

TECH TIP: CORVAIR HEATER MAINTENANCE

By Steve Goodman
Contributing Editor

In this month's Tech Tip, Master Mechanic Steve Goodman dispels the many myths surrounding the various Corvair heater systems.

Take this info to heart, as we're expecting every member of the PPCC to drive their Corvair to Estes Park on New Year's Day morning to attend the annual morning brunch event. Just sayin' ☺



Comments reach me more often these days that one of the reasons there are fewer Corvairs at winter events, such as the NEW YEARS DAY drive to Estes Park is the heater system.

For the last several years, the roads have been good/clear and clean, but temps in the 20s seem to make many take a brand X, because of better heat. When I hear the talk about poor heaters, I think to myself, "Gee, I didn't even have the blower motor running while driving into the mountains this year, plus no jacket while in the car. Why is my heater good and many aren't?"

Looking back to the 60s-70s, when most used their Corvair as daily transportation, and in lots of cases the wives owned one also, and both were driven summer/winter, as everyday work transportation, and, while yes, heater/defroster was on the top of the list of keeping in good working order, the cars were warm in the winter and not even the ladies complained about them.

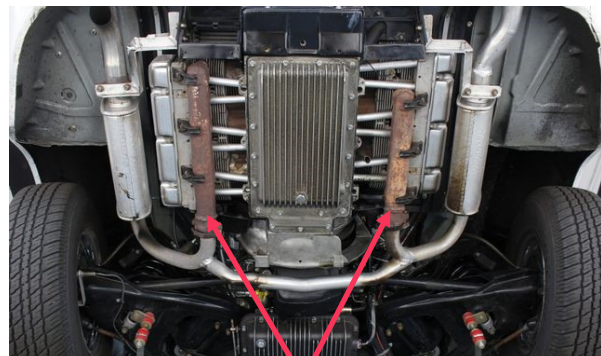


Corvairs Aplenty on New Years Day!!
Georgetown, CO - January 1st, 1976

In my case, Ruth drove only a Corvair to work every day from the mid-60s until she retired. You had better know that if the heater/defroster wasn't working, I heard about it instantly. Also I used my Spyder coupe every day, and it sat in front of the house every night, never in a warm garage.

In those days too, the events such as the NEW YEARS DAY drive had a parking lot filled with Corvairs, and the snow was piled up from clearing the parking lots. I have pictures of every year to show it. Everyone drove their Corvairs and stayed warm!

So let's look at the Corvair heater system and see what makes it work well and the minimal effort and expense it takes to keep it that way:



Exhaust manifolds which generate the heat for your comfort.

First, we all know the heat from the exhaust manifold logs, plus air passing through the heads, is what makes the air hot. In order to take full advantage of the hot air, every piece of the cooling tin must be in place and fitting correctly.

Included of course is the bottom tin that captures the heat around the manifolds, and to ensure all heat stays inside the engine the seal strips between the tin and engine/case are necessary. (a side tip is ensure the collars around the ends of the manifold logs are in place, these keep moisture from hitting the log and turning to steam which travels into the defroster system and fogs the glass).

TECH TIP: HEATER MAINTENANCE (cont.)

The next vital piece is the thermostats. Same as a water-cooled engine, the thermostats control warmup time. In the case of the Corvair, keeping the doors closed in the winter is essential to keep heat inside the engine and to be pulled forward by the heater motor, and then pushed into the passenger cabin. Having the thermostats adjusted correctly is paramount, and remember the driver side will always open first due to path of the air from the cooling fan, as well as heat from the oil cooler.

When it is cold outside the doors open very little unless hard highway miles heat up the engine. Even if the doors do open a bit, the majority of hot air is still being pulled into the cabin of the car. Opening a wing (vent) window or simply lowering a side glass a bit is helpful too. It relieves the pressure being built up inside the car, with the heat being forced into the car and actually helps pull warm air from the engine into the car.

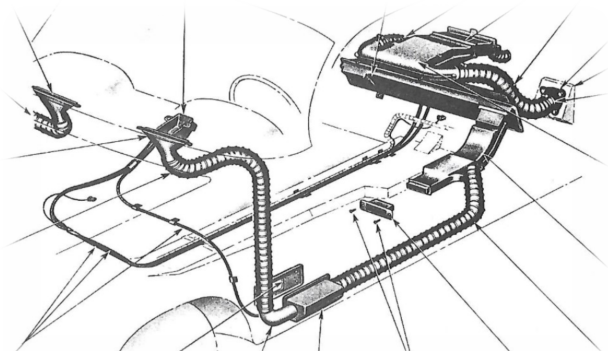
The heat is transferred from the engine to the heater box/heater motor by 4" diameter hoses. The diameter is common with rubber defroster hose, and some is offered in metal too. Since the hoses are in the open (even though under the rear of the car) using hose that is insulated, or at least a thicker wall will allow the heat to remain at high temps while traveling that short 3-4 foot length to the blower motor.

Using home dryer duct is a poor choice, due to a lack of heat resistance due to the higher operating temps of the engine, and metal hose will allow heat to transfer to the outer surface by the cold air outside, and lower temps will reach the blower motor. Also dryer duct hose has no resistance to oils and will dissolve if near most lubricants.

A side tip is to ensure that the insulating sleeve is present on the driver's side hose of early cars so the wire-wound hose cannot touch the battery connection on the solenoid, AND, on late models, use the two hangers to keep the hose from rubbing against the axle on the passenger side and just hanging down and rubbing on the driver side axle.

