

# The Preventive Maintenance Series

Mike Dawson

## Heater Blower Motors

The direct air heater motor for all Corvairs can have glitches and can be improved on.

### Improvements:

- Replace an original motor with one of the later styles such as: AC 15-87, Four Seasons 35587, or VDO PM102. There are others; all Corvair vendors sell them and they will all be faster than the original.
- Replace a loose blower Cage: VDO BW9302 (Use blue Loctite on the set screw). Again, all vendors sell versions of them.
- Use of the high speed motor requires some checking of your old system and can benefit from an upgrade; on all but late model A/C cars you can install a relay that will connect the battery directly to the motor in high speed mode. This eliminates connectors, the switch and wiring from causing voltage drops and lower speeds. Larry Claypool has a step by step article in the CORSA Tech Guide on page 20 of Electrical and Speedometer. The relay is NAPA AR102 or O'Reilly BWD R353.
- Perform PM on your blower motor switch by carefully taking it apart, cleaning and lubing.

### Glitches Caused By Old Age:

- The heater boxes above the transaxle can lose their ground to the body and lower blower speeds. This is worsened if you install a higher speed motor. To test, hook a voltmeter between the blower motor housing and a good body ground. If there is meter movement (or digital reading) with the motor on high then the ground is poor. You can also turn the motor on high and hook a jumper between the motor housing and a good body ground. If the motor speeds up, make the ground permanent.
- If you have the motor out, make sure there is no rodent nesting present in the adjacent ductwork and inspect the blower cage for a loose fit where the steel is crimped onto the alloy center.
- If you install a high speed blower motor and do not use a relay, be sure and install a quality 25 amp fuse. The motor will surge to 16.5 when cold and then run at 9-10. I recently installed two different 20 amp fuses (Made in China) that failed quickly with less than 20 amps. Using a 25 amp of the same supplier has worked so far. Also, to check a fuse, use a test light on both ends when installed or use an ohm meter. I have had several fuses with a loose filament in the end caps that visually appeared good.

- If you have a late model with A/C, you should at least clean and lube both the blower switch and the mode switch. I easily installed a relay in the back of my '65 A/C car that controls the compressor clutch and the idle speed up solenoid. It takes a few amps off of the blower switch.

Below is a copy of the CORSA Tech Guide article by Larry Claypool detailing the addition of a relay for all cars except late models with A/C.

## Relay for Hi-Volume Heater

Larry Claypool

One of the more popular additions to the Corvair has been the so-called "high volume" heater blower motor. The motors are actually stock for other '64-76 GM cars with air conditioning. They turn faster, thus providing a higher air flow rate.

The only real disadvantage of these motors is their appetite for greater current. In the short run, this leaves marginal charging reserve, especially on generator cars. In the long run, however, deterioration of various electrical connectors and switches has been observed. The problem is especially noticed on early model ignition switches and main harness connectors. The deterioration is caused by the high current flow required to operate the blower, lights, ignition, and other accessories. The single feed wire becomes hot, melting the connector.

A look at any of the cars on which the high volume blower was supplied shows that all of them used a relay to feed the blower on high speed. This provides power directly from battery to blower, removing the extra load from the fan switch, ignition switch, and all the various power connectors. A further advantage is increased blower speed (and thus volume) since the voltage drop through the system is reduced to a minimum.

It is a relatively easy task to install and wire a power relay into the Corvair. You will need the following:

- Relay, continuous duty, 12 volt coil, 25 amp contacts; I used NAPA #AR102 because it is simple and inexpensive, but any of numerous factory or aftermarket relays will do.
- In-line fuse holder with fuse, 30 amp.
- Wire, #18 gauge, approximately 15 feet.
- Wire, #10 gauge, approximately 6 feet.
- Electrical terminals, assorted.

Begin with the heater fan speed switch. You will find four terminals: power in, low, medium, and high speed. The wire from the high speed terminal goes directly to the blower motor. On early models, output from the resistor (low or medium) is also joined to the high speed terminal at the connector. Remove the high speed wire terminal from the fan switch connector. On early models, leave the two wires joined. Tape the wire(s) to the harness so the terminal is insulated. Now use the length of 18 gauge wire with a female spade terminal; connect it to the high speed output blade of the fan switch. Run this wire back through the car to the heater motor. (Do it right! Pull all the tunnel covers and run it next to the main wiring harness!)

For simplicity, I mounted the relay to the blower by one of

the screws that hold the motor to the heater mixing box. The power feed wire for the relay can be tapped in at the starter solenoid (to the battery cable), the plastic junction block near the battery on late models, or the battery terminal of the voltage regulator on early models and FCs. Be sure to install the in-line fuse somewhere in the wire between the power source and the relay. Connect the fused battery feed wire to relay power in. Connect the newly run wire from the fan high terminal to relay on. Use a short piece of #10 gauge wire to go from relay out to the blower motor. Also connect the original heater blower motor wire to the relay as shown in the diagram. This now completes the modification.

In operation, the fan motor gets its power in low and medium speeds through the ignition fused fan circuit just like stock. When switched to high speed, the relay is activated and power for the blower comes directly from the main junction block. The only current used by the heater switch on high speed is the small amount to power the relay coil.

The addition of such a system makes a noticeable improvement in air flow, and in the interest of longevity should be considered on any Corvair where the heater is used more than occasionally.

You will note that I excluded late models with air conditioning from this conversion. The reason is that the two separate blowers are controlled by one switch. If the relay was hooked up as described, the heater fan relay would energize on heat and A/C modes. If you hooked up the relay to the output of the heat-A/C selector switch, you'd lose low and medium speed function. While installation of a high speed relay on a late A/C car isn't impossible, it would certainly be more complex. I'll leave that one to someone with more time than me. (12/88)

