

" THIS ARTICLE IS INTENDED FOR YOUR REFERENCE ONLY.

ACTUAL PARTS, YEARS AND BODY STYLES CONTAINED

IN THIS ARTICLE MAY DIFFER SLIGHTLY FROM YOUR APPLICATION. "

1955-57 VINTAGE AIR CONDITIONING GEN IV AND GRIFFIN CROSS-FLOW RADIATOR INSTALLATION

This article will cover the best of both worlds: keeping your engine cool and keeping yourself and your passengers cool! The improvements made in these two areas in the last year alone are astounding. The all new Gen IV air conditioning unit from Vintage Air includes a new design coil that cools even better than earlier designs. Blower speed and volume has been increased, and best of all, this unit uses no cables or vacuum for operation – it is fully electronic and computer controlled! In addition to the Vintage Air unit, we will update the installation of our cross-flow radiator kit from Griffin and show how easily it adapts to the air conditioner. This article will cover the installation in a 1955, but procedures for 1956 and 1957 are similar.

#51-104



Parts Needed:

- | | |
|--------|--|
| 51-98 | 1955 Gen IV Vintage Air System With Pro-Line [†] Upgrade* |
| 51-99 | 1956 Gen IV Vintage Air System With Pro-Line [†] Upgrade* |
| 51-100 | 1957 Gen IV Vintage Air System With Pro-Line [†] Upgrade* |
| 51-101 | 1955 Gen IV Servo Operated Vintage Air Conditioning Unit
Use With Griffin Cross-Flow Radiator Kit |
| 51-102 | 1956 Gen IV Servo Operated Vintage Air Conditioning Unit
Use With Griffin Cross-Flow Radiator Kit |
| 51-103 | 1957 Gen IV Servo Operated Vintage Air Conditioning Unit
Use With Griffin Cross-Flow Radiator Kit |
| 51-104 | 1955 Gen IV Servo Operated Pro-Line [†] Vintage Air
Conditioning Unit Use With Griffin Cross-Flow Radiator Kit |
| 51-105 | 1956 Gen IV Servo Operated Pro-Line [†] Vintage Air
Conditioning Unit Use With Griffin Cross-Flow Radiator Kit |
| 51-106 | 1957 Gen IV Servo Operated Pro-Line [†] Vintage Air
Conditioning Unit Use With Griffin Cross-Flow Radiator Kit |

[†]Pro-Line Includes Polished Compressor & Brackets *Condensor Included

Parts Needed: *Continued*

18-309	Cross-Flow Radiator with Electric Fans, Wiring Harness, Aluminum Condenser, Over Flow Tank and Polished Radiator Cap	\$1129.99	\$1073.49 kit
18-310	Cross-Flow Radiator	\$589.99	\$560.49 ea.
18-314	A/C Condenser for Cross-Flow Radiator	\$172.99	\$164.34 ea.
18-311	Dual Electric Fans for Cross-Flow Radiator	\$374.99	\$356.24 ea.
18-312	Wiring Harness and Relays for Electric Fan Kit	\$89.99	\$85.49 kit
18-313	Overflow Tank	\$79.99	\$75.99 ea.
18-315	Polished Aluminum Radiator Cap	\$12.99	\$12.34 ea.
18-316	Aluminum Fan Shroud for Cross-Flow Radiator	\$129.99	\$123.49 ea.
18-26	Small Block Molded Lower Radiator Hose	\$23.99	\$22.79 ea.
18-308	Molded Upper Radiator Hose	\$18.99	\$18.04 ea.
18-202	Big Block Lower Radiator Hose	\$14.99	\$14.24 ea.
19-70	6-Cyl. Position 700R4 Cooler Lines	\$49.99	\$47.49 set
19-41	6-Cyl. Position TH350/TH400 Cooler Lines	\$49.99	\$47.49 set
19-60	Transmission Cooler Line Fittings	\$4.99	\$4.74 pr.

