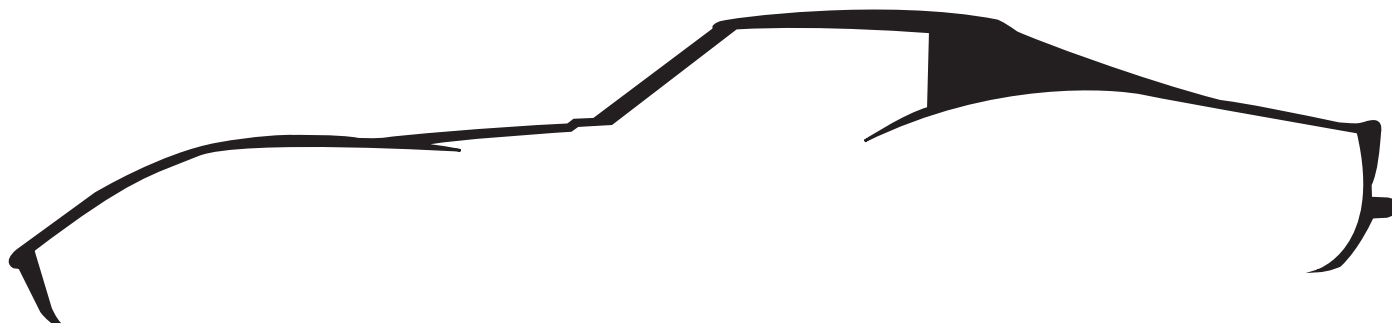




Installation Manual

1968-74 Corvette

DOCUMENT #1-3053

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Congratulations...

You have just purchased the highest quality, best performing A/C system ever designed for your Corvette.

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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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:

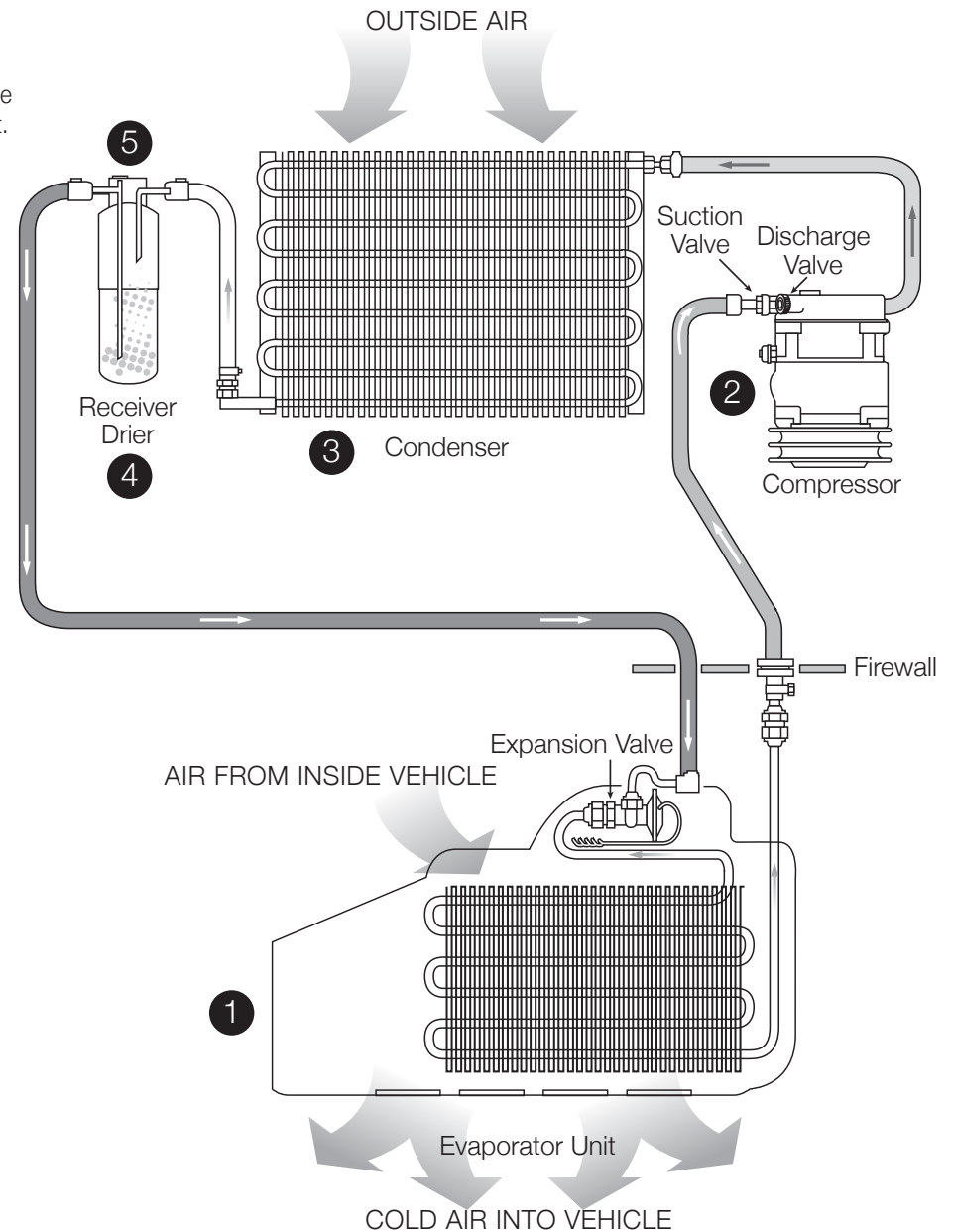
- ☐ **Fittings:** Use one or two drops of mineral oil (supplied with your kit) on ALL rubber o-rings, threads and rear of bump for o-ring where female nut rides. Do not use thread tape or sealants.
- ☐ Measure twice (or more), cut once
- ☐ **Should you have any technical questions, or feel you have defective 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...

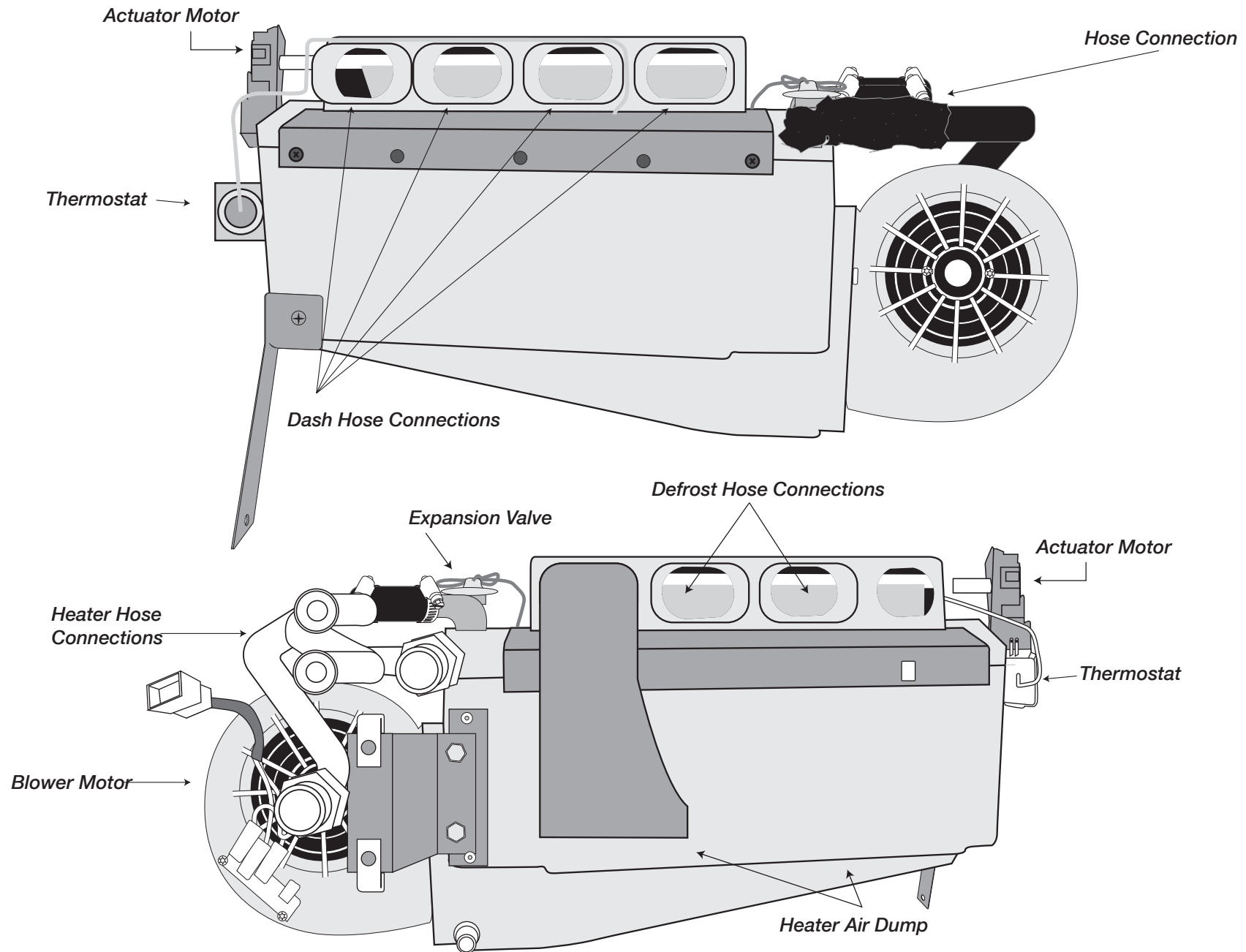
A Basic Overview of Automotive A/C....

- 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.



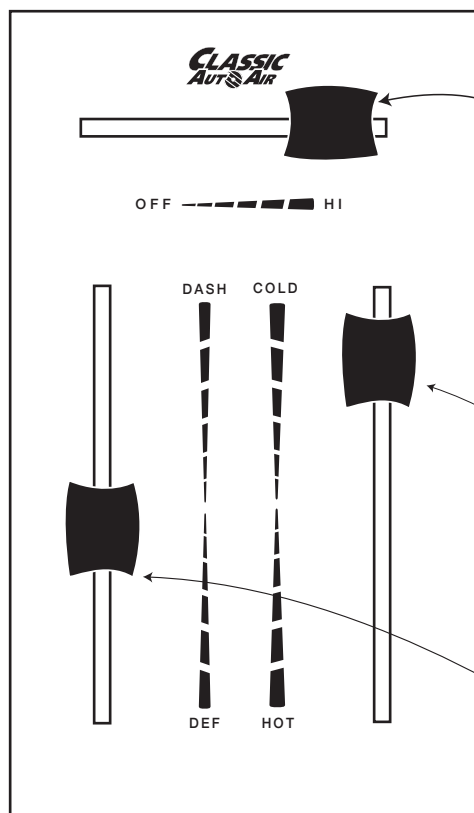
Familiarize yourself with the Evaporator





Control & Operating Instructions

Your new **Smart 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 A/C Series** for maximum comfort...



FAN SWITCH

The FAN switch works like the OEM switch, the far left position is OFF (all power to the system is OFF in this position)

TEMP LEVER

The COLD/HOT positions works like any traditional adjustment lever

MODE LEVER

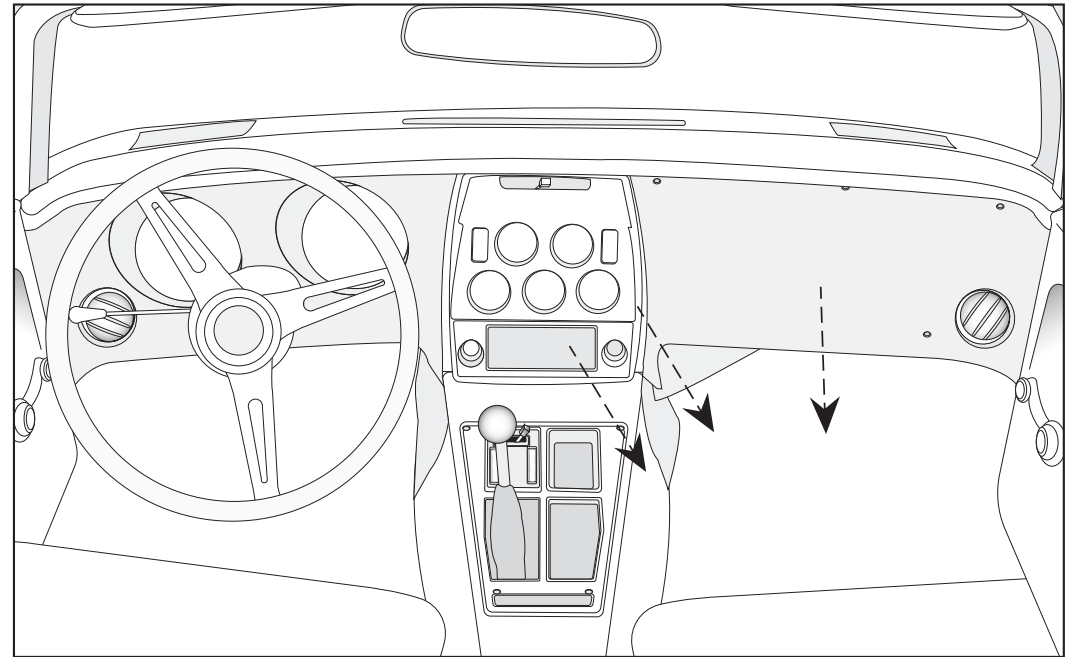
FAN	LEFT  RIGHT			
BLOWER	OFF	LOW	MED	HIGH

MODE	POSITION	MODE	COMPRESSOR
	1	Dash A/C 100%	ON
	2	Dash A/C 90% DEF/FLR 10%	ON
	3	Dash A/C 80% DEF/FLR 20%	ON
	4	Dash A/C 70% DEF/FLR 30%	ON
	5	Dash A/C 60% DEF/FLR 40%	ON
	6	Dash 50% Defrost 50%	ON
	7	Dash 40% Defrost 60%	ON
	8	Dash 30% Defrost 70%	ON
	9	Dash 20% Defrost 80%	ON
	10	Floor 10% Defrost 90%	ON
	11	Defrost 100%	ON

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



Remove Glovebox, Console (optional) Radio and Bezel, and set them aside for reinstall later (see figure 1).



The removal of the Original Heater Assembly can be accomplished by disconnecting three control cables. One is attached to the Heat/Defrost door (see figure 2). One is attached to the Temperature door, and one is attached to the Vent / Heat door (see figure 3). Disconnect the electrical harness from the assembly. Also remove attachment screw located in front of the air inlet (see figure 4).



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.

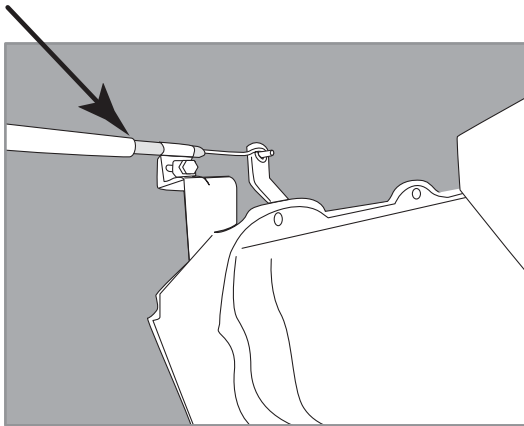


FIGURE 2

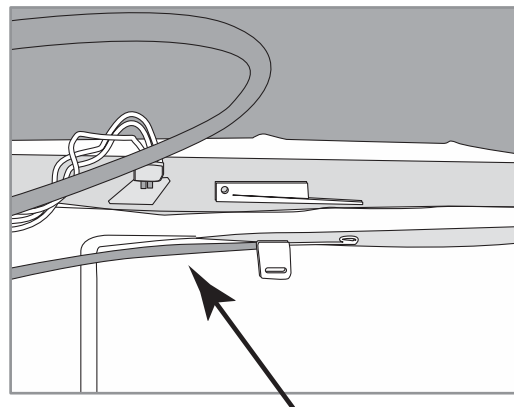


FIGURE 3

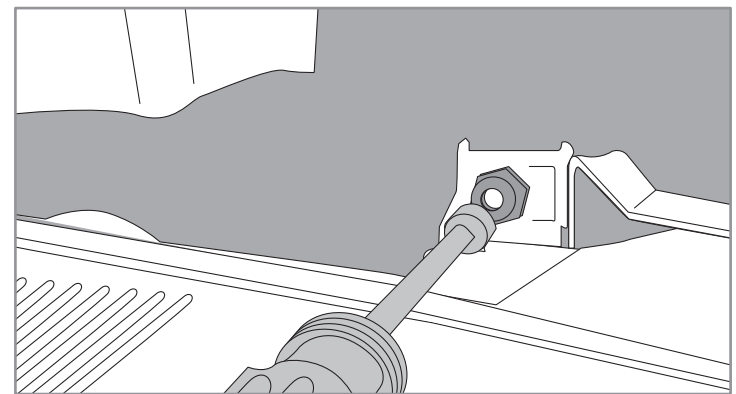


FIGURE 4

Disconnect the electrical harness at the resistor block (see Figure 5).

Remove the (4) screws that hold the console control assembly.
Remove the "Vent" knobs using an allen wrench. Retain knobs.
Remove the console cover. Retain all original hardware.
(you will need the bezel later).

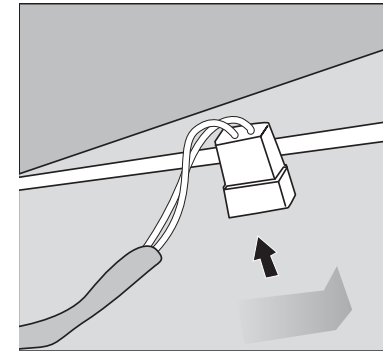
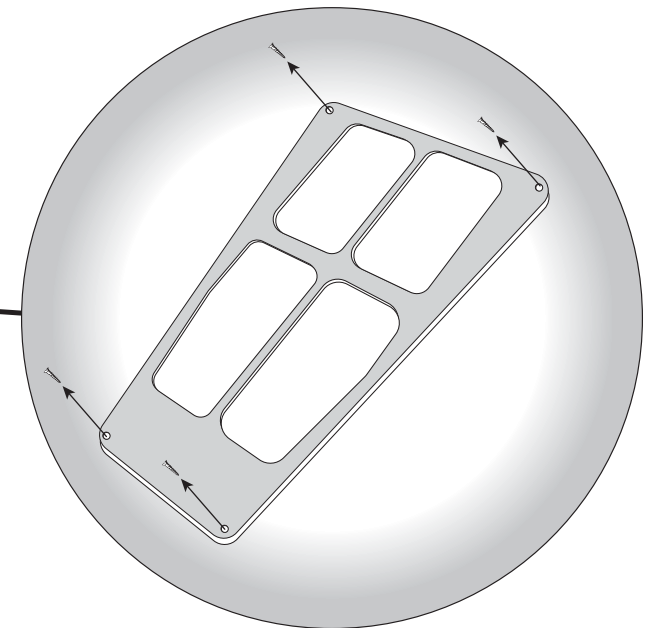
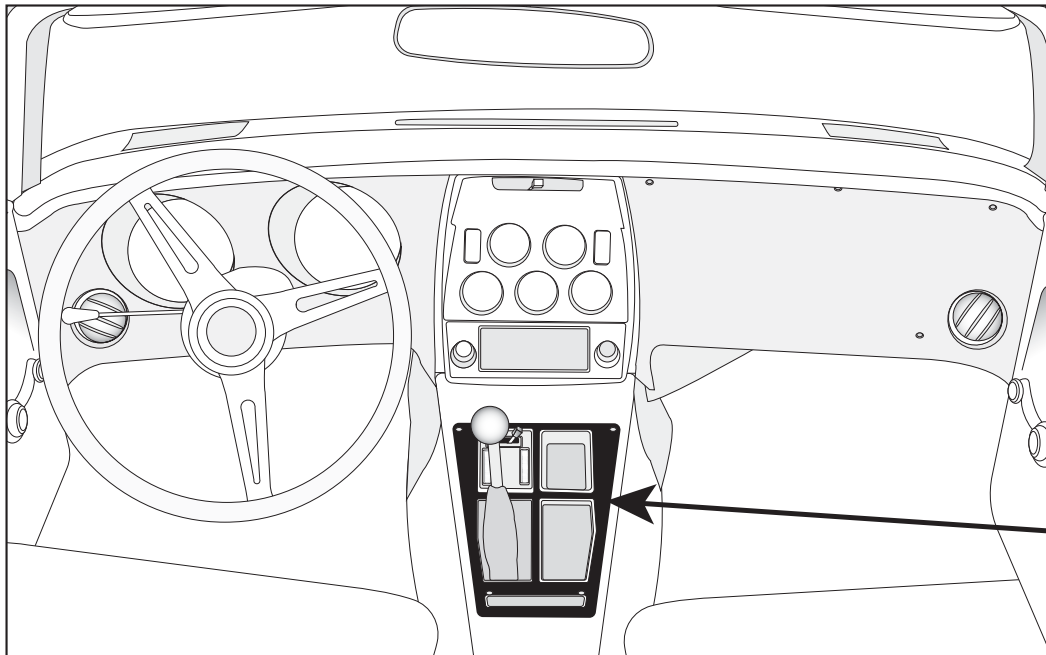
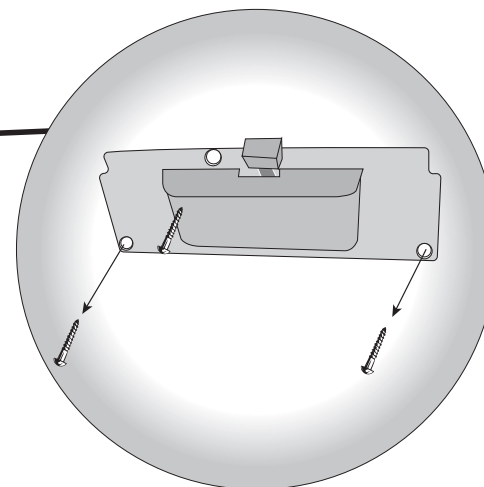
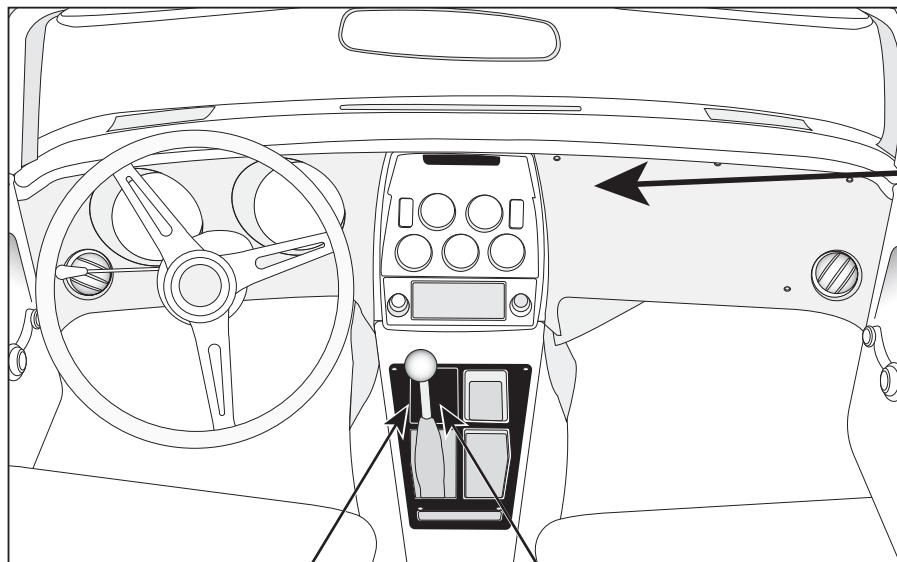


FIGURE 5

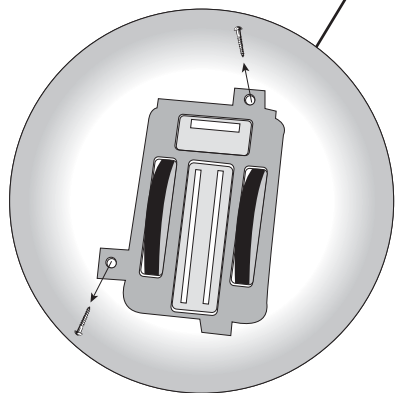


CAUTION:
WHEN VEHICLE IS EQUIPPED WITH FIBER OPTICS.
CAREFULLY REMOVE THE CONSOLE COVER.

