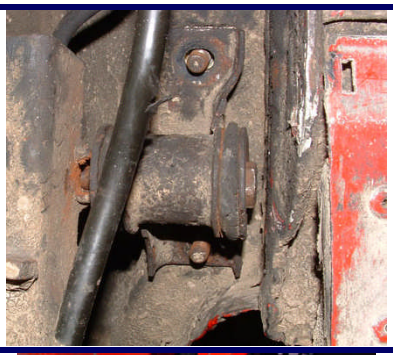
Volkswagen Cabriolet DIY Guide
Replacing the Rear Axle Beam Bushings

This how-to was originally posted on VWvortex.com by "Rabid Chihuahua": http://forums.vwvortex.com/zerothread?id=2684394 .

This is a supplement to the Bentley Manual instructions.

Tools needed:

- Read through the how-to and the Bentley Manual instructions to gather a list of what you'll need

Steps	Photos
I jacked the back of the car, supported it on jack stands, blocks on the front wheels, the usual precautions.	
Attempt 1: Then I installed my jack under the left side of the beam and undid the nuts securing the support bracket/bushing housing to the body. I lowered the jack, but the bracket would only disengage from one out of two studs even with a bit of prying.	
I had to remove the nut on top of the shock strut (the one in the trunk) to allow enough play for the bracket to fully disengage. Now the Bentley didn't mention this step, so I assume that with stock suspension you might not have to do this (I have Neuspeed sport lowering springs and Bilstein sport shocks).	
I lowered the beam enough to be able to access the head of the pivot bolt (the one that goes through the bushing's center and into the beam) with a socket, while watching that I didn't stretch the flexible brake line excessively. (By the way, this picture is actually from attempt 3 after cable clip removal and parking brake cable damage.)	

So I scratched my head (okay, maybe not; I had greasy gloves) wondering how I was going to undo this big bolt. There wasn't much space for leverage on the nut. I was able to slide my impact wrench to the nut but the thing wouldn't move. I wasn't able to get the bolt head to turn either with the impact. In both cases, copious amounts of Liquid Wrench were used.
It was getting late so I called it quits and put the whole thing back together to move the car.

Attempt 2:

Did the same thing: supported the axle beam with a milk box, installed a wrench on the nut and had a go at the bolt head with my newly acquired 27" breaker bar.


It moved! I kept turning it until I noticed that the whole bushing housing was turning with the bolt and that it had stretched and kinked the parking brake cable. I tucked the cable out of the way with a tie wrap and kept turning until I got the nut loose. Dropped the beam a bit more and I was able to remove the whole bushing/housing/bolt assembly with just a bit of hammer/punch persuasion.

My intentions were to reuse the bolt by separating it from the bushing (it runs inside a steel sleeve). But tons of Liquid Wrench and persuasion from a 6 ton press at work wouldn't make it move. I figured I'd have to press the bolt out with the sleeve and rubber stuck to it. The local dealer would only receive the bolts in 4 days.

So again I had to put it all back together to move the car...

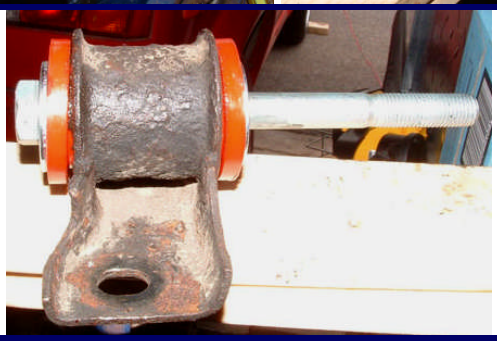
Attempt 3:

Received the expensive bolts (N0401573, $11.54 each Canadian, at least it looks like they have a Dacromet finish which is very good against corrosion) and nuts (N0221414, $1.16 each).

Skip to the bushing/housing/bolt assembly on my bench, I cut off the rubber flange on one side, drenched the whole thing in Liquid Wrench, secured the housing in the vise and punched the whole assembly out with a nice big hammer.


After cleaning out the inside of the housing, I greased the bushing halves with the stuff provided and pressed them in with the vise, then pressed in the sleeve. I used two of the four washers that came with the kit.


By the way, at about this point I ran out of batteries on the camera. Sorry, no more pictures!



So back into the beam it went; torque it to 60Nm/44ft.lb, aligned it as per Bentley's recommendations (basically aligned at about a 10 degree angle from the trailing arm, just so that the housing holes line up with the studs at reassembly), jacked the beam back up... only to find that the housing holes (oblong side to side) wouldn't line up with the studs anymore. Too tight inboard. I fiddled with loosening the housing nuts on the other side of the car, tried pry bar persuasion... It just wouldn't align.

So I took the whole thing out one more time and replaced the inboard washer with the original big flat washer. I thought this would force the housing out a bit by changing the way the urethane compresses. Indeed it did, so I bolted it back up and started on the other side.

Wrench jammed on the nut, Liquid Wrench showers and breaker bar persuasion again. Except this time, the bolt decided to shear right off! Not so bad; I had a replacement, except that the other part of the shank was still inside the beam. Hammer and punch persuasion wouldn't convince it to move, so I went hunting for an air hammer/zip gun. Only the second tool rental place had one. I protected the fuel tank with some sheet steel and heated around the bolt hole in the beam. With a few shots of the air hammer, the old shank came right out.

So I replaced the bushings and bolt, using the original wide washer on the inboard side. Reassembled, aligned, torqued and so on, but again had trouble getting the holes to line up. Took quite a bit of fiddling and prying to get them in. Finally torque the mounting nuts on both sides to 45Nm/33ft.lb, lowered the car while getting the struts to line up in their holes, and put the strut top bushing, cupped washer and locknut back together.

I can't really say how it "feels" yet, I just went for a quick drive to make sure there were no abnormal noises but wasn't able to test the handling since the car badly needs an alignment since my suspension "overhaul". I have yet to change the damaged left parking brake cable. Will do soon.

If I had to do it again, I'd undo the brake lines and parking brake cables and just remove the whole axle. This way I'd have proper access to the pivot bolt nuts and wouldn't risk shearing bolts. If I had to do it one side at a time, I'd make sure the parking brake cables are safely tucked out of harm's way before starting to undo anything.

Tip from “dubdaze68”:

I have something to say regarding this...IT IS MUCH BETTER IF YOU JUST TAKE THE WHOLE AXLE OFF...unbolt the cables, lines, and drop it...that way, not only is it easier to get to the bolts, you can inspect the rest of the beam for other problems more closely.

It is indeed a PAIN to get the old ones out; however, as most times, the rubber has turned into "hard on the outside, gooey in the middle"...

Sometimes, it is easier to try and cut the bolt out with a utility knife and wiggle action, then burn out the old bushing with a torch (similar to what some people do with A-arm bushings)...

The new one goes together MUCH easier; the two-piece design helps.

While you have the axle off, this might be a good time to inspect the e-brake cables, and definitely the sway bar bushings, as they break down over time (these can be fun to replace, as the straps are a PAIN to get back on over the axle...and they're one time use pieces, as far as I'm concerned), and the bushings can be recalcitrant to go over the bar.

With the new axle and sway bar bushings, the difference is noticeable...it takes a lot of the roll out of the "cabby lean" rear, with no noticeable difference in ride quality.