Installation Manual

1967-72 CHRYSLER "A" BODIES

DOCUMENT #20-3062

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Congratulations...

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

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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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

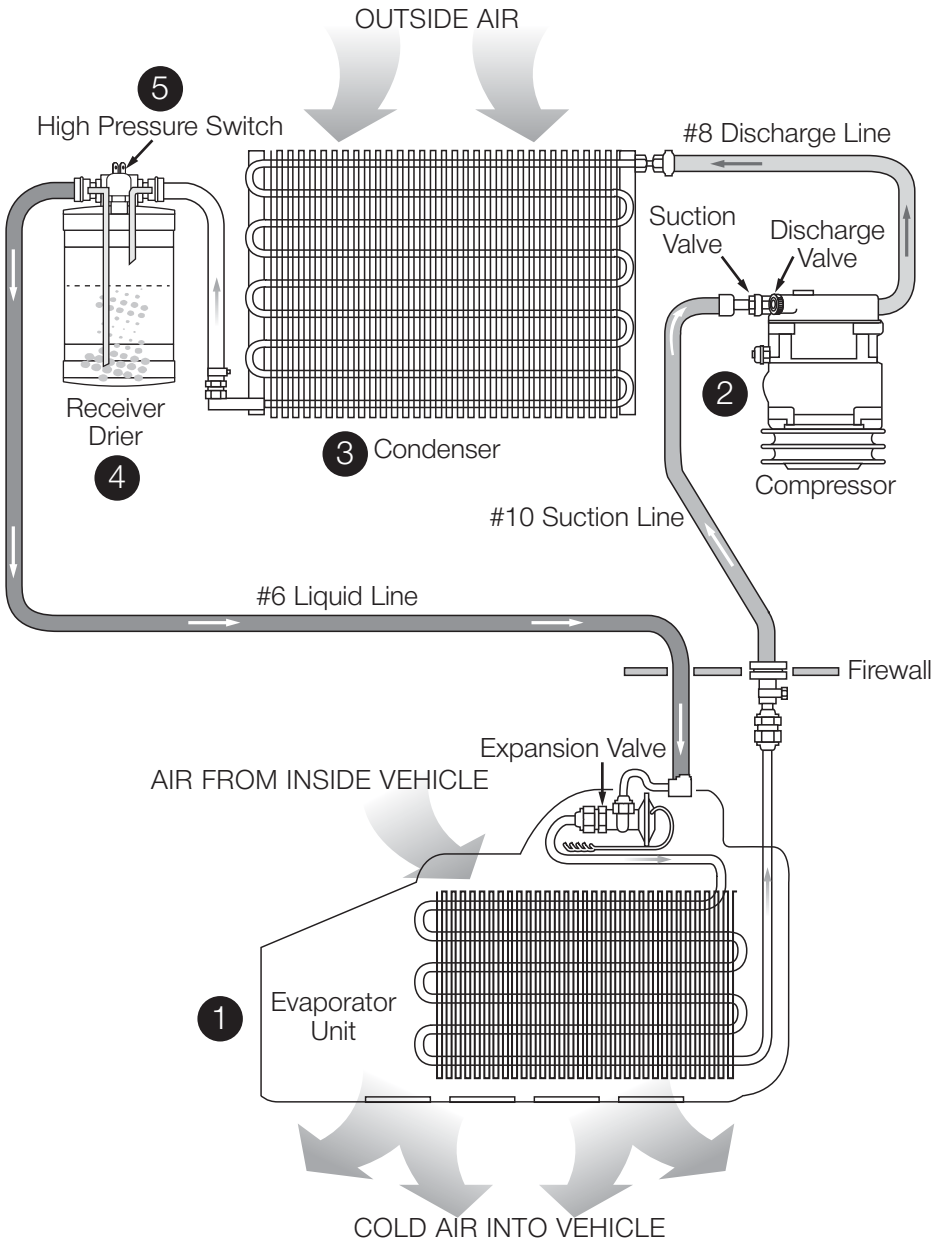
- ☐ Fittings: Use one or two drops of mineral oil (supplied with your kit) on ALL rubber o-rings, threads and where o-rings seat in fittings. Do not use thread tape or sealants.
- ☐ Measure twice (or more), cut once
- ☐ **Should you have any technical questions, or feel you have defective components (or missing items), call us immediately, we will be glad to assist you. We're here to help!**

CAUTION: DISCONNECT BATTERY GROUND CABLE

YOU CAN NOW BEGIN THE INSTALLATION...

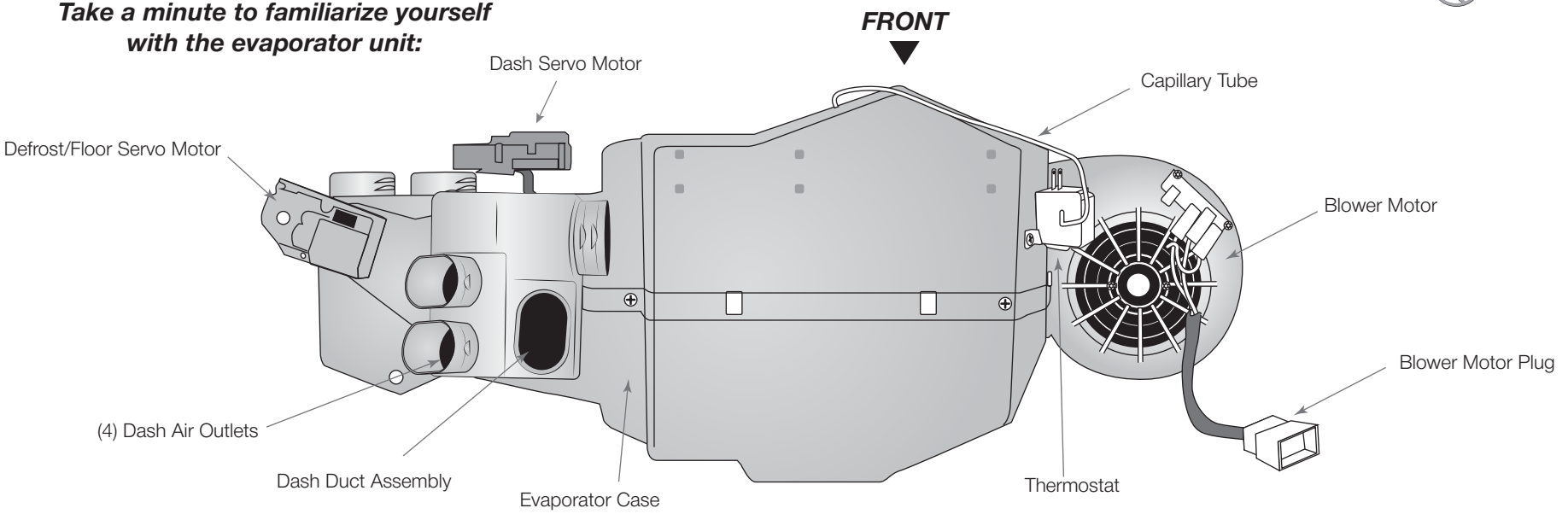
A Basic Overview of Automotive A/C....

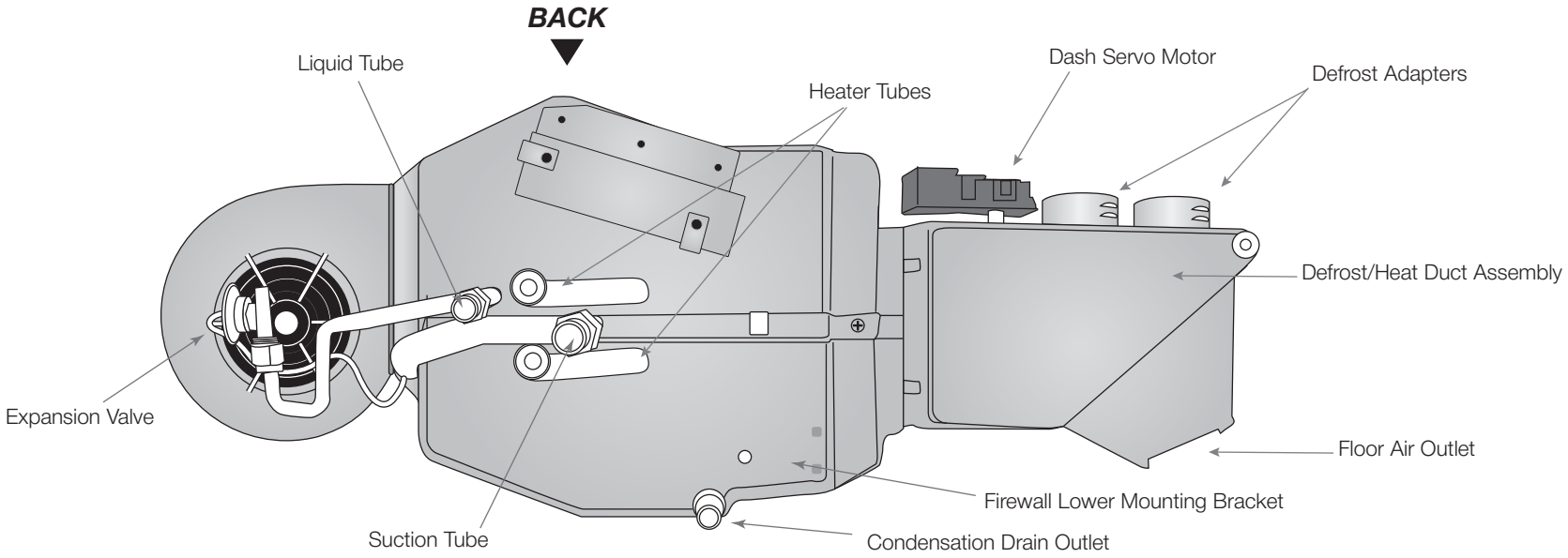
1. **Evaporator with Blower Fan:** In order to remove the heat from the air in the vehicle, the A/C evaporator allows the refrigerant to absorb the heat from the air passing over it. The blower fan moves cool air out into the car interior.
2. **Compressor:** The compressor pumps and circulates the refrigerant 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.

Take a minute to familiarize yourself with the evaporator unit:





“PERFECT FIT-SMART SERIES”
IN-DASH
HEAT/ COOL/ DEFROST

CONTROL & OPERATING INSTRUCTIONS

The controls on your new Perfect Fit-Smart Series A/C system. Offers complete comfort capabilities in virtually every driving condition. This includes Temperature control in all of the modes.

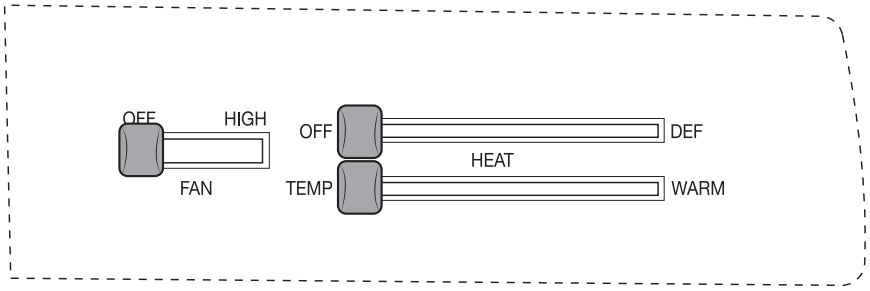
THE FOLLOWING SUMMARY WILL DESCRIBE EACH OF THE CONTROL LEVERS FUNCTION.

FAN SPEED SWITCH: There are 3 speeds plus Off. When the switch is in the off position it will disconnect the 12V power to the Blower Motor and the A/C Clutch. This will shut down the entire system. When the switch is moved to any of the blower speeds 1, 2 or 3 there is 12V supplied to the Micro-Switch that is mounted on the Defrost Duct.

HEAT / FACE / DEFROST DOOR CONTROL: When the Control Knob is pushed all the way to the LEFT the air is distributed to the DEFROST outlets. When the knob is pushed to the MIDDLE of the controls the air will go to the FACE outlets. In the FACE position the compressor is engaged. When the knob is pushed all the way to the RIGHT the air will go to the HEAT outlets. In the Defrost position the compressor clutch is engaged for dehumidification.

TEMPERATURE CONTROL: The Temperature Knob as shown is at the COLDEST temperature position. As the lever is PUSHED to the RIGHT the temperature of the discharged air will RISE to the HOTTEST point.

Note: The temperature lever will function in any of the modes.

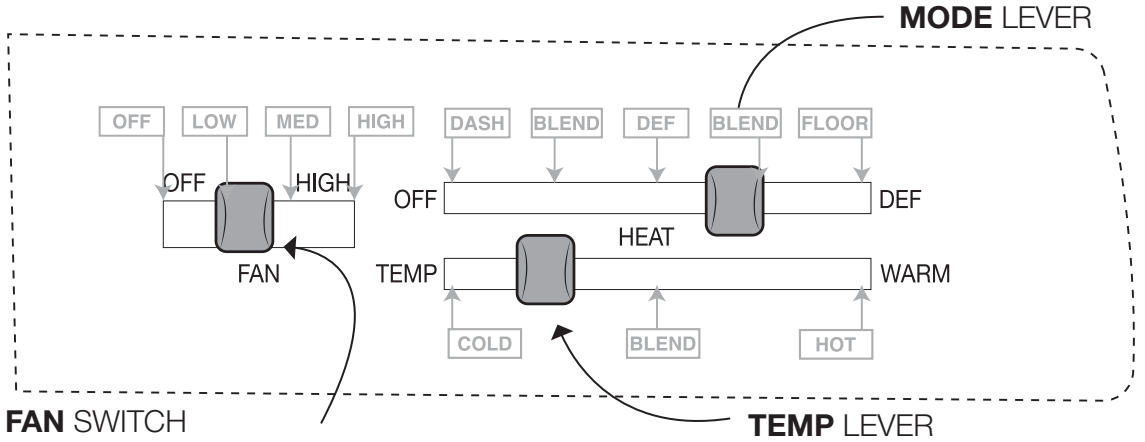


THE PICTURE YOU SEE SHOWS THE CONTROLS IN THE HEAT MODE. THIS MEANS THAT THE AIR WILL BE DISTRIBUTED THROUGH THE HEATER OUTLETS. THIS ALSO HAS THE TEMPERATURE LEVER IN THE COLDEST POSITION. WITH THE CONTROLS IN THIS POSITION YOU WILL GET THE AIR THROUGH THE HEATER OUTLETS AND THE OUTLET TEMPERATURE AT THE COLDEST POSSIBLE DEGREE.

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 MODE 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/FLR

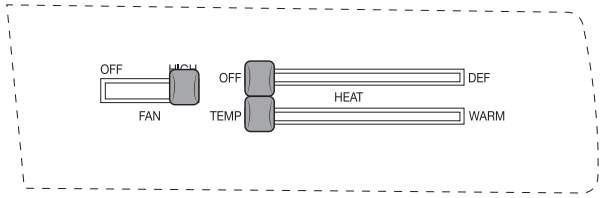
POSITION	Dash A/C 100%	Dash A/C 80% Defrost 20%	Dash A/C 60% Defrost 40%	Dash A/C 40% Defrost 60%	Dash A/C 20% Defrost 80%	Defrost 100%	Floor 20% Defrost 80%	Floor 40% Defrost 60%	Floor 60% Defrost 40%	Floor 80% Defrost 20%	Floor 100%
COMPRESSOR	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

FAN LEFT → RIGHT

BLOWER	OFF	LOW	MED	HIGH

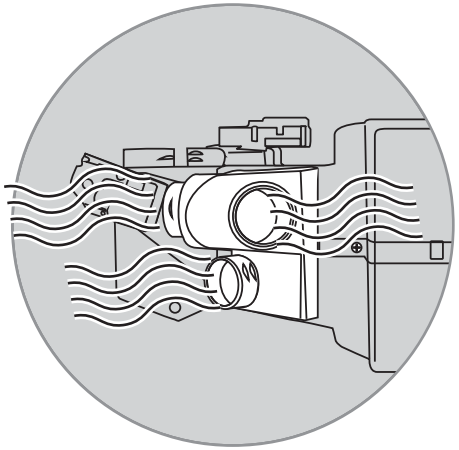
The FAN switch works like the OEM switch, moving the lever away from the OFF indicator powers the system

