VAPIR^2 SYSTEM

COMPACT A/C

INSTALLATION INSTRUCTIONS

GEN 2 WIRING

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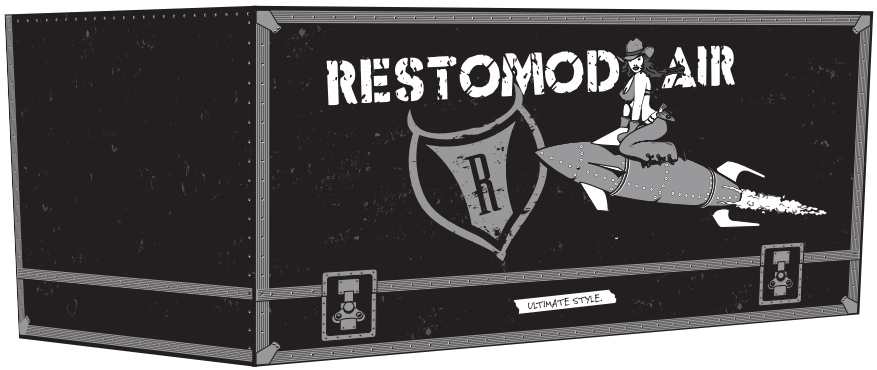
RESTOMOD AIR

ULTIMATE STYLE. KILLER PERFORMANCE.

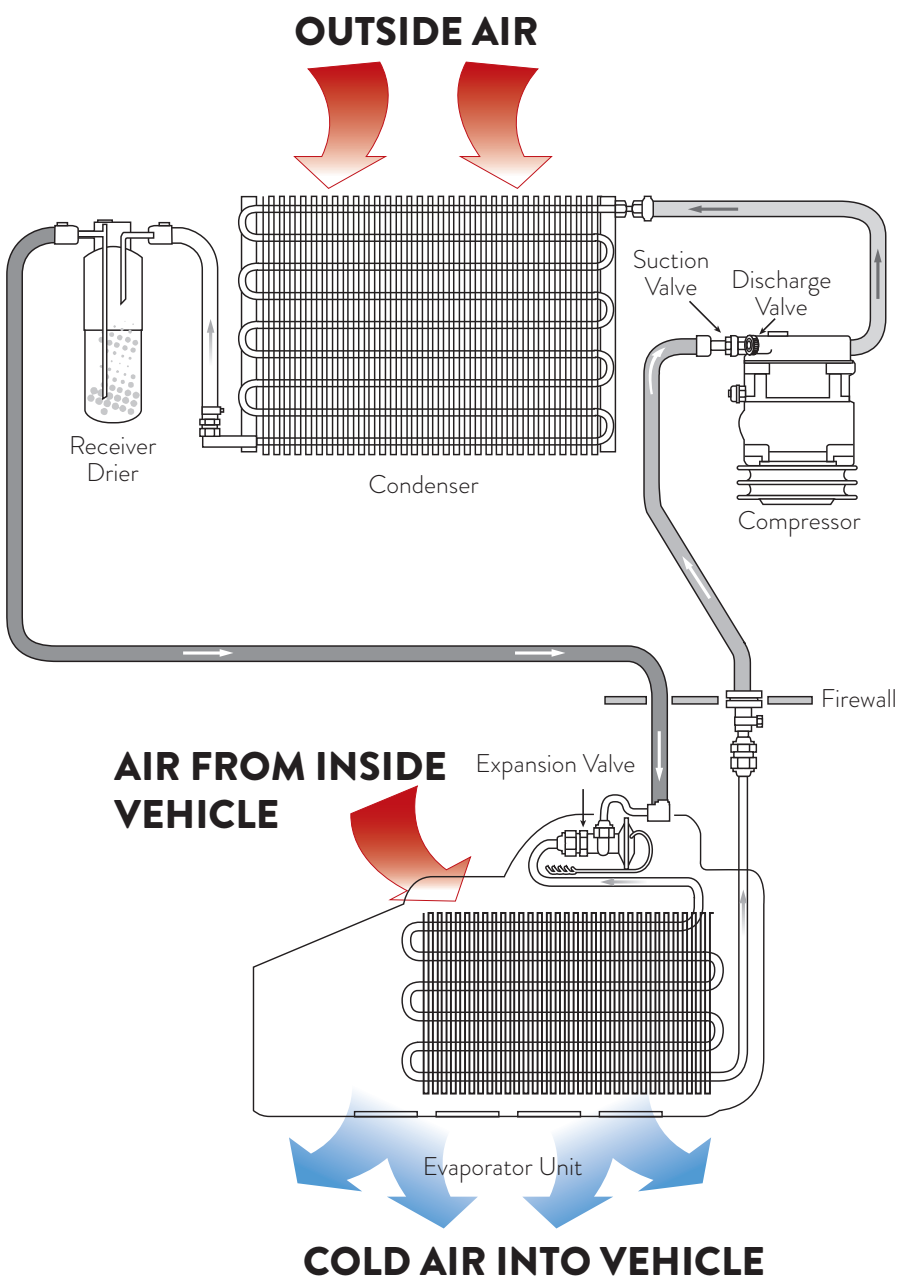


Pre-installation Check Off:

1. 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.
2. If your vehicle has been or is being modified, some procedures will need to be adjusted to fit your particular application.
3. A basic cleaning of the engine compartment and interior before beginning will make things go more smoothly.
4. Check condition of engine mounts. Excessive engine movement can damage hoses to A/C and/or heater.
5. 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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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.
6. Drain the radiator. Retain the coolant and reuse, or dispose of properly.

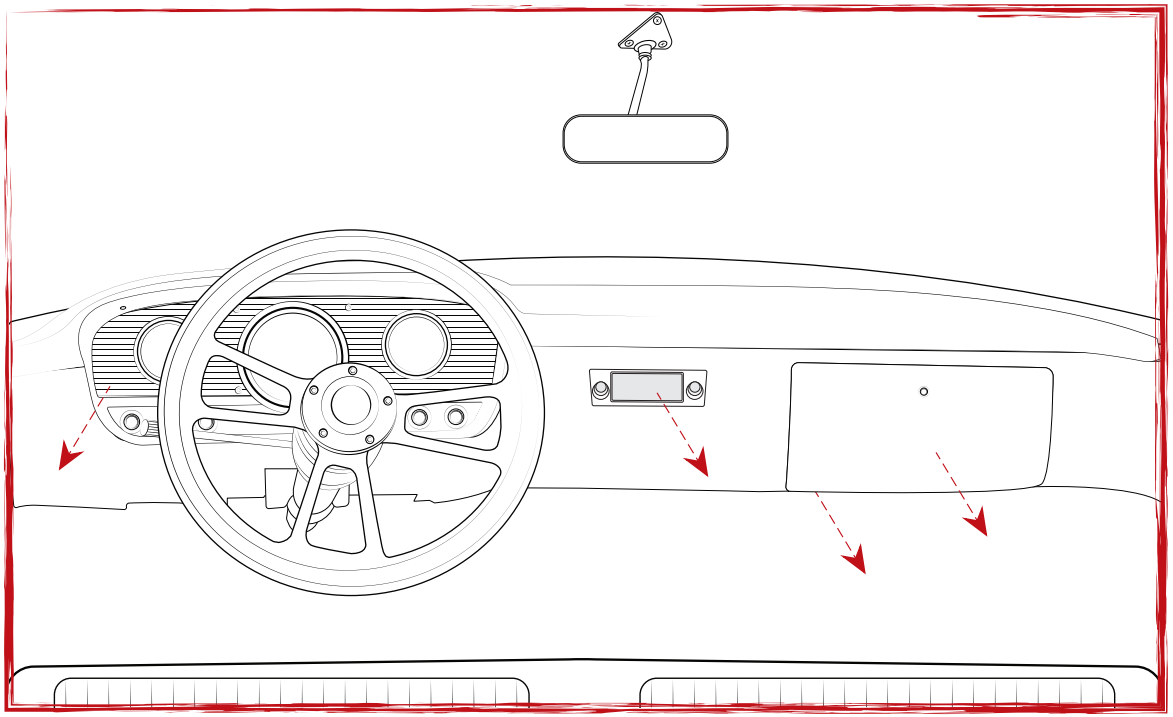
Procedures, During Installation

7. 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.
8. Measure twice (or more), cut once
9. 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!



It's Science Man:

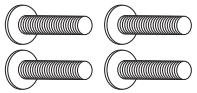
- In order to remove the heat from the air in the vehicle, the A/C evaporator allows the refrigerant to absorb the heat from the air passing over it. The blower fan moves cool air out into the car interior.
- The compressor pumps and circulates the refrigerant through the system.
- The condenser is a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



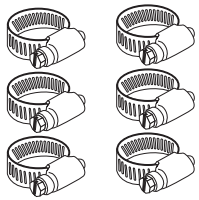
Making Room:

1. Remove Glove box, Console (optional) Radio and Bezel if you have them, and set them aside for reinstall later.
2. Remove the Original Heater Assembly Before moving forward.
3. 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.

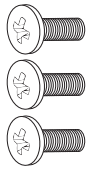
Hardware box:



Weldable Studs (4)
PN#25C100PWSP

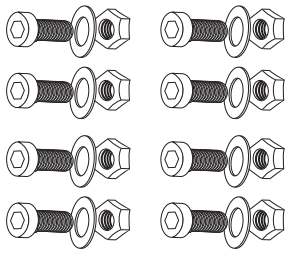


Worm Gear Clamps (6)
PN#6724 IDEAL

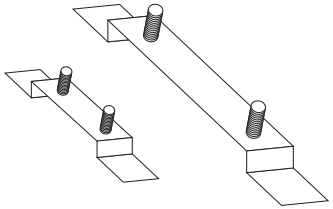


#10 - 32 x 1/2
Bolts (3)
PN#10F50PPHZ

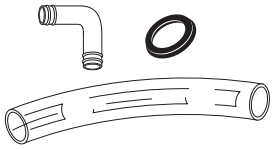
#10 - 32 Nylock
Nut (3)
PN#10FNNEZ



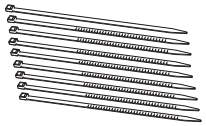
1/4 - 20 x 1" Bolts (8) PN#25C100SCS
Washers (8) PN#25NWSAB
Nuts (8) PN#25CNFLZ/S



Bracket mounting 1" Spacer
(Front and Back)
PN#RM-010-7
PN#RM-010-8



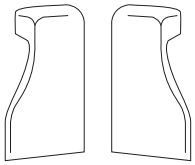
Clear Plastic Drain Tube PN#31004845
90 degree elbow PN#1875
Grommet PN#G3155



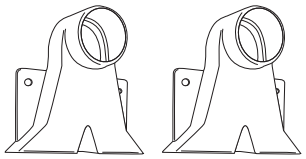
Large Zip Ties (8)
PN#AL-14-120

8" Zip Ties (16)
PN#AL-08-40-0-M

Refrigerant Tape
PN#Q-201

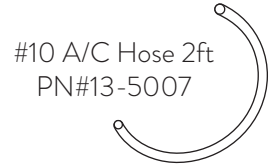


Unit heat Dumps
(left and right)
PN#2-1091-1
PN#2-1091-2

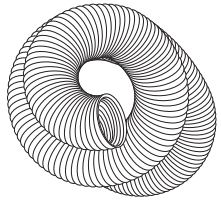


Remote Heat Dumps (2)
PN#0045-24

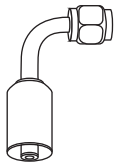
5/8 Heater
Hose 2ft (2)
PN#34-50004



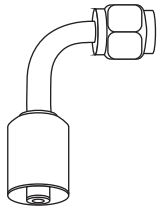
#10 A/C Hose 2ft
PN#13-5007



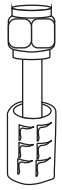
One Duct Hose,
2" I.D., 15' Long
(will be in box,
not bagged)
PN#2-1013



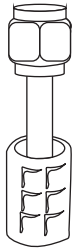
#6 90° Fitting
PN#14-2033



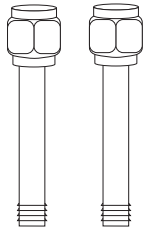
#10 90° Fitting
PN#14-2035



#6 FIO Straight
PN#14-2025

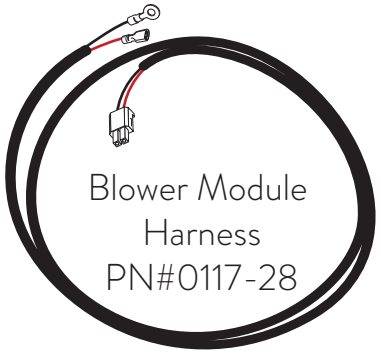


#10 FIO Straight
PN#14-2027

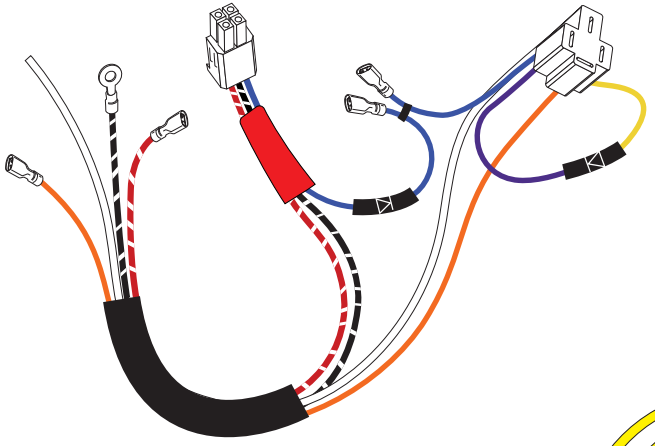


#10 Straight
Heater Fittings (2)
PN#14-110

#6 A/C Hose 2ft
PN#13-5005

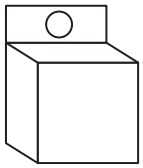


Blower Module
Harness
PN#0117-28



ECU Module
Harness
PN#0117-91

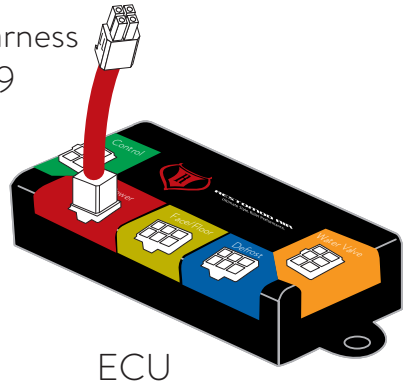
Orange Motor
Water Valve Harness
PN#0117-70



