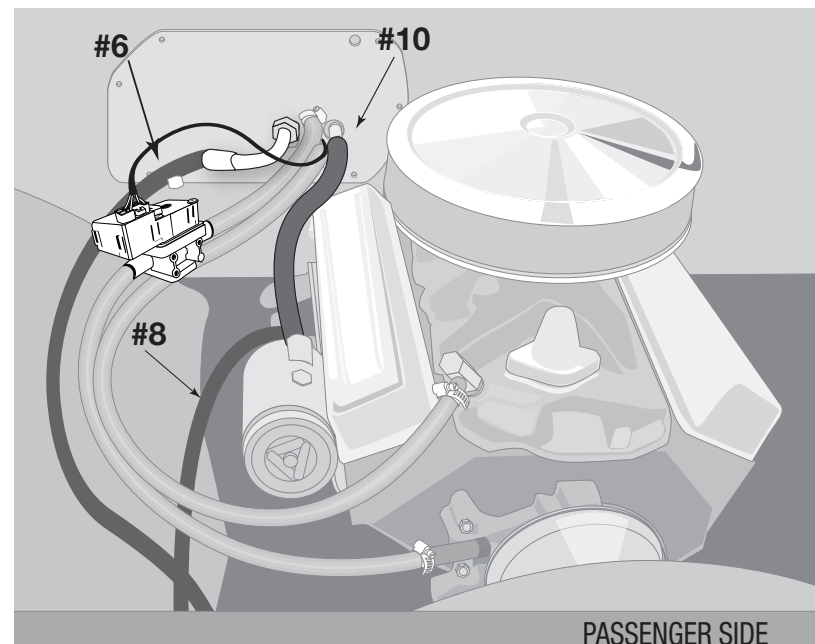
CONNECTING THE HOSES:

Based on PASSENGER or DRIVERS SIDE compressor mounting see illustrations for routing.

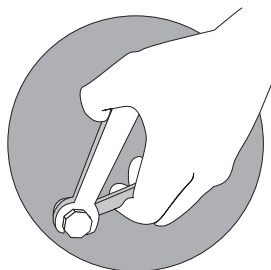
The #10 **(LARGEST)** refrigerant hose. Attach end with service fitting to the compressor using (1) #10 o-ring and a few drops of mineral oil. Attach other end to #10 fitting at the firewall. Attach using one #10 o-ring and a few drops of mineral oil. Tighten securely.

The #6 **(SMALLEST)** refrigerant hose. Route behind fender and to the connection on firewall. Attach using two #6 o-ring and a few drops of mineral oil.

The #8 **(MEDIUM)** refrigerant Hose. Route across engine and to the connection on compressor. Attach using two #8 o-ring and a few drops of mineral oil.



TWO WRENCH METHOD



Reminder...
Use two
wrenches to
tighten o-ring
fittings

New A/C System Preparation... A MUST READ!

Please read through these procedures before completing this new A/C system charging operation.

A licensed A/C technician should be utilized for these procedures to insure that your new system will perform at it's peak, and that your compressor will not be damaged.



- 1) Your radiator/cooling system is an integral part of your new system. Please insure that you have a 50/50 mix of distilled water and antifreeze. The heater coil **MUST** be purged (cycle heater control valve) to make sure no water, without antifreeze, is in the heater coil before you charge the A/C system.
- 2) Evacuate the system for 45 minutes (minimum).
- 3) **Your new compressor MUST be hand-turned 15-20 revolutions before and after charging with liquid. Failure to do this may cause the reed valves to become damaged** (this damage is NOT covered by your warranty).
- 4) Your new system requires 134a refrigerant. It will require 1.5 lbs (or 24 oz).
- 5) Your new compressor comes charged with oil - NO additional oil is needed.
- 6) Insure that the new belt is tight.
- 7) **DO NOT CHARGE SYSTEM WITH LIQUID REFRIGERANT!**