1

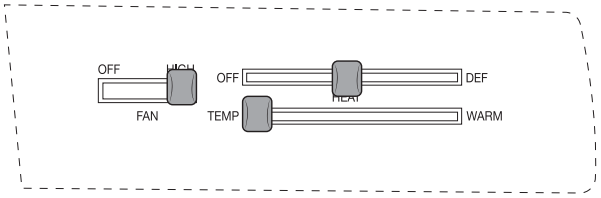


Move FAN knob to RIGHT
Move MODE knob to LEFT
Move TEMP knob to LEFT

AIR OUT OF DASH VENTS

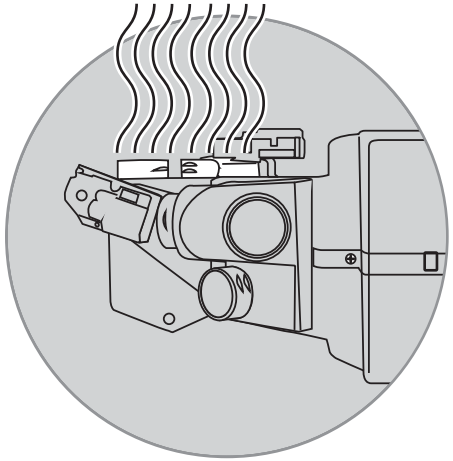


2

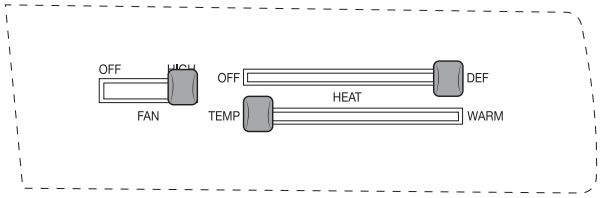


Move MODE knob to MIDDLE

AIR OUT OF DEFROST VENTS

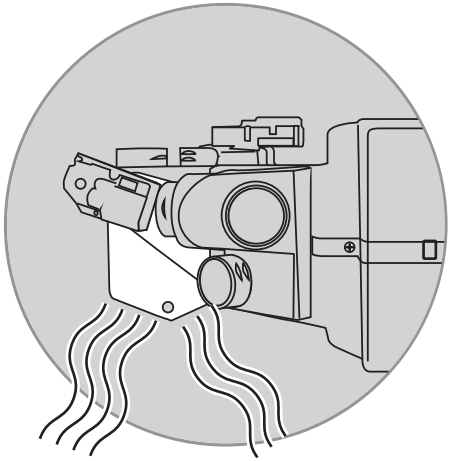


3

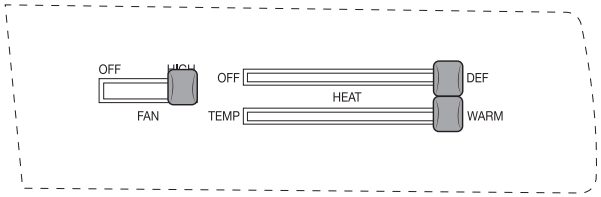


Move MODE knob to RIGHT

AIR OUT OF FLOOR VENTS

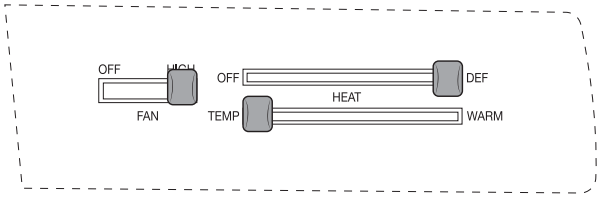


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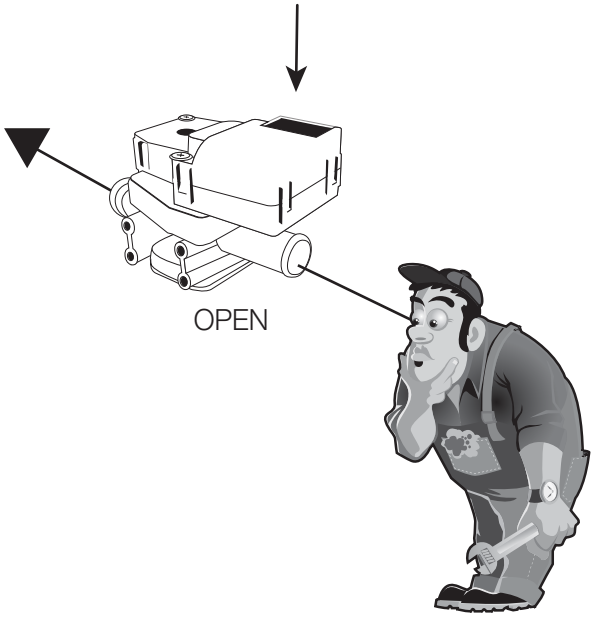


Move TEMP knob to RIGHT

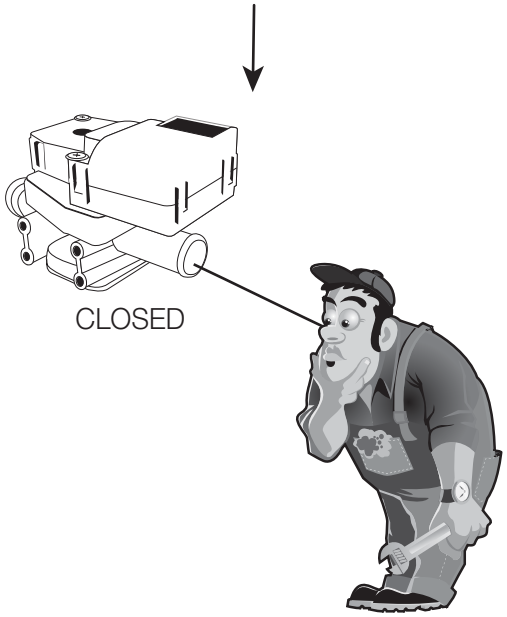
5



Move TEMP knob to LEFT

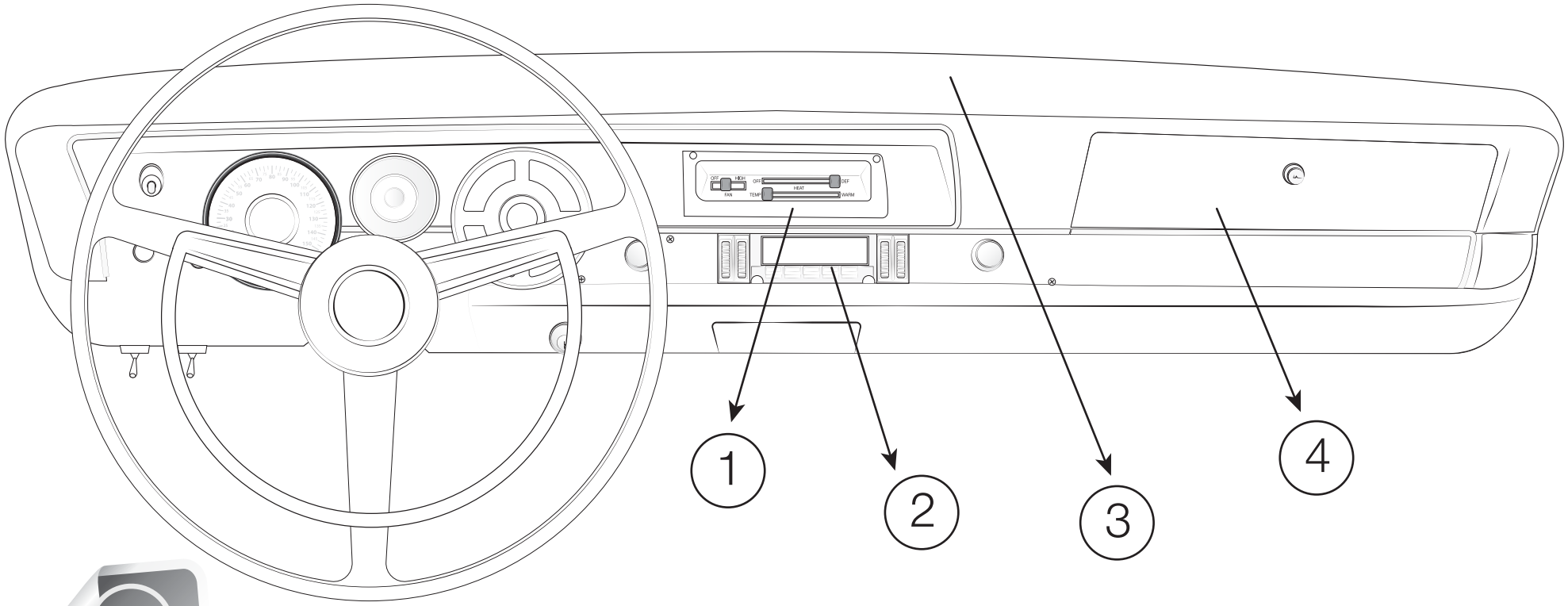


You will be able to see thru water valve passage



You will NOT be able to see thru water valve passage

Heater Controls Removal





1. Remove Heater controls. In order to remove the Control head the dash bezel needs to be loosened to gain access to screws on back of the control head. Remove screws holding controls onto the dash bezel. Retain original hardware.
2. Remove radio and keep hardware for reinstall.
3. Disconnect defrost duct work.
4. Remove the Glove box door, and remove glove box. Retain glove box door and all original hardware. Discard the glove box housing.

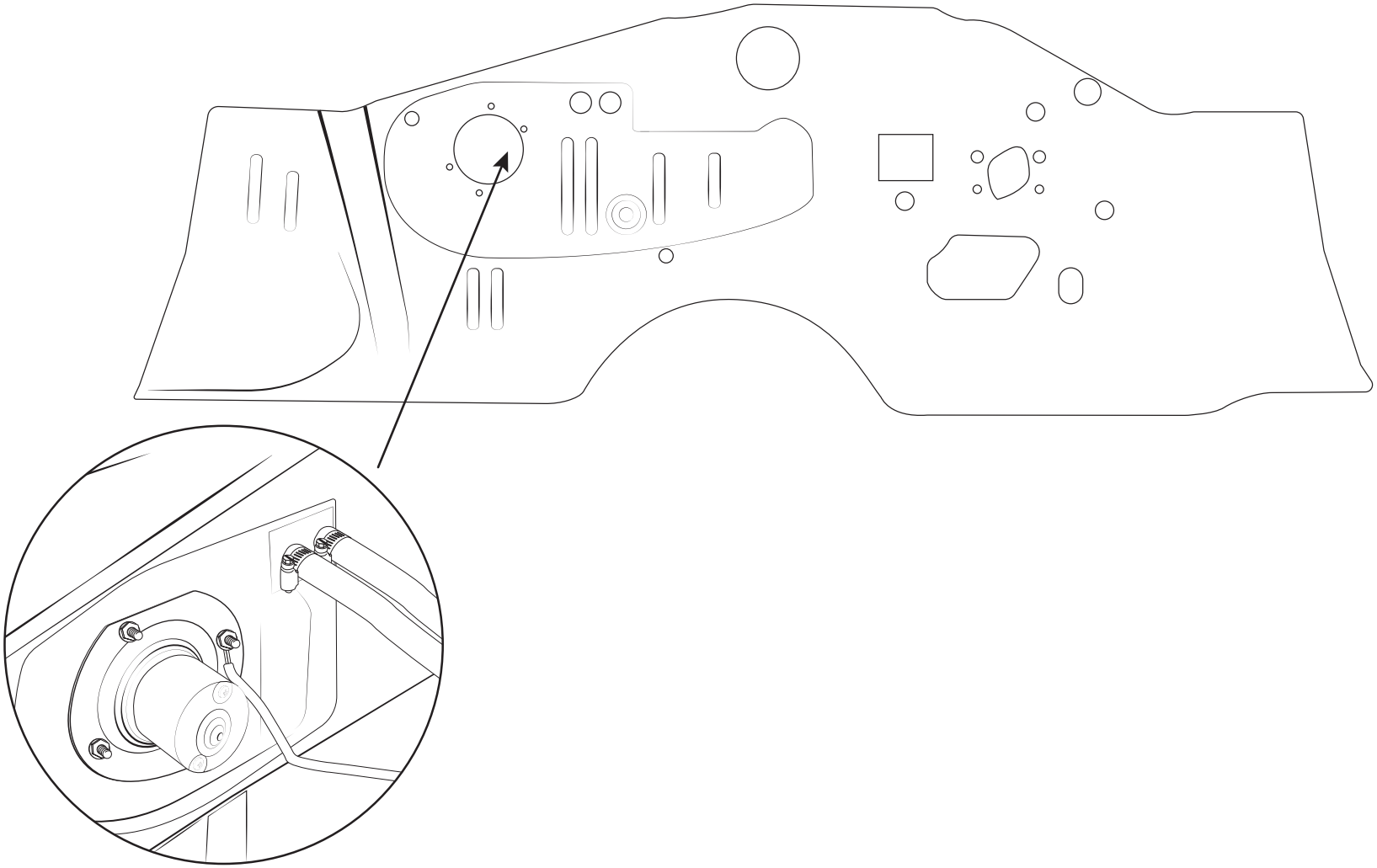
Original Heater Asembly Removal

Around perimeter of the Blower Motor remove (4) nuts that hold heater assembly to the firewall.

Disconnect heater hoses to the heater core.

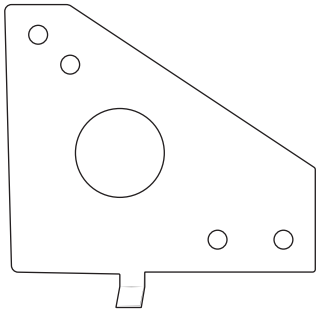
Open fresh air door on the passenger side. Remove the screw that holds support rod in place. Remove and discard the support rod.

Remove kick panel and disconnect ground wire to the blower motor. Remove the heater assembly and discard.

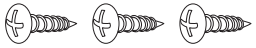


THESE ARE THE PARTS YOU WILL FIND IN BAG KIT A

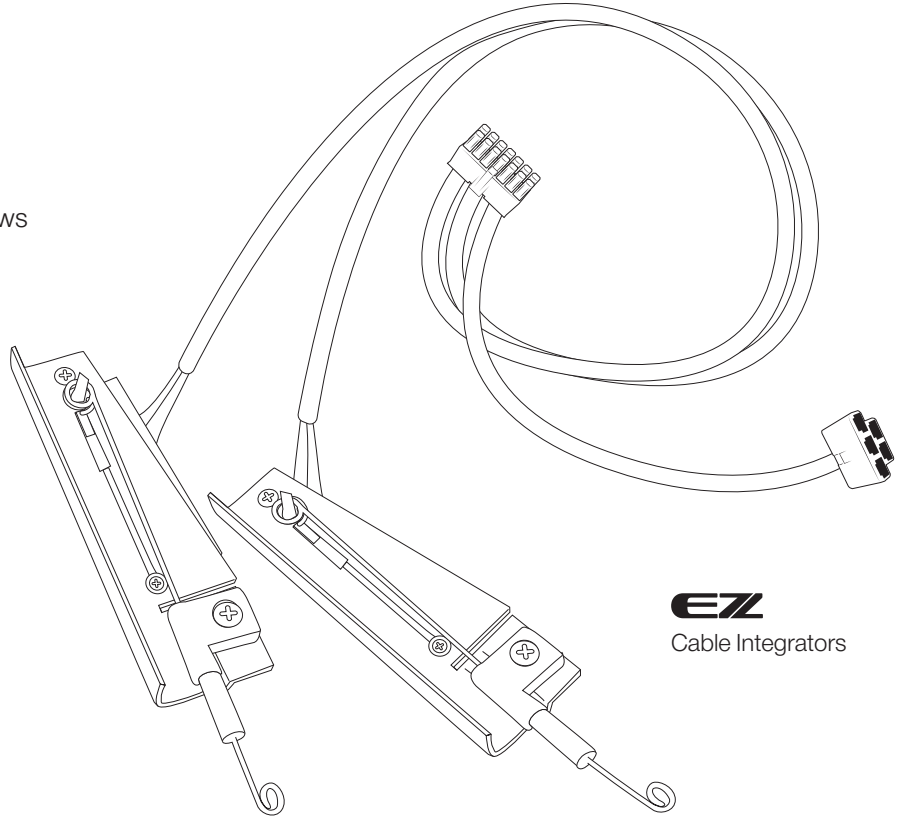
You will use all of these parts and hardware during the next series of installation steps.



0079-3A
BRACKET



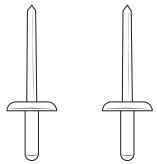
(3) #8 - 10 x 3/8" Phillips Screws



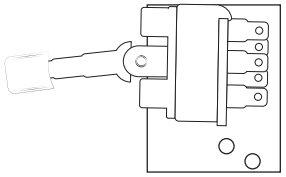
EZ
Cable Integrators



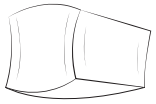
Cable Clip



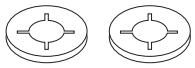
(2) 1/4” Pop Rivet



Blower Switch
Assembly



Blower Switch Knob
PN# 525325

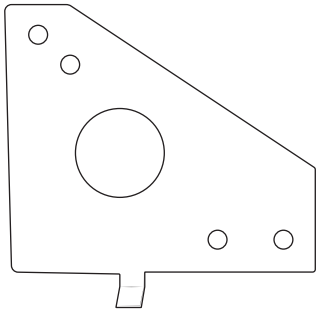


Two Push nuts

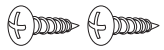
Illustrations are **NOT** actual size

THESE ARE THE PARTS YOU WILL FIND IN BAG KIT A

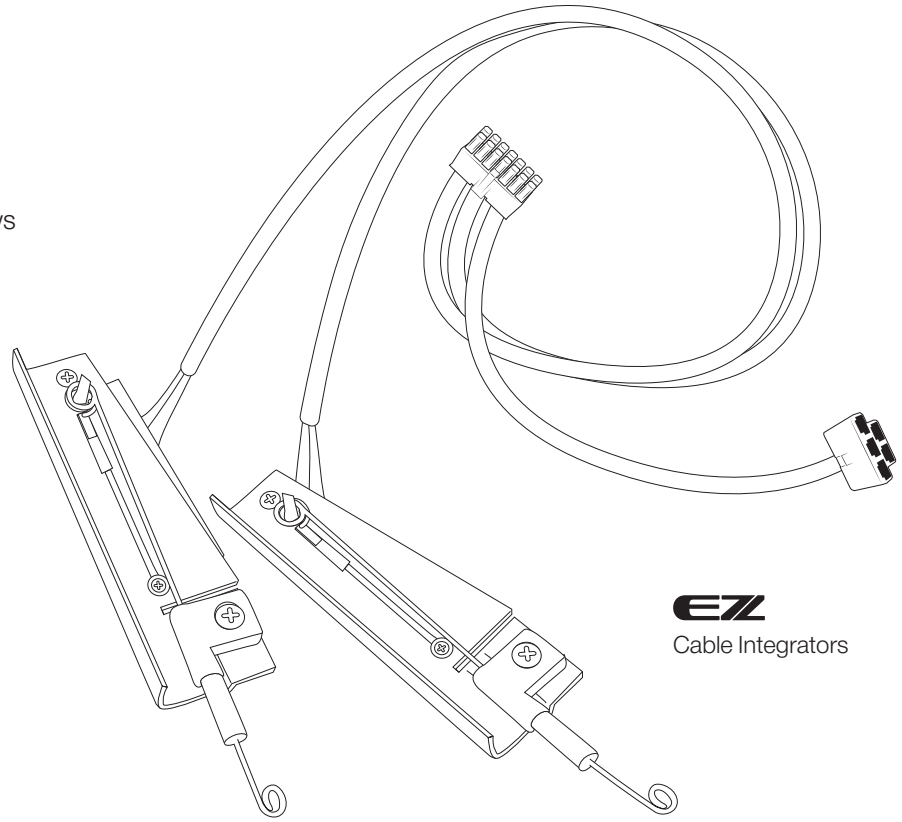
You will use all of these parts and hardware during the next series of installation steps.



