

Installation Manual

1947- Early 1955 Chevrolet Pickup

DOCUMENT #1-1029

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Congratulations...

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

Congratulations! ! You have just purchased the highest quality, best performing A/C system ever designed for you Classic Truck. 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 Louver Assembly

Flex Hose 2" dia. x 15 ft.

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 During the installation you might find the opportunity to repair or upgrade non-working or out of date components.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

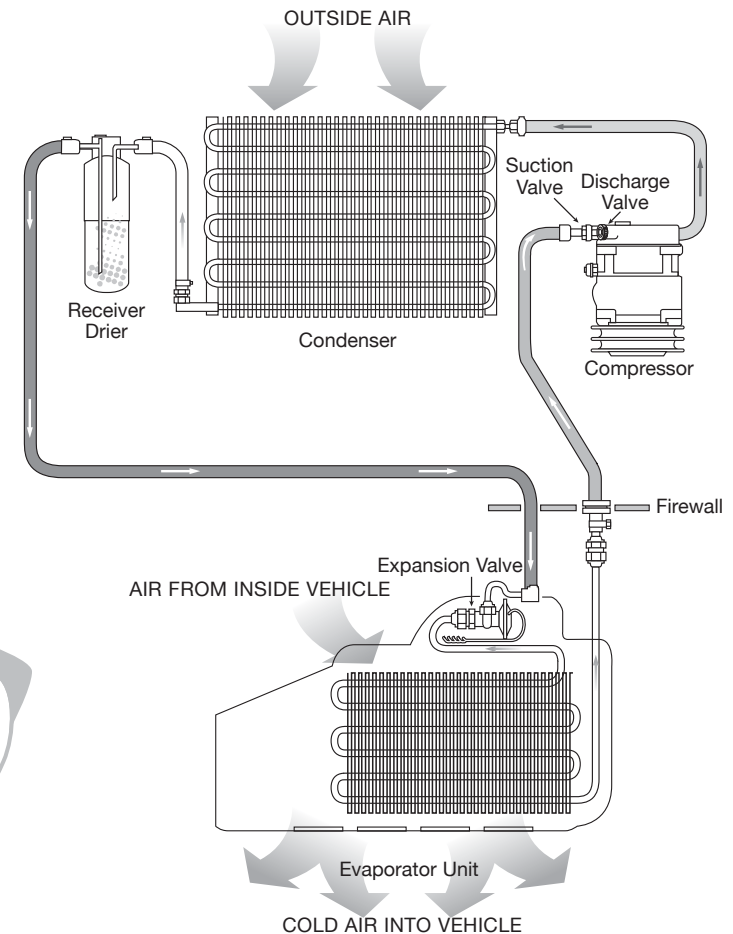
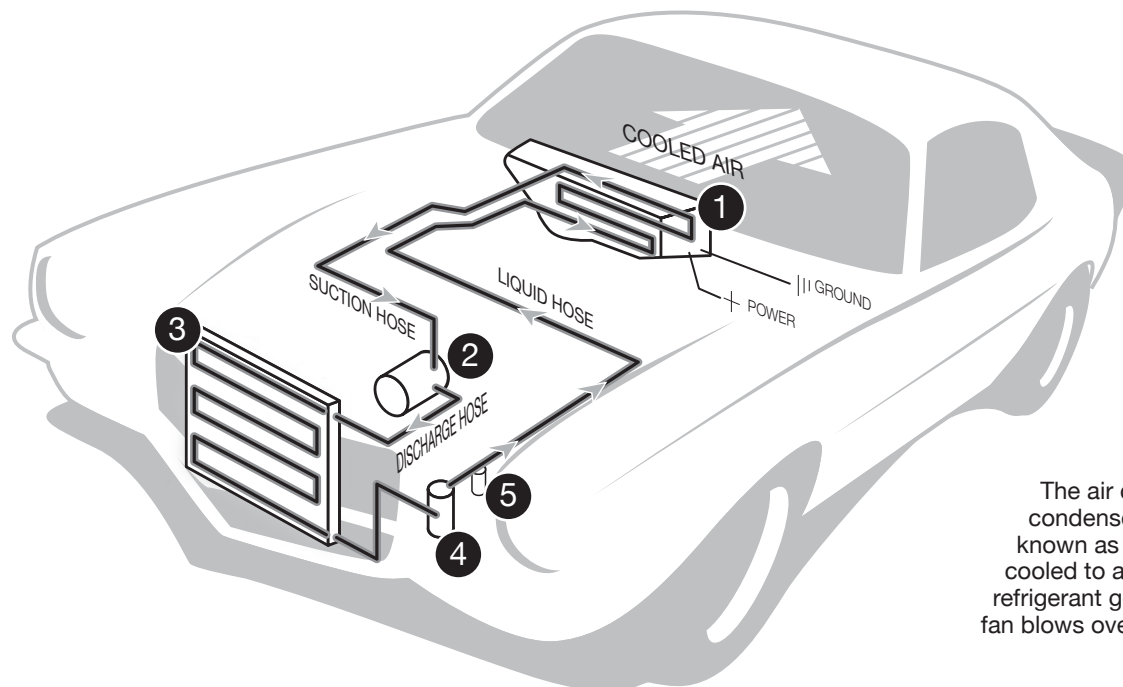
Procedures, During Installation:

- ☐ 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!**

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.

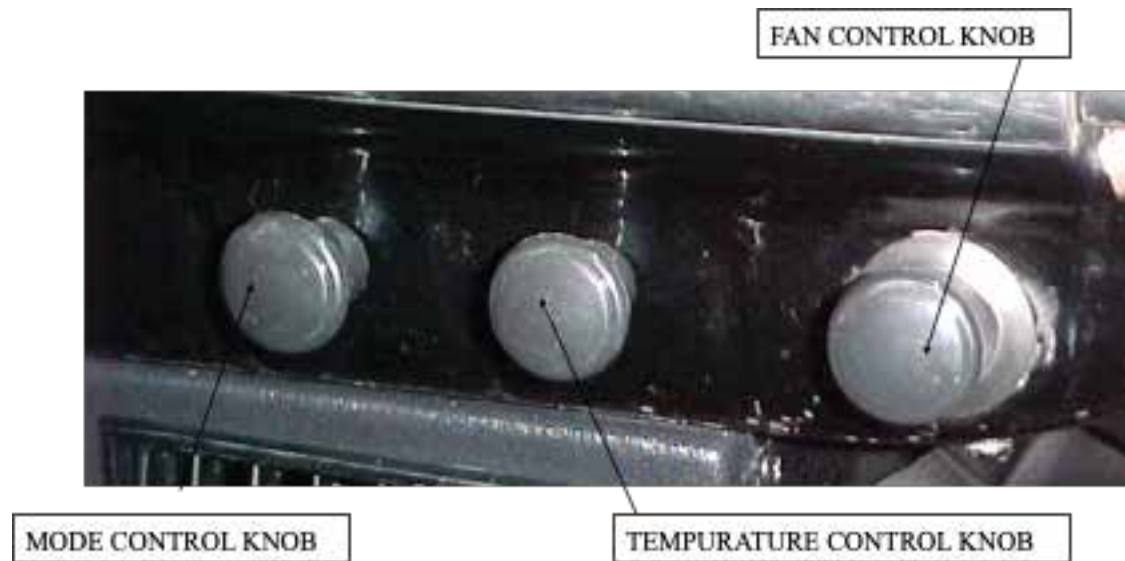


The air conditioning system in your car is comprised of a compressor, condenser, expansion valve, receiver/drier, and evaporator. Refrigerant (also known as Freon) is compressed in the compressor. In the condenser, gas is cooled to a liquid state and travels to the expansion valve. As the liquid refrigerant 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

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.

