

Installation Manual

1955-57 FORD THUNDERBIRD

DOCUMENT #1-1074

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Congratulations...

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

Congratulations! ! You have just purchased the highest quality, best performing A/C system ever designed for your Classic Car. To obtain the high level of performance and dependability our systems are known for, pay close attention to the following instructions.

Before beginning the installation check the box for the correct components.

Evaporator

Face Duct Assembly

Inlet Air Block Off Assembly

Firewall Block Off Assembly

Flex Hose 2"dia. x 3ft.

Flex Hose 2"dia. x 4ft x 2ea..

Flex Hose 2 ½"dia. x 2 ft.

Sack Kit Louver

Sack Kit Hardware

Sack Kit Control

Glove Box



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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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

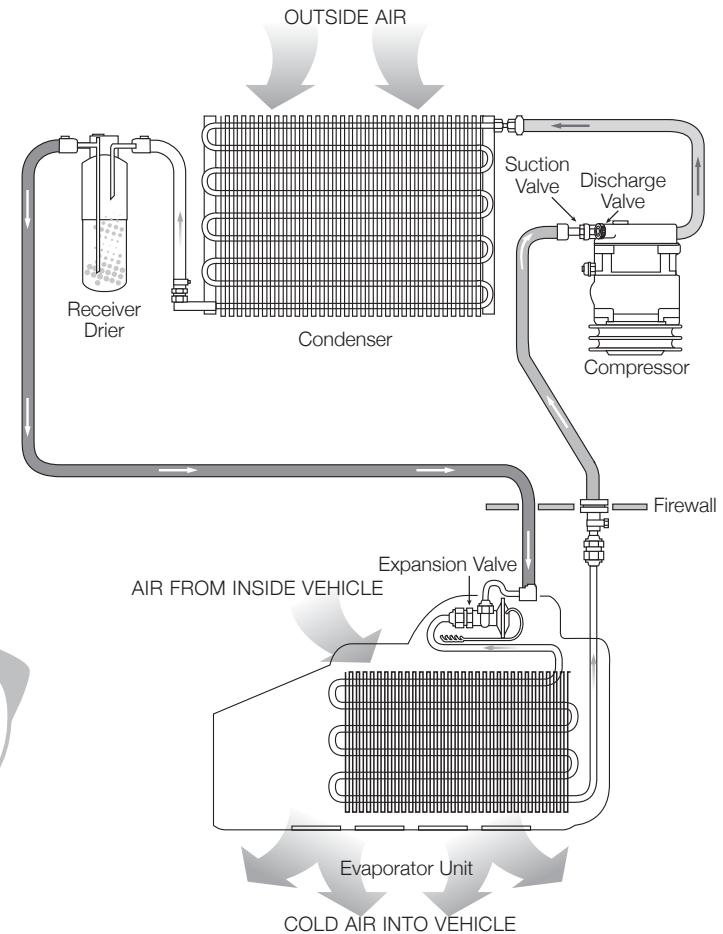
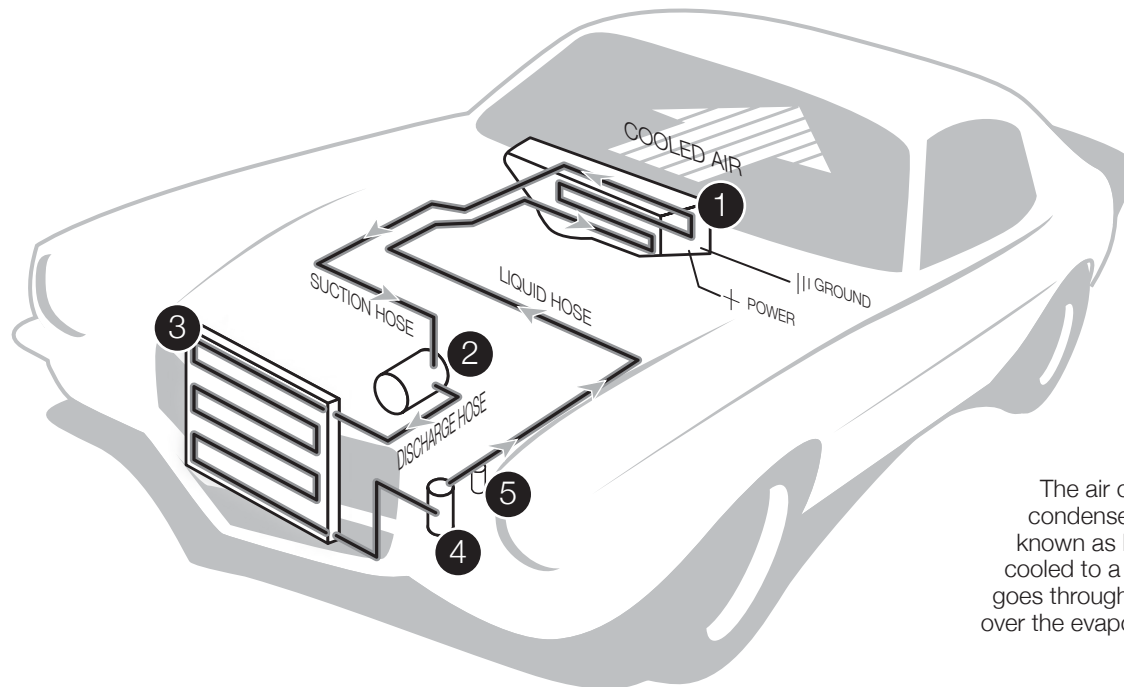
Procedures, During Installation:

- ☐ 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!**

CAUTION: DISCONNECT BATTERY GROUND CABLE
YOU CAN NOW BEGIN THE INSTALLATION...

