



**Newsletter of Air 'Vair, the CORSA Chapter for Air Conditioned Corvairs
Winter 2009**

Wire It Up

The wiring for the Corvair A/C system reaches from the luggage compartment (at least in the late model) all the way back to the compressor at the back of the engine compartment. All this wiring is added into the existing wiring system of every Corvair except for those few examples that were actually made at the factory with air conditioning. The full integration of the factory wiring harnesses is probably a rarity among air 'Vairs on the road today. While some intrepid installers may have taken raw wire, splicers, taps, electrical tape, connectors, and possibly even a soldering gun and wired up their systems "from scratch," most probably did what I did when I removed my A/C from its second (wrecked) host and into my car: they moved an existing harness from a donor car and hacked it up as necessary to get it to connect into its new host.

The result, as it remains to this day in my car, is a hodge-podge of electrical tape, unwrapped (into harnesses) wires, and generic connectors (mostly crimped quick-disconnects, but also the occasional solder joint and wire nut). What follows represents a scheme for improving on this situation to obtain, by any of several means, a neat, reliable, essentially stock wiring system that won't let you down on a hot day or when you try to demonstrate your proud system to someone who never knew that Corvairs even *had* air conditioning.

As usual, the focus will be on what I know: a late-model Corvair (1966 in my case), and a system made up of stock components.

Do It with Money

Provided you have stock components, you can solve all problems the way Ben Bernanke does—by just writing a check. You would write the check in this case to Clark's Corvair Parts, and you would purchase their already-made-up harnesses. Clark's (main) catalog for 2007-2012 lists ten A/C harnesses that include five for early models and five for late. Three of these are "main" (underdash) harnesses of the "add-in" variety. These would presumably match the harnesses supplied with the dealer-installed version of the A/C option. A further nine underdash harnesses are offered that provide instant total integration. These, for late models only, cover combinations of Corsa, non-Corsa, auto transmission, and manual transmission for four different model years, and they are complete with new fuse blocks. These last can get pricey (just under \$350) *and* you are advised that it will take 6 to 8 weeks to fill the order.

There's a "caveat emptor" to mention in connection with the Clark's products, which are supplied by an independent harness manufacturer who works exclusively from GM technical literature. Our own Chapter President Mark Corbin, noting that GM literature is faulty in a number of respects, warns that harnesses made to those specifications may not function properly. At press time, I had no user reports one way or the other on actual experience with these items.

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The Corvair (Cheaper) Way—Make Your Own

You can make your own harnesses, and by careful use of some relatively inexpensive tools and materials, you can attain results fully equal to those of “the” (harness *or* Chevrolet) factory in both function and appearance.

The easiest-to-find and cheapest material to find will be the wire. The (solid) colors in the diagram resemble their original-equipment counterparts, but the factory literature shows many two-color (striped) wires, as do the original harnesses. The Clark’s catalog shows two-tone wires for 1965 and solid colors for the years after that.)

A bit less ordinary is harness tape, which *looks* like ordinary black electrical tape when installed, but most definitely is not. Harness tape, somewhat thinner than most electrical tape, incorporates no adhesive, producing a more-flexible end product that doesn’t weep goo after its second or third summer in the car. It’s cheap (Clark’s sells it, as do better auto-supply and electrical outlets), so resist the temptation to use electrical tape because it “looks the same.” Widths vary from ½" to ¾", and again I leave exactly matching the 7/8" width of the original stuff to the purist—it may not be easy.

The real technology of harnesses is the connectors at the ends of the wires. Those for the Corvair are known as Delco-Packard Series 56, and they were used not only throughout all GM products (not just their A/C systems) for many years, but on other car and truck lines, other kinds of machinery, appliances, and such a dizzying array of other things that all the parts and tools required for making up harnesses with them are still available today, if not just anywhere and everywhere. The manufacturer has become Delphi, so you might need that name as well in hunting down your quarry.

You can find some of the commoner terminals and shells (terminology: terminal, which crimps onto the end of the wire, + shell, which snaps onto the terminals, = connector) in blister packs hanging on the racks down at your friendly local auto-parts store, and in the Clark’s catalog, along with providing useful pictures and instructions in its catalog. The terminals they sell are too small for at least the larger of the wires in the harness we’re working on.

The only source I’ve found for *all* the shells and terminals is Mouser Electronics (www.mouser.com). The terminals for this harness are all females in two size ranges, supplied in a variety of metals, among which I recommend brass, which matches the original and is easiest to work with. Get at least a dozen of each size range. A smaller size range exists, as well as males for all three ranges.