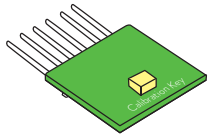
12v Relay
PN#30-13373

Yellow Motor
Harness
PN#0117-61

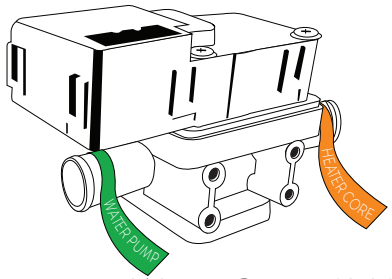
ECU Jumper Harness
PN#0117-29



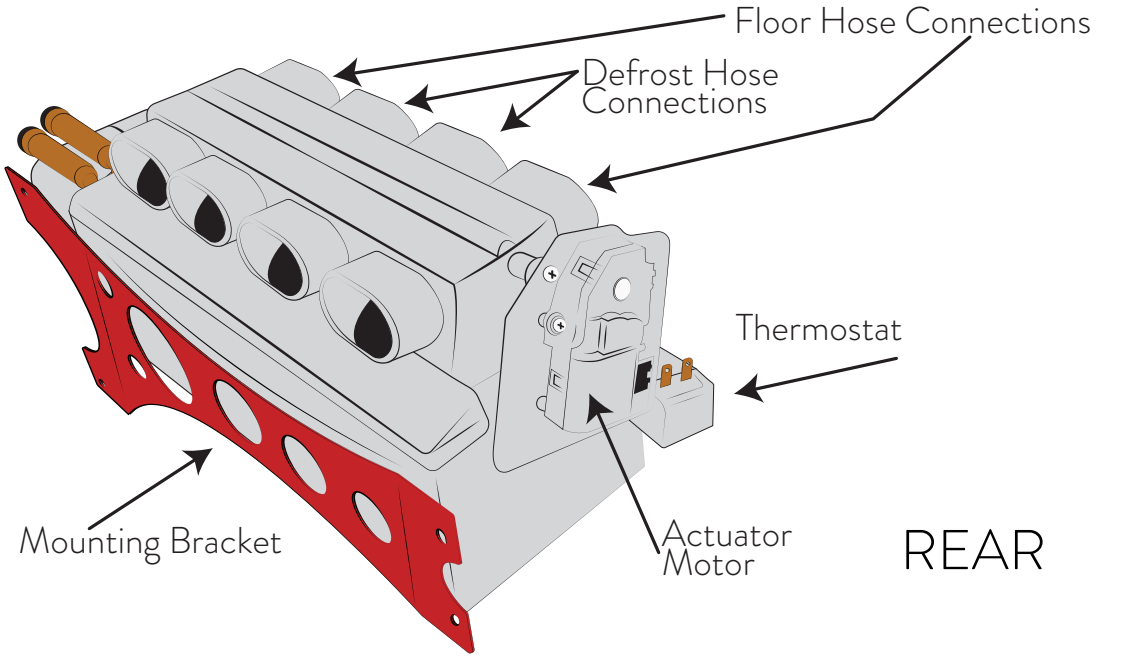
ECU
PN#RM-16-1050

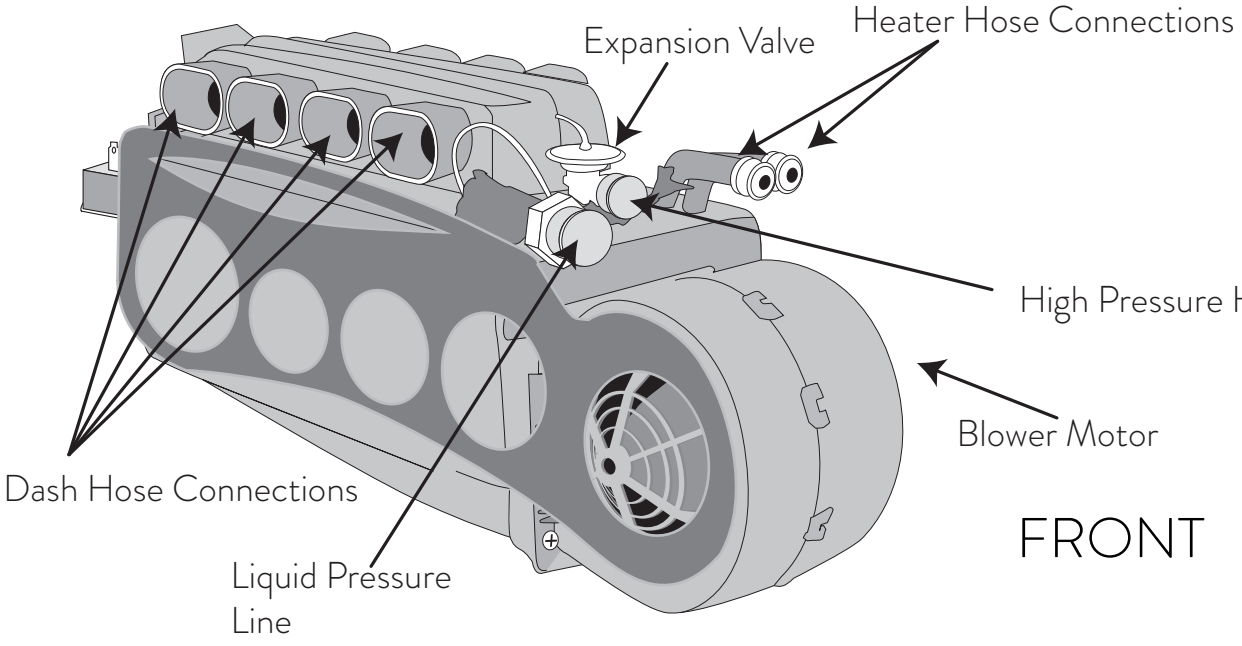


Calibration Key
(DO NOT USE WITHOUT
TECH SUPPORT)



Electronic Water Control Valve
PN#16-1023





The Vapir II:

- Within the following pages we will outline the installation steps of your new Haymaker II system. Since this is a custom installation and varies based on your particular vehicle, many of our procedures can be viewed as "suggestions"... and your personal preferences will play a major role in the actual installation.

- Take a moment to familiarize yourself with the heart of your new system, the evaporator unit.

The next step is to utilize the wiring harnesses we've included and wiring per the diagraom on the next page. The wiring harnesses are color coded, just follow the connections.

IMPORTANT MUST READ:

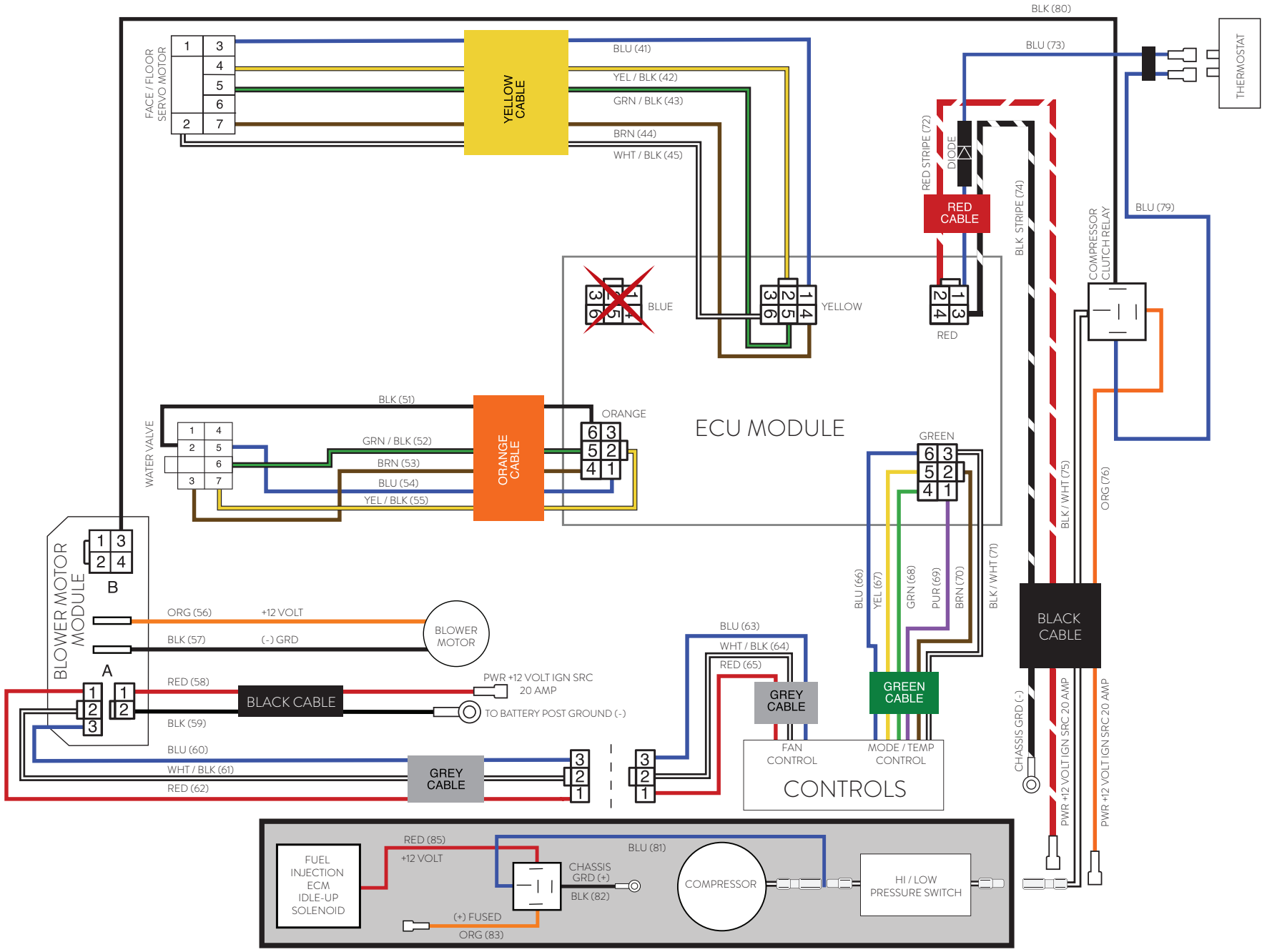
DO NOT connect any component such as electric fan, fuel injection / Idle-up solenoid to our system. Back EMF damage May occur and WILL NOT be covered under warranty.

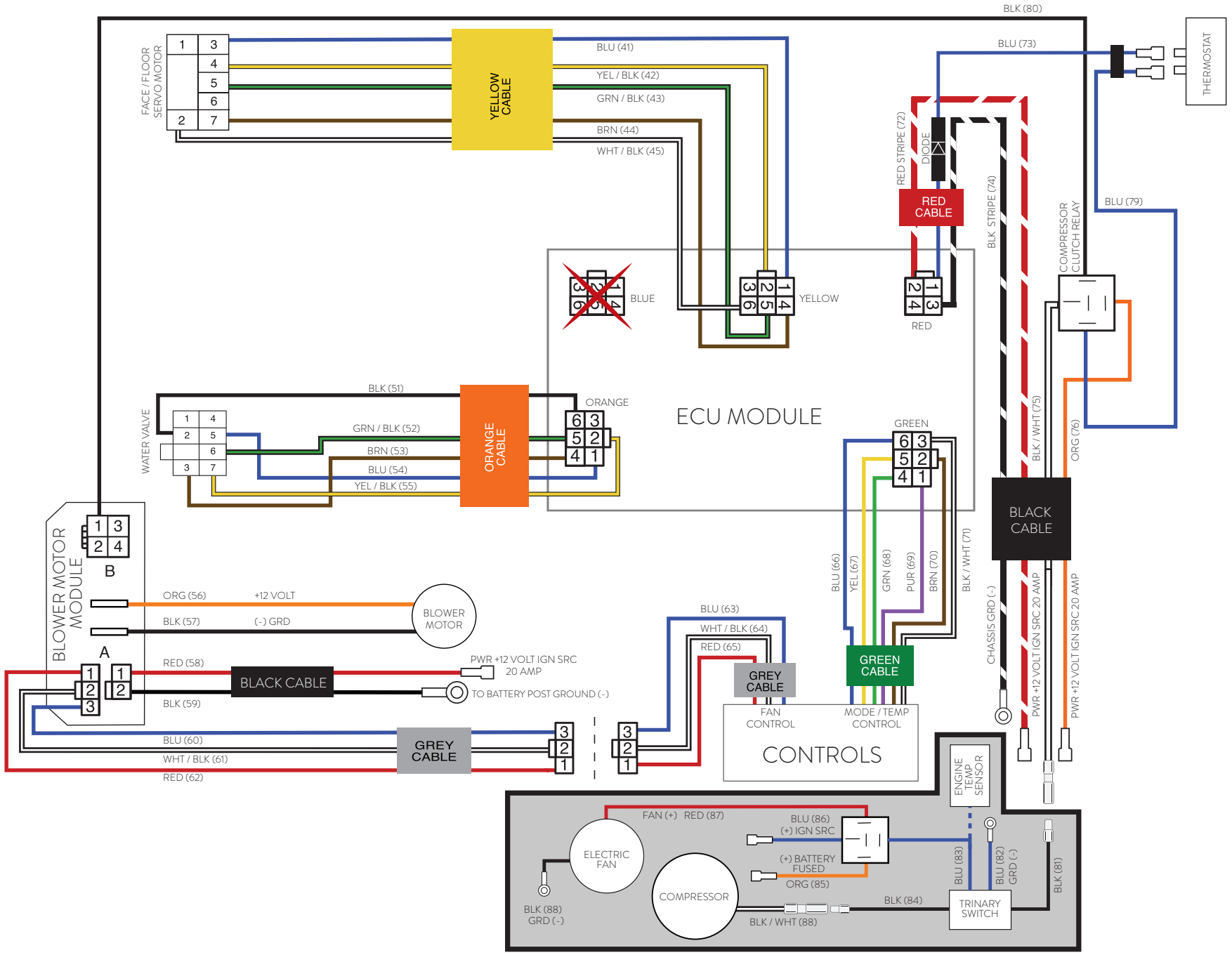
Simply put.....Back EMF is the reversal of electrical current when powering off your vehicle. This reversal of electricity can and will DAMAGE sensitive electronics. By ADDING EXTERNAL COMPONENTS to our system, such as a triggering fuel injection ECM, Idle-up solenoid electric fans to our compressor clutch output wire. The increased voltage reversal will DAMAGE a/c components, Back EMF damage May occur and WILL NOT be covered under warranty.

When adding fuel injection or other components Must purchase wiring harness part # RM-8-100. This wiring harness will protect sensitive electronics.

