

Corvair Alignment.2

The following information may be useful but is based on my methods and preferences; you may find an easier or quicker approach that would be great to share. Keep in mind that collision damage could dramatically affect alignment. This could show up as offset tracking between front and rear or impossible adjustments. All parts involved must be in serviceable condition or any time spent on alignment is wasted.

If you are doing alignments at home you will need the proper tools. I mentioned two (that I use regularly) in the December VairCor. You can make your own tools following Fred Johnson's Corvair Alignment step by step construction, or for just the minimum (toe-in) you could purchase the tool Clark's Corvair Parts has for sale. If you do the checking carefully, you will equal the skill of the professional shop and you could move on to checking your Lexus or Yugo.

My preference is to set the rear alignment first and then align the front because it is useful to use the rear tires as a reference when setting the correct front toe-in and this will help insure the steering wheel is in the center when you test drive.

Before checking any toe adjustment with a tram type toe-in tool, you must air up the tires correctly and spin them to make sure the center of the tread runs true. If it does not, mark the center with chalk or paint while it is rotating. When aligning the front, you must adjust wheel bearings, adjust the steering box, and air up tires correctly before you begin.

Pick up two large and two small pizza pans. Acquire some glass beads and with the small pan sitting on the glass beads which are on the large pan, you can place this combination under each tire to allow turning the wheels and making adjustments at normal riding level.

Early Model Cars and FC Vehicles

Rear Camber: Since rear camber is determined by the springs, your only method of correction would be to change or possibly modify springs. FC vehicles have significant positive rear camber to enable heavy loads but there are springs available to bring the camber close to zero which eliminates the "tucked under" look. Early cars usually settle in the rear and end up with negative camber, including the '64 model which has a transverse rear spring which does not affect stationary camber, only camber change during wheel travel. Changing the coil springs would bring the camber back to stock settings which is positive for all models.

Rear Toe-In: Adjusting rear toe-in is very important to maximize tire life because of the driving forces being applied to the rear tires. All models call for approximately 1/4" toe-in total which will adjust to zero as you drive down the road. Toe-in is adjusted by moving the drive train backwards or forwards: this angles the axles and toes the tires. The

adjustment is made by adding or subtracting shims between the transmission and the cross mount on both sides (equal number of shims), while allowing the rear mount stud (loosen the nut several turns) to move in the slotted hole. All of the perimeter seals need to be loose (remove the strips), align the U-joints at 90 degrees to horizontal, and place a floor jack under the drive train to lower it slightly and allow it to move. Loosen the four bolts (Powerglide) or three bolts (4-speed) and use a pry bar to make shim addition or subtraction. This can be trial and error, but use this as a guide: shim ½ the toe change needed. Keeping the shim stack equal on Powerglides is simple but for 4-speeds you may need to measure from the differential mounting surface at the clutch housing to the face of the cross mount and compare the two sides: they must be equal (the 4-speed has fat washers and shims on the left side). Be sure and drive the vehicle and re-check before final assembly and application of the correct torque on all involved nuts and bolts. Cars may need clutch and accelerator rod adjustment if you change the toe-in value very much.

Front Caster: Rarely does this need adjustment unless you change parts. I covered this last month and you can refer to the appropriate shop manual.

Front Camber: Again, I covered this last month and you can refer to the shop manual as it has good coverage.

Front Toe In: With the steering box adjusted correctly, wheel bearings adjusted and tires aired up, lock the steering wheel in the straight ahead position (gently wedge a cut length of wood against the seat). Practice sighting across the outside of the front tires and extend your view against the body or the rear tires while checking the-toe in. This will give you a reference to insure the steering wheel will be in the center when you test drive.

Early and FC Toe-In Tips:

Drivers Side: Turn sleeve forward to toe-out (to the rear to toe-in)

Passenger Side: Turn sleeve to the rear to toe-out (to the front to toe-in)

If you complete toe-in settings and the steering wheel is slightly off center, do not pull the steering wheel and re-set it; you will add play to the wheel which will accelerate steering sector wear if you tighten the adjusting screw. **To bring the wheel back from the right**, turn both sleeves to the rear the same amount. This moves the steering wheel but keeps the toe in the same. Do the opposite if the wheel is offset to the left.

Late Model Cars

Rear Camber: The index marks are only good for the factory since bushings settle and wear, so use the marks only for reference.

Turning the camber bolt counterclockwise on the passenger side adds negative camber.

Turning the camber bolt clockwise on the driver's side adds negative camber.

Doing the reverse on either adds positive camber. **Be sure you torque the nuts to 80 ft lbs.** Use new grade 8 nuts or long lug nuts (1/2"-20)

Rear Toe-In: The rear toe-in must be set the same for each side for the car to track correctly. Practice sighting along the side of the rear tires forward and reference to the body, equally on both sides. Use of the index marks is helpful but again you need the rear to have equal toe-in on each side.

Front Caster is treated the same as early model cars as discussed last month.

Front Camber was discussed last month.

Late Front Toe-In Tips:

Passenger Side: Turn sleeve to the rear to toe-in (to the front to toe-out)

Drivers Side: Turn sleeve to the front to toe-in. (to the rear to toe-out)

If the steering wheel is off center when you test drive, turn both sleeves the same amount to the front to bring the wheel back from the right (do the opposite to bring the wheel back from the left). This will not change your original toe-in setting.

Check everything after a test drive since adjustments can be affected by settlement if you have had the vehicle jacked up.