Air Apparent

An Obvious Upgrade For Any Classic Chevelle

By Chuck Hanson | Photography by the author

When Chevelles rolled off the assembly lines back in the middle of the muscle car wars, most were built for one main purpose: To deliver on-demand power to whoever was tappin' the throttle. Big-blocks, four-speeds, and four-eleven gears were the basic ingredients for getting' the job done on the track… or on the street. But things have certainly changed, some forty-odd years later.

The same guys who wanted monster power and eyeball-flattening acceleration are no longer satisfied with those simple parameters of performance. In the time since classic Chevelles ruled the earth, evolutionary changes have dramatically changed their descendents. Today's musclecars can start, stop, and turn in ways unimaginable back then, and do it all while keeping the occupants comfortably ensconced in climate controlled, plush interiors with their favorite jams played back through concert hall-quality sound systems. Not surprisingly, those same improvements are now being integrated into many Chevelles to give the owners classic muscle car looks and modern-day performance and conveniences. Fuel injection? Yes sir! Bigger brakes? You betcha! Tenacious suspension? Uh Huh! Deeply-bolstered seats? Gotta have 'em!

And while all the aforementioned items are most definitely aimed at enhancing performance, air conditioning is another cool addition that more and more builders are incorporating into their plans.

One of the most notable names in the automotive aftermarket air conditioning game is Vintage Air, in San Antonio, Texas. They've been building retrofit A/C setups for hot rods, street cars, and trucks for over 30 years, so when it came time to choose a system for our '70 Malibu, the decision was a no-brainer. We were especially impressed with their Gen IV Sure Fit series that was engineered specifically for our application. Not only is the entire system comprised of matched components to ensure maximum efficiency, but the kit also includes fully electronic controls, separate heating and cooling coils, plus all the internal air control doors are servo-operated for infinite temperature control and blending of the floor, dash and defrost outlets.

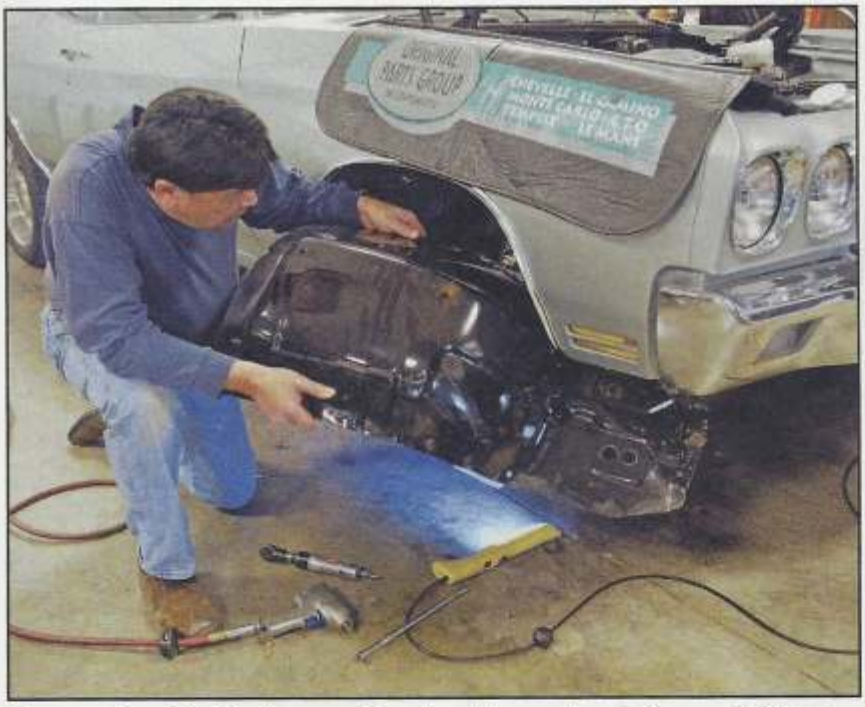
One of the things that we noticed during the installation was that the Sure Fit series is designed to bolt up with minimal modifications to the original firewall and existing hardware. This is important because it doesn't compromise the factory design and makes it easy to return everything back to stock in the future, helping retain the value of your investment. This is a very important consideration if selling your Chevelle is a possibility somewhere down the road.

