

964 / 993 Control Arm Bushing Replacement

Preparation: Once the arms are off the car (see the **Caster Eccentric Location** note at the bottom of this DIY), while being optional, clean up any road debris, dirt and/or cosmoline. I typically do this after the rubber bushings have been removed.

Remove the Steel Pivot Top Hats: Use a hand held torch to apply heat towards the center of the steel mounting bush. Apply heat only until the first sign of smoke appears.



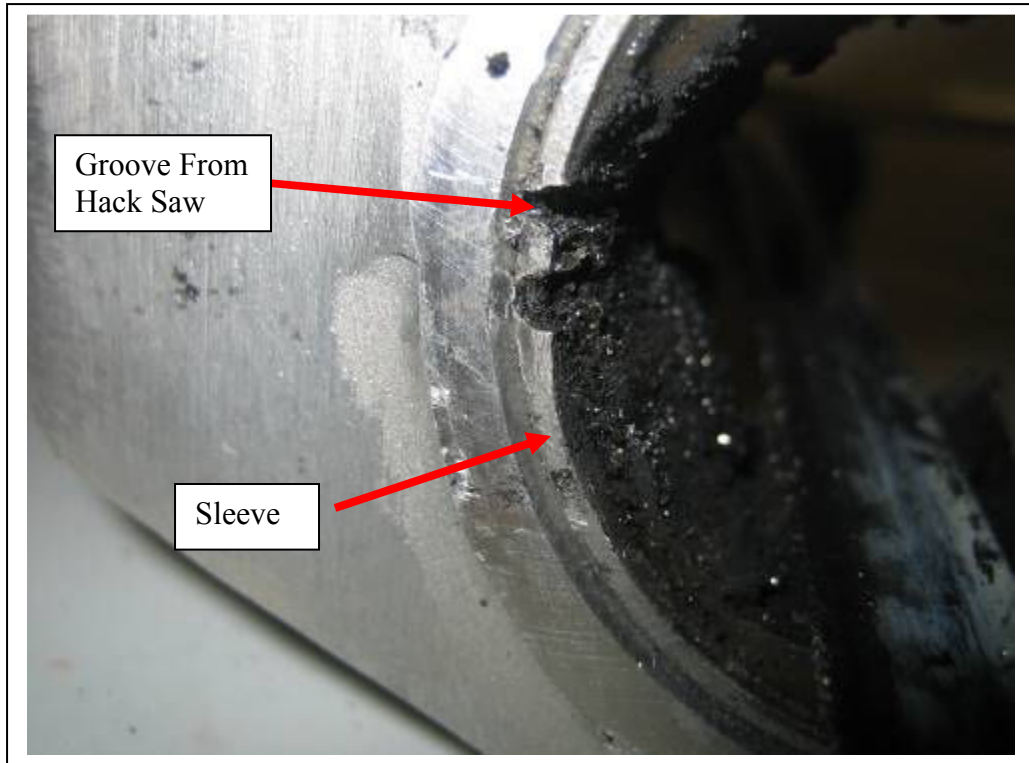
This helps de-bond the steel center bush. Extinguish the torch being careful to set it down in a safe place. Use Channel-locks to grab and rotate the steel bush back and forth. It will pull out of the rubber bushing with minimal effort. Do this for both front and rear steel top hat bushings. One at the front, two at the rear.