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

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



The air conditioning system in your 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

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

CONTROL & OPERATING INSTRUCTIONS

The controls on your new “Perfect Fit” system. Offers complete comfort capabilities in virtually every driving condition. This includes Temperature control in all of the modes.



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



LEVER CAN BE MOVED TO THE LEFT AND WILL OPEN THE PASSENGER FRESH AIR DOOR.
THE FOLLOWING SUMMARY WILL DESCRIBE EACH OF THE CONTROL LEVERS FUNCTION.

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

FACE AND FLOOR / DEFROST MODE: When the cable is MOVED all the way RIGHT, it will direct the air to the floor / and defrost ducts. The lever can be moved any position from LEFT to RIGHT. This will give blend between all distribution outlets.

TEMPERATURE CONTROL: The temperature LEVER as shown is in the COLDEST temperature position. As the lever is pushed to the right the temperature of the discharged air will rise to the HOTTEST point.

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

AIR CONDITIONING MODE: The picture shows the LEVER in the Face Mode (air-flow out the face outlets).

When the Mode control knob is pushed all the way to the LEFT against the lower stop in the control bezel the Air Conditioning is activated the compressor clutch is on. When the compressor is activated the Temperature Lever will control the air from maximum cold through maximum heat.



Disconnect battery ground cable. Drain radiator.

Disconnect air inlet duct and the flexible adapter. Remove the duct. Retain the duct, flex adapter and all of its original hardware.

Remove screws around perimeter of the heater frame.

Remove the heater assembly.



Lay assembly on bench. Remove (4) screws that hold the coil to the housing.

Discard screws and the original heater coil. Retain housing.



Carefully remove glove box door and the glove box. Retain all original hardware.

Locate behind glove box opening the tubular support brace. Remove and retain nuts and washers from center of the vehicle.

Remove and discard brace, bolts, nuts and washers from the end of the brace next to the passenger door.

Locate the blower switch. Using a small screw driver loosen the set screw in the knob.

Remove and retain the knob for later reinstallation.





Using a pair of pointed nose pliers loosen and remove the center retaining nut.

Remove the trim bezel, retaining nut and retain.

Disconnect electrical connections from the blower switch.

Remove and discard the blower switch.

Locate the brown wire and label. It will be the power wire for the a/c system. Upgrade the fuse to 25 amps.



Located under the hood and beside blower assembly are (2) electrical connections. Disconnect and pull wires through firewall to inside of the car and discard.

Located on top of the duct assembly is (2) vacuum hoses. One goes to the water valve on the engine. And one goes to a tee connection next to the wiper motor.



TO TEE CONECTION NEXT TO WIPER MOTOR



TO WATER VALVE ON ENGINE



Water valve on engine. Disconnect vacuum tube.

Remove the water valve and discard.

Remove tee assembly and connect the source to the wiper motor.

Remove cable clips from the (3) control cables. Retain the attachment hardware.

Locate behind the dash (2) screws that hold the control head in place.

NOTE: there is one on both sides of the control head.

Retain all original hardware.



Locate on end of the blower assembly the defrost / heat duct. Remove the screw from the drivers end.

Discard screw.

Located above heater box remove and discard the defrost duct hoses.

Locate and remove (3) screws around perimeter of the heater box.

Remove heater assembly from behind the glove box.

Discard the heater and mounting hardware..

Locate and drill (1) 13/16" dia. hole as shown.

Modification of the vehicle is complete.





Locate the blower switch assembly and (2) switch nut.

Insert into the original blower switch hole and attach using the switch nut.

NOTE: SWITCH SHOULD BE INSTALLED SO THAT SWITCH NUT IS AT THE END OF THE SHAFT.

Locate the original switch bezel and shaft nut.

Slide over the switch shaft.

Reinstall knob, tighten securely

Locate the Evaporator and set it on the bench.

Locate shortest of the control cables. Insert offset end into the crank arm into 2nd hole from the pivot of the door.

Locate (1) #8 x 3/8" pan head screw. Attach flag on the cable to bracket as shown.





Locate the suction tube assembly, #10 o-ring , liquid tube, #6 o-ring and refrigerant tape.

The liquid tube is attached to the expansion valve using #6 o-ring and a few drops of mineral oil.

The suction tube is attached to the #10 fitting using a o-ring and a few drops of mineral oil.

Wrap all exposed metal surfaces on the suction tube with refrigerant tape.

NOTE: WHEN ATTACHING THE REFRIGERANT TUBES. MAKE SURE THAT THEY ARE INLINE WITH REAR MOUNTING BRACKET.

Locate (2) pieces of 5/8" dia. heater hose and (2) #8 hose clamps supplied.

