

Having a “Cool” Cat

Now that I’m older, having a fast car is not as important to me as having a comfortable car. When the car is comfortable, the Mrs. doesn’t mind going places in it like car events and such in the summer. Add in two young boys now and the need to keep the family comfortable takes an even higher priority.

Even though I don’t live in the south, the humidity here in Northeast, Ohio can often get pretty unbearable as well as the frequency of temperatures seeing the 90 degree mark and keeping on going. I decided with the latest rebuild of the Hero to make sure I incorporated an air conditioning system that far surpasses the performance of the original factory air set-up, especially since I never reconnected the stock system back up when I swapped engines ten years earlier.

While my original system worked OK, I knew that the aftermarket AC systems have come a long way since I used to travel the country as a kid in the rumble seat of my dad’s 36 Ford attending Street Rod events.

Background Info

There are many companies out there today in the aftermarket industry: Vintage Air (www.vintageair.com), Classic Auto Air (www.classicautoair.com), Old Air Products (www.oldairproducts.com), Hot Rod Air (www.hotrodair.com), Southern Air (www.southernrods.com), and Air-Tique (www.fortune3.com/Air-Tique/Products.html) are the major players in this industry.

Of these companies, I have learned that many guys favor the Classic Auto Air Products. Classic offers what they call a “Perfect-Fit” kit that is designed to bolt directly into either a 67-68 or a 69-70 Cougar. Their system uses electronic controls instead of vacuum to direct the air flow, and they designed it to work off your factory control panel. They also upgrade your original York type compressor to newer and more efficient Sanden compressor.

I have heard both good and bad things about Classic. Some say the system works great while others have had minor parts failures that Classic has had to replace. Others have said their tech line is not all that helpful and still another was not pleased with the installation that Classic did right at their facility. I believe Classic would be a good place if you just need to upgrade some of your stock components without having to replace the entire system.

I do not have any experience with Southern Air, Air-Tique, or Hot Rod Air other than I know Hot Rod Air will modify your stock control panel to control their unit as well.

I do however have a Vintage Air system in my car. So the rest of this article will be based on their system with specifics about my installation.

Vintage Air pioneered the aftermarket air conditioning industry starting in street rods and then moving to classics and also muscle cars. Their technical support is first rate, everything is made in house, and they have it in stock. They are constantly raising the bar with their technology. They are based in San Antonio, Texas. So if their systems can perform well there in the summertime, they can perform well ANYWHERE!

VA offers what they call a “Sure-Fit” Kit. Like the Classic system, it is designed to use as many of the stock mounting points as possible. It also could be controlled by your factory controls. While they don’t make a system specific to a Cougar, they do make one to fit the Mustang / Falcon / Rancho platform that I’m sure could be made to work in a Cougar. It uses vacuum to direct the airflow and it also includes block-off plates and adapters to allow this system to install as closely to a stock system as possible. I seriously considered this system for my car. (www.vintageair.com/download/pdf-singles/42.pdf)

But then I learned about VA's new Generation II units. While other companies now offer electronic controls to direct airflow, VA was the first with these Generation II systems. These systems allow you to "blend" both hot and cold air to achieve the perfect temperature just like modern car climate control. No vacuum is used anywhere, everything is electronic. It also allows you to run the air conditioning out of the floor vents or the dash vents or both. The same can be done with the heat. It also offers dehumidified defrost and is designed to run on 134a refrigerant.



A note on 134a refrigerant: Older systems that are retrofitted from R12 to 134a do not work as efficiently as those specifically designed to run on 134a.

The Generation II systems are offered in three sizes: Mini, Compact and Super Cooler. But this means that each is a "universal" application and some fabrication will be required over that of a "Sure-Fit" kit. After inquiring through VA's tech support, it was recommended that I order the Super Cooler based on the amount of window surface area our Cougars have. But I was hesitant at first because of space under the dash. So I made up a pair of box templates based on the rough dimensions of the Super Cooler and The Compact.



I found that the Super Cooler will fit and it is also smaller than the stock under dash evaporator system.