The shells also divide up as between those for male terminals and female terminals, but they are also distinguished as to the *number* of terminals they hold and the *pattern* in which the terminals are arranged. They’re also available in different colors and materials, but for the A/C harness, you just want black, in which every shell is available. These difficult-to-find shells, if not damaged,

also represent the most-durable and –reusable part of any harnesses you might already have, and their design makes it quite reasonable to detach a used one from an old harness and transfer it onto a new harness.



Aside from a stripper and wire cutter, the most-important tool you can have for properly terminating harness wires is a crimper. And this is positively *not* a generic crimper used on bare and insulated quick-disconnects. It produces a “Type-B” crimp. What’s a Type-B crimp? It’s the kind you’ll find already on your existing terminals. Male or female—they’re both

crimped the same way, the larger pair of “wings” around the wire’s insulation and the smaller pair around its conductor.

A picture of the right kind of crimper is above (called Model T-11 in some lines), and I believe I picked up my Taiwanese knock-off at an auto-supply store inexpensively. The professional versions prominent on the Internet seem to run about \$70. One limitation of these crimpers is that they aren’t big enough to crimp the terminals for 12Ga. wire—14 is as big as they’ll handle. For the larger wires (and combinations of wires) I find I’m able to get a satisfactory imitation of the desired results by “hand” (actually pliers) within three tries, so remember to get three times as many terminals as you need (they’re cheap), and leave a little extra length on larger wires for false starts. For the smaller gauges, get the crimper. It’ll save you a lot of work and give you much more-satisfying, durable, dependable results.

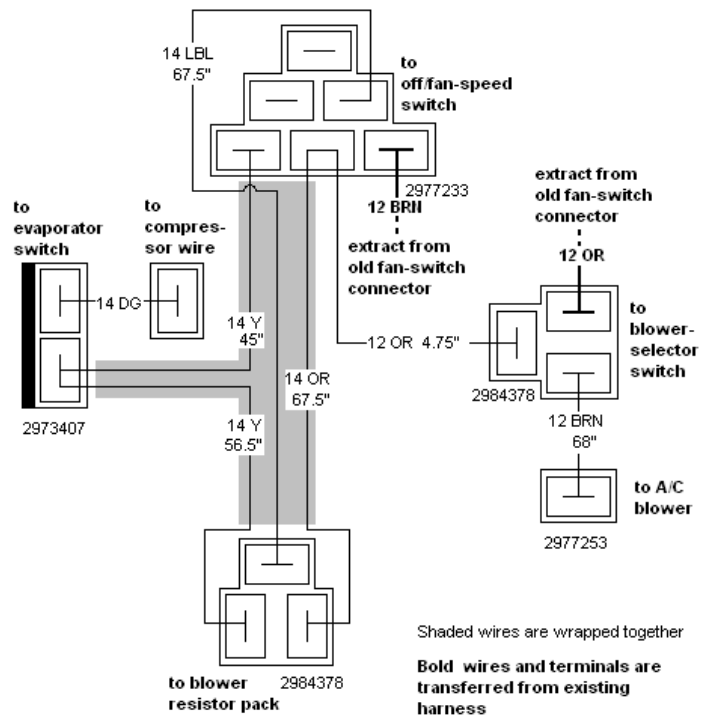
Making It

The diagram below shows the gauges and colors of wires involved in the A/C wiring at the front of the car, repeating information shown in the factory wiring diagram. Not in the factory diagram are the *lengths* of the wires and identification of the terminals and connectors (by GM part number) to attach to each. The part number for the 16-14Ga. terminal is 2965867 and for the 12Ga. is 2989877. All these part numbers work in the Mouser online catalog.

While I’ve neither made nor installed a harness of this kind, Chapter President Mark Corbin has, and he recommends an “incremental” approach that is carried out on the car. Mark recommends making up the 3-pole connector at the blower resistor first, and plugging it in. At that point, begin wrapping the wires, adding the connector and wiring the branch for the switch on the evaporator as you pass the point closest to it until you end up at the fan speed control.

In this process, you should make up the connector for the thermostatic switch, plug it in where it goes, and wrap the branch back to the “stem” of the harness before proceeding beyond the point of branching off. If any of the wires (or combinations) going into the connector are bigger than 14Ga., do them first because of the cut-and-try (literally) aspect to terminating them, as described above. Then line up the smaller wires with the big one, terminating them with your crimper. After you’ve carefully lined up each wire in its correct position, the shell should snap onto the terminals quite neatly.

All connectors in the drawing are viewed from the “back” (wire side). The (6288704) shell to the A/C blower has a slot required for attachment to the lug on the stock blower. The connection to the compressor wire may be done with generic or Delco connectors, or even omitted in favor of an uninterrupted wire going all the way back to the compressor-clutch connector.



COOL AIR

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