

The Preventive Maintenance Series

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Engine Rebuild Costs

Each owner will have a different vision of what a rebuild consists of and what it should cost. In many instances the cost of an engine mechanical restoration is not an economic decision in terms of market value of the car. Except for those who have cars restored with a careful eye to market value only, restoration of "your baby" may be just that – a satisfying project you want to pursue for essentially non-economic reasons.

As in any automotive repair, you have the parts list and then the time requirements. A professional shop may require you to invest in more new parts than you might do yourself, but then they want to protect themselves from any possible problem. Looking at parts first, a complete rebuild for a two carburetor engine would almost certainly require the following items in the first group:

- ❑ A complete gasket set, main bearings, rod bearings, crankshaft service, reconditioned rods, head service, new camshaft, cam gear, lifters, oil pump set, piston, ring, and cylinder combination, pushrod and rocker arm sets and oil and filter. This includes machine shop services for crankshaft, heads and rods. Current 2011 price for this group: **\$2200.00**

Additional items that may be required depending on what you start with are included in group two:

- ❑ Fan bearing, idler bearing, alternator bearings, spark plugs, plug wires, carburetor kits, fuel pump, air filter, points, condenser, rotor, cap, belt, harmonic balancer (164) and shroud paint (powder coating is nice, approximately \$300.00 for everything). If you have an early model, you may want to add engine perimeter seals. Current 2011 prices for this group: **\$400.00** to **\$700.00**

Finally, engine assembly to the transaxle and final assembly in the car may require these items out of group three:

- ❑ Pilot bushing, clutch shaft seal, release bearing, clutch disc, pressure plate, flywheel (torque converter, converter seal, converter bushing), thermostats, heater hoses and exhaust system. Current 2011 prices for this group could run from **\$600.00** to **\$900.00**

Adding up the above costs with the intention of doing a first class rebuild could result in a parts outlay of about **\$3200** to **\$3800**. You may also need small items such as new bolts, screws, gas lines, rubber grommets, wiring, etc. and if you have a 140 or Turbo, there could be additional items. You may elect to eliminate some items and go with cheaper parts, but this is a pretty good number to plan on.

Big ticket item number two is the labor required to accomplish your project.

- ❑ When you make an agreement with an engine re-builder, it may turn out they will only work on an hourly charge plus parts due to the unique nature of a Corvair engine and because the age of the engine is 40-50 years, some one previously may have interjected some complication that is unknown until disassembly.
- ❑ Cleanup and inspection: any item to be reused would obviously be in this category. Crankcase halves, engine housings, and sheet metal all end up taking up a lot of time, since threaded holes need to be cleaned, rusted parts addressed, and very important would be an inspection of all aluminum wear surfaces and oil passages. Plastigage work is time consuming if done properly. You will need to discuss the cleaning and inspection process with the builder. This would be at the point you would find if any major components are not serviceable.
- ❑ There may be outside service operations such as crankshaft service, cylinder boring, head service, and connecting rod service that require drive time or shipping both ways. There is nothing free (except air and the EPA may change that) so you will be charged for rebuild connected time spent on out sourcing.
- ❑ Because of the nature of the air cooled engine, it is imperative that a quality valve job is performed by a machinist familiar with Corvair heads. Of particular importance are the valve seats which are loosened by heat and cycles of operation. They need to be replaced or staked to prevent premature failure. The best place in the Kansas City area is Noland Automotive Machine Shop. Three generations of Nolan's have been doing Corvair heads, and although not the cheapest, I feel they are the best. If your re-builder does his own head work, discuss this item with him.
- ❑ The complexity of the Corvair sheet metal (20 pieces) mandates either powder coating or cleaning, blasting, priming and painting if you want it to look like the new engine you are paying for. Again, a lot of time and or dollars are required. You could arrange to paint the sheet metal yourself and save a bunch, although powder coating would be the first class treatment. Early models would need the seal strips replaced.
- ❑ Although not mentioned in any of the above, you also have the removal and installation time involved, and possibly time in inspecting and sealing the transaxle while it is out.

The two overhauls I completed this past winter took me 42 and 47 hours, including removal and installation, painting shrouds, travel time for outside services, carburetor and distributor overhaul, and paying particular attention to Corvair unique items. Both were Powerglide engines; a 140 and a 110 with A/C. I did not overhaul the transaxles. This is just supposed to help be a guide, but I would guess that most professional shops charge at least \$60.00 an hour (thanks to litigation and regulation) so based on the above numbers my engine job would have cost between \$5700 and \$6600.

When you make arrangements for mechanical services, communication is the key to success. Make absolutely sure that both parties understand what is expected and that a reasonable amount of communication needs to occur throughout the process.