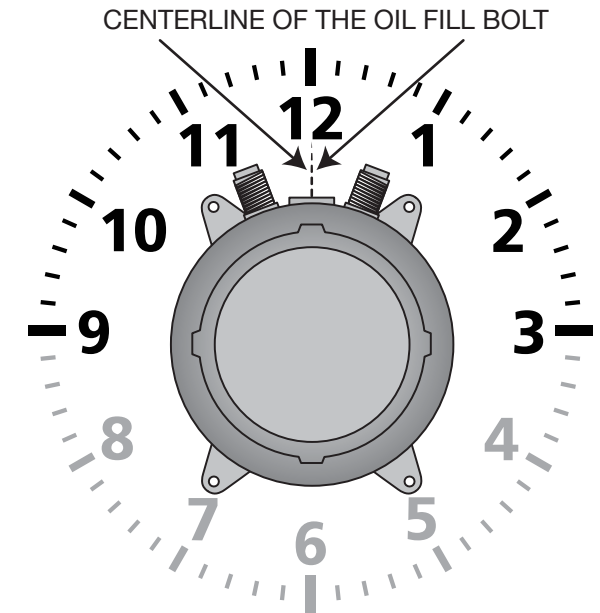
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- Determine the temperature outside of the car
- Connect gauges or service equipment to high/low charging ports
- Place blower fan switch on medium
- Close all doors and windows on vehicle
- Place shop fan directly in front of condenser
- Run engine idle up to approx. 1500 rpm

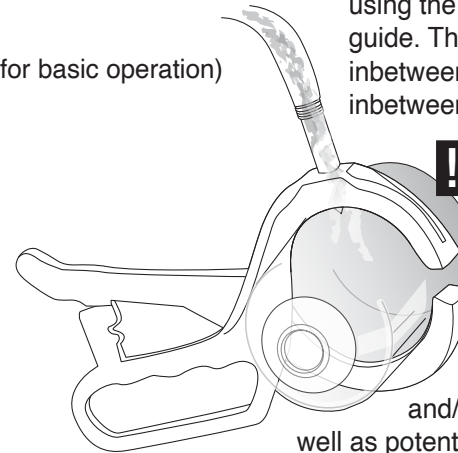
ACCEPTABLE OPERATING PRESSURE RANGES:

1. HIGH-SIDE PRESSURES (150-275 PSI)
2. LOW-SIDE PRESSURES (10-25 PSI in a steady state)

Readings above are based on an ambient temperature of 90° with an adequate airflow on condenser



CAUTION! When mounting your compressor and/or adjusting the belt use caution. Mount by using the centerline of the oil fill plug as your guide. The compressor can **ONLY** be mounted inbetween the 9 to 3 positions. **DO NOT** mount inbetween the 4 to 8 positions.



Do NOT tilt, shake or turn refrigerant can upside-down OR use a charging station to install refrigerant while the engine is running. Doing so will direct liquid refrigerant into the compressor piston

chamber, causing damage to reed valves and/or pistons and/or other components, as well as potentially seizing the compressor. Allow a minimum of 30 minutes for liquid to "boil off." You must hand turn the compressor hub (not the pulley) a minimum of 15 complete revolutions prior to starting the engine with the clutch engaged.

TROUBLESHOOTING GUIDE

TEST CONDITIONS USED TO DETERMINE SYSTEM OPERATION

(THESE TEST CONDITIONS WILL SIMULATE THE AFFECT OF DRIVING THE VEHICLE AND GIVE THE TECHNICIAN THE THREE CRITICAL READINGS THAT THEY WILL NEED TO DIAGNOSE ANY POTENTIAL PROBLEMS).

- B. CONNECT GAUGES OR SERVICE EQUIPMENT TO HIGH/LOW CHARGING PORTS.
- C. PLACE BLOWER FAN SWITCH ON MEDIUM.
- D. CLOSE ALL DOORS AND WINDOWS ON VEHICLE.
- E. PLACE SHOP FAN IN FRONT OF CONDENSER.
- F. RUN ENGINE IDLE UP TO 1500 RPM.

ACCEPTABLE OPERATING PRESSURE RANGES (R134A TYPE)

- 1. HIGH-SIDE PRESSURES (150-275 PSI) **Note- general rule of thumb is two times the ambient (daytime) temperature, plus 15-20%.*
- 2. LOW-SIDE PRESSURES (10-25 PSI in a steady state).

CHARGE AS FOLLOWS: R134A = 24 OZ.
NO ADDITIONAL OIL IS NECESSARY IN OUR NEW COMPRESSORS.

