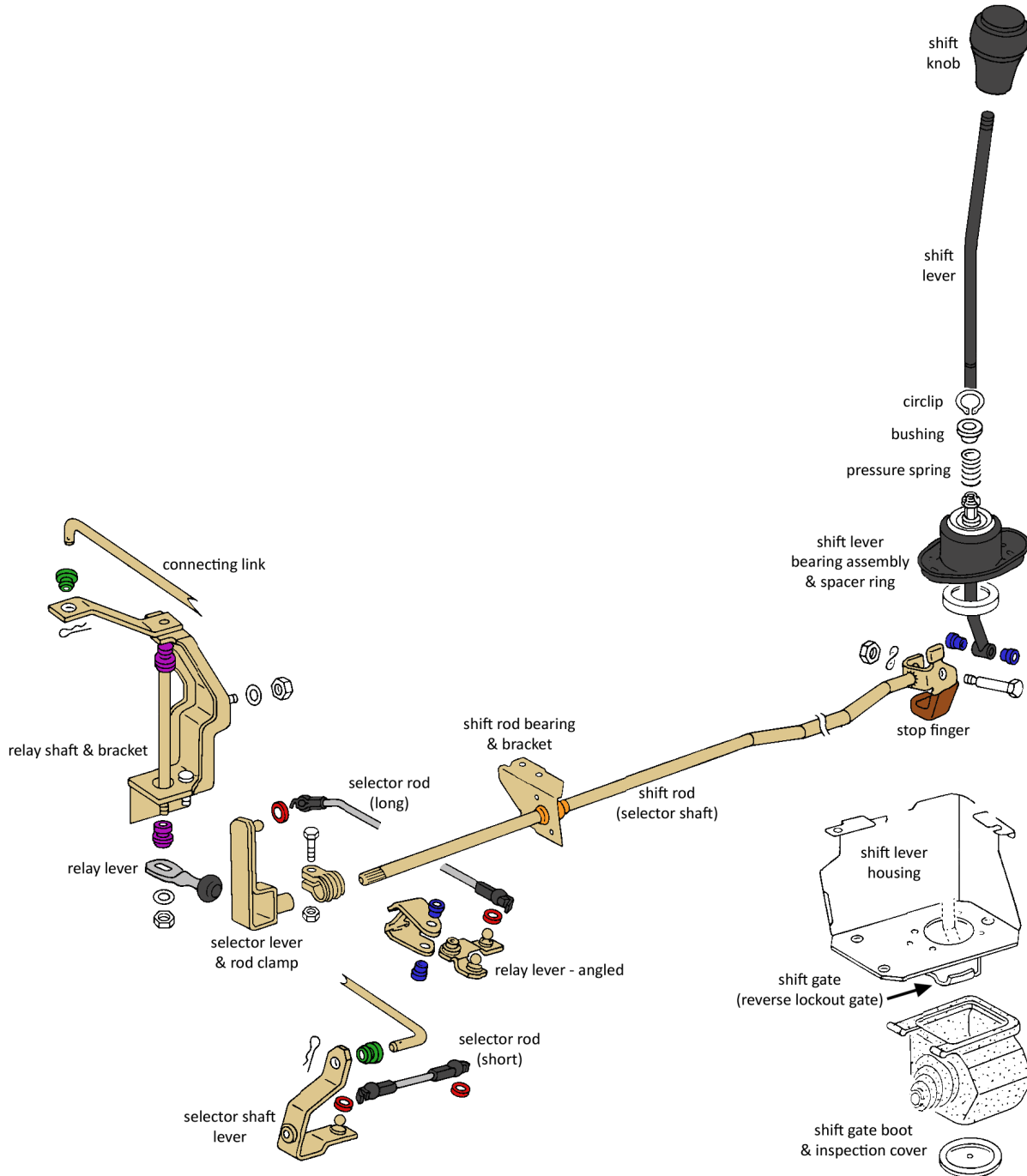


# Volkswagen Cabriolet DIY Guide

## 020 Manual Transmission

### 5-speed Shifter Linkages & Bushings

You bought yourself a shifter linkage rebuild kit. Problem is, you have no idea where everything goes. This guide shows you where what goes where. Before beginning, take a moment to familiarize yourself with the 020's shift components:



[Shifter Component Part Numbers and Locations: Page 2](#)