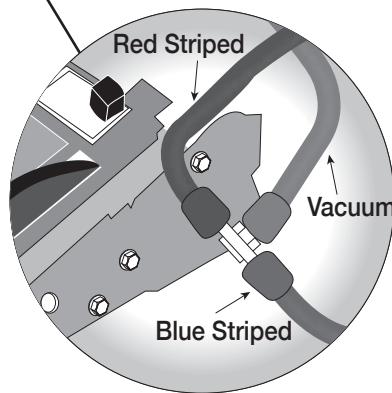
DISCONNECT BATTERY. (BATTERY IS LOCATED INSIDE THE CAR BEHIND THE DRIVERS SEAT)



Remove the (3) screws that hold the center bezel in place. Retain bezel screws.



Remove the OEM control head, which is held in with two screws. Retain the OEM screws.



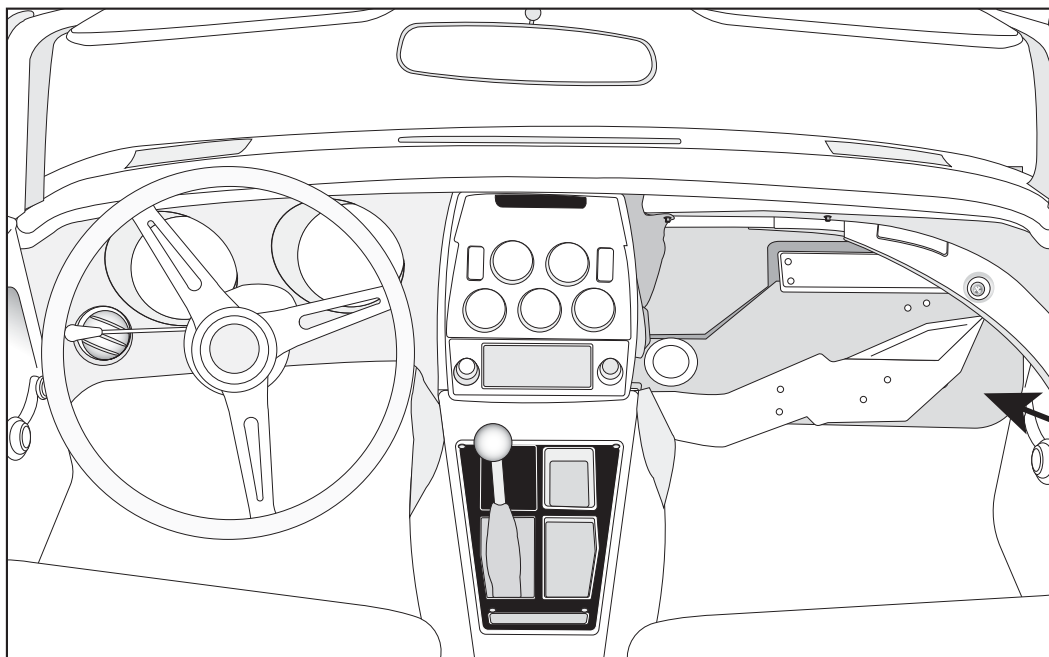
Locate the vacuum Tee from Bag Kit B. Attach the red striped, the blue striped and the black vacuum source to the Tee.



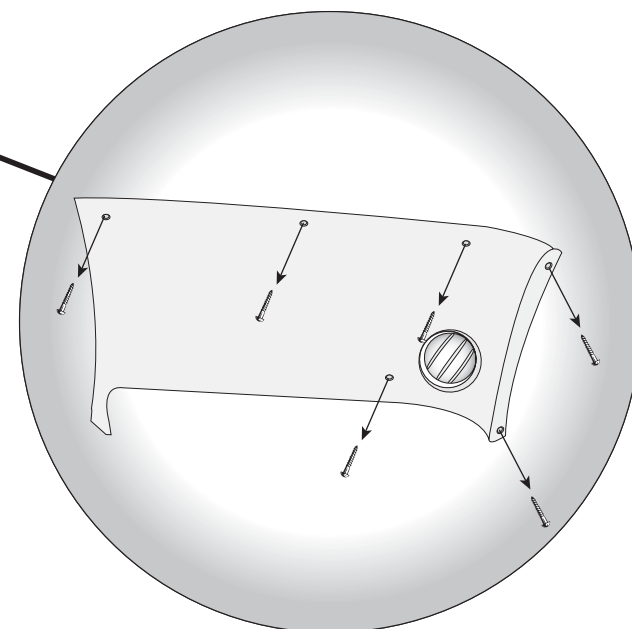
Factory A/C Cars

When removing controls make certain to plug any open vacuum source.

Remove passenger kick panel and retain hardware, remove vacuum motor and mounting hardware. Use existing spring to keep fresh air door.



On the passenger side of the instrument panel.
Locate and remove the (5) screws that attach the cover to the car.
Retain all original hardware.



Moving to the engine compartment:

In order to remove your heater assembly it is necessary to remove the heater case housing first.

Located on the engine side of the firewall, remove six (6) bolts around the perimeter of the heater case housing (see Figure 7). Remove the housing (Discard).

NOTE: To remove the two bolts at locations **1A** and **6B**, it may be necessary to lower the inner fender. Retain these screws.

Drain coolant from radiator. Remove the heater hoses from heater coil and firewall (see Figure 8).

You will also cut a power lead to the blower motor. This will not be re-used.

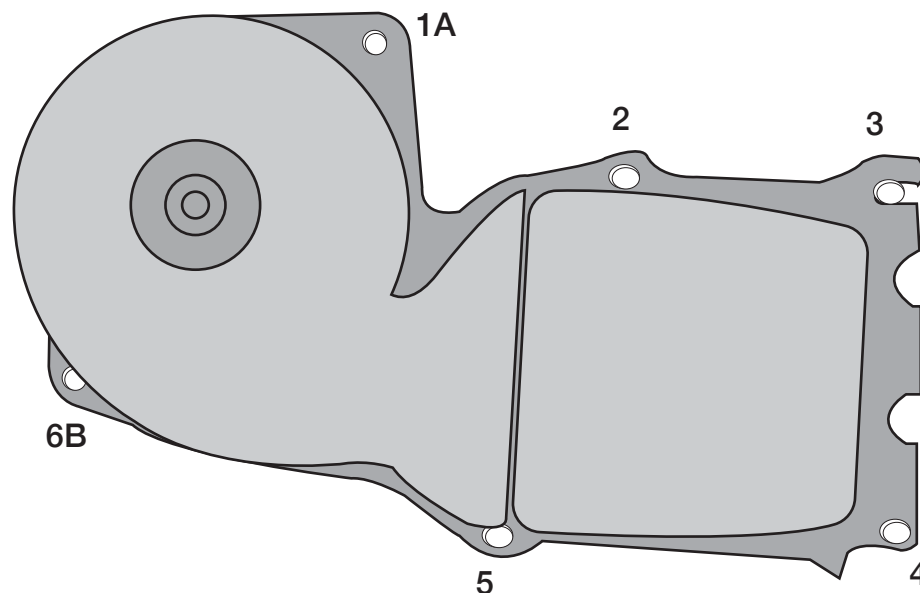


FIGURE 7

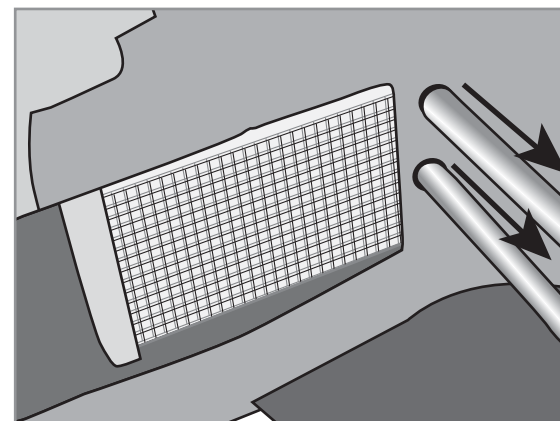
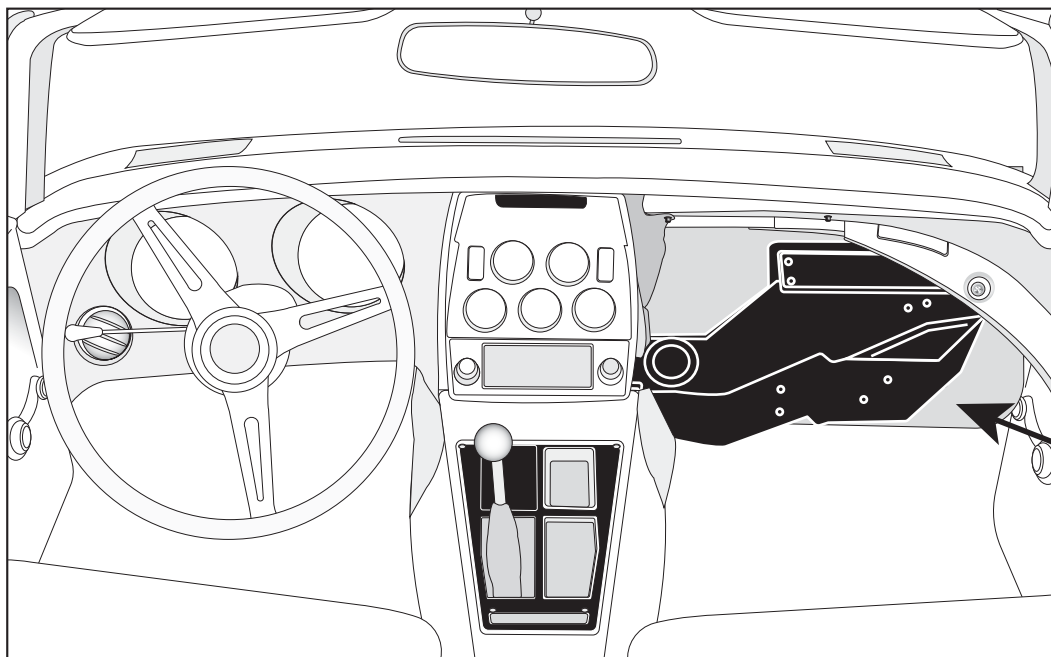
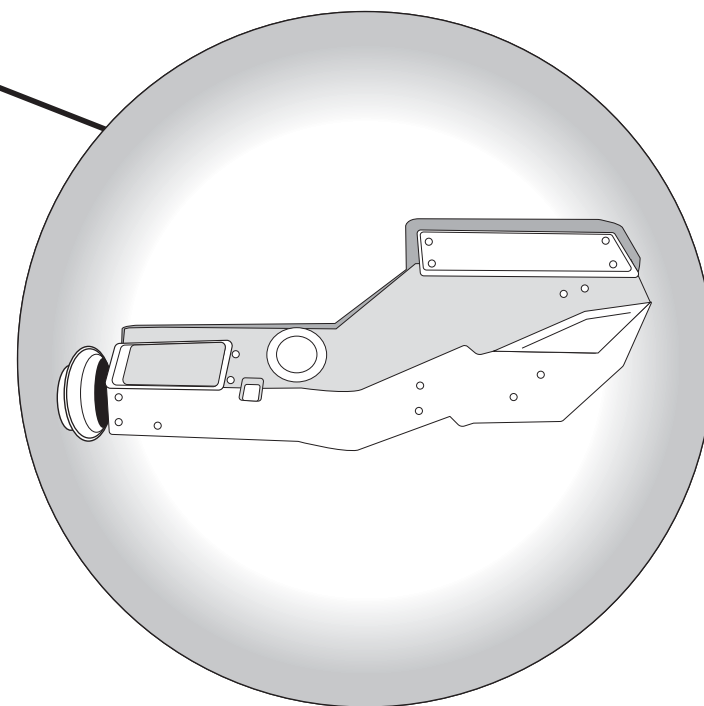


FIGURE 8

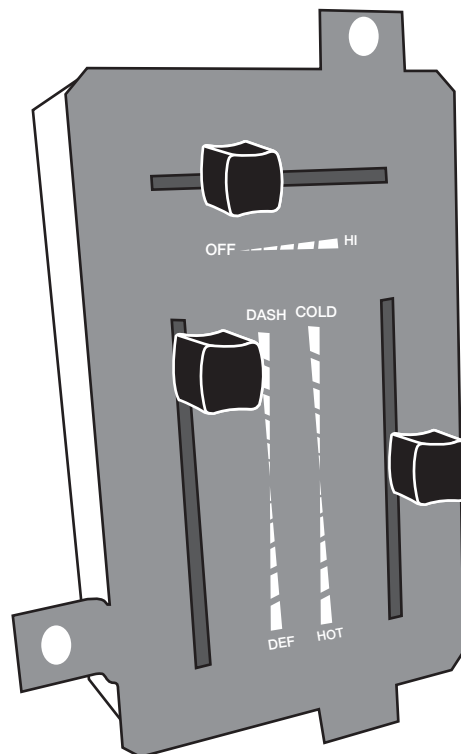


You should now be able to remove the heater assembly located behind the dash area.
Rotate upward being careful not to drain any coolant left in the heater coil.



THESE ARE THE PARTS YOU WILL FIND IN CONTROL BOX

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



**D.E.R. Controller, 1968-74 Corvette
PN #16-4053**

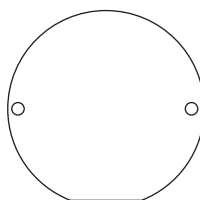


THESE ARE THE PARTS YOU WILL FIND IN BAG KIT B

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



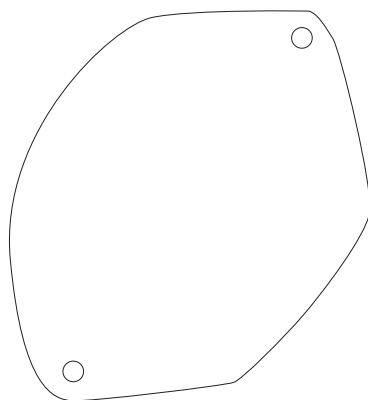
*Evaporator Support Brackets
PN#0023-7*



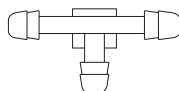
*One Air Inlet Block Off
PN#0088-9*



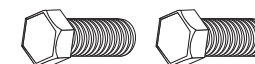
One #8 - 20x3/8" Screws



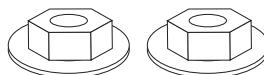
*Fresh Air Inlet Block Off
PN#10-1048-2*



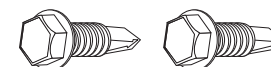
3/16" Vacuum Tee



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



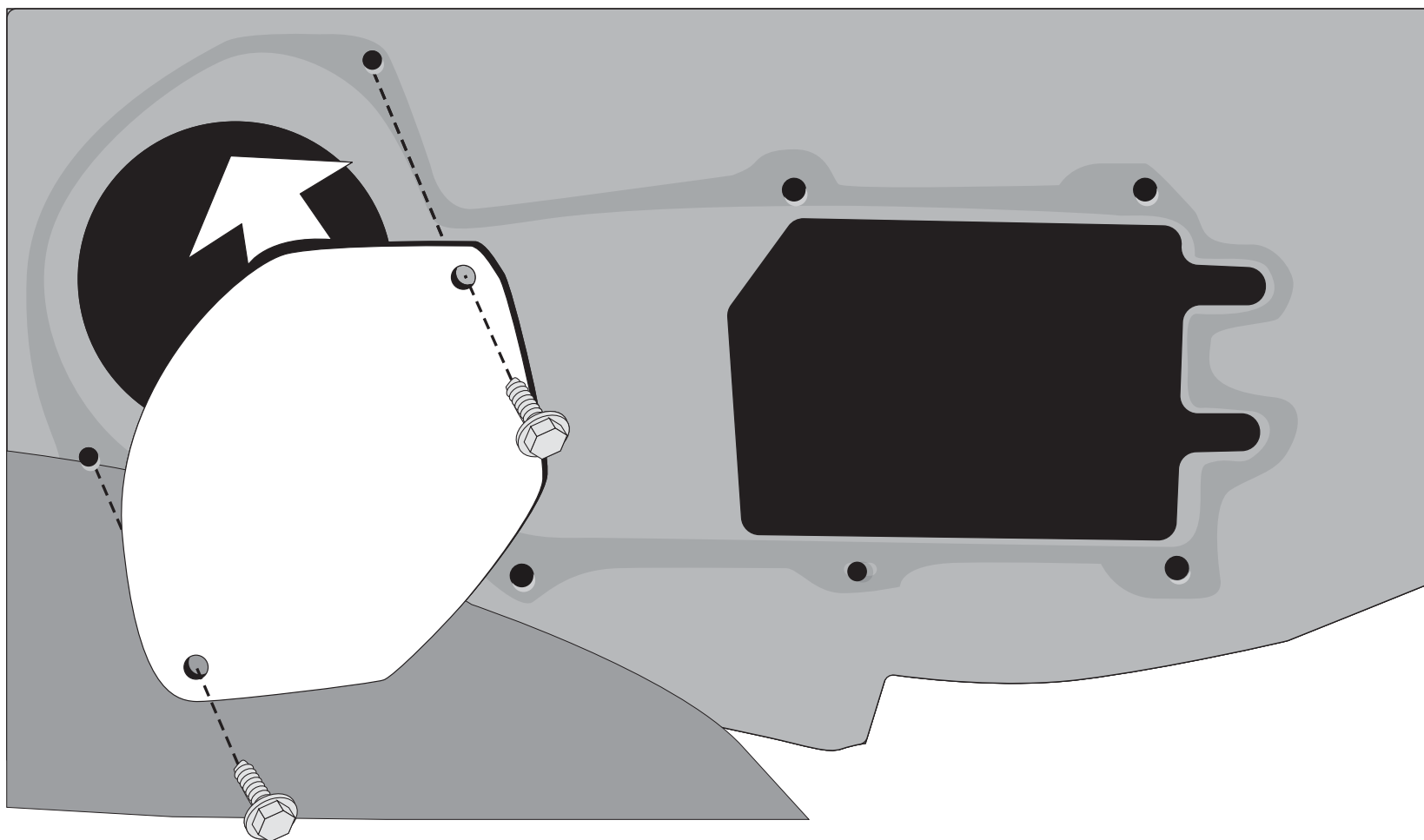
Two Flange Nut



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

Within the engine compartment area, Install Fresh Air inlet block-off Pn# 10-1048-2 (from Bag Kit B) over the OEM fan opening using the OEM screws (1A and 6B).

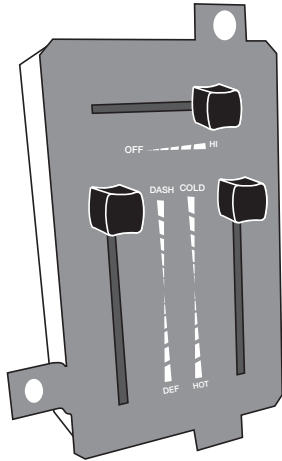
If necessary, reinstall inner fender. Remove evaporator unit from box and place on a work surface.