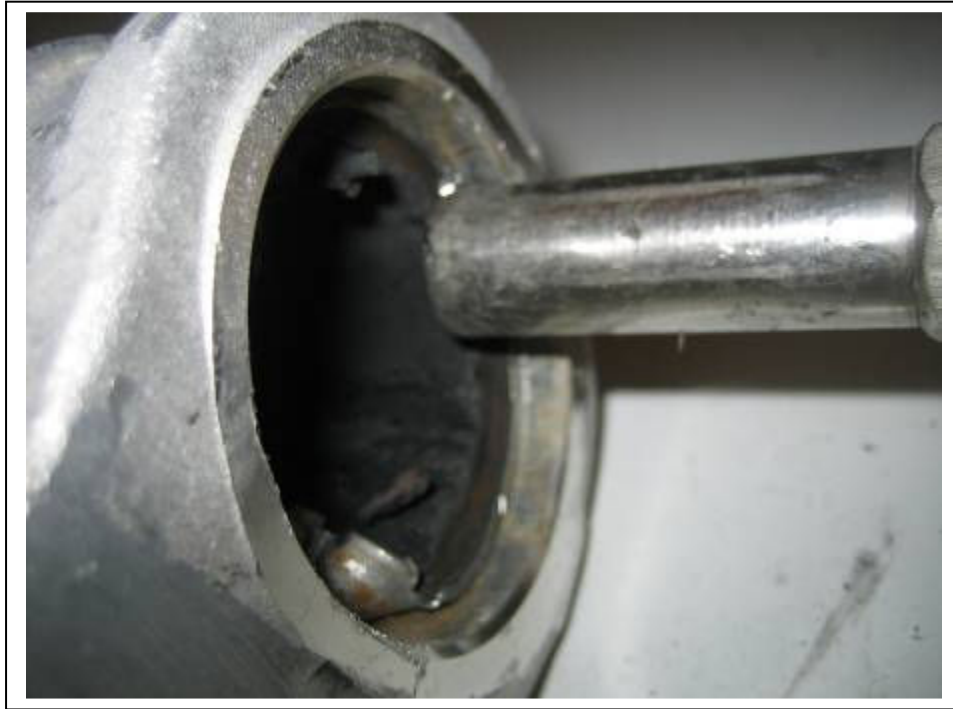
Remove the Forward Bushing: With a sharp hack saw blade, remove the blade and feed it through the center of the bushing and reassemble the hack saw. You may wish to mount the control arm in a vise for added stability. What you are doing is cutting through a small section of rubber to get to the steel outer bushing sleeve. The goal here is to cut through only the rubber bushings' outer steel sleeve. This will relax the as-designed press fit of the rubber bushing assembly. Cut through it being careful not to cut into the aluminum of the control arm.





Best is to cut level and take it slow. When you get close, stroke the hack saw one stroke at a time, looking to see if you have cut through the steel outer sleeve. Once complete, use a chisel to bend-up the edges of the outer steel sleeve. Then with a large diameter punch, work the bushing loose and ultimately out of the control arm.





Remove the Aft Bushings: There are two bushings at the aft leg of the control arm. They are pressed into place to face each other. Use a large chisel to get under the steel lip of one of the outer bushing sleeves. Basically striking it at 90 degrees to the bushing centerline or axis. Work your way around the bushing sleeve flange.



The steel flange of the rubber bushing will start to deform like this:



Keep striking it and you'll notice the bushing will start to move outward.

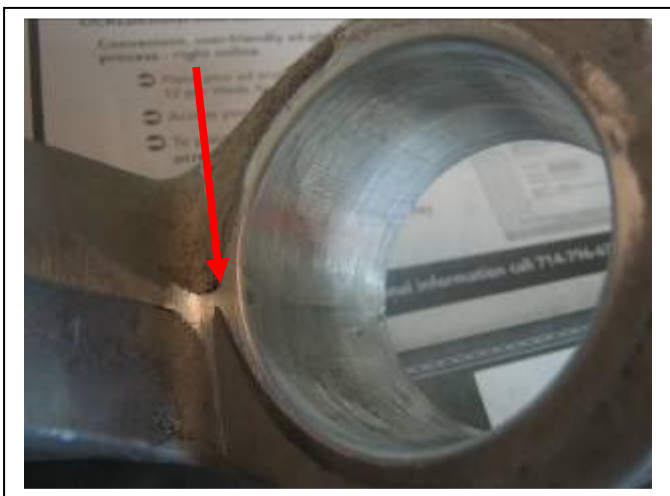


Once out, you will notice the other bushing can be easily punched out of the control arm from the inside.



With sand paper or Scotchbrite, clean the bores of the control arms where the original rubber bushings were installed. It doesn't need to be shiny clean, just remove any highspots, dirt, rust etc. Remember the bushings do not rotate in the control arm.

I have found some control arms (due to core shift during the casting process) to have a little bump or casting flash here:



Simply file it flat such that it will not interfere with the flange of the urethane bushing.