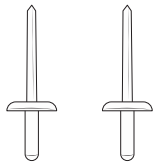
0079-3A
BRACKET



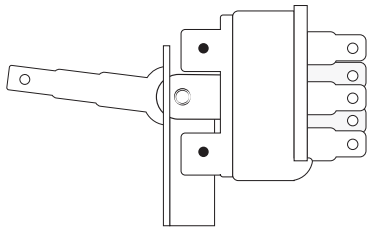
Two #8 - 10 x 3/8" Phillips Screws



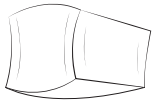
EZ
Cable Integrators



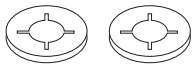
(2) 1/4” Pop Rivet



Blower Switch
Assembly



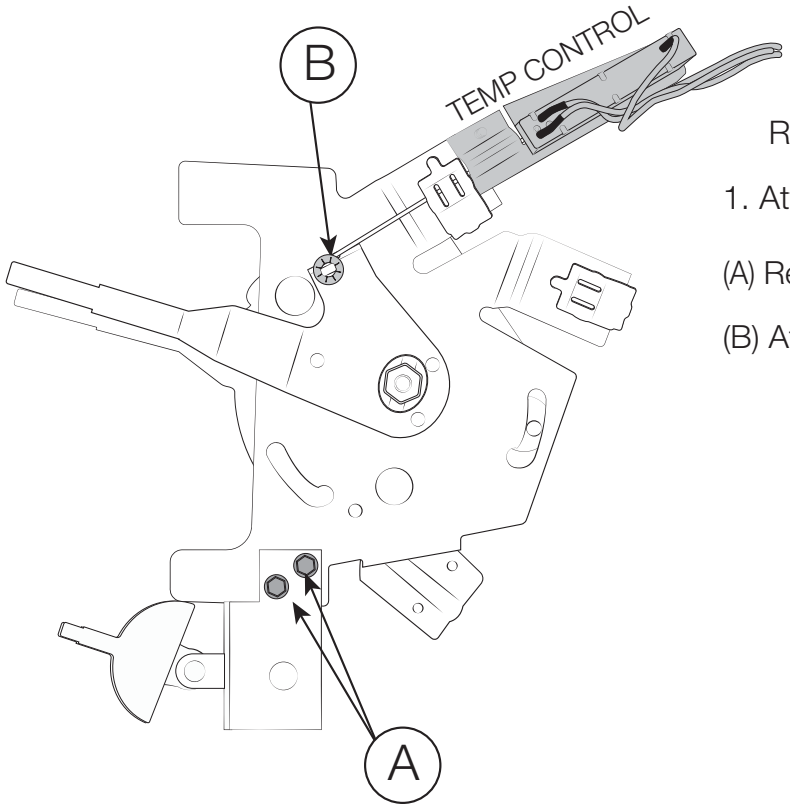
Blower Switch Knob
PN# 525325



Two Push nuts

Illustrations are **NOT** actual size

1967 A-Body Controls

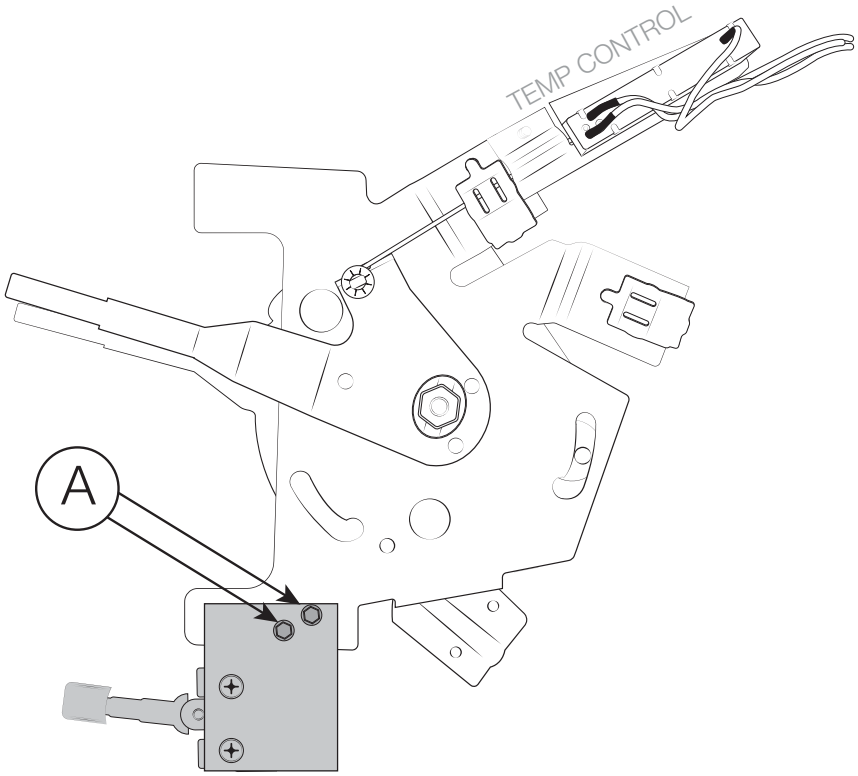


Remove all original push-pull cables on control head.

1. Attach the Classic Auto Air Temp Control Integrator as shown.

(A) Remove original blower switch by removing screws with nut driver.

(B) Attach Temp cable over the bracket and secure with a push nut.

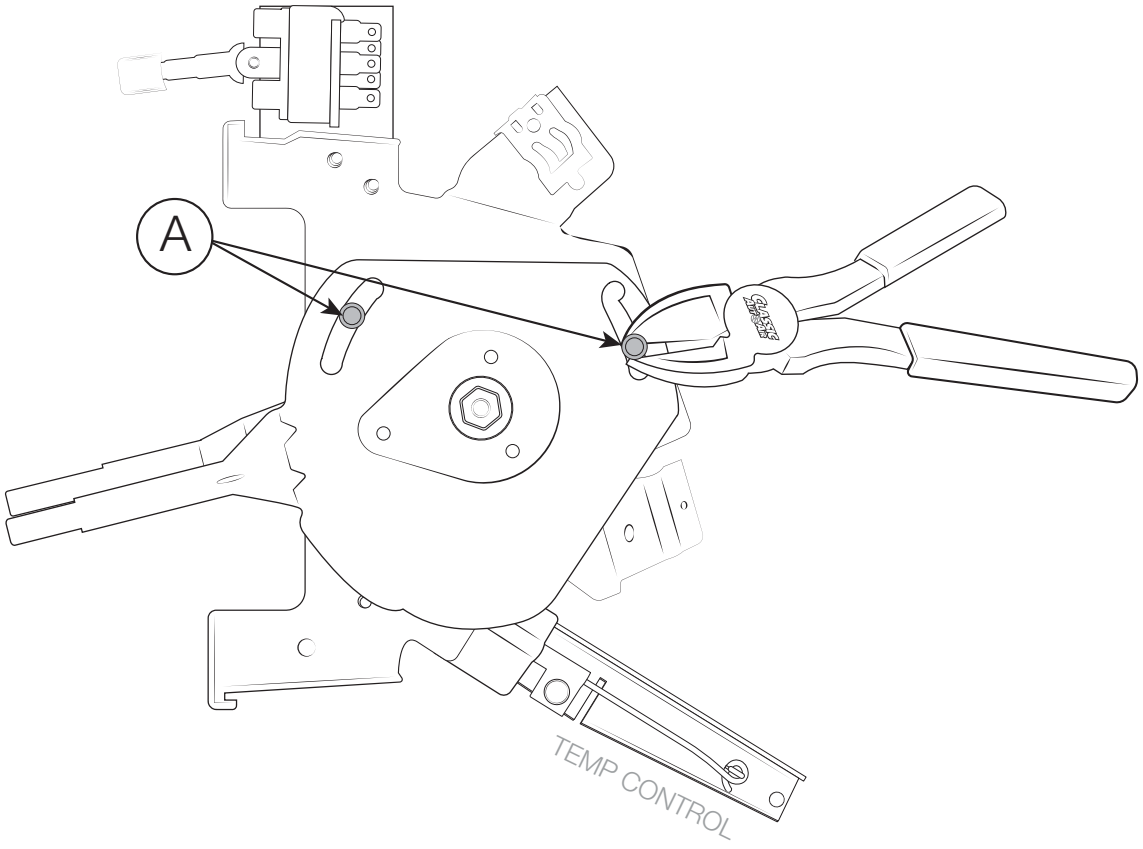


2. Installing Bracket and Switch

(A) Attach assembly to original control head using the original hardware.

3. Flip Control head over Attach the Classic Auto Air Mode Control Integrator as shown.

(A) Cut off (2) control cable hook up pins as shown.

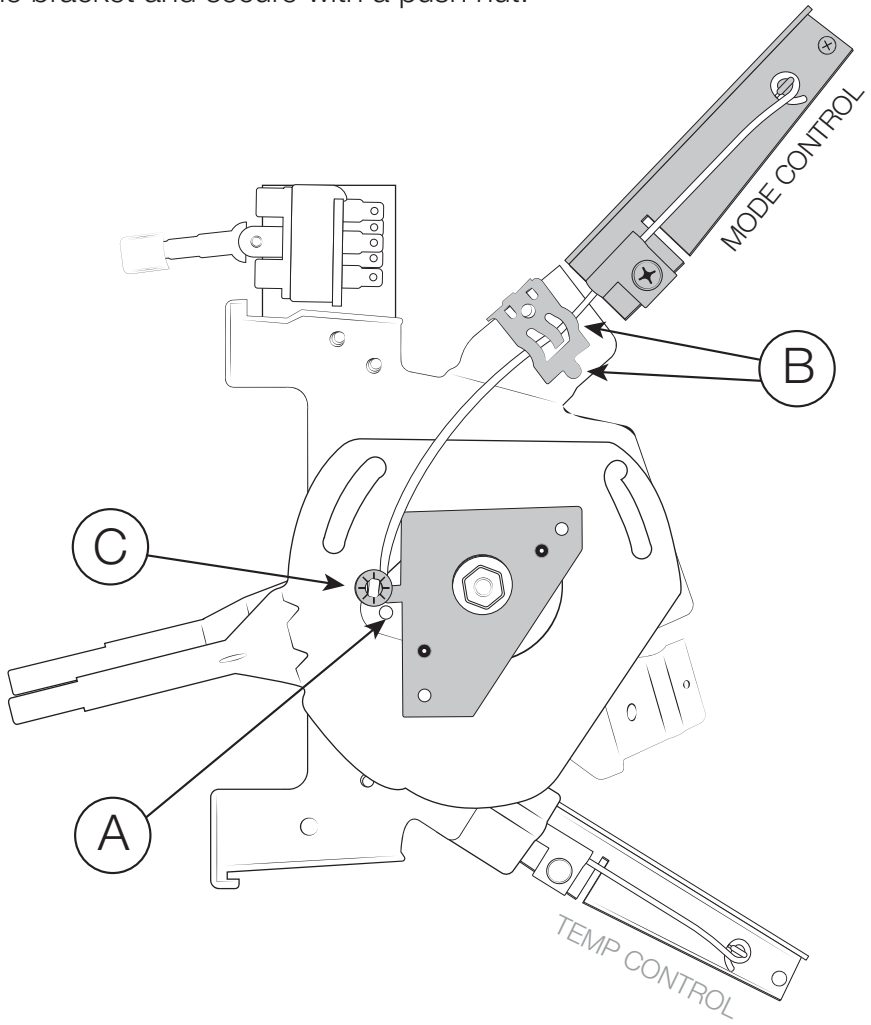


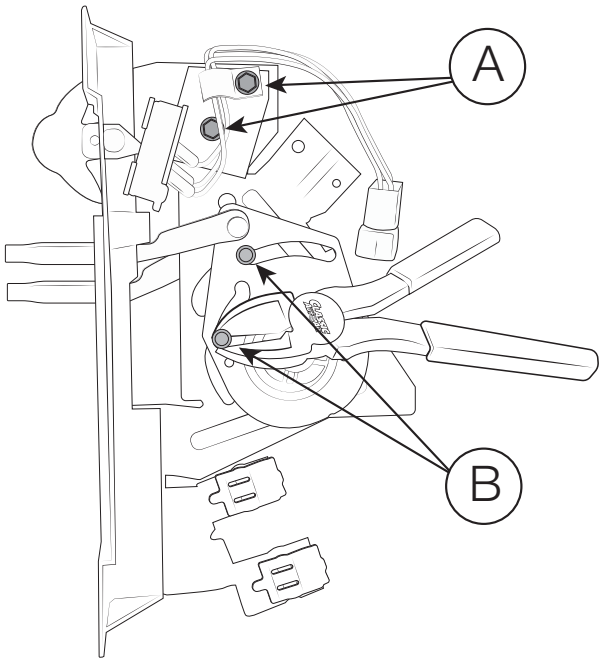
3. Attach the Classic Auto Air Mode Control Integrator as shown.

(A) Place bracket over the nut and rotate so that cable connection tab is just Above of the dimple in the control lever. Drill (2) 1/8” dia holes in lever using the bracket as a template. Install the pop rivets.

(B) Attach mode control assembly to mounting point on control by using the factory cable clip.

(C) Attach Mode cable over the bracket and secure with a push nut.

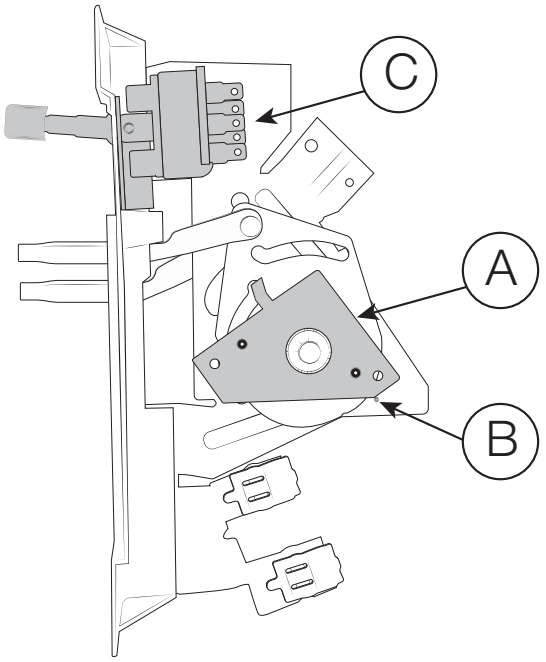




1. Remove all original push-pull cables on control head.

(A) Remove original blower switch by removing screws with nut driver.

(B) Locate original heater control head and Cut off (2) control cable hook up pins as shown.



2. Installing Bracket and Switch

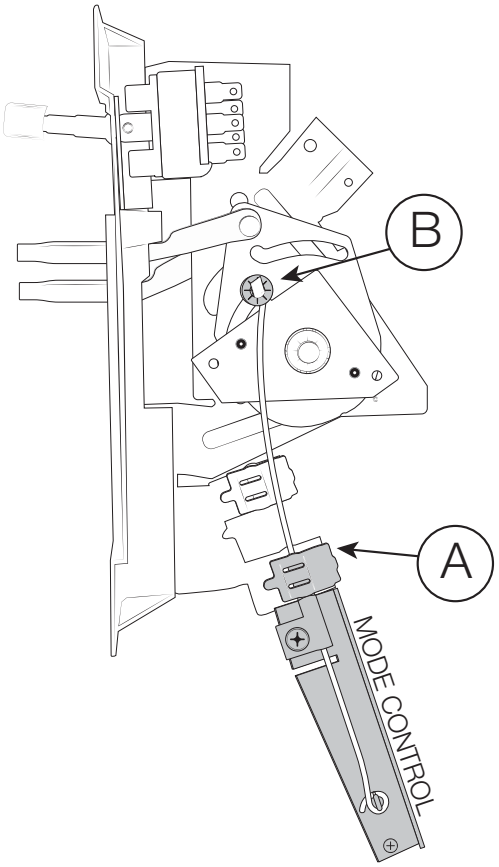
(A) Attach the cable attachment bracket over center nut as shown.

(B) Rotate so that the bracket just misses the center spring clip. Match drill (2) 1/8” dia holes in lever using the bracket as a template. Install (2) 1/8” pop rivets.

Note: Line up bottom corner of bracket with spring as shown.

(C) Using the switch assembly as a guide. Match drill mounting holes into the control assembly. Use a 1/8” drill bit.

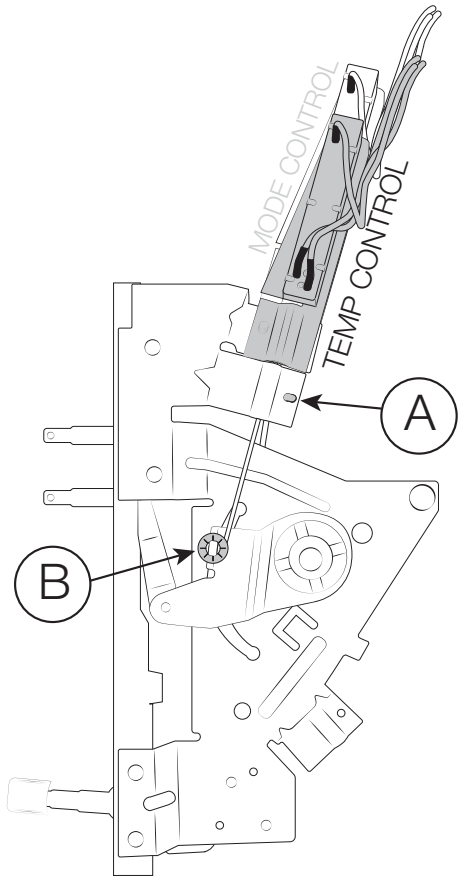
Open previously drilled holes to 5/32” dia. and attach the switch assembly using (2) #8 x 3/8” pan head screws.



3. Attach the Classic Auto Air Mode Control Integrator as shown.

(A) Attach the Mode cable to control head using the original cable retaining clip.

(B) Attach Mode cable over the bracket and secure with a push nut.



4. Flip Control head over and attach the Classic Auto Air Temp Control Integrator as shown.

(A) Attach the Temp cable to control head using the original cable retaining clip.

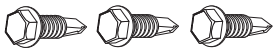
(B) Attach Temp cable over the bracket and secure with a push nut.

THESE ARE THE PARTS YOU WILL FIND IN BAG KIT B

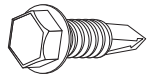
You will use all of these parts and hardware during the next series of installation steps.