TYPICAL PROBLEMS ENCOUNTERED IN CHARGING SYSTEMS

NOISY COMPRESSOR. A noisy compressor is generally caused by charging a compressor with liquid or overcharging

- A. If the system is overcharged both gauges will read abnormally high readings. This is causing a feedback pressure on the compressor causing it to rattle or shake from the increased cylinder head pressures. System must be evacuated and re-charged to exact weight specifications.
- B. Heater control valve installation - Installing the heater control valve in the incorrect hose. Usually when this occurs the system will cool at idle then start to warm up when raising the RPM's of the motor. THE HEATER CONTROL IS A DIRECTIONAL VALVE; MAKE SURE THE WATER FLOW IS WITH THE DIRECTION OF THE ARROW. As the engine heats up that water transfers the heat to the coil, thus overpowering the a/c coil. A leaking or

faulty valve will have a more pronounced affect on the unit's cooling ability. Installing the valve improperly (such as having the flow reversed) will also allow water to flow through, thus inhibiting cooling. Check for heat transfer by disconnecting hoses from the system completely. By running down the road with the hoses looped backed through the motor, you eliminate the possibility of heat transfer to the unit.

- C. Evaporator freezing - Freezing can occur both externally and internally on an evaporator core. External freeze up occurs when the coil cannot effectively displace the condensation on the outside fins and the water forms ice (the evaporator core resembles a block of solid ice), it restricts the flow of air that can pass through it, which gives the illusion of the air not functioning. The common cause of external freezing is the setting of the thermostat and the presence of high humidity in the passenger compartment. All door and window seals should be checked in the event of constant freeze-up. A thermostat is provided with all units to control the cycling of the compressor.
- D. Internal freeze up occurs when there is too much moisture inside the system. The symptoms of internal freeze up often surface after extended highway driving. The volume of air stays constant, but the temperature of the air gradually rises. When this freezing occurs the low side pressure will drop, eventually going into a vacuum. At this point, the system should be checked by a professional who will evacuate the system and the drier will have to be changed.
- E. Inadequate airflow to condenser - The condenser works best in front of the radiator with a large supply of fresh air. Abnormally high pressures will result from improper airflow. Check the airflow requirements by placing a large capacity fan in front of the condenser and running cool water over the surface. If the pressures drop significantly, this will indicate the need for better airflow.
- F. Incorrect or inadequate condenser capacity - Incorrect condenser capacity will cause abnormally high head pressures. A quick test that can be performed is to run cool water over the condenser while the system is operating, if the pressures decrease significantly, it is likely a airflow or capacity problem.
- G. Expansion valve failure - An expansion valve failure is generally caused by dirt or debris entering the system during assembly. If an expansion valve fails it will be indicated by abnormal gauge readings. A valve that is blocked will be indicated by high side that is unusually high, while the low side will be unusually low or may even go into a vacuum. A valve that is stuck open will be indicated by both the high and low pressures rising to unusually high readings, seeming to move toward equal readings on the gauges.
- H. Restrictions in system - A restriction in the cooling system will cause abnormal readings on the gauges. A high-side restriction (between the compressor and the drier inlet) will be indicated by the discharge gauges reading excessively high. These simple tests can be performed by a local shop and can help determine the extent of the systems problem.

Trouble Shooting Your Classic Auto Air A/C System

PROBLEM: system is not cooling properly

ISSUE: cold at idle, warmer when raising engine RPM's

Make sure the Water Valve is positioned correctly

The water valve is a directional valve and should be installed with the arrow pointing towards the water pump, it should be connected to the heater hose that runs from the heater core to the water pump. If the water valve is connected to the incorrect hose it allows water to circulate through the system via the heater core over powering the cooling effect of the A/C coil, (normally the air conditioning is functioning properly).

Step 1: Check placement of the water valve, correct if needed. (In some cases changing the location of the water valve may not fix the above problem.) Continue to next step.

Step 2 If changing the location of the water valve does not rectify the issue, then possibly the water valve is permanently damaged and may need to be replaced. To check the integrity of the water valve completely remove the water hoses for the heater core and "loop" together. (This will remove the heater system completely from the possibilities) If the system now cools, replace the water valve

Verify Adequate Air Flow to Condenser

For an air conditioning system to function properly there has to be adequate airflow across the condenser. The function of the condenser is to dissipate heat, without proper airflow your system will not cool correctly in the cabin of your vehicle.

Step 1: connect gauges to a/c hoses. The pressures should be: with the ambient temp is 90, low side pressures should be between 10-25 psi, high side pressures should be between 150-275 psi

Step 2: IF the low side pressures are normal and the high side pressures are high then there might be an airflow issue, continue to next step.