OPERATIONS

• Steps 1 thru 3

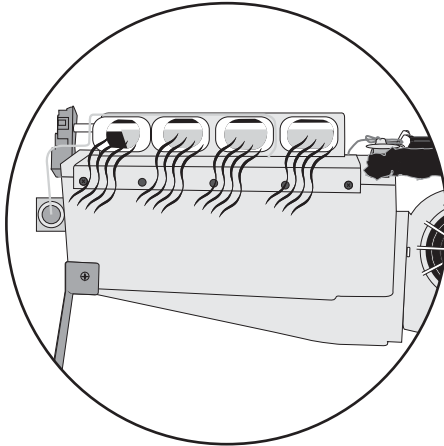
1



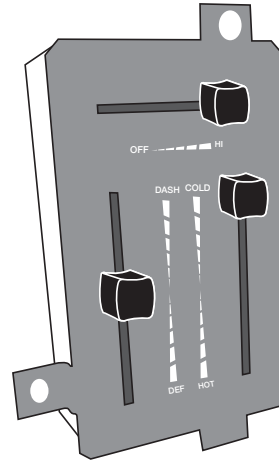
Move FAN knob to HIGH
Move MODE knob to DASH
Move TEMP knob to COLD



AIR OUT OF DASH VENTS



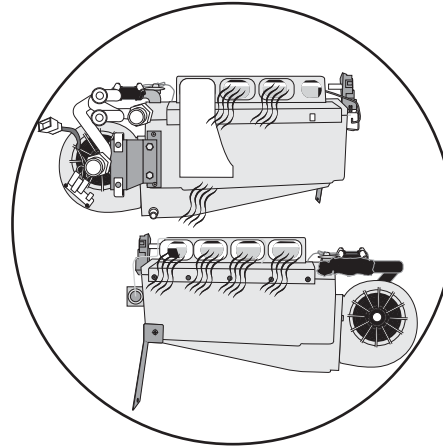
2



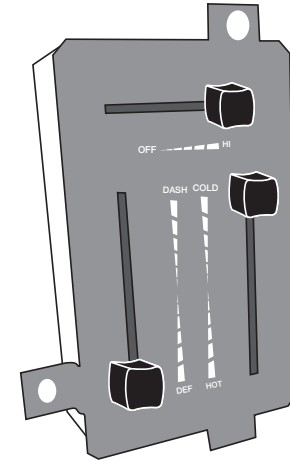
Move MODE knob to BLEND



AIR OUT OF ALL VENTS
(50/50)



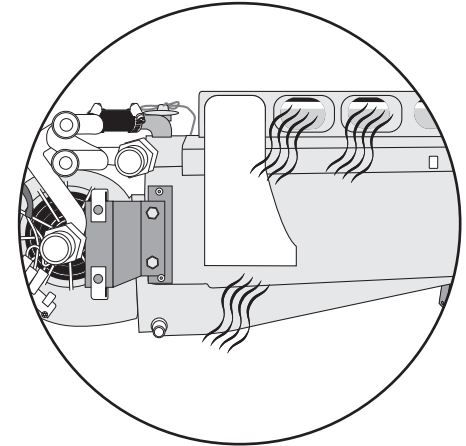
3



Move MODE knob to DEFROST

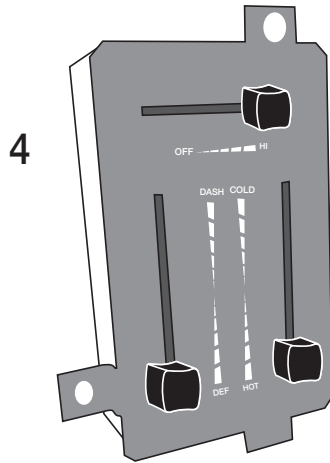


AIR OUT OF FLOOR/DEFROST VENTS

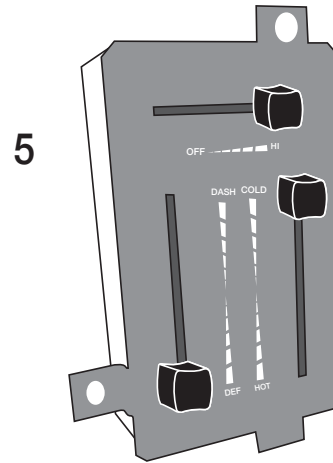


OPERATIONS

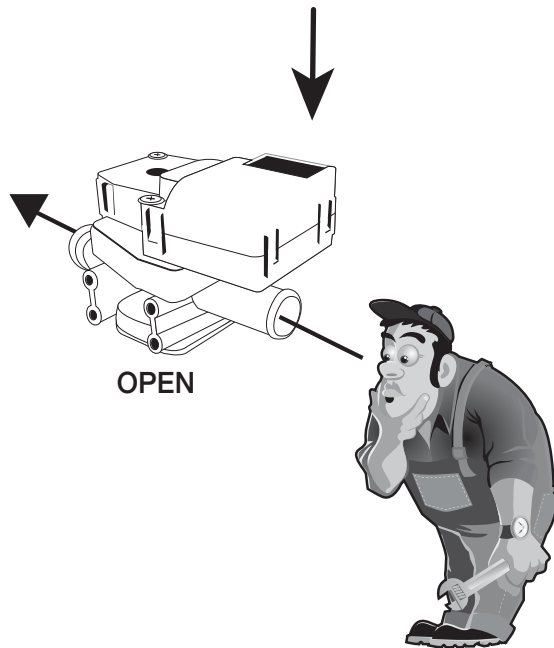
• Steps 4 and 5



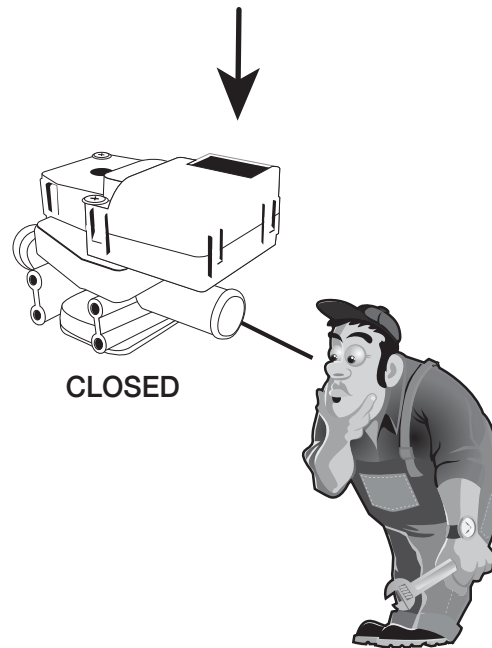
Move TEMP knob to HOT



Move TEMP knob to COLD



You will be able to see through water valve passage



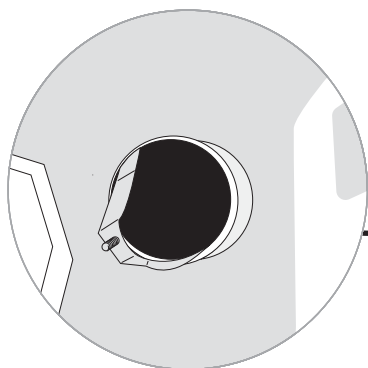
You will NOT be able to see through water valve passage

Return all wiring harnesses, water valve, and ECU to their originally bags/boxes (this keeps them organized for future installation steps).

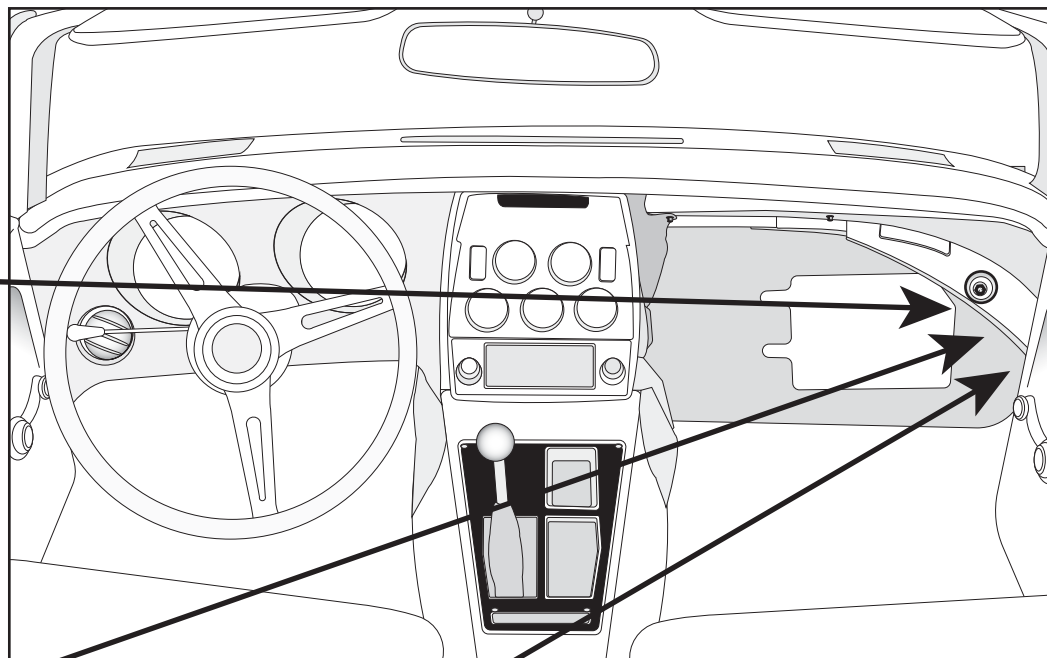
Your controls are now fully calibrated to your unit. Please refer to the next steps in your installation manual for installing the system in your vehicle.

NOTE: IF DURING ANY OF THESE STEPS YOU DO NOT GET THE CORRECT OUTCOME, PLEASE CALL TECH SUPPORT BEFORE INSTALLING INTO VEHICLE. 1(866)435-7801

1

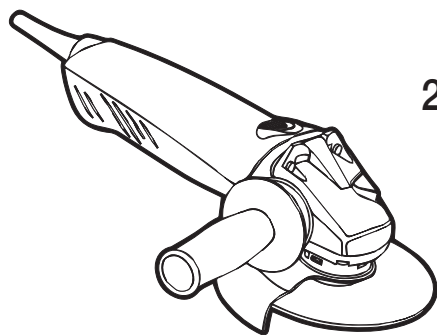


Locate on the passenger kick panel the inlet collar.



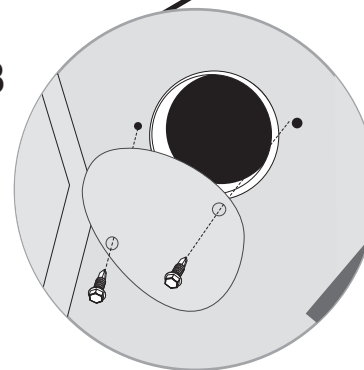
THIS IS FROM INSIDE THE COWL AREA!

2



Carefully cut the collar off flush with the firewall.

3



Locate the inlet block off and (2) #10 tek screws in bag kit B
Attach the block off over the hole using the #10 screws

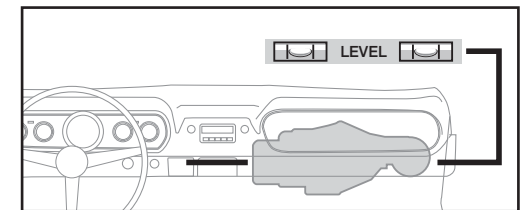
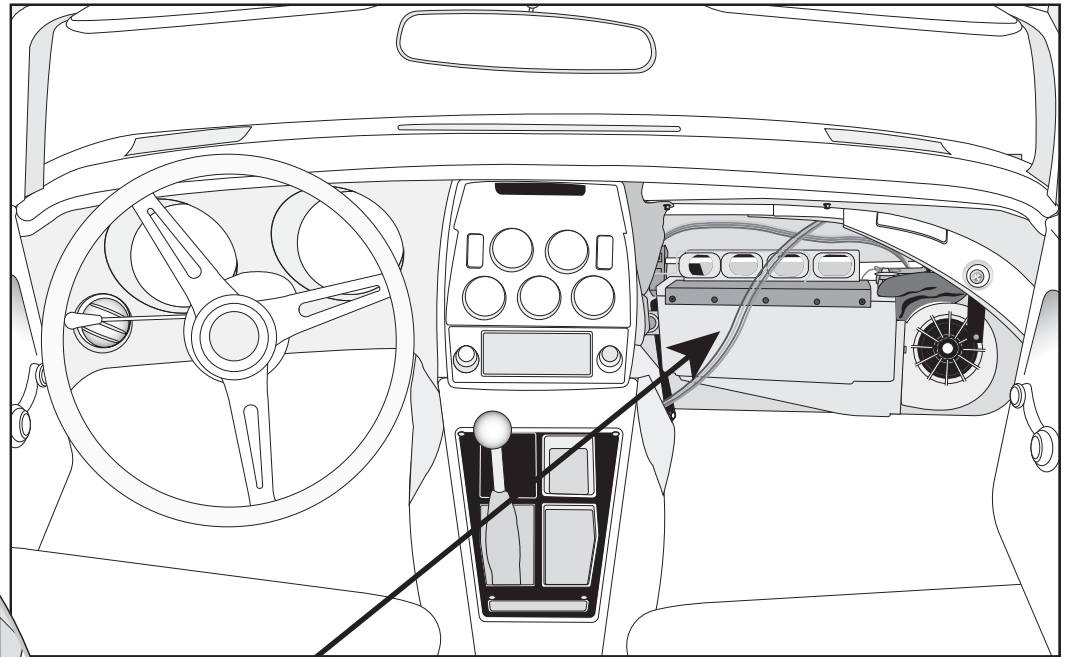
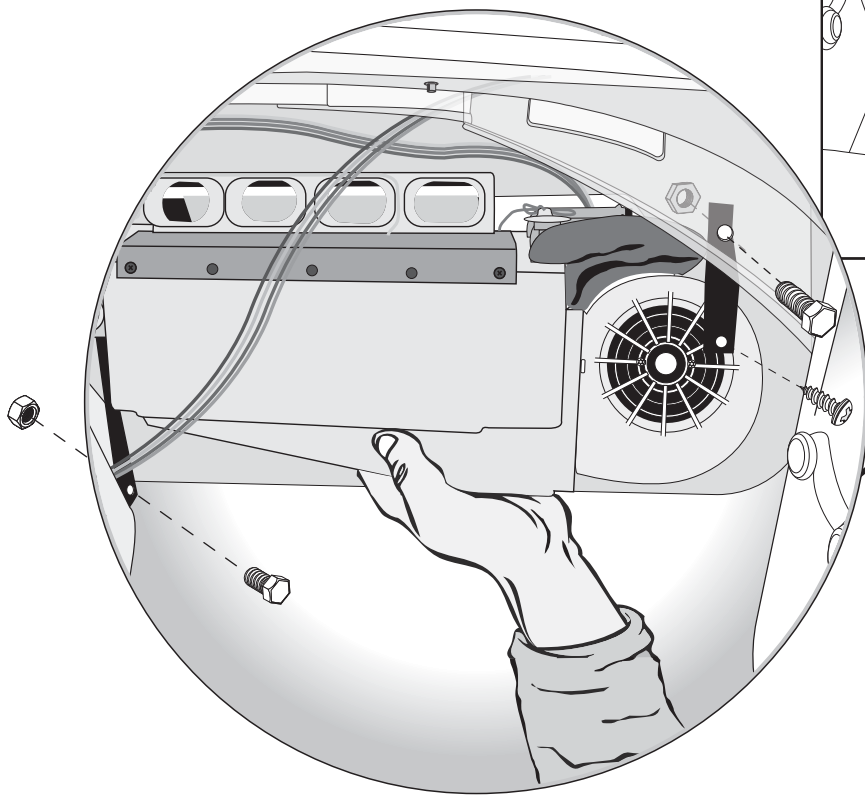


Factory A/C Cars

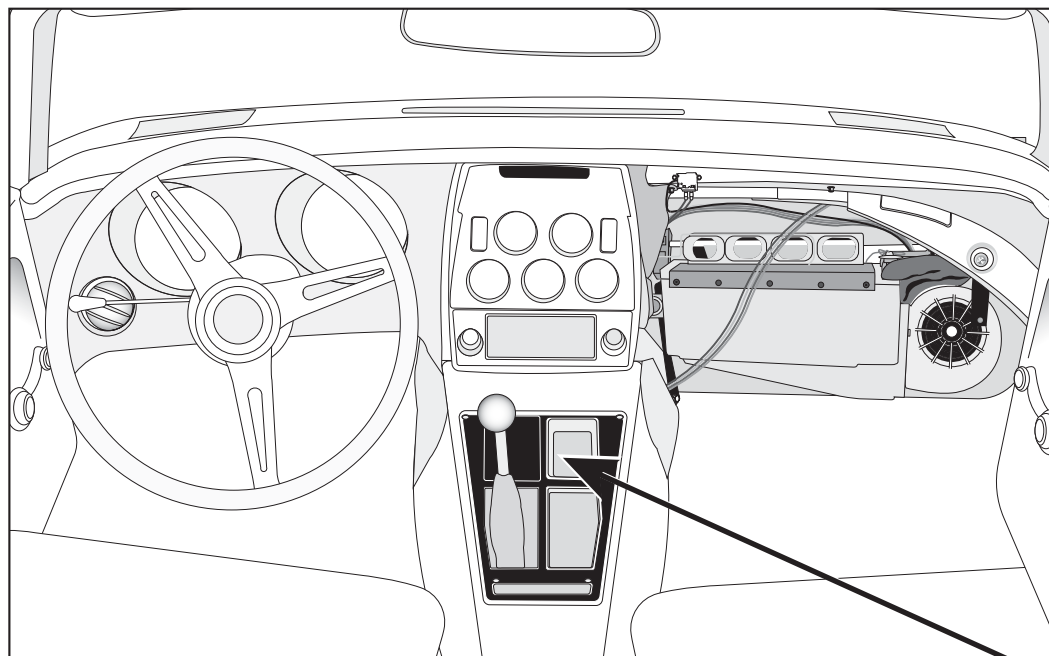
Remove condenser assembly, a/c hoses, compressor unit, and V.I.R. assembly.

Locate the radio support bracket. Remove the screw and attach the left evaporator support bracket to this bracket location using (1) ¼-20 x 5/8" hex head bolt and nut from Bag Kit B. Attach blower support brace to dash.

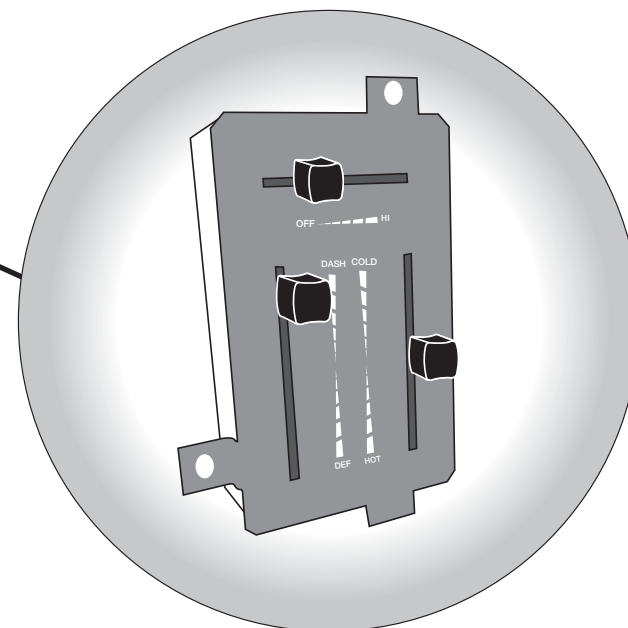
Locate (1) #8 x 3/8 pan head screw. Holding the evaporator level attach the blower support brace to the blower using the #8 screw and a power screw driver.



Be sure to align the evaporator unit level with the bottom of instrument panel as shown above.



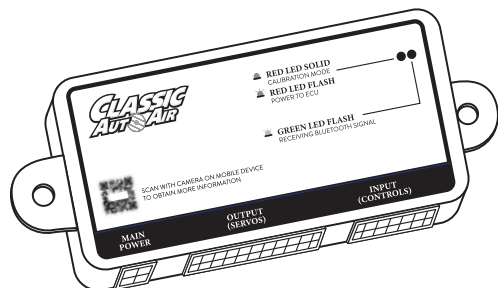
Install D.E.R. Controller, PN #16-4053



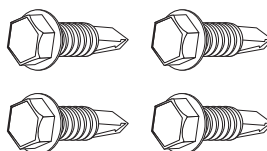
Illustrations NOT shown actual size

THESE ARE THE PARTS YOU WILL FIND IN BAG KIT C

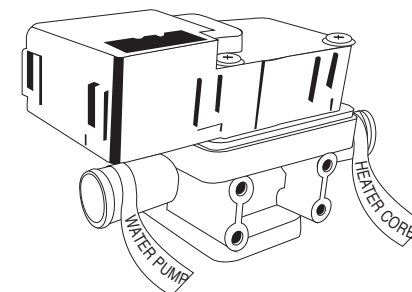
You will use all of these parts and hardware during the next series of installation steps.



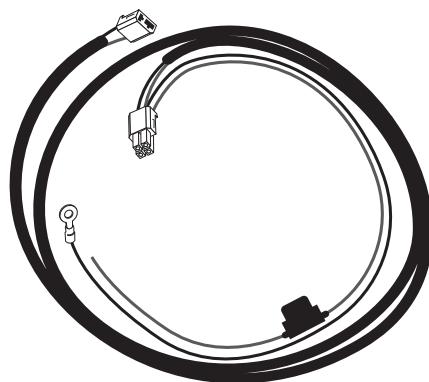
*ECU
16-2500*



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



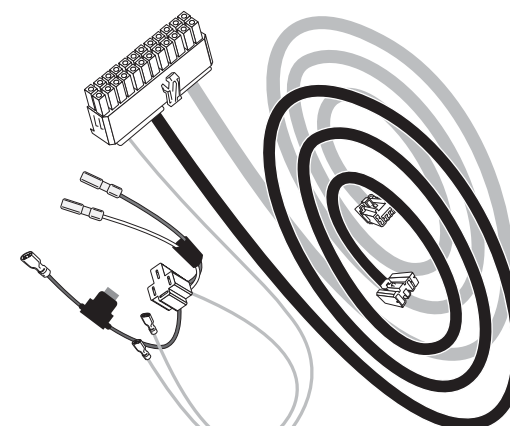
*Electronic Water Control Valve
PN# 16-1023*



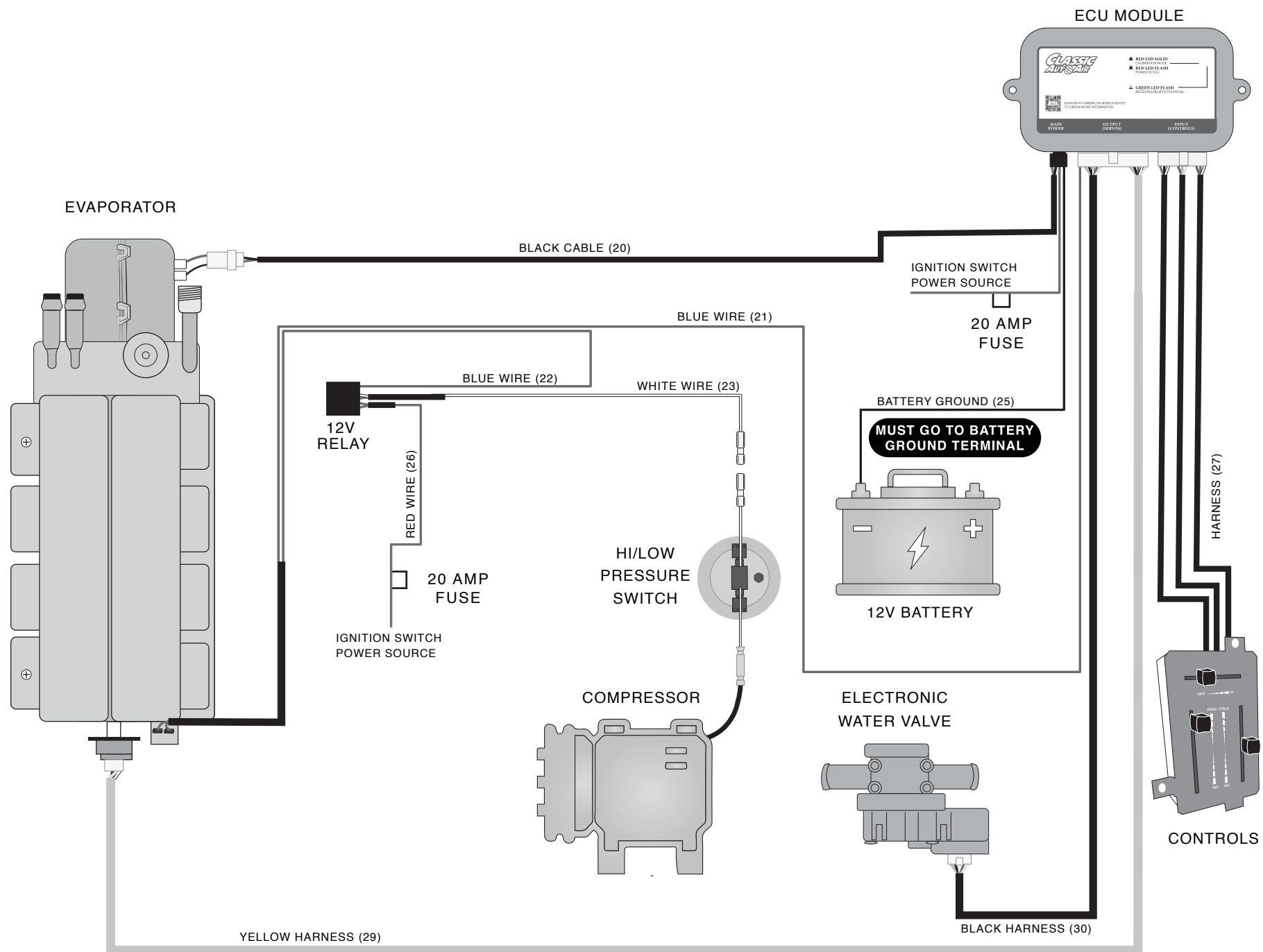
*HARNESS POWER SUPPLY
0125-5*



*Relay
30-13373*

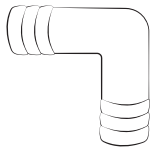


*HARNESS
0125-20A*

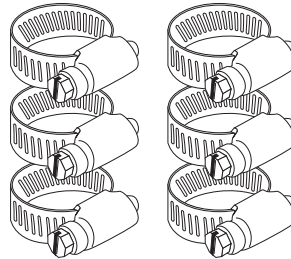


THESE ARE THE PARTS YOU WILL FIND IN BAG KIT D

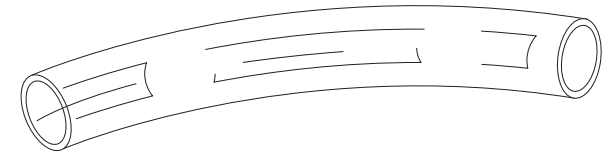
You will use all of these parts and hardware during the next series of installation steps.



