

ECS TUNING

Volkswagen

Transverse 5 & 6 Speed Transmission

Solid Shifter Bushing Installation



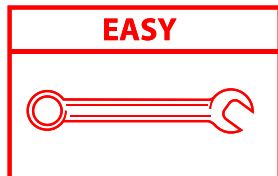
Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

INTRODUCTION

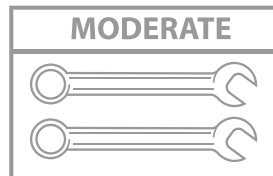
Volkswagen Transverse 5 & 6 Speed Transmission Solid Shifter Bushing Upgrade Kits

ECS Tuning 2002.5 and newer Volkswagen Transverse 5 & 6 Speed Solid Shifter Bushing Upgrade Kits offer the following features:

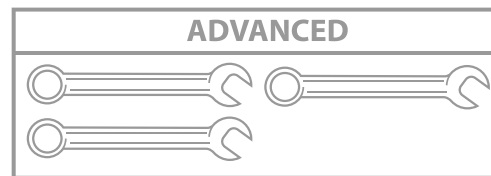
- Bronze Pivot Bushings - no lubrication required
- 6061 T-6 Billet Aluminum Support Bushings
- In house designed by ECS Tuning Engineers
- Easy Installation - no drilling required
- All components included - no additional hardware required



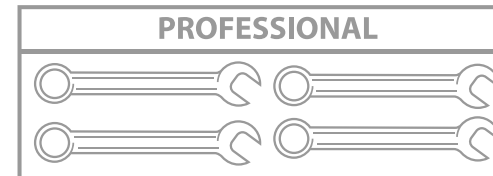
**BASIC SKILLS
REQUIRED**



**SOME EXPERIENCE
RECOMMENDED**



**ADVANCED SKILLS &
EXPERIENCE REQUIRED**



**PROFESSIONAL SKILLS &
SPECIALTY TOOLS REQUIRED**

Looking to get rid of the rubbery feeling from your shifter? Installing one of our Solid Shifter Bushing kits is the answer. No more than a short afternoon project, you can install this kit a couple of hours or less. Before you begin, read and familiarize yourself with these instructions and make sure you have all the required tools on hand. Thank you for purchasing our ECS Tuning Solid Shifter Bushing Upgrade Kit. We appreciate your business!

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HOW TO USE THIS GUIDE

Step 1:

Study the shifter cable identification chart for your transmission (5 or 6 speed) and familiarize yourself with shifter cable location and component identification.

Step 2:

Follow the Shifter Bushing Application Flowchart to identify the bushings that will be required for your vehicle.

Step 3:

Study the assembly charts for your application.

Step 4:

Follow the step by step installation instructions using the assembly charts for your application.

REQUIRED TOOLS

Note: The tools required for each step will be listed by the step number throughout these instructions.

We recommend that you have a complete selection of tools and equipment necessary for automotive repair. Below is a list of the tools we used to install the Volkswagen Solid Shifter Bushing Upgrade kit. Although only a few simple tools are required to install the actual shifter bushings, additional tools may be required depending on the airbox or intake system that is installed on your vehicle.

- 3/8" Drive Torque Wrench Available at ecstuning.com..... [ES#2221245](#)
- Flat Blade Screwdriver(s) Available at ecstuning.com..... [ES#2225921](#)
- Non-Marring Trim Tool Available at ecstuning.com..... [ES#517779](#)
- 3/8" Drive Ratchet Available at ecstuning.com..... [ES#2765896](#)
- Volkswagen Shifter Alignment Pln Available at ecstuning.com..... [ES#2848851](#)
- 3/8" Drive Sockets: 13mm Deep
- Needle Nose Pliers
- Small File

SHOP SUPPLIES AND MATERIALS

- Hand Cleaner/Degreaser..... Available at ecstuning.com..... [ES#2167336](#)
- Shop Rags Available at your local auto parts store

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INSTALLATION NOTES

- RH refers to the passenger side of the vehicle.
- LH refers to the driver side of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process before you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety. Please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