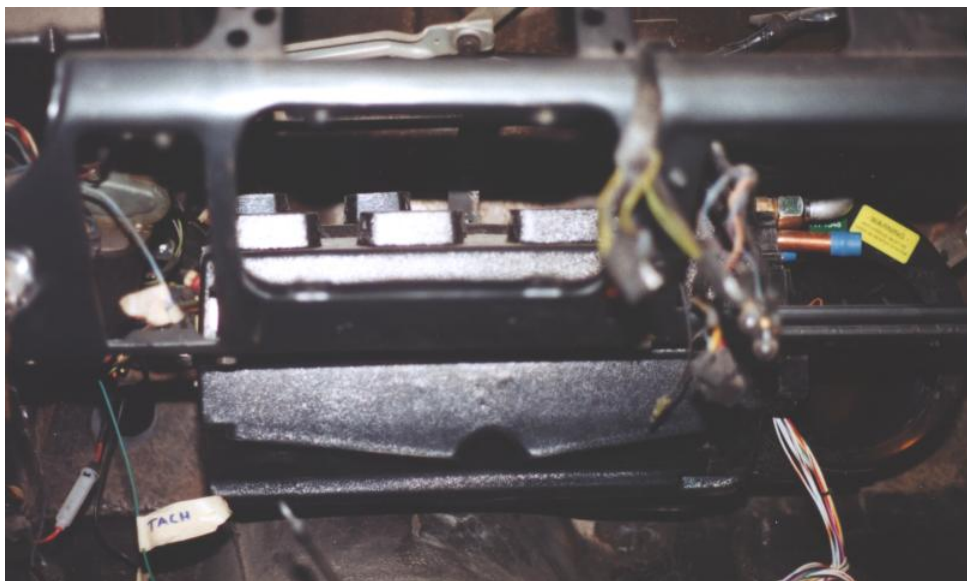
Overall, I ordered the Generation II Super Cooler with defrost, their largest ultra flow condenser, a hose kit, a dryer element, an optional billet control panel, an optional billet bulkhead fitting, and a binary switch. More details on all these pieces to follow... I did not order a compressor from them because I had planned to run a serpentine belt system using pieces and brackets from an 88 T-Bird. They did not offer a compressor at that time to fit my brackets so I utilized the T-Bird compressor. Either way it would have been a more modern Sanden style compressor. If I wanted to run a V-belt system or one of their serpentine belt systems, it would not have been an issue.



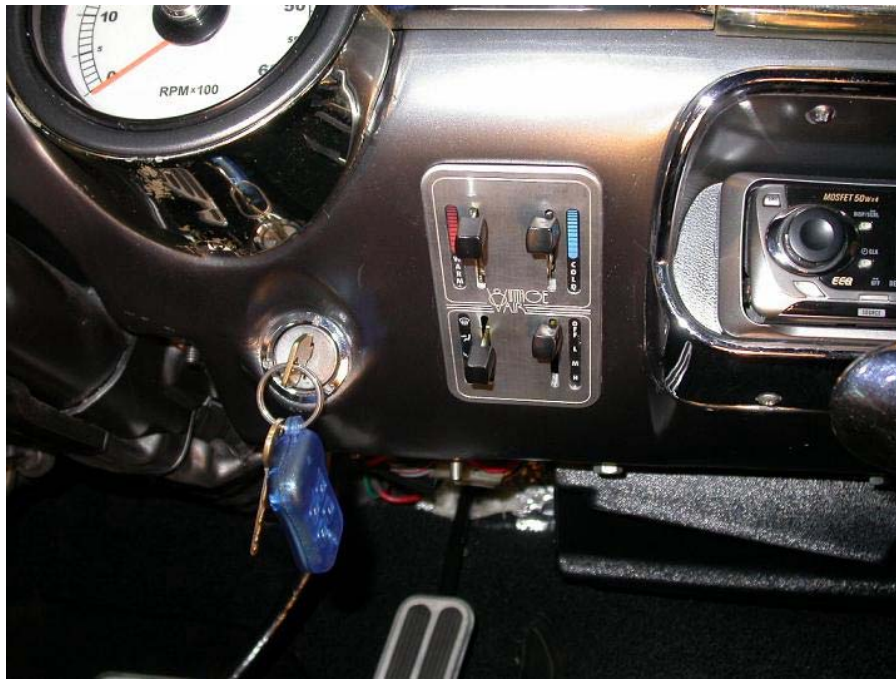
The instructions were very thorough and clear making them easy to understand. The components were very high quality from the construction of the case and the electronic servo motors to the wiring harnesses.

Installation

After all of the stock equipment and wiring was removed, the first step was to block off the air inlet from the cowl to the stock AC system since this unit does not use any outside air. At one point I considered adding a second fresh air vent to the passenger side for those days when you do not need AC. But I just ran out of room once everything got installed. I also made up a couple sets of brackets to position the under dash unit so that it will clear the windshield wiper motor, stereo, and everything else under the dash and allow the duct hoses to route without any kinks or sharp bends. Basically the unit rests on top of the transmission tunnel carpet and the brackets keep it from moving around. (In this picture the unit looks like it really hangs down low below the dash but that is an illusion. Looking through the window, the unit doesn't hang any lower below the dash than the stock unit.