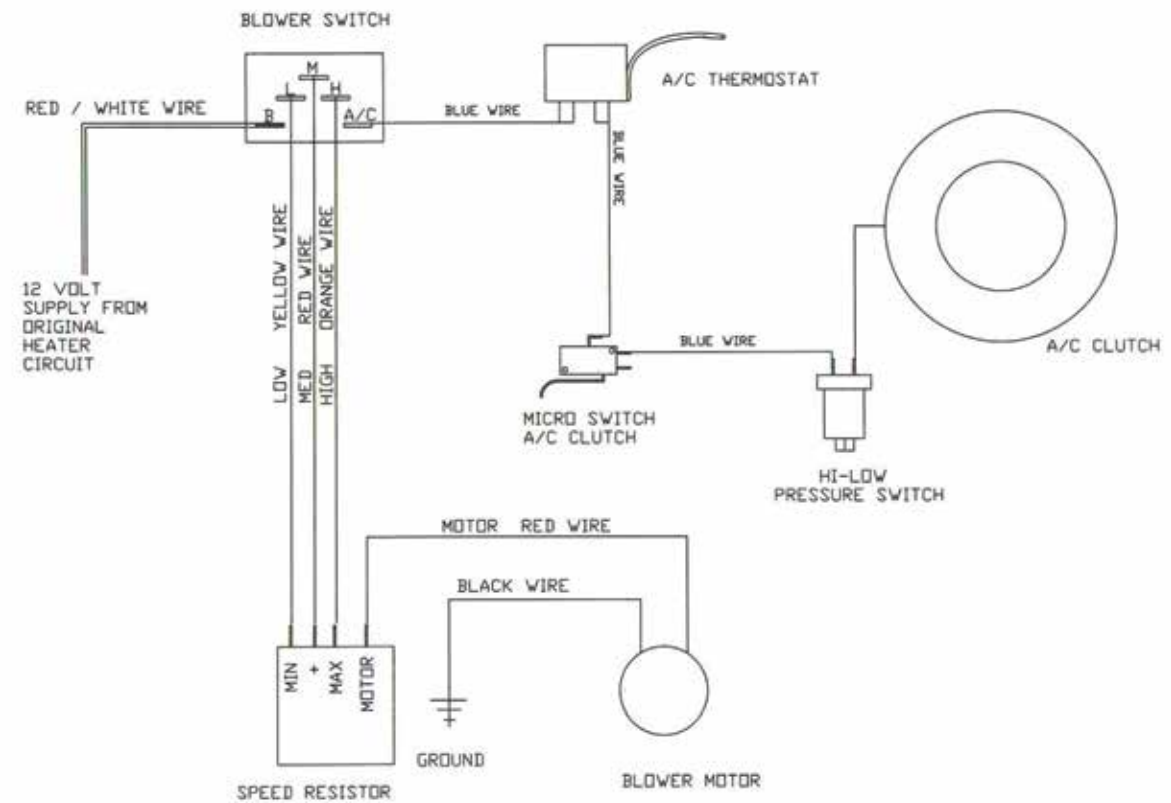
Attach shortest of the hoses to rear heater fitting using the worm gear clamp.

Attach remaining hose to front heater fitting using the worm gear clamp.





Locate wire harness from the unit box. Attach harness to the blower motor and ground the wire from the motor (see top pg-13). Refer to wiring diagram below.



WIRING DIAGRAM



Locate 2" dia. x 2ft. flex hose from the kit, cut (1) piece 18". Locate 2" dia. x 4ft. flex hose, cut (1) piece 42".

Attach 18" hose to defrost outlet on back of the unit using (2) #8 x 3/8" pan head screws.

Attach 42" hose to heat outlet on back of the unit using (2) #8 x 3/8" pan head screws.

Locate in the hardware sack kit the defrost hose adapter and (2) #8 x 3/8" pan head screws. Attach to end of the 18" flex hose.



Locate the original control head, original cable clip, screw and the water valve control cable from the unit box.

Attach cable to top temp lever as shown using the original hardware.

Reinstall control head using the original clamps and screws.

Be sure to attach the light socket before installation.





This picture is for reference only.

When installing evaporator the heater hoses, clutch wire and temperature control cable will go through the firewall mounting plate.

Insert items through the opening. The mounting plate will be attach later.



Locate evaporator and insert it up and behind instrument panel behind the glove box opening.

Attach driver's side mounting bracket over studs that the support brace attaches to. Use original nuts and flat washers.

Locate in the hardware sack kit (1) #10 x 3/4" tek screw.

Attach blower support brace to the body rib as shown.





Route 18" defrost duct over to drivers defrost diffuser. Push s-clips over edge of the inlet.

Short flex hose from top rear of the evaporator needs to be inserted into the passenger defrost diffuser.

Locate the unit mounting plate assembly and (2) #10 x 5/8" pan head screws.

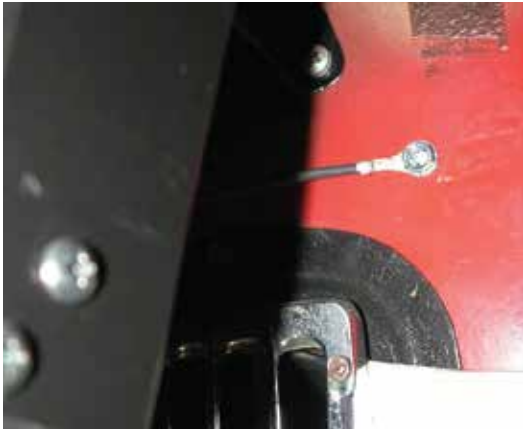
Insert temperature cable and clutch wire through grommet hole in the mounting bracket.

Insert heater hoses through holes in the mounting plate. Short hose through the lower hole.

Insert #6 and #10 fitting through mounting bracket and attach using the fitting nut. Locate (2) 1/4" -20 x 5/8" hex head screws and flat washers. Attach rear unit brace to the mounting bracket.

