

42 Draft Designs

Shifter Cable Bushings

VW Mk5 Jetta GLI, GTI | 2008-2009 | 6 Speed

Tools Recommended: needle nose pliers, large flat head screwdriver, thin flat head screwdriver, hammer, 10mm socket & ratchet, 13mm socket & ratchet, sharp knife, pliers, 5/32 Allan wrench, 3/8" open end wrench, hacksaw, sanding tools, drill

Warning! Hot metal burns! Always work on a cool motor.

Contents:

- 2 rectangular front/back bushings marked B6FB51
- 1 round side/side bushing marked B6SS52
- 1 round side/side bushing marked B6SS53
- 1 black plastic shouldered bushing
- 1 bronze thrust bearing 1/8" thick
- 1 bronze thrust bearing 1/32" thick
- 1 #10 washer 7/16" OD
- 1 #10 washer 3/4" OD
- 2 #10-32 nylon locking nuts
- 1 #10-32 x 1 1/2" socket cap screw
- 1 #10-32 x 2 1/4" socket cap screw
- 1 3/16" drill bit

Before You Begin:

Set the emergency brake. Place the shifter in neutral.

The front/back endlink is rectangular and accepts the rectangular bushings marked B6FB51. The pin diameter is roughly 8.5mm. The front/back endlink connects directly to the weighted shift linkage.



The side/side endlink is square and accepts the round bushings marked B6SS52 & B6SS53. The pin diameter is roughly 10mm. The side/side endlink connects directly to the plastic side/side linkage.



When installing the side/side bushings the side/side bracket must be removed. To do this, we strongly recommend removing the battery and the battery tray. If the battery tray is installed it will be impossible to see the side/side bracket during critical parts of the installation.

Front/Back Bushings

1. Disconnect the front/back end link from the shifter cable by grasping the plastic ring which retains the spring. Pull this ring towards you compressing the spring as you pull. When the spring is fully compressed, rotate the ring until it locks into place. The end link will now be free from the shifter cable.
2. Remove the retaining clip which holds the end link to the shifter linkage pin. Lift the center of the clip using needle nose pliers and slide off the pin. Don't lose this clip!
3. Slide the end link off the pin and off the shifter cable. Unlock and release the spring.
4. Remove the rectangular plastic bushing in the end link by prying apart with a thin flat head screwdriver. The bushing will separate into two halves and come out easily. The rubber bushing underneath will not be removed.
5. Insert the new bushings marked B6FB51 from either side of the end link. Simply press them into place.
6. Compress and lock the spring on the end link. Re-install by first sliding the end link onto the shifter cable, then sliding the bushings over the pin. It may be necessary to wiggle the shifter linkage to slide the bushings over the pin.
7. Re-install the retaining clip by sliding it over the pin until it clicks. With the transmission still in neutral and the shift knob centered inside the car, release the spring on the end link.

