Installation Manual

1968-1970 MOPAR B-BODY

DOCUMENT #1-2066

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Congratulations...

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

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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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.
CONTROL & OPERATING INSTRUCTIONS

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...

NOTE: When the TEMP lever is in the FULL FORWARD (the coldest setting) position the compressor is ON, no matter what position the DASH / FLR lever is in (think of it as a compressor-override function)

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

<table>
<thead>
<tr>
<th>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>Face A/C 100%</td>
<td>Face 80%</td>
<td>Face 60%</td>
<td>Face 40%</td>
<td>Face 20%</td>
<td>Floor 100%</td>
<td>Floor 80%</td>
<td>Defrost 20%</td>
<td>Floor 60%</td>
<td>Defrost 40%</td>
<td>Floor 40%</td>
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<tr>
<td>Compressor State</td>
<td>ON</td>
<td></td>
<td></td>
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The FAN switch works like the OEM switch, the far FORWARD position is OFF (all power to the system is OFF in this position)
Remove Glove box, Glovebox door, Ashtray, and Radio, and OEM heater 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, optional, but may make installation easier.

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.

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).
Remove all the factory duct hoses and discard. Remove all 3 nuts that hold the heater unit unit to firewall (see figure 3). At this point the the 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 (see figure 5B). 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.
THESE ARE THE PARTS YOU WILL FIND IN THE CONTROL BOX
(varies based on your choice of using your factory controls or using our new D.E.R. Controller)

D.E.R. Controller
PN# 16-3066
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.

Evap Support Bracket
PN# 0066-21

Fresh Air Inlet Block Off
PN# 10-1066-2

Defrost/Heat Duct Assembly
PN# 2-2025-2
PRE-INSTALLED

One #10 - 10 x 5/8” Flange Nut
PN#25CNFLZ/S

Five #10 - 16 x 3/4” Tek Screws

Six #10 - 10 x 5/8” Phillips Screws

Washer
PN #25NWSAB

One Male Spade Connector

One 1/4” - 20 x 1” bolt

Illustrations NOT shown actual size
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 13).

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

Locate defrost / heat duct assembly and attach to the evaporator using two #10 - 10 x 5/8" Phillips screws (see figure 14). **NOTE: Be sure that the s-clips are pushed over rear flange on evaporator.**

Take a minute to familiarize yourself with the evaporator unit:
Take a minute to familiarize yourself with the evaporator unit:
WIRING PREP

- Locate Evaporator Unit from Main Box
- Pre-installed Face Duct Assembly
- Pre-installed Defrost/Heat Duct Assembly
- Locate electronic water valve from Bag Kit D
- Locate Blue, Yellow, Orange wiring harness from Bag Kit C
- Locate main wiring harness from Bag Kit C
- Locate the D.E.R. control in the CONTROL BOX
- Locate ECU and Calibration Key from Bag Kit C
- Acquire a 12V Battery (NOT a battery charger)

DO NOT USE CALIBRATION KEY WITHOUT TECH SUPPORT
Push S-Clips over flange securing with two #10x5/8” screws, from back

Attach to front outlet securing with pre-installed S-Clips
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

Click! Click! Click!
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

Click!

Click!

Click!
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 corresponding fan motor harness. Connect ground.

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

Connect 12V Power (20 amp fuse).

Connect ground.

Connect ground.

(White lead is to be connected to compressor.)
FUNCTION TESTING

• Function Test, Steps 1 thru 3

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

AIR OUT OF DASH VENTS
AIR OUT OF DEFROST VENTS
AIR OUT OF FLOOR VENTS
• Function Test, Steps 4 and 5

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

Move TEMP knob to HOT

You will be able to see through water valve passage

Move TEMP knob to COLD

You will NOT be able to see through water valve passage
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 10). **Within the OEM fuse box upgrade the factory HEATER fuse with a 20 amp fuse (VERY IMPORTANT).**

Next, drill a drain hole (as shown in figure 11).

