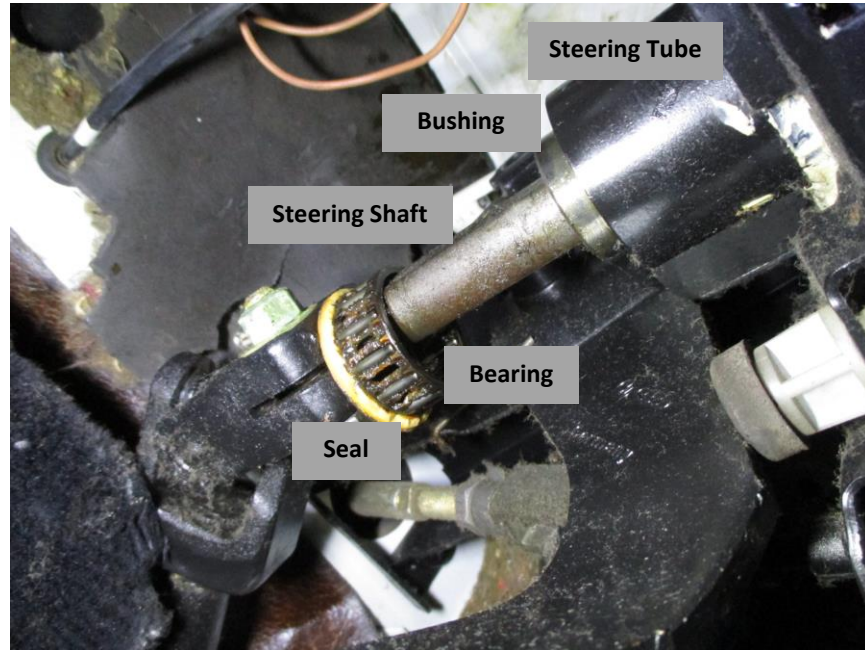


Volkswagen Cabriolet DIY Guide

Loose Steering Shaft | Steering Bearing Replacement

You're driving along and, while making a turn, your steering wheel moves a bit (or perhaps a lot), be it vertically and/or laterally. It may make a slight knock as well. What's wrong? Most likely, the bearing at the bottom of the shaft has slipped off its bushing due to a disintegrated, or worn out, seal.



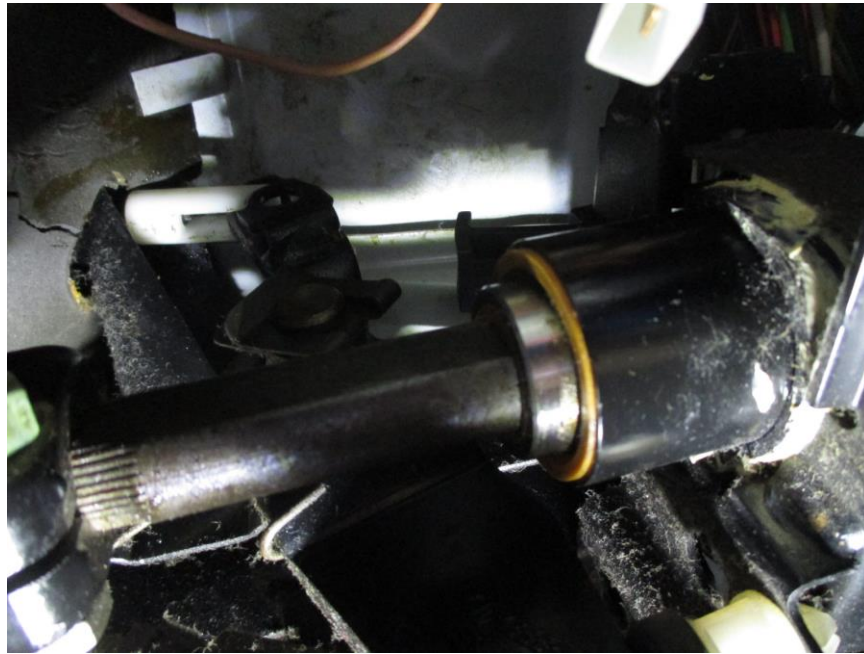
Can this issue be easily fixed and can it be done without steering column removal? Yes! However, this should really be a temporary repair because, as seen in the photo above, the two-piece bearing has actually separated and is no longer doing its job as effectively as it should be. What the original components looked like:



Temporary repair procedure:

