Congratulations...

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

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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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. Our toll-free number is listed on every page, we’re here to help!**

YOU CAN NOW BEGIN THE INSTALLATION...
A Basic Overview of Automotive A/C....

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

2. **Compressor** The compressor pumps and circulates the refrigerant through the system.

3. **Condenser** The condenser is a heat exchanger mounted at the front of the vehicle. Heat drawn out of the interior of the car is expelled here.

4. **Receiver/Drier** The drier not only dries refrigerant, it also filters the refrigerant and stores it under certain operating conditions.

5. **High Pressure Switch** A pressure switch is used to shut down the system if high or low pressure is detected, basically it acts as a safety switch.

The air conditioning system in your car 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.
Operation

Your new **Perfect Fit-Elite 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 **Perfect Fit-Elite** for maximum comfort...

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

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

The COLD/HOT positions works like any traditional adjustment lever.

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**Perfect Fit Elite**

<table>
<thead>
<tr>
<th>Left Lever Position</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution</td>
<td>Dash A/C 100%</td>
<td>Dash A/C 80%</td>
<td>Dash A/C 60%</td>
<td>Dash A/C 40%</td>
<td>Dash A/C 20%</td>
<td>Defrost 100%</td>
<td>Floor 20%</td>
<td>Floor 40%</td>
<td>Floor 60%</td>
<td>Floor 80%</td>
<td>Floor 100%</td>
</tr>
<tr>
<td>Compressor State</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
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<td>ON</td>
</tr>
</tbody>
</table>
Remove Glove box, Glovebox door, Ashtray, and Radio, and OEM A/C controls (we provide our new D.E.R. controls). and set them aside for reinstall later (see figure 1). Note: If vehicle is equipped with a console, remove entire console and set aside.

Disconnect the electrical harness from the OEM assembly. Remove front support brace from the OEM unit (see figure 2). Retain the hardware (we will be providing a new support brace).

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.

GOOD IDEA
Remove all the factory duct hoses and discard. Unhook the cable to the OEM heater valve and push the tout thru the firewall. Remove all 5 nuts that hold OEM A/C unit to firewall (see figure 3). At this point the OEM A/C unit should be free and you can remove from the vehicle. Nothing on the OEM unit will be reused on this installation.

**DRAIN COOLANT FROM RADIATOR. Store safely to reuse or recycle accordingly.** Cut heater hose approximately 1” from firewall. Also, to prevent forgetting to refill the coolant when the installation is completed, do not put the cap back into place - instead put the cap to the side and cover radiator hole with a clean rag or something similar.

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**FIGURE 3**
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.

D.E.R. Controller
PN# 16-3065

Illustrations NOT shown actual size
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.

- Four #10 - 16 x 3/4" Tek Screws
- Three #10 - 10 x 5/8" Flange Nuts
  PN# 25CNFLZ/S
- Fresh Air Inlet Block Off
  PN# 10-1066-2
- Evap Support Bracket
  PN# 10-1066-21
- Defrost/Heat Duct Assembly
  PN# 2-2025-2
  PRE-INSTALLED
- One Male Spade Connector
- Two #10 - x 5/8" Phillips Screws
- Two #8 - x 3/8" Phillips Screws
- Two Fender Washers
  PN #0113-3

Illustrations NOT shown actual size
Locate the original wiring harness that supplied power to the OEM unit and cut them close to their end. On the OEM power supply wire attach a 1/4” insulated male spade connector (see figure 5).

**Within the OEM fuse box upgrade the factory HEATER fuse with a 20 amp fuse (VERY IMPORTANT)!**

Locate behind dash and on firewall the hole that previously mounted the OEM unit.

All preliminary modifications to the vehicle are complete.
Locate the fresh Air inlet block off. Install over hole in inlet cowl as shown. Attach with three #10 - 16 x 3/4" Tek Screws (see figure 7).

Remove evaporator unit from box and place on a clean work bench.