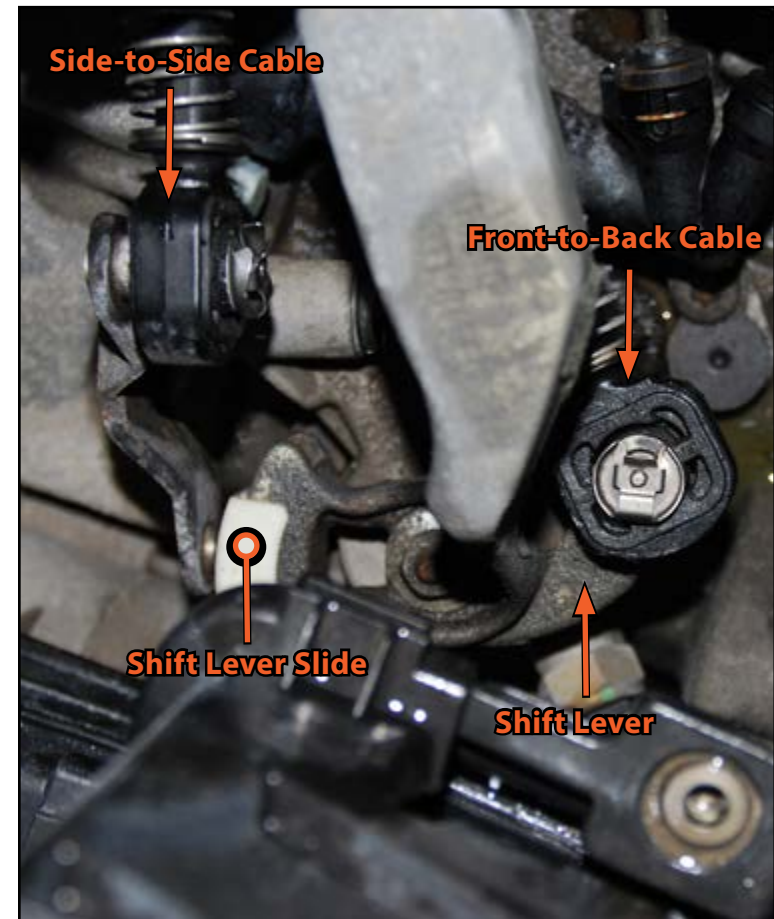
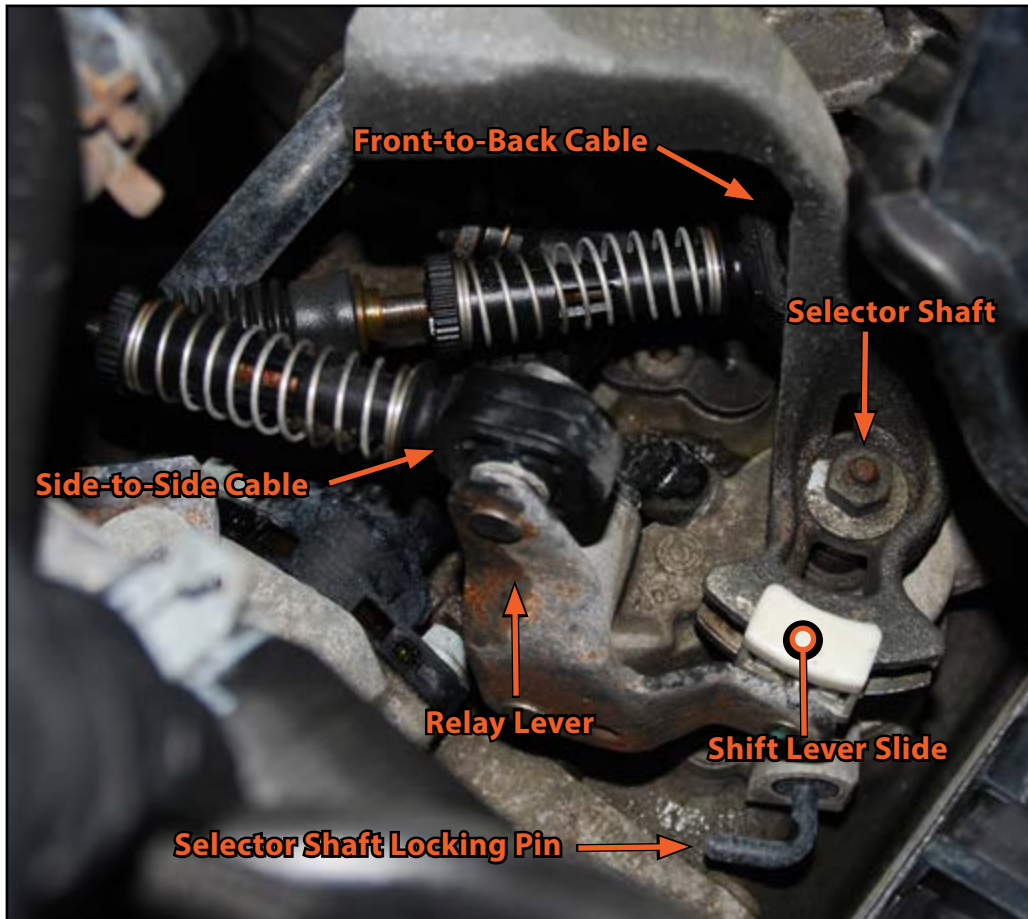
- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- Always wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- If using an automotive lift, be sure and utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- When lifting a vehicle using a jack, always utilize the factory specified lift points. Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear. Always support the vehicle with jack stands.
- Always read and follow all safety information and warnings for the equipment you are using.



