Air conditioning, you’ve got to have it! If you live in a state where it gets hotter than 80 degrees during the summer the first thing you hit when you jump in that car is the A/C. In the following article we will install a new GEN IV Air Conditioning System into a 1950 Chevy Fleetliner. Working with Vintage Air we have developed the most complete A/C kit for the 1949 to 1954 cars. Our kits will include the new GEN IV all electronic servo evaporator unit, the A/C hoses and fittings, a Sanden compressor with mounting bracket, a condenser kit with mounting brackets and a receiver dryer.

**Parts Needed:**
- 851001 Vintage Air GEN VI Air Conditioning System
- 211-21 Chrome Double Groove Crankshaft Pulley
- 211-19 Chrome Double Groove Water Pump Pulley
- 18-509 5/8” Heater Hose With 90-Degree End
- 18-510 5/8” Molded Heater Hose

**Tools Needed:**
- 7/16” Wrench
- Philips Screwdriver
- Vise
- Hammer
- Drill With 1/4” Drill Bit
- Cutoff Wheel

**Time Frame:**
20 hours

**Photo #1:** First thing to do is to disconnect the battery. Always disconnect the negative cable first.

**Photo #2a & 2b:** To gain access behind the dash we will remove the panels and speaker grille from the dashboard. The panels and speaker grille are held to the dashboard with screws along the bottom lip of the dashboard. With the screws removed the panels and grille will slide straight down away from the dashboard. The top of the panels and speaker grille slip under the dashboard trim and have no retaining clips. The glove box door is held to the glove box hinges with four machine screws.

**Photo #3a & 3b:** Next we will remove the original heater and control panel. The heater control panel is held to the bottom lip of the dashboard with two 1/4” nuts.
Photo #4: The heater valve is held to the firewall with three Philips head screws. On our 1950 Fleetliner there were no heater hoses connected to the valve, so there must have been a past problem with the valve or core.

Photo #5a & 5b: The heater box is held to the firewall with nuts and bolts. Remove all the mounting hardware and heater assembly can be removed from the car. When we pulled the heater box down this mud dabber fell out of the defroster duct, wonder how long its been there.

Photo #6: Eckler’s Early Chevy Vintage Air unit includes a dummy empty evaporator unit for mocking up purposes. You can bang this empty unit around all you want and have no worries about damaging anything.

Photo #7a & 7b: The empty evaporator unit has all the same mounting locations as the loaded evaporator unit. We installed the supplied brackets from Vintage Air to the front and rear of the evaporator unit.

Photo #8: Position the evaporator unit so that the two floor heater outlets on the front side of the evaporator unit are centered over the transmission hump. Once we started to install the empty evaporator unit up behind the dashboard we found that the rear Vintage Air bracket will not work for this application so we removed it.

Photo #9: Next we found that the GEN IV evaporator unit would not fit between the firewall and the lower lip of the dashboard on our 1950 Chevy. Talking with the people at Vintage Air we found that the lower lip of the dashboard on a 1949 and 1950 Chevy would need to be trimmed about 1” to allow the GEN IV evaporator unit to fit up behind the dashboard. This little extra work will be well worth it to have the best air conditioning system on the market installed in our 1950 Chevy. We trimmed off 1” of the lower lip of the dashboard from under the right hand glove box door hinge to the left hand side of the dash tray panel.

Photo #10: We raised the evaporator unit so that the seam between the upper and lower case was even with the lower lip of the dashboard. This left us plenty of room between the top of the evaporator unit and the passenger side wiper transmission and linkage.

Photo #11: With the evaporator unit in place we used the front bracket as a template and drilled three mounting hole and anchored the unit to the firewall.
Photo #12: Using our vise and a hammer we made a simple elbow bracket out of 16 gage steel to anchor the back side of the evaporator unit to the bottom lip of the dash board. With the bracket painted black it will almost disappear. With the empty unit mocked up we are ready to install the real unit.

Photo #13a & 13b & 13c: Two heater hose fittings are supplied to connect the rubber heater hoses to the heater core. Lubricate the supplied O-rings and install the fittings onto the heater core. Next remove the front mounting bracket from the empty evaporator unit and install it onto the assembled evaporator unit.