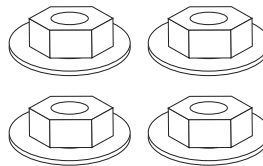
90 Degree Elbow



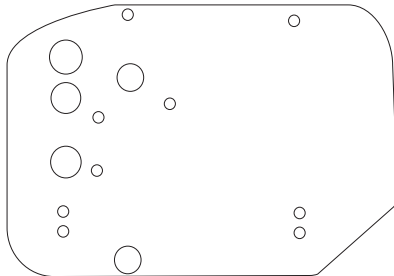
Six Worm Gear Clamps



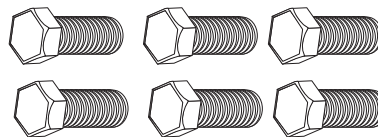
Clear Plastic Drain Tube



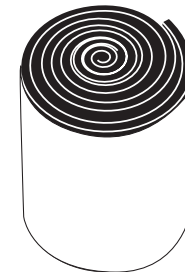
Four Flange Nut



*Firewall Block Off
PN#10-1053-1*



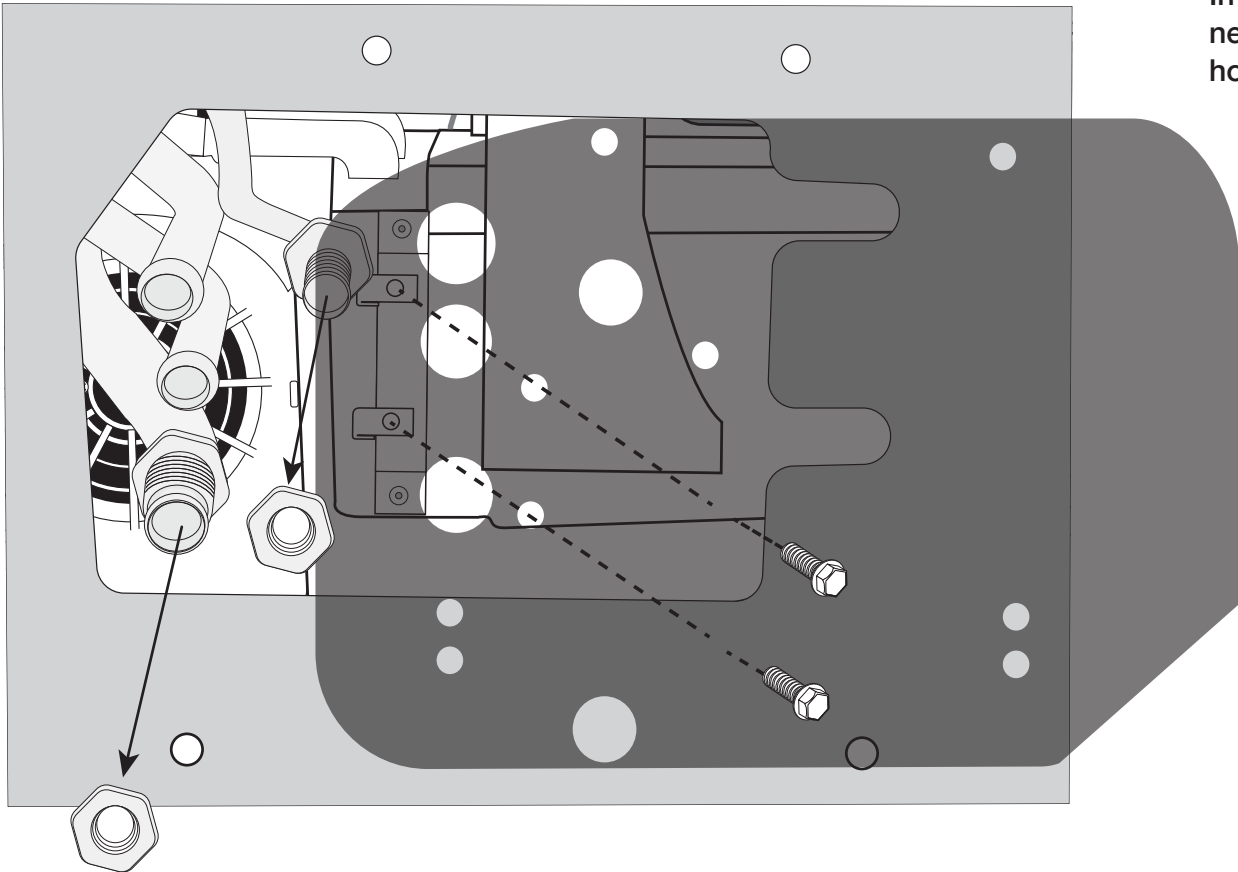
Six 1/4 - #20 x 1" Bolts



Refrigerant Tape

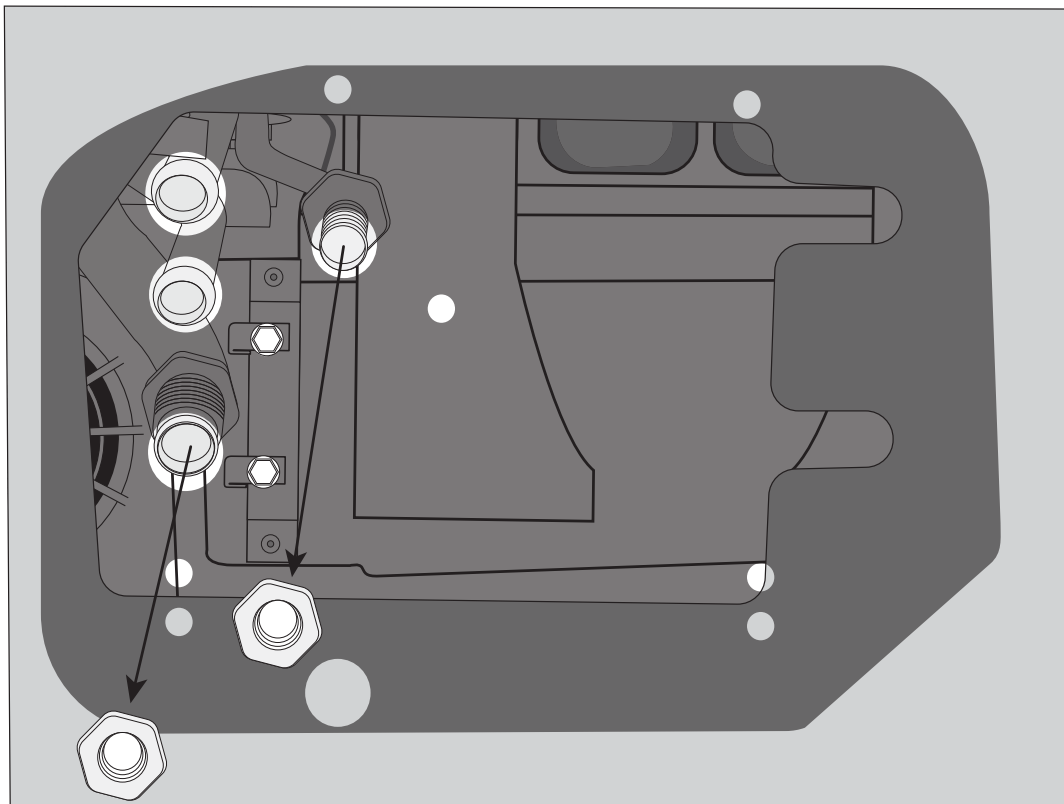
There are two sets of nuts on two of the hose connections coming through the firewall.

In order to install block off plate you will need to remove one nut from both of the hose connections.

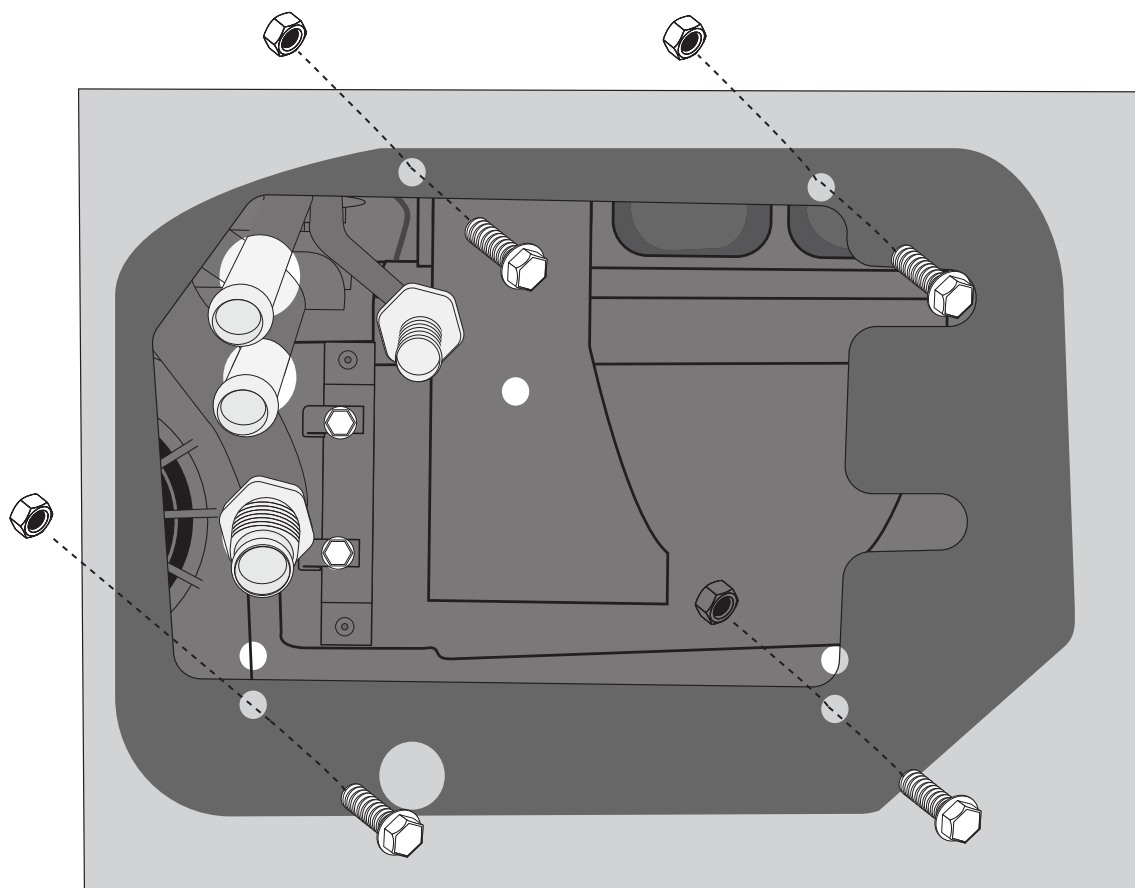


In **Bag Kit D** you'll find the firewall block off. Install this over the hose connections coming through the firewall within the engine compartment.

Attach Block off to Rear Mounting Bracket using (2) 1/4-20 x 1" Bolts



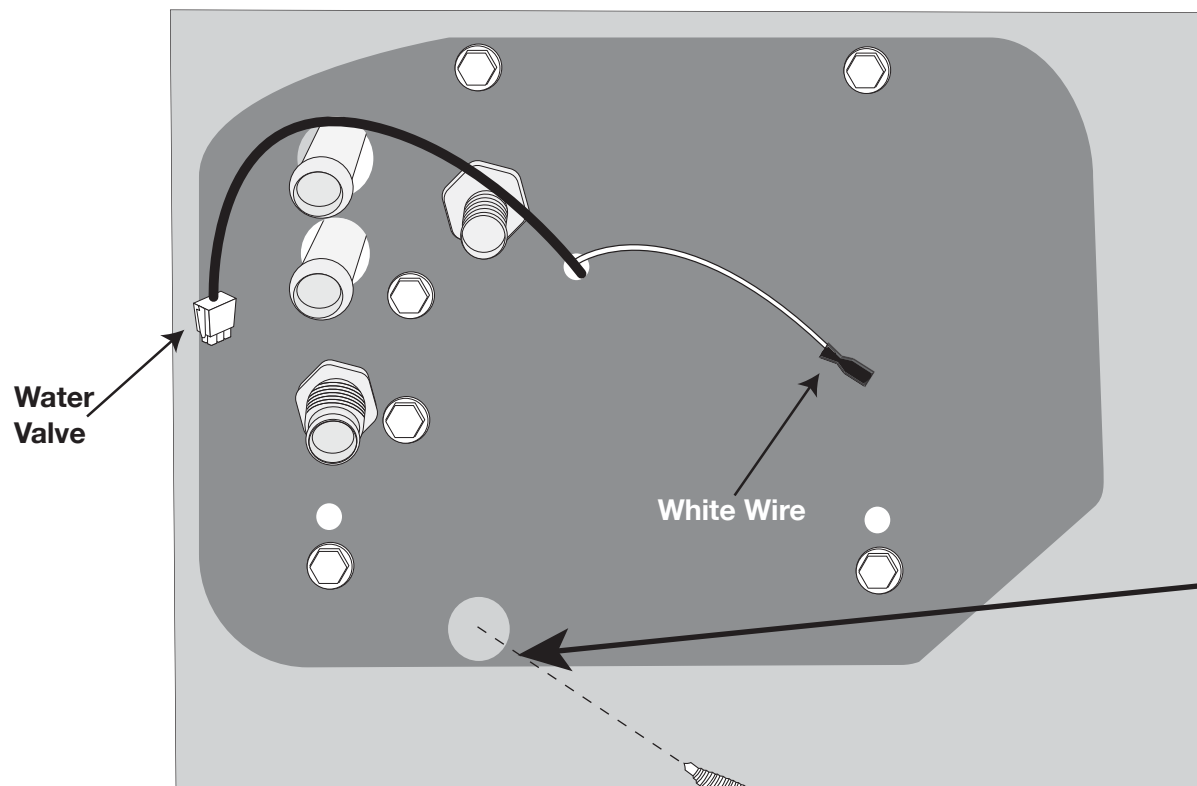
Install nuts to both hose connections on the outside of block off plate.



Attach Block off to Firewall using (4)
1/4-20 x 1" Bolts and 1/4 -20 nuts



**This will be easier
with a buddy**

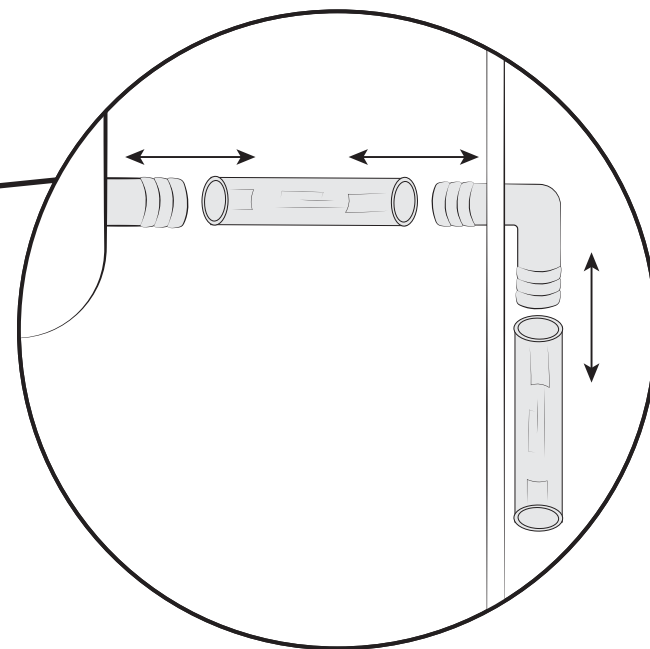


Water
Valve

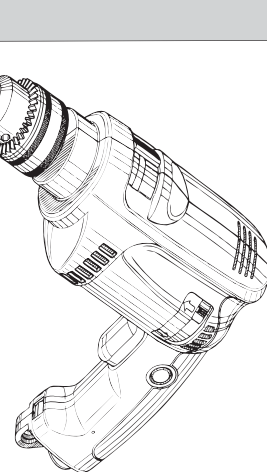
White Wire

TIP: Route WATER VALVE cable through the block off plate.

The loose white wire from main power harness can be fed through the same hole (as shown below).



Match drill hole in blockoff plate for drain tube. You will need to drill a 5/8" size hole in you fire wall for drain tube..



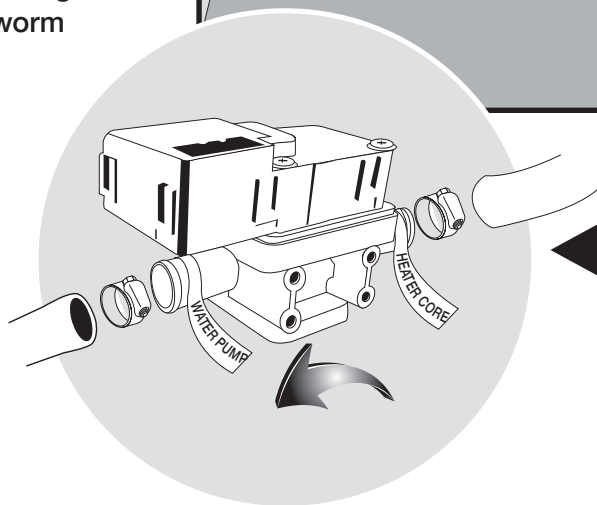
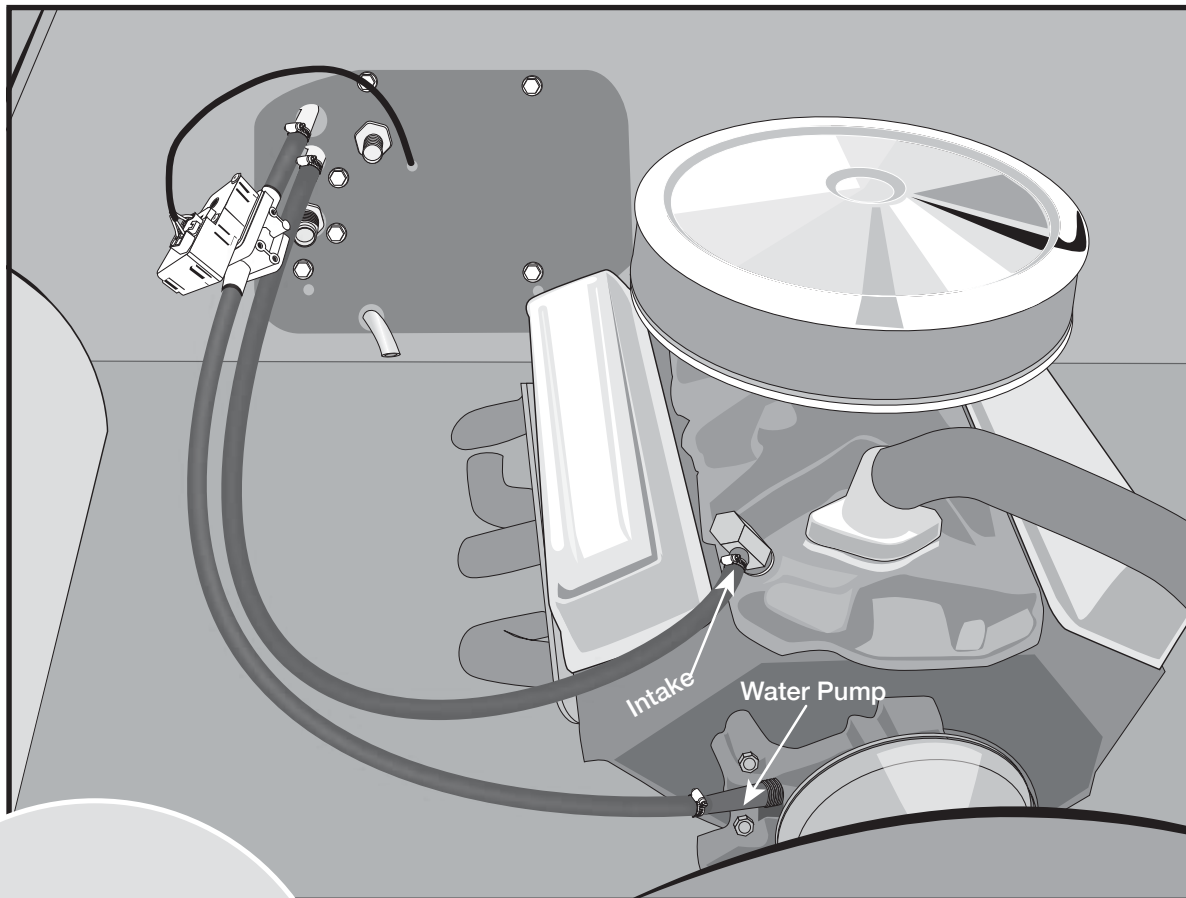
IMPORTANT NOTICE: PROPER INSTALLATION OF WATER VALVE

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.

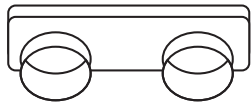


**FOLLOW THESE
TAGS... CHECK IT
TWICE BEFORE
PROCEEDING!**

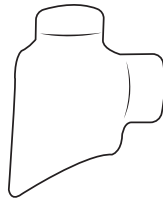
THESE ARE THE PARTS YOU WILL FIND IN BAG KITS E, F, and G

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

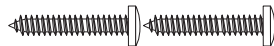
Bag E



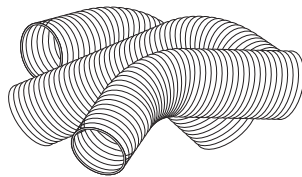
Defrost Adapter PN#2-1053-2



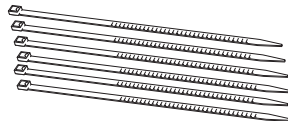
Driver Heater Dump PN#0094-4



Two #10 1" Screws

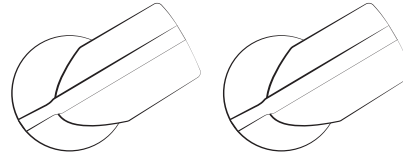


Three Duct Hoses, 2" I.D.