This system also provides the ability to blend the air between Face and Heat / Defrost modes.



THE PICTURE YOU SEE ABOVE SHOWS THE CONTROLS IN THE FACE MODE. THIS MEANS THAT THE AIR WILL BE DISTRIBUTED THROUGH THE FACE OUTLETS. THIS ALSO HAS THE TEMPERATURE LEVER IN THE COLD POSITION. WITH THE CONTROLS IN THIS POSITION YOU WILL GET THE AIR THROUGH THE FACE OUTLETS WITH THE COMPRESSOR ON.



CAUTION: ALL OF THE OUTSIDE VENTS MUST BE CLOSED WHEN THE SYSTEM IS IN THE A/C MODE. THIS WILL ALLOW THE A/C SYSTEM TO FUNCTION AT ITS MAXIMUM PERFORMANCE LEVEL.

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 push pull cable is pulled all the way OUT, it will direct the air to the floor / and defrost ducts. The cable can be moved any position from full in to full out. This will give blend between all distribution outlets.

TEMPERATURE CONTROL: The temperature Knob as shown is in the COLDEST temperature position. As the lever is pulled out 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 Knob in the Face Mode (air-flow out the face outlets).

When the Mode control knob is pushed all the way IN 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.

CAUTION: DISCONNECT BATTERY GROUND CABLE

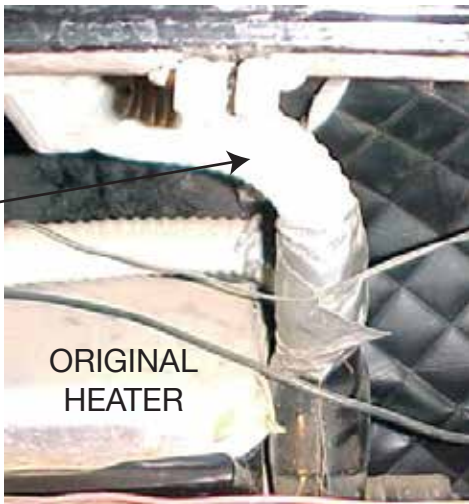
GLOVE BOX



Remove the Glove box door retain original hardware, remove and discard glove box .

BLOWER
SWITCH

Remove and discard the original blower switch.

DEFROST
DUCTS

There are various heater assemblies available with this series truck. If the truck that you have is equipped with the optional Defrost blower and distribution hoses, and ducts. Remove the flex duct and discard. The defrost diffusers may be used if they are in good condition. If they are not we have provided (2) diffusers in the kit.

#8 X 1/2 SCREWS



If required install the Defrost Diffusers provided using (2) #8 x 1/2 pan head screws.

View shown is behind and above the glove box opening. Drivers side Duct is installed the same way.

HEATER MTG. NUTS



Remove heater hoses from the heater connections.

Remove (2) nuts that attach the heater assembly to the firewall.

LOCATE THE TEMPLATE AT THIS LOCATION



Under the glove box opening carefully remove the original heater box and discard.

On the firewall looking through the glove box opening. We will be drilling the (4) mounting holes for the evaporator.

These holes will be located from the top edge of the firewall stiffener.

It may be necessary to carefully pull back the insulation on the firewall.
Refer to the next (2) pictures.

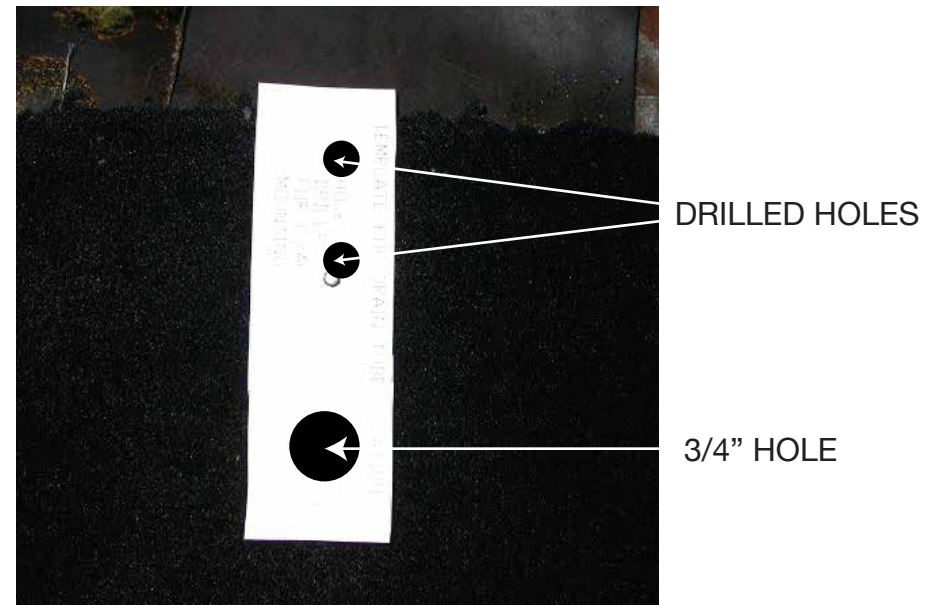
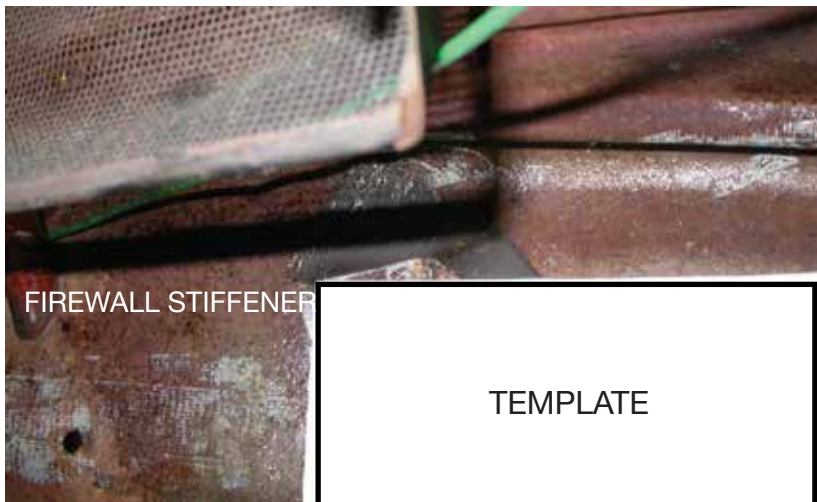


Locate the firewall template and tape to the firewall. Locate using the firewall stiffener.