Photo #14: The evaporator unit is sent with the expansion valve facing down and forward. The way we have decided to route our hose from the expansion valve we will need the valve to be facing straight up. Remove the insulation tape from the valve connection and using two wrenches loosen the connection and reposition the valve. We will re-tape the connection with the same insulation tape after running a vacuum just before charging the system.

Photo #15: We have removed the blower for now. This will gain use access to the heater hose connections with the evaporator unit installed.

Photo #16a & 16b: The heater hose fittings fall dead center of the original hole in the firewall for the fresh air vent. The upper heater hose fitting is just above the hole.

Photo #17: Our fresh air hole in the firewall was blocked off with a piece of aluminum. We will use the piece of aluminum to anchor the bulk head fittings for the A/C hoses and for the pass through for the heater hoses.

Photo #18a & 18b & 18c: The GEN IV kit includes a #6 and #10 bulk head fittings. These fittings work great and look super clean when passing a hose from the one side of the firewall to the other.
**Photo #19a & 19b:** We have cut the #6 and #10 hoses to length for the under the dash hoses. Make sure the hoses are not kinked when installed and are clear of any moving parts under the dash like the wiper transmissions and linkage. For the smaller #6 hose we are using the #6 bulk head fitting at the firewall and a 90-degree fitting at the expansion valve. For the larger #10 hose we are using the #10 bulk head fitting at the firewall and a straight fitting at the evaporator unit.

**Photo #20a & 20b & 20c:** For the upper heater hose from the heater we will use #18-509, this hose will connect from the heater core to the heater valve in the engine compartment. For the lower heater hose we will use #18-510, this hose will connect from the heater core to the water pump.

**Photo #21:** The A/C fittings will need to be crimped onto the A/C hoses with a crimping tool, most auto parts stores have this tool. Make sure the fittings are oriented properly so that when the hoses are installed for the final time they are not in a bind.

**Photo #22a & 22b:** Next install the supplied grommets in the holes for the heater hoses and install the two heater hoses and A/C hoses. Make sure to lubricate and install the O-rings on the A/C fittings.

**Photo #23:** Our project car has the alternator and power steering pump mounted on the drives side of the engine. The alternator is driven off the first groove of the water pump and crankshaft. The power steering pump is driven off the third groove of the crankshaft. We will have to install a double groove water pump and crankshaft pulley to drive the A/C compressor.

**Photo #24a & 24b & 24c & 24d:** The third groove pulley is separate from the single groove crank pulley. This is how Chevrolet achieved three grooves on the crankshaft for a short water pump, small block engine. We will add the third groove pulley to our double groove chrome crankshaft pulley #211-21 to create 3 grooves on the crank shaft.

**Photo #25:** We have installed our #211-19 double groove pulley on the water pump.
Photo #26a & 26b & 26c: The A/C compressor bracket bolts to the engine using the upper two water pump bolts and the front intake manifold bolts. It is not necessary to have cylinder heads with accessory holes.

Photo #27a & 27b: The compressor is held to the bracket with two 3/8” bolts and has an adjusting rod for adjusting the fan belt.

Photo #28: With the A/C compressor mounted we can connect the heater hoses. The lower heater hose from the heater core will connect to the water pump.

Photo #29a & 29b & 29c: The upper heater hose from the heater core will connect to the heater control valve and the valve to the intake manifold. When installing the heater control valve make sure the arrow on the valve is facing the heater core.

Photo #30a & 30b: The larger A/C hose from the firewall uses the supplied #10 straight O-ring fitting at the firewall and the supplied #10 130-degree fitting with the charging port at the A/C compressor. Once again cut the supplied hose to length, orient the fittings appropriately and have the fittings crimped onto the hose.

Photo #31a & 31b: The smaller A/C from the firewall uses the supplied #6 straight O-ring fitting at the firewall and a 45-degree fitting at the receiver dryer. An inline schrader valve is installed in this line for the low pressure cycling switch.

Photo #32: The receiver dryer can be installed anywhere inline on the smaller A/C hose between the firewall and condenser. The arrow on the receiver dryer will point to the firewall.

Photo #33a & 33b: The A/C condenser mounts in front of the radiator. We have removed the hood latch support, disconnected the wires at the junction block on the right hand side of the car and cut the spot welds loose on the wire conduit to gain access to the front of the radiator.
The condenser kit includes four universal brackets. The brackets attach to the tabs on the left and right side of the condenser and to the radiator core support.