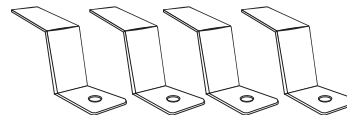


Six Zip-Ties

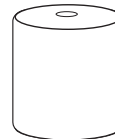
Bag F



Ball Louver Adapters
(2 piece assembly)
PN#2-1053-1

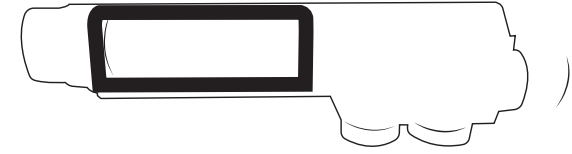


Four Louver Bracket
PN# 0088-11

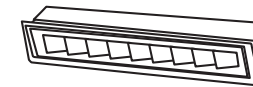


Driver side Fresh air cover
PN# 0088-15

Bag G



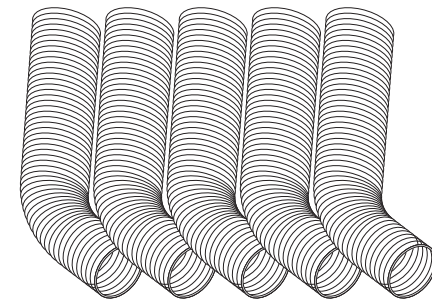
Center Dash Vent Assembly
PN# 2-1053-1



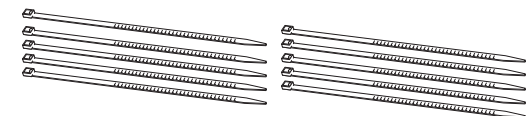
Center Dash Vent
PN#10.183.29



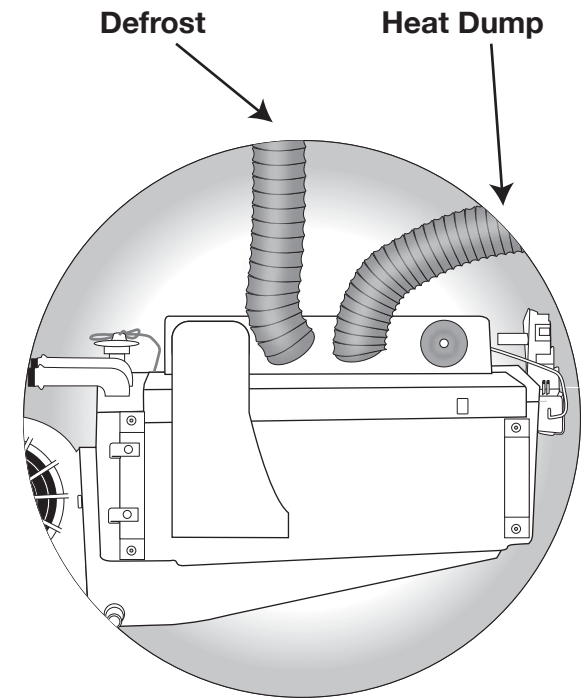
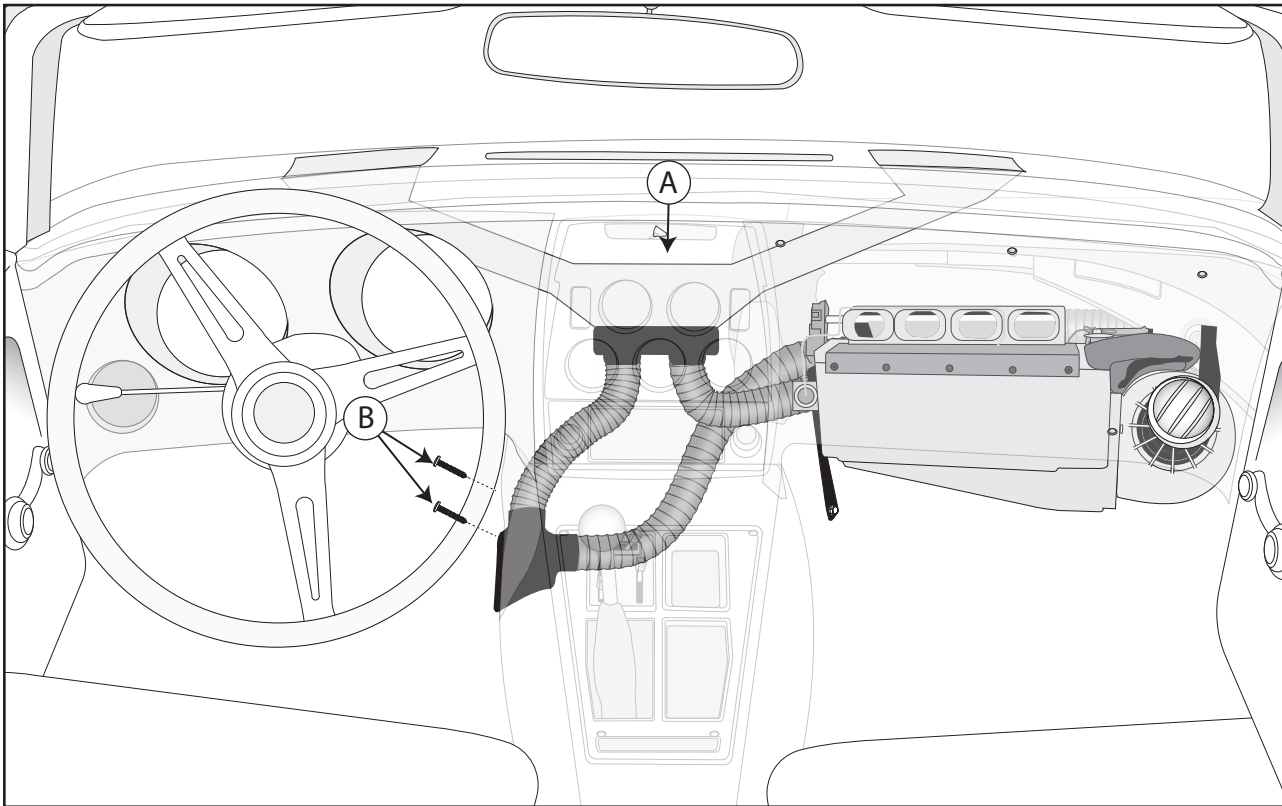
Foam Tape



Five Duct Hoses, 2" I.D.



Ten Zip-Ties

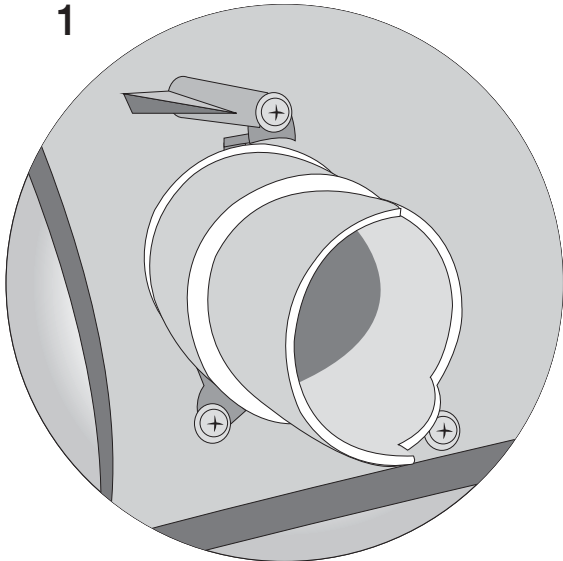
**Reverse View of system**

(A) Insert the adapter 2-1053-2 into defrost diffuser. Make sure that the s-clips are all the way into the plastic.

(B) Using Two #10 x 1" screws attach Driver Heat Dump PN#0094-4 into transmission tunnel near accelerator.
NOTE: Make sure heater dump does not interfere with function of accelerator pedal.

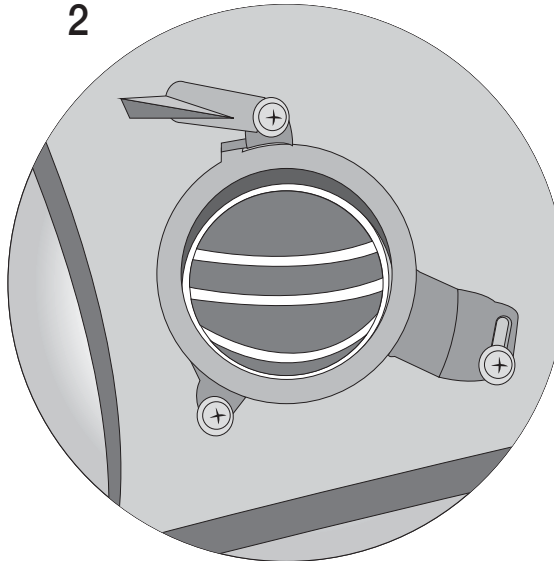
Cut duct hose to length and attach defrost and heat dump as shown. Attach with zipties.

1



Locate the passenger side dash cover, set the cover on the bench face side down.

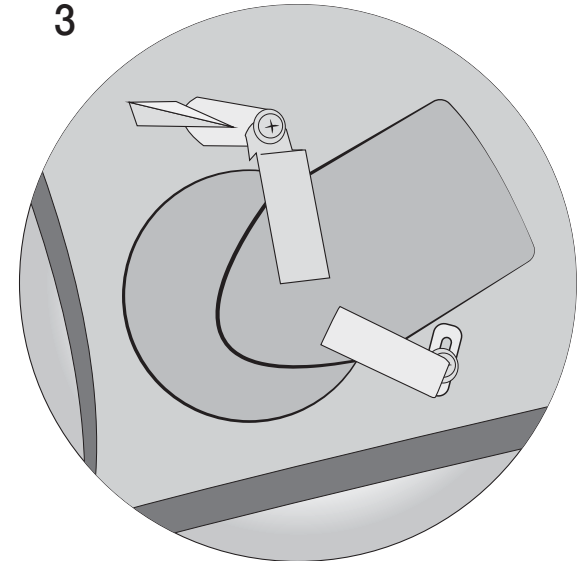
2



Remove the (3) pan head screws that hold the original hose adapter to the panel.

Remove the hose adapter and discard the adapter. Retain the original hardware.

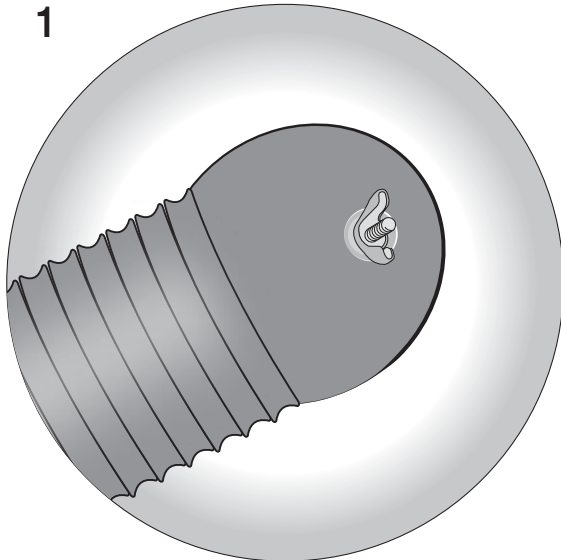
3



Attach the hose adapter over the ball louver and retain with the (2) brackets and the original hardware.

Reinstall the 3rd original screw.

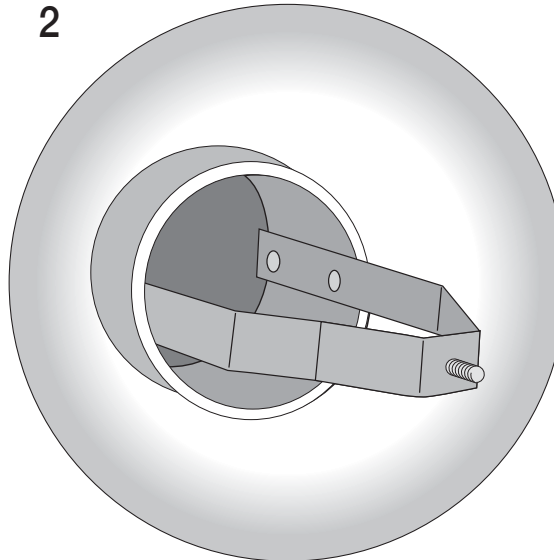
1



Located on the driver's side above the kick panel is the fresh air duct.

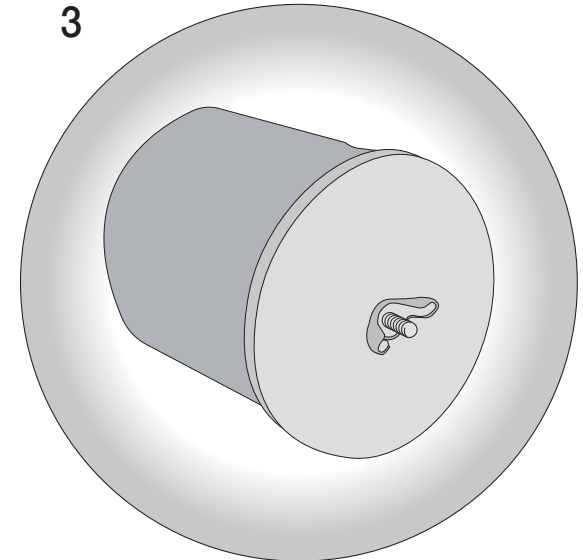
Remove the wing nut and retain.

2



Remove and discard the duct.

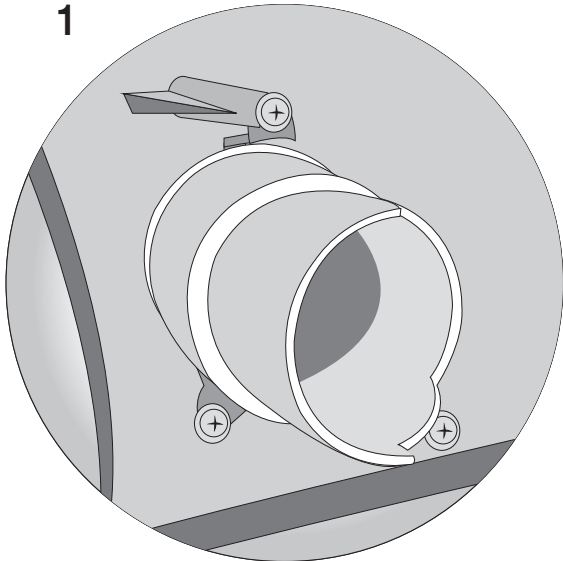
3



Locate the fresh air cover and slide over the inlet flange.

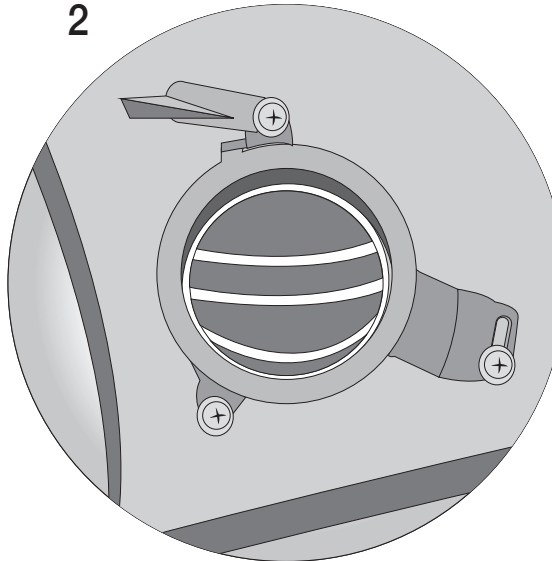
Attach using the original wing nut.

1



Locate the driver side dash cover, set the cover on the bench face side down.

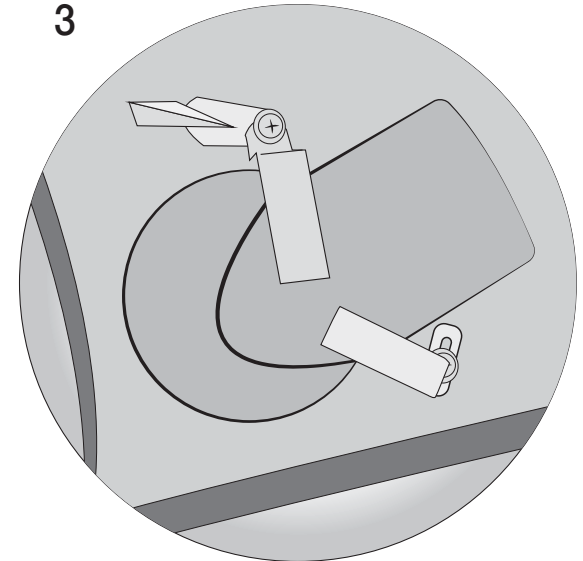
2



Remove the (3) pan head screws that hold the original hose adapter to the panel.

Remove the hose adapter and discard the adapter. Retain the original hardware.

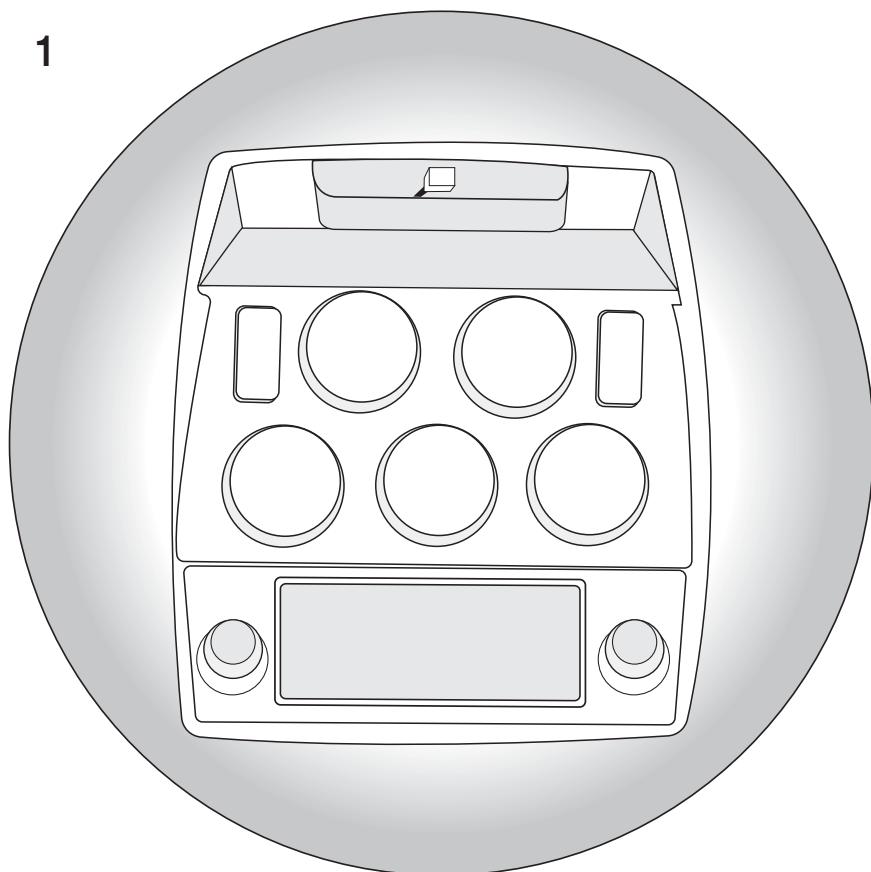
3



Attach the hose adapter over the ball louver and retain with the (2) brackets and the original hardware.

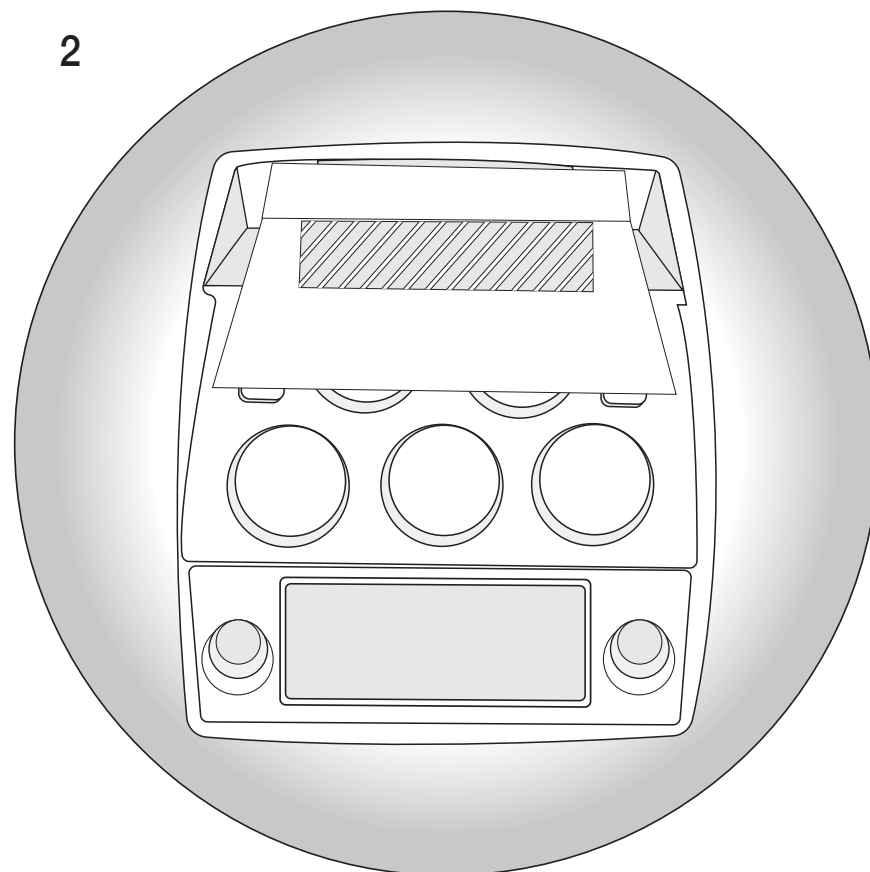
Reinstall the 3rd original screw.

1



Locate the original center bezel,
and the trim template from the
last page of the instructions..