CALL TECH SUPPORT:

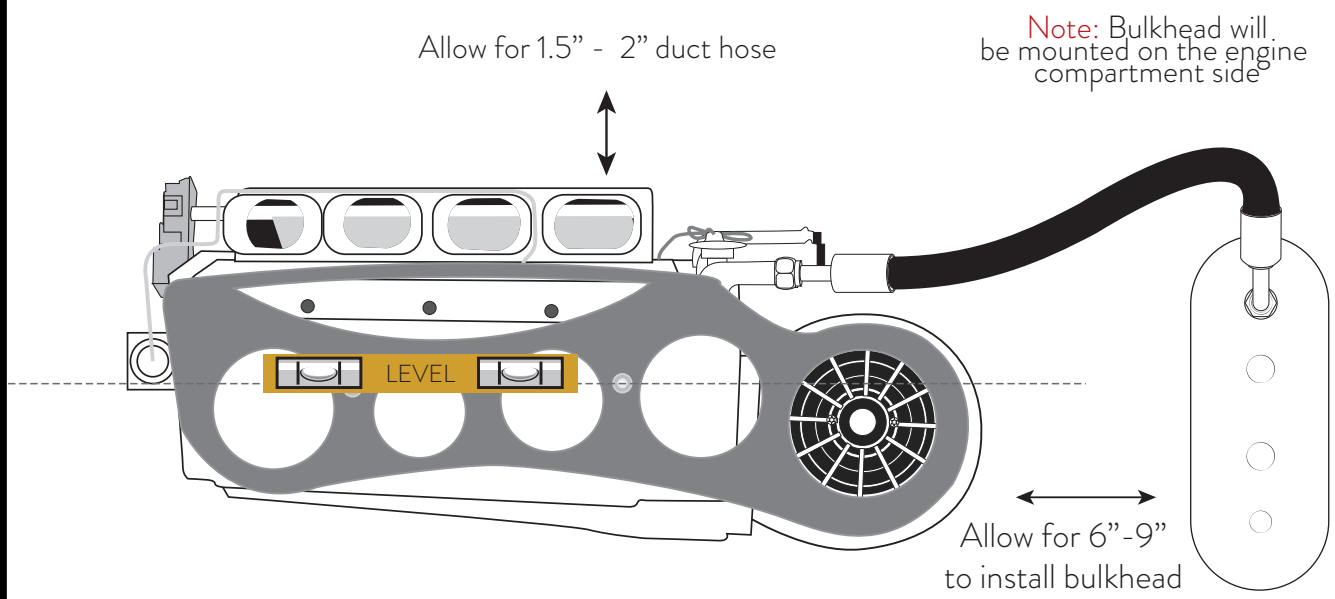
Wiring these components must be done correctly. Failure to do so will NOT be covered under warranty. IF YOU HAVE QUESTIONS call tech support before experimenting.


FACE / FLOOR SERVO MOTOR
YELLOW CABLE
BLU (41)
YEL / BLK (42)
GRN / BLK (43)
BRN (44)
WHT / BLK (45)
BLUE
YELLOW
BLK (80)
BLU (73)
THERMOSTAT
RED STRIPE (72)
DIODE
RED CABLE
RED
BLK STRIPE (74)
COMPRESSOR CLUTCH RELAY
BLU (79)
ECU MODULE
WATER VALVE
BLK (51)
GRN / BLK (52)
BRN (53)
BLU (54)
YEL / BLK (55)
ORANGE CABLE
ORANGE
GREEN
BLU (66)
YEL (67)
GRN (68)
PUR (69)
BRN (70)
BLK / WHT (71)
BLK / WHT (75)
ORG (76)
BLACK CABLE
BLOWER MOTOR MODULE
B
A
ORG (56)
+12 VOLT
BLK (57)
(-) GRD
BLOWER MOTOR
RED (58)
PWR +12 VOLT IGN SRC 20 AMP
BLACK CABLE
TO BATTERY POST GROUND (-)
BLK (59)
BLU (60)
WHT / BLK (61)
RED (62)
GREY CABLE
BLU (63)
WHT / BLK (64)
RED (65)
GREY CABLE
GREEN CABLE
FAN CONTROL
MODE / TEMP CONTROL
CONTROLS
CHASSIS GRD (-)
PWR +12 VOLT IGN SRC 20 AMP
PWR +12 VOLT IGN SRC 20 AMP
FUEL INJECTION ECM IDLE-UP SOLENOID
RED (85)
+12 VOLT
BLU (81)
CHASSIS GRD (+)
BLK (82)
(+) FUSED
ORG (83)
COMPRESSOR
HI / LOW PRESSURE SWITCH


BLK (80)
BLU (73)
THERMOSTAT
FACE / FLOOR SERVO MOTOR
YELLOW CABLE
BLU (41)
YEL / BLK (42)
GRN / BLK (43)
BRN (44)
WHT / BLK (45)
RED STRIPE (72)
DIODE
RED CABLE
BLK STRIPE (74)
COMPRESSOR CLUTCH RELAY
BLU (79)
BLUE
YELLOW
RED
ECU MODULE
BLK (51)
ORANGE
WATER VALVE
GRN / BLK (52)
BRN (53)
BLU (54)
YEL / BLK (55)
ORANGE CABLE
GREEN
BLK / WHT (75)
ORG (76)
BLACK CABLE
BLU (66)
YEL (67)
GRN (68)
PUR (69)
BRN (70)
BLK / WHT (71)
CHASSIS GRD (-)
PWR +12 VOLT IGN SRC 20 AMP
BLOWER MOTOR MODULE
B
A
ORG (56)
+12 VOLT
BLK (57)
(-) GRD
BLOWER MOTOR
RED (58)
BLACK CABLE
PWR +12 VOLT IGN SRC 20 AMP
BLK (59)
TO BATTERY POST GROUND (-)
BLU (63)
WHT / BLK (64)
RED (65)
GREY CABLE
GREEN CABLE
FAN CONTROL
MODE / TEMP CONTROL
CONTROLS
BLU (60)
WHT / BLK (61)
RED (62)
GREY CABLE
ENGINE TEMP SENSOR
FAN (+) RED (87)
BLU (86) (+) IGN SRC
ELECTRIC FAN
(+) BATTERY FUSED
ORG (85)
COMPRESSOR
BLK (84)
BLK / WHT (88)
BLK (88) GRD (-)
TRINARY SWITCH
BLU (83)
BLU (82) GRD (-)
BLK (81)

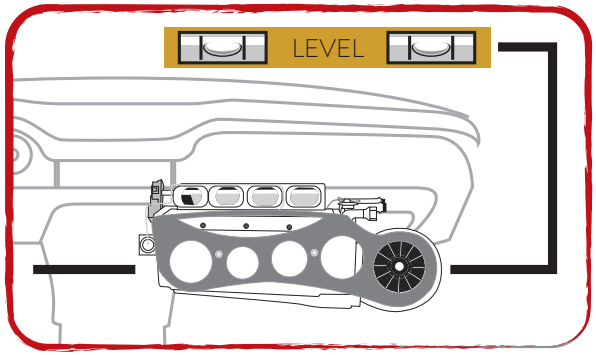
Controller Manual:

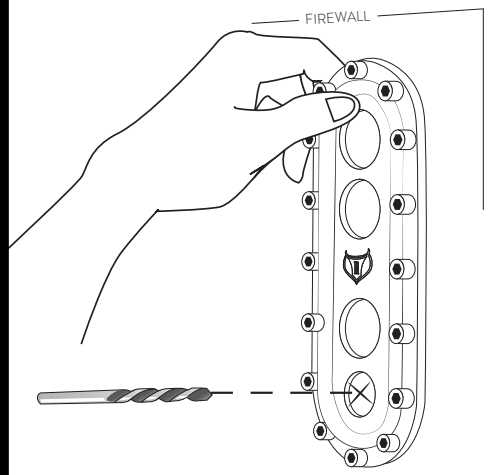
Refer to your controller manual at this time. After you have complete the controller manual come back to this point for the remainder of your installation.

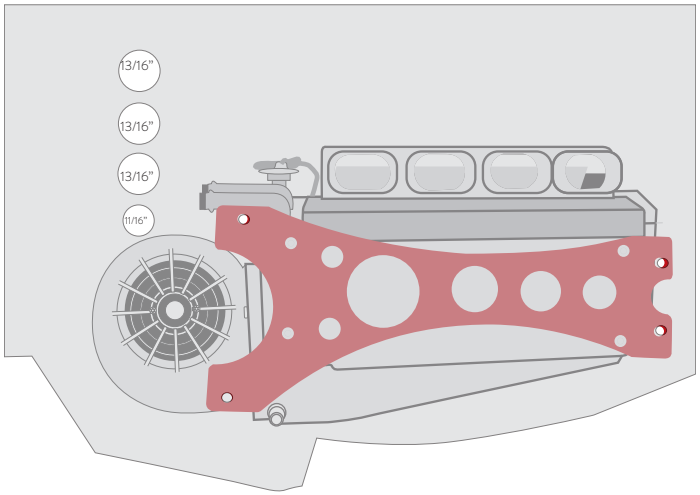


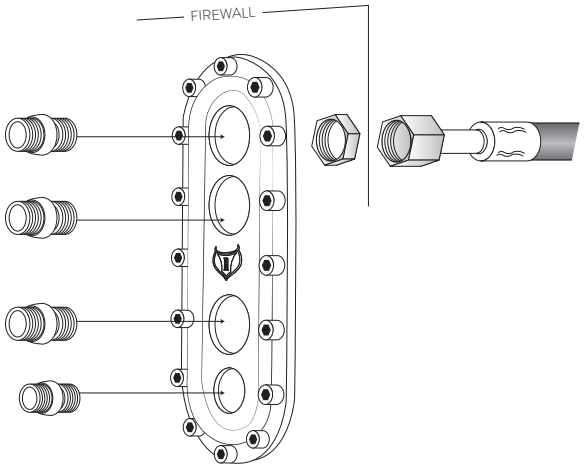
Mounting Check Off:

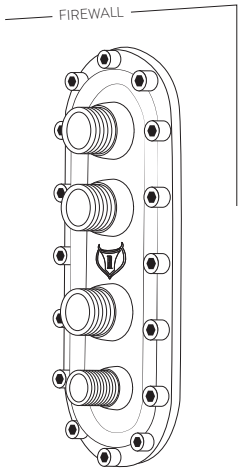
1. Be sure to align the evaporator unit level with the bottom of instrument panel (assuming the vehicle is sitting level). This will allow for proper drainage of condensation.
2. Find optimal position for bulkhead prior to mounting system. Allow for 6"-9" to install bulkhead.
3. Allow 2" for duct hose. Be aware that duct hoses need to be clear of moving parts such as windshield wiper motors.





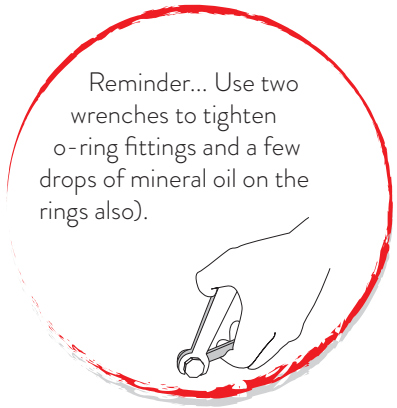


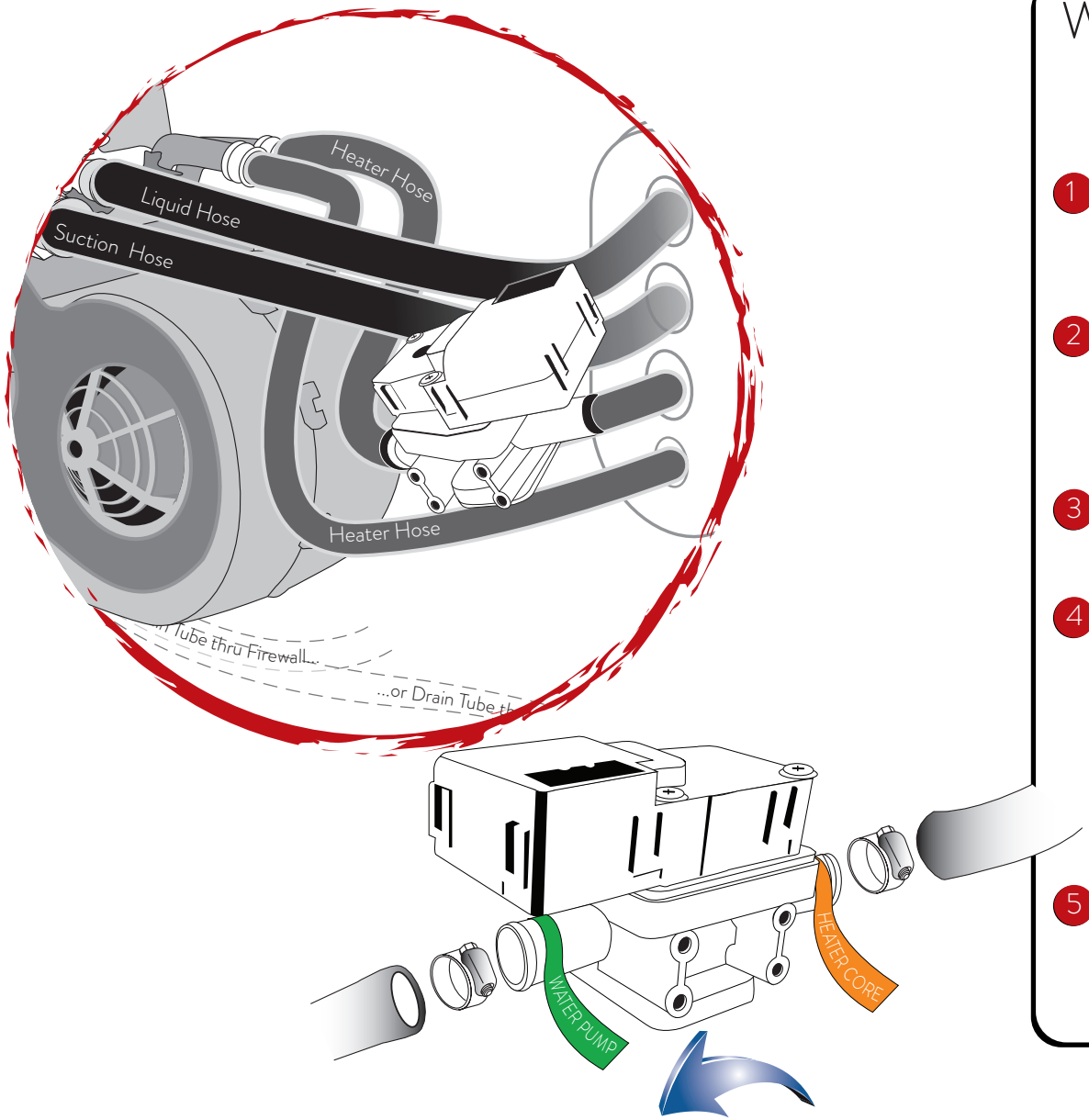




Bulkhead Check Off:

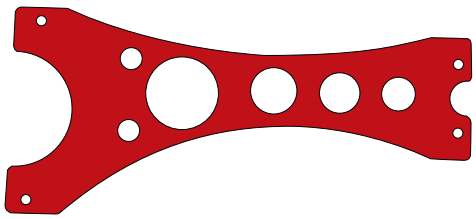
1. Find a nice flat surface to install your bulk head and make sure that the area you selected is clear of any obstructions or components that can be damage.
2. Use the bulkhead to mock up your holes for the hoses. Match Drill
3. Standard sizes for the fitting are 13/16” for the heater and suction hoses. The liquid hose needs a 11/16” hole.
4. When final installation of hoses is done be sure to use the proper O-rings and a few drops of mineral oil in each connection.
5. After drilling any holes, carefully deburr them to eliminate any potential snags.