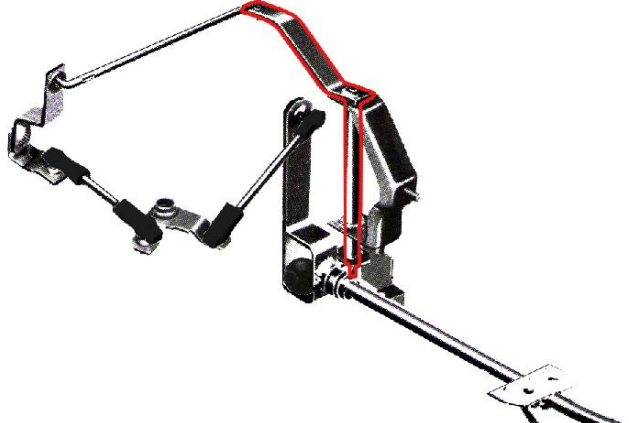

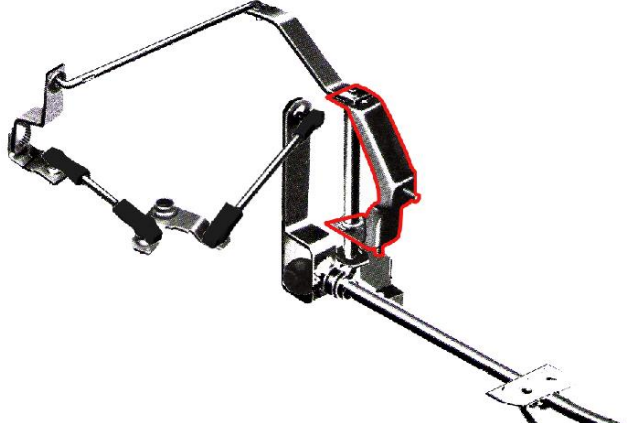

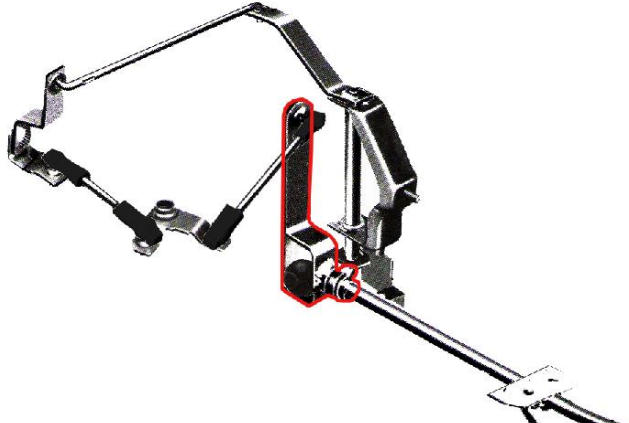

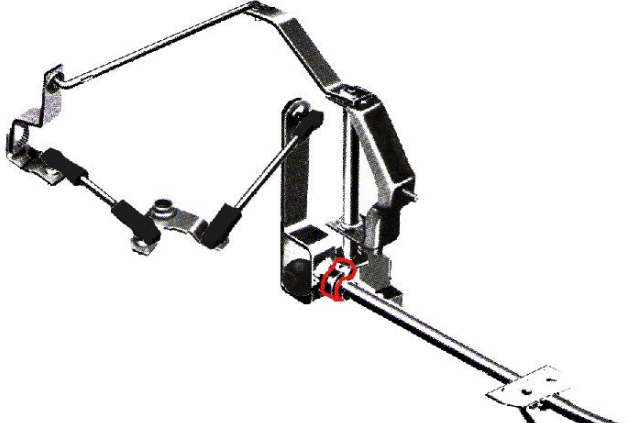
[Shift Linkage & Bushing Replacement: Page 7](#)


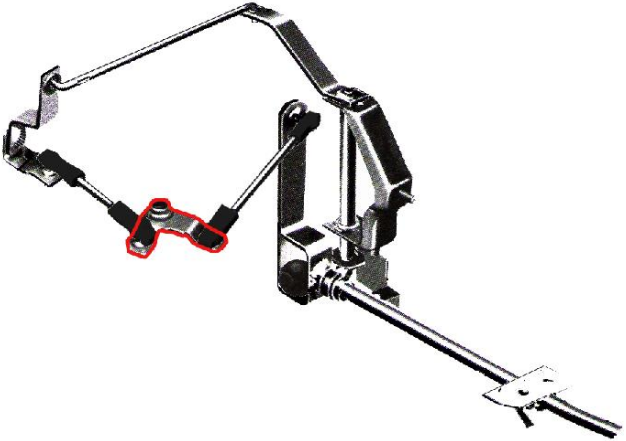

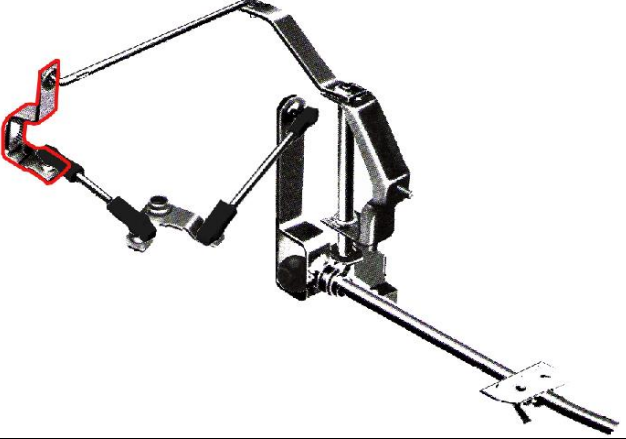



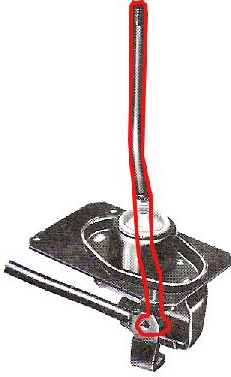

[Shift Linkage Adjustment: Page 10](#)