While we were upgrading our '70 Chevelle with air conditioning, we also decided to include Vintage Air's FrontRunner accessory drive system into the buildup. This kit converts the archaic factory v-belt configuration into a compact, reliable and attractive serpentine setup that utilizes a spring-loaded tensioning system for trouble free operation. It comes with a new, compact Sanden compressor, a new Delphi-Saginaw power steering pump, and a 140-amp, one-wire alternator, plus a Stewart aluminum, reverse rotation water pump. It also includes ARP hardware. The entire system is supported completely by four stainless studs that install in place of the water pump mounting bolts, and a billet aluminum truss that mounts the accessories.

We also tapped Detroit Speed Inc. for their power steering pump hard line and flexible stainless line kits that allowed us to complete the connection between the pump and our steering box. Sure, you could probably cobble something together and make it work, but with ready-to-go hardware at your disposal, why even spend the time and trouble?

So, while adding new-age air conditioning to a middle-aged muscle car is certainly a worthwhile endeavor, it is also a fairly involved project that will consume the entire weekend, require a good assortment of hand tools, and access to a special "bead lock" crimping tool for installing connector fittings, or a shop that can do the job for you. Plan accordingly. For our installation we ended up removing the front seat, the complete dash, the passenger side front inner fender, hood, radiator, hood latch, and the grille assembly. With all that out of the way, we were finally ready to begin our installation.

Of course, once you've completed your Vintage Air installation, you'll still need to have a vacuum pulled on the system to evacuate it and determine if you have any leaks. If you have a leak-free system, you'll be ready to have R-134a refrigerant added. But unless you have vacuum pump and a refrigerant recovery and service unit at your disposal, you'll need to take your Chevelle to a professional automotive A/C shop to have them put the final touches to your new Vintage Air system. Be sure to follow the instructions and charge with 1.8 lbs. of 134a refrigerant. With that done though, the inside of your Chevelle will



•To access the original heater assembly and provide room to route the new A/C hoses, we removed battery, battery tray, and the right, front inner fender.

•With the outside heater box removed from the firewall, we directed our attention to the inside where we disconnected all the factory cables and wire connections before removing the inside heater box.

•After removing the front seat, the dash pad was removed next, and then the complete dash assembly. We set it aside for modifications that are covered in a sidebar.

•With the dash and heater assembly out of the way, we now have unimpeded access to the firewall and passenger side kick panel.

•After removing the passenger side kick panel, we used the template included with the kit to outline the cut for our new insert. We cut the opening using an air-powered body saw.

•The insert fits the new kick panel opening and will support the new A/C and heater hoses once they are routed.

GET IT

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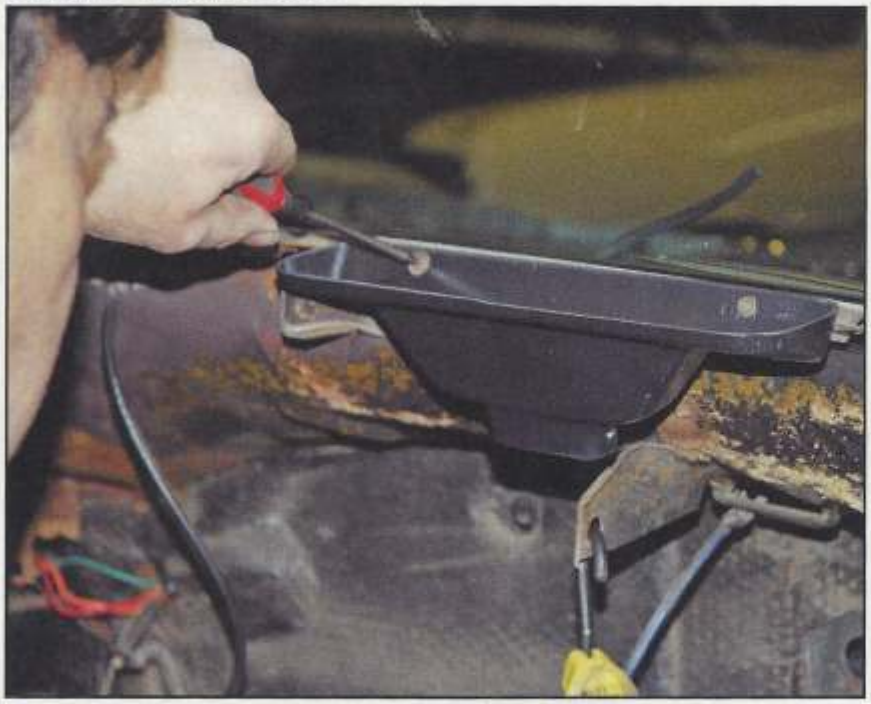