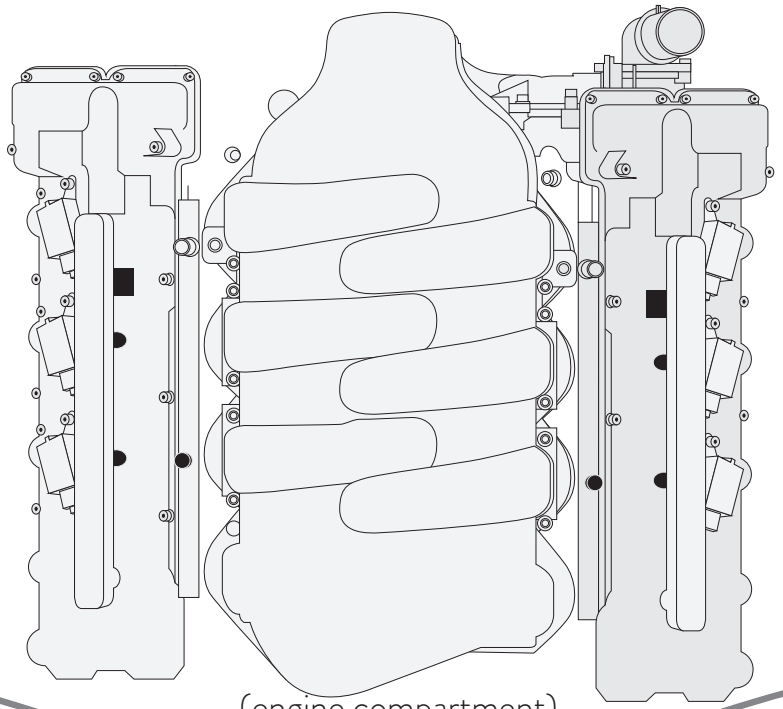




Water Valve Check Off:

1. The lower connection on the tubes coming thru the block off assembly is going to be routed to the water outlet on the intake manifold.
2. Attach your hose with cable clamps on both ends and route where it will not interfere with linkage or come in contact with exhaust manifolds or headers.
3. The water valve can be connected to either heater connection on the evaporator unit.
4. Make certain the water valve is connected to the hose that connects to the WATER PUMP, If you only remember one thing during this installation make certain that the water valve goes to the water pump. We are stopping the flow of coolant leaving the heater core!
5. For a cleaner installation, we recommend mounting the electronic water valve in the interior area next to the evaporator

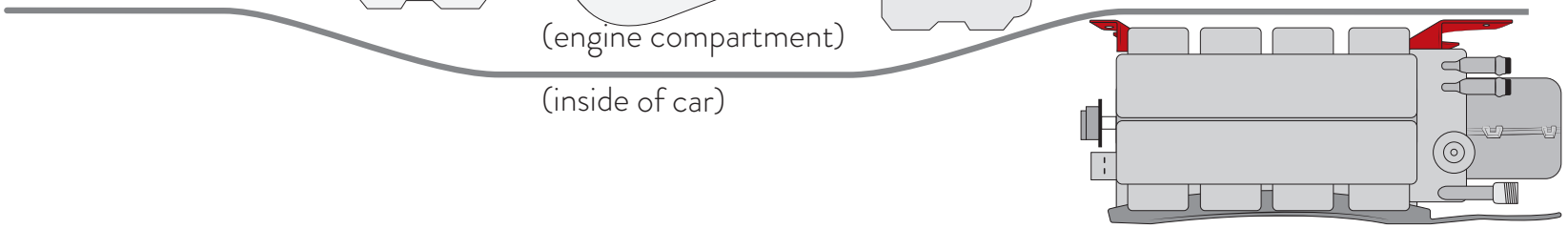




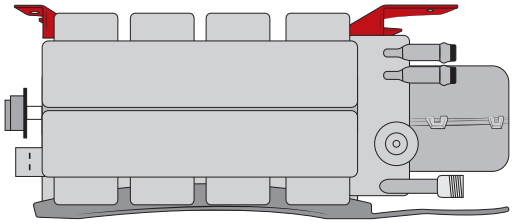
Mounting Options:

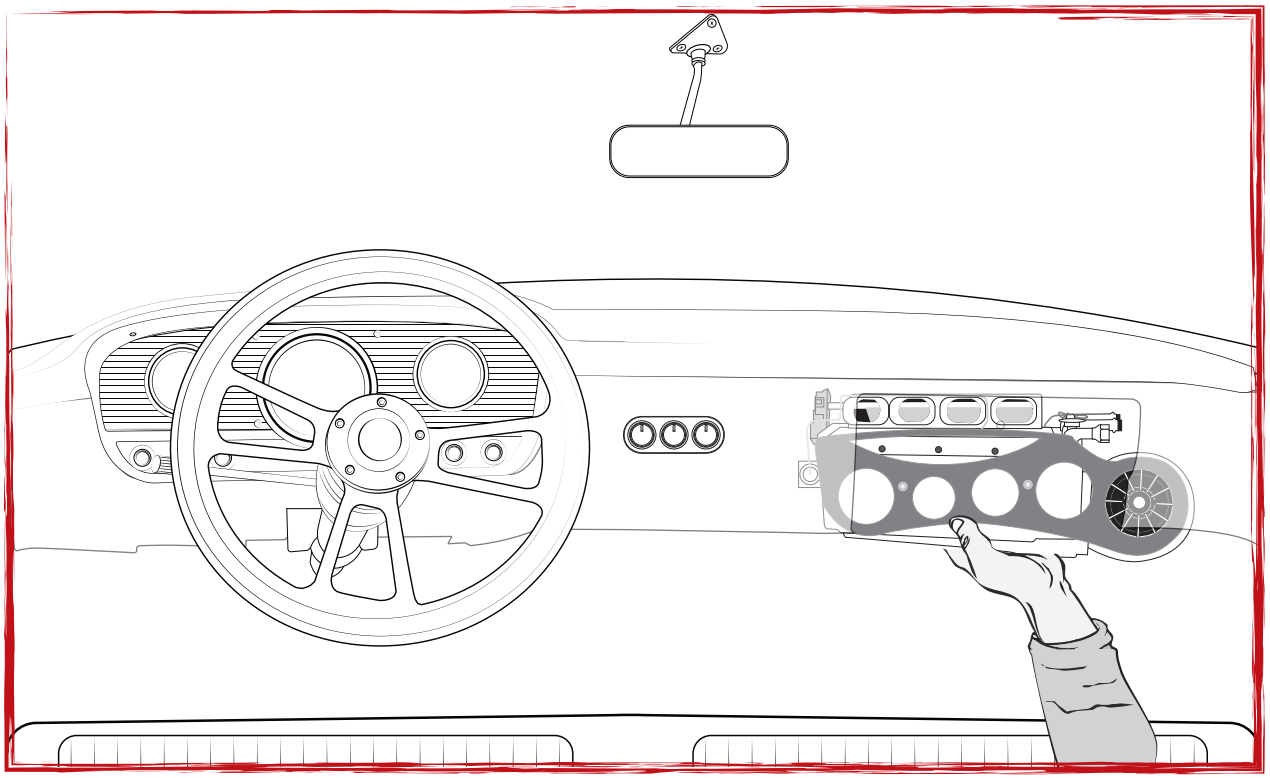
Our exclusive multi-mount system allows you to mount your evaporator flush (parallel) with the inside firewall. If your firewall has a indentation for the trans tunnel, use the included Multi-Mount extension bracket to off set your unit.

CURVED FIREWALL



FLAT FIREWALL

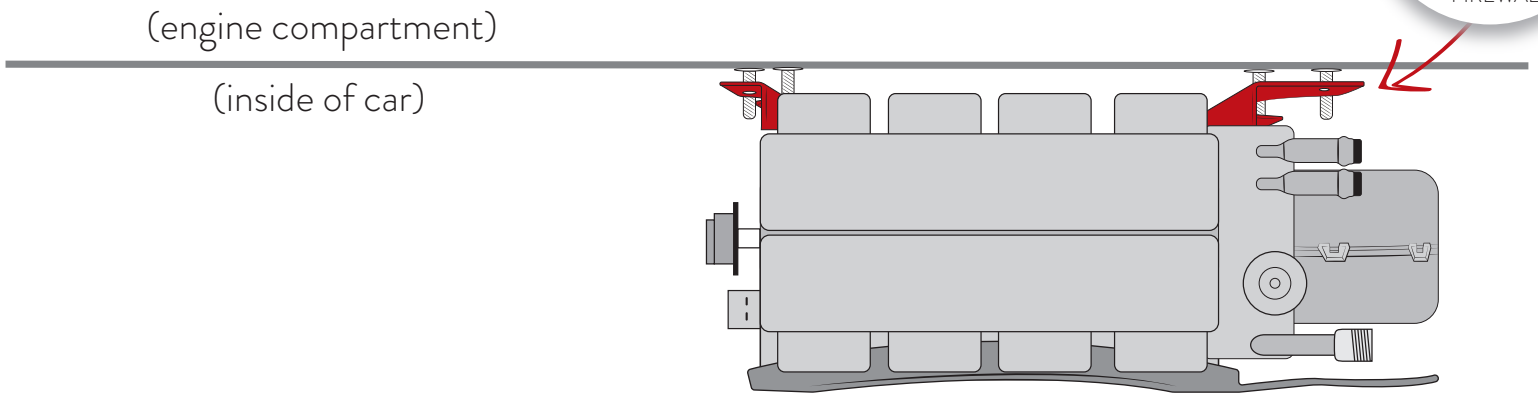


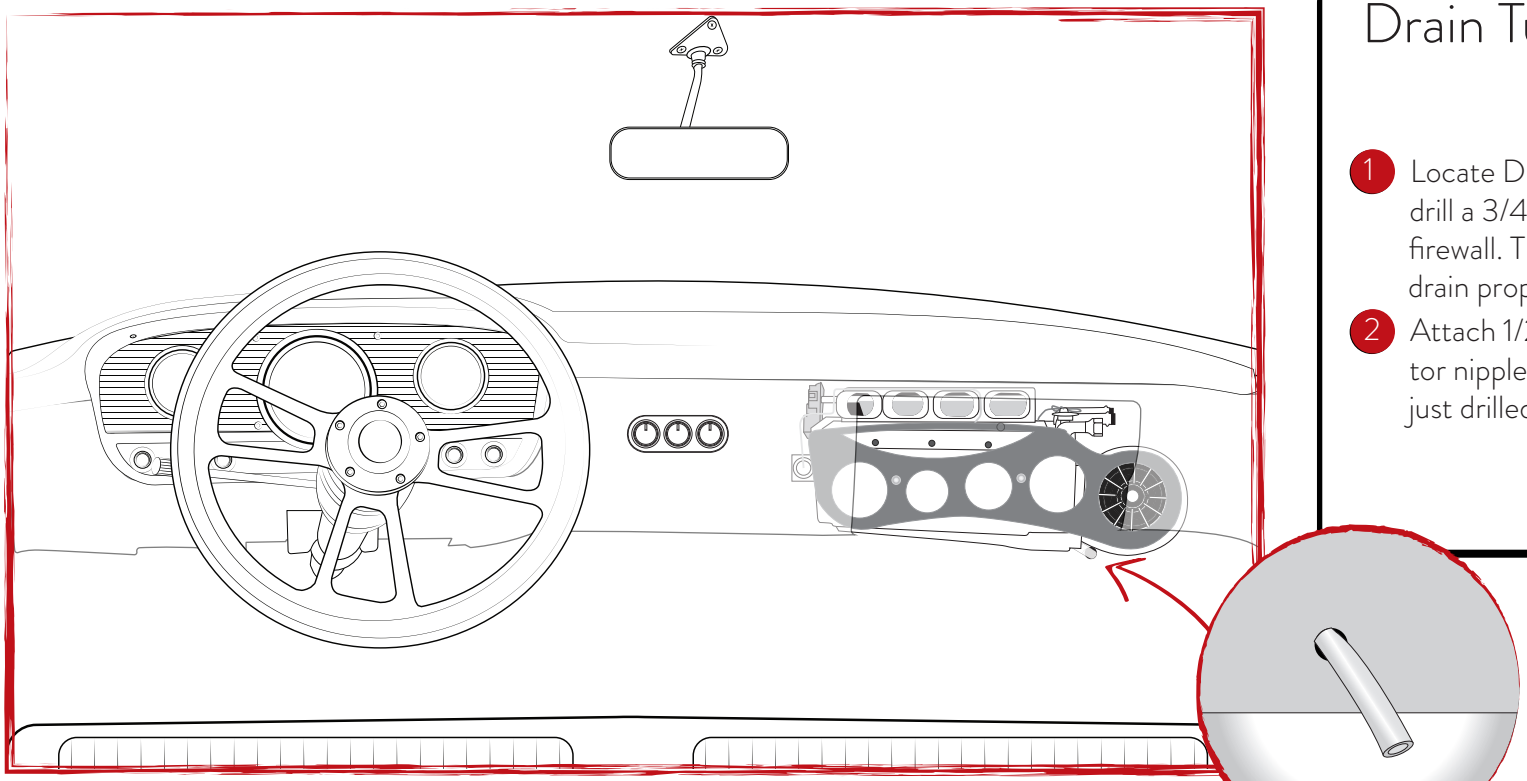


Mounting Check Off:

For the purpose of this manual we will be mounting on a flat firewall.