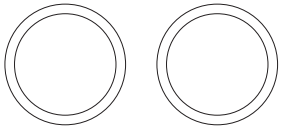
Two 1/4" Washer



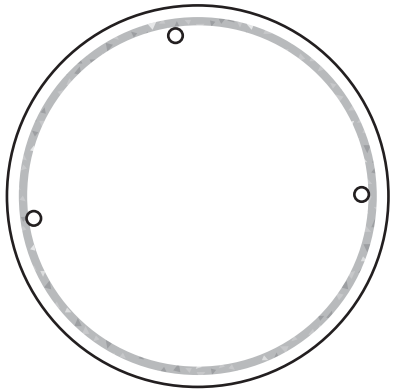
Three #10 - 16 x 3/4" Tek Screws



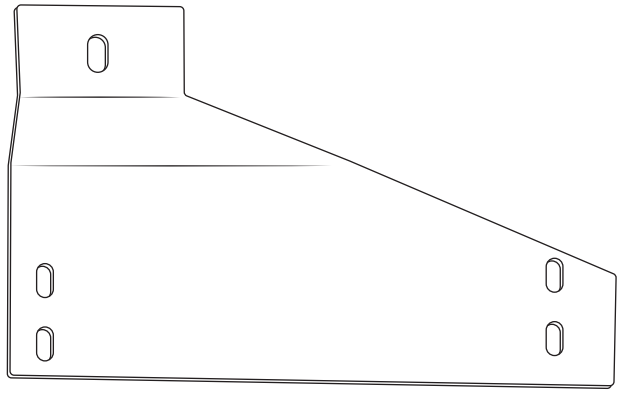
One #14 - 16 x 3/4" Tek Screws



Two 3/4" Cap Plugs



Fresh Air Inlet Block Off
PN# 10-1025-2



Evaporator Support Bracket
PN# 0022-4



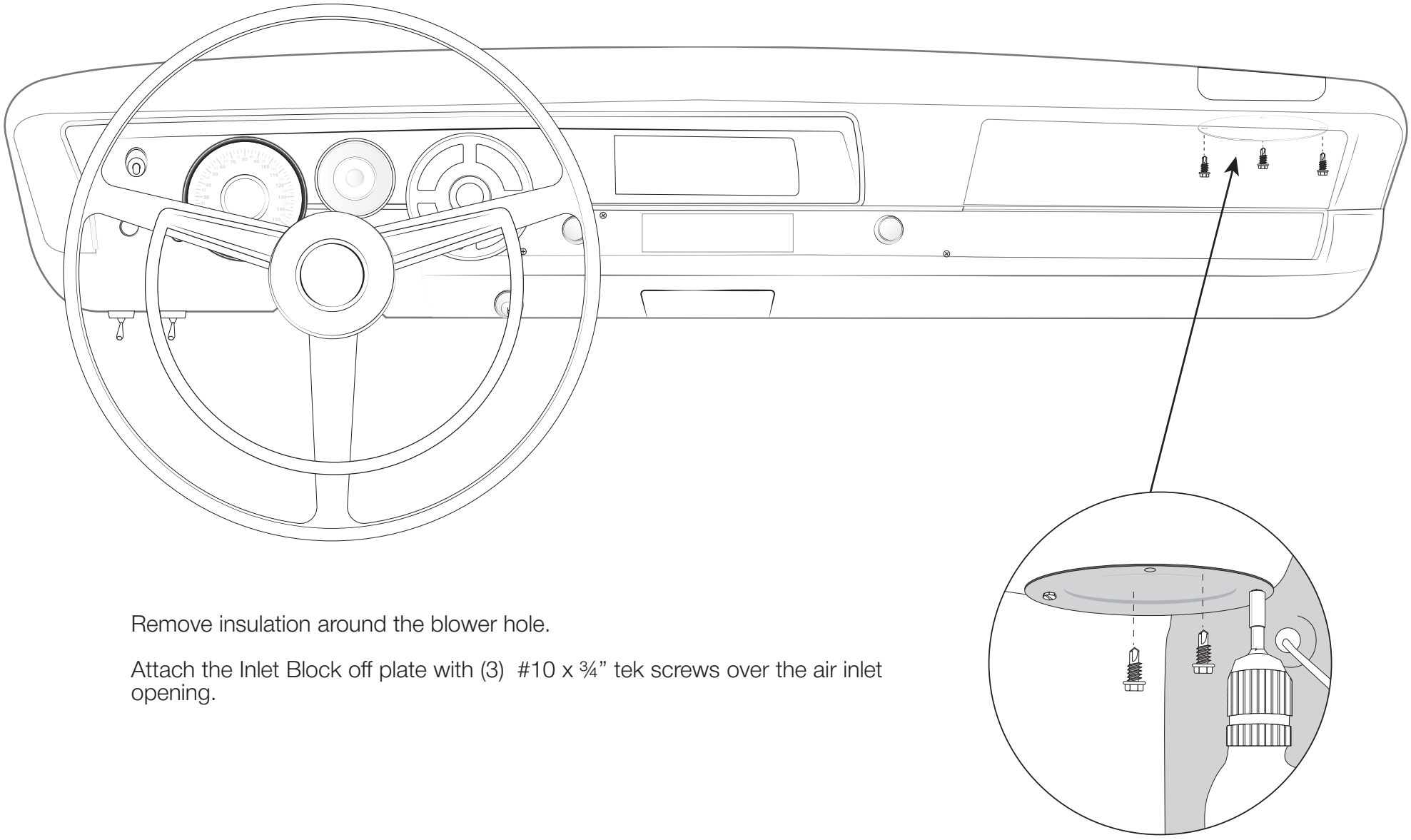
Two 1/4 - #20 x 5/8" Bolts



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

Illustrations are **NOT** actual size

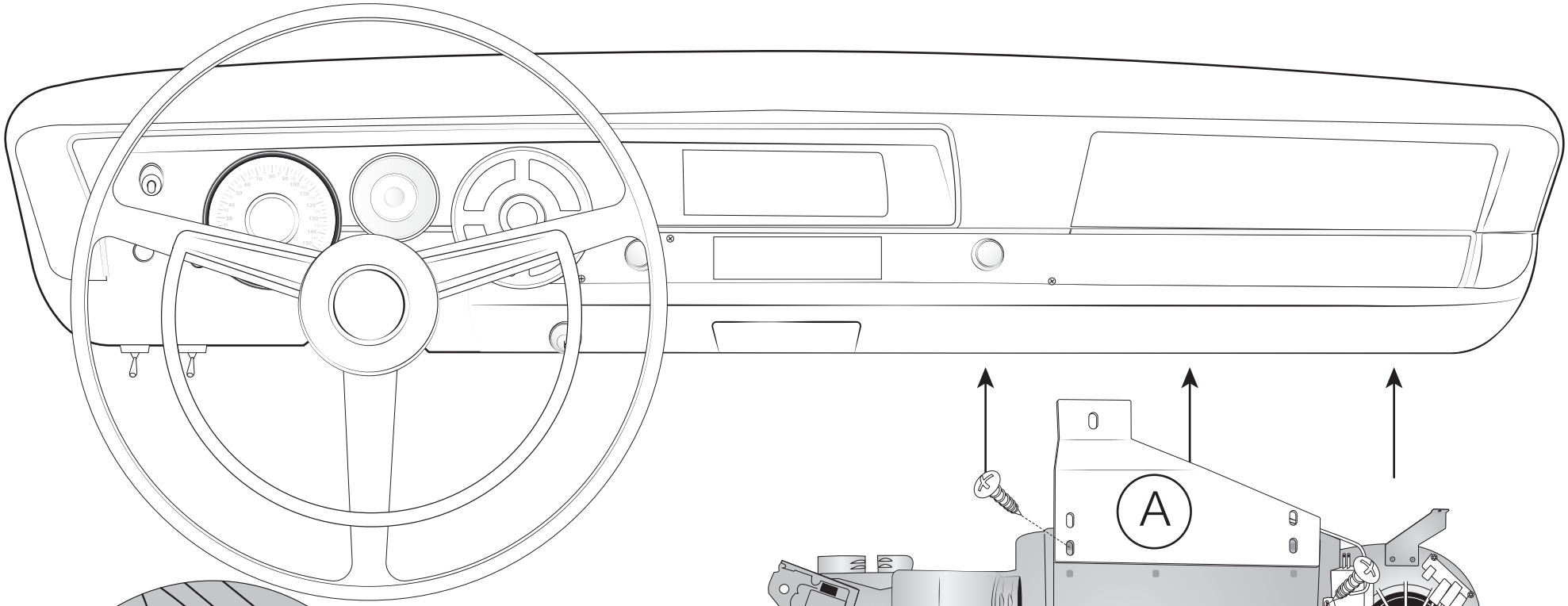
Fresh Air Block Off

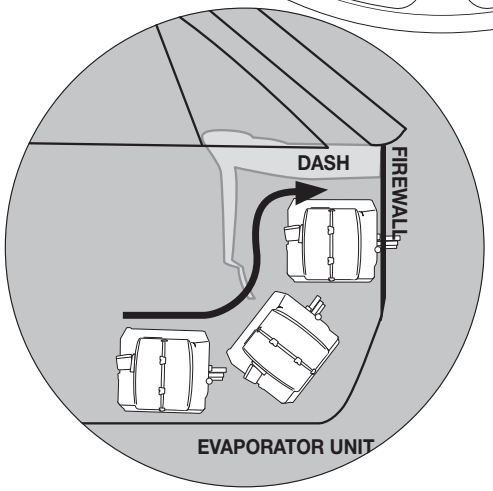


Remove insulation around the blower hole.

Attach the Inlet Block off plate with (3) #10 x ¾" tek screws over the air inlet opening.

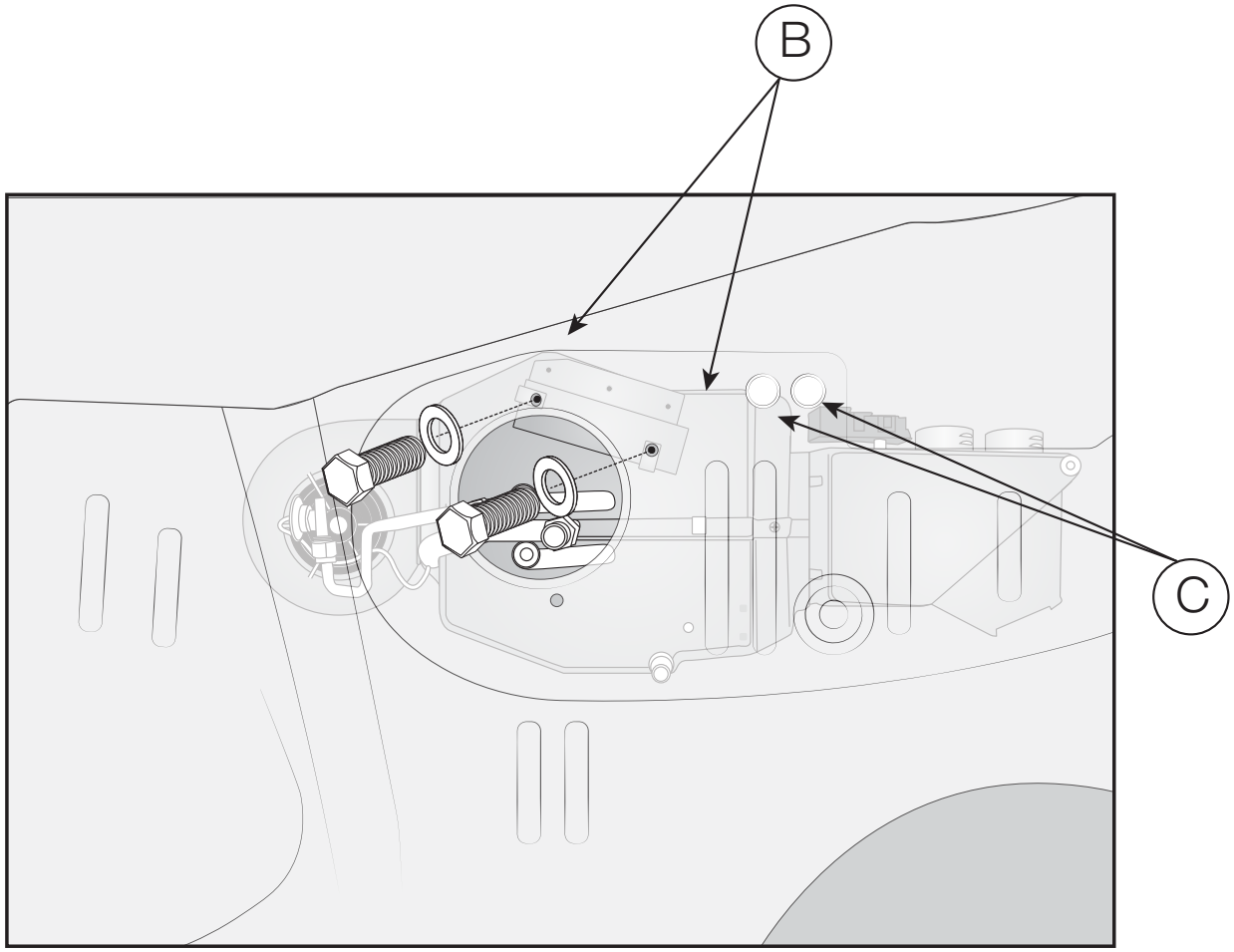
NOTE: Two people are needed for this step!





Place evaporator unit on floor panel.
(A) Attach mounting bracket to the evaportator using two #10 - 10 x 5/8" Phillips Screws. ***Only use the top row of holes on the evaporator housing.*** Roll unit up behind glovebox opening.

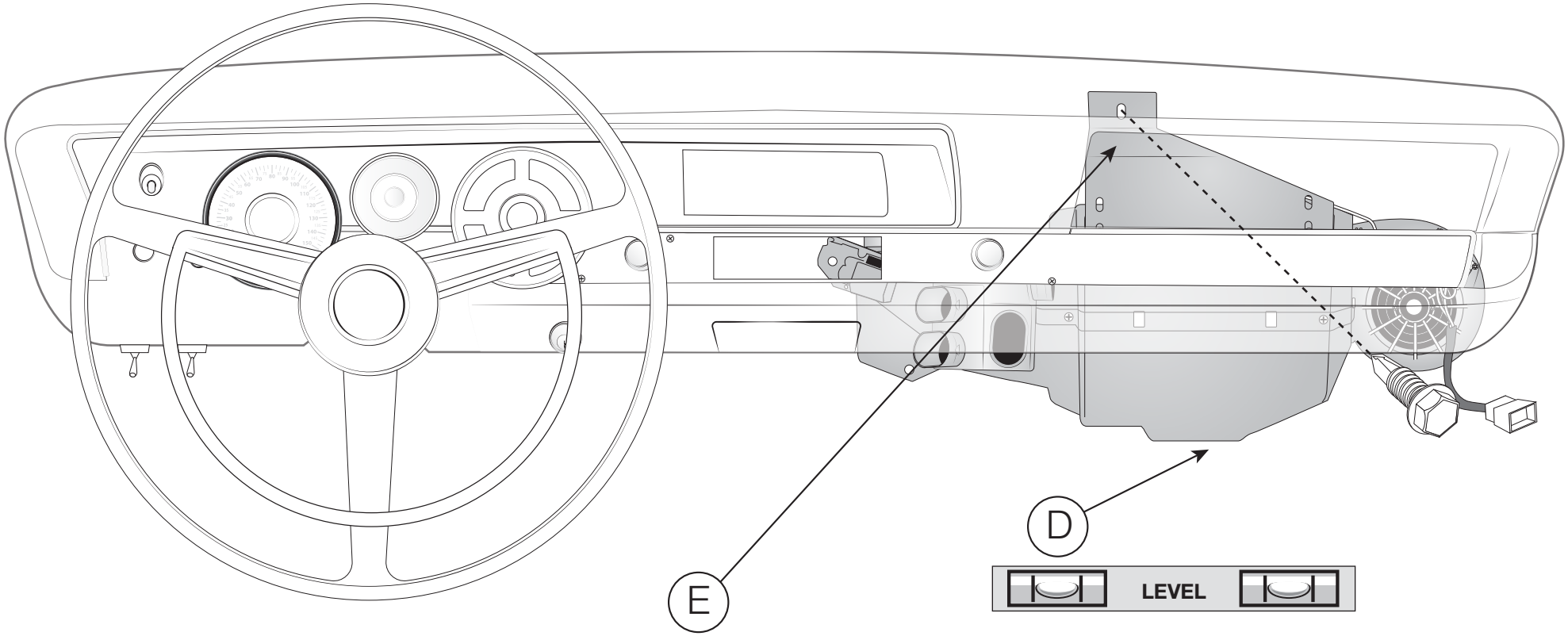
NOTE: Two people are needed for this step!



(B) Align back mounting bracket on to Firewall using (2) 1/4 - #20 x 5/8" Bolts & (2) 1/4” washers leave loose at this time.

(C) Attach Two 1” Cap plugs in the original heater hose holes in the firewall at this time.

NOTE: Two people are needed for this step!



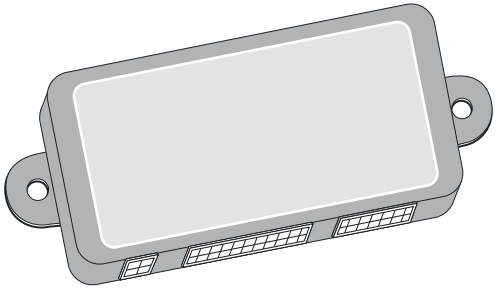
(D) Level Unit
(E) The Bracket is slotted to allow adjustment for proper tilting of unit toward firewall for condensation drainage. Once proper angle is found use one #14 Tek screw unit to upper cowl area.

LEVEL UNIT WITH BOTTOM EDGE OF DASH AND TIGHTEN ALL BOLTS

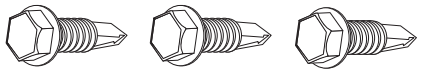
.

THESE ARE THE PARTS YOU WILL FIND IN BAG KIT C

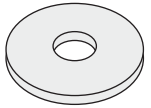
You will use all of these parts and hardware during the next series of installation steps.