Defrost / heat duct assembly are pre-attached and attached to the evaporator using two #10 - 10 x 5/8" Phillips screws (see figure 8). **NOTE: Be sure that the s-clips are pushed over rear flange on evaporator.**
Familiarize yourself with the Evaporator

Take a minute to familiarize yourself with the evaporator unit:

- Capillary Tube
- Blower Motor
- Defrost/Floor Servo Motor
- Thermmostat
- Blower Motor Plug
- Heater Tubes
- Defrost/Heat Duct Assembly
- Dash Servo Motor
- Firewall Mounting Stud
- Expansion Valve
- Liquid Tube
- Suction Tube
- Condensation Drain Outlet
- (4) Dash Air Outlets
- Dash Duct Assembly
- Evaporator Case
- Defrost Adapters
- Defrost/Floor Servo Motor
WIRING PREP

• Wiring Preparation Steps 1 through 3

1. Connect Blue Harness into Defrost/Heat Servo Motor
2. Connect Yellow Harness into Face/Floor Servo Motor
3. Connect Orange Harness into water valve
4. Connect Yellow Harness into Face/Floor Port on ECU

5. Connect Blue Harness into Defrost/Heat Port on ECU

6. Connect Orange Harness into Water Valve Port on ECU

7. From your D.E.R., Connect Green Harness into Control Port on ECU
**WIRING PREP**

- **Wiring Preparation Steps 8 through 12**

**8. Connect corresponding Fan Switch harness to the Bower Switch on Controls**
   - Connect Power lead to 12V.

**9. Click!**
   - Connect red tagged power harness to POWER port on ECU.
   - Connect ground.

**10. Click!**
   - Connect corresponding fan motor harness.
   - Connect ground.

**11. Connect both BLUE leads into thermostat**
   - (either lead into either terminal)

**12. Connect ground.**

- **12V Power**
  - (20 amp fuse)

- **Gnd**
  - (White lead is to be connected to compressor)
FUNCTION TESTING

- Function Test, Steps 1 thru 3

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

AIR OUT OF DASH VENTS

2. Move MODE knob to DEF

AIR OUT OF DEFROST VENTS

3. Move MODE knob to FLOOR

AIR OUT OF FLOOR VENTS
FUNCTION TESTING

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

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

NOTE: IF DURING ANY OF THESE STEPS YOU DO NOT GET THE CORRECT OUTCOME, PLEASE CALL TECH SUPPORT BEFORE INSTALLING INTO VEHICLE. 1(866)435-7801
Installing the complete evaporator unit under the dash will go much easier with the help of a friend. One person can take the unit within the car and “roll” up and under the dash while the other person can be ready at the firewall area with one or more of the included flange washers and nuts (the OEM hole are over sized and will require both a washer and flange nut for each). On back side of the evaporator is a mounting bracket with two studs. These studs will protrude thru the OEM holes (see figure 9).

Next, attach the bracket located on the blower motor to the underside of the cowling with a Tek-screw (as shown in figure 10).

**Now the unit will be easy to level and secure.** Leveling the unit is very important to insure proper drainage of condensation (see below).

Be sure to align the evaporator unit level with the bottom of instrument panel (assuming the vehicle is sitting level) as shown above, but with a small degree of tilt toward the back to allow proper drain of condensation.
We’ve included a new under dash evaporator brace to replace the OEM one. Our new brace has a different bend and is an important replacement. Mount the brace to the new evaporator as shown below, and use an included flange nut to secure (there is an OEM stud that you will use to secure the top of the bracket, see figure 11).

**IMPORTANT NOTE:** On the side of the main unit you will see several holes for mounting holes... **ONLY USE THE ONES ON THE FAR LEFT FOR THIS BRACKET!** Do not tap into the other holes for any reason. Also, use a screwdriver and hand-power and do not over-tighten so you don’t strip the holes (see figure 12).
Classic Auto Air has done extensive testing on the correct method to install the water valve in order to get a repeatable and progressive temperature control. **Your water valve MUST be installed per these instructions!... (if not, your system will not work properly... and that's an absolute fact).**

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. 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.