Using #10 pan head screws attach the mounting bracket to the original holes.





Locate (1) #10 x 3/4" tek screw. Locate black wire from blower motor and ground just above air inlet in the kick panel.

Locate clear drain tube from the hardware sack kit. Attach to the drain fitting on unit and out through the hole previously drilled.

Looking up to the bottom of the control head.

Attach control cable from the face / heat door to lower lever next to the radio. Use original hardware.

Attach control cable from air inlet door to its original location and original hardware.



ORIGINAL FRESH AIR
CABLE



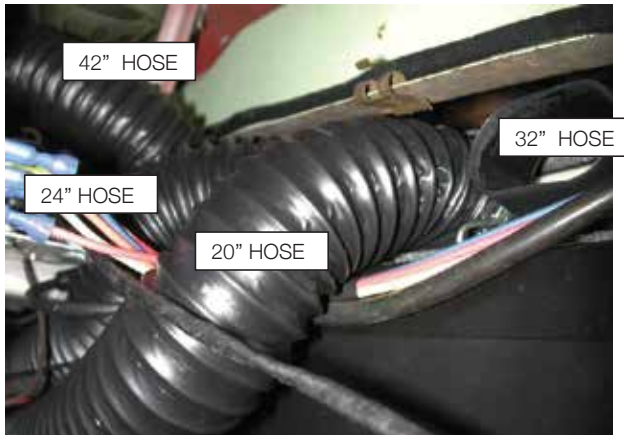
CONTROL CABLE FROM
FACE/ HEAT DOOR



Locate in the hardware sack kit the (4) remote louver assemblies, and the #10 x 3/4" hex head tek screws.



Mount the (4) remote louver assemblies in desired location of dash. Locate 2" dia flex hose from the unit box and attach to the unit.



Locate 2" dia. x 2ft., 3ft. and 4ft. flex hose from the kit.

Cut (1) piece 20" long, (1) piece 24" long, and (1) piece 42" long.

Attach 42" piece to left face outlet and route over top of the radio. Then down and attach to the drivers louver.

Attach 24" piece to next outlet and route to the left side of the center louvers.

Attach 20" piece to next outlet and route to right side of the center louvers.

Cut (1) piece of 2" x 3ft. flex hose to 32" long.

Attach to last outlet on evaporator. Route it up and over to the passenger side louver.

Use a ty-wrap through the original hole to hold duct in place.

Locate in the hardware sack kit the remote heat dump, (2) #8 x 3/8" pan head screws and (2) u-clip fasteners

Attach flex hose to the heat dump using #8 screws..

Attach heat dump assembly to drivers air inlet deflector using the u-clips.

Engine compartment components should be installed at this time. Carefully follow the electrical diagram provided on page 7

REMOVE RADIATOR

Locate following components from the condenser kit. Condenser, (1) left condenser mounting bracket, discharge tube (1) #8 o-ring, liquid tube (1) #6 o-ring and (2) #10 x 1/4t" hex head screws..

Attach left condenser bracket to 3rd hole from bottom of the condenser, using the #10 screws.

Attach discharge tube to #8 fitting on the condenser using #8 o-ring and a few drops of mineral oil.

Attach liquid tube to #6 fitting on the condenser using #6 o-ring and a few drops of mineral oil.





Using (4) 5/16" -18 x 1/2" bolt and washers, loosely attach these to the radiator support on grill side of the support.

Carefully rotate condenser into position. Hook the tube assemblies through opening on passenger side.

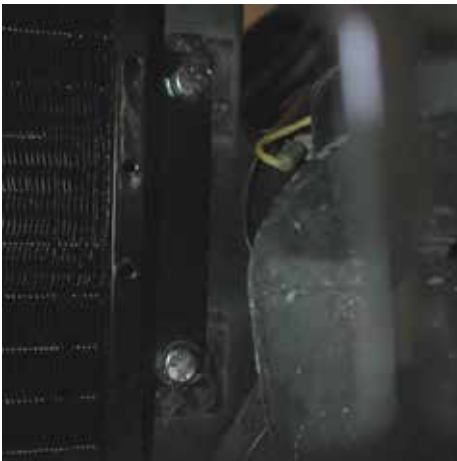
Slide condenser left side bracket into the 5/16" bolts.

Locate right side condenser mounting bracket and (2) #10 x 1/4" hex head screws.

Attach right side bracket over 5/16" bolts and attach the bracket to condenser using (2) #10 x 1/4" hex head screw.

Tighten condenser bolts using a long extension through the grill.

Locate the condenser tube support bracket. Attach bracket to the condenser tubes as shown.





Locate the original heater core frame.
Carefully enlarge the heater hose holes to 1".

Insert the heater hoses through the frame. Attach frame over the block off using original hardware.

Locate in the condenser kit, drier mounting bracket, drier clamp, filter / drier, (2) #10 x 1/2" hex head screws and the hi-low pressure switch.

Attach drier to the mounting bracket using #10 screws and drier clamp.
Attach hi-low pressure switch to drier using a few drops of mineral oil.

Loosen bolts that support the original blower and slide drier assembly behind the original bracket. Tighten bolts.



Locate the 90 deg 5/8" water fitting .

Install fitting where the water valve was on the water neck. This is the supply line from the engine.

Locate the Temperature Control Cable and attach to the water valve as shown. Set cable so that the Temp lever is pushed all the way to the left and water valve is in its fully closed position.