To order parts call 1-800-456-1957 or visit ClassicChevy.com

Tools Needed:

Assorted Wrenches from 1-1/8" to 1-1/4"	Box Knife
Phillips Screwdrivers	Wire Crimpers/Cutters
Straight Screwdriver	Butt Connectors
	Electric Drill and 1/8" Drill Bit

Time Frame:

16 Hours



Photo #1: Begin by removing the entire original heater system, glove box, radio and heater control panel inside. Also remove the original defroster duct. You may find it easier to complete this installation with

the front seat removed, but it is not necessary. Completely disassemble the original deluxe heater control panel except for the two original heater levers.



Photo #2: Install the two new horizontal blower and mode levers from the kit using the 5/16" bolt, washers, nylon spacers and nut provided.



Photo #3a & 3b: Using a 1/8" drill bit, remove the original rivets that secure the upper rear cable bracket to the panel cage and discard the bracket. Install the new slider switch bracket using the two #6-32 machine screws and nuts provided.



Photo #4a & 4b: There are four identical slider switch PC boards and cast metal holders. These assemblies attach to the control panel and will control the computer ECU on the air unit. Attach two of the assemblies to the new slider switch bracket. Make certain the loop ends of the new control levers engage the levers on the slider switches. If the levers drag on the sides of the metal holders, slightly bend the levers in or out until proper clearance is achieved. Secure the assemblies with the #8 x 1-1/4" self-tapping screws and nylon cupped washers. Tighten the screws until they are just barely snug. Do not over tighten or the PC boards may be damaged.

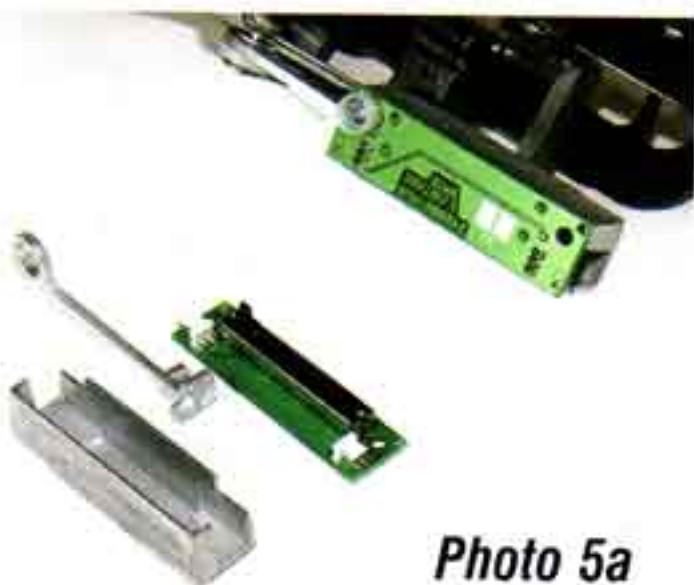


Photo 5a

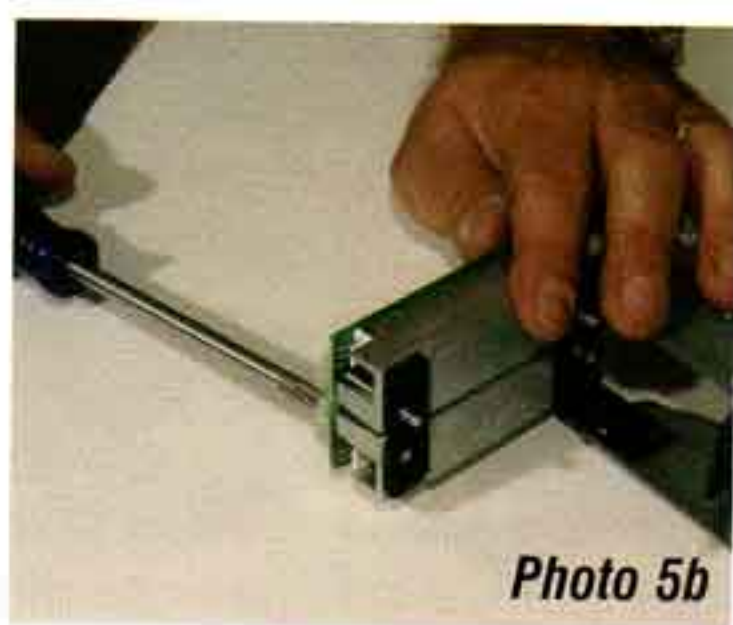


Photo 5b

Photo #5a & 5b: The two remaining switch assemblies attach to the bottom of the panel just like the two previous ones.