The **upper** port coming thru the firewall will be routed to and thru your new your electronic water valve (the water valve is marked for easy installation, see figure 14). First Attach a 6" piece of 5/8" dia. heater hose with the supplied worm gear clamp. Attach to the inlet side of the water valve using another supplied hose clamp. Attach a heater hose from the outlet side of the electronic water valve and route to the connection on the water pump.

In **Bag Kit C** you’ll find the firewall block off plate. Install this over the hose connections coming thru the firewall within the engine compartment. Attach with four Tek screws (see figure 13). **TIP: This would be a good time to “jump” ahead a bit, and remove the ORANGE cable from Bag Kit D and route it thru one of the OEM bolt holes (it will be plugged into the electronic water valve). Use the included cap plugs and seal off the remaining OEM holes.**
Insert a 6” piece of the clear drain tube we included through the hole previously drilled and attach over the drain nipple (see figure 15). Seal around tube hole with refrigerant tape (see figure 16).

We’ve also included an additional block off plate to cover the OEM hole for the water valve and heater tubes. Use the remaining Tek-screws to secure the new plate (see figure 17).
Install the Drain tube

Mount Evaporator level to firewall.

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

Attach 1/2” clear drain tube to Evaporator nipple and run through 3/4” hole you just drilled.

All condensation will now drain out into the engine bay.
Attach Blower Switch Assembly to the dash mounting bracket with (2) #10x 5/8 screws.

Attach black knob to the Blower Switch.
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.

The ECU and Calibration Key will be in its own box within this bag kit.
DO NOT USE CALIBRATION KEY WITHOUT TECH SUPPORT.

Illustrations NOT shown actual size
Connect Blue Harness into Defrost/Heat Servo Motor

Connect Yellow Harness into Face/Floor Servo Motor

Connect Orange Harness into water valve
Connect Yellow Harness into Face/Floor Port on ECU

Connect Blue Harness into Defrost/Heat Port on ECU

Connect Orange Harness into Water Valve Port on ECU

From your D.E.R., Connect Green Harness into Control Port on ECU
Connect corresponding Fan Switch harness to the Bower Switch on Controls. Connect Power lead to 12V.

Connect red tagged power harness to POWER port on ECU. Connect ground.

12V Power (20 amp fuse)

Connect corresponding fan motor harness. Connect ground.

Click!

Connect both BLUE leads into thermostat (either lead into either terminal)

(White lead is to be connected to compressor)
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.

Electronic Water Control Valve
PN# 16-1081-2

Firewall Block Off Plate
PN #10-2066FA-2

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

Firewall Block Off
PN# 10-2066FA-1

Clear Plastic Drain Tube

Six Worm Gear Clamps

Refrigerant Tape

Five Cap Plugs

Illustrations NOT shown actual size
Classic Auto Air has done extensive testing on the correct method to install the water valve in order to get a repeatable and progressive temperature control. **Your water valve MUST be installed per these instructions!... (if not, your system will not work properly... and that’s an absolute fact).**

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. 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.

The **upper** port coming thru the firewall will be routed to and thru your new your electronic water valve (the water valve is marked for easy installation, see figure 14). First Attach a 6” piece of 5/8” dia. heater hose with the supplied worm gear clamp. Attach to the inlet side of the water valve using another supplied hose clamp. Attach a heater hose from the outlet side of the electronic water valve and route to the connection on the water pump.