Drill (4) 5/16" dia holes.

CAUTION: TAKE EXTRA CARE THAT THE HOLES ARE PROPERLY LOCATED. THIS WILL INSURE A SMOOTH INSTALLATION.

Locate the drain tube template. Holding the template over the evaporator mounting holes on the passenger side. Drill the 3/4" dia hole for the drain tube.





On the engine side of the firewall.

Locate the original holes under the hood hinge.

Using the left hole measure 1 1/2" straight up from the centerline of hole.
Drill (1) hole 3/4" diameter.

Drill the second hole 3/4" diameter
1 1/4" above the first hole.



The modifications to the vehicle are complete. You can now begin installing your new Classic Auto Air conditioner.

Locate the Evaporator and lay on the bench.

Remove the right heat dump and discard.

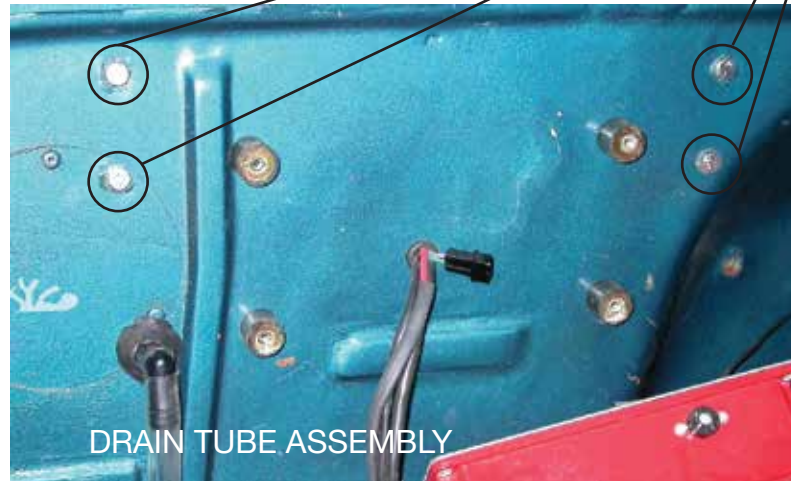


Locate the 2" flex duct from the kit. Cut (3) pieces 16", 22", and 42" long.

Attach to the rear outlets as shown.

Slide evaporator up and behind the glove box opening.

Using the (4) 1/4"-20 x 1" screws supplied in the kit attach the unit to the firewall. The attachment is through the 5/16" holes previously drilled.



Locate the drain tube and (1) 90 deg. Elbow cut the tube 1 1/2" attach to the elbow and the rest of the drain tube to the other end.

Insert through the hole in the firewall and on to the evaporator.

The duct hose on the right attaches to the passenger defrost diffuser.

Attach using (1) #8 x 3/8" pan head screw.



The next hose from the left of the passenger defrost hose, routes across the firewall to the drivers defrost diffuser.

Ty-rap the duct hose to the air inlet brace.

Locate (1) #14 x $\frac{3}{4}$ " tek screw, and the remote heat dump.



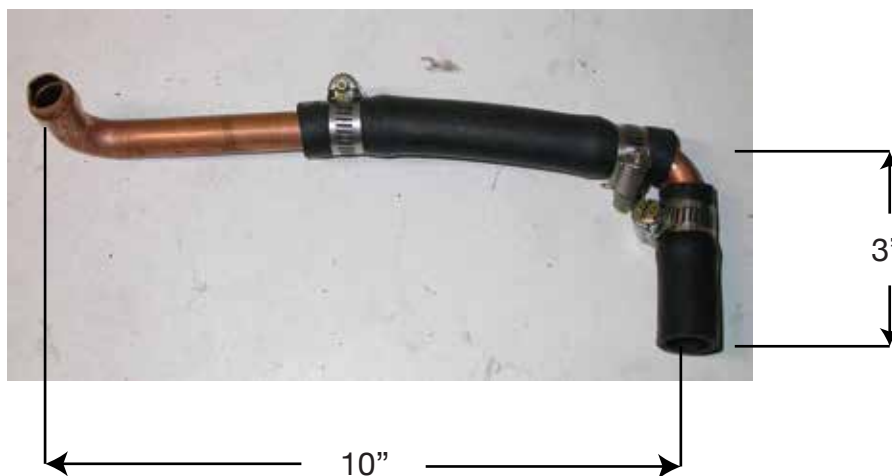
Screw through the center of the heat dump and attach to the firewall support brace on the drivers side.

The remaining 22" hose from the back of the evaporator will be attached to the remote heat dump using (1) #8 x $\frac{3}{8}$ " pan head screw.

Locate the $\frac{5}{8}$ " heater hose and cut (1) piece 2 $\frac{1}{2}$ " and (1) piece 6" long.

Also locate the long and short 90 deg hose splice and (3) worm gear clamps.

Assemble per picture to the left.





Attach the hose assembly to the rear heater fitting on the evaporator.

Use a worm gear clamp.

Route the assembly down the back and insert the 90 deg fitting through the firewall.

Locate the remaining heater hose, 5/8" hose splice, water valve and (3) worm gear clamps.

Cut 21" of the heater hose and attach it to the exiting end of water valve. The other end of the hose, attach the 5/8" hose splice.

Cut 6" of the heater hose and attach it to the entering end of the water valve.

Use the worm gear clamps as shown.

Attach the 6" end to the heater hookup tube using (1) worm gear clamp.

Insert the other end through firewall as shown.





Locate (1) hose clamp and (1) # 10 x 3/4" tek screw.

Attach the clamp over the hose and to the kick panel.

Be careful not to kink the heater hose.



Locate the (4) flat washers from the Hardware sack kit. There are (2) different sizes of holes in the center of the washers.

Place (1) of the washers with the small hole over the Liquid hose.

Place (1) of the washers with the large hole over the Suction hose fitting



Insert the small diameter liquid hose assembly through the left hole under the evaporator.

On the engine side of the firewall, place second flat washer and bulkhead nut on to the fitting.





Route the open end of the liquid hose over the blower and attach to the expansion valve.

Use (1) #6 o-ring and a few drops of mineral oil.



Insert the suction hose assembly through the remaining hole in the firewall.

On the engine side of the firewall, place second flat washer and bulkhead nut on to



Route the open end of the suction hose over the blower and attach to the a/c coil.