Prepare the Steel Pivot Top Hats: Now that these have cooled from prior heating, they need to be cleaned to bare metal. If there are larger chunks of rubber still on them, soak them in lacquer thinner for an hour or so. This loosens any rubber bits left on them from original removal. Warning: this previously heated rubber is messy and gets everywhere --wear rubber gloves! Use sandpaper or a wire brush (perhaps a wire wheel on a grinder motor) to get down to the metal. You will notice the surface will go from black rubber to shiny steel. Continue sanding until all of the rubber is removed. Use Scotchbrite to polish the surface further. It must be relatively smooth and shiny as this is your new pivot surface that pivots on the urethane bushings inner bore.



Assemble Urethane Bushings Into Control Arm: You are almost home free. The hard work is behind you. Since there is a slight interference fit between the bushing and the control arm, apply a very light film of the supplied SSN (super sticky nasty) grease to the outer surface of all bushings, a very thin film. Use a C-clamp or the like to press-in the bushings until they are close to seating on their respective flange. Use two pieces of wood or aluminum placed between the C-clamp feet and the bushing / control arm (please excuse my crude pieces of wood). Otherwise the C-clamp feet will fall into the bushing / control arm bore. The bushings can be started by hand. The large front bushing can be a little tricky to get started straight. Wipe off any excess grease. WD40 cuts the excess grease nicely.



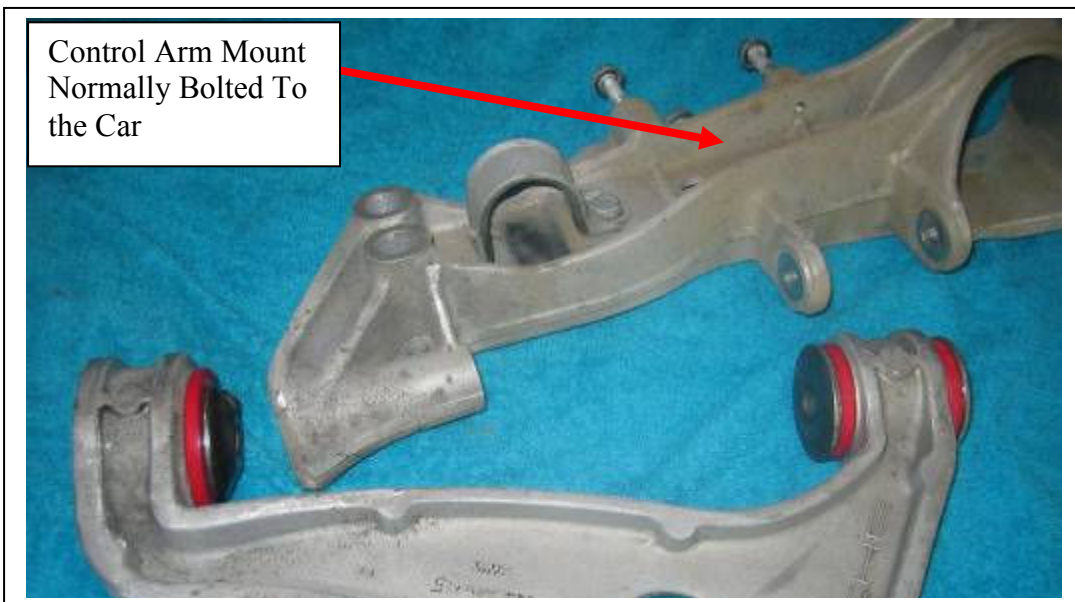
Press-in the Steel Pivot Top Hats: Wipe the SSN grease into the grooves of all urethane bushings, filling-up the grooves. Apply it generously. Apply a generous amount of SSN grease to the steel pivot tophats, both on the outer diameter and the backside of the flange. Install the steel pivot tophats by hand at first to start them. **Be sure to clock the forward steel pivot tophat such that the locking notch will easily find its place on the aluminum carrier in which the control arms mount to before pressing it into place. Reference photos below.* Then, with the C-clamp / wood or aluminum combo, press them into the urethane bushings all the way until completely seated. Doing this will properly seat the urethane bushings at the same time. Wipe-off all SSN grease that oozed out. Also, be sure clean out any SSN grease that made its way into the center of the steel pivot tophats.





Reinstall Control Arms: You'll notice the forward steel pivot top hat bushing has a notch or locating feature that prevents the top hat bushing from turning while tightening its mounting bolt. The clocking or orientation of this top hat is important at the time the steel top hat is pressed into the urethane bushing. It is to be pointing towards the center of the car. See the above image for reference.