Additionally, there is a set of metal pushrods that engage the original vertical control levers and the new slider switches. Install the switch assemblies with the #8 x 1-1/4" self-tapping screws and nylon cupped washers provided. Do not overtighten. Make sure the loop ends of the metal pushrods engage the control levers on the panel. Secure these pushrods to the levers with the original screw, nylon spacer and small flat washer provided. Secure the rear of the switch assemblies with the small flat bracket and #8 x 1-1/4" self-tapping screws and cupped nylon washers provided.



Photo #6a & 6b: Install the new air conditioning lens faceplate into the chrome heater face using the original steel backing plate. You will want to wait to secure the face to the panel assembly and reattach the original knobs until after it is installed in the dash. Check for proper, free operation of all levers. Also make certain the new slider switches are operating properly. Your newly refurbished panel is now complete!

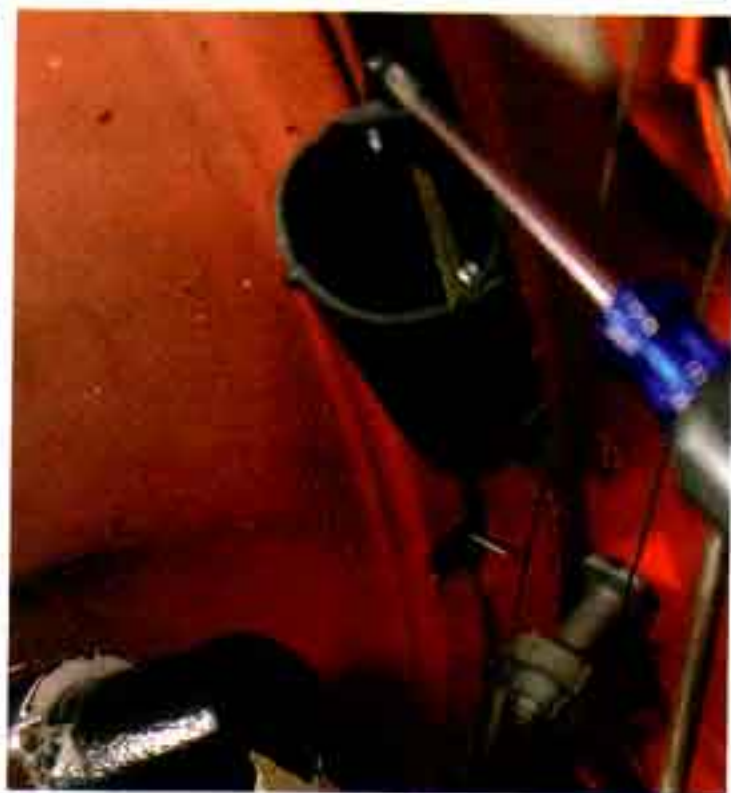


Photo #7a & 7b: Install the new ABS defroster ducts on each side by sliding the metal bracket on each into the original defroster slots in the dash top. The duct hose openings should be oriented toward the center of the car. Secure with the #8 x 1/2" sheetmetal screws provided.