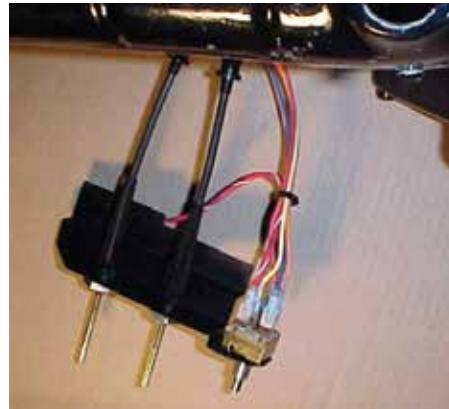
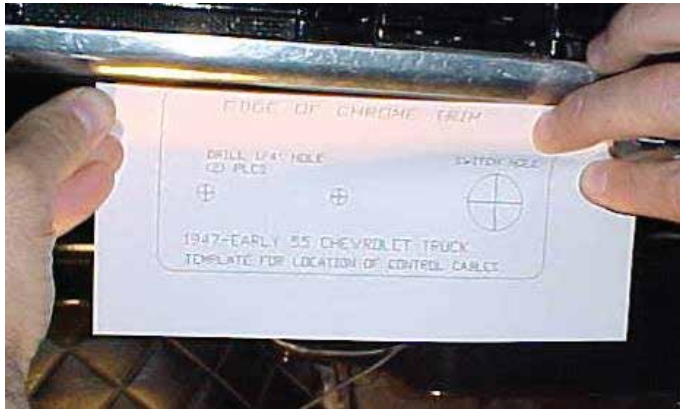
Use (1) #10 o-ring and a few drops of mineral oil.



Locate the refrigerant tape in the kit.



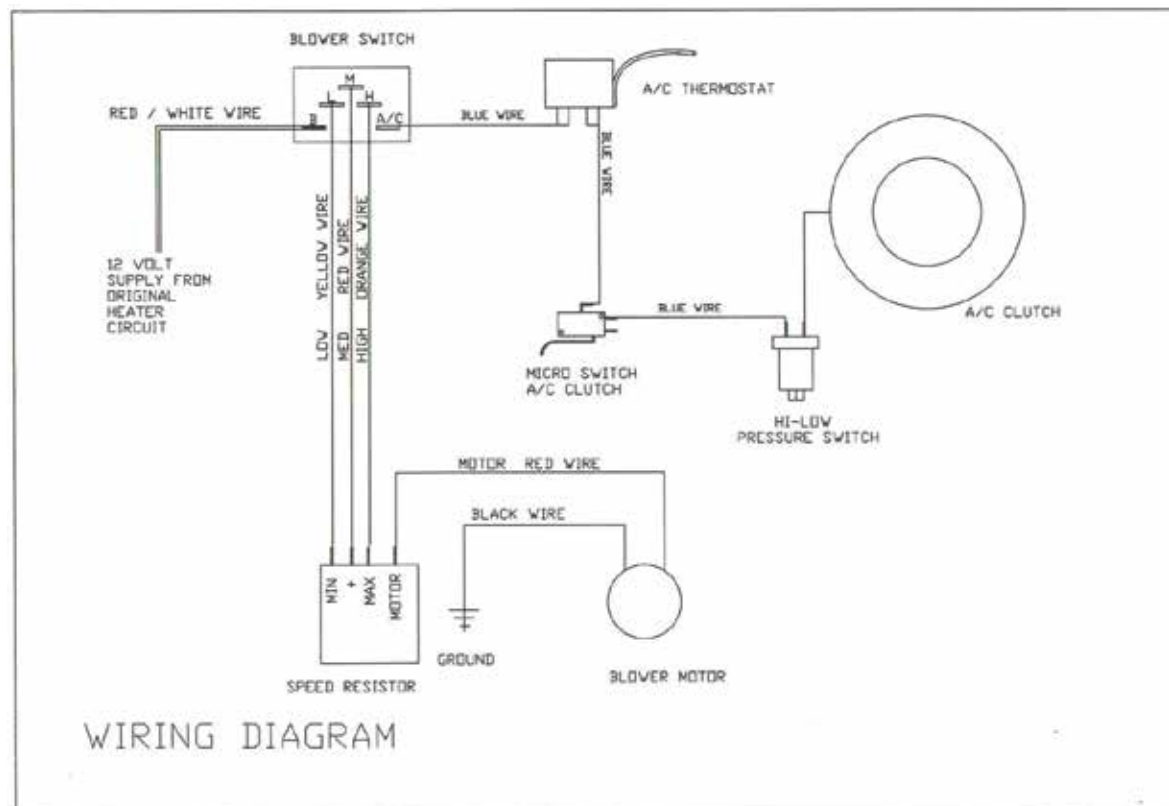
Wrap all of the exposed metal surfaces of the fitting.

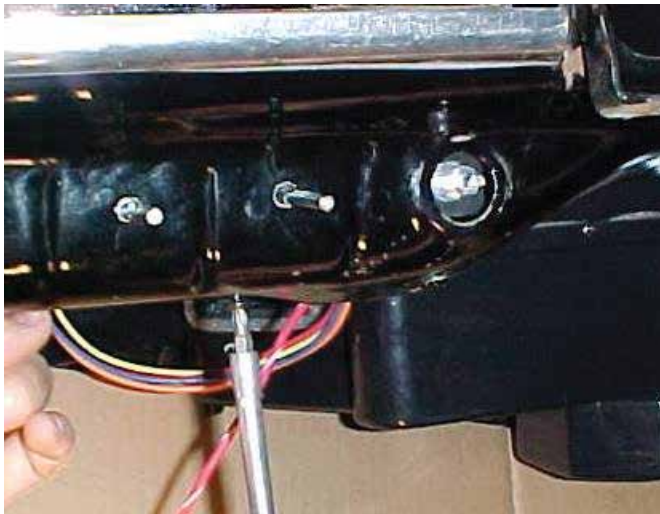


Locate in the Control sack kit the Control assembly and the template provided at the end of the instructions. Place the template over the original blower switch hole. Tape into position and carefully drill the two 5/16" diameter holes for the control cables.

Hold the control assembly under the instrument panel as shown. The temperature cable will route over the top of the unit and over to the water valve.

Attach the Wire harness using the diagram below.

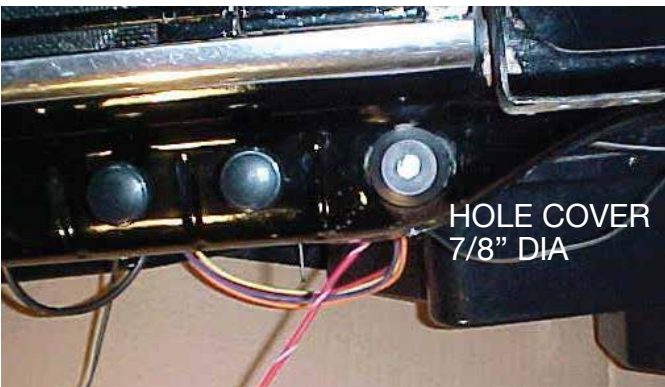




Carefully insert the control assembly through the holes in the instrument panel.
Attach using (2) #10 x 5/8" pan head screw into the mounting holes as shown.

