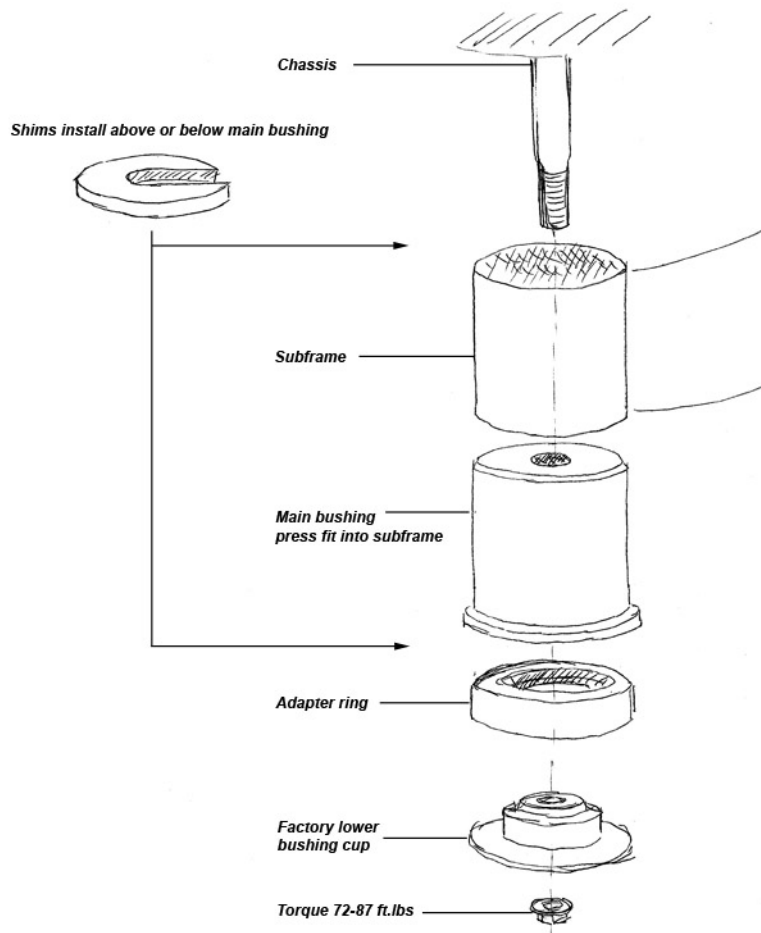


# SPL Subframe Bushings S13/S14 and Z32



Remove subframe and OEM subframe bushings. The OEM subframe bushings can either be pressed out or cut out. The entire OEM bushing must be removed, including all the outer metal “shells” (race). When the OEM bushing is completely removed, there should just be 1 ring of steel left that is part of the subframe itself.

Press in the main bushing from the bottom of the subframe.

To “raise” the subframe by  $\frac{1}{2}$ ”, both shims should be installed below the subframe.

To “raise” the subframe by  $\frac{1}{4}$ ”, one shim should be installed above the subframe and one shim installed below the subframe.

To place the subframe at the OEM location, both shims should be installed above the subframe.

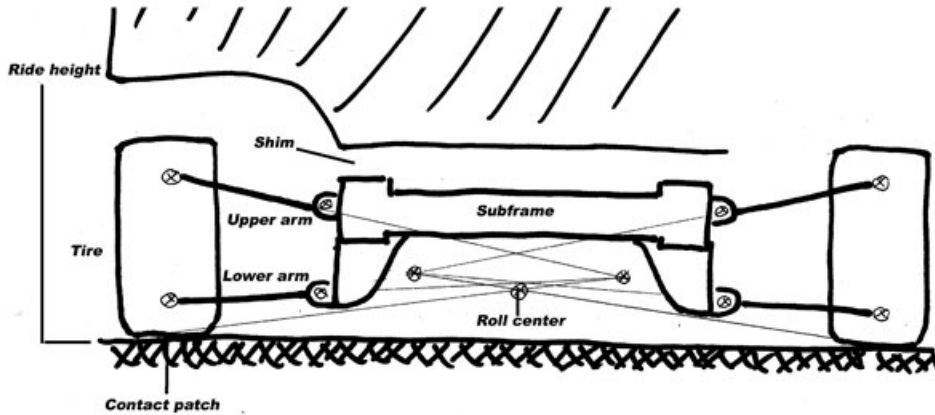
Optional: The supplied rubber isolators can be installed between the chassis and the subframe bushing to help dampen some noise.