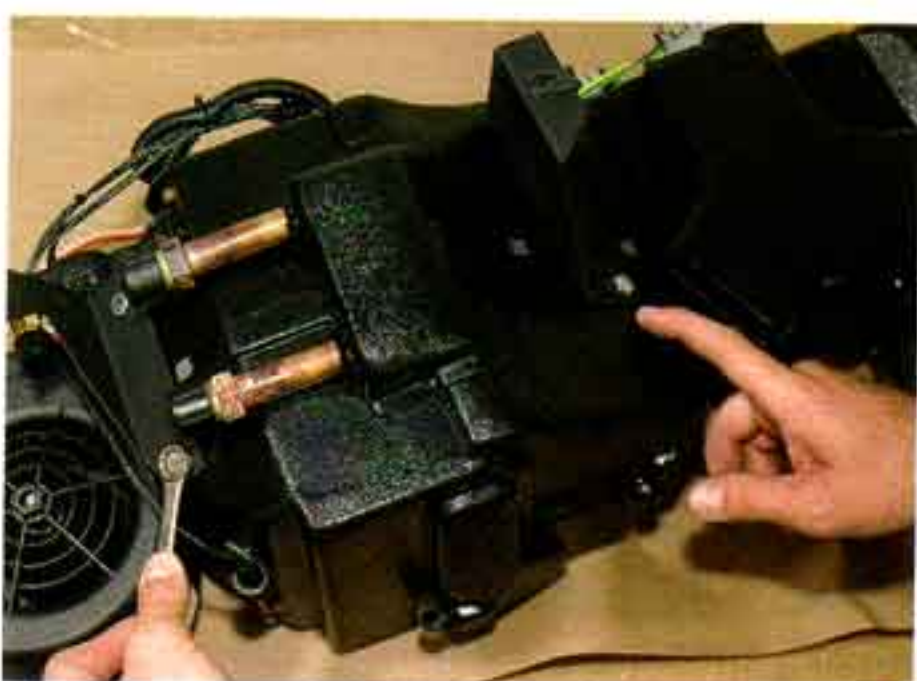


Photo #8: Attach the two evaporator rear support brackets to the evaporator with the 1/4 x 20 x 1/2" hex head bolts provided. These brackets will secure the evaporator to the firewall once the unit is in the car.



Photo #9a, 9b & 9c: Install the proper size O-rings provided on the ends of the suction line, liquid line and two heater lines. Lubricate the O-rings with a small amount of assembly lube provided with the kit. Install and tighten each line on the evaporator assembly. When tightening the lines, be sure they are properly oriented and use a wrench on each side of the fitting.



Photo #10: After the fittings are tight, wrap the exposed suction line fittings with the sticky press tape provided. This will improve the efficiency of the unit and help prevent water condensation or sweating on the tube.

Photo #11: The original fresh-air intake hole above the left hand kick panel vent on 1955-56 cars should be blocked off at this point. We used a flat piece of sheet metal trimmed to the right size and secured it with the original blower adapter screws. Install the evaporator assembly in the dash. You may wish to remove the center air vent and plenum from the unit to make installation easier. We found it best to install the unit by inserting the driver side of the unit under the dash first and then moving the entire unit up and to the center. Make certain the four heat and air conditioning tubes pass through the original heater motor hole in the firewall. This is where a second person really helps! Install the flat dash to evaporator bracket in the glove box area with the 1/4-20 x 1" bolt and washer provided. Also install the two 1/4-20 x 1" bolts and washers from the engine compartment side into the evaporator brackets installed earlier. It will require some shifting and repositioning and alignment in order to install and tighten these fasteners. Reattach the center plenum and air vent and tighten all hardware.