The receiver dryer mounts inline on the smaller liquid line from the evaporator core under the dashboard to the smaller fitting on the condenser. With the fresh air vent system no longer being used we are going to hide the receiver behind the fresh air baffle on the passenger side of the car. We made a short line with 90-degree fittings on each end to connect the receiver dryer to the condenser.

The larger fitting on the condenser connects to the smaller fitting on the A/C compressor. We also routed this hose through the fresh air baffle.

A single A/C vent will mount to the bottom of the dashboard in each corner and a dual vent in the center. The vents are held to the bottom of the dashboard with self tapping screws. Connect the vents to the evaporator core using the supplied duct hose and make sure to zip tie the hoses to the vents and evaporator core.
There is a gray wire with a female spade connector. This wire will be used later to program the computer.

The main wiring harness will plug into the GEN IV computer and will connect to a 12-volt source, ground, the blower motor, ignition switch, the heater valve and the low pressure cycling switch.

We connected the red wire to the large stud on the starter where the battery cable connects.

The red, green, white and blue wires will need to be routed into the engine compartment. The green wire from the main harness and white wire that is connected to the ground under the dashboard will connect to the heater control valve.

The main wiring harness will plug into the GEN IV computer and will connect to a 12-volt source, ground, the blower motor, ignition switch, the heater valve and the low pressure cycling switch.

The jack with the red and white wire will plug into the jack from the blower motor. The violet wire will connect to a “key on” power source from the ignition switch.

The blue wire from the main harness will connect to one of the terminals on the low pressure cycling switch using the supplied female spade connector. Using the leftover blue wire and the supplied connectors, connect the other terminal on the low pressure cycling switch to the wire from the A/C compressor.

The white 10” white wire is supplied with a female spade connector on one end and a round lug on the other end. This wire will connect to a good body ground and to one of the terminals on the heater valve. There is a white wire in the main harness that also connects to a good body ground.

The switches can be mounted in several locations. You can drill holes in the dashboard and mount them anywhere you like; they can be mounted in the center of the center air duct or in the supplied switch panel. Our customer has asked us to use the switch panel and mount it to the left of the center air duct; this will be easy to reach while driving down the road.

We are installing the GEN IV System #851003 which includes the remote switch panel. There are three control switches used in the GEN IV System, one switch controls the fan speed, one for the temperature and one for the air supply location (floor, dash or defrost). The switches can be mounted in several locations. You can drill holes in the dashboard and mount them anywhere you like; they can be mounted in the center of the center air duct or in the supplied switch panel. Our customer has asked us to use the switch panel and mount it to the left of the center air duct; this will be easy to reach while driving down the road.
**Photo #49:** The GEN IV System #851004 includes the Vintage Air Upgrade switch panel. This panel is made of billet aluminum and can be mounted anywhere there is a flat surface. The knobs are illuminated which is a great feature.

**Photo #50:** With the panel mounted route the wiring harness over to the GEN IV computer and plug the jack into the GEN IV computer. Make sure the wiring is clear of any moving parts under the dashboard.

**Photo #51:** Next wrap the large fitting on the evaporator core with the supplied press tape. We did this last to keep the sticky off our fingers.

**Photo #52:** A drain tube is supplied that will attach to the nipple on the bottom of the evaporator unit and drain the condensation from the evaporator unit to the outside of the car.

**Photo #53a & #53b:** Right before we charged the system we installed the receiver dryer. With the receiver dryer installed the A/C shop ran a vacuum on the system for about 30 minuets and then filled the system with R134a freon. With our system charged, at an ideal in the shop we had 56 degrees blowing out of the A/C vents, 40-45 lbs. on the low side and right at 200 lbs. on the high side.

**Photo #54a & #54b & #54c:** With the hug evaporator unit behind the dashboard the left hand glove box door hinge hits the unit when you try to close the door. A simple modification to the hinge and we can now close the door. The door will only open about one third of the way, now we have a glove box delete.

**Photo #55a & #55b:** We also had to modify the ashtray. We attached the sides of the ashtray to the ashtray guide with two #6 sheet metal screws that cut off the excess of the ashtray.

**Photo #56:** The speaker grille and panel just to the right of the ignition switch installed with no modifications. Now enjoy the super cool A/C and the super hot heater. Good luck. ☀️