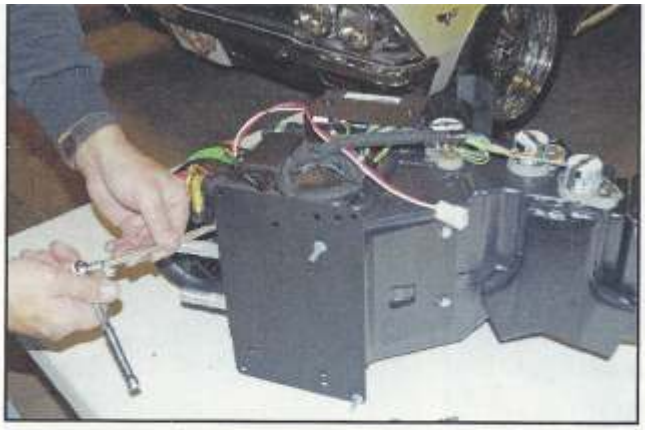
•New defroster ducts are also provided in the kit, and are easily screwed in place once the originals are removed.

•The Sure Fit kit includes a new heater/evaporator combo unit, and everything else needed to complete the installation. A microprocessor (ECU) mounted on top of the box itself controls all heating and cooling activities by signaling the electronic servos to do your bidding.

•This block-off plate installs where the original blower fan previously resided, and provides support for the hoses once they are routed through to the engine compartment.

•Now we can move back inside and begin routing the hoses through our new kick panel insert and up through the opening to the block-off plate mounted on the firewall fan opening. (Below left)

•Once the hoses are routed and the kick panel secured, the metal firewall plate is bolted in place using the mounting holes for the original heater assembly.



After attaching the heater hose fittings included in the kit, another metal mounting plate is attached to the heater/evaporator box. It is then positioned in place and secured to the newly installed firewall plate. Vice grips on the upper mount held everything in place while we started the nuts on the engine side of the firewall.

In preparation for the installation of the condenser, we removed the grill and headlight bezels, the hood latch and supports, plus the radiator and electric fans.

The condenser that comes with the kit is an aluminum, parallel-flow unit that also includes a drier, a binary pressure switch, mounting plates and hardware, and aluminum tubing to help make all the requisite connections to the rest of the system.

After attaching the mounting plates, the drier is secured to the condenser and the lines are attached.

•The condenser can now be slid into place, positioned in front of the radiator. The mounting brackets attach to the core support using existing holes and hardware.

•Using a 1.25-inch hole saw, we drilled through the core support to make way for the two lines passing through from the condenser and drier. Be sure to use the provided grommet, or the steel core support will saw through the soft aluminum lines in no time!

•The drier also has a port on it for this binary pressure switch, which protects the compressor by shutting down the system if the high and low pressures exceed recommended limits.

•Before you slide the hoses into place, be sure to lubricate the o-rings and aluminum tube generously with the special PAG oil included with the system.

•Once the hoses are routed and cut to length, you can mark them and the fitting to ensure the "clocking" will be correct once the fittings are crimped in place.

•The Sure Fit kit includes plenty of flexible hose to connect the evaporator unit to the vents and defrosters. Be sure to engage the hose fully so it "locks" on the adapter by hooking on the barbs that are molded in place.

•We're getting close to being done now, with the dash and steering column reinstalled and the dash pad going back into place.

•(left) Wiring the Vintage Air system is simple with the underdash connections being plug 'n play, while underhood wiring consists mainly of the compressor connection, the binary switch hookup, the in-line heater hose shut-off, and leads to the battery and grounds. As with any electronic system, be sure to run the ground wire directly to the battery.

DRIVEN TO SUCCESS

Even though the Vintage Air kit comes with a new compressor and the brackets to mount it all up, we decided to take the opportunity to update the front of our engine with one of their Front Runner accessory drive systems. That would eliminate the old v-belt system, replacing it with a contemporary serpentine belt and reconfigure all our accessories in one nice, tight package that takes less power to drive. It's available in natural aluminum or black, and with or without a new, small Saginaw pump that mounts tightly to the rest of the system.