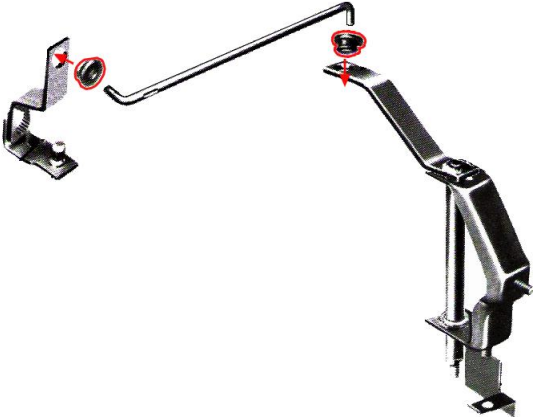

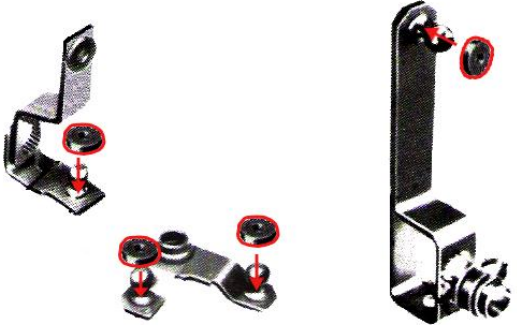


[Stop Finger Repair: Page 11](#)

**Part I: Component List and Location**


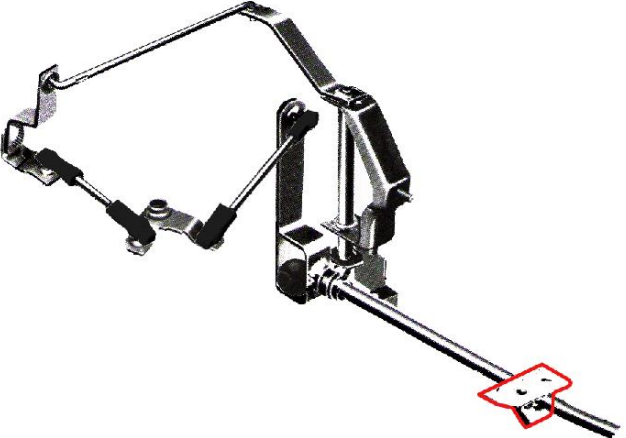

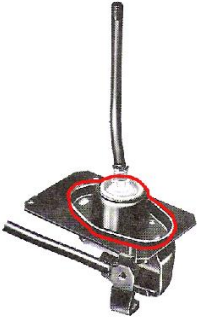
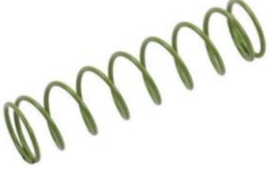



Component	Part Number / Notes	Location
 <p>Selector Rod – short</p>	<p>171-711-574B</p>	
 <p>Selector Rod – long</p>	<p>171-711-593E</p>	
 <p>Relay Lever (30mm ball)</p>	<p>171-711-163E</p>	
 <p>Connecting Link</p>	<p>171-711-185B  171-711-561 (hairpin cotter pin)</p>	

 <p><b>Relay Shaft</b></p>	<p><b>171-711-173</b></p> <p>Securing nut torque: 20 Nm / 15 ft. lbs.</p>	
 <p><b>Relay Shaft Bracket</b></p>	<p><b>171-711-083B</b> (manual steering)</p> <p><b>175-711-083</b> (power steering)</p> <p>Securing nut torque: 20 Nm / 15 ft. lbs.</p>	
 <p><b>Selector Lever</b></p>	<p><b>171-711-177C</b></p>	
 <p><b>Selector Lever &amp; Shift Rod Clamp</b></p>	<p><b>803-711-237A</b></p> <p>Securing nut torque: 20 Nm / 15 ft. lbs.</p>	

 <p><b>Relay Lever – angled</b></p>	<p><b>171-711-586A</b></p> <p>Securing nut torque: 10 Nm / 7 ft. lbs.</p>	
 <p><b>Selector Shaft Lever</b></p>	<p><b>171-711-051C</b></p> <p>Securing nut torque: 13 Nm / 9 ft. lbs.</p>	
 <p><b>Shift Rod / Selector Shaft (with stop finger)</b></p>	<p><b>171-711-151B</b></p> <p>Securing nut torque: 7 Nm / 61 in. lbs.</p>	
 <p><b>Shift Lever</b></p>	<p><b>171-711-125B</b></p> <p>Securing nut torque: 7 Nm / 61 in. lbs.</p>	
 <p><b>Shift Linkage Bushing Kit</b></p>	<p><b>171-798-211</b></p>	<p>(see the individual locations below)</p>