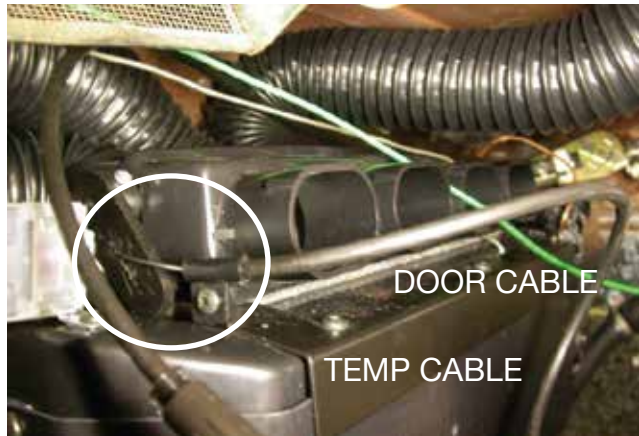


Locate in the Control sack kit (2) control knobs. (TEMP, HEAT)
Using an allen wrench install and tighten securely.



Locate in the hardware sack kit the Hole Cover Plug. Push into the hole over the blower switch.

Locate FAN knob and attach over the blower switch lighten with allen wrench.



Locate the Red / White Stripped Wire from the back of the blower switch and attach it to the original blower power wire.

The original power wire that was hooked to the original blower switch must be a minimum of 12 ga. And have an inline fuse with a minimum of 25 amp capability. It may be necessary to upgrade this wire assembly.

Route the door cable to the face / heat defrost door. Insert the cable center into the 3rd hole from the center of the crank arm.

Attach to the unit using (1) #8 x 3/8" pan head screw.



Route the temperature cable over the top of the unit and attach to the water valve.



Route the wire harness over to the thermostat.

Attach the blue terminals to the thermostat.
Refer to wiring diagram.

BLUE CLUTCH WIRE



Route the wire harness across the top of the evaporator and connect to the micro switch and the blower motor.

Connect the black wire to the ground wire from the blower motor.

Route wire to the kick panel and using (1) #10 tek screw ground it to the body.



CHECK FOR OPERATION OF DOOR AND WATER VALVE. BE SURE THAT THE DOOR MOVES FREELY AND THE AT THE WATER VALVE CLOSING COMPLETELY.



Route the hose up and behind the instruments and over to the evaporator.





CAUTION: The control cables are equipped with inline adjusters. Adjust the Defrost, Face / Heat door, and Water valve cable so that the full travel of the Control operates the door to its full travel. Make sure that the water valve completely closes when the Lever is in the cold position.

The Micro Switch that is mounted on the Face / heat door is used to turn on the compressor clutch. This will occur when the control lever is in the face position. It may be necessary to adjust the thin metal arm on the switch. Make sure that the Clutch Micro Switch is depressed when the lever is in the face position.

Locate Glove Box supplied and attach to opening using original hardware.

Reinstall original glove box door. use original hardware.



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.



Attach the right duct hose to the back of the louver.

The engine compartment components should be installed at this time. Carefully follow the electrical diagram.

THE COMPRESSOR MOUNTING COMPONENTS WILL DIFFER DEPENDING ON THE ENGINE AND DRIVE ACCESSORIES THAT YOUR VEHICLE IS EQUIPT WITH. THE FOLLOWING INSTRUCTIONS SHOW THE PROPER INSTALLATION SEQUENCE FOR THIS VEHICLE

THE VEHICLE SHOWN IS A STANDARD SHIFT, 12 VOLT ALTERNATOR, NO POWER STEERING. CHEVROLET 230 INLINE 6 CYL.

IF THE VEHICLE THAT YOU ARE INSTALLING IS EQUIPT WITH A V8 ENGINE TAKE NOTE OF THE INSTALL DIFFERENCES.

Remove Bulkhead support. Retain all of the original hardware.

Remove original fan, drain and remove radiator. Retain all of the original hardware.

INSTALL THE ENGINE KIT AND COMPRESSOR AT THIS TIME PER MANUFACTURERS INSTRUCTIONS.

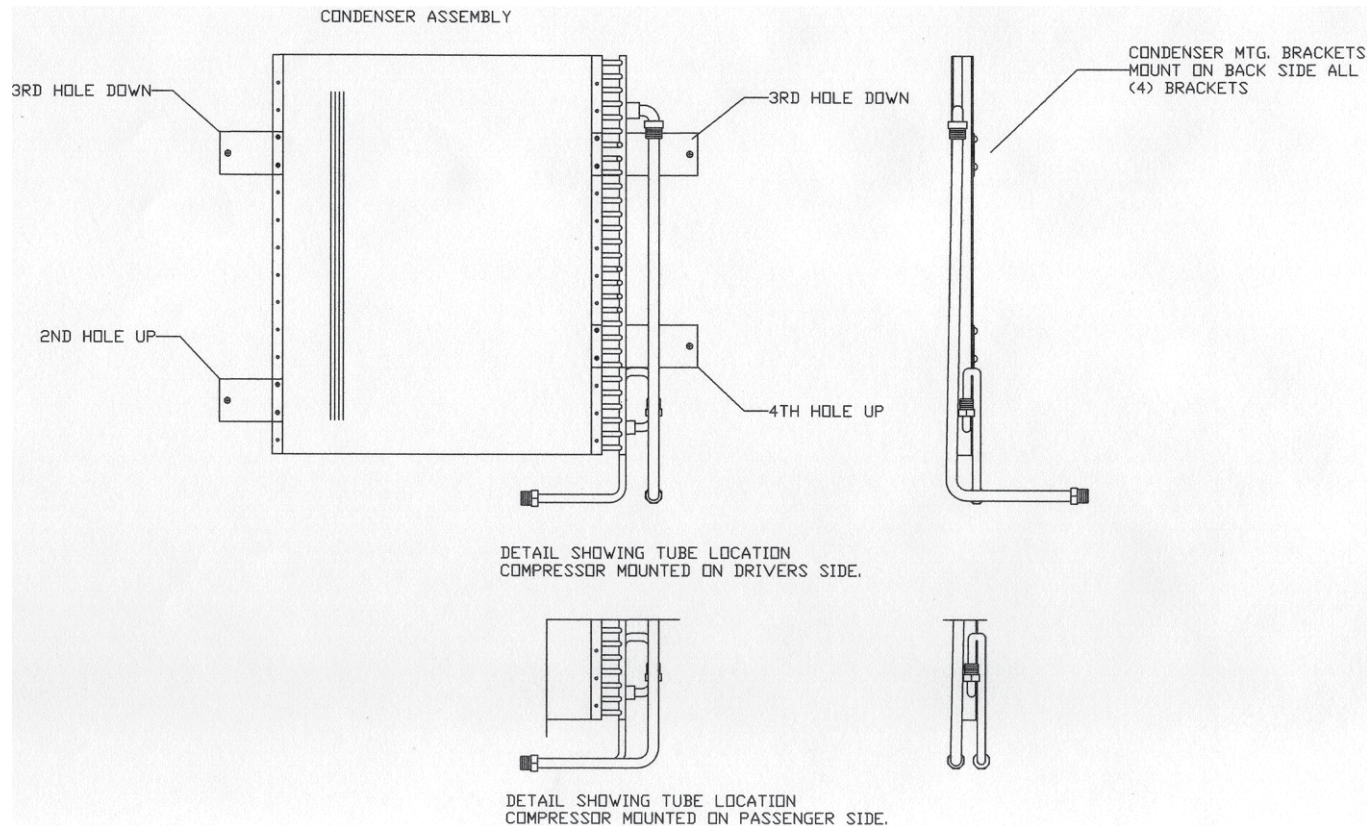


CAUTION: IF VEHICLE IS EQUIPTED WITH A (4) BLADE FAN IT IS NECESSARY TO UPGRADE TO A (6) BLADE FAN.