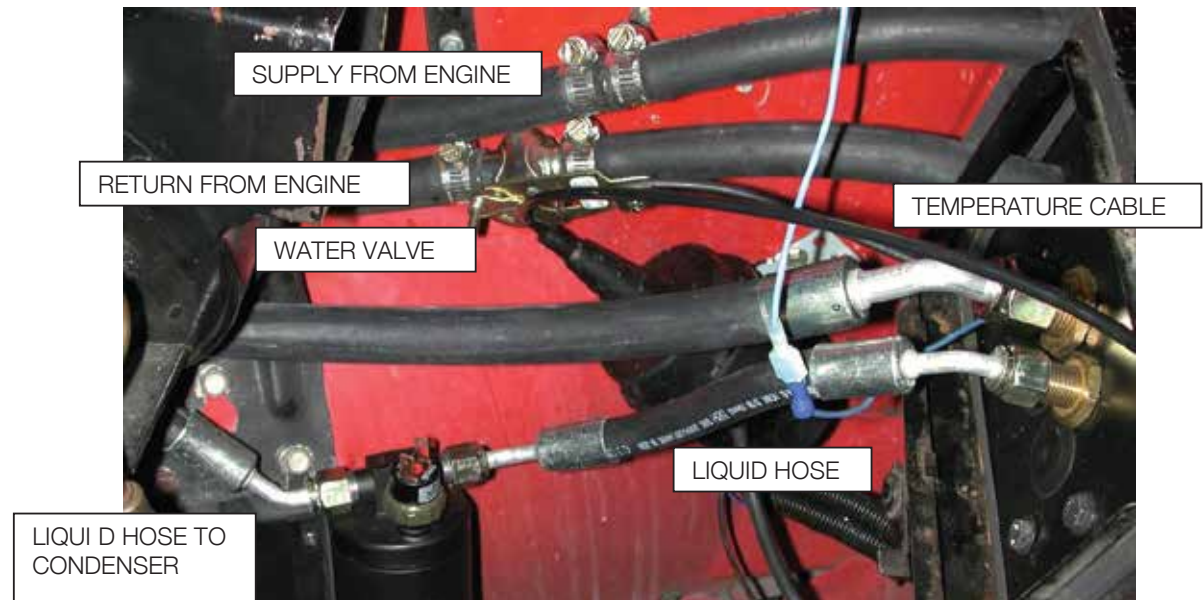
Locate the water valve, 5/8" hose splice and (4) worm gear clamps. Note: it is recommended that you replace the heater hoses from the engine at this time.

Locate short #6 liquid tube and (2) #6 o-rings. Attach hose between #6 fitting on block off and the drier.

Locate long #6 liquid hose and (2) #6 o-rings. Attach hose between drier and fitting on the condenser.

Locate #10 suction hose and (2) #10 o-rings. Attach hose to fitting on block off and end with the service port to the compressor.

Locate #8 discharge hose and (2) #8 o-ring. Attach hose to condenser fitting and the end with the service port to the compressor.