I also did some fabrication to place the optional control panel in place of the factory ashtray. This involved welding the ashtray shut, smoothing off the area and cutting a smaller opening for the control panel. This control panel is optional because I wanted one that moved the controls vertically up and down as opposed to horizontally to fit the space where I was going to use it. They do offer a standard vertical panel, but I liked the look of this one better.



Then I was faced with needing to fill the opening of the original control panel yet still be able to use the factory vent on the driver's side. In fact, I retained all of the factory vents so that the system looked like it belonged there. I used a second passenger side duct bracket piece on the driver's side to fill that hole.



Following that I made some homegrown adapters to connect the VA flexible duct hose to the Cat's factory vents for both the A/C and defrost. Rubber plumbing adapters from Home Depot worked in every case except the rectangular center dash vent that got an adapter cut out of a foam block instead. In that case I had to put a round hose in a rectangular hole.

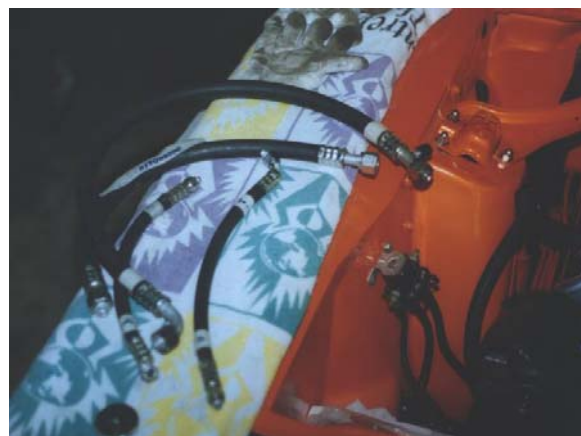
Moving under the hood, my goal for this part of the installation was to make it look as neat as possible. I fabbed up some custom brackets for the condenser since it is slightly smaller than the stock unit. You'll want to mount the condenser as close to the radiator as possible without actually touching it.



Since the universal kit didn't offer anything to block off the factory openings on the firewall, I made up a plate to do this and also incorporate the optional billet aluminum bulkhead to allow both the heater and AC hoses to pass through. This also cleaned up the engine compartment quite a bit.



The universal kit comes with plenty of hose for any application. Although, I had to cut all the hose to length and put the fittings on, it allowed me route all of them to best suit my application while still trying to make it look neat. Once I had all the hoses mocked up, I took them to a local radiator shop that also specializes in AC to get them crimped.



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In keeping with the clean installation theme, I also moved the dryer element to under the dash mounted on another custom bracket. It doesn't matter where this piece gets mounted as long as it's in the high pressure line between the condenser and the under dash unit. I stole this idea from a 32 Ford coupe I saw having upholstery installed at a local shop.



It's also a good idea to install a binary switch in the high pressure line. This will shut the system down to prevent damage in the event that there is pressure loss or too much pressure. It wires between the control panel and the compressor. I tried to "hide" that piece as best I could too. I have it in the high pressure hose right where it runs underneath the driver's side cowl brace.



They also offer a trinary switch for those applications where someone might want to have an electric fan come on every time the A/C is on.

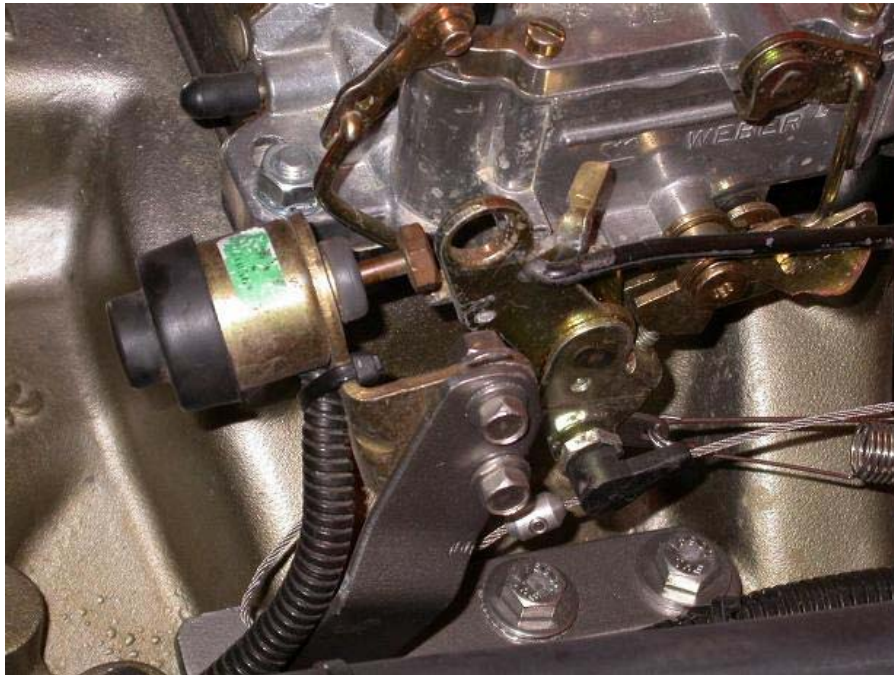
Once everything was installed, and I had the car out on the road, I took it to another shop to have the system evacuated and charged up. They also added dye to help detect if there are any leaks. There weren't any and I have yet to need to add any more refrigerant in the four years the system has been in the car.