Locate the following components from the under hood components box.

Condenser
Receiver Drier / Hi -Low pressure switch
Drier mounting bracket
Discharge tube.
Liquid tube
Right and Left condenser mounting brackets (4)
(10) #10 x 3/8 hex washer head screws

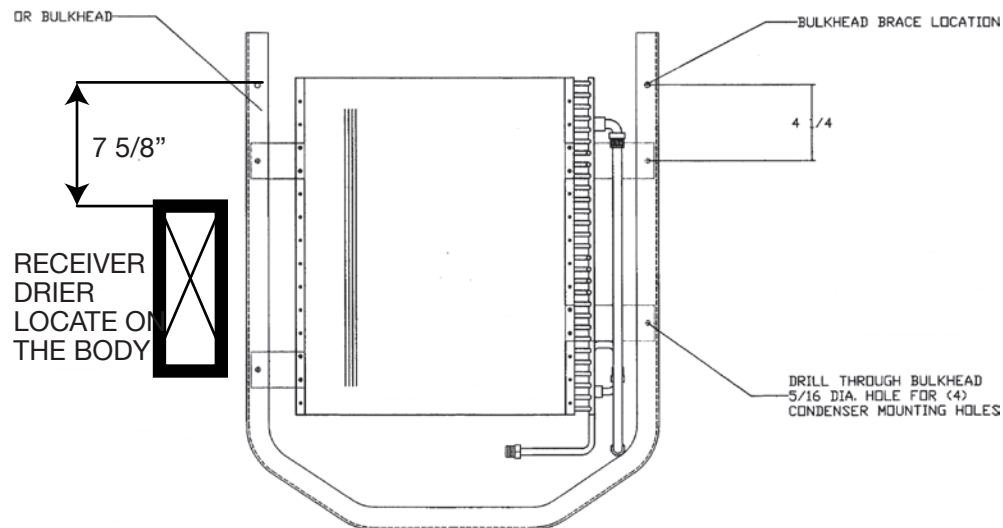
Following the diagram below pre-assemble the above components. Be sure to use o-rings and place a few drops of mineral oil on every tube connection. Tighten all fittings and secure all attachment screws.



Place condenser assembly inside of radiator mounting frame as shown. Brackets should be inside of frame.

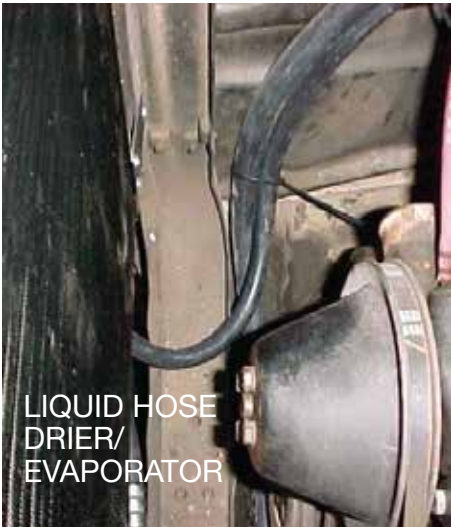
Locate and drill (4) 5/16 dia. holes in the radiator mounting flange. The drawing below shows the location.

Locate the Receiver Drier and Mounting Bracket and (2) #10 x 3/4 tek screws from the parts supplied. Attach the drier assembly to the body on the passenger side behind the grille 7 5/8" below the bulkhead brace mounting hole.





Locate the (2) Liquid Hose Assemblies, the shortest hose assembly routes from the liquid tube under the condenser up in front of condenser and attaches to the inlet side of the drier. Use #6 o-ring and a few drops of mineral oil on all fittings.



The longest hose attaches to the outlet of the drier (shown on previous page) and down under the condenser along the passenger fender skirt.

Route the Liquid Hose Assembly along the passenger fender skirt to the firewall and attach to the #6 bulkhead fitting. Use (1) #6 o-ring and a few drops of mineral oil. Tighten both ends securely.



CONDENSER TUBE



DISCHARGE
HOSE

Locate the Discharge Hose Assembly and attach to the condenser tubes. Use (1) #8 o-ring adding a few drops of mineral oil to the connection.

Route the Discharge hose from the condenser tube back below the compressor and up and attach to the compressor. Use (1) #8 o-ring adding a few drops of mineral oil to the connection.



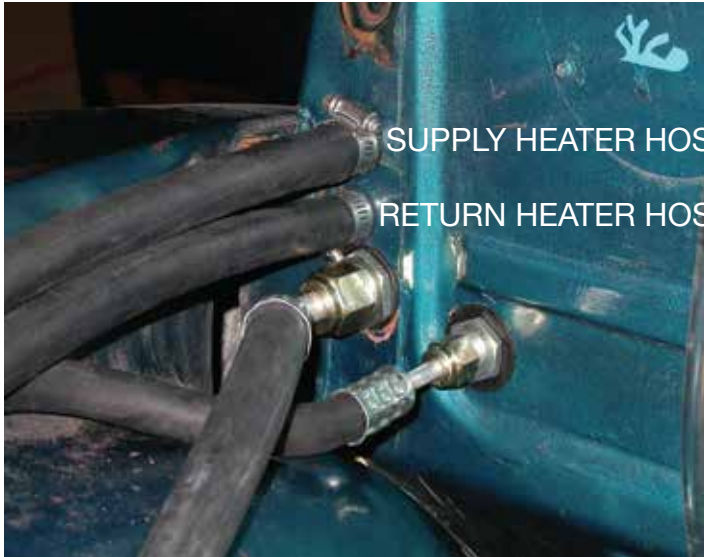
Locate the Suction Hose Assembly and attach to the compressor using (1) # 10 o-ring adding a few drops of mineral oil to the connection. Route compressor hose forward and down. Hose will lay into the frame channel under the drive pulley.



Route the suction hose up and follow the liquid hose along the passenger fender skirt to the firewall and attach to the suction bulkhead fitting. Use #10 o-ring and a few drops of mineral oil.



There are two white wires attached to the pressure switch route one of them to the compressor clutch and attach a Female bullet connector. The other wire route through the bulkhead with the original wire harness assembly and attach to the thermostat wire coming through the firewall. Secure wires with ty-raps provided.



SUPPLY HEATER HOS

RETURN HEATER HOS

Hookup the heater hoses to the connections coming through the firewall.