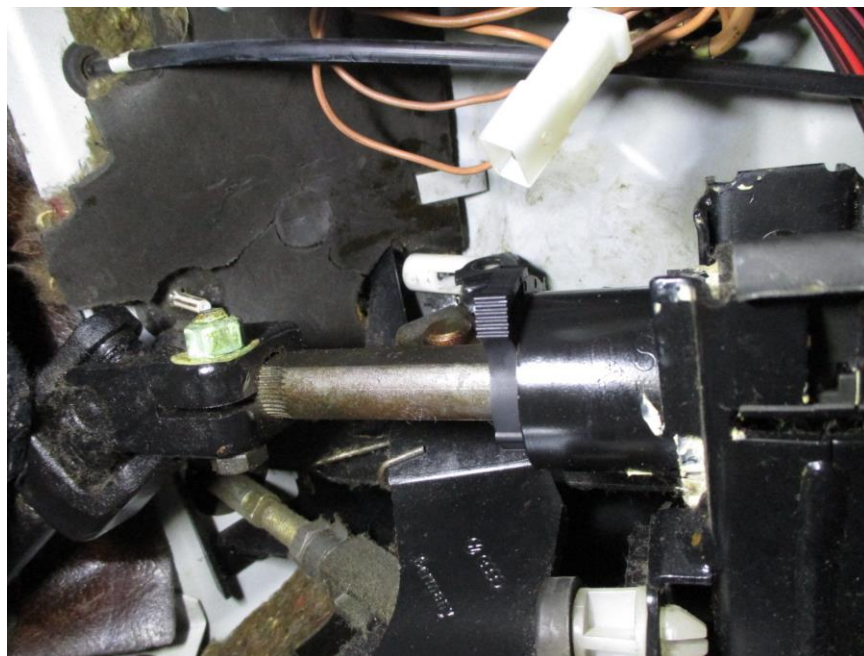
Not seen in the photos, but recommended: Wipe the bearing as clean as possible and re-grease it.

Slide the bearing back over the bushing and up into the steering tube. If the seal is still present, slide it back over the bushing until it's flush with the tube.



Wipe the bushing clean of grease.

Find a hose clamp (plastic click type), or zip-tie large enough to fit 1" or 28mm and install tightly around the bushing.



Ensure the clamp or tie doesn't slip off the bushing. Done!

Note: It is advised that you not use a screw-on clamp. The reason for this, is that since this is a telescoping column, in the case of an accident, there is a possibility that a screw-on hose clamp could interfere with the collapsing nature of the column, which is a safety feature. A plastic version, or zip tie, will, seemingly, slip off the bushing, thereby not interfering with the safety feature.

This should really be a temporary repair. At some point, you will want to replace the bearing assembly. For that, skip to page 3.

Steering Column Bearing Replacement

This guide was originally posted in the Scirocco Forum on VWvortex by Carl Maxwell (ginster86roc):

<https://forums.vwvortex.com/showthread.php?3571059> & reposted at <http://www.timbox.net/technotes/steering-column-bearings/>.

Symptoms:

- Steering wheel moves up and down with an annoying clunk-clunk
- Steering (manual steering) effort seem to bind in the parking lot sometimes
- Loose steering column rattle and vibrations felt throughout the pedal cluster

Over time, my car's feel had deteriorated. The steering was 'off', but I wasn't sure why. I checked tire pressures, trends, etc. and then one day it was as if the bottom of the column had fallen loose. Indeed it had.

Looking back up at the column, you can see where the needle bearing had worked down, while the column was dangling freely in space, only to set up vibrations in the car that I could swear I could feel in my fillings.

So I consulted ETKA at work and ordered a new bearing for the column tube (part #171-419-517)...



...and a new race (part #171-419-518A) for the actual steering column, which would turn out to be my real problem.

[Ed. note: You can purchase a new lower bearing from the following places:

<https://www.tech-53.com/product-p/171-419-517.htm>

<https://mk1engineering.com/products/vw-mk1-rabbit-scirocco-cabriolet-steering-column-rebuild-kit>

http://www.mk1autohaus.com/Lower-Steering-Column-Bearing- p_8478.html

...as well as other retailers.

You'll want to [follow this guide](#) to remove the ignition switch housing before continuing. In addition to the below guide, Mk1 Engineering also has a guide at their bearing page <https://mk1engineering.com/products/vw-mk1-rabbit-scirocco-cabriolet-steering-column-rebuild-kit>.

For best results, you'll want to make notations, either on the column/shaft itself, or via measurements, of where everything is located so that all components are installed in the original positions.]

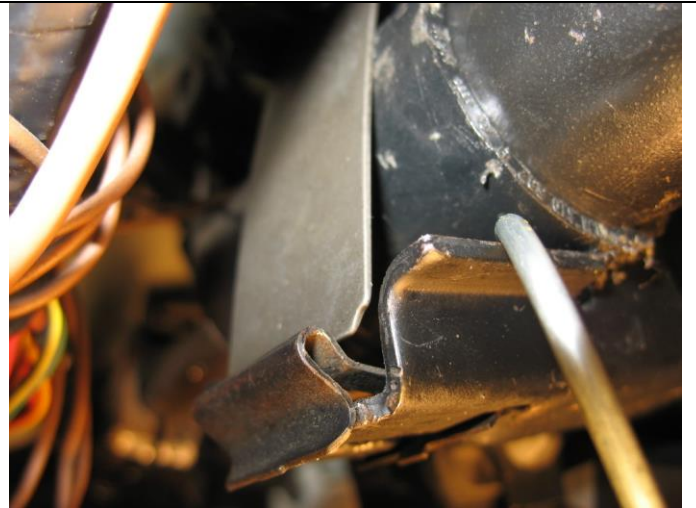
Locate the two Allen-head bolts towards the bottom of the column and undo them.