Then, using the provided template (tape to firewall from inside, aligning with OEM holes), drill two new 7/8" holes in the firewall, and also, open the existing OEM hole to 3/4" as shown on the template. Be sure to smooth out any rough edges in the drilled holes (see figure 12).

All preliminary modifications to the vehicle are complete.
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 the included 1” screw and washer. Place the bolt thru the hole and thread into the brace located on the lower backside of evaporator unit (see figure 15).

Next, attach the bracket located on the blower motor to the underside of the cowling with a tek-screw (as shown in figure 16).

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 underdash 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 a OEM stud that you will use to secure the top of the bracket, see figure 17).

**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 18).

**FIGURE 17**

**FIGURE 18**

#8 x 3/8” Screws
Install liquid tube onto the Expansion valve (TXV) as shown. Use #6 o-ring and (2) drops of mineral oil on the o-ring and tighten securely.

Install Suction Tube to the outlet on the unit as shown. Use #10 o-ring and (2) drops of mineral oil on the o-ring and tighten securely.

Locate Sensing Coil attached to Expansion valve (TXV) and utilizing Bulb Clamp, attach to the Suction Tube.

**CAUTION: THE SYSTEM WILL NOT FUNCTION PROPERLY IF THE SENSING COIL IS NOT CLAMPED IN THE CORRECT POSITION. SEE PICTURE.**

Wrap Suction Tube and Sensing Coil with the refrigerant tape provided. Be sure that all of the exposed metal is covered.

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

**BULB CLAMP**

- **NO!**
- **YES**
Installing 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.

THIS IS FROM INSIDE THE VEHICLE!
Mount D.E.R. into dash using OEM hardware.
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.

Illustrations NOT shown actual size

Wire Harness - Power Supply

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

ECU and Calibration Key
DO NOT USE CALIBRATION KEY WITHOUT TECH SUPPORT

Wire Harness System
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

Next route other end of harness out of firewall opening

From your OEM Controls, Connect Green Harness into Control Port on ECU

Mount your ECU under the dash with included tek
1. Connect corresponding Fan Switch harness to the Bower Switch on Controls.
2. Connect Power lead to 12V.
3. Connect red tagged power harness to POWER port on ECU.
4. Connect both BLUE leads into thermostat (either lead into either terminal).
5. Connect ground.
6. Connect corresponding Fan Switch harness to the Bower Switch on Controls.
7. Connect ground.
8. Connect Power lead to 12V.
9. Connect corresponding fan motor harness.
10. Connect ground.
11. Click!
12. Connect ground.

(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
- Refrigerant Tape
- Clear Plastic Drain Tube
- One 3/4” Cap Plug
- Six Worm Gear Clamps

Illustrations NOT shown actual size
**Important Notice: Proper Installation of Water Valve**

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

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

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

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

FOLLOW THESE TAGS... CHECK IT TWICE BEFORE PROCEEDING!
THESE ARE THE PARTS YOU WILL FIND IN BAG KITS E, F, and G

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

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

Bag F
- Lower Vents
  PN# 0062-7 / 0027-0030
- Two Duct Hoses, 2" I.D.
- Face Duct Assembly
  PN# 2-2025-1
- Four #10 - 16 x 3/4" Tek Screws
- Four Zip-Ties

Bag G
- Center Louver
  PN# 2-2029-1
- Two Duct Hoses, 2" I.D.
- Two #10 - 16 x 3/4" Tek Screws
- Four Zip-Ties
**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 22) upward toward the defrost adaptor diffusers. Next locate and install defrost adaptor diffusers from the top of the dash and secure with v-clips supplied. Attach flex hose to the defrost diffuser adaptors using zip-ties. Push adaptors onto diffusers from below. The other end of the duct hose is installed over the defrost/heat duct assembly outlets on the main unit (see figure 23 and the diagram below).