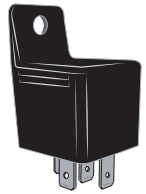
ECU
PN# 16-2500



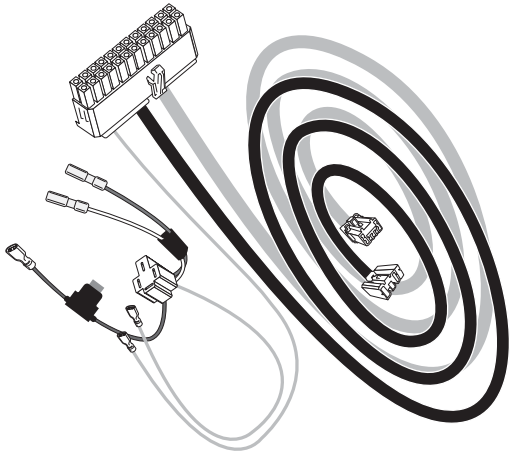
Three #10 - 16 x 3/4" Tek Screws



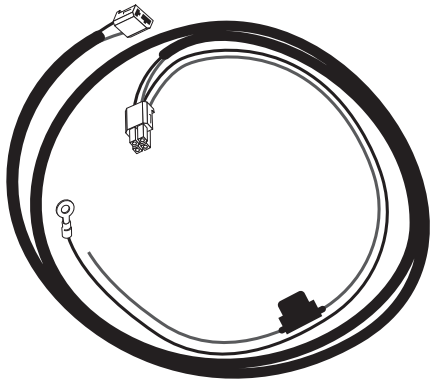
G3 Firewall Grommet



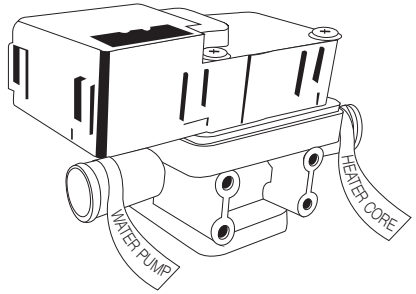
Relay
PN# 30-13373



Servo Output Harness
PN# 0125-7R3A



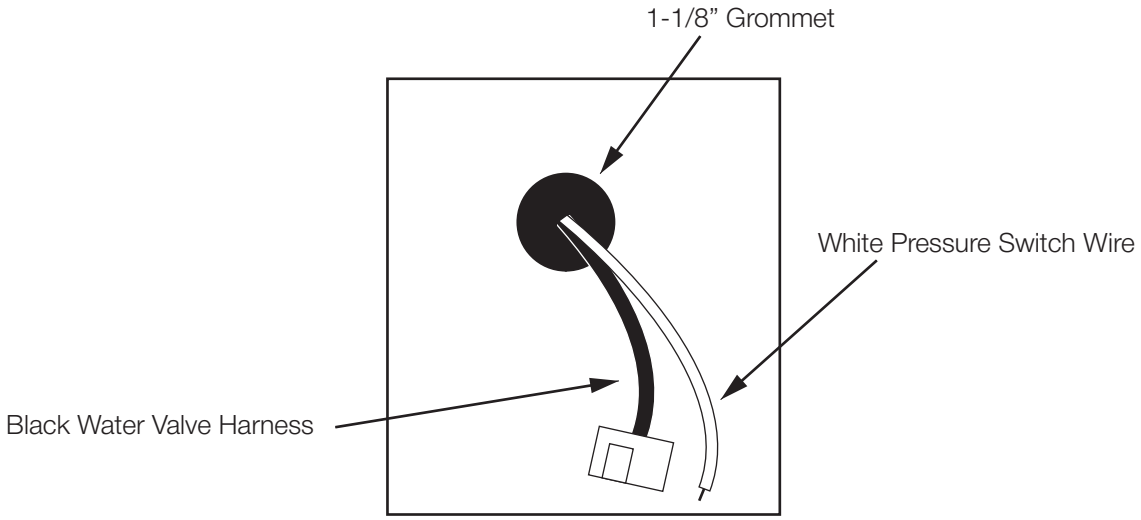
Harness Power Supply
PN# 0125-5R1



Electronic Water Control Valve
PN# 16-1023

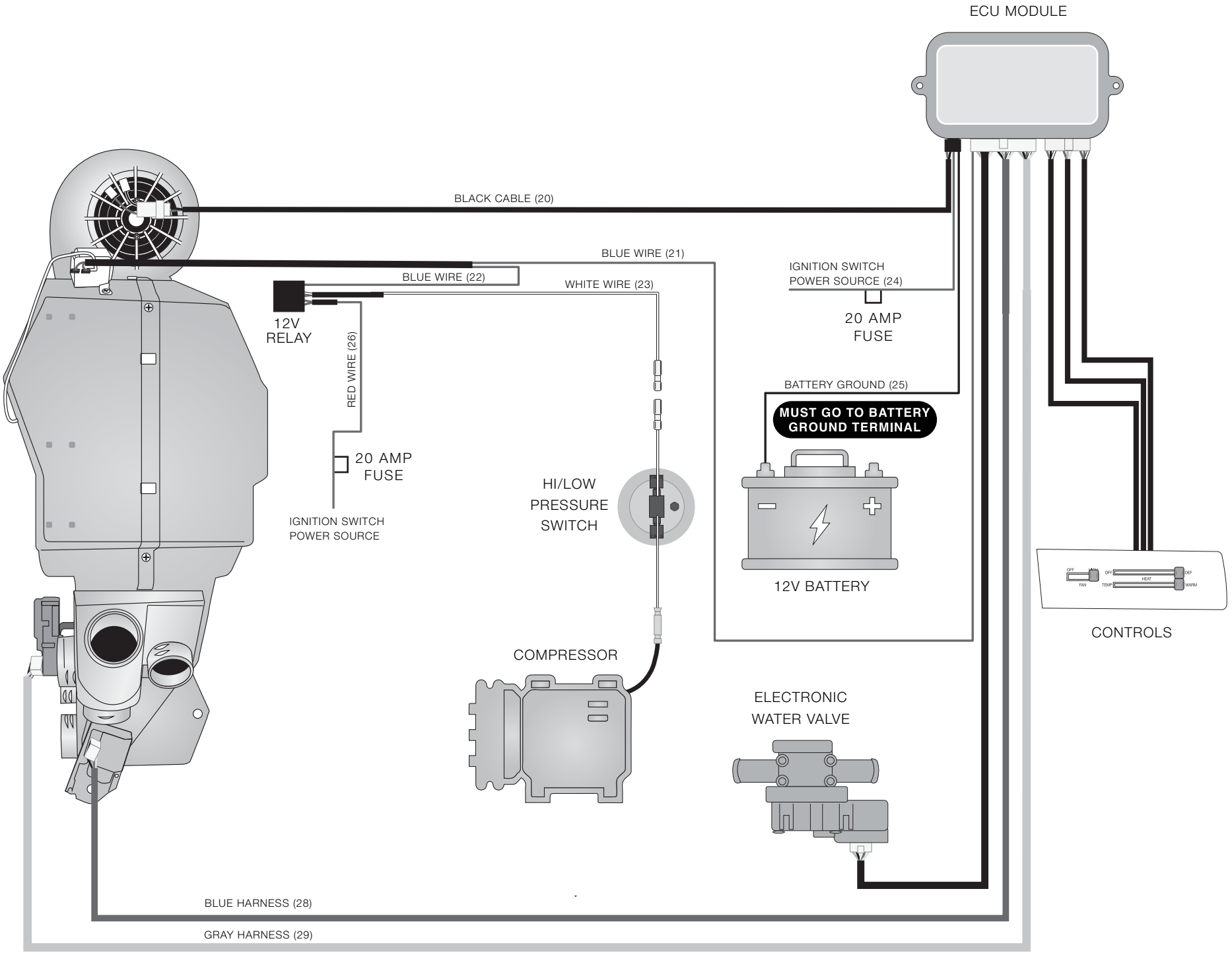
NOTE: The following wire harness installation steps are shown in the wiring diagram on the next page.

- Install the output (servo) wire harness according to the wire diagram.
- Run the black water valve harness and white pressure switch wire through the 1-1/8 inch hole in the firewall block off plate.
- Wrap the 1-1/8 inch grommet around the wires and insert into the hole.



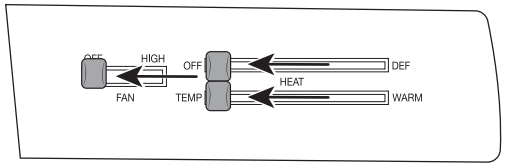
Engine Side of Firewall

- Install the power supply wire harness according to the wire diagram.
- Mount the ECU with (2) #10-16 x 3/4” Tek screws.
- Secure the relay with the remaining #10-16 x 3/4” Tek screw.


ECU MODULE
BLACK CABLE (20)
BLUE WIRE (21)
BLUE WIRE (22)
WHITE WIRE (23)
IGNITION SWITCH
POWER SOURCE (24)
20 AMP
FUSE
12V
RELAY
RED WIRE (26)
20 AMP
FUSE
BATTERY GROUND (25)
MUST GO TO BATTERY
GROUND TERMINAL
IGNITION SWITCH
POWER SOURCE
HI/LOW
PRESSURE
SWITCH
12V BATTERY
CONTROLS
COMPRESSOR
ELECTRONIC
WATER VALVE
BLUE HARNESS (28)
GRAY HARNESS (29)

CALIBRATION

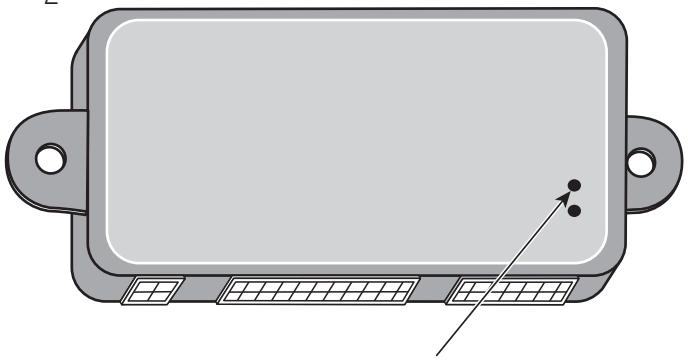
1



A) Start with all your levers to the LEFT.

B) Power your ignition on.

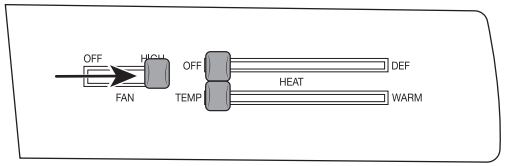
2



A) Using a paper clip, insert into the hole and hold the calibration button until the FAN pulses.

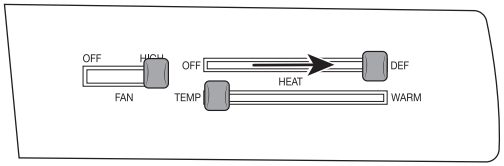
B) Release when you hear the fan!

3



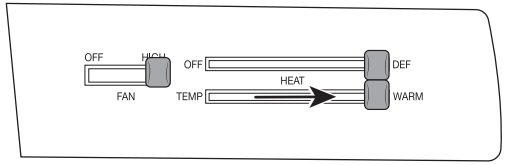
When the LED is SOLID move blower RIGHT.

4



Move top lever to the RIGHT

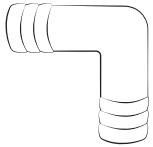
5



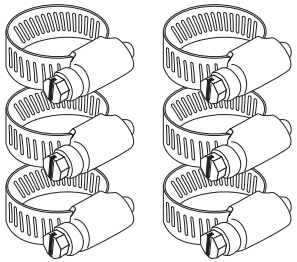
A) Move second lever RIGHT
B) Wait until red LED flashes & fan is on.
C) Calibration is complete.

THESE ARE THE PARTS YOU WILL FIND IN BAG KIT D

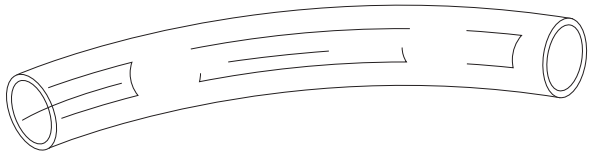
You will use all of these parts and hardware during the next series of installation steps.



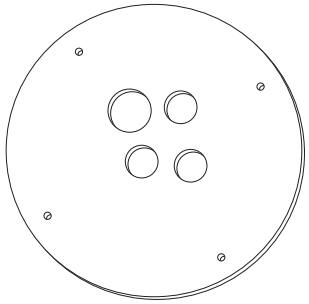
90 Degree Elbow



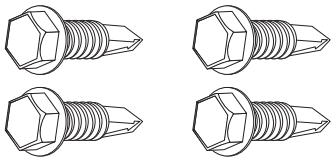
Six Worm Gear Clamps



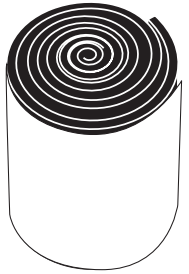
Clear Plastic Drain Tube



Firewall Block Off
PN# 10-1062-1



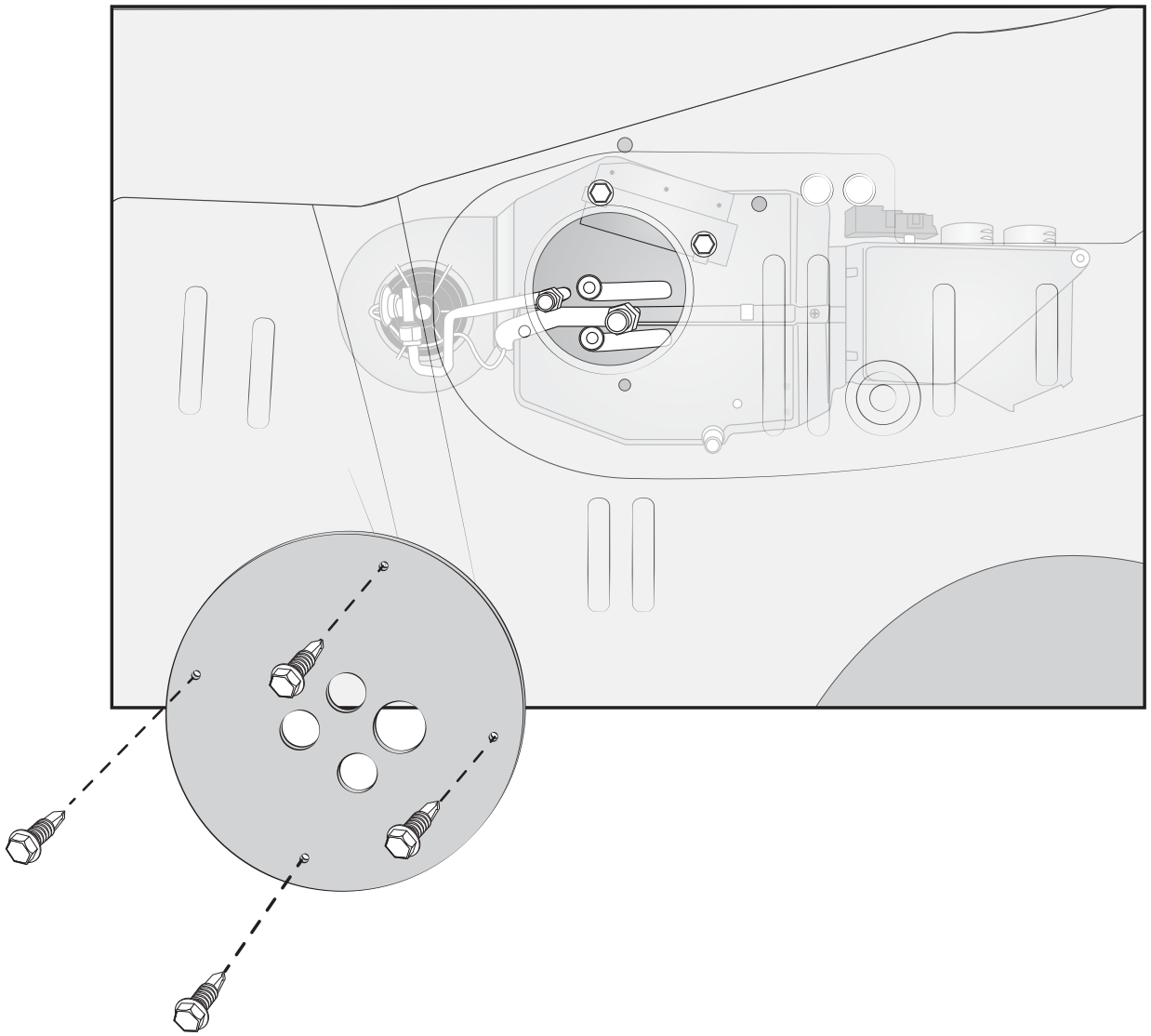
Four #10 - 16 x 3/4" Tek Screws



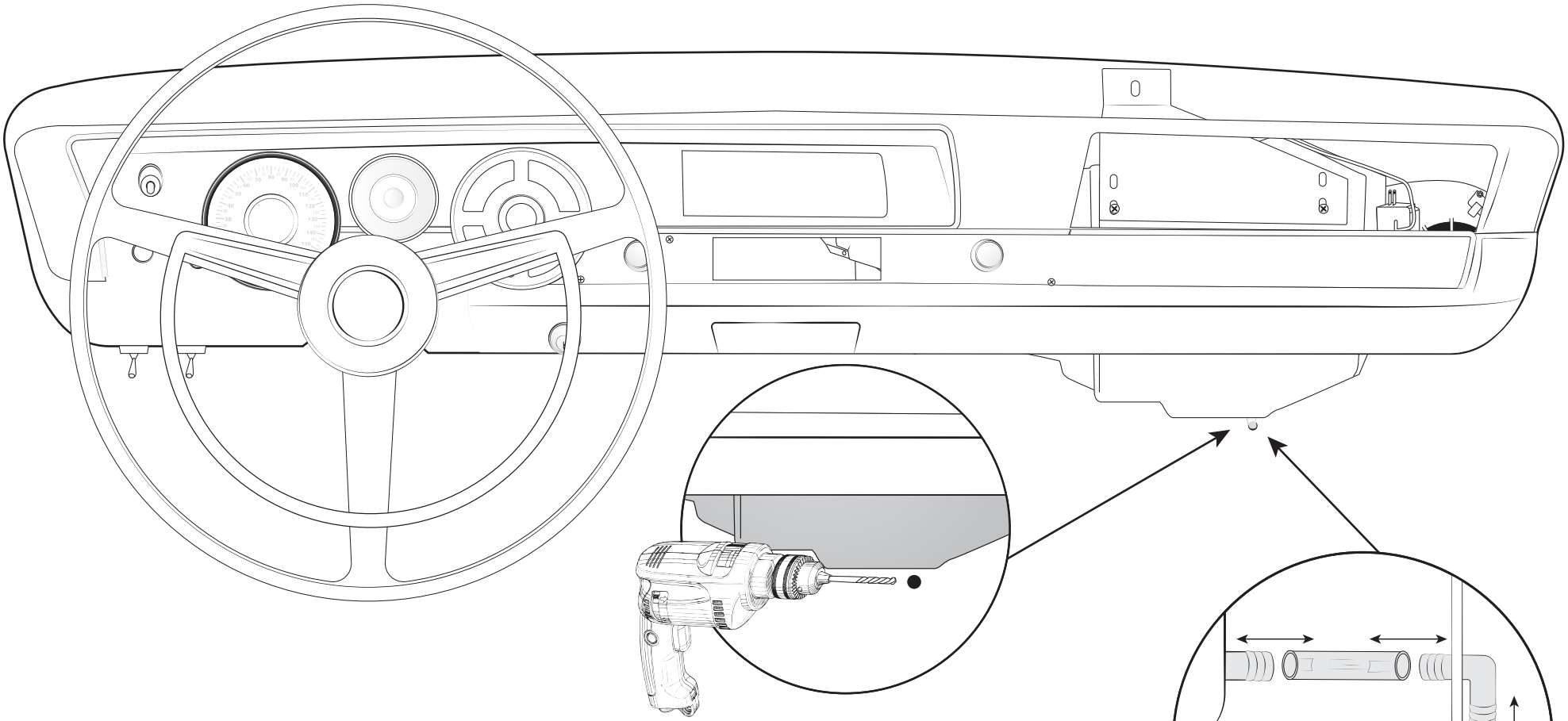
Refrigerant Tape

Illustrations are **NOT** actual size

Attach the firewall block off from Bag Kit D over tube connections with (4) #10 x 3/4” Tek screws.