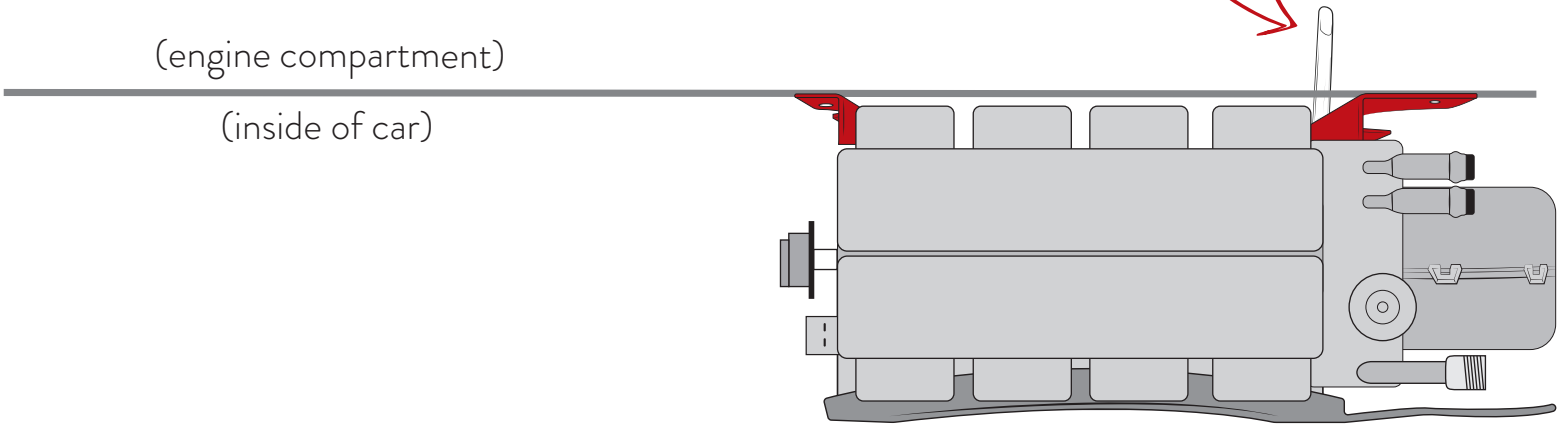
1. Using the Multi Mount Bracket as a template, mark the 4 mounting points.
2. Weld 4 mounting studs in locations you marked.
3. Roll evaporator under dash. Place onto mounting studs and secure with flange nuts.

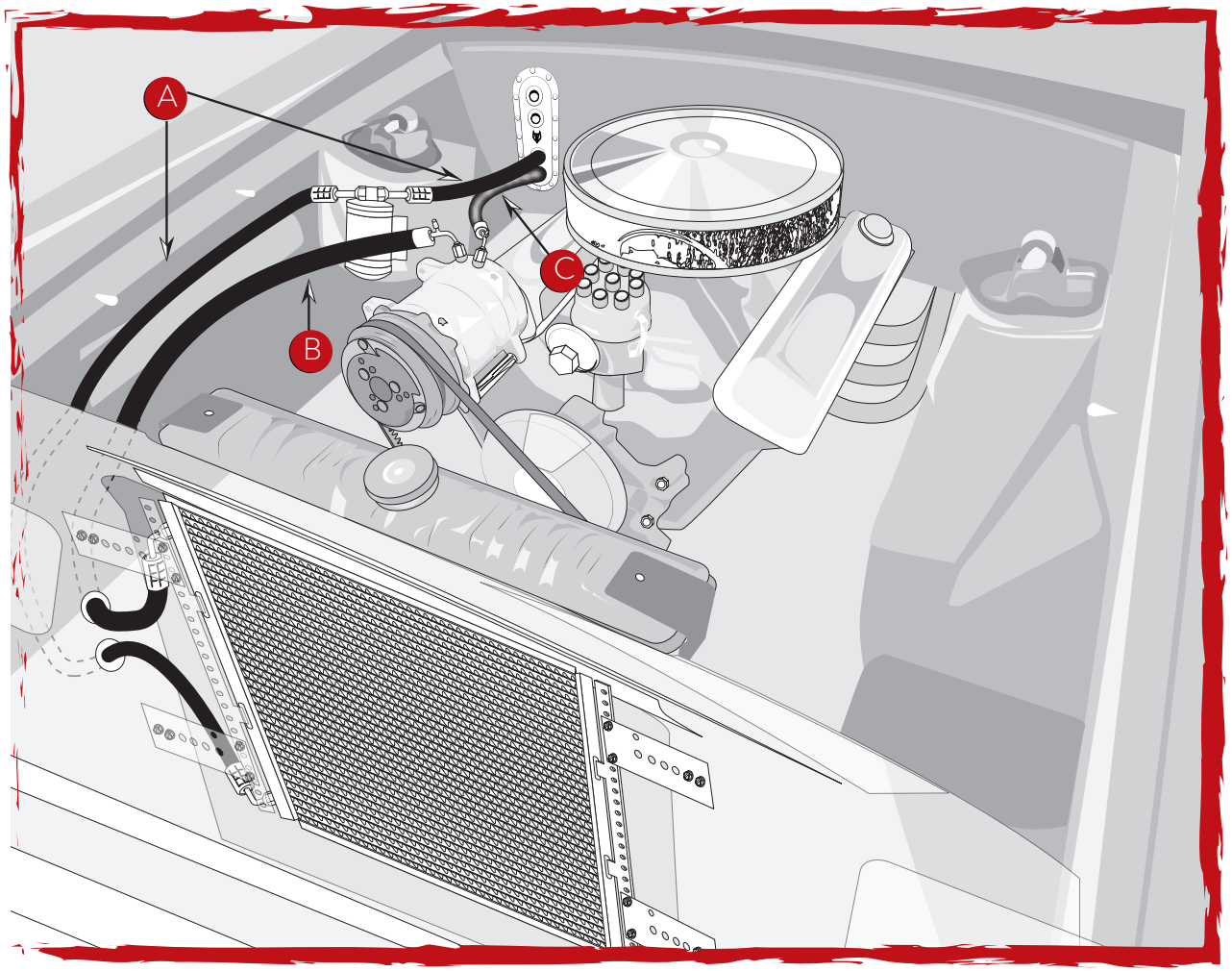




Drain Tube:

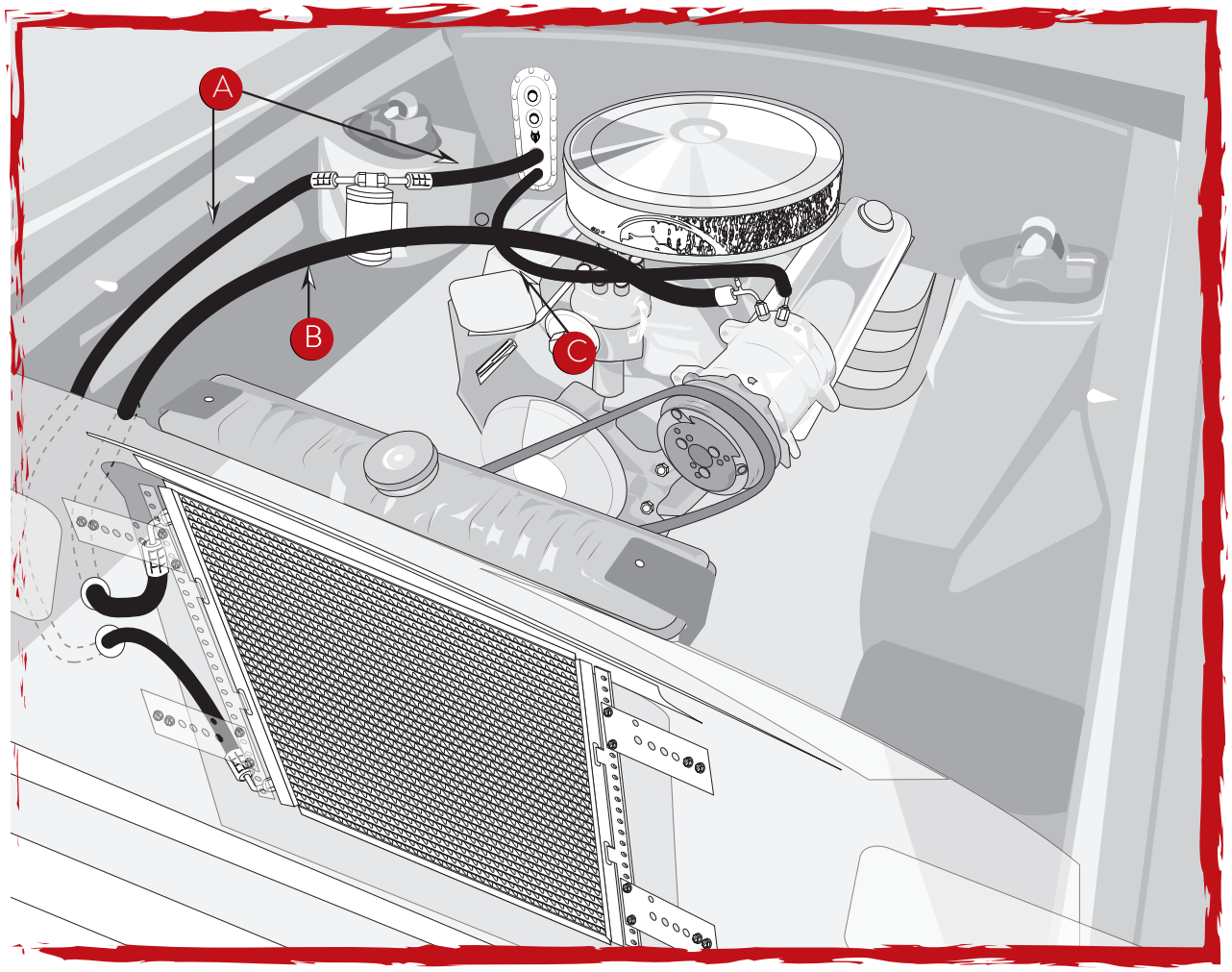
1. Locate Drain nipple on Evaporator and drill a 3/4" hole below the nipple on the firewall. This will allow condensation to drain properly.
2. Attach 1/2" clear drain tube to Evaporator nipple and run through 3/4" hole you just drilled





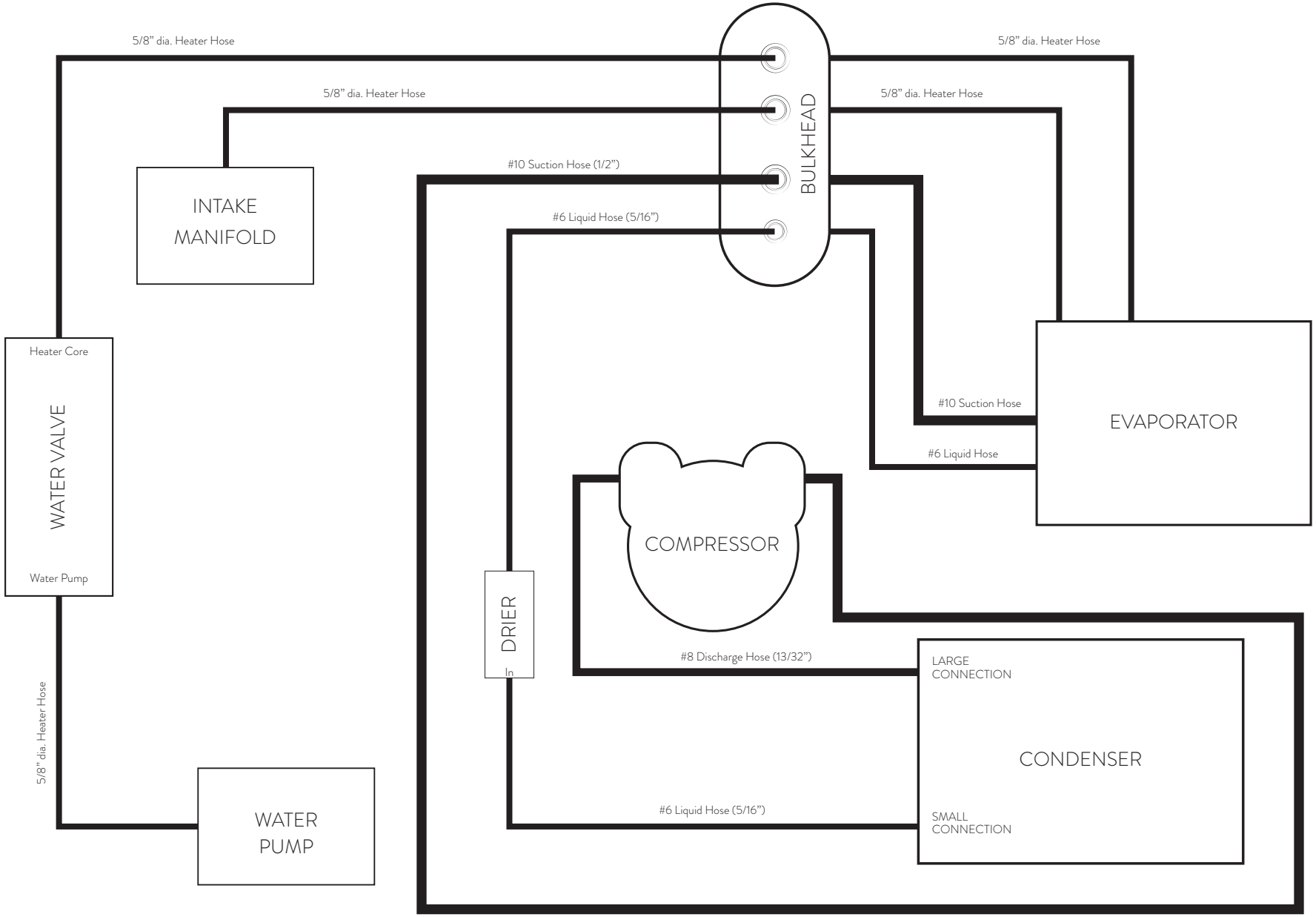
Passenger Side:

- A #6 Liquid Hose (5/16")
- B #8 Discharge Hose (13/32")
- C #10 Suction Hose (1/2")