To test air flow to Condenser do the following three tests:

1. Place a piece of paper on the condenser with the car in idle and see if paper is held in place.
2. With car in idle, attach gages, and place a large capacity fan in front of

the condenser. What happens to the pressures?

3. With car still in idle and gages attached, pour water down the front of the condenser. What happens to the pressures?

If the paper is held in place you are at least getting some air flow. If the high side decreases during test 2 & 3 then your condenser is not getting enough air which is causing your system to not cool properly. To correct this issue you will need a more powerful mechanical fan.

Step 3: Confirm correct Refrigerant charge in System

All of our systems should be charged with 24 oz or 1.5 lbs of R134A Refrigerant only. If overcharged you will need to evacuate the system and recharge with the correct amount.*

What measurements mean:

Low Temp and High Pressure seem to be equal...

You have a malfunctioning expansion valve that is stuck open.

High Side is extremely high and Low Side is extremely low (possibly into vacuum)...

There is a blockage in the system. Remove hoses and blow compressed air through in both directions. If pressures don't change its possible that your expansion valve is stuck closed and would have to be replaced.

*Compressor Concerns:

This is often misdiagnosed as a problem for the system not cooling properly. If you have a noisy compressor it is due to improper charging of refrigerant. An overcharged (more than 24 oz or 1.5 lbs R134A) compressor can cause rattling. If charged with pure liquid there is a high probability you have bent reed valves that are causing tapping sound.

SCAN QR code
with your mobile camera

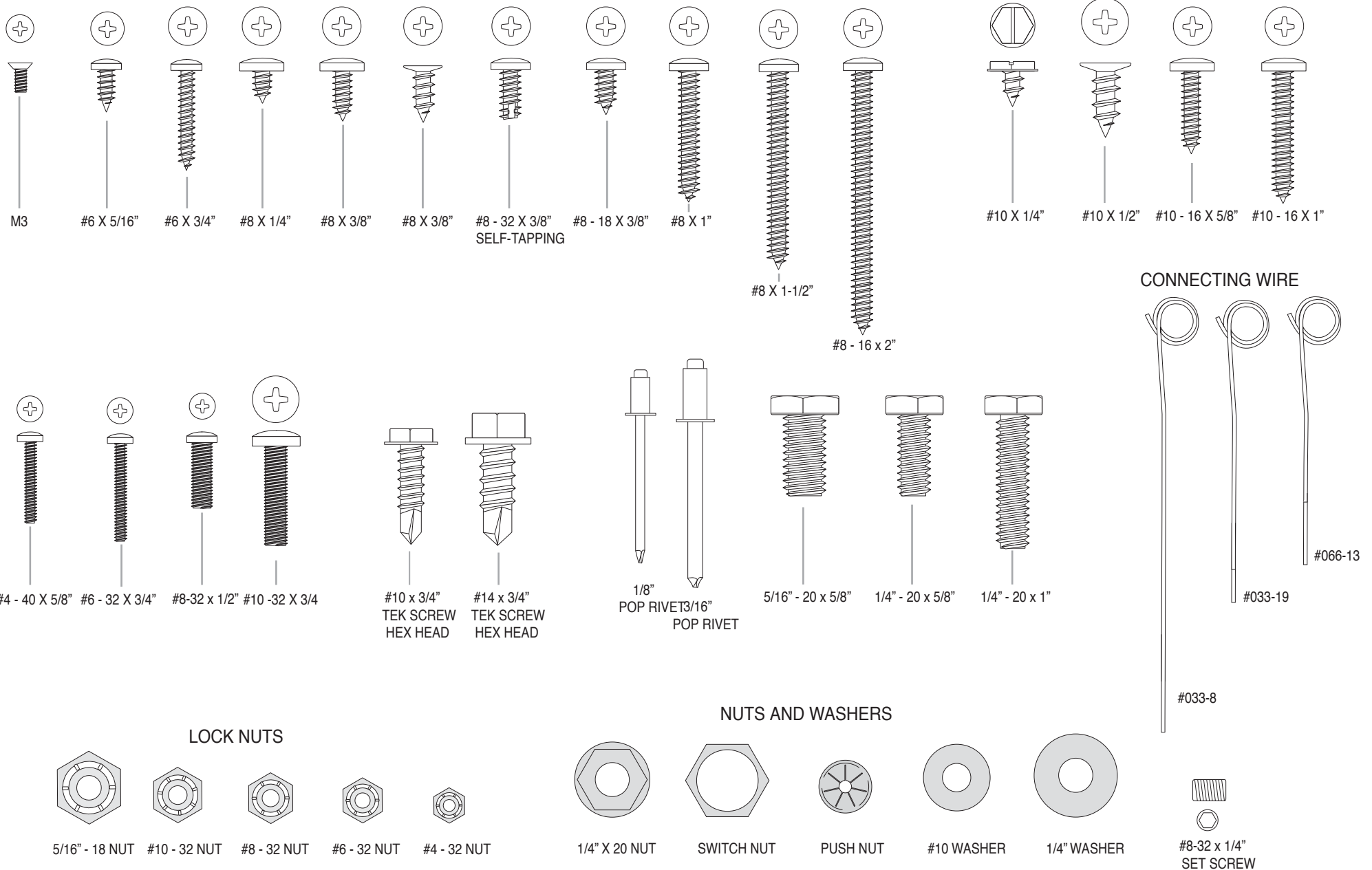
Get the technical support you want the moment you need it, with no wait times. Simply **SCAN** the **QR code** and be directly taken to our support section to troubleshoot all things A/C.