Drain Tube



(F) 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.



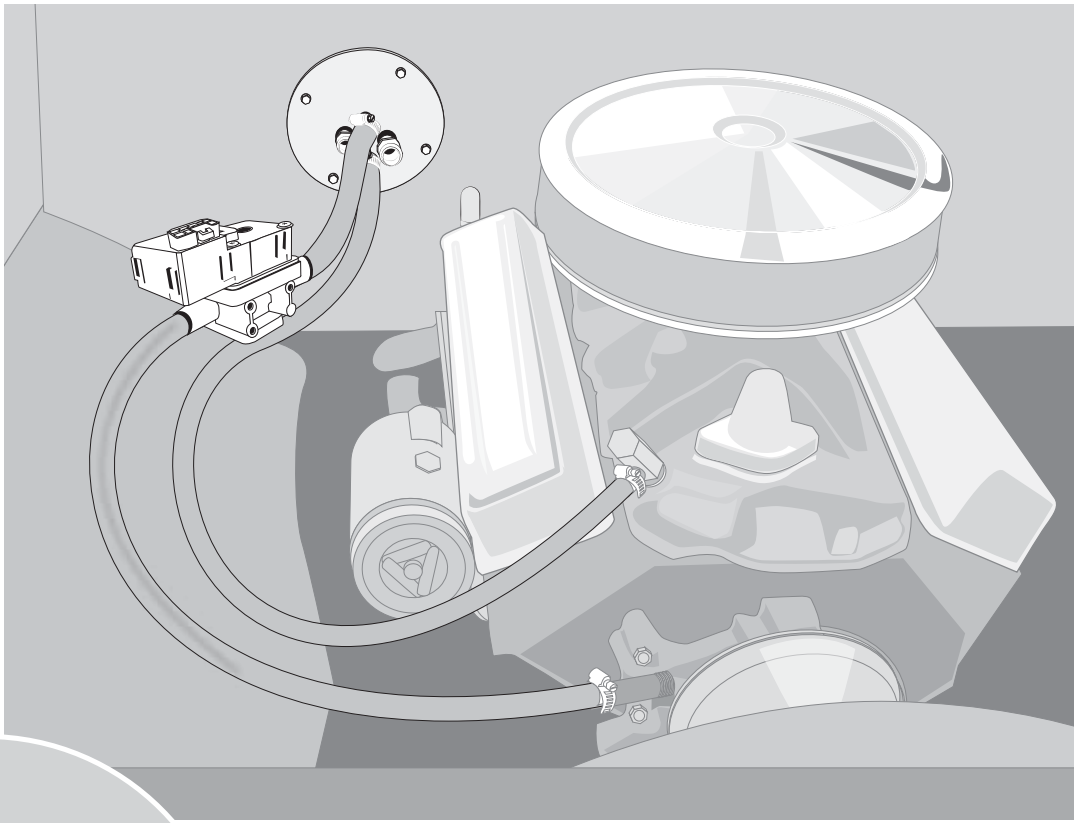
IMPORTANT NOTICE: PROPER INSTALLATION OF WATER VALVE

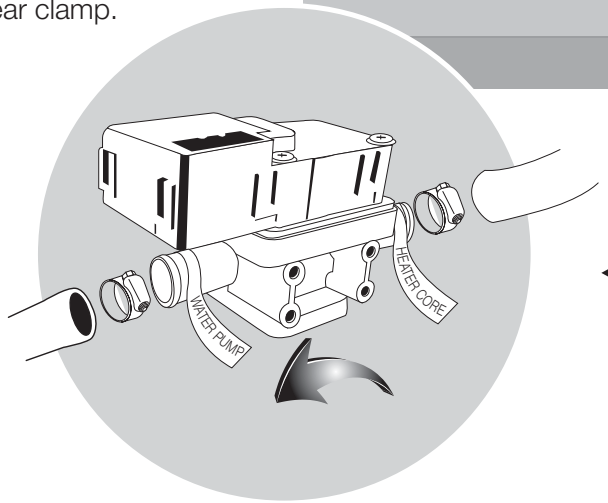
Your water valve MUST **be installed per these instructions!...** ***(if not, your system will not work properly.***

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.



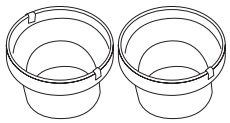


FOLLOW THESE TAGS... CHECK IT TWICE BEFORE PROCEEDING!

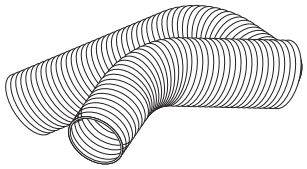
THESE ARE THE PARTS YOU WILL FIND IN BAGS E,F,G

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

BAG E



Adaptor
PN# 2-1025-3

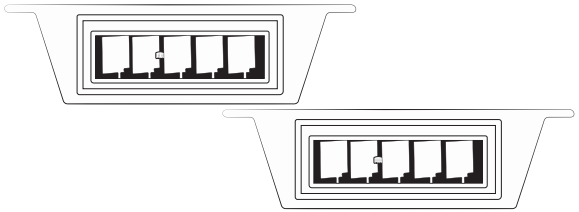


Two Duct Hoses, 2" I.D.

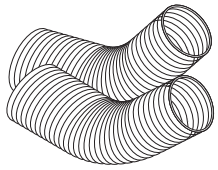


Four Zip-Ties

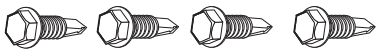
BAG F



Underdash Louver Assembly
PN#2-1038



Two Duct Hoses, 2" I.D.

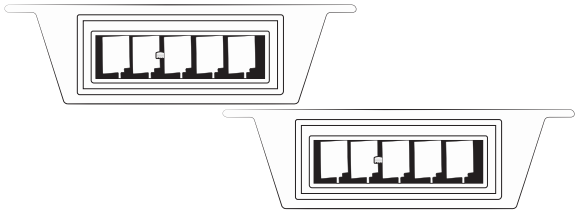


Four #10 - 16 x 3/4" Tek Screws

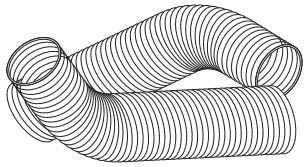


Four Zip-Ties

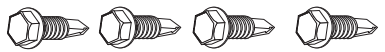
BAG G



Underdash Louver Assembly
PN#2-1038



Two Duct Hoses, 2" I.D.



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



Four Zip-Ties

Illustrations NOT shown actual size

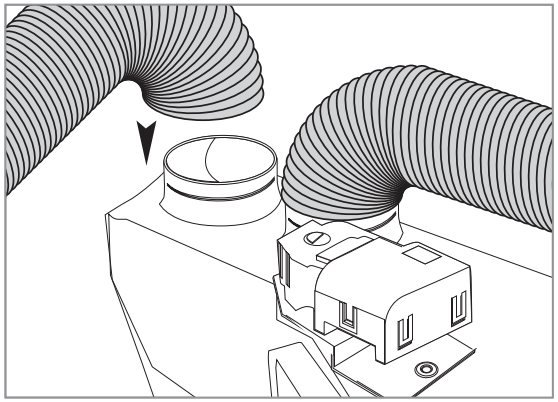


FIGURE 29

The following steps are for left and right Defrost Diffusers:

Attach and route the duct hoses from the defrost/heat duct assembly (see figure 29) upward toward the defrost adapter diffusers. Next locate and install defrost adapter diffusers from the top of the dash and secure with s-clips supplied. Attach flex hose to the defrost diffuser adapters using zip-ties. Push adapters onto diffusers from below. The other end of the duct hose is installed over the defrost/heat duct assembly outlets on main unit (see figure 30 and the diagram below).

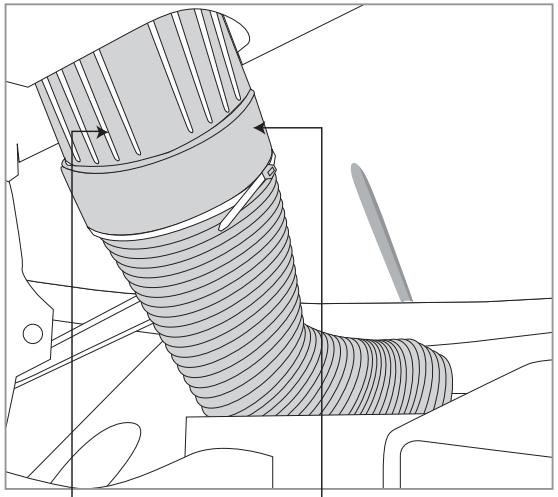
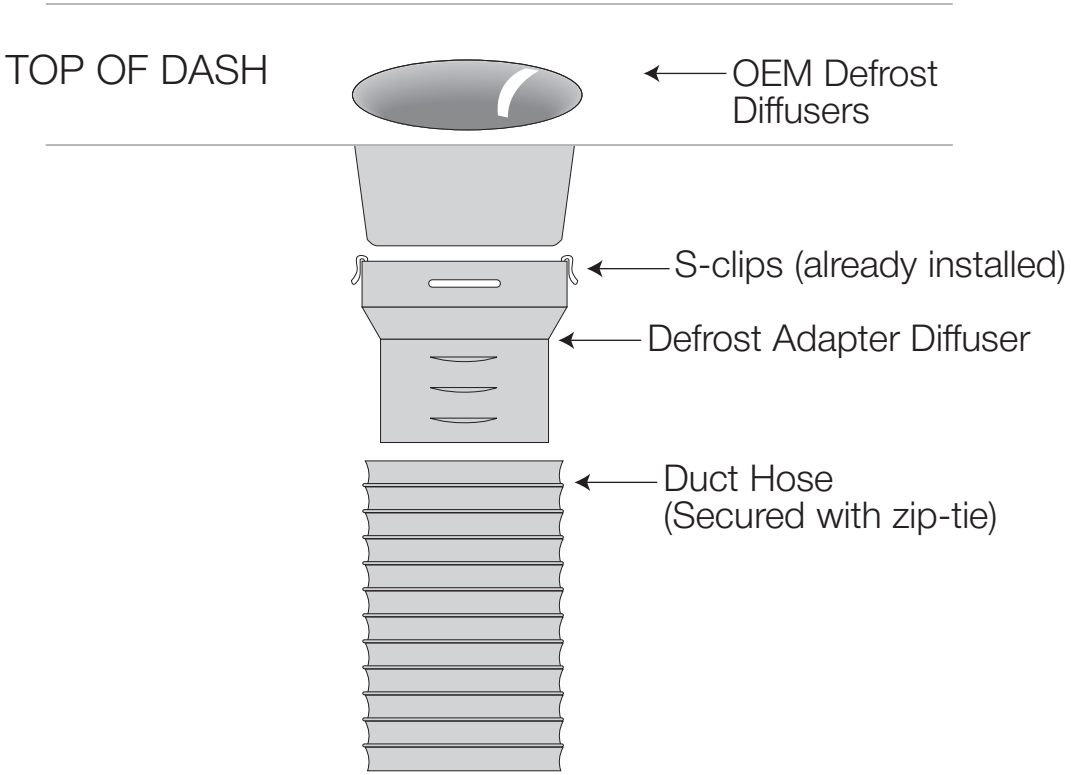
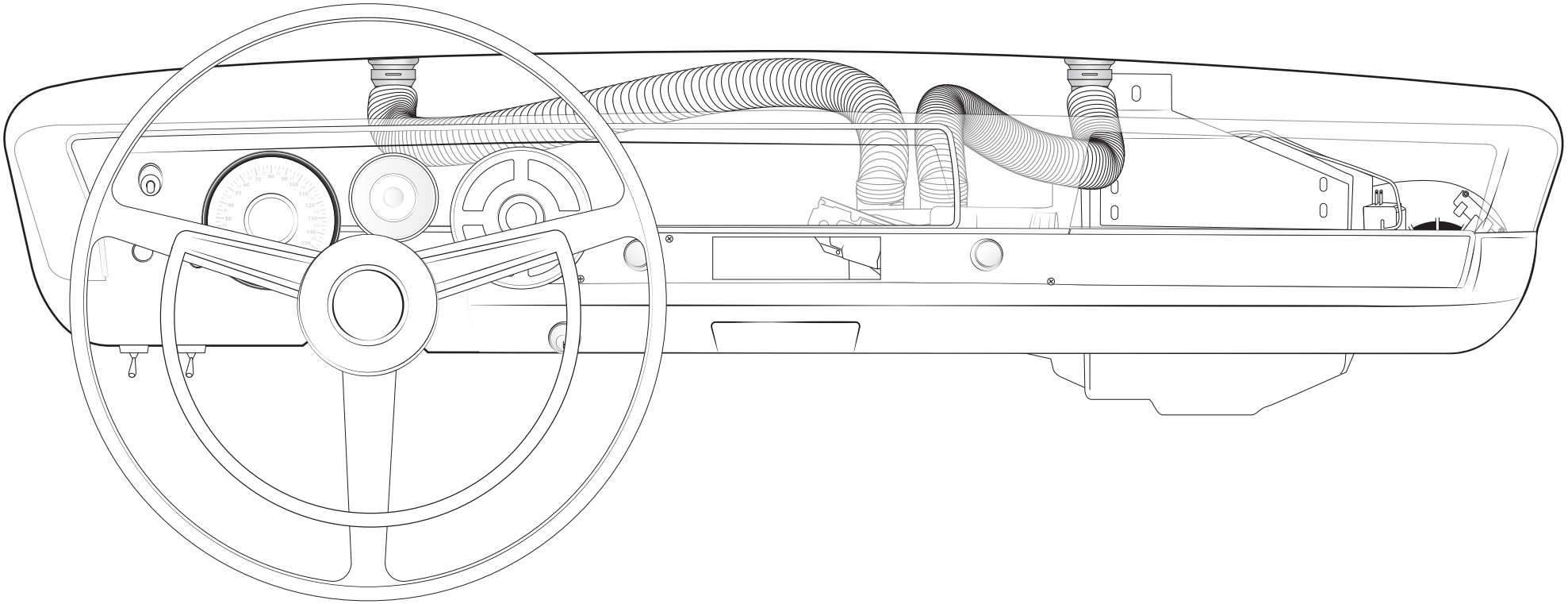
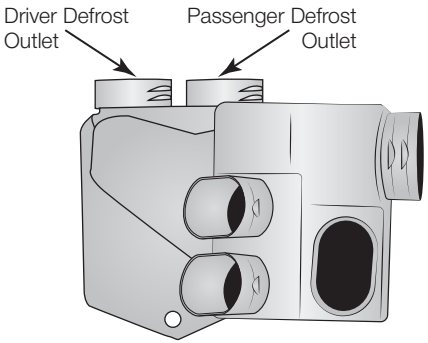


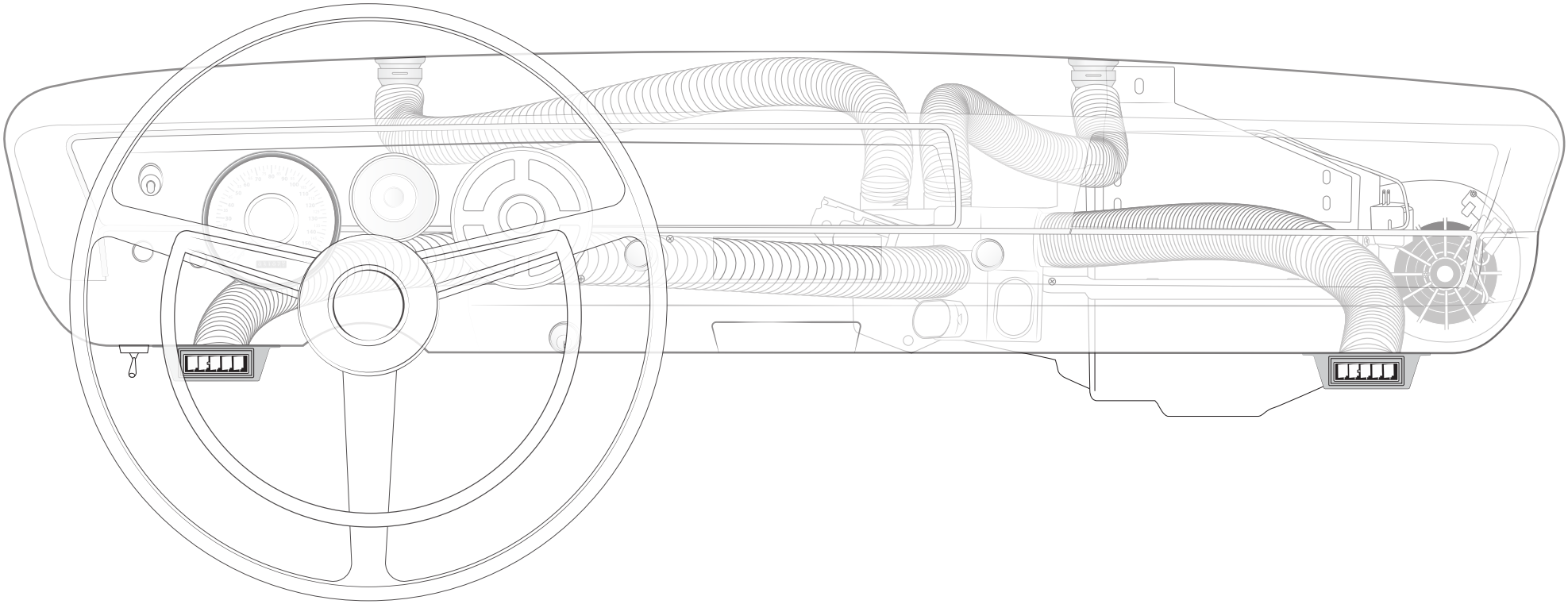
FIGURE 30

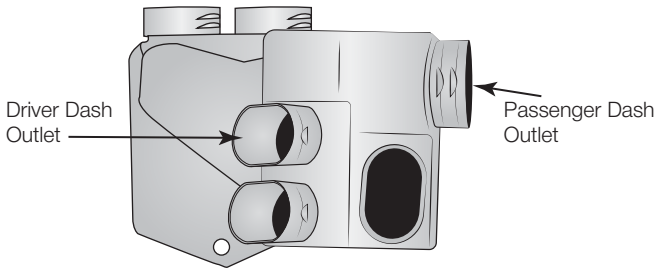






Note: Make sure duct hose clears all moving parts of wipers.