 <p><b>Relay Shaft Bracket Bushings</b></p>	<p><b>171-711-067B</b></p>	
 <p><b>Connecting Link Bushings</b></p>	<p><b>171-711-181</b></p>	
 <p><b>Selector Rod Neoprene Washers</b></p>	<p><b>171-711-965</b></p>	
 <p><b>Shift Lever &amp; Relay Lever (angled) Bushings</b></p>	<p><b>171-711-166</b></p>	



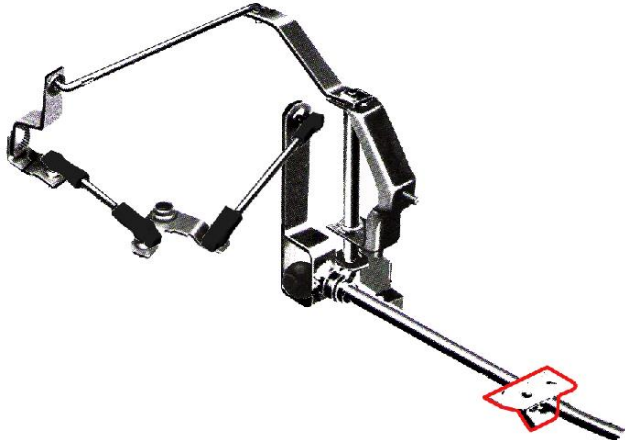
 <p><b>Shift Rod Bearing</b></p>	<p><b>171-711-194G</b></p> <p>Securing nut torque: 20 Nm / 15 ft. lbs.</p> <p>Note: The bearing can be purchased without the bracket, where available, but the bracket/bearing assembly is an easy plug-n-play install. A superior Delrin version of this bearing is also available on eBay; it requires disassembly of the bracket for installation. Regardless, if your car is missing this bearing or if it's shot, replace it ASAP!</p>	
 <p><b>Shift Lever Bearing Assembly</b></p>	<p><b>171-711-247</b></p> <p>Securing bolt torque: 8.5 Nm / 74 in. lbs.</p>	
 <p><b>Shift Lever Pressure Spring</b></p>	<p><b>431-711-197</b></p>	
 <p><b>Shift Lever Pressure Spring Bushing</b></p>	<p><b>171-711-217</b></p>	
 <p><b>Shift Lever Pressure Spring Circlip</b></p>	<p><b>N0124121</b></p>	

## Part II: Replacing Shift Linkages & Bushings

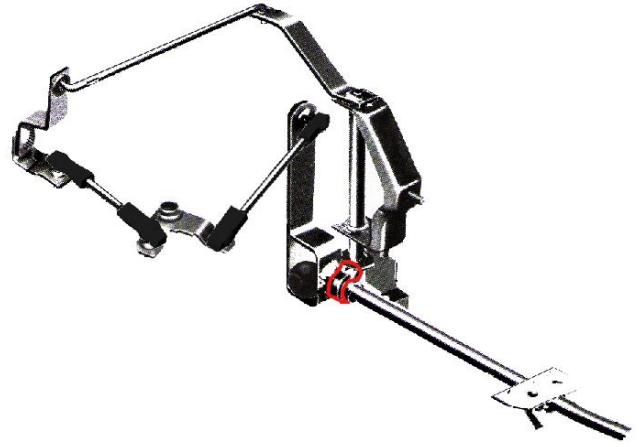
### Tools:

- ✓ 13mm socket wrench
- ✓ 10mm socket wrench
- ✓ Flat screwdriver
- ✓ Bearing grease, Fluid Film
- ✓ Degreaser and/or brake cleaner, rags/quality paper towels
- ✓ Jack & jack stands, or ramps/lift

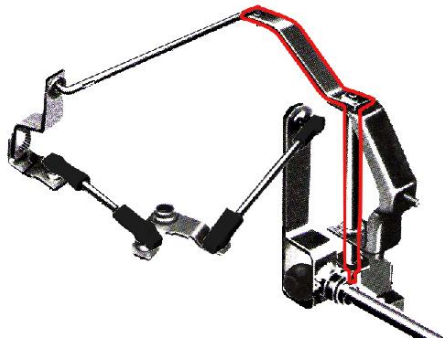
Procedure (after placing the front of the car on secure jack stands/ramps/lift):



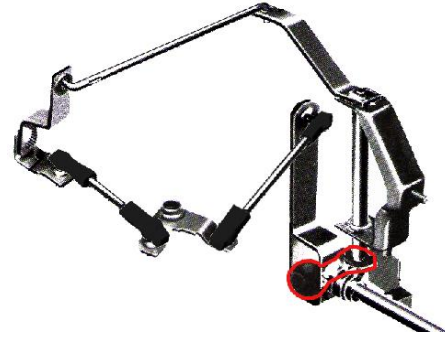
Remove the two 13mm nuts and washers from the shift rod bearing bracket.



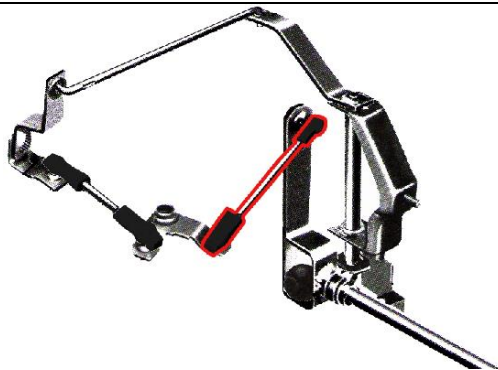
Remove 13mm nut and bolt on the shift rod clamp bolt.