•The FrontRunner accessory mount system includes a new compressor, 140 amp alternator, mounts, brackets and stainless steel hardware for a clean, simple installation.

•After removing the old accessories and water pump, four long, stainless steel studs support the system, starting with a new Stewart reverse rotation water pump and power steering bracket. Be sure to use anti-seize lubricant on all stainless hardware.

•Once the alternator and compressor are mounted on the main truss of the system, it's slid in place over the four long studs.

•The PS pump pulley needs to be installed on the pump, so we made our own installation tool from a bolt that screws into the threaded shaft, then simply turned the nut/washer on the bolt to "press" the pulley into position. Our instructions also included the part number for the KD Tools power steering pulley installation tool. Never attempt to press the pulley on -- it must be pulled on.

•Next, we bolted up the PS pump and crank pulley, then installed the serpentine belt included with the kit.

•Rather than cobble together the plumbing for the power steering, we opted for this cool hose kit from Detroit Speed Inc. that simplified the installation and looks great too!

•Here's what the completed FrontRunner system looks like. We really like the tight packaging of the system, plus it gives the engine a modern, high-tech look. Mechanical upgrades include a 140-amp alternator, a small, high-efficiency compressor and an aluminum, high-flow water pump.

MAKING A DASH FOR IT

One of the reasons we decided to install the Vintage Air Sure Fit system is that it minimizes the modifications necessary to cool our classic Chevelle, and that it would give us the appearance of a "factory-original" setup. To achieve that look, Vintage Air created vent adapters, a glove compartment modification, and even a new control unit that looks "factory" and installs using the original mounts. The end result speaks for itself, and once the installation is complete the integration of new with the old is difficult to detect unless you're really paying attention.

•Here's the new control panel that comes with the kit. It's completely electronic, so it does away with the melange of cables, wires, and vacuum hoses associated with factory A/C controls. It also has a real OEM look and feel.

•Since our '70 Malibu was a non-air car, we decided to install the upper, center vent from a factory A/C setup, and installed it at the same time as we bolted up the control panel.

•Once we completed the simple operation, here is what the new control panel and vent look like in their proper positions.

•The glove box needed to be shortened two inches to clear the new heater/evaporator box that bolts to the firewall. We cut ours using a pneumatic body saw.

•A new cap is included to seal our newly shortened glove box. We filed and smoothed the cut before trial-fitting the cap to the box.

These S-clips retain the new cap to the box, as it's slid in place on the outside of the cut.

With a few well-placed smacks with the heel of our hand, the cap was securely attached to the glove box. The capacity is diminished somewhat, but barely noticeable since everything that was in the glovebox before still fit inside.

Hose adapters are also include with the kit, allowing you to retain the dash-mounted vents. The plastic pieces are formed for a perfect fit.

SCARING THE CRIMP OUTTA YA!

As well-engineered as the Vintage Air Sure Fit kit is, there are just a few variables that you're gonna have to deal with. One of them is routing, cutting, and crimping the hoses from the compressor, condenser and evaporator. We further complicated matters by adding the FrontRunner drive system, which positions the compressor on the passenger side of the engine, rather than the driver side. No matter what, you'll have to determine the proper length of the hoses, position them properly, and mark them for correct clocking, then crimp the correct fittings to them.

The hoses all use a "bead lock" crimp, which requires a special crimping tool. Once you have the hoses and fittings marked you can bring them to a local A/C repair shop and have them complete the job for you, or you can beg, borrow, or buy the proper tool and do it yourself. You can also send the hoses to Vintage Air, and they will crimp them at no charge (you'll just have to cover the freight).The Bead Lock crimper is a fairly expensive tool, however, so unless you're planning on making a living installing or repairing A/C systems, buying one is probably out of the question. We were lucky enough to have a friend with a bead lock crimping tool, and while his shop was closed one weekend, we borrowed it to complete our job.

Before beginning the crimping operation, make sure your marks are lined up to ensure proper clocking of the hose and fitting.

•Now you can place the hose and fitting together in the crimping tool, making sure equal amounts of fitting are showing on either side of the tool.

•The crimping tool uses six anvils that are compressed to form a leak-proof seal with the hose.

•Using a half-inch drive ratchet, we easily turned the clamping screw down to apply force to the anvils.

•Here's what our fitting looks like after being properly crimped on the hose. To check it, try to rotate the hose inside the fitting; no movement means you've got a good seal.