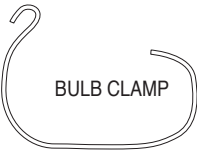
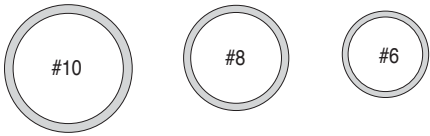


Classic Auto Air Hardware Reference Guide

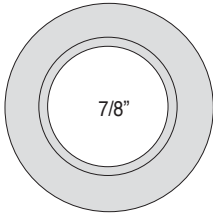
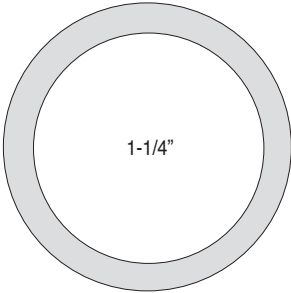
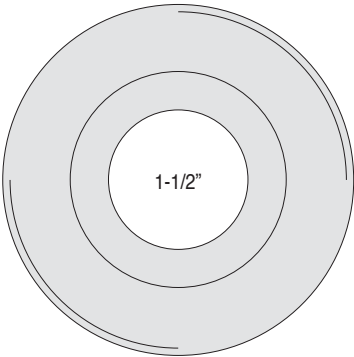
This is our basic line-up of hardware. No single kit will not contain all of these, but you can use this guide to match-up hardware for shape and size (all of these are actual size.)



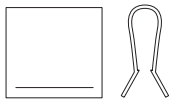
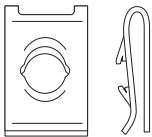
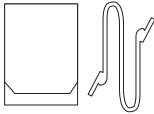
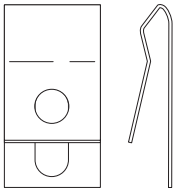
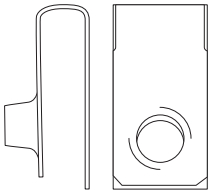
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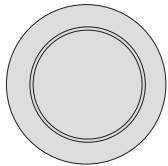
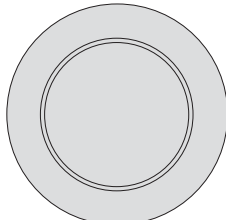
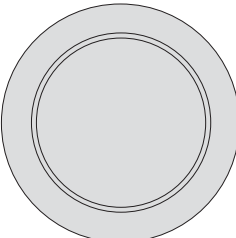
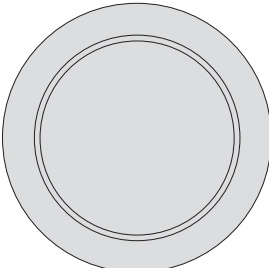
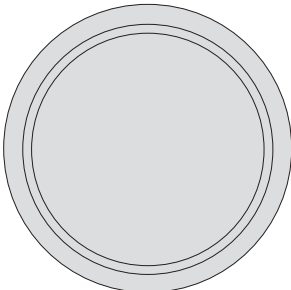
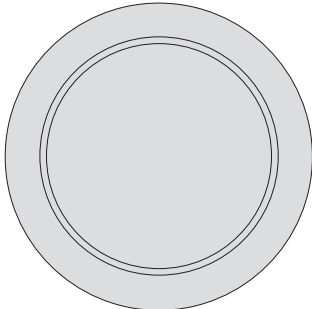
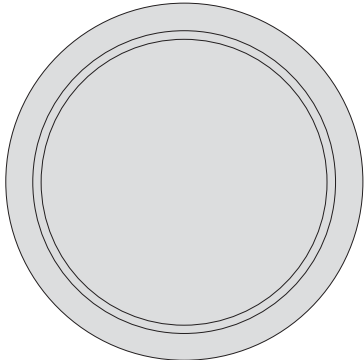
GROMMETS