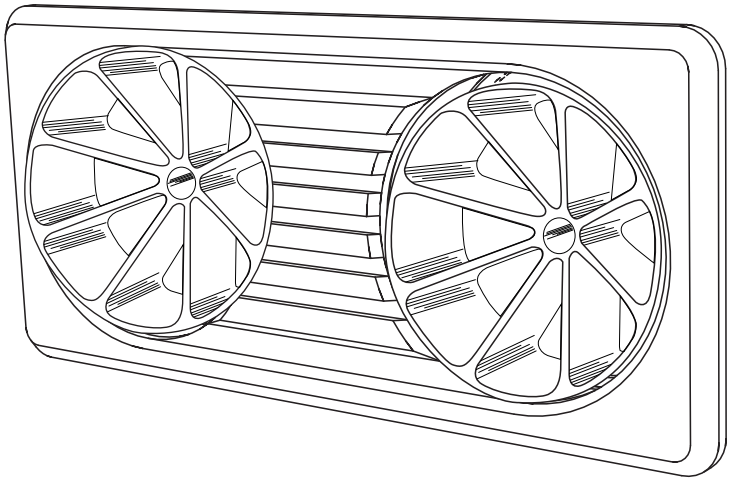


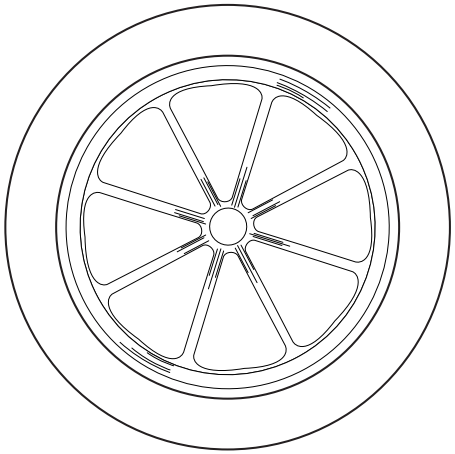
Driver Side:

- A #6 Liquid Hose (5/16")
- B #8 Discharge Hose (13/32")
- C #10 Suction Hose (1/2")


5/8" dia. Heater Hose
5/8" dia. Heater Hose
5/8" dia. Heater Hose
5/8" dia. Heater Hose
BULKHEAD
INTAKE MANIFOLD
#10 Suction Hose (1/2")
#6 Liquid Hose (5/16")
Heater Core
WATER VALVE
Water Pump
#10 Suction Hose
#6 Liquid Hose
EVAPORATOR
COMPRESSOR
DRIER
In
#8 Discharge Hose (13/32")
LARGE CONNECTION
CONDENSER
SMALL CONNECTION
5/8" dia. Heater Hose
WATER PUMP
#6 Liquid Hose (5/16")

Quantum Dual 8 Vane Billet Aluminum A/C Vent

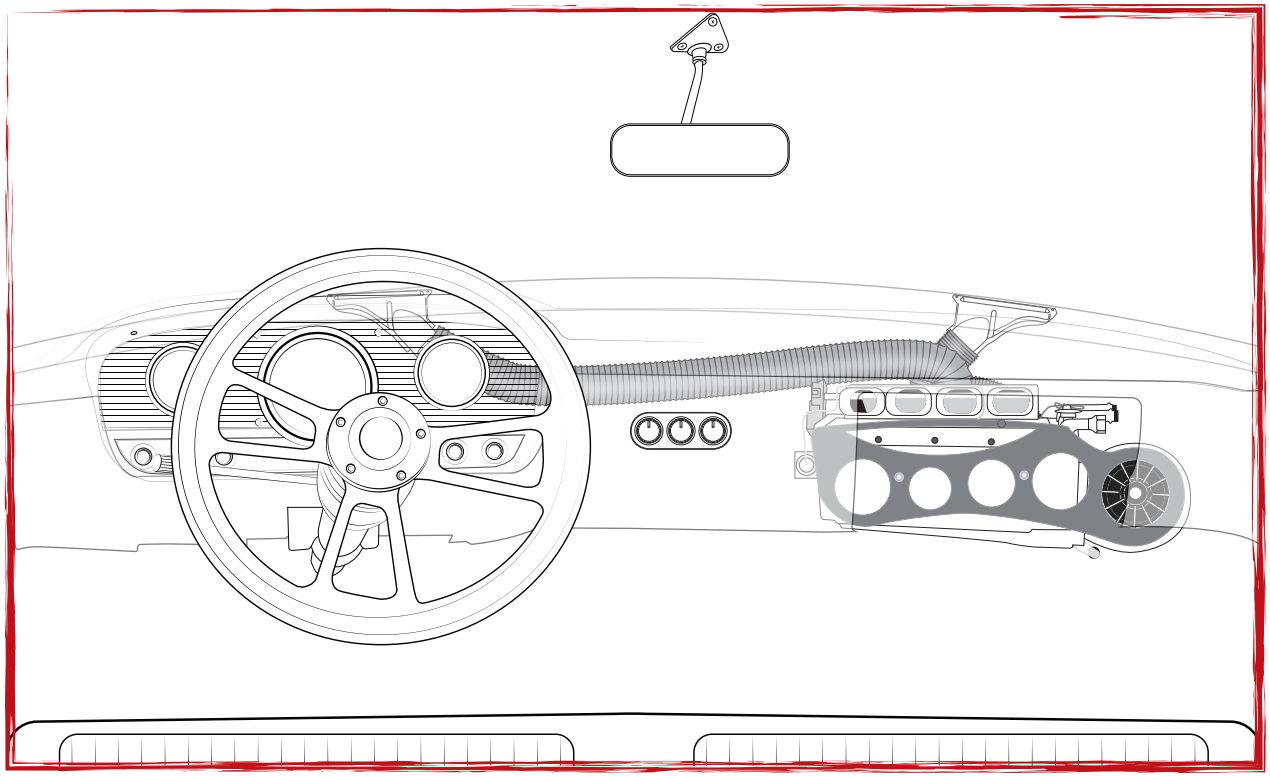




Quantum 8 Vane Billet Aluminum A/C Vent

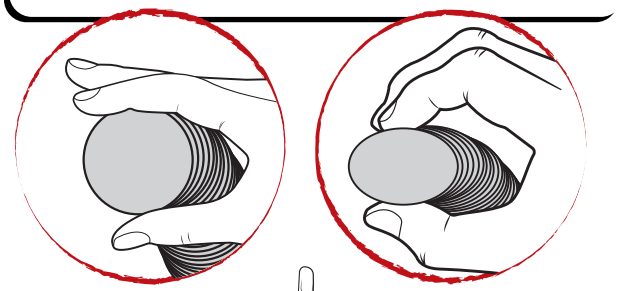
Vents Check Off:

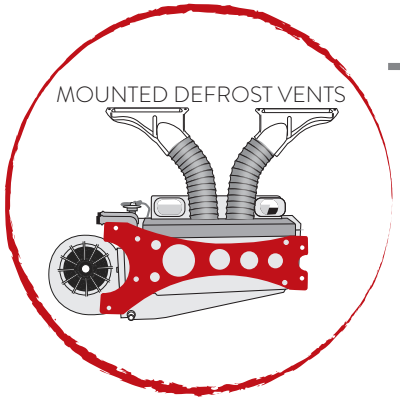
1. Installing them will go very easily if you plan ahead and take your time. In some cases you may be able to use factory installed vents, if not, follow the following steps.
2. While sitting in the vehicle, make a plan of where the vents will be located, situating them for maximum airflow and convenience. Make sure the location of the vents will not interfere with actions like shifting gears, or that the vents will not be subjected to excessive impact.
3. Many of the vents will require some drilling thru the lower dash to attach. Mark the drill hole(s) location first, and drill pilot holes (i.e. with a small bit like 9/32") before attaching the vents with the included Tech Screws. Also make sure that you don't drill thru wires or other mechanisms when drilling the pilot holes.
4. Some vents can be inserted into OEM vent holes, or you may need to cut-out holes within the dash... Measure twice - cut once.
5. Use zip-ties to connect the flex hoses to the back of the vents.



Defrost:

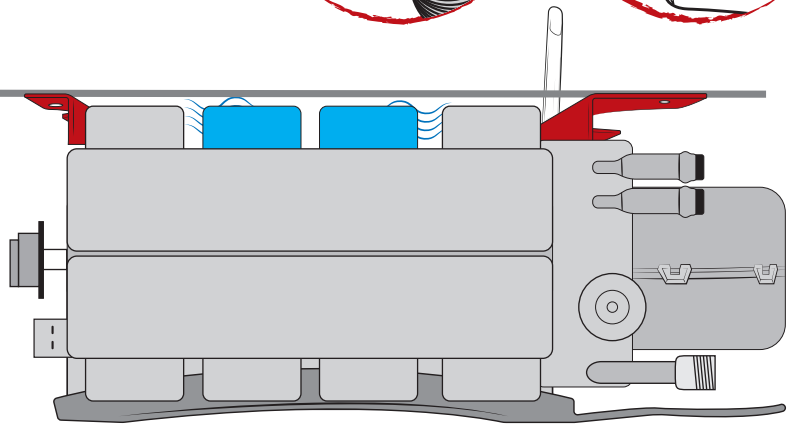
1. Locate and use pre-exsiting defrost vents or New defrost vents purchased from Restomod Air.
2. Allow 2" for duct hose. Be aware that duct hoses need to be clear of moving parts such as windshield wiper motors.
3. Use zip-ties to connect the flex hoses to the back of the vents.
4. TECH TIP: You may have to work the ducting on the adapter by squeezing the duct hose. Shown below.

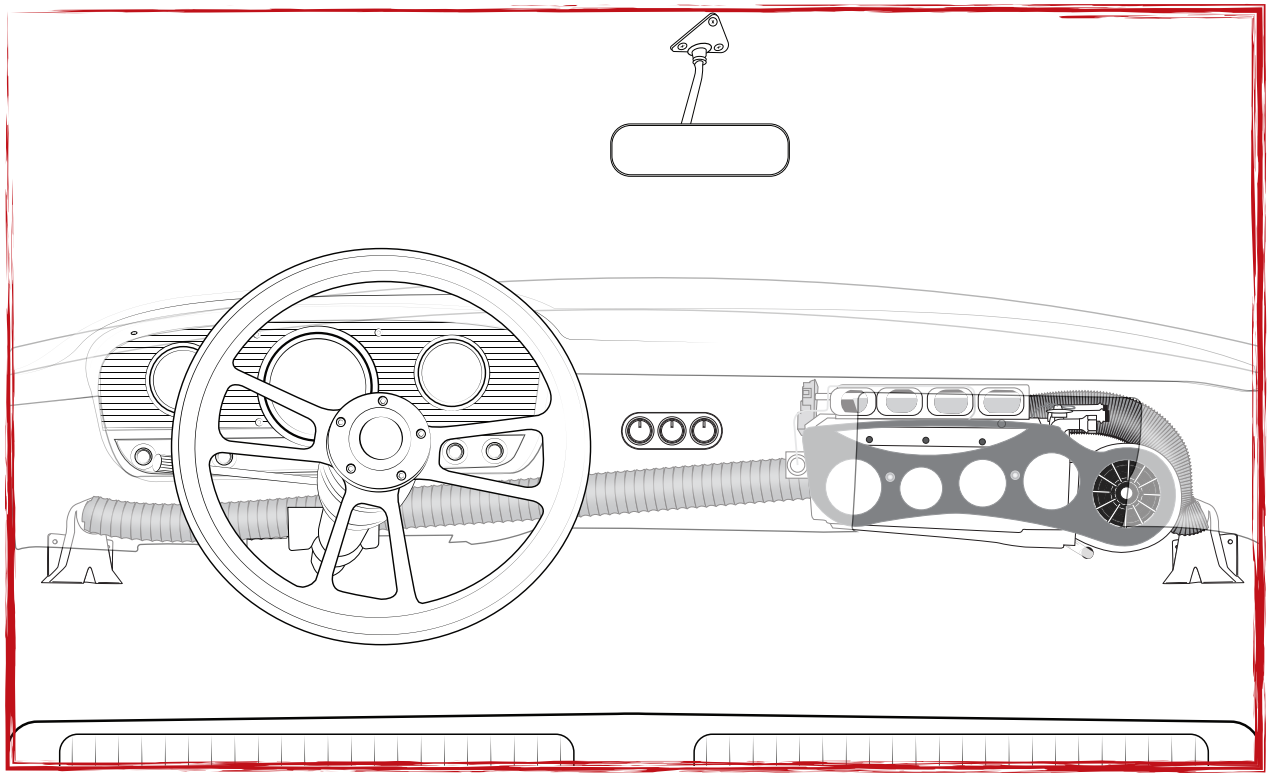




(engine compartment)

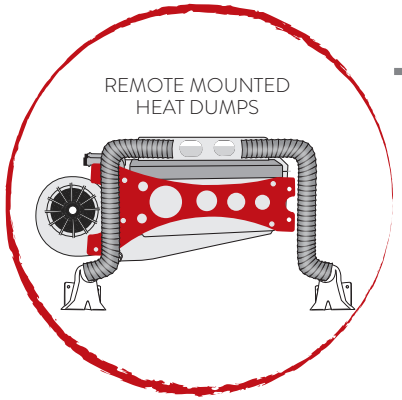
(inside of car)