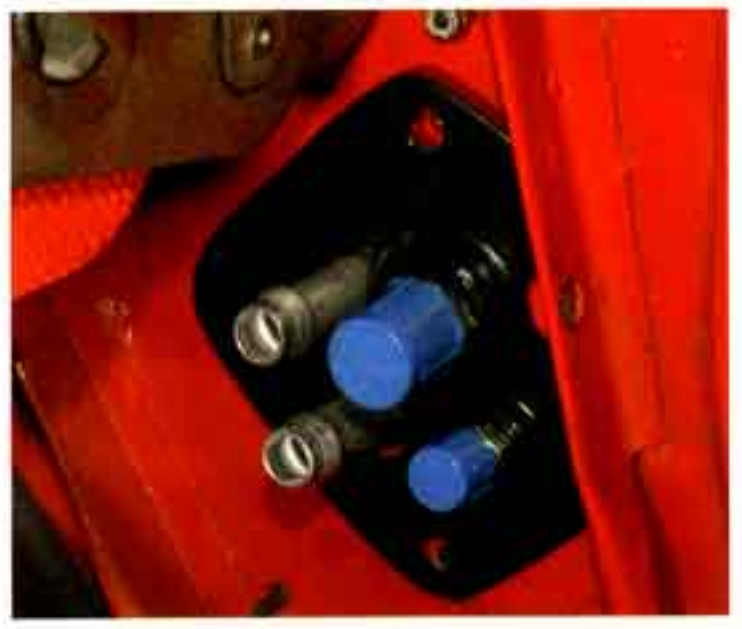


Photo #12a & 12b: Install the new firewall cover over the protruding evaporator tubes and secure with the push retainers provided. The kit also comes with some rubber plugs to block off the original heater core holes in the firewall.



Photo #13a & 13b: Locate the larger diameter duct hose provided with the kit. It will be necessary to cut this hose into two pieces. Route the uncut hose from the evaporator outlet to the driver side corner at the kick panel where the dash outlet will be located. After determining the length needed to reach this area, cut the hose with a sharp knife and your wire cutters. The remaining portion should be routed to the passenger side. Push the duct hoses firmly onto the evaporator and the corner outlets. Owners



of 1957 cars may decide to use the new reproduction dash outlets #51-10 in place of the supplied ones.



Photo #14a & 14b: Install the outlets by inserting the flanges of the housing between the kick panel and the kick panel retainer. Secure to the kick panel using a #8 x 1/2" sheetmetal screw. If the ducts do not fit the contour of the dash properly, you may wish to drill and add an additional screw to hold it in place. Drill a 5/8" hole through the toeboard on the passenger side 1" lower than the level of the drain nipple in the bottom of the evaporator. Install the flexible drain tube and pass it out through the toeboard.



Photo #15: Using the same procedure for the routing large diameter duct hose, run the smaller duct hose from the top of the evaporator to each of the dash defroster outlets.

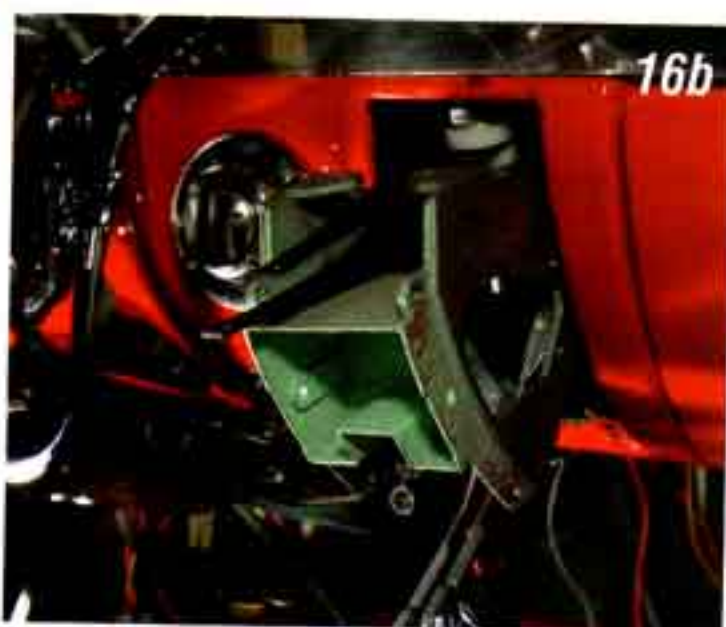


Photo #16a, 16b & 16c: Plug the wiring harness into the control panel and pass the unit through the glove box opening and back through the dash heater control opening. Install the face plate and knobs, secure the control panel to the dash. Attach the other end of the control panel wiring harness to the plug on the ECU module on the passenger side top of the evaporator. Also plug in the lead from the blower motor to the ECU.



Photo #17: Our Pro-Line Upgrade kit includes a polished aluminum compressor and alternator bracket as well as a polished compressor. The main bracket bolts to the two upper water pump mounting holes with 3/8" x 2-1/4" bolts and flat washers with a 3/8" spacer between the bracket and water pump on the driver's side and a 1/8" spacer on the passenger side.