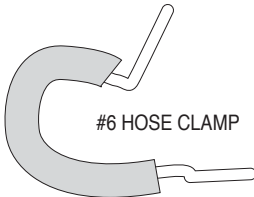
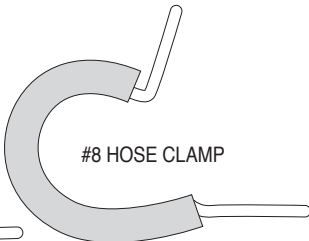
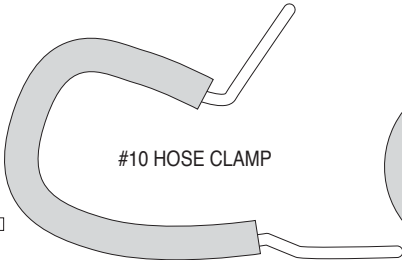
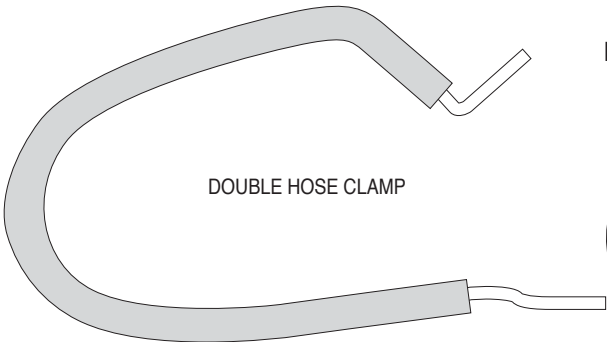
CLIPS