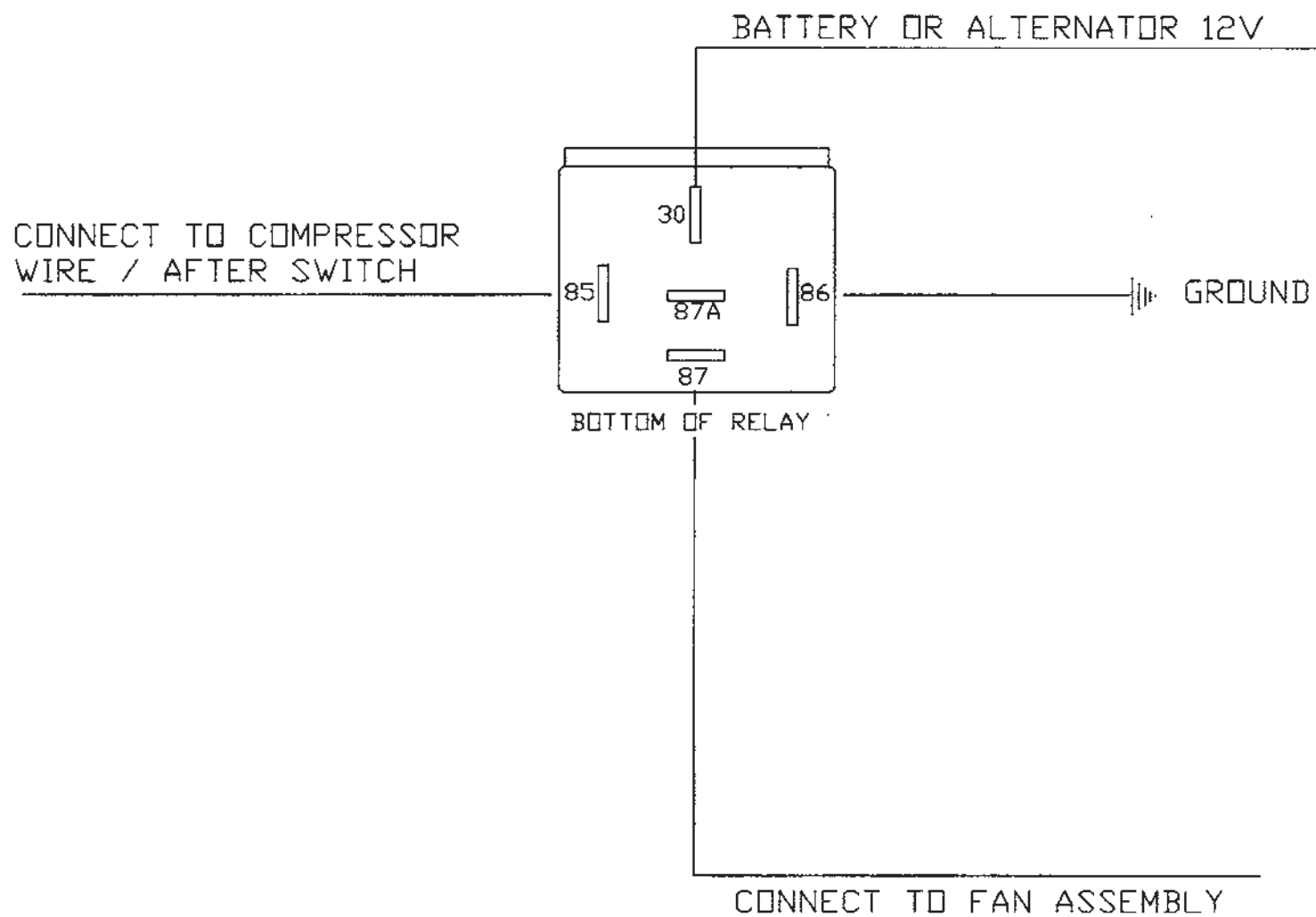


Locate the new air plenum. Slide plenum over the refrigerant hoses and attach using original cams. Install flexible hose between the blower and the plenum.

Locate female bullet connector that is supplied with the Hi-Low pressure switch. Cut one of the white wires from the pressure switch. Attach bullet connector to this wire and plug into the compressor clutch wire. As shown route the long white wire from the pressure switch along the suction hose and connect to the clutch wire that was inserted through firewall.

Fan relay is attached to the condenser. Ground the fan and relay to the body. Follow diagram on next page to hook up the fan. Fan ground needs to be attached with its own screw.





AUXILARY FAN RELAY / ELECTRICALS



**THE ENGINE COMPARTMENT OF YOUR SYSTEM IS COMPLETE.
THE UNIT IS READY FOR EVACUATION AND CHARGING.**

**THIS SHOULD BE DONE BY A QUALIFIED AND CERTIFIED AIR CONDITIONING
TECHNICIAN.**

**NOTE: COMPRESSOR IS SUPPLIED WITH THE
CORRECT OIL CHARGE. DO NOT ADD OIL TO
SYSTEM.**

**134a SYSTEMS 24 oz OF REFRIGERANT
Recommend that power fuse is 25amp minimum**

Congratulations you have completed the install of your CLASSIC AUTO AIR "Perfect Fit Series" system.

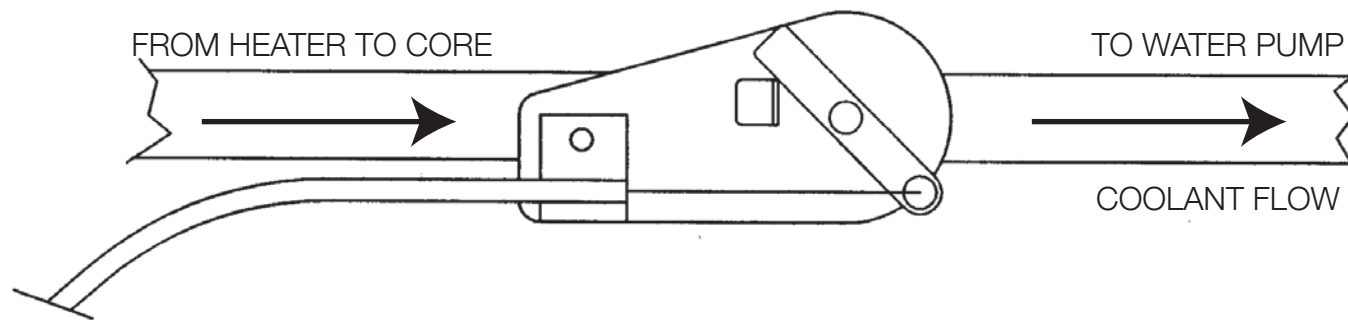
IMPORTANT!

CAUTION: WATER VALVE MUST BE INSTALLED PER THE INSTRUCTIONS.

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.

Locate the bottom connection from the evaporator/heater unit off of the firewall and attach a 6" piece of 5/8" dia. heater hose with the supplied hose clamp. Next attach the inlet side of the water valve using another supplied hose clamp, (make sure the arrow on the water valve points toward the engine) Attach a heater hose from the outlet side of the water valve and route to the connection on the water pump.

NOTE: WATER VALVE = WATER PUMP



CAUTION: WATER VALVE MUST BE INSTALLED ON HEATER LINE ROUTED TO WATER PUMP.

**NOTE: COMPRESSOR PURCHASED WITH KIT IS
SUPPLIED WITH THE CORRECT OIL CHARGE. DO
NOT ADD OIL TO SYSTEM.**

134A SYSTEMS 24 oz OF REFRIGERANT
Recommend that power fuse is 25amp minimum

New A/C System Preparation... A MUST READ!

Please read through these procedures before completing this new A/C system charging operation.

A licensed A/C technician should be utilized for these procedures to insure that your new system will perform at it's peak, and that your compressor will not be damaged.