The following 2 pages explain the effect of raising the subframe on roll center and anti-squat. For a car that is lowered, as a general rule, raising the subframe will improve the roll center but reduce traction. Feel free to experiment with different subframe positions to find the one that best suits your driving style!

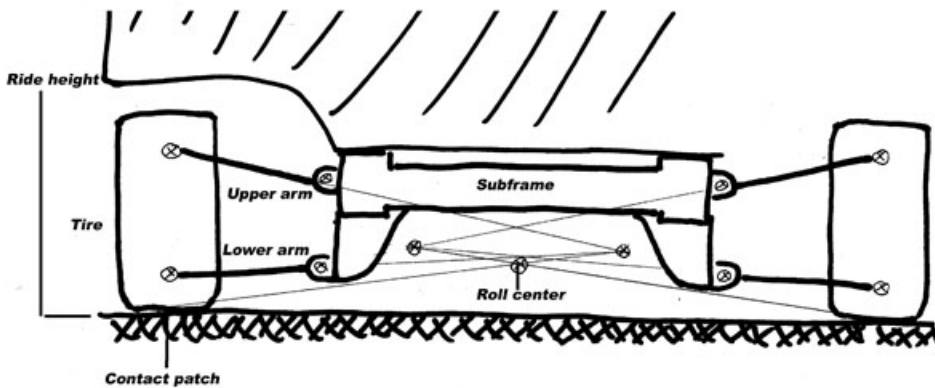
Note: Raising the subframe will alter your rear alignment.

## Roll center adjustment and ride height adjustment by raising subframe

The following diagram depicts the subframe at the OEM location, with the stock ride height and roll center. Notice the gap between the subframe and the chassis, where the shims would sit.



The following diagram shows the subframe raised closer towards the chassis (no more gap between subframe and chassis), and the ride height lowered the same amount. The roll center position is un-changed.



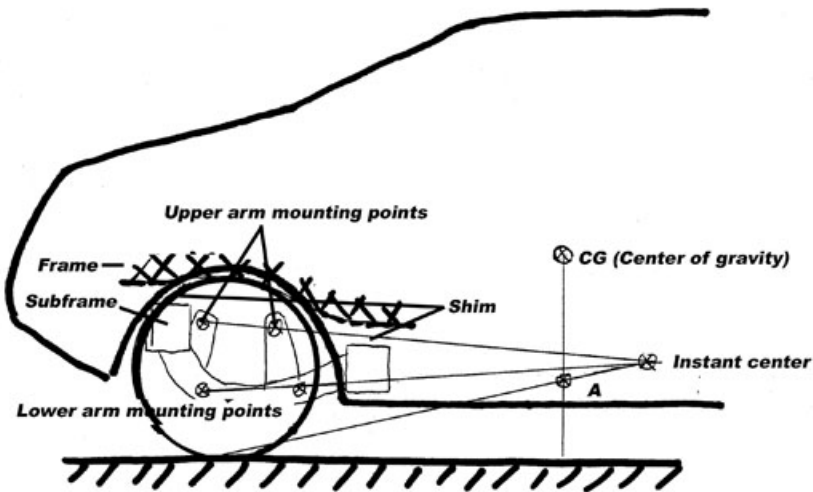
If we are to compare the 2 subframe positions with the car at the same ride height in both cases, raising the subframe will raise the roll center.

Note: Raising the subframe will not significantly change ride height, this is because the ride height is determined by the shock/spring assembly as it sits between the chassis and the knuckle.

## Raising subframe and effect on anti-squat

The ratio between the height from the ground to point “A”, and the height from the ground to CG, is the amount of anti-squat. As a general rule, more anti-squat keeps the rear end from squatting under hard acceleration, and reduces traction.

The following diagram depicts the subframe at the OEM location, with the stock ride height and anti-squat. Notice the gap between the subframe and the chassis, where the shims would sit.



The following diagram shows what happens when you raise the subframe closer to the chassis. For this example, we are comparing what happens to the anti-squat when the ride height remains the same. When the subframe is raised, the rear “instant center” is raised as well, that moves point A up and increases anti-squat.