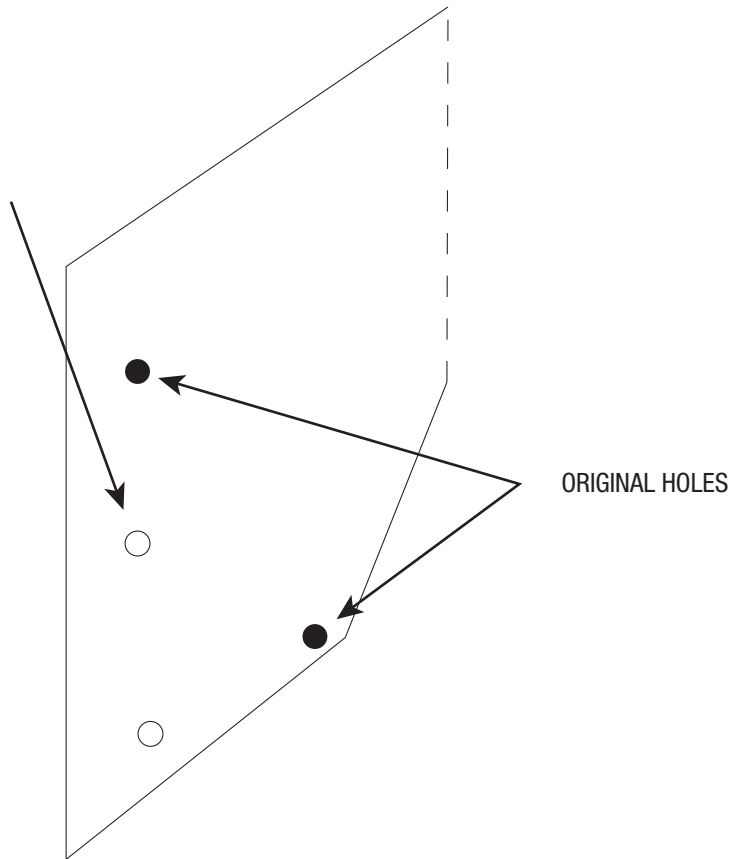
HOLE PLUGS



HOSE CLAMPS



TWO NEW HOLES
7/64" DIAMETER



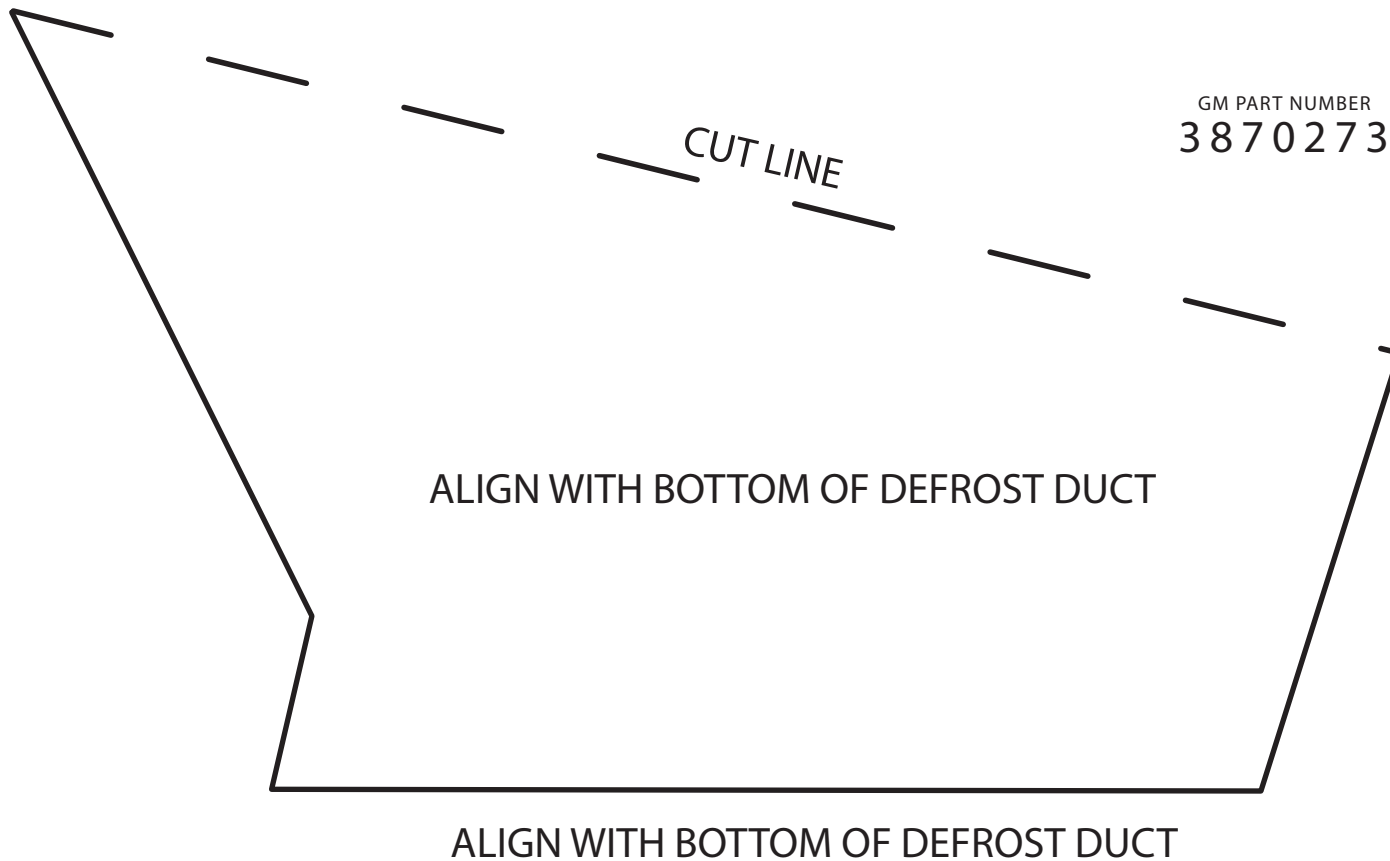
ORIGINAL HOLES



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GM PART NUMBER
3870273

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