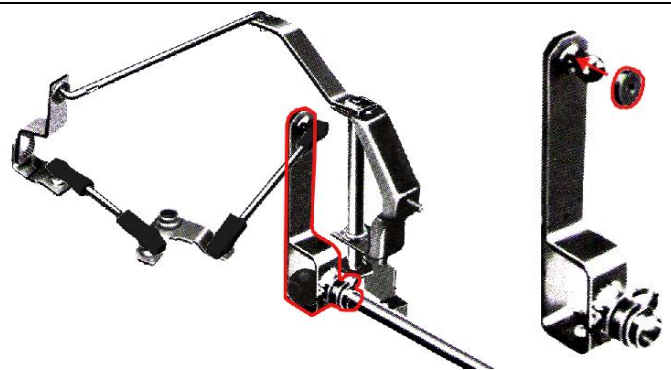
Remove the 13mm nut & washer from the bottom of the relay shaft.



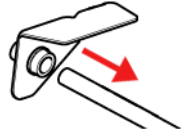
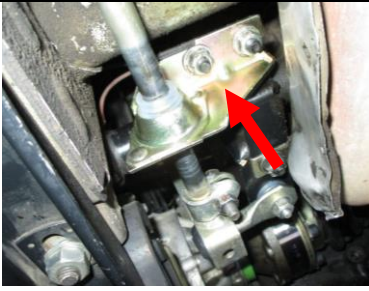
Remove the relay lever.



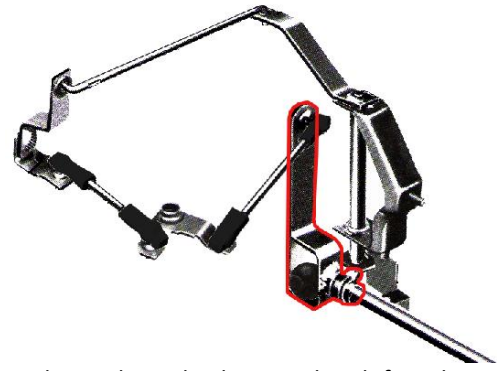
Using a flat screwdriver, pry the retaining tab open on the selector lever-end of the long selector rod. Pop the selector rod off the selector lever (easier to rotate it to one side while pushing, as opposed to pulling straight off).



Pull the selector lever off the shift rod. Remove the old washer from the selector rod pivot ball. Clean the selector lever up, including splined flange, if need be. Install new Neoprene washer onto pivot ball neck.



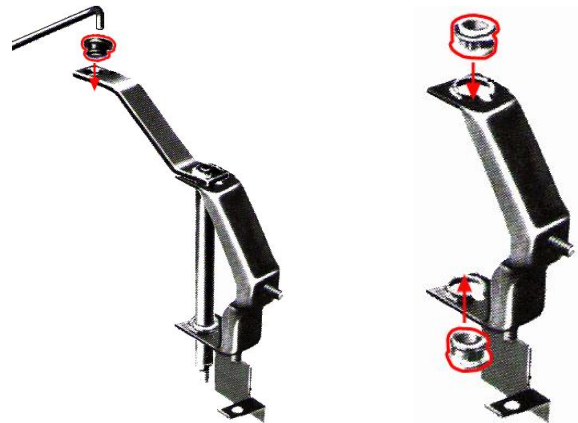
Rotate the shift rod bearing bracket so that it will clear the cat converter shroud and slide it off the rod. Clean up the rod, including the splines at the end. Liberally apply grease or Fluid Film to the inside of the new bearing and slide it onto the rod in the orientation shown (above, right). Wipe off any excess lubricant from the rod and install the two nuts/washers.



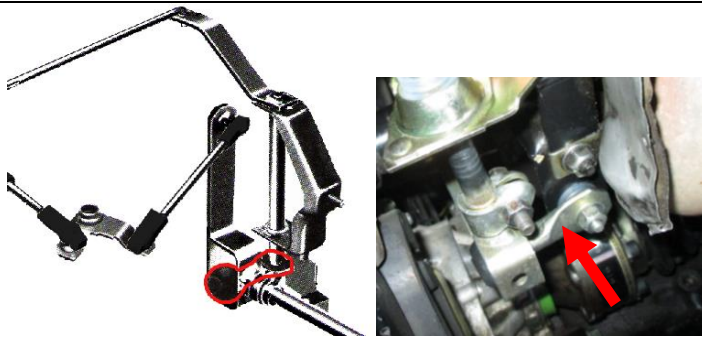
Install the selector lever back onto the shift rod. Reinstall the clamp bolt and nut, but **do not tighten**.