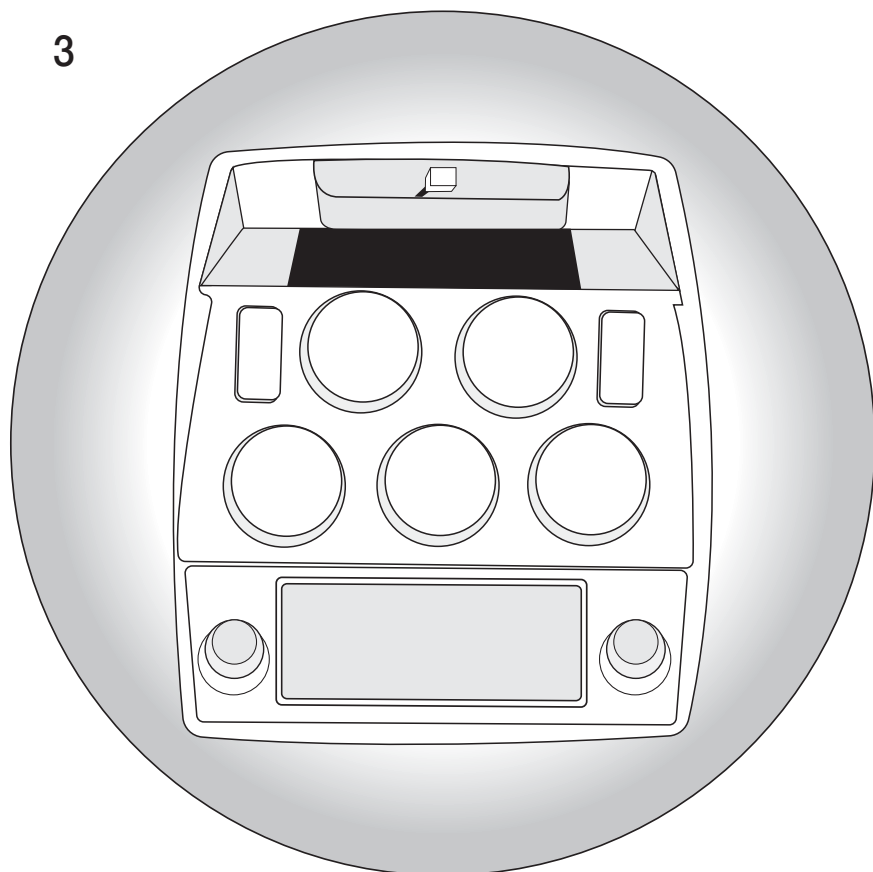
2



Cut out the template and tape to
the center Bezel as shown.

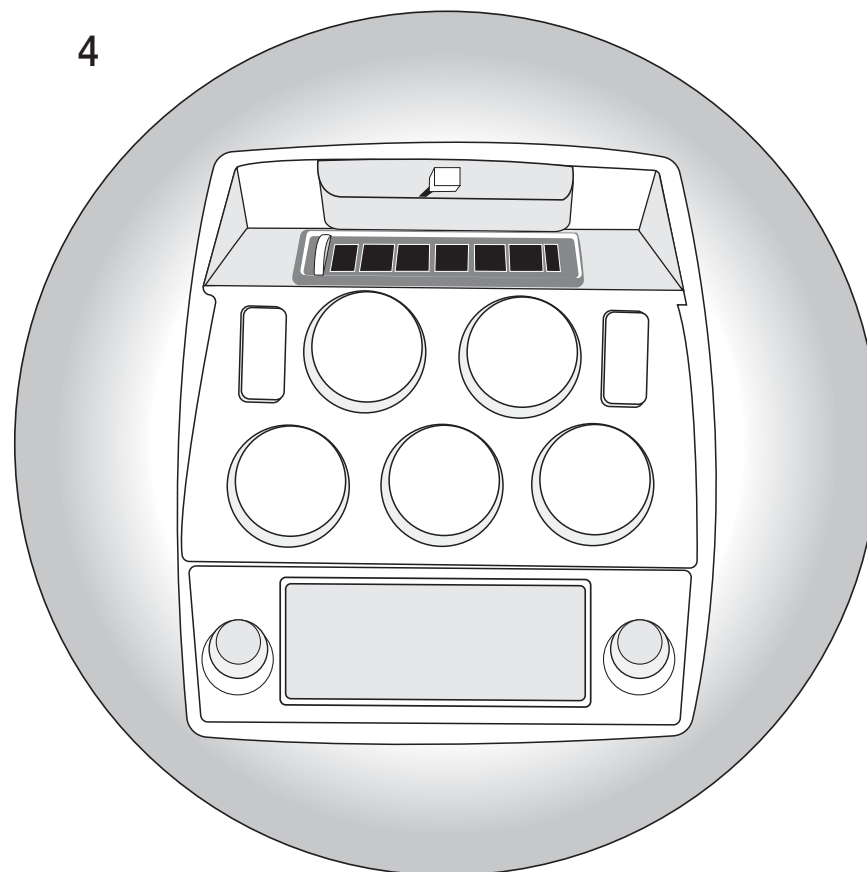
Cut out the shaded area.

3



**CAUTION: CUT CAREFULLY.
CHECK THE LOUVER ASSEMBLY
FOR FIT. IT MAY BE NECESSARY
TO FILE THE OPENING TO SIZE**

4



Install new louver into the center
dash bezel.



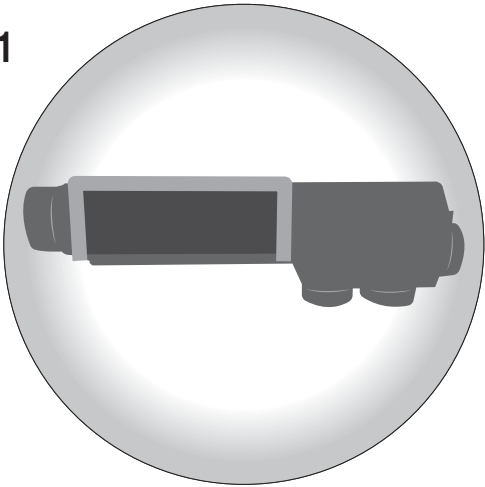
Factory A/C Cars

It is necessary to remove
the shut off door.

FACTORY A/C CARS ONLY

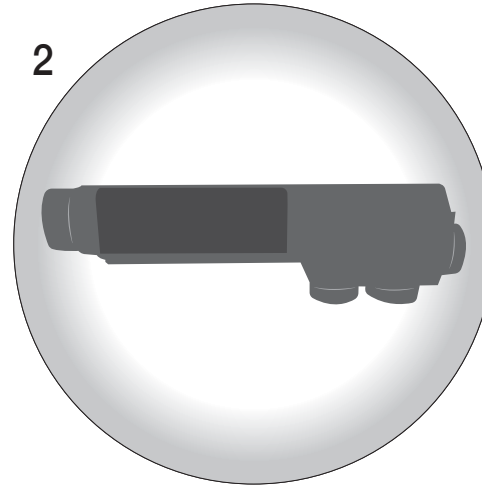
Center air distribution assembly

1



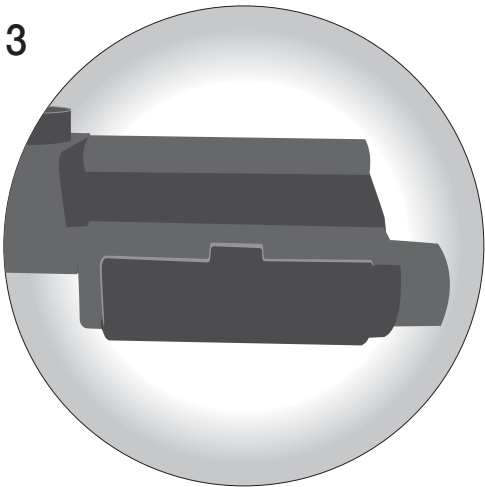
Locate center air distribution assembly.

2



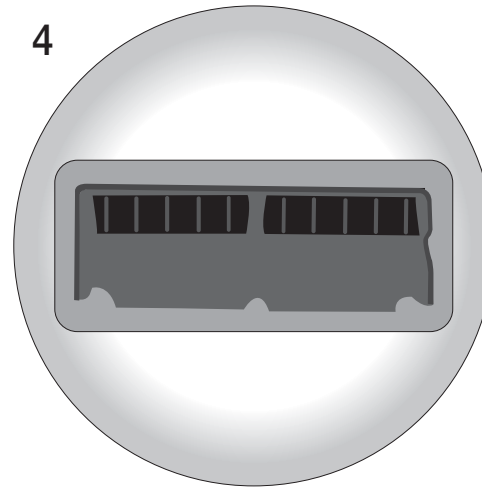
Remove the foam seal.

3

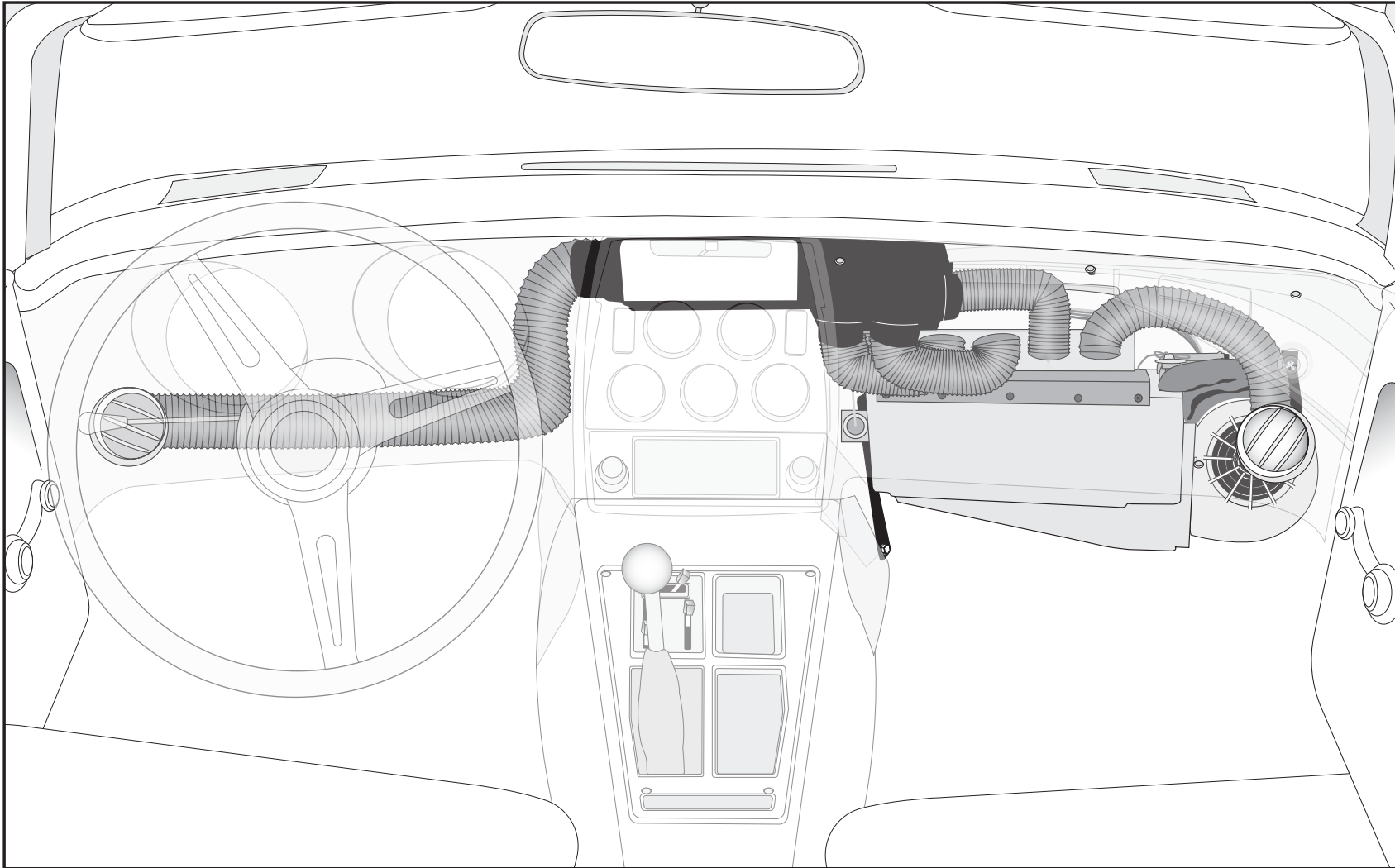


Modify the duct to clear factory louver attaching screw. Cut off flanges and cut notch in the duct as shown.

4



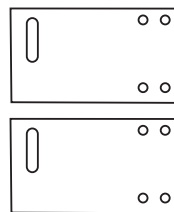
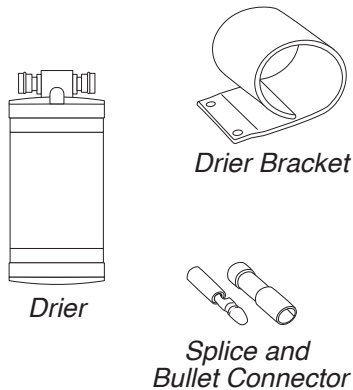
Locate (1) 16" piece of open cell foam and carefully wrap the factory louver assembly.



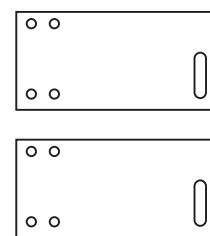
Insert the Center air distribution assembly across the top of the gauges. Locate the 2" flex duct attach to the evaporator and air distribution as shown.

THESE ARE THE PARTS YOU WILL NEED FOR THE ENGINE COMPARTMENT INSTALLATION

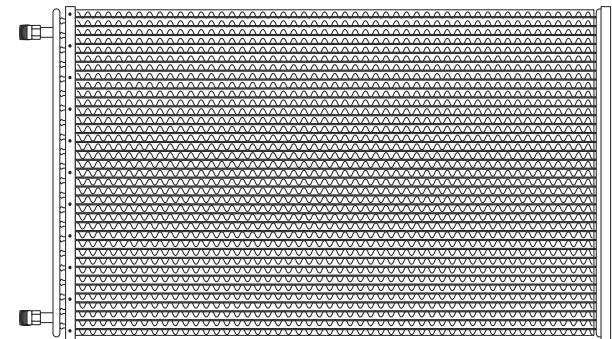
You'll find all of these parts within the main box



(2) Short Condenser Bracket
PN#0088-50



(2) Long Condenser Brackets
PN#0088-51



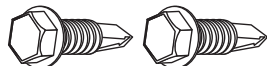
Condenser
PN#11-1042



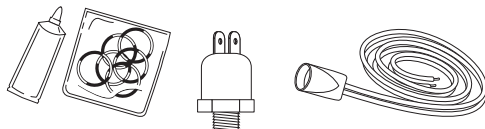
Eight #10 - 20 x 1/4" Screws



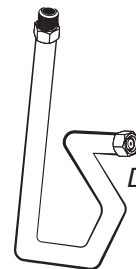
Two #10 - 16 x 3/4" Tek Screws



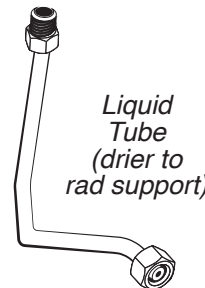
Four #14 - 16 x 3/4" Tek Screws



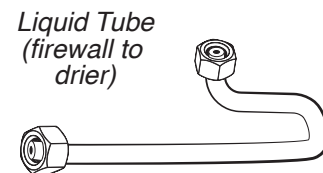
Pressure Switch and harness,
Bag of O-rings and Mineral Oil Tube



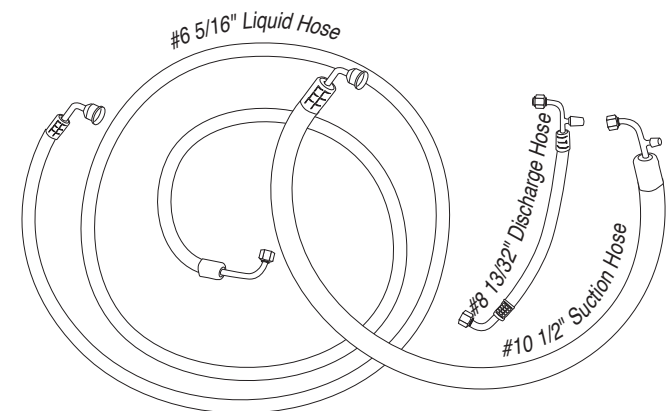
Discharge Tube
Condenser



Liquid Tube
(drier to
rad support)

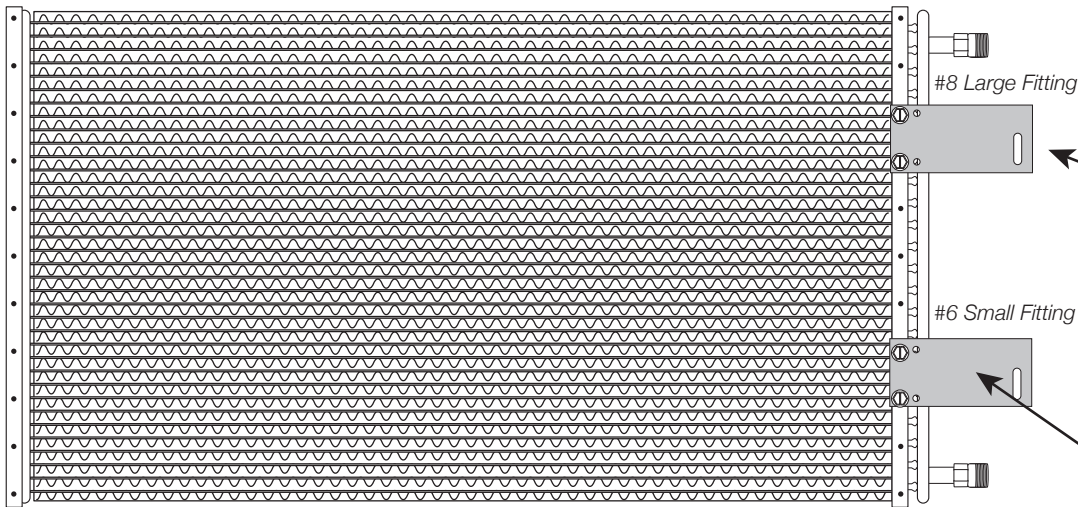


Liquid Tube
(firewall to
drier)

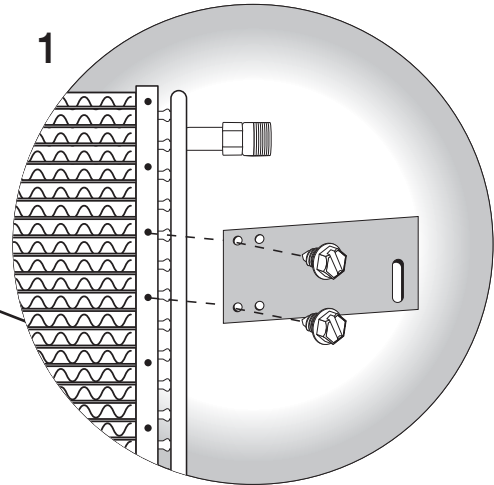


Three Refrigerant Hoses

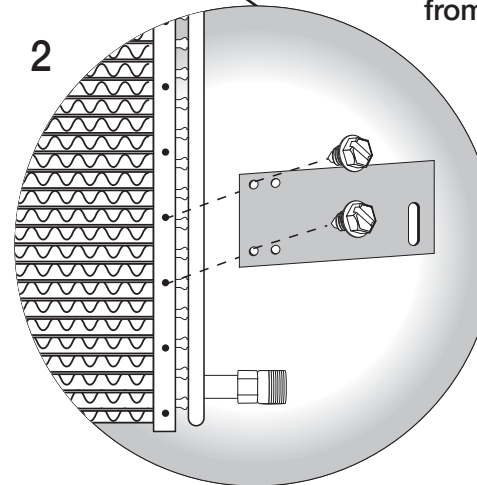
Locate the following components from the condenser kit. Condenser, (2) left side condenser mounting brackets, (2) right side condenser mounting brackets, condenser to bulkhead hose assembly, (1) #6 O-rings, and (8) #10 x 3/8" hex head screws.



ATTENTION: THIS IS A VIEW OF THE BACK OF THE CONDENSER

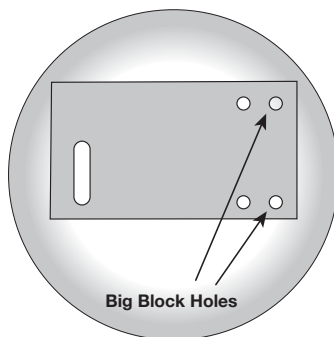
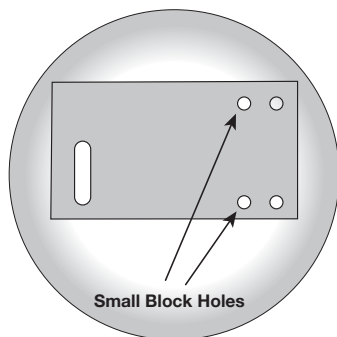


Attach the condenser brackets using #10 screws to the 3rd hole from the top, using the outer holes.

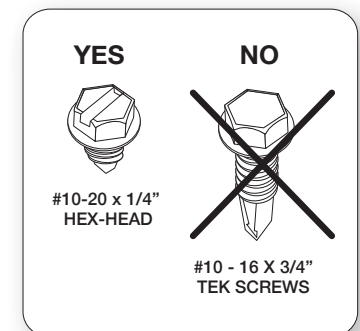


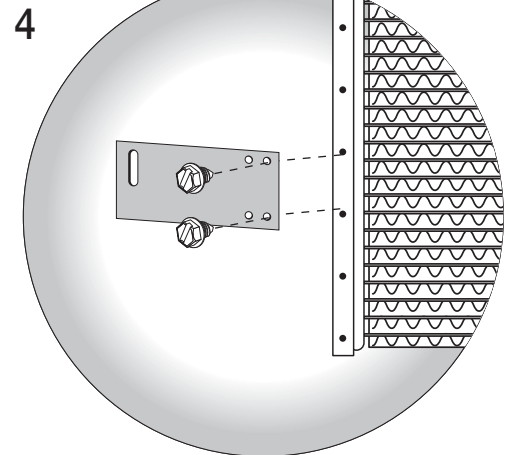
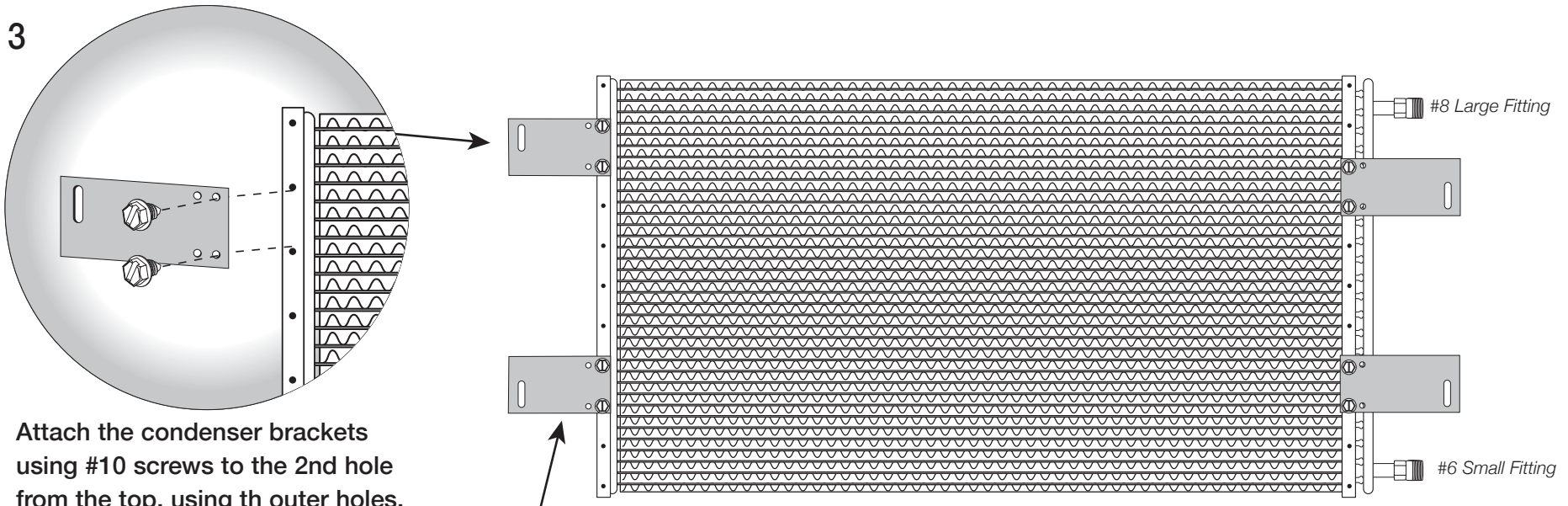
Attach the condenser brackets using #10 screws to the 3rd hole from the bottom, using the outer holes.