NOTE: THE SUPPLY LINE FROM THE ENGINE WILL BE HOOKED TO THE TOP FITTING USING A WORM GEAR CLAMP.

It is recommended that the heater hoses be replaced at this time.

Reinstall the radiator, the correct fan and Bulkhead support cover using the original hardware.

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

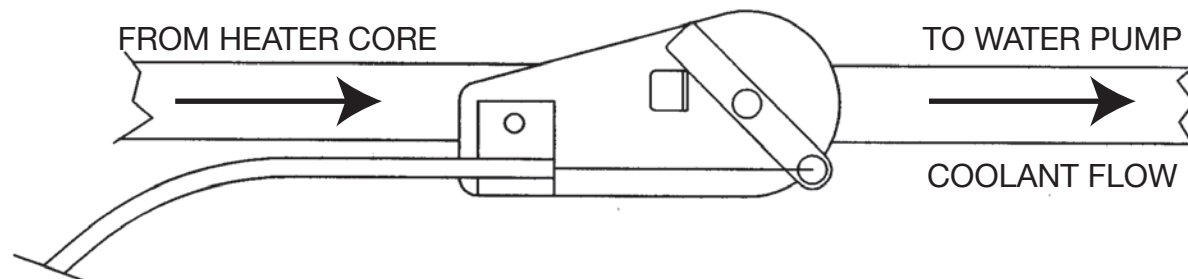
IMPORTANT

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!**

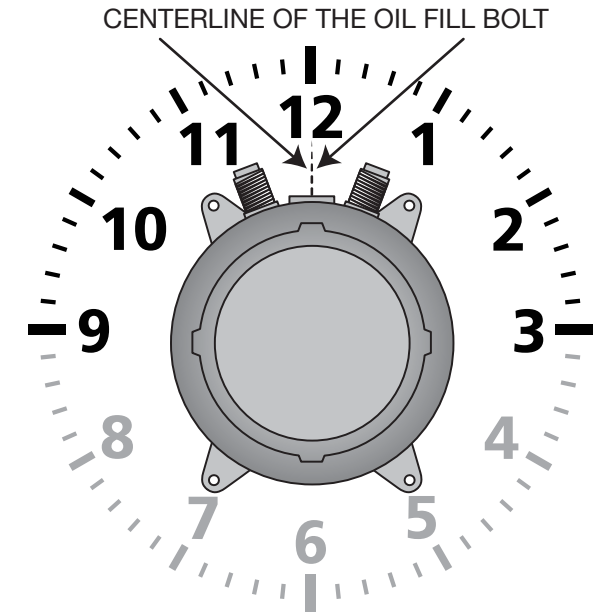
RECOMMENDED TEST CONDITIONS: (After system has been fully charged and tested for basic operation)

- 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

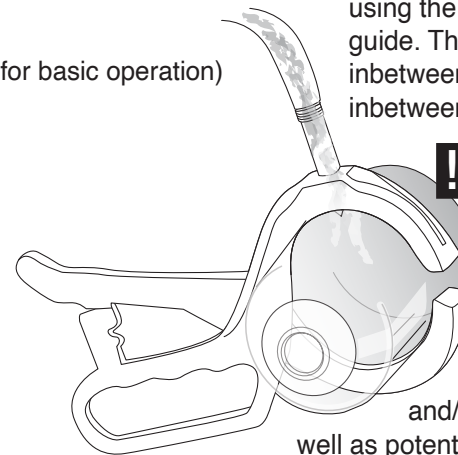
ACCEPTABLE OPERATING PRESSURE RANGES:

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.

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)...

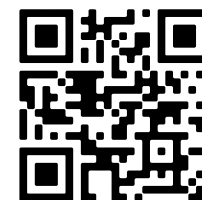
There is a blockage in the system. Remove hoses and blow compressed air through in both directions. If pressures don't change its possible that your expansion valve is stuck closed and would have to be replaced.

*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

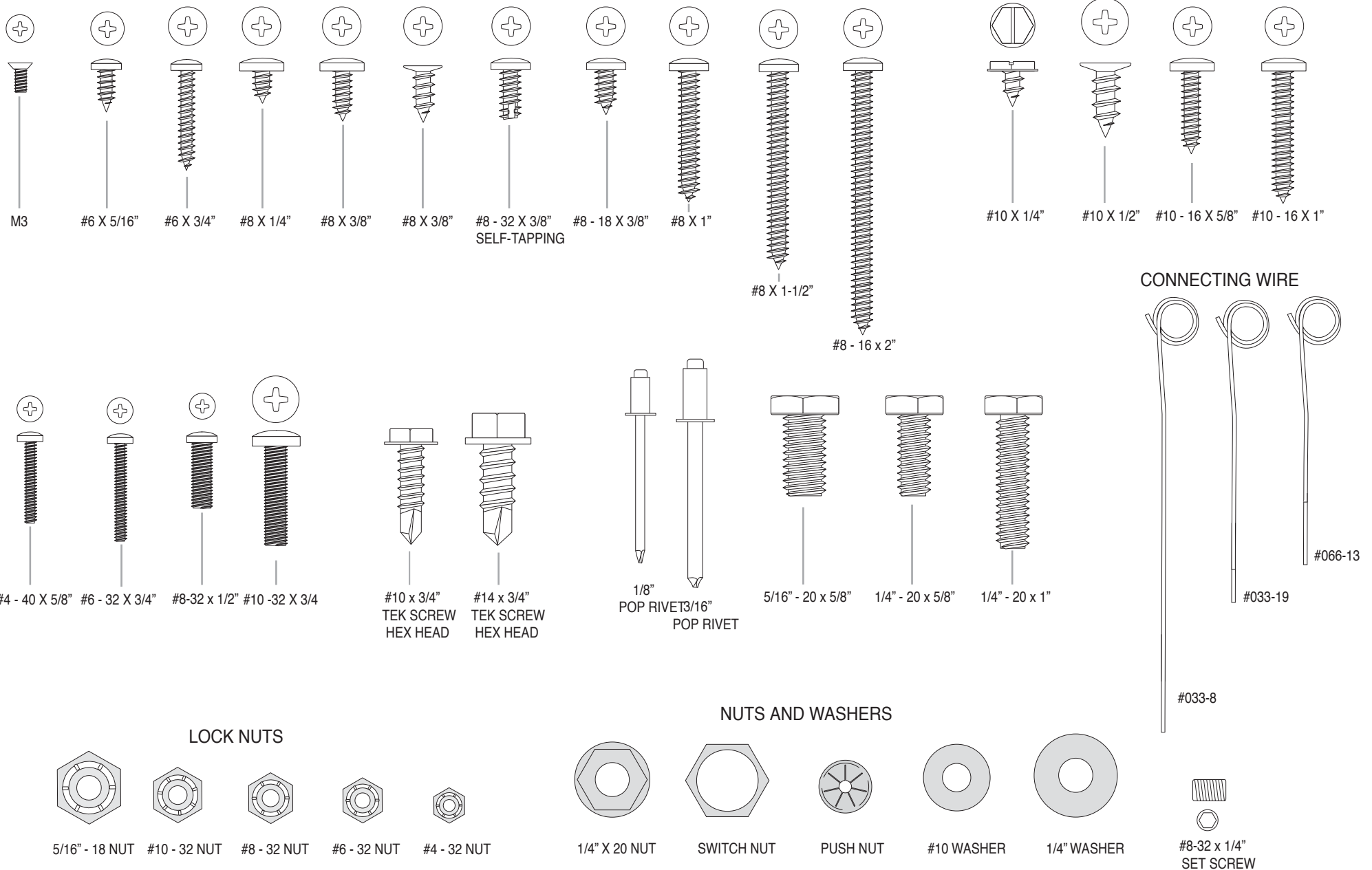
Get the technical support you want the moment you need it, with no wait times. Simply **SCAN** the **QR code** and be directly taken to our support section to troubleshoot all things A/C.