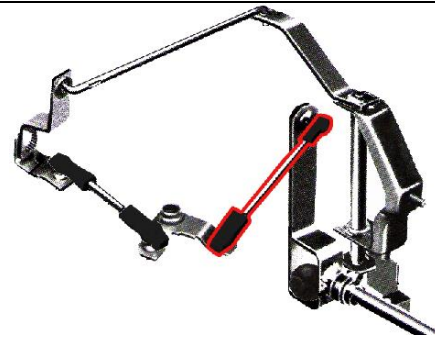
At the relay shaft, pull out the connecting link's cotter pin and pull the connecting link out of the relay shaft.



Pull the relay shaft out of the shaft's bracket. Remove the rubber bushing from the relay shaft, and the two bushings from the shaft bracket. Clean up the parts if need be. Install a new bushings into the relay shaft and bracket as shown above. Apply grease to the relay shaft bushing and grease or Fluid Film to the shaft bracket bushings. Reinstall the relay shaft into the bracket and reinstall the connecting link into the relay shaft, securing it with the cotter pin.

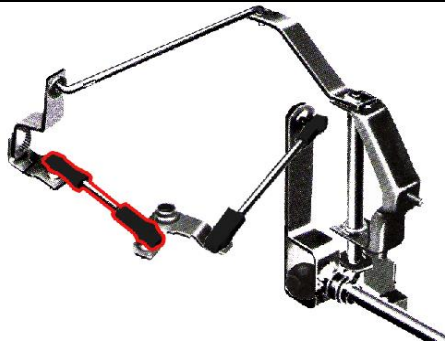


Install your new relay lever onto the relay shaft and into the selector lever "cage". Reinstall the 13mm washer and nut.

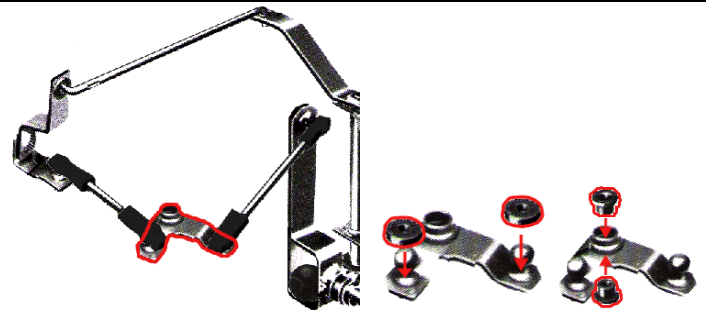


Using a flat screwdriver at the angled relay lever, pry the retaining tab open on the relay lever-end of the long selector rod. Pop the selector rod off the relay lever (easier to rotate it to one side while pushing, as opposed to pulling straight off).

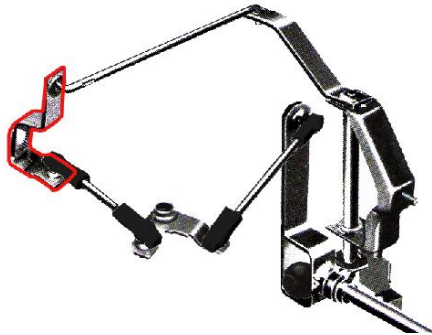




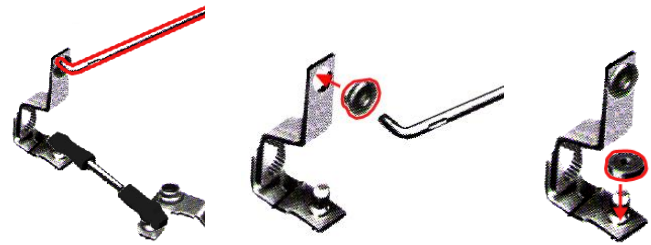
Using a flat screwdriver at the angled relay lever, pry the retaining tab open on the relay lever-end of the short selector rod. Pop the selector rod off the relay lever (easier to rotate it to one side while pushing, as opposed to pulling straight off).



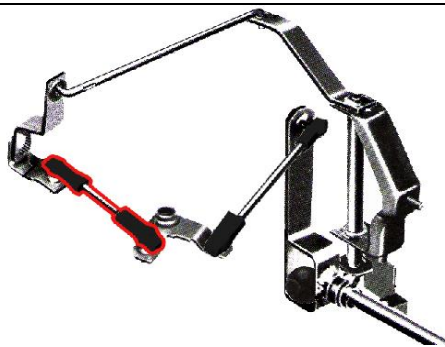
Using a 10mm socket on the nut and a 13mm socket on the bolt head, remove both from the angled relay lever. Remove the two plastic bushings and the two washers. Clean up the lever if need be. Install a new Neoprene washer on each pivot ball neck, and a new bushing into each side of the bolt hole. Apply grease or Fluid Film to the bushings and reinstall the lever into its bracket (reminder: bolt goes into the lever from the top, nut goes on the bottom).