Photo #18a & 18b: The left and right elbow brackets mount to the back of the main bracket and attach to the front intake bolt on each side. The elbow brackets are bolted to the main bracket with two counter sunk 5/16" Allen head bolts. Spacers are provided for installation between the intake manifold and the main portion of the bracket for proper alignment.

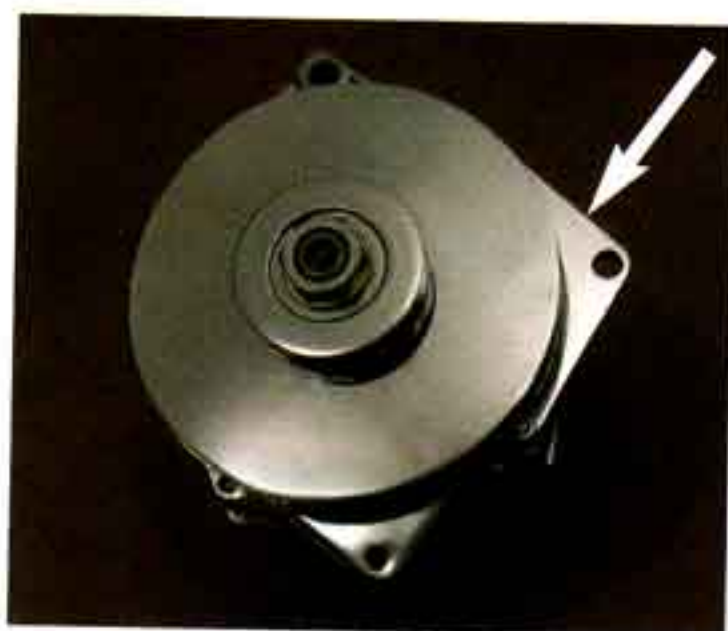
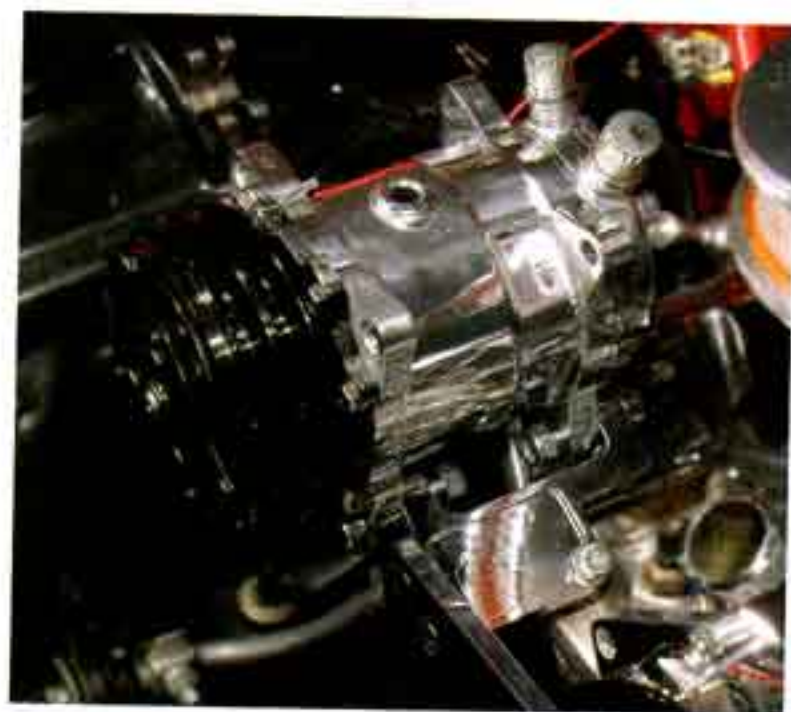


Photo #19a & 19b: Attach the mounting tab to the alternator and attach to the main bracket.



Photo #20a & 20b: Install the compressor with the two 3/8" Allen head bolts and lock nuts. Install the alternator adjusting link on the front side of the main bracket and the compressor link on the back side of the main bracket.