There are two sets of holes on the Condenser mounting Brackets. One set is for a Big Block and the other set is for a small block.

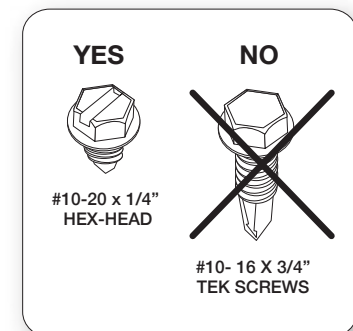


Notice that there are two a different lengths on the brackets and hole options



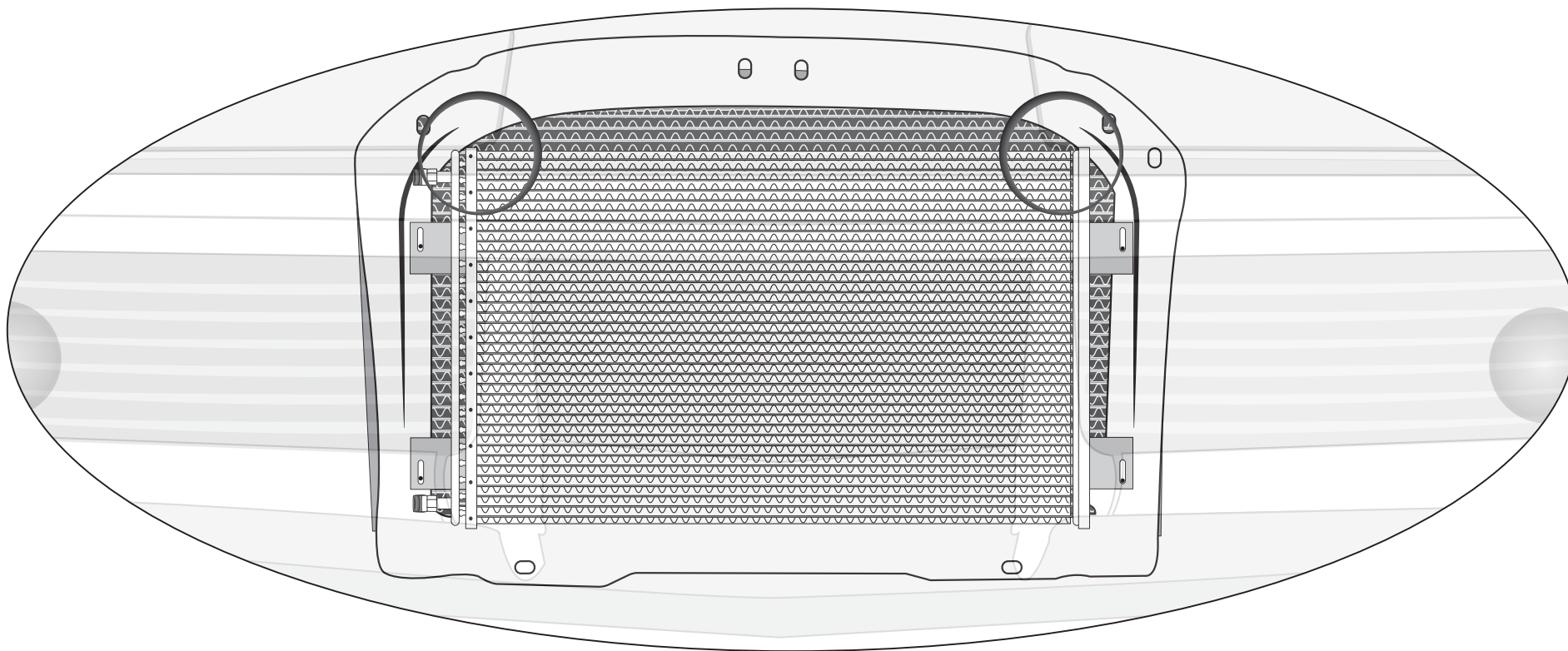
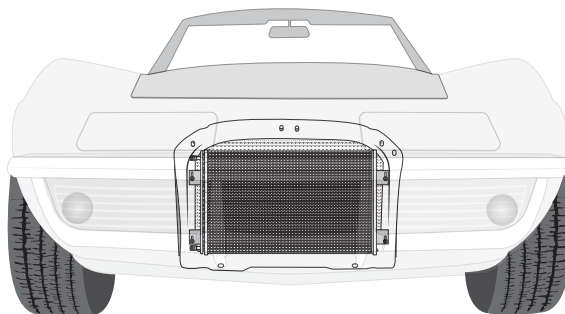


Attach the condenser brackets using #10 screws to the 3rd hole from the bottom, using the outer holes.

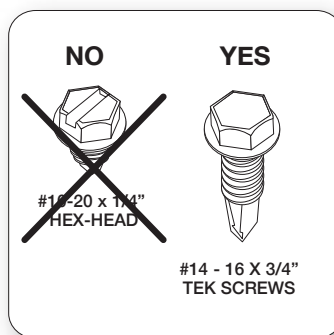
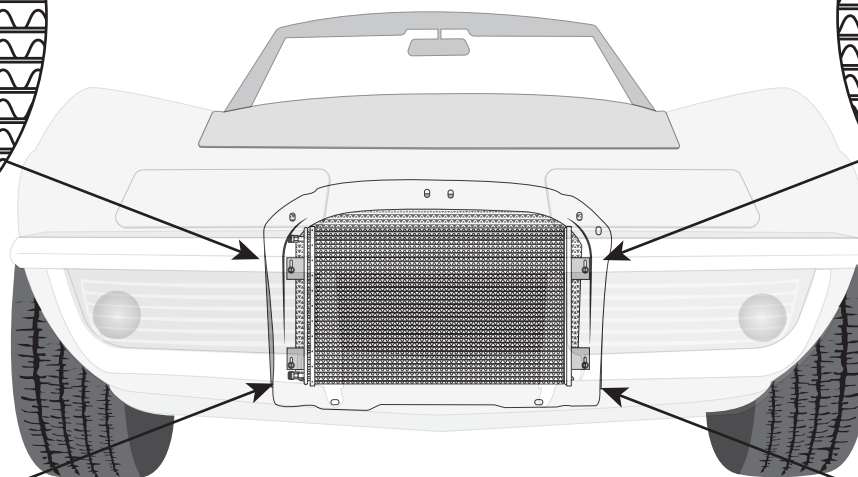
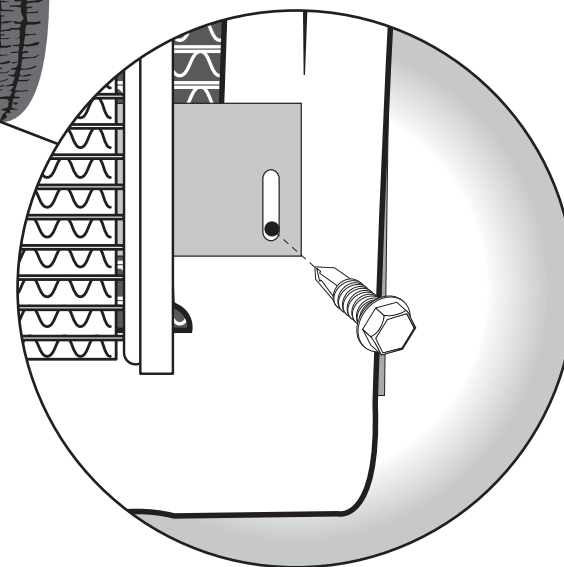
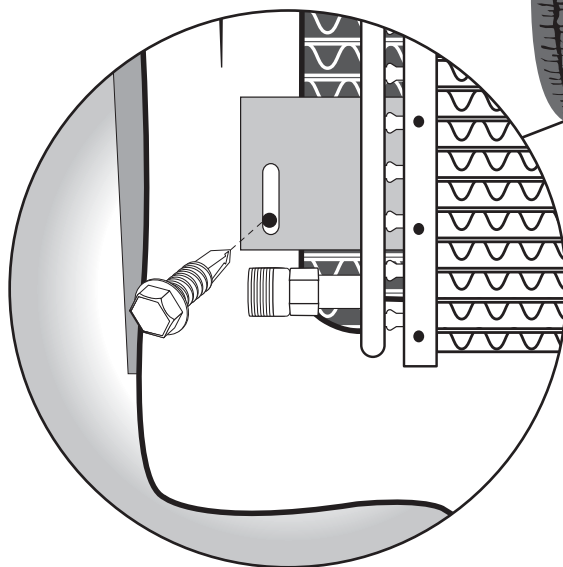
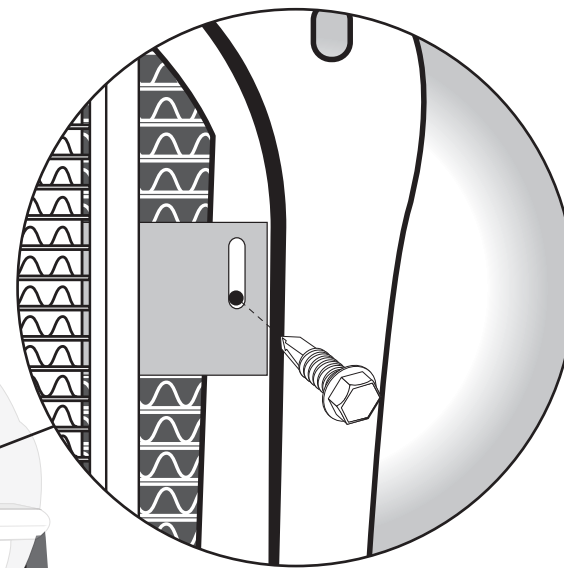
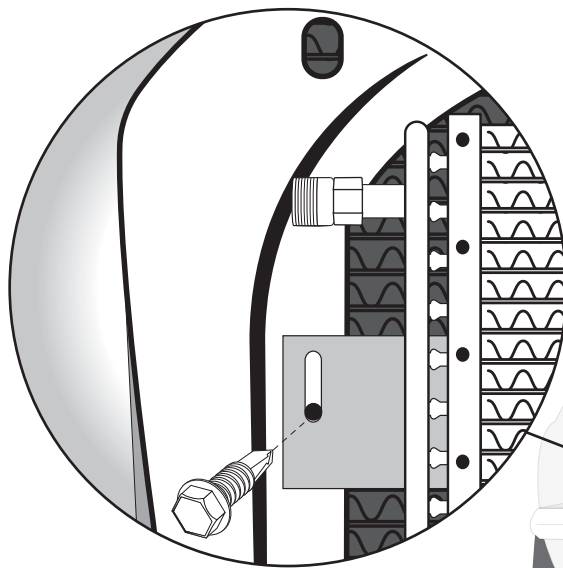


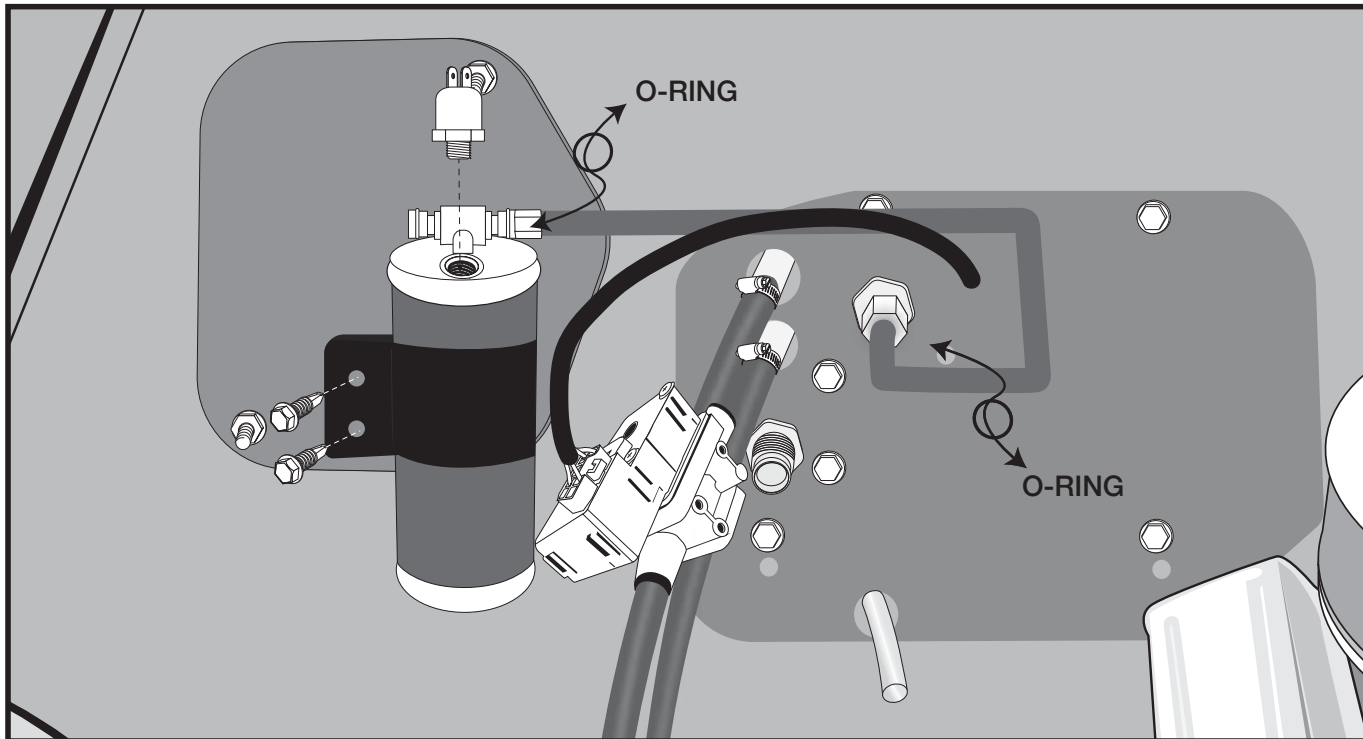


Locate the height of the condenser to the radiator support as shown!



Place condenser in front of the radiator and using the #14 self-drilling screws secure the mounting brackets.





Locate the receiver drier, hi / low pressure switch, liquid tube (bulkhead / drier), drier mounting bracket, and (2) #10 x 3/4" tek screws.

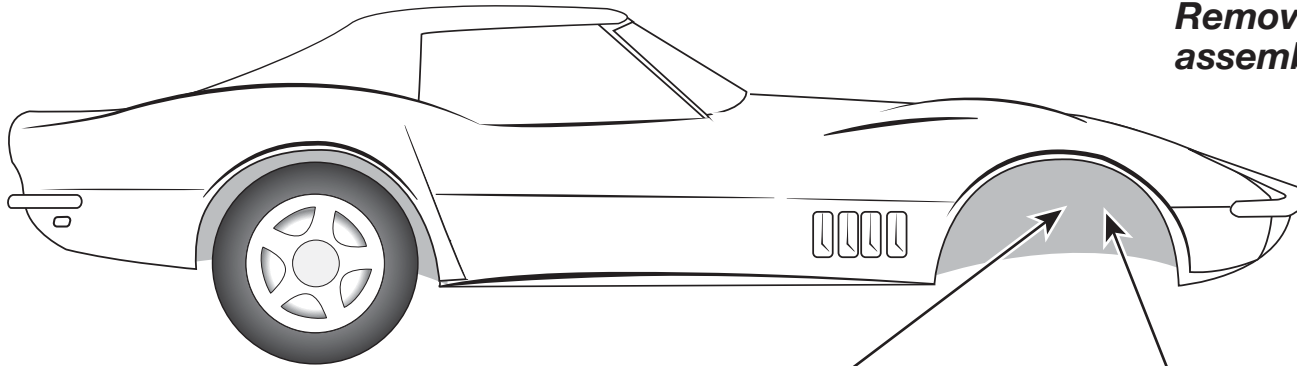
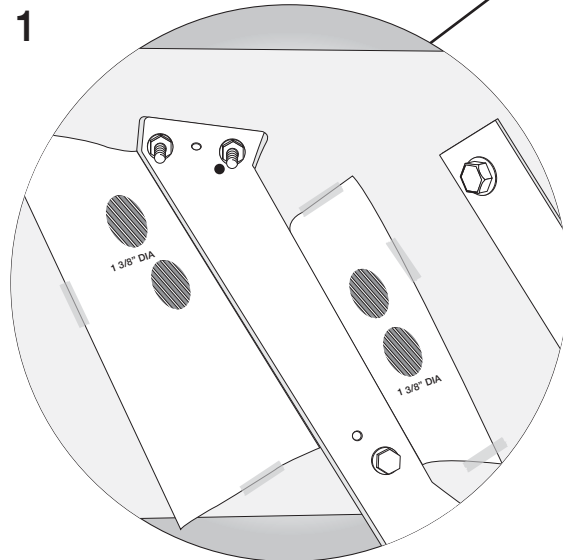
Attach to the inlet block off as shown using the liquid tube for location. Attach tube using (2) #6 O-rings and a few drops of mineral oil.

TWO WRENCH METHOD

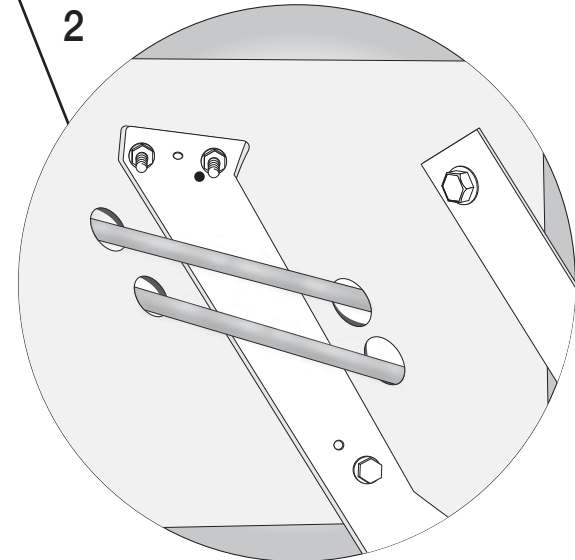


Reminder...
Use two
wrenches to
tighten o-ring
fittings

Remove the passenger front wheel assembly and retain hardware.

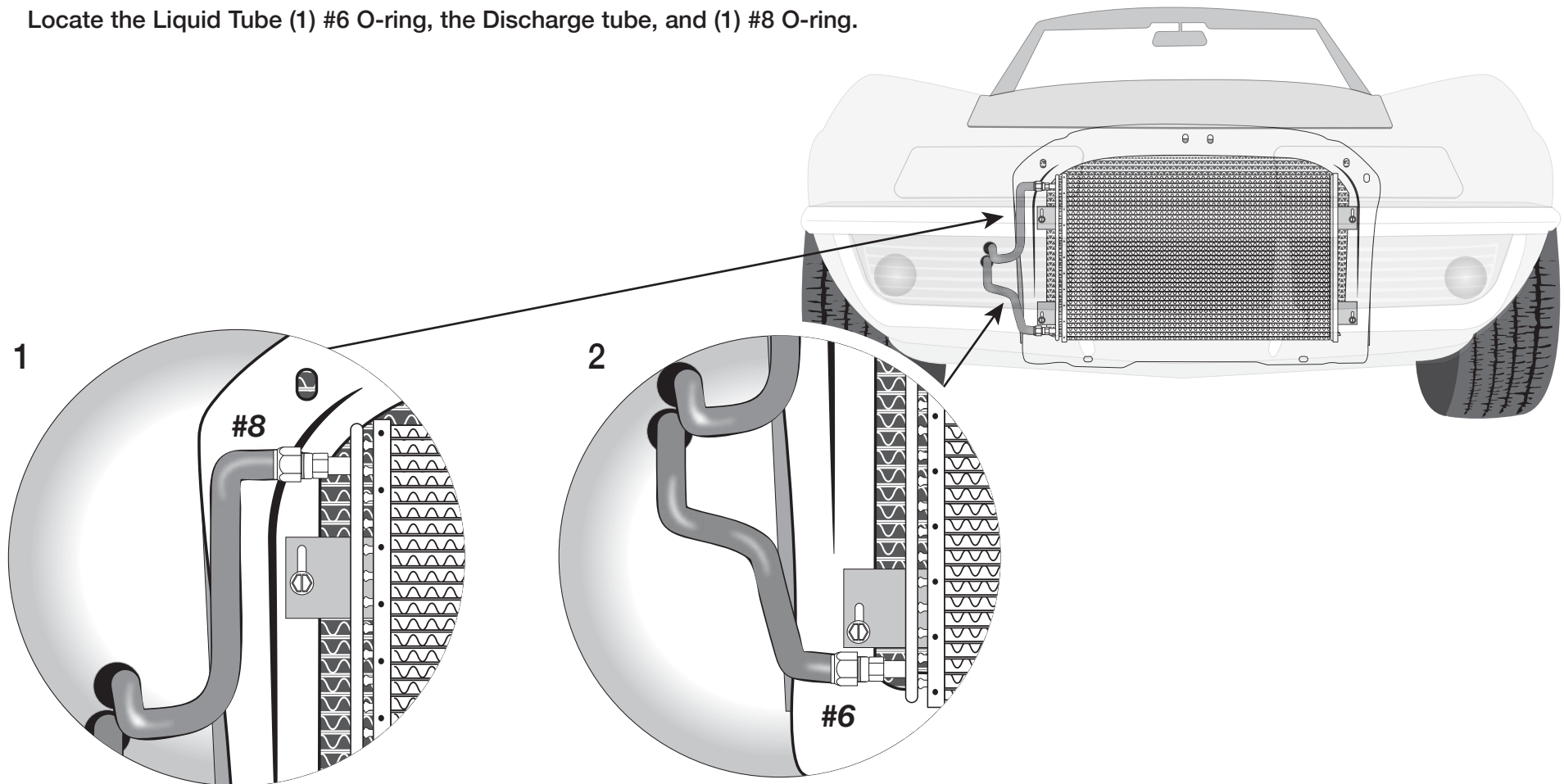
**1**

Locate the (2) templates from the installation instructions.