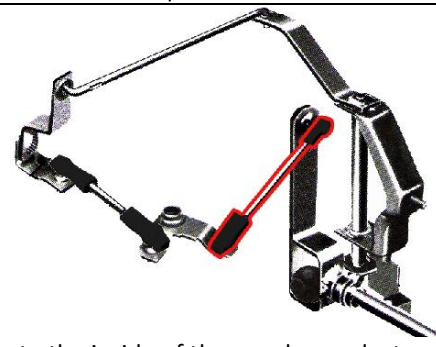
Using a flat screwdriver at the selector shaft lever, pry the retaining tab open on the lever-end of the short selector rod. Pop the selector rod off the lever (easier to rotate it to one side while pushing, as opposed to pulling straight off).



At the selector shaft lever, pull out the connecting link's cotter pin and pull the connecting link out of the lever. Remove the connecting link bushing and washer. Clean the lever if need be. Install new bushing at the top, and Neoprene washer onto the pivot ball neck. If the lever moves, return it to neutral (vertical) before reinstalling the linkages. Apply grease to the connecting link bushing and reinstall the connecting link, securing it with its cotter pin.



Apply grease to the inside of the new short selector rod end links. Pop the rod ends onto the selector shaft lever and angled relay lever pivot balls. Close each end's retaining tab.



Apply grease to the inside of the new long selector rod end links. Pop the rod ends onto the angled relay lever and selector lever pivot balls (bent-end of rod goes on selector lever). Close each end's retaining tab.



If you wish to replace the gear shift lever bushings, you'll need to remove the 13mm nut and bolt at the bottom of the lever, which is attached to the rear of the shift rod, housed inside the rubber boot. This job is a PITA, so remove the inspection cover and take a close look at your car's bushings. If they appear to be fine, spray some Fluid Film into them and call it good. If they appear damaged, you'll need to remove the boot in order to remove the bolt.

Proceed to Adjusting section.

## Part III: Adjusting Shift Linkages

### Tools:

- 13mm socket wrench (two of them, or a 13mm crescent wrench – you'll need two 13mm wrenches for this job)
- 15mm-wide gizmo (old cassette tape, piece of wood/metal cut down to 15mm wide, etc.)

### Requirements:

- ✓ Shift lever bearing assembly is in good shape and lubed. If it's faulty in any way, replace it.
- ✓ Shift rod bearing in place and in good shape. If the shift rod bearing is busted, missing, or if the bracket is damaged, you will have a difficult time getting the adjustment dialed in... I speak from experience!
- ✓ Stop finger still in good shape. If it has broken off, you'll need to repair it (see the repair guide on page 11).
- ✓ Transmission must be in neutral.

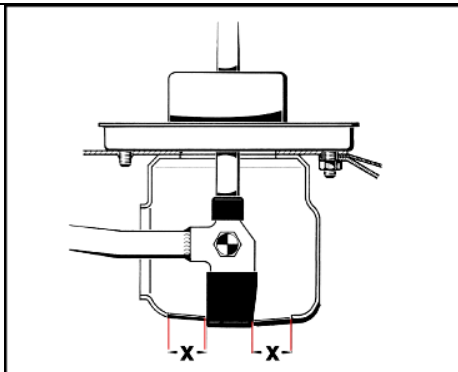


If you skipped to this section without replacing linkage components, raise the car (front, or left side) and securely support it (jack stands, ramps, lift). Next, **loosen** the 13mm nut on the shift rod clamp. Put a 13mm socket wrench on the bolt head and let it rest until you get to the tightening step.

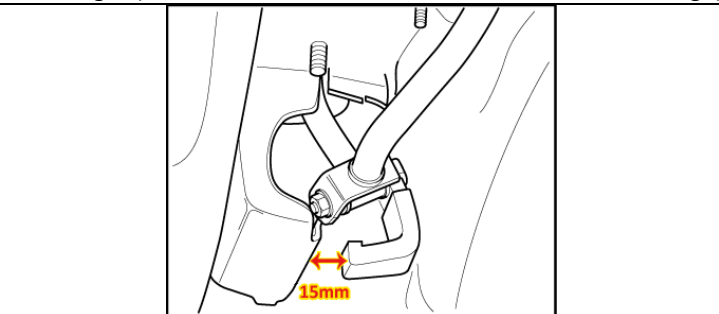
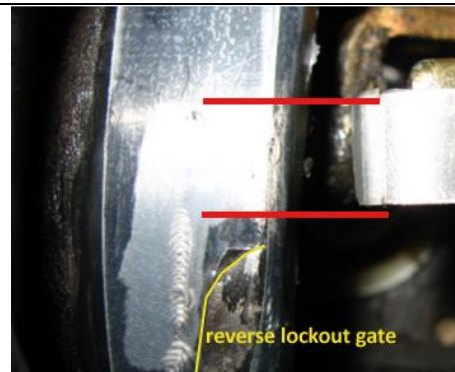


If you haven't already, remove the inspection cover.

(Broken stop finger shown in this example photo.)



If the stop finger is not centered fore and aft, slide the shift rod forward or backward so that it is centered on the stop plate. If there is a wear pattern worn into the paint of your stop plate, you can use this as a convenient guide for the fore-aft placement, as shown above right (the shift rod shown needs to move forward a smidge).



Place your 15mm gap tool against the stop plate, rotate the shift rod so that it rests against your tool, and tighten the shift rod clamp nut, holding your waiting wrench at the bolt head.