The rod ends are held to the alternator and compressor with 3/8" Allen bolts and lock nuts. They are attached to the main bracket with 3/8" Allen shoulder bolts and lock nuts.



Photo #21a & 21b: Install the two compressor hard lines after lubricating and installing the proper size O-rings.



Photo #22: Once the air conditioner has been charged and tested (after the underhood plumbing in the next few steps is done), install the 2-piece ABS glove box through the glove box opening in the dash and install the glove box door. Also install any other dash items that were removed earlier.



Photo #23a & 23b: Now we will begin the installation of the cross-flow radiator and finish the underhood plumbing on the air unit. If your car is equipped with an automatic transmission, 6-cylinder transmission cooler lines must be used with the cross-flow radiator. Use #19-41 for a TH350/TH400 and #19-69 for a 700R4 transmission. The original V8 radiator core support has a baffle on the bottom that can be removed by bending it back and forth a few times. This is required to clear the new radiator.



Photo #24a & 24b: The stock horns, voltage regulator and horn relay will need to be relocated closer to the inner fenders to allow for the wider radiator core.



Photo #25a & 25b: Using the template supplied with the cross-flow radiator, mark the driver's side filler panel and drill a 2-1/8" hole using a hole saw. Once the hole is drilled, clean up any sharp edges with a file and touch up the paint.



Photo #26: This next step is far easier if the grille is removed from the car. A template is supplied with the radiator to drill a hole in the passenger side radiator lower filler panel to allow the condenser lines to pass through and connect to the receiver dryer and compressor lines. Using a hole saw, drill a 2-1/8" hole in the panel.

Photo #27: The cross-flow radiator #18-309 comes with a 1/2" pipe bung on the driver's side. Install the sender for the electric fans in this opening. Install the fittings #19-60 for the automatic cooler lines into the lower radiator tank.



Photo #28a & 28b: On 1955-56 cars, there is not enough room between the front of the condenser and the back of the hood latch striker plate and support. We trimmed the front opening of the radiator core support slightly so the electric fan shroud would fit under the top of the core support giving us 7/16" more clearance.



Photo #29a, 29b & 29c: The radiator and electric fans can be installed as one unit, the condenser will need to be installed after the radiator is bolted into place. Bolt the cross-flow to the stock V8 core support using the original bolts. If a tubular core support #54-73, 54-74 or 54-75 is used, the V8 position flanges need to be used. Connect the transmission cooler lines to the new fittings #19-60 in the lower radiator tank.



Photo #30a & 30b: The outlet on the radiator for the lower radiator hose is in the stock location so a stock #18-26 lower hose can be used on a small block. If a big block engine has been installed, the lower outlet on the radiator will need to be trimmed to match up with the lower radiator hose #18-202. Install the upper and lower molded radiator hoses.



Photo #31a & 31b: With the radiator in place, the condenser may be installed. The hard lines from the condenser pass through the new hole in the passenger side filler panel. Secure the condenser to the front of the radiator with six #8 machine screws provided with the radiator kit.

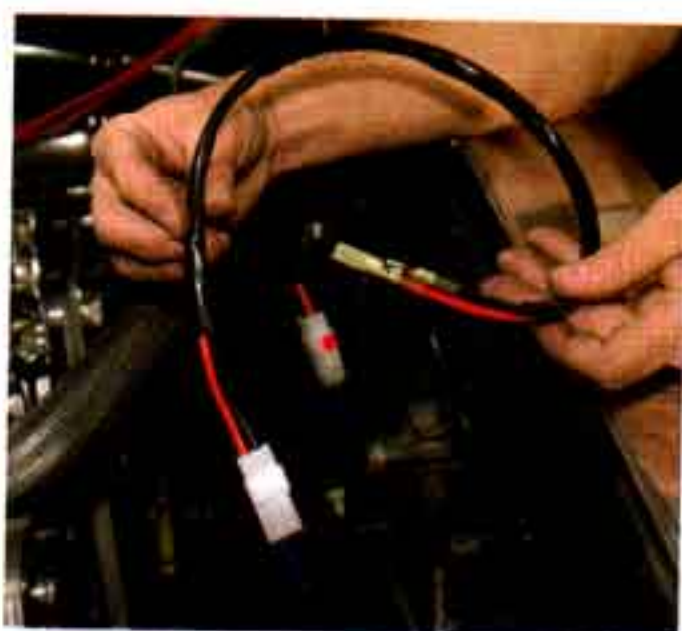


Photo #32a & 32b: The fan wiring harness kit includes two short leads with a red and black wire that plug into the electric fans. This will allow you to unplug the fans and remove them if you ever need to.