The next part is the blower motor. The typical replacement for many years has been a higher output/higher rpm motor from late 60s to mid 70s GM products, such as Cadillac or Buick with air conditioning. There are wiring diagrams available to place a relay into the high speed wire, to ensure a full 12 volts is available to the motor, but many times it is difficult to hear any difference in speed or feel more air after, compared to before the relay installation.

From the blower motor, heat in early model cars follow two hoses along the rocker panels to the front heat/defroster valves. Insulation is minimal along the rockers too. There is a hose inside the hollow rocker and nothing else. Feel the rockers near the sill plates if you have had your heater running for a while in your 61-64, it will be pretty warm.



'61-'64 Direct Air Heater System (driver side illustrated)

Late model cars got improved ducting, a path down the middle of the tunnel that is insulated itself, and all the way to the defroster 'Y' under the dash. Needless to say, the late cars have a better way of keeping hot air flowing, but earlier cars can be helped (see tips below).

Another issue can be the misadjustment of the cables, or poor moving cables, but usually I don't see many adjustment problems.

Of course the cables need to move easily from closed to fully open. An unobstructed path for the hot air is needed too. Anything blocking the ducting will slow the heated air and make it difficult to get the hot air into the car.

TECH TIP: HEATER MAINTENANCE (cont.)

Generally a car that is used often doesn't have problems, BUT, a car that has been sitting in a barn/field for years is guaranteed to be full of mouse apartments. Not only is air blocked but it may be unhealthy to even breathe the droppings. The ducting must be blown out before use (by someone other than me)!!



Georgetown, CO - January 1st, 1982

NOW FOR THE SIDE TIPS FOR EARLIES & FORWARD CONTROLS

On the early cars: You can direct all hot air forward instead of having some at the rear seat floor by making an air dam that slips inside the Y duct under the rear seat. Also I have used marine Bilge blower motors under the seat to push the air forward with greater force.

On Forward Controls (Rampsides & Vans): The auxiliary blower goes in the ducting, near the front of the cab.

If the above are all in good condition then you should have ample heat/defrost inside the car. BUT, there are still some items to consider, mostly due to age of the car, OR, poor maintenance.

First is air leaks. Nothing is worse than driving in darn cold temps and having a draft on your ankle or knee. The fresh air ducts in the kick panels have a rubber flapper seal to keep air shut out, but as with everything else on these old cars, the rubber fails, and air finds its way into the cabin. Needless to say, replacing the seals fixes the problem.

Even the hole in the toe board for the speedo cable will leak an amazing amount of cold air; replace the grommet and the hole is sealed.

Lastly if the rubber door strips and roof rail strips on later are poor, there is the ability to have cold air sneak in. Sometimes the air leak isn't as bad as the noise created by the whistle effect too. Next is smells, probably the most complained about issue with any air cooled car. Remember that old VW bugs and 356/901 Porsche all used heat from the engine.

All smell, you can't get away from it because the hot metal itself will give off an odor. Add to that the fact that keeping the engine spotlessly clean is virtually an impossibility, because of the parts that aren't easily reached to clean. One small drop of oil will make a smell and in fact a single drop of oil will instantly burn off of the hot metal and smell worse than if the entire engine was leaking.

Plus, the PCV system cannot be sealed perfectly, the O-ring on the tube is a slip fit into the vent tube. The gasket under the oil filler cap will still allow a tiny bit of fumes to escape, and even some blow-by from the fuel pump vent. Plus, if the wind is blowing just right, it can push the exhaust from the muffler back into the bottom of the engine and mix with hot air going into the heater. GM tried to fix that problem by pointing the muffler tips outward toward the sides of the car.



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TECH TIP: HEATER MAINTENANCE (cont.)

The other more typical exhaust smell is from the packings from the tubes to manifolds leaking. I don't see this often but it can happen. You cannot smell the carbon monoxide, but there is still an exhaust odor present if leaking.

Last is warmup of a cold engine. Since the heat is taken from the warm engine, the exhaust logs in particular take a couple of minutes to start radiating some heat after a cold start. The rest of the ducting system is cold too, so it takes another couple of minutes to warm up the hoses etc.

I find that by the time snow/ice is cleared from the car and glass, the heater is blowing warm air. A few blocks down the street in 1st/2nd gear help push hot air into the passenger cabin too. Using low in PG cars works the same. Vehicle speed is low on residential streets anyway.


A by-product of an air-cooled engine is that when it is shut off on cold days, the engine metal starts cooling immediately. Come out in an hour from a restaurant and the blower is pushing cold air. Warm up is faster, but you still get to wait that couple of minutes before real heat begins.

That about does it. All of the above was attended to and accepted by Corvair owner/drivers around here for years, and it still works the same. I know, because unless snow is so deep that I need a four-wheel-drive, I still drive my Corvair every day. My driver car sits outside, not in a garage or carport. I have done nothing special to it, other than the above.

Getting back to the 'good old days', I had one late coupe with four studded snow tires mounted. Ruth drove it whenever the roads were bad. The tires were taller and thus greater ground clearance and she could steer and brake as if the car was on dry roads. The car sat outside, and she willingly drove it to her office either downtown, or later to the tech center. We used it on winter drives into the mountains and even Ruth would ask me to turn the blower down, or off.

Bottom Line: You can stay warm in your Corvair!

Steve Goodman is owner of Rear Engine Specialists in Golden, Colorado



PERIMETER HEATER AND DEFROSTER

This completely new direct air heater is available for all Corvair models. It utilizes the engine heat for fast heating of passenger compartment.

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* Above picture courtesy of Rick Beets