Follow the steering column down to the the U-joint and undo that 13mm bolt. [Ed. note: You may want to mark the steering shaft and bracket for depth and position before loosening the bolt so that you can ensure exact placement upon reinstallation.]



Remove the bolt and with some wiggling, the column should free from the end of the U-joint shaft by pulling the column assembly towards the back of the car.

Undo the spring that clamps the column tube to the pedal cluster.



The column assembly should now be free to remove from the car. Be mindful of your wiring harnesses and grounds while extracting the tube.

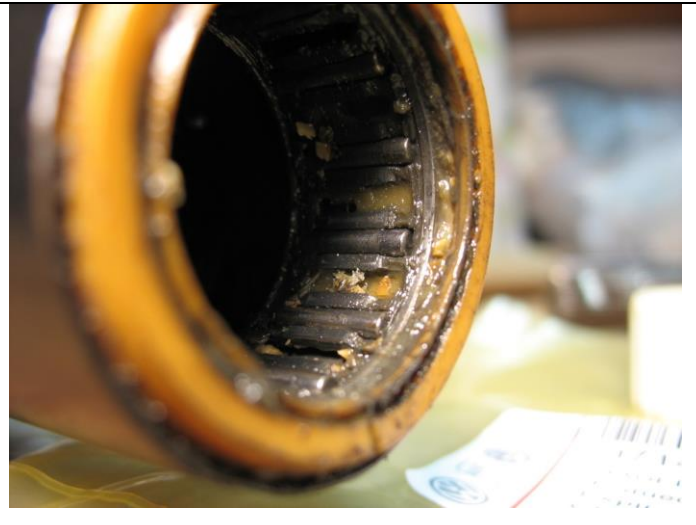
This is the steering column stripped of its tube. It is a 2-piece, telescoping unit, with the splined-half on the left sliding into the lock cylinder housing-end on the right.



My problem was with the inner bearing race that is pressed onto the column. Mine had rotted with age and had actually started to crumble...



As a result, over time, that inner race had walked itself up the steering column, little by little, turn after turn, until finally it had walked up so high that it had freed itself from the outer needle-bearing race in the tube. Bam! There's your problem! Yummy...



I searched the garage for a suitable length of pipe to use as a drift to drive out the needle bearing. What to do? I ended up using (and I s*** you not) the lower half of my beach umbrella – whose diameter fit the race nicely – a couple taps with a hammer and out it came.

You can see where my needle bearing had actually slipped downwards, indicated by the distinct line of the discolored area vs. the more 'white' area as compared to the new bearing in the background.



To install the new needle bearing, I simply placed the bearing on the carpet, stood the tube atop it, and smacked the end of the tube w/a hammer a couple times until the needle bearing was flush with the end of the tube. Oh, and I held a wooden block atop the tube to avoid deforming it with hammer blows.

The inner race on the column was installed using a large deep-welled socket as a drift to drive the race into place on the shaft. A nice snug fit was my reward after a couple tap-tap-taps with the hammer.

I did a couple test fits before I got the location of the race just so. By that, I mean I had to grab the tube and reinstall the lock housing-end and pull the column down into the tube (as if it were assembled) to see if the race was at the proper 'depth' so as to be fully contacting the needle bearing.

Once you've got the inner race on the column where you want it, you **must** be sure to install the column with the notched-out splined end in the proper orientation for mating with the u-joint shaft.

Once you're sure everything is lined up, go ahead and reinstall the housing and lock it down. Now you have fixed the length of your column and eliminated any end play... there should be none.



^Almost like a radial shaft seal in its tightness.

It helps to pry open the clamping end of the U-joint a bit before attempting to slide the column back in place... a little lube wouldn't hurt either.

If you oriented things properly when putting on the lock housing then everything should drop back into place like a hot... well, you know.

Finish the rest of the install as per that linked thread at the beginning of this thread and you should be golden.



Total elapsed time for me in the garage with common hand tools (and an umbrella): 1 hour.

Happy tinkering.

**** Remember, *you* are responsible for working on *your* car; Cabby-Info.com, KamzKreationz, VAG, VWoA, or anyone else are not responsible if *anything* goes wrong while *you* are working on, in and under *your* car!
Use this information at your own risk!***