Side/Side Bushings

1. Remove the top battery cover and side cover. Using a 10mm socket and ratchet, remove the battery terminals. Using a 13mm socket, loosen and remove the battery mounting bracket on the left side. Remove the battery. Using a 10mm socket, remove the 3 bolts securing the battery tray. Remove the battery tray.
2. Disconnect the side/side end link from the shifter cable by grasping the plastic ring which retains the spring. Pull this ring towards you compressing the spring as you pull. When the spring is fully compressed, rotate the ring until it locks into place. The end link will now be free from the shifter cable.
3. Remove the plastic side/side bracket by depressing the plastic tab on the left side of the pivot pin. Push down on the tab and push the bracket towards the transmission mount. To completely remove the bracket you will need to rotate the shift linkage to the left (changing gears) and rotate the bracket downwards towards the transmission.
4. With the bracket removed, use a flat head screwdriver and pliers to remove the end link. The plastic end link bushing is held in place by a small wedge of plastic. Use pliers to compress the end of the plastic pin and the screwdriver to force the bushing off the pin.
5. Once removed, use a sharp knife to cut the wedge off the pin. The stock bushing should slide on and off the pin freely at this point.
6. Next, use the included 3/16" drill bit to drill out the end link pin and the main pivot pin. Start on the pin, drilling through the body of the bracket. Let the bit follow the existing hole in order to drill a straight hole.
7. Next, study the main pivot pin. The tip of the pin splits into 3 pieces. The tip of the pin needs to be cut off where the pin splits. This should be 1/2" from the inside of the locking tab. Cut the pin using a hacksaw or band saw. Square and smooth the end of the pin using sandpaper or a sander.
8. Test fit the modified side-side bracket. Install the black plastic bushing on the left side of the pivot pin and compress the two using your fingers. If your pivot pin was cut too far, the two will not meet. If the pin was cut too little, the bushing will meet the pin and still allow movement. If your pin is too long, shorten using sanding tools until the side/side bracket can only slide the thickness of a credit card left-right. If your pin was cut too short, don't worry. Adjustment of the strengthening bolt will lock everything together.
9. Install the 1 1/2" screw in the side/side bracket. Insert through the back of the bracket through the end link pivot pin. If the screw fits tight, use a 5/32" Allan wrench to thread into place.

10. Test fit the 2 1/4" screw in the side/side bracket. This screw slides into the pin and out the back of the bracket. If the screw fits too tight, open the hole slightly with the drill.
11. Next, remove the factory bushing from the side/side end link. The rubber bushing in the end link is molded in place. A thin vein of plastic in each corner keeps the bushing from coming out. These veins must be broken to install the new bushings.
12. Using a large flat head screwdriver press into the rubber bushing in each corner at a 45° angle. Tap the screwdriver with a hammer or press hard to break the plastic veins. Remove the rubber bushing by pressing it out with your fingers.
13. Insert the new bushings marked B6SS52 and B6SS53 from either side of the end link. Simply press them into place.
14. Slide the 1/32" thrust washer onto the end link pivot pin. Slide the assembled end link onto the pin. Slide the thin bushing side on first, labeled B6SS52. Slide the 1/8" thrust washer on the pin. Slide the 3/4" OD washer onto the screw. Thread-on and tighten the nylon lock nut using a 3/8" wrench. The large washer should sit flat on the end of the plastic pin. Once tightened the end link and thrust washers should rotate freely, sliding back-and-forth no more than the thickness of the washer.
15. Compress and lock the spring on the end link. Re-install the assembled side-side bracket by first sliding the end link onto the shifter cable, then sliding the main pivot pin into the shift tower. It may be necessary to shift through the gears and rotate the bracket to slide the main pivot pin in place with the end link installed.
16. Slide the 2 1/4" screw through the black plastic bushing so that the head of the screw is concealed. Slide the screw through the transmission bracket and through the side/side bracket. Using your fingers, squeeze the bushing and the bracket together until the screw sticks out 3/8". On the mount side of the side/side bracket, install the 7/16" OD washer over the screw and thread on the nylon locking nut. Using a 5/32" Allan wrench and a 3/8" open end wrench, tighten the screw until the bushing and pivot pin connect. Tighten until the side/side bracket seems difficult to move, then loosen the nut a quarter turn until the bracket moves freely.
17. With the transmission still in neutral and the shift knob centered inside the car, release the spring on the end link.

What to expect:

- Before driving, depress the clutch and try each gear. Each gear should engage smoothly. The shift knob should be centered left-right and front-back. If your shift knob is not centered, release the proper end link and adjust until centered. If shifting doesn't feel right, don't start the car. Release each end link from the shifter cables, find neutral at the transmission, and re-adjust the shift knob position.
- Upon driving, shifting should feel direct and solid. It should not be difficult to engage the gears at any point. You will feel no slack in the shifter assembly. When you push the shift knob into third, where the movement of the knob stops is third gear fully engaged.
- These bushings should give you a direct link between your hand and the synchronizers. It will not cause your shifting to feel notchy, grind, or make your gears difficult to engage.
- No lubrication of the shifter bushings is necessary or recommended.