Hook the control arm around its forward mounting position, verifying the notch or locating features are aligned.

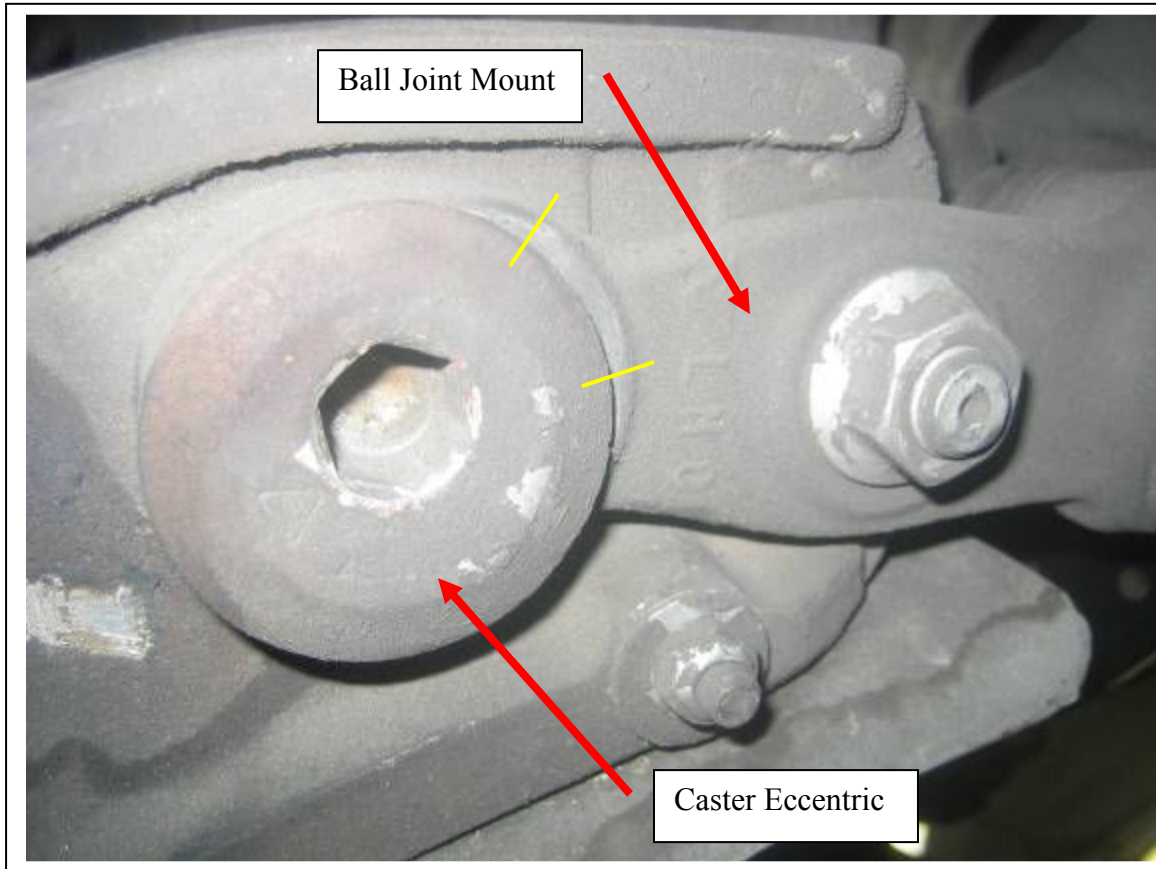


Once the forward mounting is engaged in its mount, swing the aft end of the control arm into its mount. It may take a little shoving to get it into place.



Continued below:

Caster Eccentric Location: Before loosening the caster adjuster eccentric, be sure to mark its position. To do this, clean the eccentric head and the ball joint mount local to where you wish to mark its position. Use a paint pen, Sharpie or a centerpunch to mark the position of the eccentric relative to the ball joint mount. See the image below for an example (yellow marks). There is not a need to mark its position relative to the control arm itself.



Torque Specs:

Long, forward mounting bolt	81 ft/lbs
Aft mounting bolt	63 ft/lbs
Caster Eccentric	48 ft/lbs
Caster Pivot Stud	88 ft/lbs
Wheels	96 ft/lbs