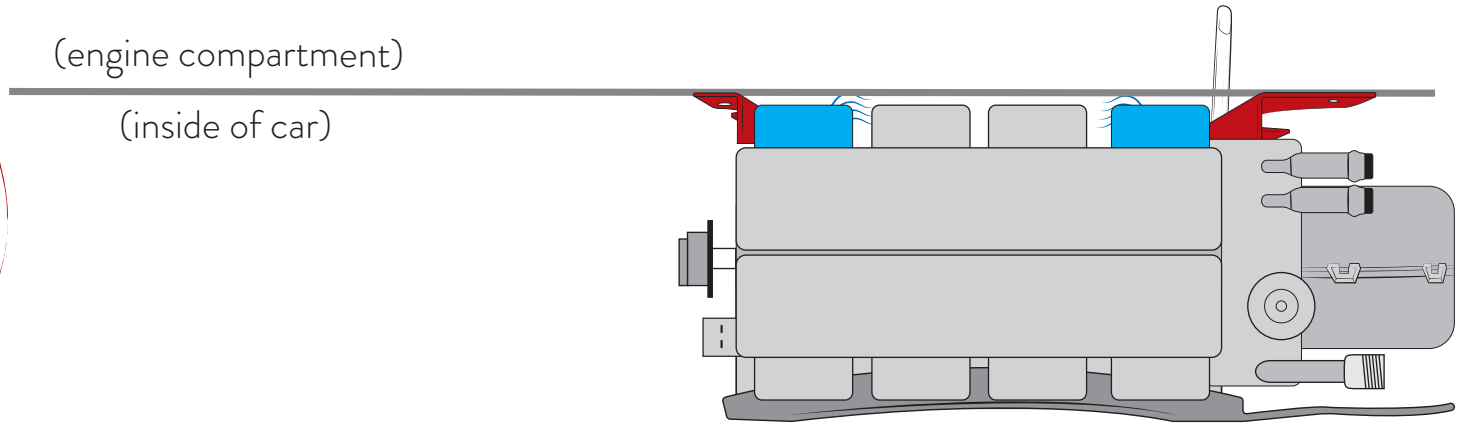


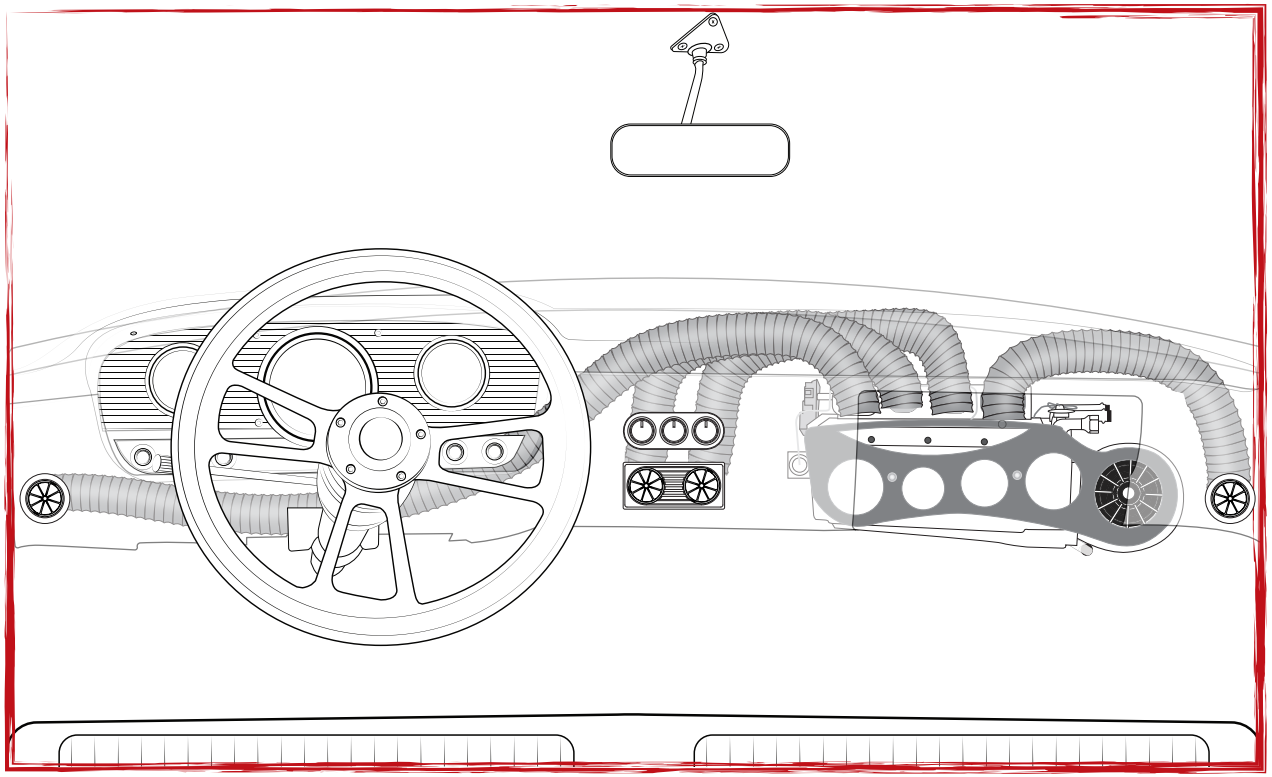


Heat Dumps:

1. Locate the Heat dumps provided.
2. Keep in mind that heat dumps are to heat/cool the floor area. Too high or low and they can not perform to their best ability.
3. Allow 2" for duct hose. Be aware that duct hoses need to be clear of moving parts such as windshield wiper motors.
4. Use zip-ties to connect the flex hoses to the back of the vents.

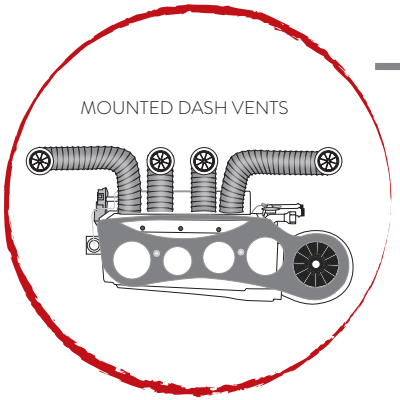


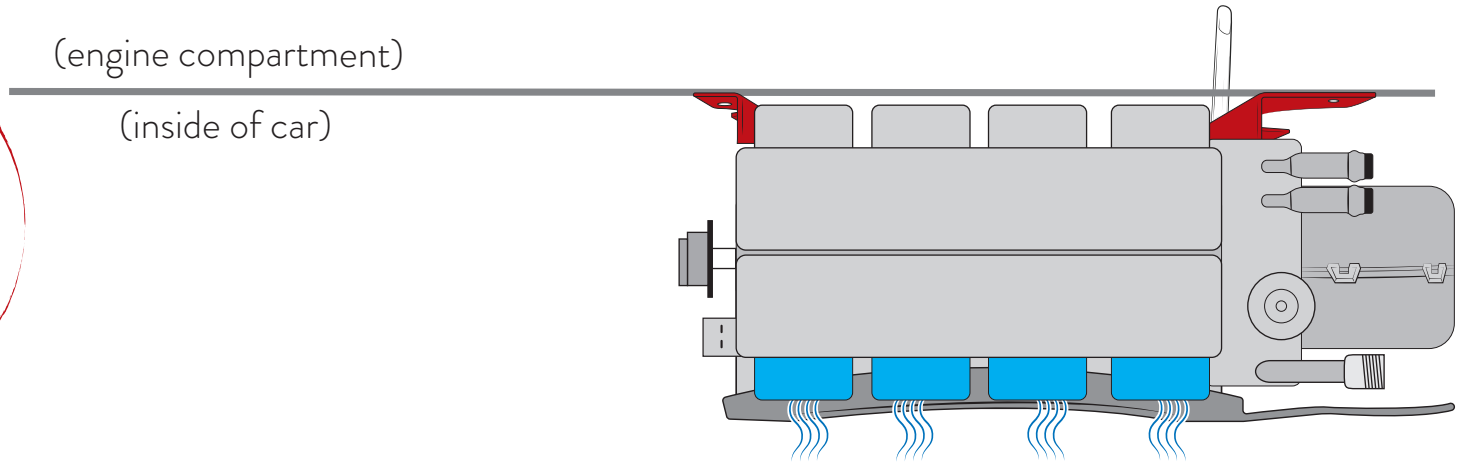


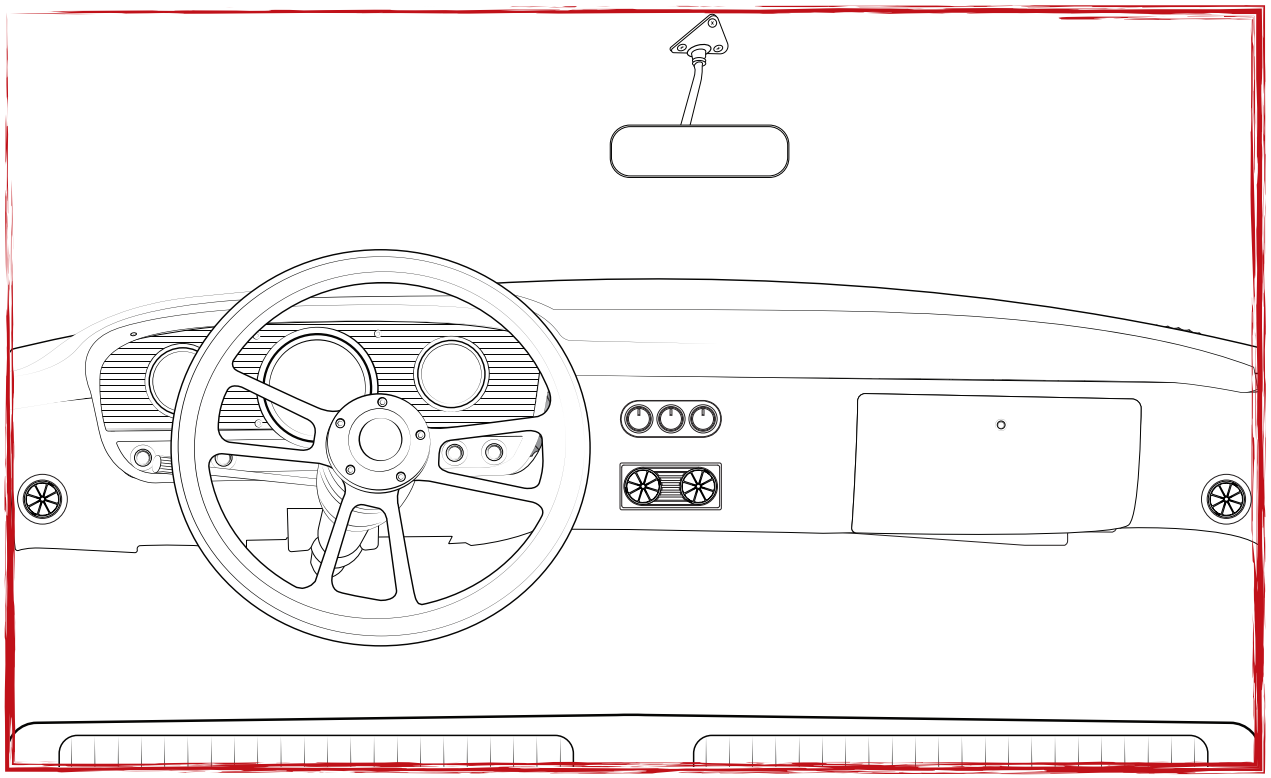


Dash:

1. Keep in mind that routing your flex hose will depend on your vent locations. Flex hose can not have tight bends or they will not perform to their best ability.
2. Allow 2" for duct hose. Be aware that duct hoses need to be clear of moving parts such as windshield wiper motors.
3. Use zip-ties to connect the flex hoses to the back of the vents.





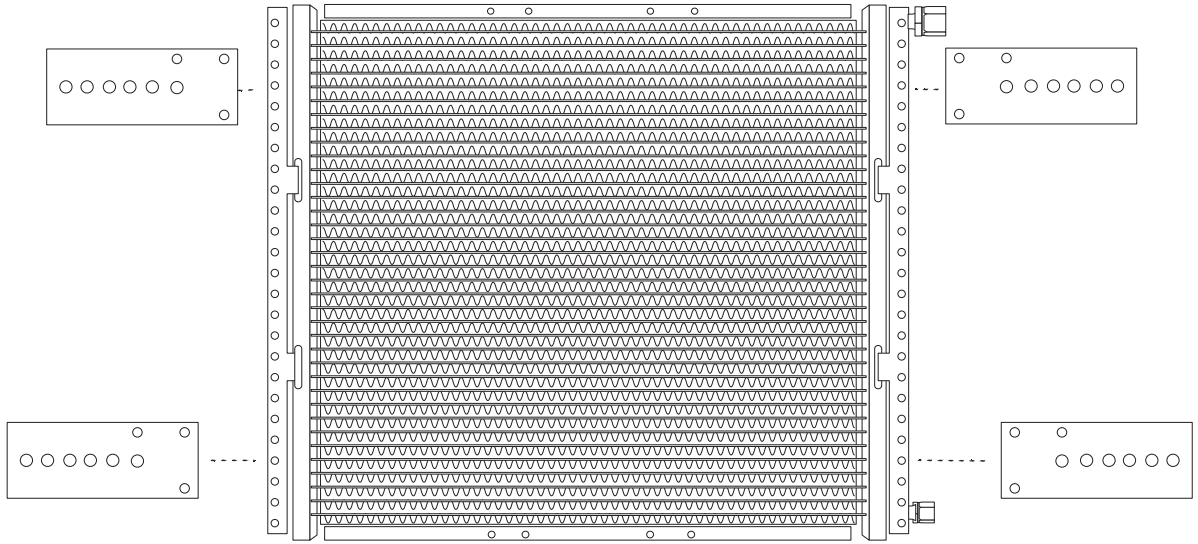


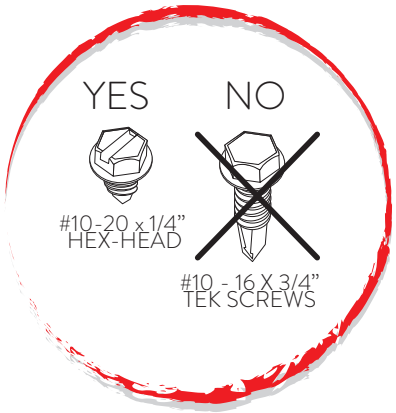
Reinstall:

1. Now is the time to reinstall the Glove box, Console (if you took off) Radio and Bezel if you have them.

2. Take a step back and make sure your dash looks clean and there is no duct work hanging down.

3. If you have a friend helping, point out how sick your dash looks with Restomod Air vents in it.

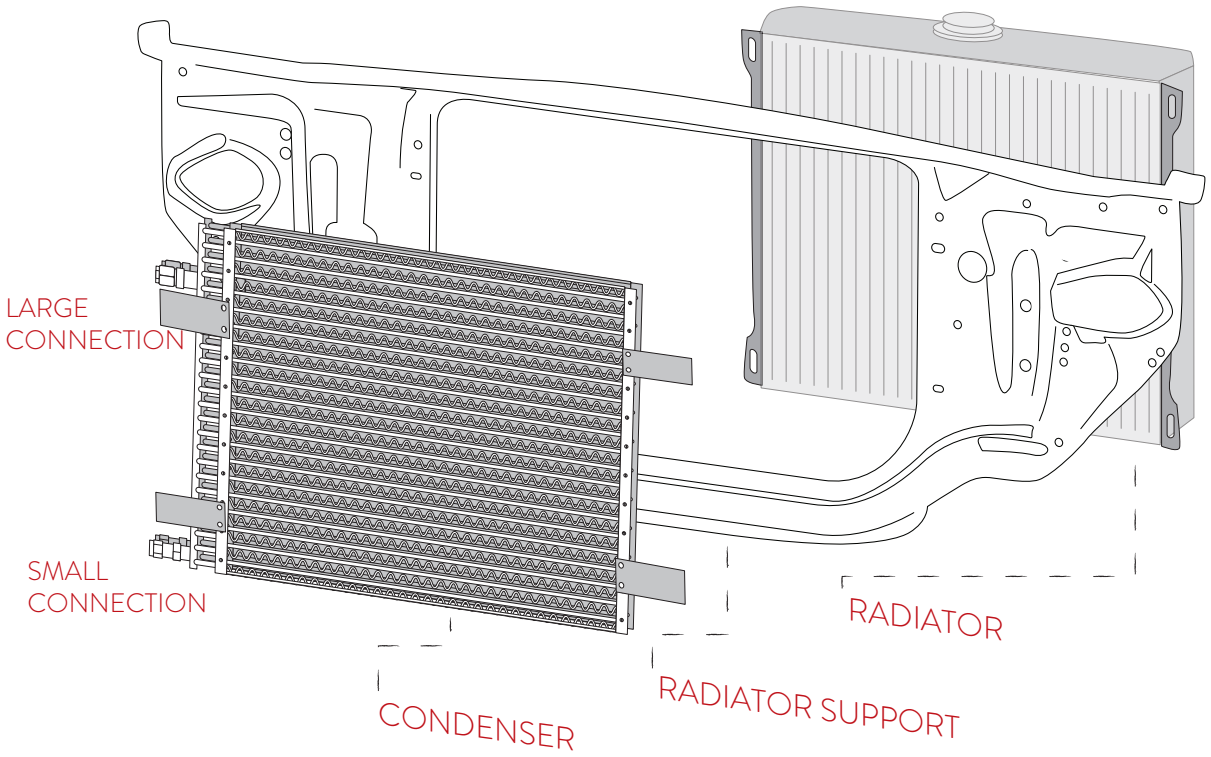




Condenser Check Off:

READ THRU EACH PROCEDURE BEFORE MOUNTING YOUR CONDENSER!