In **Bag Kit D** you’ll find the firewall block off. Install this over the hose connections coming thru the firewall within the engine compartment. Attach with four Tek screws (see figure 13). **TIP: This would be a good time to “jump” ahead a bit, and remove the ORANGE cable from Bag Kit D and route it thru one of the OEM bolt holes (it will be plugged into the electronic water valve). Use the included cap plugs and seal off the remaining OEM holes.**
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.
THESE ARE THE PARTS YOU WILL FIND IN BAG KITS E, F, and G

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

Bag E
- Two Defrost Duct Adapters
  PN #069-10
- Two Duct Hoses, 2" I.D.
- Four Zip-Ties

Bag F
- Two Duct Adapters
  PN# 2-2065FA-1
- Two Duct Hoses, 2" I.D.
- Face Duct Assembly
  PN# 2-2025-1
- Four Zip-Ties

Bag G
- Center Louver Adapter
  PN# 2-2065FA-2
- Two Duct Hoses, 2" I.D.
- Four Zip-Ties

Illustrations NOT shown actual size
Bag Kit E: The following steps are for left and right Defrost Diffusers: Locate and route the duct hoses from the defrost/heat duct assembly (see figure 18) upward toward the defrost adapter diffusers. Next locate and install defrost adapter diffusers from the top of the dash and secure with v-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.

The face duct assembly comes pre-installed with s-clips which allow you to install onto the evaporator unit quickly and securely (see figure 19).
Bag Kit F: Route hoses to the OEM Driver and Passenger louvers. We’ve included two louver adapters.

Locate Drivers louver adapter from bag kit F and attach to backside of factory louver with the supplied S-clips. (Simply pushing the adapter onto flange will secure the adapter to the louver)

Route the supplied flex hose adapter to Drivers factory louver. It may be necessary to cut flex hose shorter to be certain optimal air flow is achieved. Secure all hose connections with zip-ties.

Next, locate Passenger adapter from bag kit F and attach to backside of factory louver with the supplied S-clips. (Simply pushing the adapter onto flange will secure the adapter to the louver).

Route the supplied flex hose adapter to Passengers factory louver. It may be necessary to cut flex hose shorter to be certain optimal air flow is achieved. Secure all hose connections with zip-ties.
Retaining all the non-reinstalled OEM parts is a good idea, but that’s your choice.

**Bag Kit G:** Route last hose to the OEM center louver. We’ve included a center louver adapter, which you will push over the opening on the OEM air plenum. Attach to backside of factory louver with the supplied S-clips. (Simply pushing the adapter onto flange will secure the adapter to the louver). (Take your time and route so it won’t become kinked or torn).

The smoother the route of the flex hoses the better the airflow.
THESE ARE THE PARTS YOU WILL NEED FOR THE ENGINE COMPARTMENT INSTALLATION

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

- Bag of O-rings and Mineral Oil Tube
- #6 Hose
- Clamp
- #8 Hose
- Clamp
- Switch Port Line PN# 0062-52
- #6 Liquid Tube PN# 0062-50
- Condenser PN# 11-1042
- Condenser Bracket PN# 19-1001
- MDS-03 Insulation
- Condenser Bracket PN# 0066-51
- Condenser Bracket PN# 0066-50
- #8 Discharge Tube PN# 0066-53
- #6.5/16” Liquid Hose
- #6.5/16” Discharge Hose
- #10 1/2” Suction Hose
- Pressure Switch
- Pressure Switch Harness
- Splice and Bullet Connector
- Drier PN# 12-1008
- Drier Bracket PN# 19-1001
- Two J-Clips
- Four #10 - 16 x 3/4” Tek Screws
- Four #1/4” 20 X 5/8” Bolts
- Two #1/4” x 20 Flange Nuts
- Four #10 X 1/4 Hex Head Screws
- Condenser Bracket PN# 0066-52
- Condenser Bracket PN# 0066-51
- Condenser Bracket PN# 0066-50
- Drier Bracket PN# 19-1001
- Drier PN# 12-1008
ENGINE COMPARTMENT INSTRUCTIONS

STEP ONE: IF YOU HAVE NOT ALREADY, DISCONNECT THE BATTERY.

STEP TWO: During the next installation section you’ll be installing the condenser, drier, and routing the high/low pressure lines and the liquid line. Since much of this is installed in the OEM location for the condenser, you’ll need to remove the center grill section, horn(s), and latch support assembly. Be sure to retain all the mounting screws – you’ll reinstall these pieces in the exact reverse order with the OEM screws.

