

**Newsletter of Air 'Vair, the CORSA Chapter for Air Conditioned Corvairs
Fall 2007**

Uncool at Lower Speeds

Never use the Low or Medium speeds of your stock air-conditioning system. Use only High, at least in warm weather. That's one way of dealing with a problem I discovered in the right front fender of my 66 Corsa, to which I added A/C about seven years ago. You needn't worry with the blower of your heater, but for the A/C blower, you are throwing large amounts of heat into a virtually closed space under your right front fender just behind the wheelhouse when running the blower at Medium, and still more when running it on Low (High generates no heat). This heat is coming from the blower-resistor pack that nestles at your left (standing in front of the car looking back) near the windshield in the luggage compartment.

I discovered this while doing some body work that involved removal of a lot of the metal of the right front fender. This gave me a view of the underside of the horizontal sheet metal just outboard of the compartment lid and forward of the windshield. There, I found a most peculiar pattern of rusting that it took me weeks to realize was a consequence of all the hot-weather "cooking" going on in that space over at least the past seven years. I didn't have the other side of the car open to compare this view with, but there was another symptom that was easy to compare side-to-side.

If you raise the luggage-compartment lid, you will find a seam running just inboard of the fender sheet metal. On the right side where it approaches the windshield, the sealer was dried out and leaking, while on the left side, the sealer was intact. This problem actually extended all the way back to the windshield, as I noted when I removed the cowl over the passenger-compartment air intake. It's your only clue on an intact car as to what is going on underneath, but whatever is going on, it will get worse with the passage of time, and get worse faster if you continue cooking in there in hot weather.

Naturally, if the metal undersides were properly finished in a protective enamel, there would be no problem, but there's no way to remedy this situation without cutting metal somewhere either in the luggage compartment or on the outside, as I happened to do. As it is, once water starts leaking in there, things start going south in a big hurry. One thing that can be ruined is the original culprit: the resistor pack. And while the heater-only version of this part is plentiful, the A/C versions are rare as hen's teeth. The heater-only version is GM Part No. 3866429, while the A/C version is 3866430. The heater-only

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version has higher resistances than the A/C version and does not work well with the A/C blower.

So, What to Do?

Short of always keeping your fan on High, you need either to get the resistor pack out of the compartment it's in or get ambient air flowing over it at a high rate. The part must dissipate heat; that's how it works. The manufacturer of these parts, INDAK Manufacturing Company, is still in business, and they still make these things for other applications (but not ours); their technology does not look to have advanced much in the past forty years.

There are 12V fans small enough to install through the hole the resistor pack installs into; one could ground to frame and pick up 12V from the heatsink of Terminal 2, which is always hot (electrically) when the A/C is on. But: (a) such a fan might not move enough air; and (b) it might not actually exchange air with the outside, but rather just blow air around the inside of the closed box the resistor pack hangs in. Of course, there is always the option of cutting a hole or holes into the wheel well to get air exchanging.

There are options for relocating the resistor pack, which unfortunately isn't weatherproof. Relocating it somewhere under the front cowl, again perhaps with a little fan, could be an effective solution, but might be too exposed to weather. More extremely, the resistor pack could be relocated to the back of the car, but this would take at least 60 feet of AWG12 primary wire, and would be a job to install. Locations near the front are limited by the undesirability of exposing the fuel tank to the heat generated by this part in operation, and of placing it where it might dump its heat into the passenger compartment, which after all is what we're trying to cool in the first place (earlys and many other vehicles actually do this; the resistor pack is in the evaporator box that hangs under the dash).

About the Resistors

The following discussion concerns late-model resistor packs, because that is what I have samples of. Early-model Corvairs use different part numbers, but the architecture of their resistors is likely similar to the late models (as well as 2007 Chevrolets, I imagine).

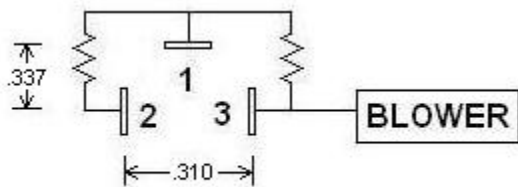
The heater-only and A/C versions of this part are virtually indistinguishable visually except for the part number embossed into the terminal card (nonconductive) of the part. They can be distinguished holding them next to each other. My original of the heater-only part has a terminal card of cardboard (warped), while my sample of the other type has what seems to be fiberglass or composite (much stronger). By the way, it's tempting to screw the resistor in place in the side of the luggage compartment and then plug on the wiring harness as though plugging in a toaster. Don't do this—the ability of the board to resist the metal parts pushing through it declines every year and every time this is done. Instead, back up all three heat sinks with something flat (the shelf of the luggage compartment) and push on the harness *before* screwing the resistors down in their hole. Of course, never do this with any circuit energized.

Each resistor pack is made up of two resistors of coiled resistive wire of two different gauges and lengths. These resistors are joined at Terminal 1, with the high-resistance one's other end at Terminal 2, and the low-resistance one's other end at Terminal 3. The blower is connected at Terminal 3, at the point where power is applied when the speed control is set to High (bypassing the resistor pack). With the Fan on Medium, power is supplied where the two resistors join, so that the low-resistance resistor is in circuit, and on Low, power is supplied at the other end of the high-resistance resistor, so both resistors are in series with the blower motor. The resistors are mounted away from the board on light heat sinks.

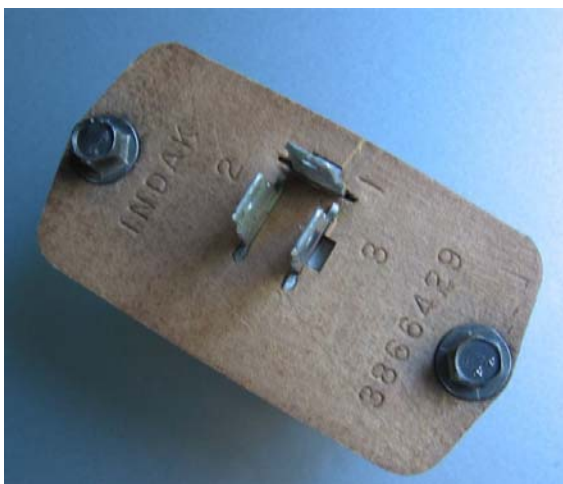


Here are the approximate resistances, measured from samples:

Between Terminals (see diagram)	Heater-only		A/C	
	Resistance	Wire length @ gauge	Resistance	Wire length @ gauge
1 – 3 (Medium speed)	1.42ohm	24@20	0.46ohm	11@18
1 – 2 (switched out for Medium speed)	2.25ohm	40@20	1.34ohm	24@20
2 – 3 Both in series (Low speed)	3.67ohm		1.80ohm	



The diagram shows the pattern of quick disconnects that protrude into the luggage compartment when the resistor pack is installed. The wiring harness plugs onto these lugs. The terminal numbers shown are those embossed on the part.



Clark's Corvair Parts sells the heater-only version under its part number C2687, but its only listing for the A/C version is an NOS part, and they're usually out of these. That part (number 3866430) does occasionally show up on lists of parts for sale. Much more-common is Number 3929055, which fits 1965-68 Chevy Novas and Chevelles. The size and shape of the board isn't exactly right, but the plug is right and the resistances are close enough that you might not even notice that your Low speed is slightly faster than before.

COOL AIR

Air 'Vair, CORSA Chapter 004

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