The face duct assembly comes preinstalled with s-clips which allow you to install onto the evaporator unit quickly and securely (see figure 24).
Bag Kit F: We’ve included two vents (driver and passenger side). You’ll need to attach the louver housing to the lower dash first (see figure 25). Attach the vent base to the lower dash using the included tek-screws, then snap the included louver(s) into the housing (see figure 26). Make sure you test fit the location first so the vents won’t interfere with any other components. This is also a good time to route the hoses, and determine the best and most efficient routing. Lastly attach the flex hoses to the back of the vents, securing with zip-ties.

During installation of the hoses be aware of the eventual movement of the wiper arm components. Also, the smoother the route of the flex hoses the better the airflow.
**Bag Kit G:** In order to install the lower center louver, you’ll repeat much the same process as you did on the driver and passenger side louvers. First attach the housing using the included tek-screws, then pop-in the two center louvers (see figure 27). Remember, test the location out first.

**FIGURE 27**
Reinstall any of the interior you may have removed. This is a good time to make a final check that all the controls still move freely and that nothing is loose or hanging down. This completes the interior portion of the **PERFECT FIT-ELITE** installation process.

The interior of your car should look pretty much the same as before you started (or better). Plus you probably got to know the underside of your dash a lot better and might even have repaired or upgraded components that needed attention.

Good Job... Let’s move on to the major components within the engine compartment....

Retaining all the non-resintalled OEM parts is a good idea, but that’s your choice.
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
- Five #1/4" x 20 Flange Nuts
- Four #10 X 1/4 Hex Head Screws
- #6 Hose Clamp
- #8 Hose Clamp
- Five #10 - 16 x 3/4" Tek Screws
- #8 Discharge Tube PN# 0066-54
- #6 Liquid Tube PN# 0062-50
- Condenser PN# 11-1042
- Condenser Bracket PN# 0066-51
- Condenser Bracket PN# 0066-52
- Condenser Bracket PN# 0066-53
- #6 5/16" Liquid Hose
- Three Refrigerant Hoses
- #6 13/32" Discharge Hose
- #10 1/2" Switch Hose
- #8 1/2" Suction Hose
- Three #1/4" 20 X 1" Bolts
- Four #10 X 1/4 Hex Head Screws
- Four #1/4" 20 X 5/8" Bolts
- Five #1/4" x 20 Flange Nuts
- Switch Port Line PN# 0066-54
- #6 Liquid Tube PN# 0062-50
- #8 Discharge Tube PN# 0066-53
- #6 Hose Clamp
- #8 Hose Clamp
- Condenser Bracket PN# 0066-50
- Condenser Bracket PN# 0066-51
- MDS-03 Insulation
- Pressure Switch Harness
- Pressure Switch
- Splice and Bullet Connector
- Drier PN# 12-1008
- Two J-Clips
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 high-low 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 28).

Before you can mount the drier to the inner fender, you’ll need to mark and drill three holes (9/32 drill bit)*. THIS IS VERY IMPORTANT!.... LOOSELY CONNECT THE SWITCH PORT LINE TO THE DRIER AND THE PORT COMING THRU THE FIRE WALL, THEN USE THE ENTIRE ASSEMBLY TO MARK YOUR LOCATION BEFORE DRILLING!
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 29).

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 1/4”-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 (see figure 30). Peel the backing off and place into the upper channel of the lower bracket (this will reduce vibration).

STEP SEVEN: Place the condenser into place and secure with a 1/4”-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 (see figure 30). 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. **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 32).
STEP NINE: CONNECTING THE HOSES (see figure 33):
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 slice connector to make these connections.

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 fitting 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 ensure 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 a minimum of 45 minutes.
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 1.5lbs (24oz) of R134a refrigerant.
5. Your new compressor comes charged with oil - **NO** additional oil is necessary.
6. Ensure 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 approximately 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.

This can cause compressor failure.