- 1) Your radiator/cooling system is an integral part of your new system. Please insure that you have a 50/50 mix of distilled water and antifreeze. The heater coil **MUST** be purged (cycle heater control valve) to make sure no water, without antifreeze, is in the heater coil before you charge the A/C system.
- 2) Evacuate the system for 45 minutes (minimum).
- 3) **Your new compressor MUST be hand-turned 15-20 revolutions before and after charging with liquid. Failure to do this may cause the reed valves to become damaged** (this damage is NOT covered by your warranty).
- 4) Your new system requires 134a refrigerant. It will require 1.5 lbs (or 24 oz).
- 5) Your new compressor comes charged with oil - NO additional oil is needed.
- 6) Insure that the new belt is tight.
- 7) **DO NOT CHARGE SYSTEM WITH LIQUID REFRIGERANT!**

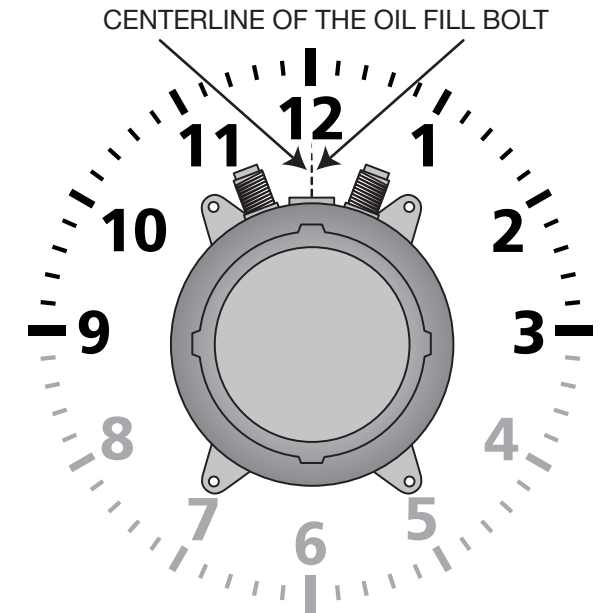
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- Determine the temperature outside of the car
- Connect gauges or service equipment to high/low charging ports
- Place blower fan switch on medium
- Close all doors and windows on vehicle
- Place shop fan directly in front of condenser
- Run engine idle up to approx. 1500 rpm

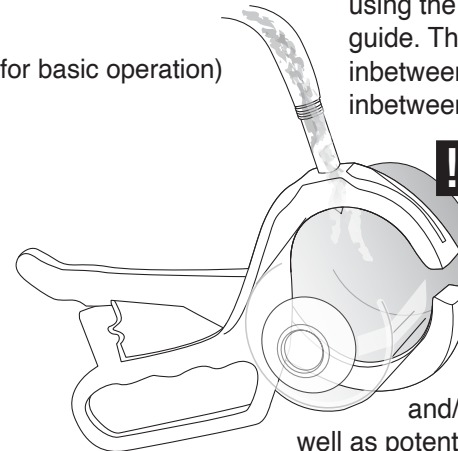
ACCEPTABLE OPERATING PRESSURE RANGES:

1. HIGH-SIDE PRESSURES (150-275 PSI)
2. LOW-SIDE PRESSURES (10-25 PSI in a steady state)

Readings above are based on an ambient temperature of 90° with an adequate airflow on condenser



CAUTION! When mounting your compressor and/or adjusting the belt use caution. Mount by using the centerline of the oil fill plug as your guide. The compressor can **ONLY** be mounted inbetween the 9 to 3 positions. **DO NOT** mount inbetween the 4 to 8 positions.



Do NOT tilt, shake or turn refrigerant can upside-down OR use a charging station to install refrigerant while the engine is running. Doing so will direct liquid refrigerant into the compressor piston

chamber, causing damage to reed valves and/or pistons and/or other components, as well as potentially seizing the compressor. Allow a minimum of 30 minutes for liquid to "boil off." You must hand turn the compressor hub (not the pulley) a minimum of 15 complete revolutions prior to starting the engine with the clutch engaged.

TROUBLESHOOTING GUIDE

TEST CONDITIONS USED TO DETERMINE SYSTEM OPERATION

(THESE TEST CONDITIONS WILL SIMULATE THE AFFECT OF DRIVING THE VEHICLE AND GIVE THE TECHNICIAN THE THREE CRITICAL READINGS THAT THEY WILL NEED TO DIAGNOSE ANY POTENTIAL PROBLEMS).

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

ACCEPTABLE OPERATING PRESSURE RANGES (R134A TYPE)

- 1. HIGH-SIDE PRESSURES (150-275 PSI) **Note- general rule of thumb is two times the ambient (daytime) temperature, plus 15-20%.*
- 2. LOW-SIDE PRESSURES (10-25 PSI in a steady state).

CHARGE AS FOLLOWS: R134A = 24 OZ.
NO ADDITIONAL OIL IS NECESSARY IN OUR NEW COMPRESSORS.

