

Early Model Car Rear Springs and Alignment

Early model car rear alignment tends to change over the years due mainly to sagging rear springs which give the "squatting" look and reduces the riding height/ground clearance in the rear. Negative camber is the condition where the tops of the tires are closer to each other and the bottoms farther apart. Camber change can also alter toe in, and there is no adjustment for camber (spring spacers don't count) except the replacement of the rear springs with the correct new parts. Toe in is adjustable (always the final adjustment in alignment) and will be covered in the second half of this article. Also consider other parts while you are there such as shocks, brakes, hoses & lines, '64 rubber bushings, U joints, side seals and packing rear wheel bearings.

Replacing stock rear springs does not require a spring compressor; you need only hand tools and a floor jack. Depending on age and exposure, you may want to use penetrating oil on shock mounts ahead of time (or have a torch available). With the car safely supported on the highest step of your jack stands, remove the wheels, put one lug nut back on tight to hold the drum and remove the two vertical bolts on each side that hold the brake line support (A flex socket is handy). This allows the brake line to drop down without removing it. If you have a '64, remove the transverse spring. Rotate the axle so that the U joint will allow maximum axle drop. Place your floor jack under the edge of the drum, jack up the arm just enough to unload the shock absorber and then remove the shock. Slowly let the jack down, lowering the arm until you can remove the jack. Use a pry bar to remove the spring, and also to aid in installing the new one. Make sure the ends of the spring line up with the seats. Put the jack back under the drum and jack it up far enough to re-install the shock absorber (and '64 transverse spring). Replace the brake line bracket and wheel – you are ready for toe in check/adjustment.

Keep in mind that camber will determine WHERE tire wear will occur and that the toe adjustment will determine HOW FAST tire wear will occur. Check tire tread for toe problems by running your hand back and forth across the tread: if toe is proper the tread will feel the same in both directions. If you feel a feather in one direction but not the other you have incorrect toe. A feather to the center of the car indicates excessive toe in, a feather to the outside indicates toe out. Wheels are set for toe in because as the car travels forward the tires tend to toe out; ideally you wind up at zero as you drive and no wear occurs. The front wheels are more prone to toe out than the rears under driving conditions, so set the rear to the minimum specs.

If you are contemplating adjusting toe in, you will need one of the many tool designs available for checking toe at home. Many vendors sell fairly inexpensive tools, you can borrow mine or you can make your own: the late Fred Johnson wrote a booklet on making home alignment tools; you can get the book from CCP or borrow mine. I also have drawings that allow you to simply straightedge the measurements on the garage floor. You also might want to borrow my selection of shims to choose from in case changes are necessary.

Early models and FC's adjust toe in by means of a slotted rear motor mount and shimming between the transmission and the cross mounting bracket. Before aligning, check motor mount condition and the bolts that hold the transmission to the cross mount – the bolts can be loose. To adjust toe, you will be moving the drive train either forwards or backwards which angles the axles and

changes toe; moving forward causes toe out, moving backwards causes toe in. GM specifications called for 0-1/4" toe in for '60-'63 models and 1/8 – 3/8" toe in for '64. More toe in or actual toe out will quickly cause tire wear, handling problems, and wander on diamond ground concrete or rutted asphalt. Ice will be deadly.

To move the drive train and adjust toe, safely place the car on stands, remove all four engine seal strip retainers, loosen rear motor mount nut, loosen bolts that mount the transmission to the bracket. Check the shims; you need the same total thickness on each side. Four speed cars have a fat washer plus shims on the driver's side. If you have a drive train out of the car (this can also be done with the drive train in the car), take a measurement from the centerline of the motor mount stud hole on each side to the mating surface between differential and the clutch/converter housing. This will tell you if you have the correct number of shims on each side. Place your floor jack with a block of wood under the clutch/converter housing to raise the unit slightly; this will help you move the drive train forward or backward to adjust shims. If you make adjustments, put the car back on the floor and roll back and forth while bouncing the back to settle the suspension before re-checking.

This is a trial and error method, but take your time and you can get toe in close to perfect. Also keep in mind that if you change toe very much you also change accelerator adjustment, PG shift point or clutch adjustment. These may need attention when you finish.