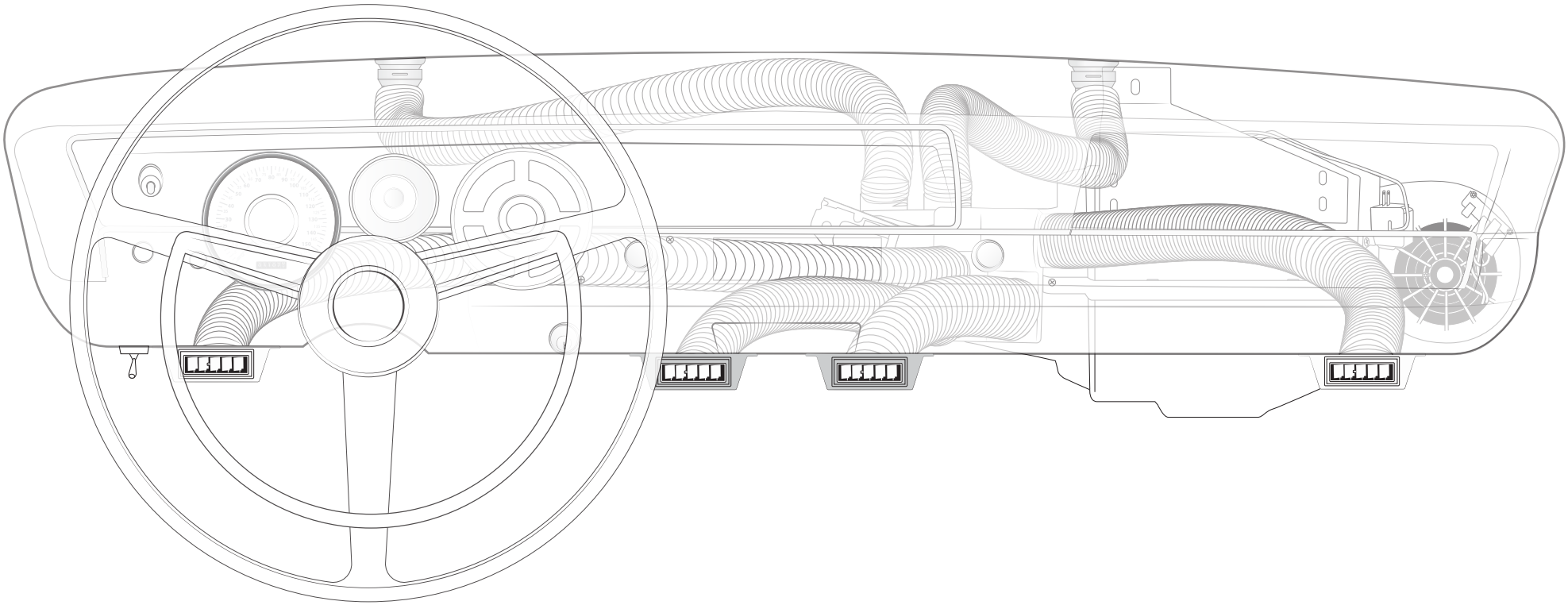


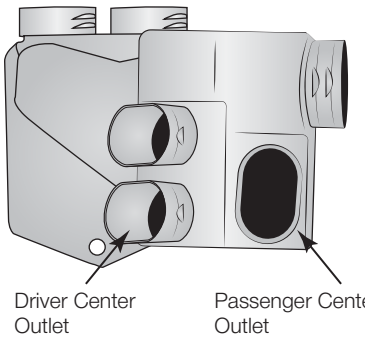


Attach (2) louvers to bottom of the dash with (4) #10 x ¾” hex head tek screws.

Route 2” Duct hose & attach with ZipTies.

Cut duct hose to desired length.



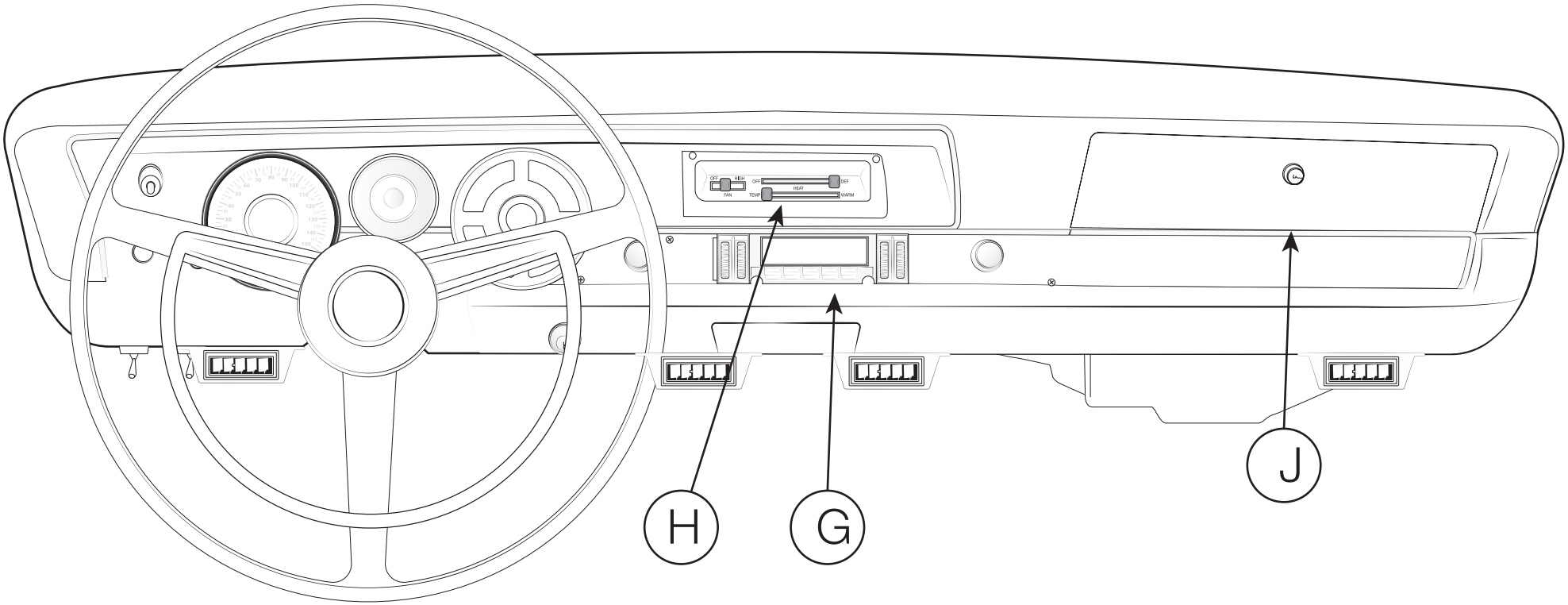


Attach (2) louvers to bottom of the dash with (4) #10 x ¾” hex head tek screws.

Route 2” Duct hose & attach with ZipTies.

Cut duct hose to desired length.

Reinstall A/C Controls, Radio and Glovebox Door



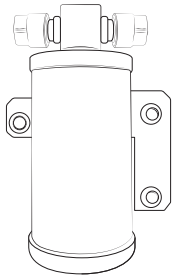
Reinstall radio (G)

Reinstall control head (H) using the original hardware. Reattach dash bezel using original hardware. Attach chrome switch knob and attach to the blower switch. Reinstall the original lever knobs.

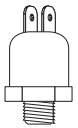
Reinstall the glovebox door (J) using the original hardware.

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

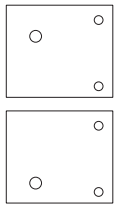
You'll find all of these parts within the main box



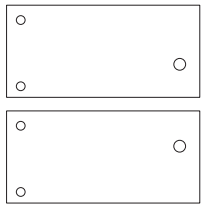
Drier



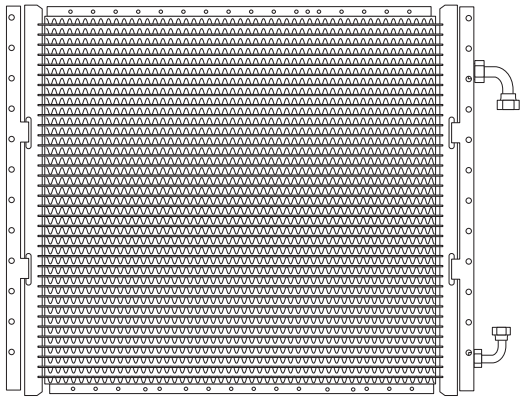
Pressure Switch



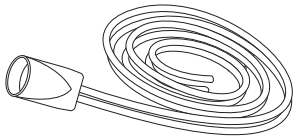
0037-52
Condenser Brackets



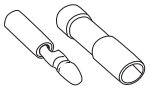
0037-23
Condenser Brackets



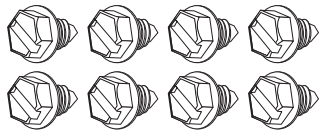
11-1089
Condenser



Pressure Switch Harness



Splice and
Bullet Connector



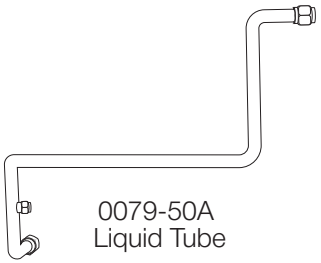
Eight #10 - 20x1/4" Tek Screws



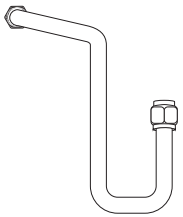
Four Zip-Ties



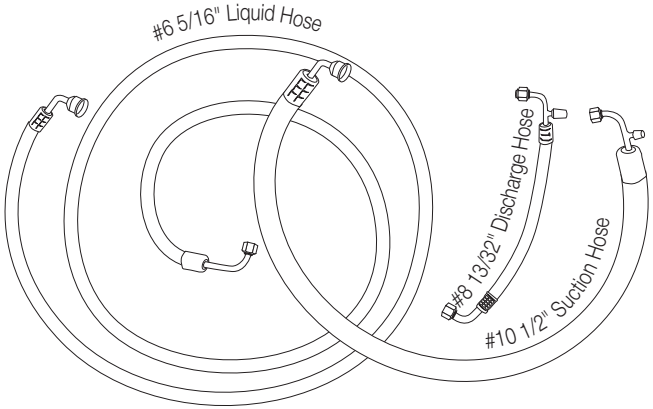
Bag of O-rings and Mineral Oil Tube



0079-50A
Liquid Tube



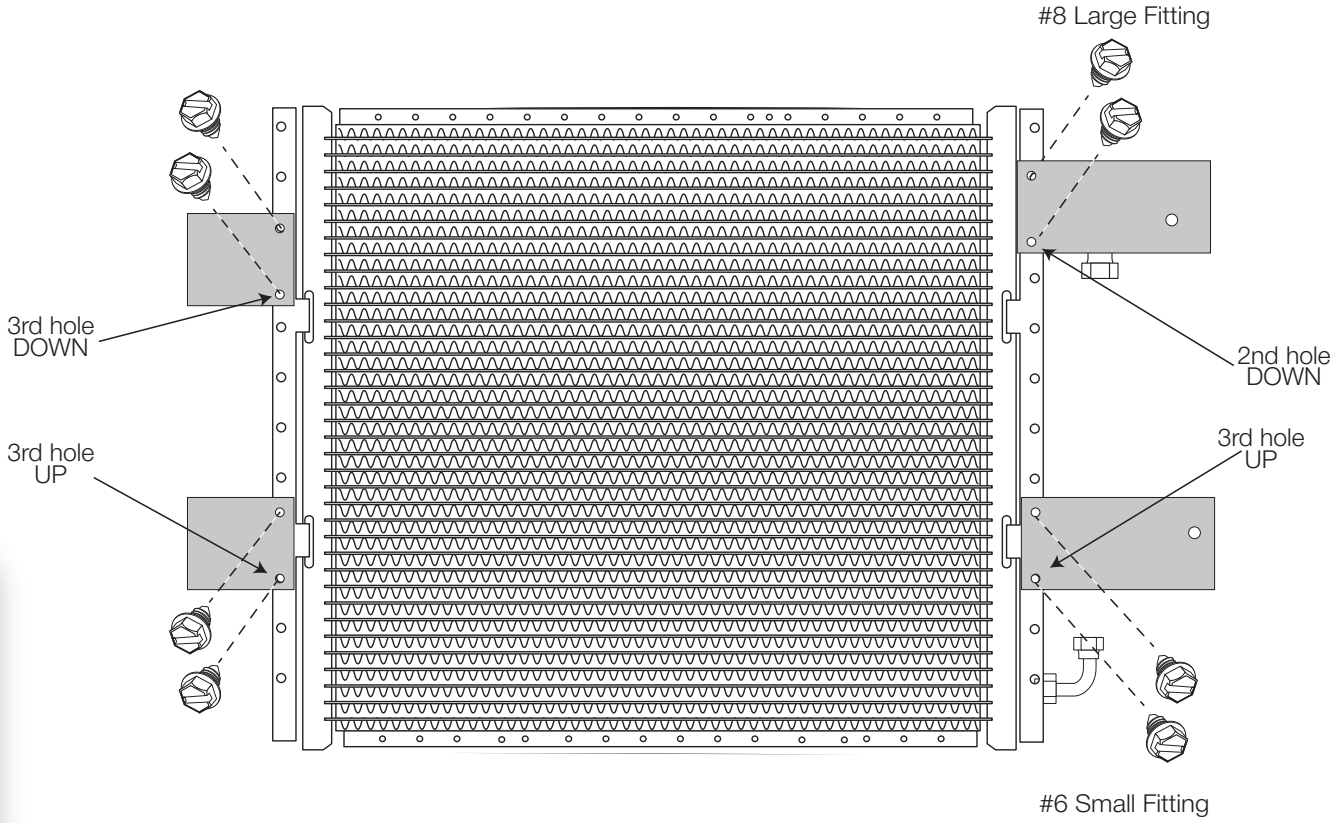
0079-51
discharge tube

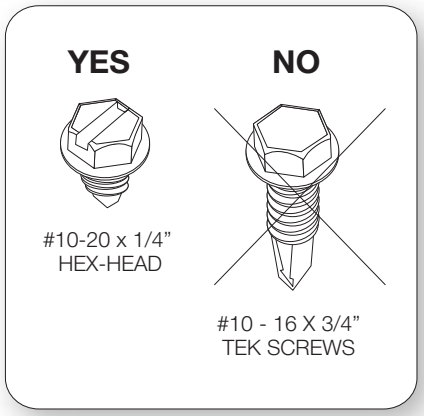


Three Refrigerant Hoses

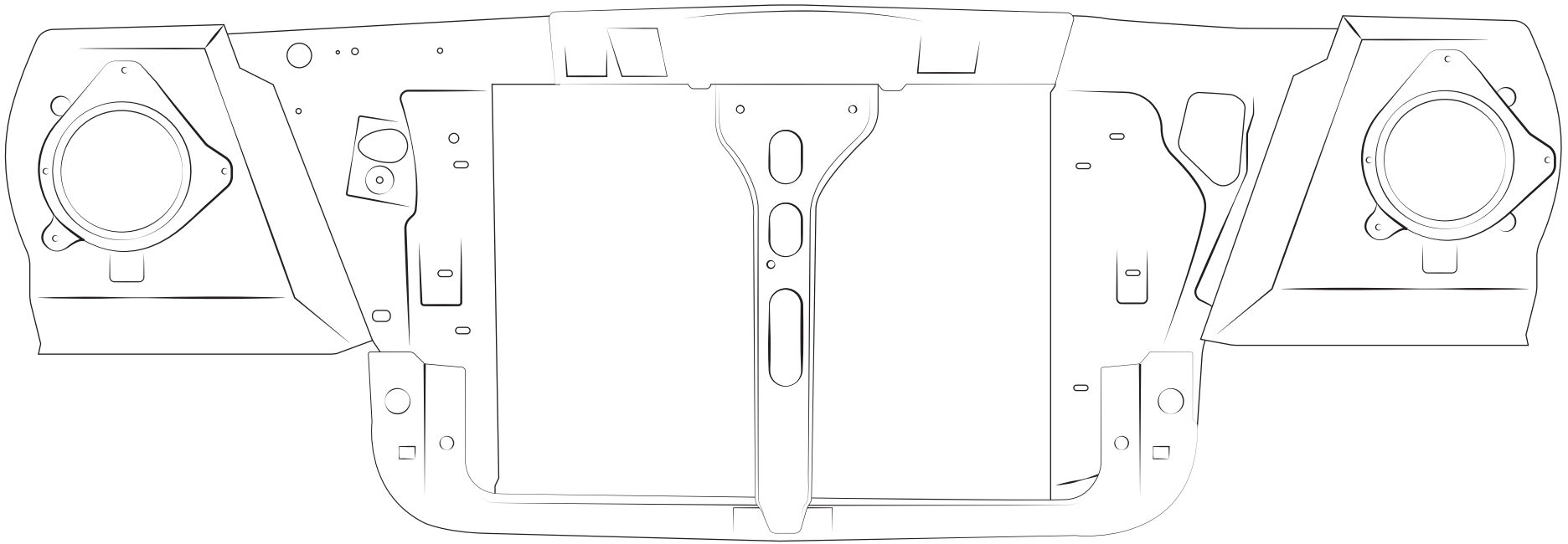
CONDENSER PREPARATION. You can perform most of the following steps on a clean flat surface like a workbench. Lay the condenser down so that both hose connections are on the **RIGHT SIDE** (the larger connection will be on top).