So how does it perform?

When I was ordering the components, I had the thought in the back of my mind that the Super Cooler was going to be overkill for my application. It turns out that it kind of is. Not that it's such a bad thing, but this thing cools so well that we never run it on any fan speed other than the lowest setting. My wife is constantly asking me to dial in a little more heat because she's too cold. I did take a two-hour road trip by myself one 93° day so I could really test the system. My fingertips got numb and I could literally see my breath in the car. I was drinking a glass of Iced-T while driving and the ice cubes never melted.

Having the "bi-level" feature is really nice to spread the air around especially when running the heater. We use this car from early spring to late Fall so the heater does get used as well. I stumbled upon a trick where I adjust the dash AC vents on the driver and passenger sides to aim the heat at the side windows to clear them when the side windows fog up on a cold day. Modern cars have this feature from the factory.

But I did notice that when the compressor kicked on, it did drop the idle down a few hundred RPMs. I didn't want to adjust the idle higher just to compensate because it would then be too high when I didn't need it. I inquired through Edelbrock about a solenoid to kick the RPMs up when the AC is on. They do offer one but I would have had to sell my soul and first-born to them to get it. Instead I pulled a factory solenoid off a GM Quadra jet we had sitting on the shelf, fabbed up another bracket and wired it in to come on when the compressor is on. It works great and all but totally gets covered up by the drop base air cleaner housing when that's on.



Since I'm running a three row radiator, I didn't notice that the engine runs any hotter when the A/C is on. But I did notice that it would have a little bit harder time restarting when it was hot. So I added a one-inch spacer under the carb to cure that problem.

Final thoughts

If I was going to install another one of these systems in a Classic Cougar, I would still stick with Vintage Air and a Generation II unit but I would go with the Compact instead of the Super Cooler. I think it will fit easier and perform well enough to cool the car. I mean the Super Cooler fits fine. But it was a lot of work to make it fit fine. The biggest difference between this unit and the stock unit from a space standpoint, is that the heater and AC hoses do not stop at the firewall, they continue on to under the dash where they then connect to the evaporator unit. This takes up more room than I originally thought just based on the size of the unit itself.

I would also search a little longer to try and find a compressor mounting bracket that will allow the compressor to switch places with the alternator and mount on the passenger side of the engine instead of the driver's side. This way I wouldn't have to run the hoses completely across the engine compartment to get to the compressor, the condenser and back. I know the stock system did that. But mine is so far from stock now, it would have made for an even cleaner installation.

What about cost?

The system is not cheap. I don't have an exact dollar figure but I will say that for all the pieces including the optional things I ordered, the total bill was right around \$1100. That doesn't include labor since I installed it myself.

How long will it take?

I can't give a straight answer on that. I installed mine in phases as I was building the car. Mock-up and making brackets and laying out the system took the longest. Plus, I never installed anything like this on any car before. Final installation could have been done in a little more than a half-day. But I think if someone with decent fabrication skills could maybe install a system in a weekend start to finish because you don't have to smooth off the firewall and customize your ashtray opening to fit the control panel if you don't want to. I was in a position to be able to do that.

Obviously this article became very one-sided. But if you're not concerned with stock or even "stock appearing" in your Cat but want what I consider to be the best aftermarket AC and heat system, you can't beat Vintage Air. It is also the number one choice among Chip Foose, Troy Trepanier, Steve Strope, Bobby Alloway and Kyle Tucker, the professional car builders that I admire the most.