Liberally smear some Moly grease or Fluid Film over the stop plate (and the stop finger if you have a repaired version).

In the car, shift the lever into all gears. If all gears engage without issue, reinstall the inspection cover, put the car back on the ground and motor onward. If any gear has an issue (third instead of first, for example), you may need to fine-tune the adjustment. If there is a problem with a pair of gear sets, first and second or third and fourth, you may have a transmission issue.

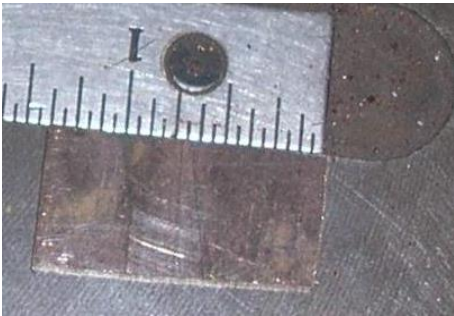
## Part IV: Repairing The Stop Finger

Has your car all of a sudden lost first and reverse gears? If so, this guide is for you. From the original VWvortex forum topic by JonnyPhenom: <http://forums.vwvortex.com/showthread.php?3536691> .

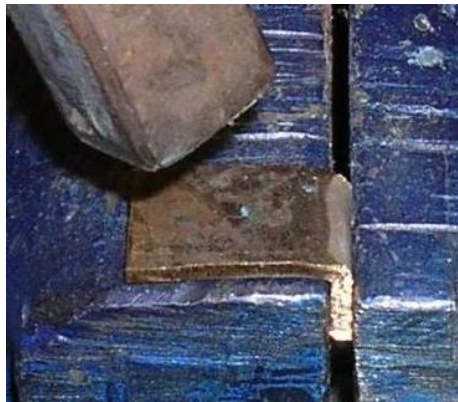
I lost my reverse gear lockout feature in the Scirocco a while back and got sick of struggling to find gears so I decided to fix it. The problem happens when part of the shift linkage breaks: The long metal shift rod has a bit of plastic molded onto the end of it that acts as a gate to keep you from popping it into reverse accidentally. Naturally, this breaks. Instead of spending \$100 on a new shift rod to solve the problem, I decided I would just fabricate my own solution.

I chose a small piece of brass, a nut, and a bolt. I would have preferred to use bronze, but I haven't got bronze in sheets, and I had brass readily available.

The piece I used was 1/8" thick, and about 1.4" by .5"



I hammered it into an L shape:



Test fitted:



Clamped it together and drilled it:



then I stuck a bolt through it and tightened it up:



One more pic, just 'cuz:



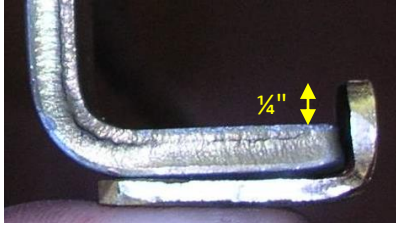
I installed it in the car tonight and took it for a test drive. It performs its job perfectly well. My linkage is still a bit sloppy because my new shift bushings haven't come in yet, but once I get that stuff installed this is going to be a dream to drive.



**Additional notes from kamzcab86:**

I used a 1/8" thick piece of aluminum (had it in stock), and started with a length of 3" and 1/2" wide. A longer piece gives you more to work with; i.e. it's easier to bend in the vise.

The original plastic finger rose approx. 1/4" above the top of the metal piece. Bend your new metal stop finger so that it too is approximately 1/4" above the top of the metal piece. I bent the aluminum, test-fit it, and cut off the excess. A Dremel was then used to round the corners and smooth the edges.



This job can be performed with the rod still mounted to the car (would be easier off the car, but I didn't care to remove it). I had to carefully remove remaining plastic; used a Dremel to cut a line through the plastic (but not into the metal!), then pried the pieces out. I drilled the hole in the new stop finger approx. 1" from the bent end, positioned it onto the selector shaft, marked the hole with a Sharpie pen, and drilled the hole in the selector shaft.

I used an M6 hex washer head bolt, 1" long with a matching lock nut. If you use a regular nut, be sure to use a liquid threadlocker.

I cleaned up the disgusting, greasy mess on and around the lock gate and then applied UHMW tape to the gate and to the new stop finger (if you don't know what UHMW tape is, Google it). I did this for two reasons: 1) as added metal-on-metal contact protection; 2) as easy, non-messy lubrication so I could do a quick test-drive. [Update 2018: Do **NOT** use UHMW tape! Exhaust heat destroys it and turns it into a gooey mess.] You could also Plasti-Dip the part. A healthy serving of grease was applied once the selector rod was properly aligned.



The new stop finger will eventually be welded to the selector shaft for a more permanent solution, but so far the quick fix is working well. [Update 2018: Could not be welded due to dissimilar metals. A rivet was added instead. Couple years later, repair is still going strong.]

**\*\* Remember, you are responsible for working on your car; Cabby-Info.com, KamzKreationz, JonnyPhenom, VWvortex.com, 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! \*\***