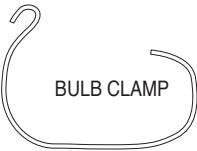
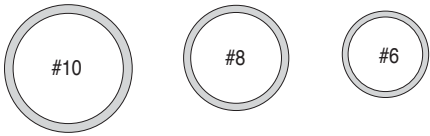


Classic Auto Air Hardware Reference Guide

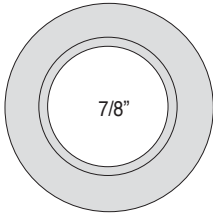
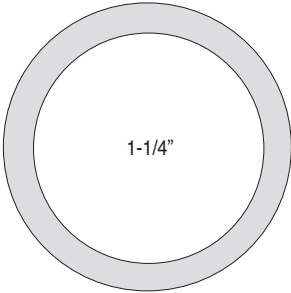
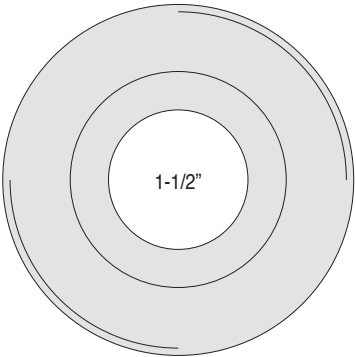
This is our basic line-up of hardware. No single kit will not contain all of these, but you can use this guide to match-up hardware for shape and size (all of these are actual size.)



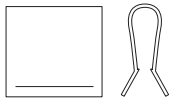
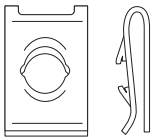
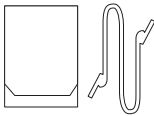
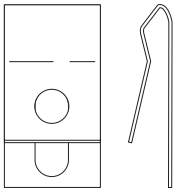
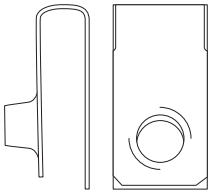
ORINGS



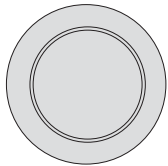
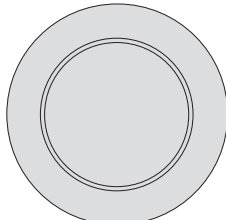
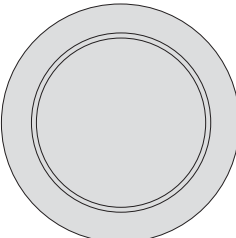
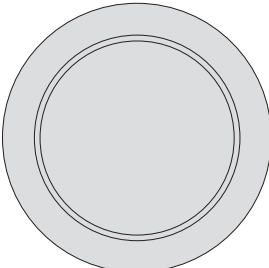
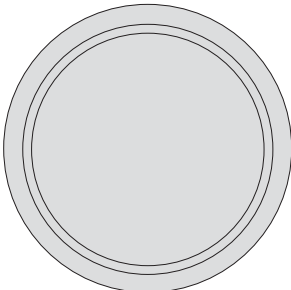
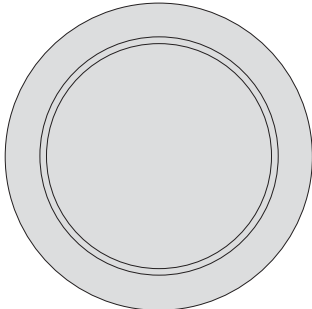
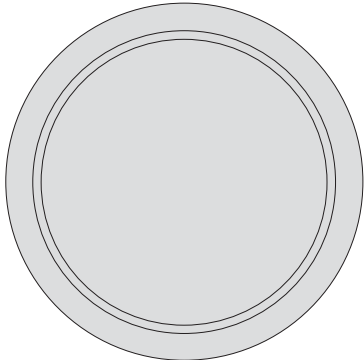
GROMMETS



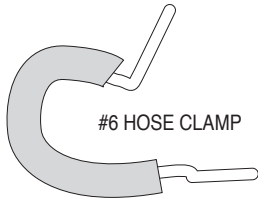
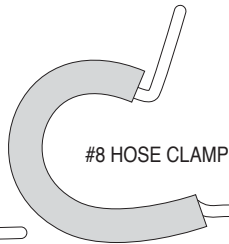
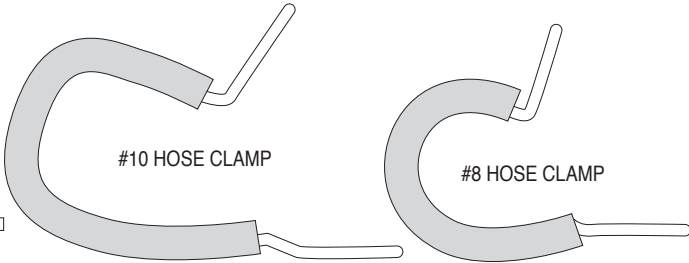
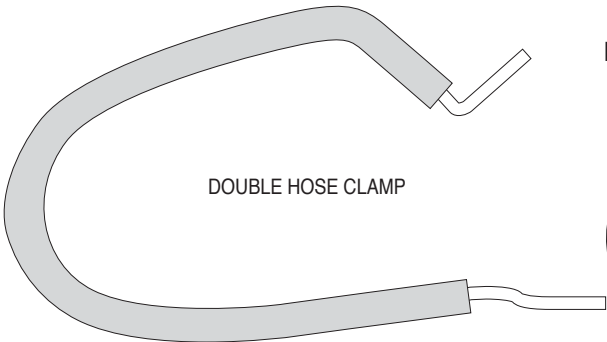
CLIPS



HOLE PLUGS



HOSE CLAMPS

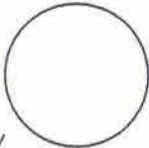


TEMPLATE FIREWALL

TEMPLATE FOR DRAIN TUBE LOCATION

⊘ HOLES
DRILLED
FOR EVAP,
MOUNTING ⊘

3/4"
HOLE



DRILL (4) HOLES 9/32 DIA

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