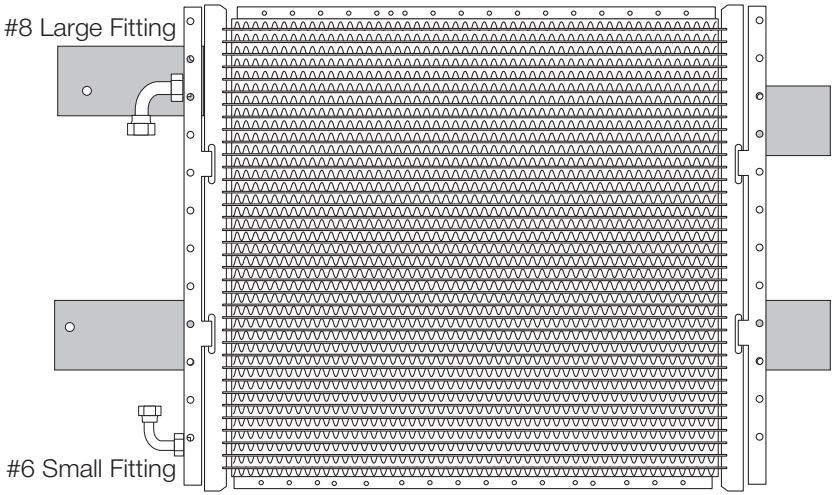
Locate condenser, Condenser Brackets, and (8) #10 x 1/4" Screws. Attach brackets to the coil as shown.





NOTE: Grille removed for clarity.



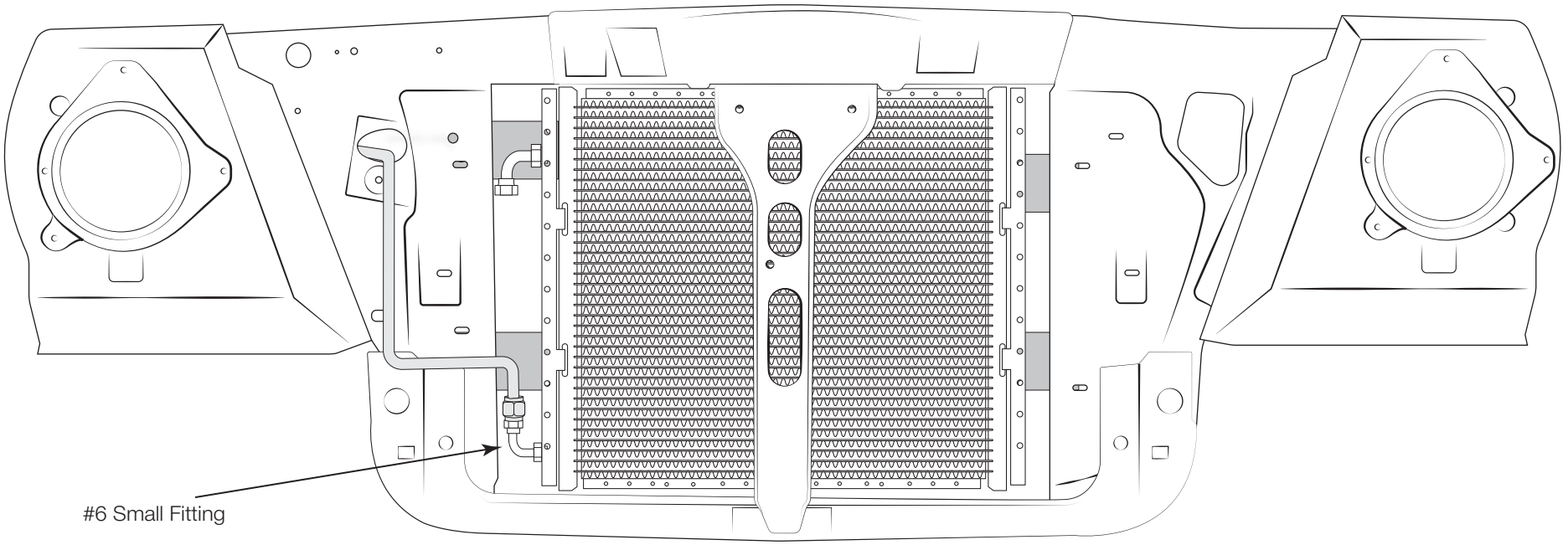


1. Remove the upper radiator mounting bolts and retain.

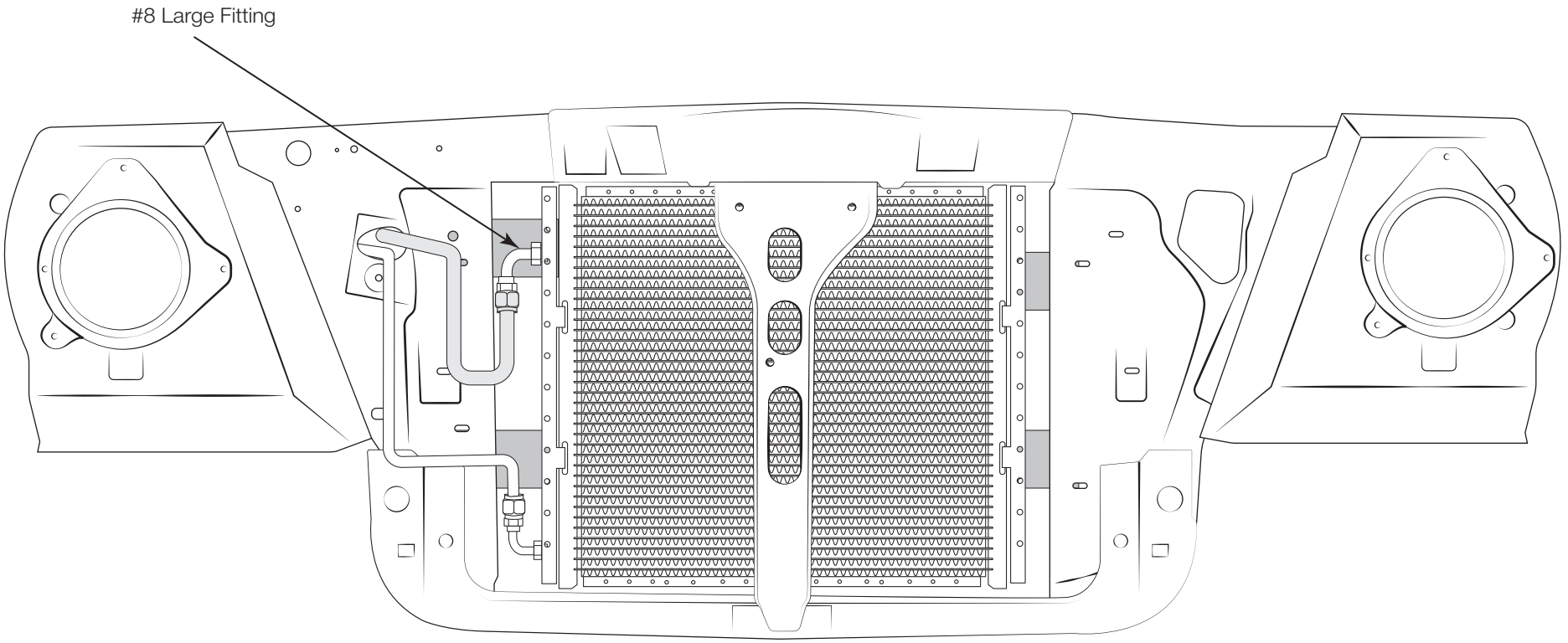
2. Loosen the bottom radiator mounting bolts.

3. Carefully slide Condenser Assembly between Radiator core support and the radiator.

4. Reinstall radiator upper bolts clamping condenser brackets between radiator support and the radiator. Leave a little loose at this time. The condenser should be able to be mounted into different positions in the next step.

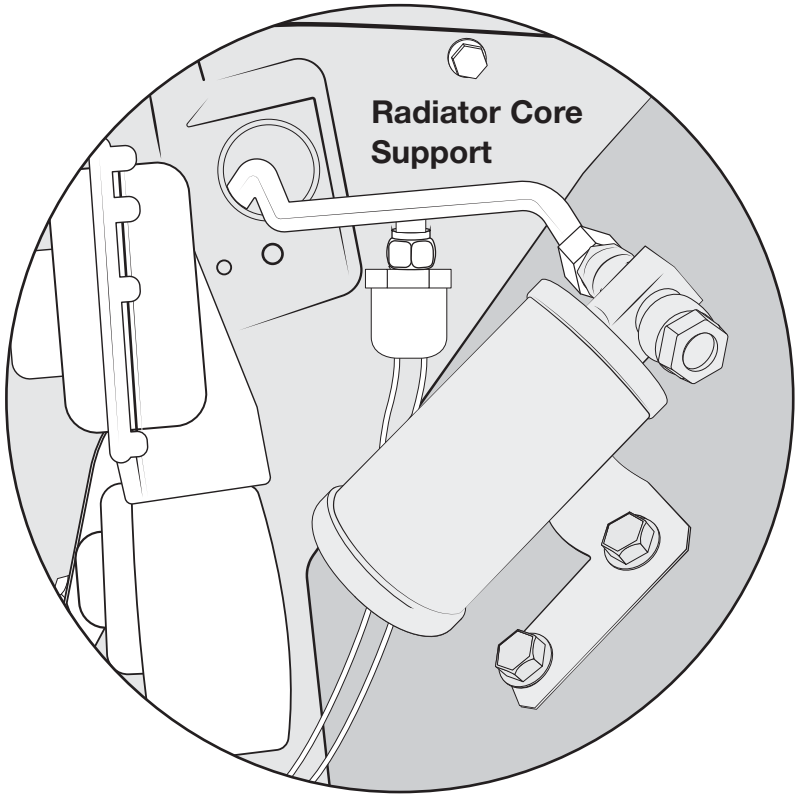


Using Liquid tube as a guide attach lower fitting with #6-oring and oil. Top of tube will insert through core support as shown. Move condenser as needed and tighten (4) radiator bolt firmly to conk condenser in place.

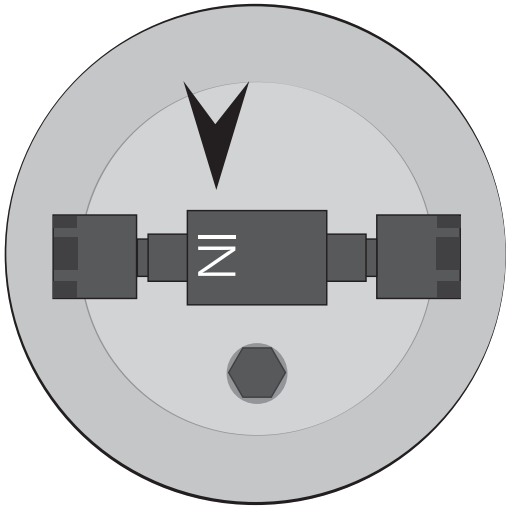


Install #8 discharge tube, and (1) #8 o-ring. Insert tube through hole on the radiator core support as shown.

Attach to upper condenser fitting using (1) #8 o-ring and a few drops of mineral oil.



DRIER TOP VIEW



Locate the Filter Drier, (3) ¼” – 20 x 1” screws, flange nuts and pressure switch kit. Using liquid tube to locate the drier, drill (3) ¼” diameter holes in the inner fender.

Attach drier using (3) 1/4-20 x 1” bolts and Flange nuts.

Attach pressure switch and harness to the liquid tube using a few drops of mineral oil.

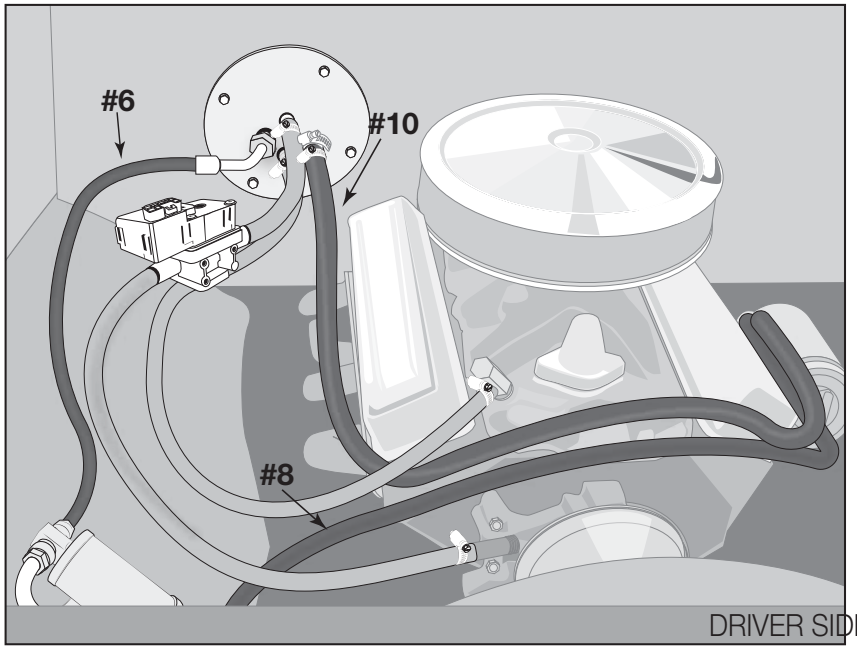
Install the compressor kit. Included was a premium compressor kit with all the parts you'll need to install the compressor. This kit includes instructions specifically written for your engine. Once you've installed the complete compressor kit, continue on to connecting the hoses.

CONNECTING THE HOSES:
Based on PASSENGER or DRIVERS SIDE compressor mounting see illustrations for routing.

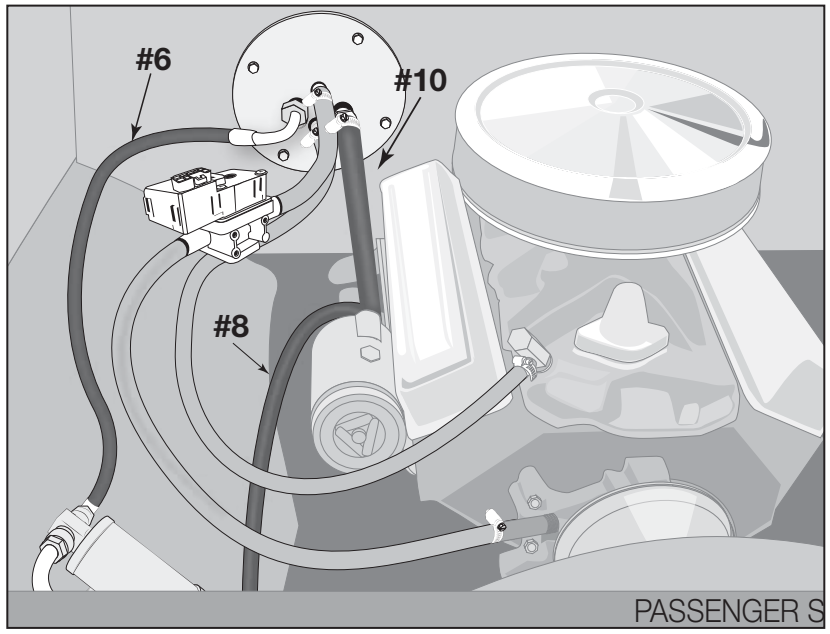
The #10 **(LARGEST)** refrigerant hose. Attach end with service fitting to the compressor using (1) #10 o-ring and a few drops of mineral oil. Attach other end to #10 fitting at the firewall. Attach using one #10 o-ring and a few drops of mineral oil. Tighten securely.

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 behind fender and to the connection on compressor. Attach using two #6 o-ring and a few drops of mineral oil.



DRIVER SIDE



PASSENGER S

TWO WRENCH METHOD



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

FINAL STEPS: Take a look around at your installation and check all fittings and bolts for tightness, check the heater hose clamps for tightness, and make sure nothing is routed in a way to obstruct any moving parts.
You can refill the radiator and reconnect the battery at this time.

You've just completed the installation of your new A/C system.
The very final step is to fully charge and test your new system.

On the next page you'll find specifications for proper final preparation for your A/C technician.

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!**

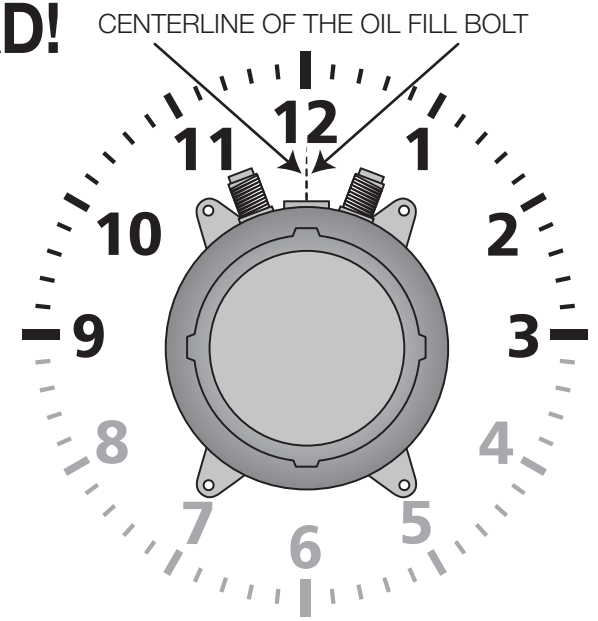
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- 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

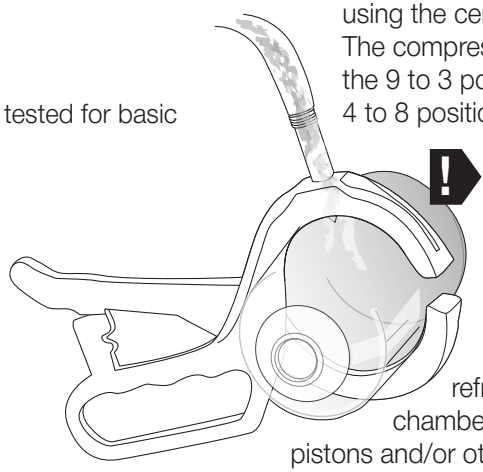
ACCEPTABLE OPERATING PRESSURE RANGES:

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.