STEP THREE: Time to install the compressor kit. Included in your box is a premium compressor kit with all the parts you’ll need to install the compressor. This kit includes easy to follow instructions specifically written for your engine. Once you’ve installed the complete compressor kit, continue on to the next step. We believe that this is the finest compressor kit available, and you’re bound to notice the excellent fit and quality once this step is completed.

STEP FOUR: Install the Switch Port Line coming thru the firewall. Install the high pressure switch into the port on the Switch port line. NOTE: Tighten connections at either end using supplied o-rings on both ends and a few drops of mineral oil to each o-ring. Screw the high-pressure switch into the port at the lower end of the drier liquid tube. Go ahead and plug the pressure switch harness into the switch at this time (black electrical boot with two long white wires. See figure 22).

This will give you the correct location for installing the drier. Place the included drier bracket over the drier, and mount to the drier to the inner fender using the included
STEP FIVE: 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 left side (the larger connection will be on top). Install the upper condenser brackets (A) using the included #10 x 1/4 hex screws. Both brackets are installed at the very top of the condenser, and from the backside. These brackets have holes that exactly correspond to bolts that are in the OEM radiator support (see figure 23).

STEP SIX: We’ve included a new lower condenser bracket (B). Locate the lower mounting bracket to bottom rail in front of the radiator. Attach two ¼”-20 j-clip to the frame rail over the existing holes, and secure with two 1/4” x 20 x 5/8” hex screws. We’ve included a piece of MDS03 insulation with a self-adhesive back. Peel the backing off and place into the upper channel of the lower bracket (this will reduce vibration, see figure 24).

STEP SEVEN: Place the condenser into place and secure with a ¼”-20 x 5/8” hex head screw and a 1/4 x 20 flange nut thru the existing holes in the radiator support on both sides (both brackets are secured in the same way).
STEP EIGHT: You can now jog the discharge and liquids lines thru the existing upper rectangular hole in the radiator support, and then secure to the condenser. The longer line will be attached to the lower port on the condenser. The shorter line is attached to the upper port on the condenser. Test fit the routing before securing the fittings (see figure 25). NOTE: Tighten connections at either end using supplied o-rings on both ends and a few drops of mineral oil to each o-ring.

We’ve included two hose clamps which you can use to secure the lines to the drivers side inner fender area. Secure clamps with two #10 x 3/4” Tek-screws (see figure 26).
STEP NINE: CONNECTING THE HOSES (see figure 27):

1) Attach the #8 Discharge Hose (13/32") from the connection coming thru the support and route to the compressor. Tighten fittings using o-rings and mineral oil provided.

2) Attach the #6 liquid hose (5/16") from the connection coming thru the support and route to the connection evaporator unit (see figure 41). Tighten fittings using o-rings and mineral oil supplied in kit.

3) Attach the #10 suction hose (1/2") to the compressor and route to the last remaining connection coming thru the firewall. Tighten fittings using o-rings and mineral oil supplied in the kit.

TIPS: Route your lines so they will not interfere with moving parts or fall onto excessively hot components.

Double check all fittings before the initial servicing of your system. Loose fittings are the number one cause of leaks.
STEP TEN: Connecting the wires from the pressure switch will be done as follows, connect one wire to the connection on the compressor, and the other wire will be routed along with the liquid hose and connected to the blue lead you left unconnected during the interior installation. We’ve included a bullet and splice connector to make these connections, use a crimp tool to secure these properly. You must run the white switch wire thru the firewall and connect to the blue wire from the main harness.

FINAL STEPS: You can now complete this portion of the installation by reinstalling any of the exterior components you removed. 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.

WAY TO GO! You’ve just completed the installation of your new A/C system.

The 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.

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.
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 (150-250 PSI) *Note- general rule of thumb
   is two times the ambient (daytime) temperature, plus 15-20%.
2. 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

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 15-25 psi, high side pressures should be between 150-250 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 1.8 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 1.8 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.
This template is used from the inside of the car!

Heater Motor Hole

O.E.M. Hole

Note: bottom of template is parallel with floor pan.