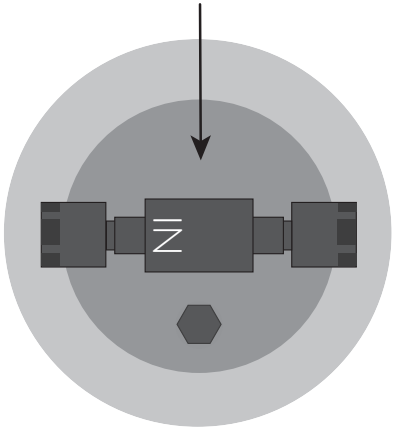
1. Make sure you have the largest possible size condenser for your vehicle. Surface area is important for maximum cooing.
2. Is your condenser the size of your radiator? If not you may need to go larger.
3. Condenser should be no more than 1" away from the radiator.
4. Condenser has two fitting connections. Remember the larger #8 goes on top. DO NOT MOUNT CONDENSER UPSIDE DOWN! (FAILURE TO DO SO WILL CAUSE AIR CONDITIONING SYSTEM TO FUNCTION INCORRECTLY).
5. Fab condenser mounting brackets to minimize condenser movement.



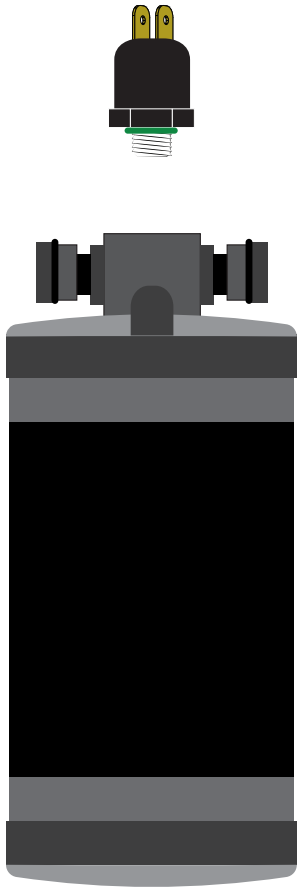
Condenser Check Off:

1. Place condenser in front of radiator and mount to radiator support with supplied #10-16 x 3/4" TEK screws or desired hardware.
2. Condenser can be mounted with fitting connections to either driver or passenger side.
3. (MAKE CERTAIN LARGE FITTING CONNECTION IS TO THE TOP. FAILURE TO DO SO WILL CAUSE SYSTEM TO FUNCTION INCORRECTLY)

TOP VIEW OF DRIER



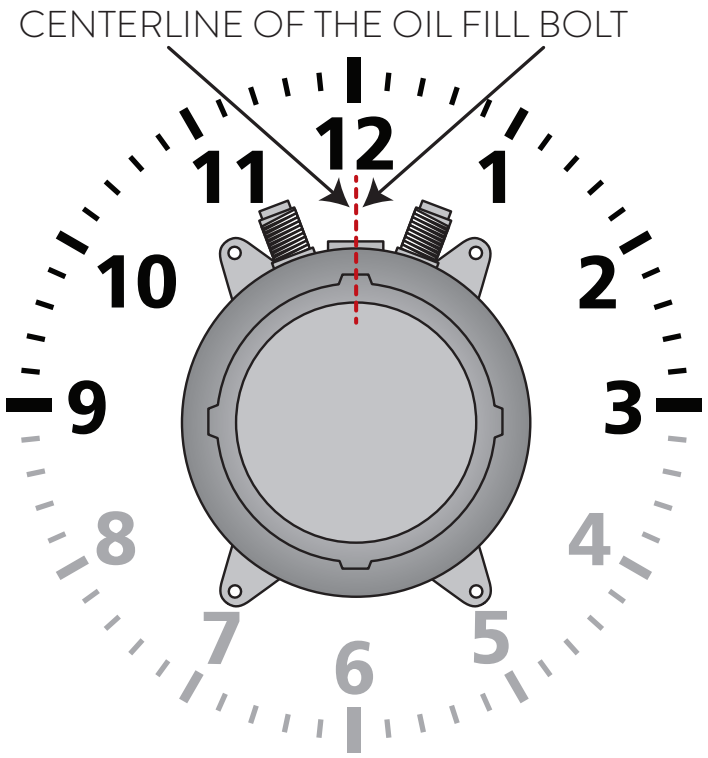
Be sure to mount drier vertically with fittings to top.

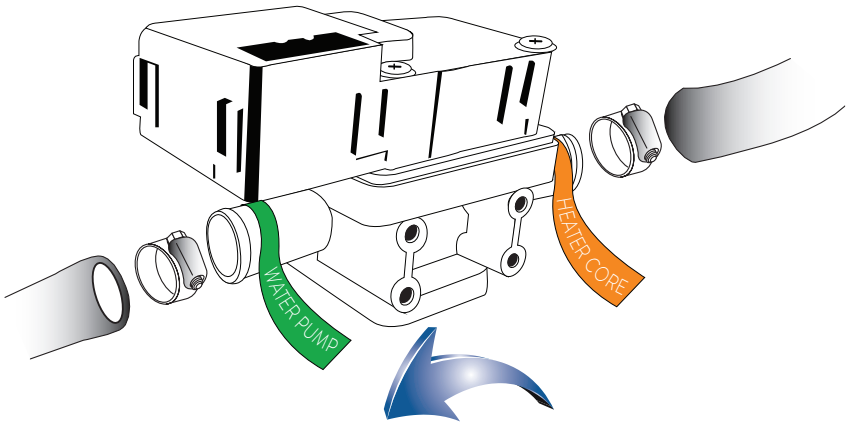


Drier Check Off:

READ THRU EACH PROCEDURE BEFORE MOUNTING YOUR DRIER AND PRESSURE SWITCH!

1. Locate a good place for the drier. Somewhere that is appealing to the eye and where hose will reach. Keep in mind refrigerant hoses from condenser must connect to it.
2. Remember Drier should be mounted with connections upward.
3. Keep in mind the threaded connection labeled "IN" will connect to the lower connection of condenser.
4. When installing the PRESSURE SWITCH remove dust cover and attach wiring harness to electrical connections.
5. Insert the drier into the drier mounting bracket (it's basically a sleeve for the drier).

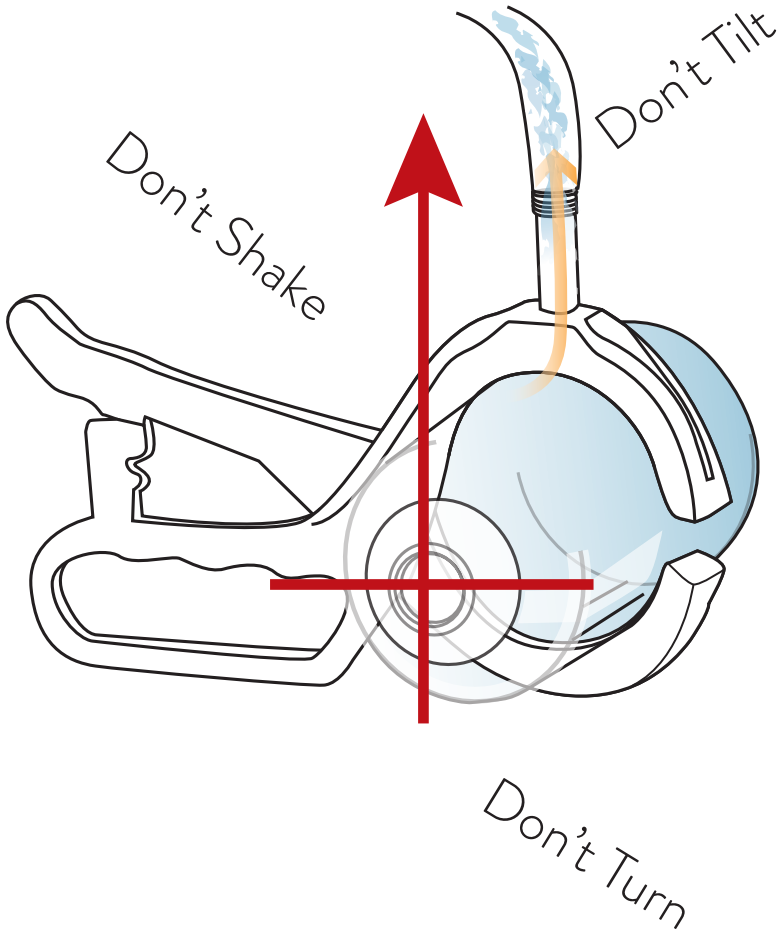




Charging Check Off:

READ THRU EACH PROCEDURE BEFORE CHARGING, THEN CHECK OFF EACH ONE IN ORDER.

1. Make sure that the new belt is tight.
2. Check direction of water valve. The water valve should be connected to the hose going to the water pump.
3. 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 in-between the 9 to 3 positions. DO NOT mount in-between the 4 to 8 positions. This can cause compressor failure.
4. Evacuate the system for a minimum of 30-45 minutes before charging. Longer if possible. This will remove any moisture and reveal any small leaks. Make sure the low-side reaches a minimum of 28-30 inches of vacuum. Failure to evacuate the system will cause inadequate temperatures and premature component failure.
5. DO NOT ADD OIL! All new compressors from Restomod Air contain a full system charge of oil.
6. DO NOT CHARGE SYSTEM IN LIQUID FORM. Unlike later model vehicles, doing so will direct liquid refrigerant into the compressor piston chamber, causing damage to compressor reed valves and/or pistons, as well as potentially seizing the compressor. Doing so voids the warranty.
7. This new system requires R134A refrigerant. It will require 1.5 lbs (or 24 oz). ADDING MORE THAN THE RECOMMENDED AMOUNT OF REFRIGERANT WILL NOT LEAD TO COOLER TEMPS! No other refrigerant is advisable for our systems. Use of other refrigerants will VOID the warranty.
8. This new compressor MUST be hand-turned 15-20 revolutions after charging. Failure to do this may cause the reed valves to become damaged (this damage is NOT covered the warranty).



Charging Check Off:

CHARGING PROCEDURES FOR THIS SYSTEM ARE DIFFERENT THAN MOST MODERN A/C SYSTEMS! AVOID DAMAGING YOUR NEW A/C SYSTEM BY CLOSELY FOLLOWING ALL THESE GUIDELINES!

BEFORE CHARGING, GO THRU THE CHECK LIST!

1. DO NOT ADD OIL! All new compressors from Restomod Air contain a full system charge of oil.
2. DO NOT USE MORE THAN 24 oz. OF 134A REFRIGERANT! 1.5 lbs. or 24 oz of R134A is what is required.
3. DO NOT SHAKE, TILT, OR TURN CAN UPSIDE DOWN WHILE

   Failure to do this may cause the reed valves to become damaged (this damage is NOT covered the warranty). Refrigerant must come out of the top of the can.

Charging Check Off:

CHARGING PROCEDURES FOR THIS SYSTEM ARE DIFFERENT THAN MOST MODERN A/C SYSTEMS! AVOID DAMAGING YOUR NEW A/C SYSTEM BY CLOSELY FOLLOWING ALL THESE GUIDELINES!

ALL CHARGING STATIONS CHARGE REFRIGERANT IN LIQUID FORM, WHICH WILL DAMAGE THE COMPRESSOR IF IT IS ADDED WHILE THE VEHICLE IS RUNNING

1. BEFORE CHARGING, GO THROUGH THE CHECK LIST!
2. DO NOT CHARGE THIS SYSTEM WITH THE CAR RUNNING! Unlike the common procedures used for late model vehicles (that have variable-speed compressors), this RETROFIT system cannot be charged with the car running. THIS IS IMPORTANT... Failure to follow this warning will most likely result in damaging the compressor and voiding the warranty
3. DO NOT ADD OIL! All new compressors from Restomod Air contain a full system charge of oil.
4. DO NOT USE MORE THAN 24 oz. OF 134A REFRIGERANT! 1.5 lbs. or 24 oz of R134A is what is required.
5. HAND TURN THE COMPRESSOR 15-20 TIMES AFTER CHARGING! Failure to do this may cause the reed valves to become damaged (this damage is NOT covered the warranty).

Trouble shooting 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).

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

ACCEPTABLE OPERATING PRESSURE RANGES (R134A

F. HIGH-SIDE PRESSURES (150-250 PSI) *Note- general rule of thumb is two times the ambient (daytime) temperature, plus 15-20%.
G. LOW-SIDE PRESSURES (15-25 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

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

H. 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.

I. 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.

J. 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.

K. 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.

L. 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.

M. 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.

N. 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 Guide:

Trouble Shooting Your Restomod 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

O 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).

P 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.

Q 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

R 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.

S Connect gauges to a/C hoses. The pressures should be: with the ambient temp is 90, low side pressures should be between 15-25 psi, high side pressures should be between 150-250 psi

T 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

U Place a piece of paper on the condenser with the car in idle and see if paper is held in place.

V With car in idle, attach gages, and place a large capacity fan in front of the condenser. What happens to the pressures?

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

X 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.

Confirm correct Refrigerant charge in System

All of our systems should be charged with 24 oz or 1.8 lbs of R134A Refrigerant only. If overcharged you will need to evacuate the system and recharge with the correct amount.*

What measurements mean?

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

Z You have a malfunctioning expansion valve that is stuck open.

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

AB 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 vacuum)...

Compressor Concerns

AC 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.