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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 effect 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 type):
1. High-side pressures: 150-275 PSI
   *note: general rule is two times the ambient/daytime temperature plus 15-20% 
2. Low-side pressures: 10-25 PSI in steady state
Charge as follows: R134a = 1.5lbs (24oz)
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. Installing the heater control valve in the incorrect hose will cause the system to cool at idle and gradually warm up when the RPM's of the engine rise. The heater control is a directional valve; make sure the water flow is with the direction of the arrow. As the engine heats up, the 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 which inhibits the 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 can occur both externally and internally on an evaporator core. External freeze up occurs when the coil can’t effectively displace the condensation on the outside fins so 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 most common cause of external freezing is the thermostat setting and 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 the system has too much moisture inside. 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 and eventually go into a vacuum. At this point, the system should be checked by a professional who will evacuate the system and change the drier.
E. 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. Pressures dropping significantly will indicate the need for better airflow.
F. 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. 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 and the low-side unusually low (may even go into a vacuum.) A valve that is stuck open will be indicated by both the pressures rising to unusually high readings and tend to move toward equal readings on the gauges.
H. 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 excessively high discharge reading. These simple tests can be performed by a local shop and can help determine the extent of the system’s problem.
Troubleshooting Your Classic Auto Air A/C System

Problem: system is not cooling properly
Issue: cold at idle. warmer when raising engine RPMs

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 incorrectly connected to the hose it
allows water to circulate through the system via the heater core over-powering the cooling
effect of the a/c coil.

Step 1: Check placement of the water valve and correct if needed.
Step 2: If changing the location of the water valve does not rectify the issue, the water
valve may be permanently damaged and may need to be replaced. To check the
integrity of the water valve you will need to completely remove the heater core's
water hoses and "loop" together. By doing so, the heater system will be completely
removed from the possibilities. If the system now cools then the water valve will need
to be replaced.

Verify adequate air flow to the condenser.
The condenser's function is to dissipate heat. Your air conditioning system will not cool
your vehicle's cabin properly if you do not have an adequate airflow across the condenser.

Step 1: Connect gauges to a/c hoses. When ambient temp is 90°, pressures should be:
Low-side pressures: 10-25 PSI
High-side pressures: 150-275 PSI
If the low-side pressures are normal but the high-side pressures are high then there might
be an airflow issue and you will need to test the airflow to the condenser.

Test airflow to the condenser.
Step 1: Place a piece of paper on the condenser with the car idling to see if the paper
is held in place.
Step 2: With the car still idling, attach gauges and place a large capacity fan in front of
the condenser. Check the pressures to see what happens.
Step 3: With the car still idling and the gauges still attached, pour water down the front
of the condenser. Check the pressures again to see what happens.
If the paper was held in place then you are getting some air flow. If the high-side
decreases during step 2 and step 3 then your condenser is not getting enough air which is
stopping your system from cooling properly. To correct this issue, you will need a more
powerful mechanical fan.

Confirm the correct refrigerant charge is in the system.
All of our systems should be charged with 1.5lbs (24oz) of R134a refrigerant only. If
overcharged, you will need to evacuate the system and recharge with the correct
amount.*

Measurement meanings:
1. Low temp and high pressure seems to be equal = malfunctioning expansion valve
   that is stuck open.
2. High side is extremely high and low side is extremely low (possibly into vacuum) =
   blockage in the system. Remove hoses and blow cold compressed air through it in both
directions. Re-check your pressures. If pressures do not change then it is possible
that your expansion valve is stuck closed and would have to be replaced.

*Compressor Concerns:
If you have a noisy compressor, it is due to the improper charging with liquid or
overcharging. An overcharged compressor will cause rattling. A compressor charged with
pure liquid produces a high probability of bent reed valves. When the reed valves get bent
they will created a tapping sound. Ensure your system is charged with 1.5lbs (24oz) of
R134a refrigerant to avoid compressor related cooling issues.
Open OEM hole to 3/4”

Existing Holes

Drill two 7/8” holes

Drill 5/8” Drain Hole

THIS IS FROM THE INSIDE OF THE CAR!

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