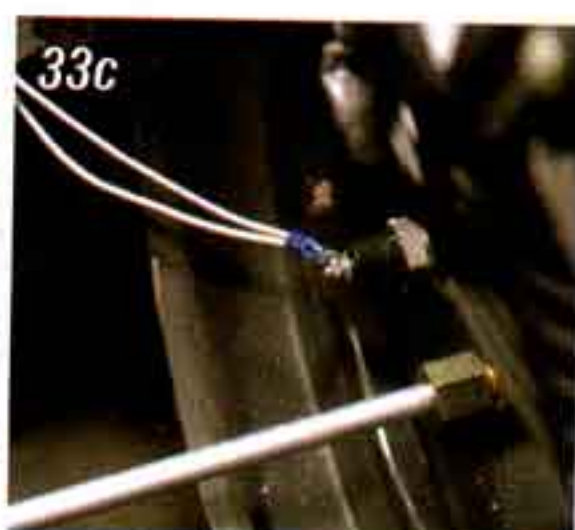


Photo #33a, 33b & 33c: The relays for the electric fans can be mounted anywhere on the car. We mounted ours up under the dash to keep the engine compartment nice and clean. The two red wires and two gray wires from the relays need to be routed out to the electric fans. The yellow wire on the relay needs to be connected to full-time 12-volts. The orange wire should be connected to ignition on 12-volts. The two gray wires should be butt connected together and connected to the temperature sender on the radiator.



Photo #34: The red wires in the harness connect to the red lead wires on the fans. The black wires from the fans should be connected to a good ground.

Photo #35: Mount the overflow tank included with the kit to the front of the filler panel on the passenger side.



Photo #36: Once the radiator and condenser are in place, the grille can be reinstalled. This is where it gets tight on 1955-56 cars. The hood latch striker plate and support need to be trimmed to give enough clearance with the condenser.



Photo #37a & 37b: The small fitting on the underdash evaporator unit is the liquid line



that attaches to the receiver dryer. The air conditioning kit includes an aluminum hard line that connects the evaporator and the inlet side of the receiver dryer. The receiver dryer mounts to the back of the passenger side radiator filler panel. The outlet side of the receiver attaches to the small fitting on the condenser using the #6 hose with the 90 degree fittings on each end.



Photo #38a & 38b: The blue wire from the evaporator under the dash needs to be connected to one of the terminals on the binary switch on the liquid line. The other terminal on the binary switch connects to the compressor with the supplied wire.



Photo #39a & 39b: The larger fitting from the evaporator attaches to the larger fitting on the compressor using the #10 hose with the straight fitting on one end and the 90-degree fitting on the other. The small fitting on the compressor connects to the large fitting on the condenser using the #8 hose with the 45 degree fitting on each end.



Photo #40: The electric heater control valve supplied with the air conditioning kit should be installed inline in the upper heater hose. The upper heater hose connects to the top barbed fitting on the heater core and to the

intake manifold nipple. The other heater hose connects to the lower barb on the heater core and to the water pump. The heater control valve has two male spade connectors. One terminal connects to the green wire from the new air conditioning harness, the other terminal should be connected to a good ground using the supplied white wire.

Photo #41: With all the hoses connected, fill the cooling system with antifreeze suitable for use with an aluminum radiator and distilled water. Start the engine and check for any leaks. Watching the temper-



ature, allow the engine to warm up. The electric cooling fans should turn on at 185° and than turn off once the engine cools down to 165°.

Take your car to a certified air conditioning garage and have the system charged. Enjoy your nice cold air!

Good Luck! 