TYPICAL PROBLEMS ENCOUNTERED IN CHARGING SYSTEMS

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

- A. If the system is overcharged both gauges will read abnormally high readings. This is causing a feedback pressure on the compressor causing it to rattle or shake from the increased cylinder head pressures. System must be evacuated and re-charged to exact weight specifications.
- B. Heater control valve installation - Installing the heater control valve in the incorrect hose. Usually when this occurs the system will cool at idle then start to warm up when raising the RPM's of the motor. THE HEATER CONTROL IS A DIRECTIONAL VALVE; MAKE SURE THE WATER FLOW IS WITH THE DIRECTION OF THE ARROW. As the engine heats up that water transfers the heat to the coil, thus overpowering the a/c coil. A leaking or

faulty valve will have a more pronounced affect on the unit's cooling ability. Installing the valve improperly (such as having the flow reversed) will also allow water to flow through, thus inhibiting cooling. Check for heat transfer by disconnecting hoses from the system completely. By running down the road with the hoses looped backed through the motor, you eliminate the possibility of heat transfer to the unit.

- C. Evaporator freezing - Freezing can occur both externally and internally on an evaporator core. External freeze up occurs when the coil cannot effectively displace the condensation on the outside fins and the water forms ice (the evaporator core resembles a block of solid ice), it restricts the flow of air that can pass through it, which gives the illusion of the air not functioning. The common cause of external freezing is the setting of the thermostat and the presence of high humidity in the passenger compartment. All door and window seals should be checked in the event of constant freeze-up. A thermostat is provided with all units to control the cycling of the compressor.
- D. Internal freeze up occurs when there is too much moisture inside the system. The symptoms of internal freeze up often surface after extended highway driving. The volume of air stays constant, but the temperature of the air gradually rises. When this freezing occurs the low side pressure will drop, eventually going into a vacuum. At this point, the system should be checked by a professional who will evacuate the system and the drier will have to be changed.
- E. Inadequate airflow to condenser - The condenser works best in front of the radiator with a large supply of fresh air. Abnormally high pressures will result from improper airflow. Check the airflow requirements by placing a large capacity fan in front of the condenser and running cool water over the surface. If the pressures drop significantly, this will indicate the need for better airflow.
- F. Incorrect or inadequate condenser capacity - Incorrect condenser capacity will cause abnormally high head pressures. A quick test that can be performed is to run cool water over the condenser while the system is operating, if the pressures decrease significantly, it is likely a airflow or capacity problem.
- G. Expansion valve failure - An expansion valve failure is generally caused by dirt or debris entering the system during assembly. If an expansion valve fails it will be indicated by abnormal gauge readings. A valve that is blocked will be indicated by high side that is unusually high, while the low side will be unusually low or may even go into a vacuum. A valve that is stuck open will be indicated by both the high and low pressures rising to unusually high readings, seeming to move toward equal readings on the gauges.
- H. Restrictions in system - A restriction in the cooling system will cause abnormal readings on the gauges. A high-side restriction (between the compressor and the drier inlet) will be indicated by the discharge gauges reading excessively high. These simple tests can be performed by a local shop and can help determine the extent of the systems problem.

Trouble Shooting Your Classic Auto Air A/C System

PROBLEM: system is not cooling properly

ISSUE: cold at idle, warmer when raising engine RPM's

Make sure the Water Valve is positioned correctly

The water valve is a directional valve and should be installed with the arrow pointing towards the water pump, it should be connected to the heater hose that runs from the heater core to the water pump. If the water valve is connected to the incorrect hose it allows water to circulate through the system via the heater core over powering the cooling effect of the A/C coil, (normally the air conditioning is functioning properly).

Step 1: Check placement of the water valve, correct if needed. (In some cases changing the location of the water valve may not fix the above problem.) Continue to next step.

Step 2 If changing the location of the water valve does not rectify the issue, then possibly the water valve is permanently damaged and may need to be replaced. To check the integrity of the water valve completely remove the water hoses for the heater core and "loop" together. (This will remove the heater system completely from the possibilities) If the system now cools, replace the water valve

Verify Adequate Air Flow to Condenser

For an air conditioning system to function properly there has to be adequate airflow across the condenser. The function of the condenser is to dissipate heat, without proper airflow your system will not cool correctly in the cabin of your vehicle.

Step 1: connect gauges to a/c hoses. The pressures should be: with the ambient temp is 90, low side pressures should be between 10-25 psi, high side pressures should be between 150-275 psi

Step 2: IF the low side pressures are normal and the high side pressures are high then there might be an airflow issue, continue to next step.

To test air flow to Condenser do the following three tests:

1. Place a piece of paper on the condenser with the car in idle and see if paper is held in place.
2. With car in idle, attach gages, and place a large capacity fan in front of

the condenser. What happens to the pressures?

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

If the paper is held in place you are at least getting some air flow. If the high side decreases during test 2 & 3 then your condenser is not getting enough air which is causing your system to not cool properly. To correct this issue you will need a more powerful mechanical fan.

Step 3: Confirm correct Refrigerant charge in System

All of our systems should be charged with 24 oz or 1.5 lbs of R134A Refrigerant only. If overcharged you will need to evacuate the system and recharge with the correct amount.*

What measurements mean:

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

You have a malfunctioning expansion valve that is stuck open.

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

There is a blockage in the system. Remove hoses and blow compressed air through in both directions. If pressures don't change its possible that your expansion valve is stuck closed and would have to be replaced.

*Compressor Concerns:

This is often misdiagnosed as a problem for the system not cooling properly. If you have a noisy compressor it is due to improper charging of refrigerant. An overcharged (more than 24 oz or 1.5 lbs R134A) compressor can cause rattling. If charged with pure liquid there is a high probability you have bent reed valves that are causing tapping sound.

SCAN QR code
with your mobile camera

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