2

The condenser tube assemblies will pass through the core support in front of the radiator and the core support behind the radiator.
The picture above shows the tubes installed from behind the passenger wheel.

Locate the Liquid Tube (1) #6 O-ring, the Discharge tube, and (1) #8 O-ring.



Insert the large tube through the upper-drilled hole and attach to the top fitting on the condenser using (1) #8 O-ring and a few drops of mineral oil.

Insert the smaller tube through the lower drilled hole and attach to the bottom fitting on the condenser using (1) #6 O-ring and a few drops

Connecting the Hoses Passenger Side



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.

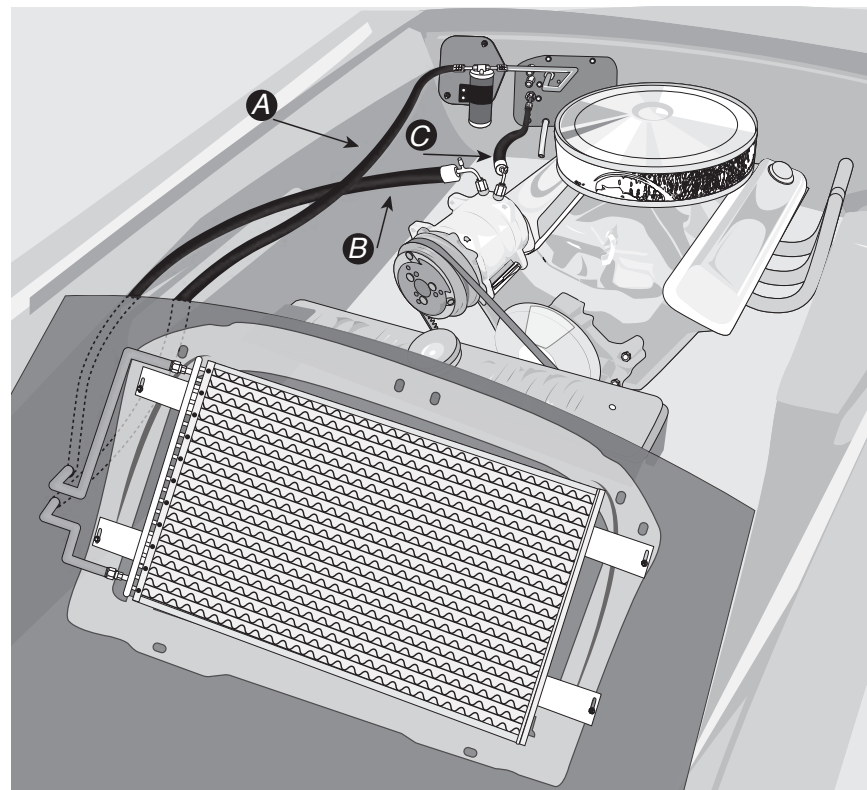
CONNECTING THE HOSES:

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

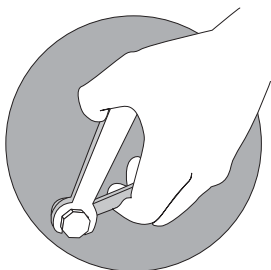
The #10 (**LARGEST**) "C" refrigerant hose. Attach end with service fitting to the compressor using (1) #10 o-ring and a few drops of mineral oil. Attach other end to #10 fitting at the firewall. Attach using one #10 o-ring and a few drops of mineral oil. Tighten securely.

The #6 (**SMALLEST**) "A" 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**) "B" refrigerant Hose. Route behind fender 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

Connecting the Hoses Driver Side



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.

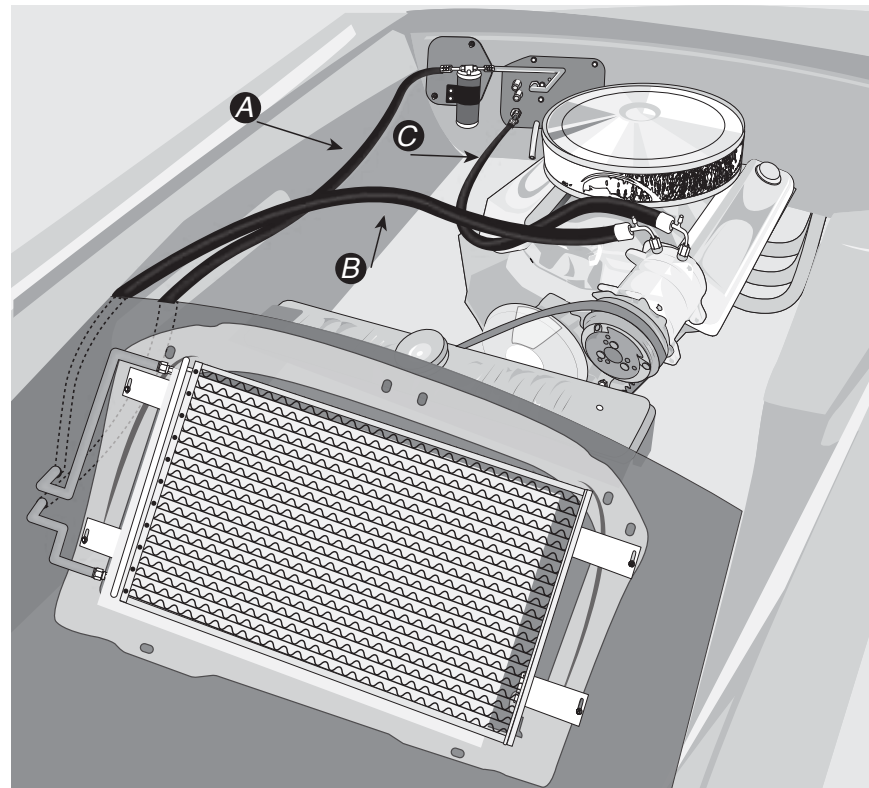
CONNECTING THE HOSES:

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

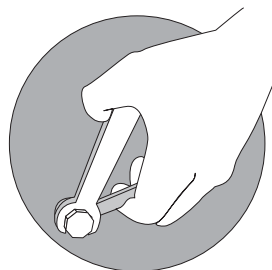
The #10 (**LARGEST**) "C" refrigerant hose. Attach end with service fitting to the compressor using (1) #10 o-ring and a few drops of mineral oil. Attach other end to #10 fitting at the firewall. Attach using one #10 o-ring and a few drops of mineral oil. Tighten securely.

The #6 (**SMALLEST**) "A" 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**) "B" refrigerant Hose. Route behind fender 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!**

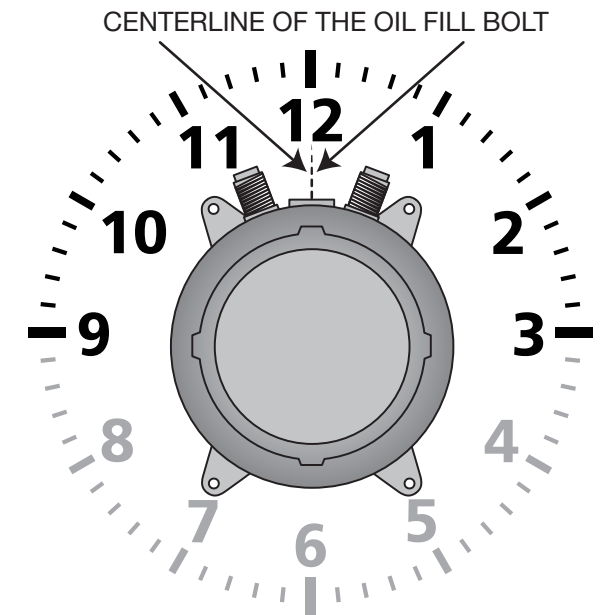
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- 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

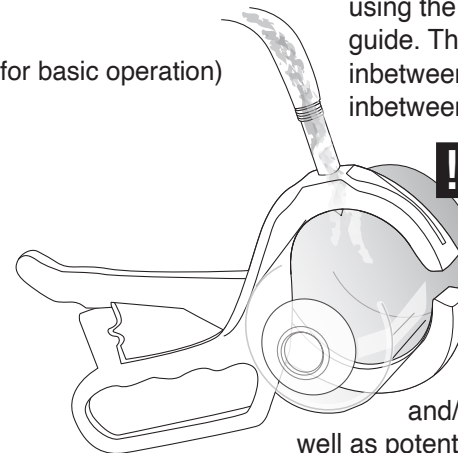
ACCEPTABLE OPERATING PRESSURE RANGES:

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

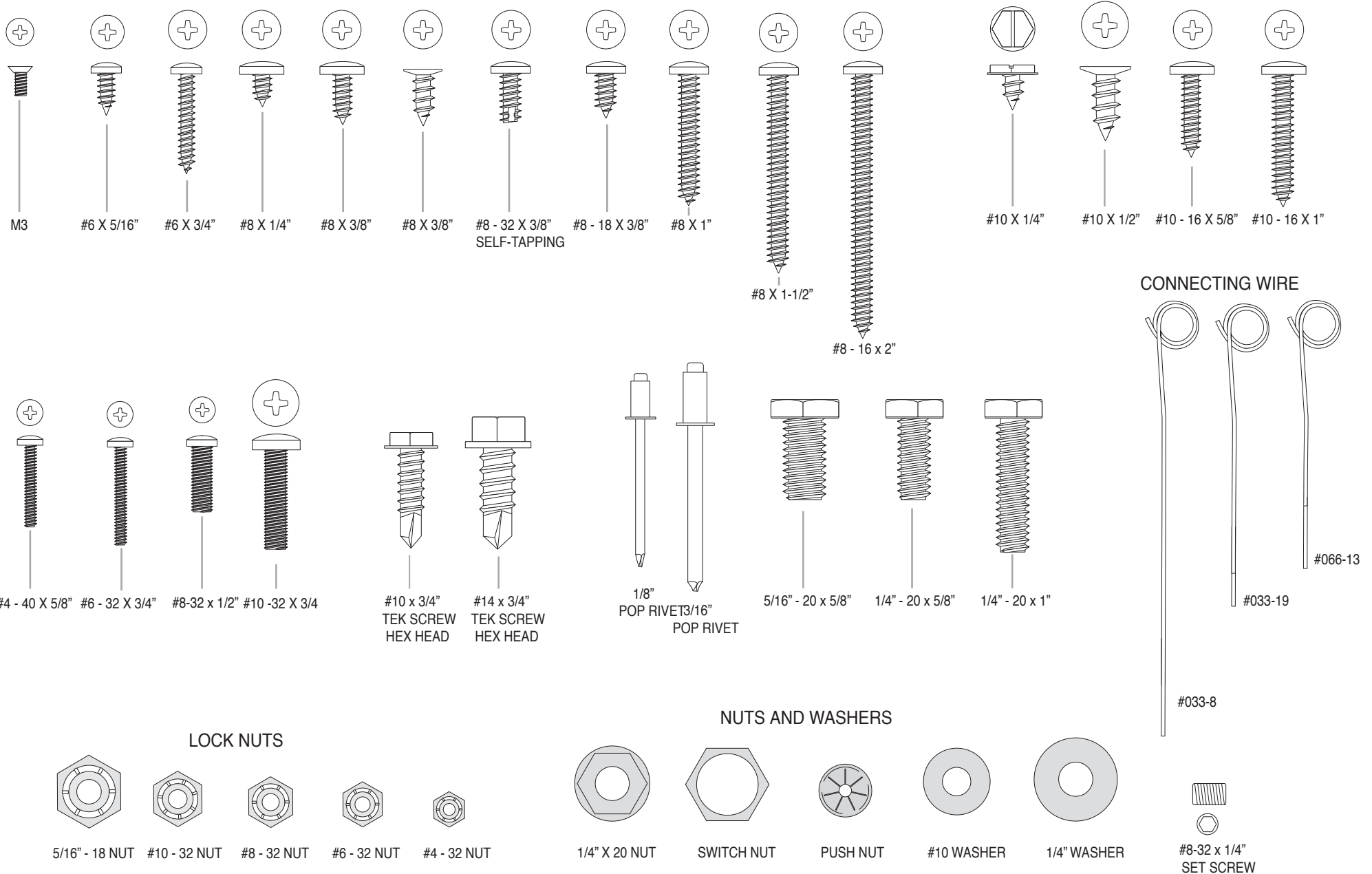
Get the technical support you want the moment you need it, with no wait times. Simply **SCAN** the **QR code** and be directly taken to our support section to troubleshoot all things A/C.



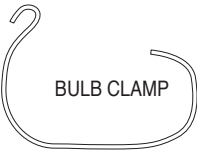
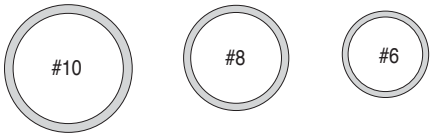


Classic Auto Air Hardware Reference Guide

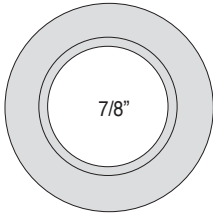
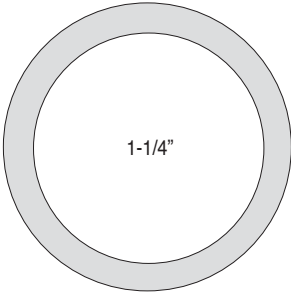
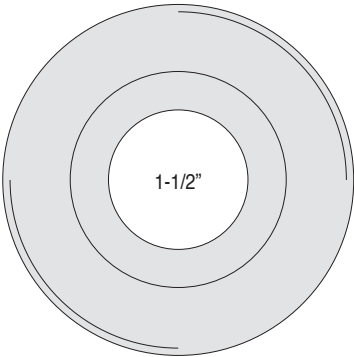
This is our basic line-up of hardware. No single kit will not contain all of these, but you can use this guide to match-up hardware for shape and size (all of these are actual size.)



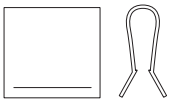
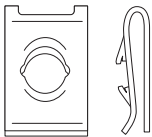
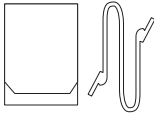
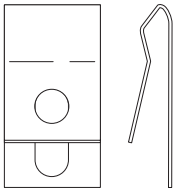
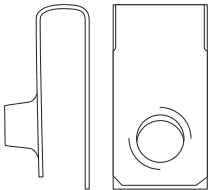
ORINGS



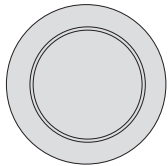
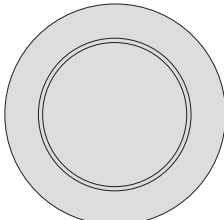
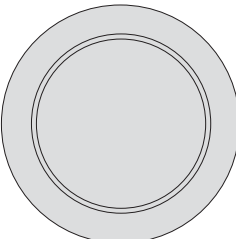
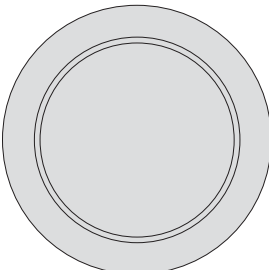
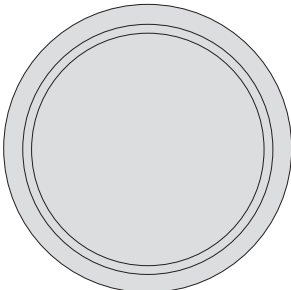
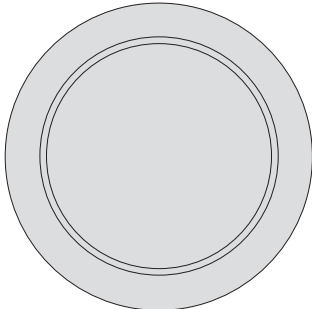
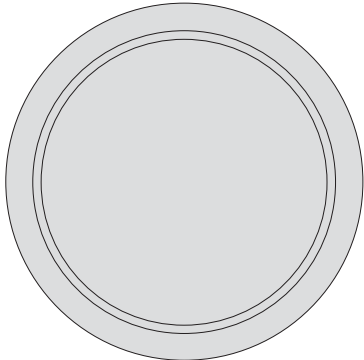
GROMMETS



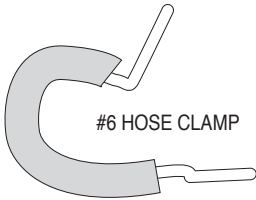
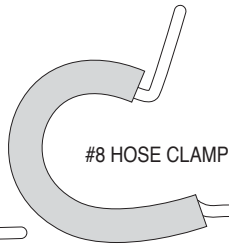
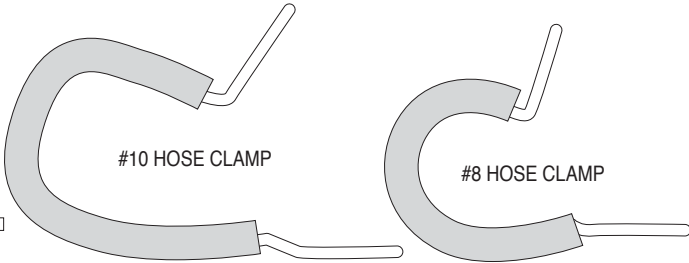
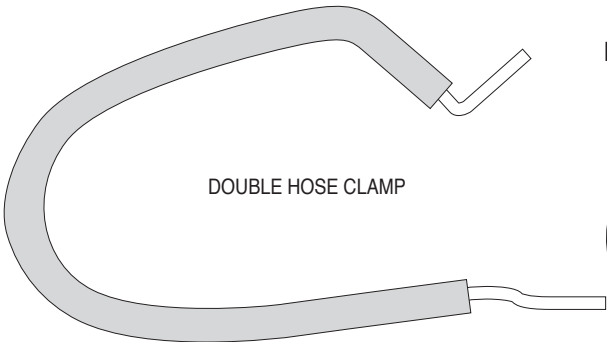
CLIPS



HOLE PLUGS



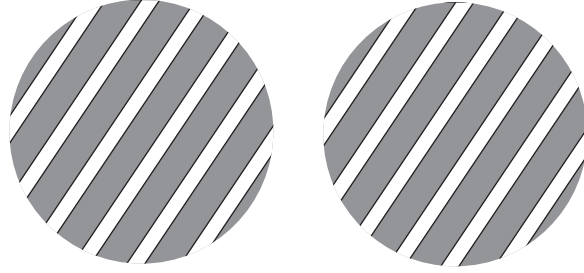
HOSE CLAMPS





IF YOU PRINTED THIS MANUAL
PLEASE READ THIS...
Just as a cautionary step, please
measure this box and make sure it
is 1" x 1". Some copiers/printers
do not print at 100% of actual size.

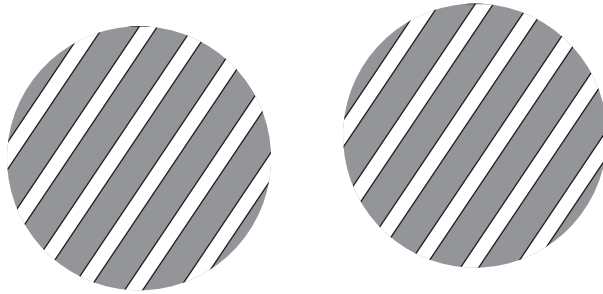
FRONT EDGE OF RADIATOR SUPPORT



**1 3/8" DIA
FOR CUTOUTS**

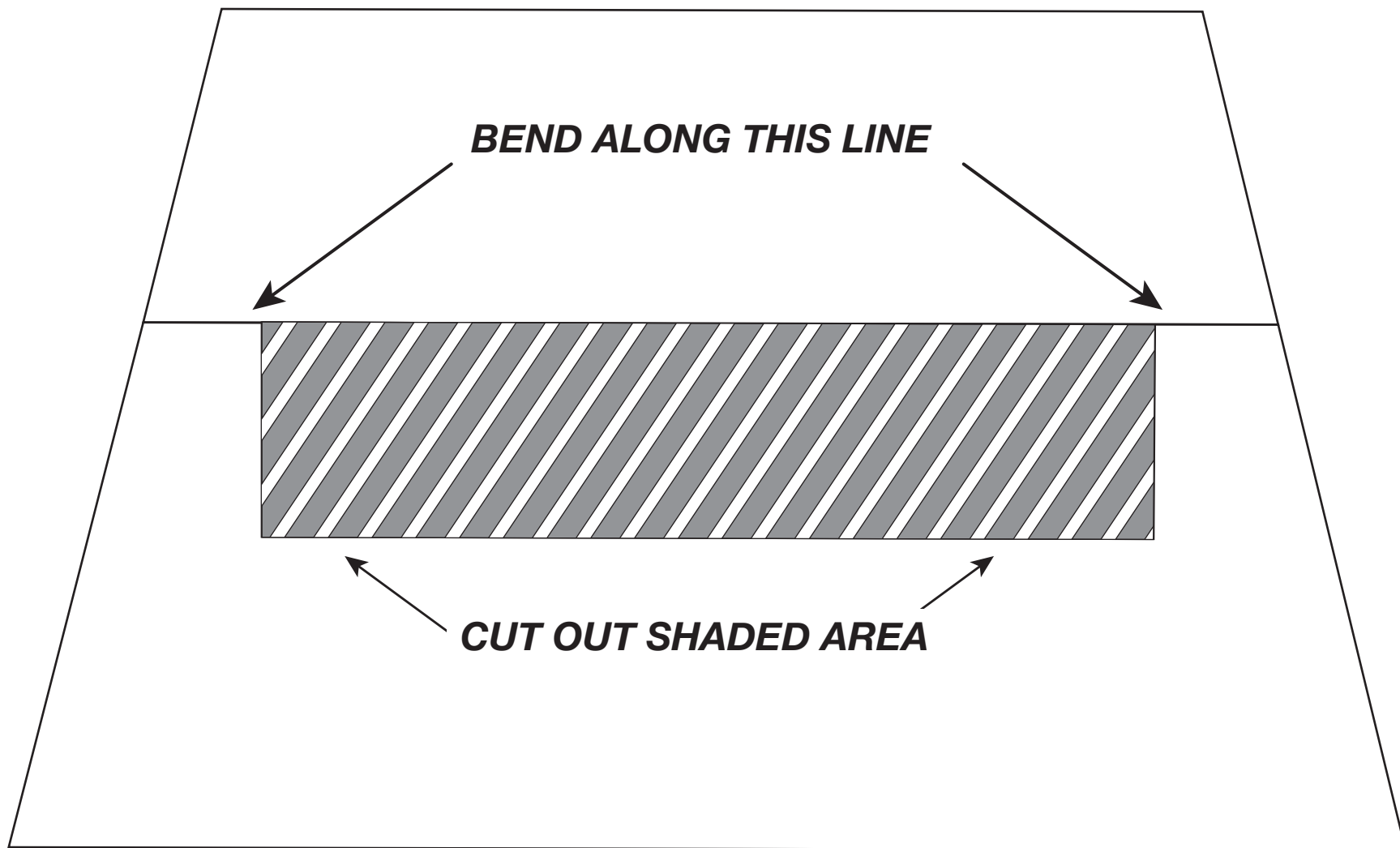
TEMPLATE #1

REAR EDGE OF RADIATOR SUPPORT



**1 3/8" DIA
FOR CUTOUTS**

TEMPLATE #2



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