Never get underneath a vehicle that is supported only by a jack. Always make sure that the vehicle is securely supported on jack stands.

5 SPEED SHIFTER CABLE IDENTIFICATION

All Volkswagen 5-speed transmission shifter cables will have this orientation, regardless of the end style of the shift cable. The Front-to-Back cable is the lower of the two cables, mounted onto the vertical pin of the shift lever. The Side-to-Side cable is the higher of the two cables, mounted onto the horizontal pin of the relay lever.



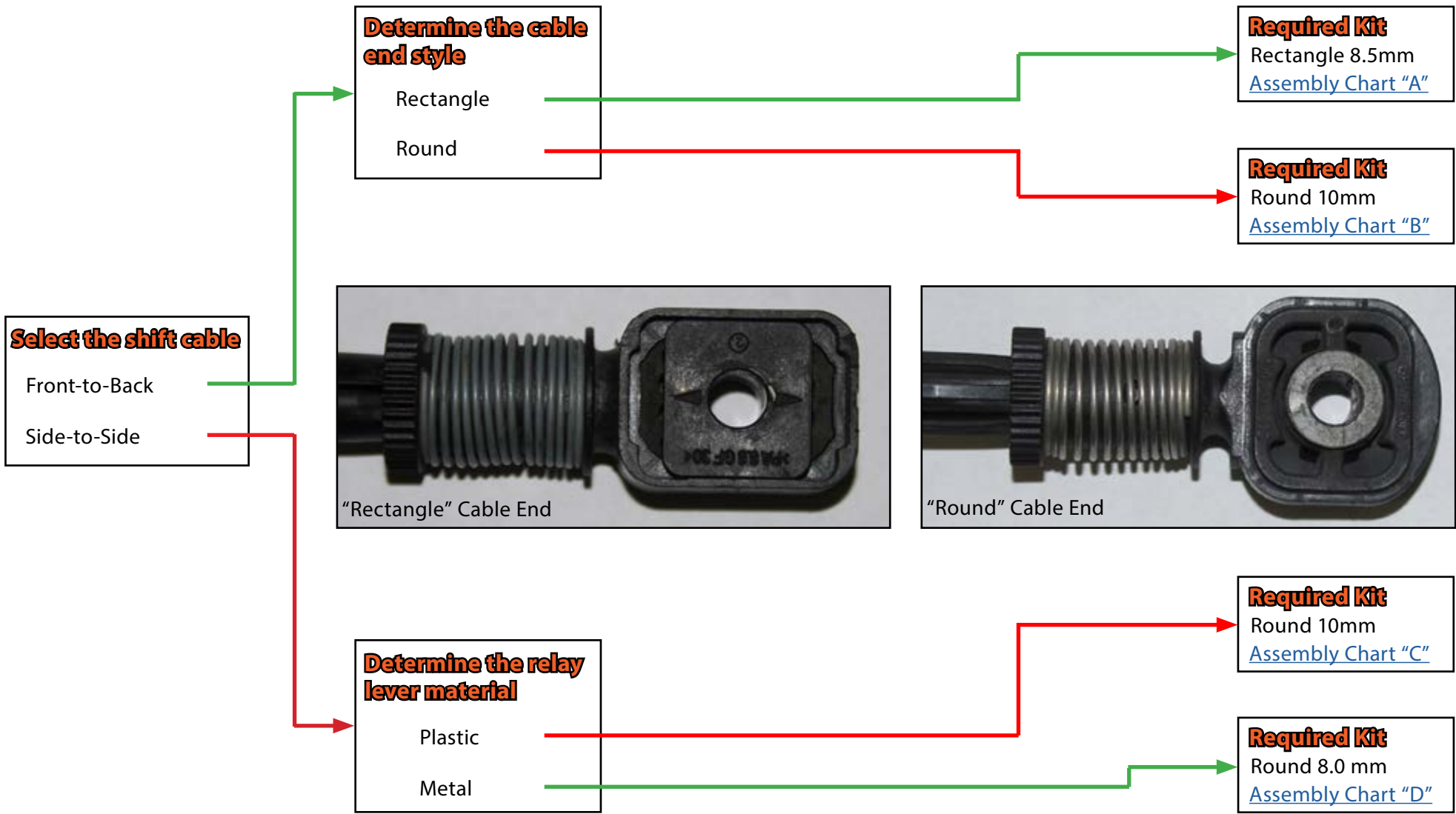
6 SPEED SHIFTER CABLE IDENTIFICATION

All Volkswagen 6-speed transmission shifter cables will have this orientation, regardless of the end style of the shift cable. The Front-to-Back cable is the lower of the two cables, mounted onto the vertical pin of the shift lever. The Side-to-Side cable is the higher of the two cables, mounted onto the horizontal pin of the relay lever.



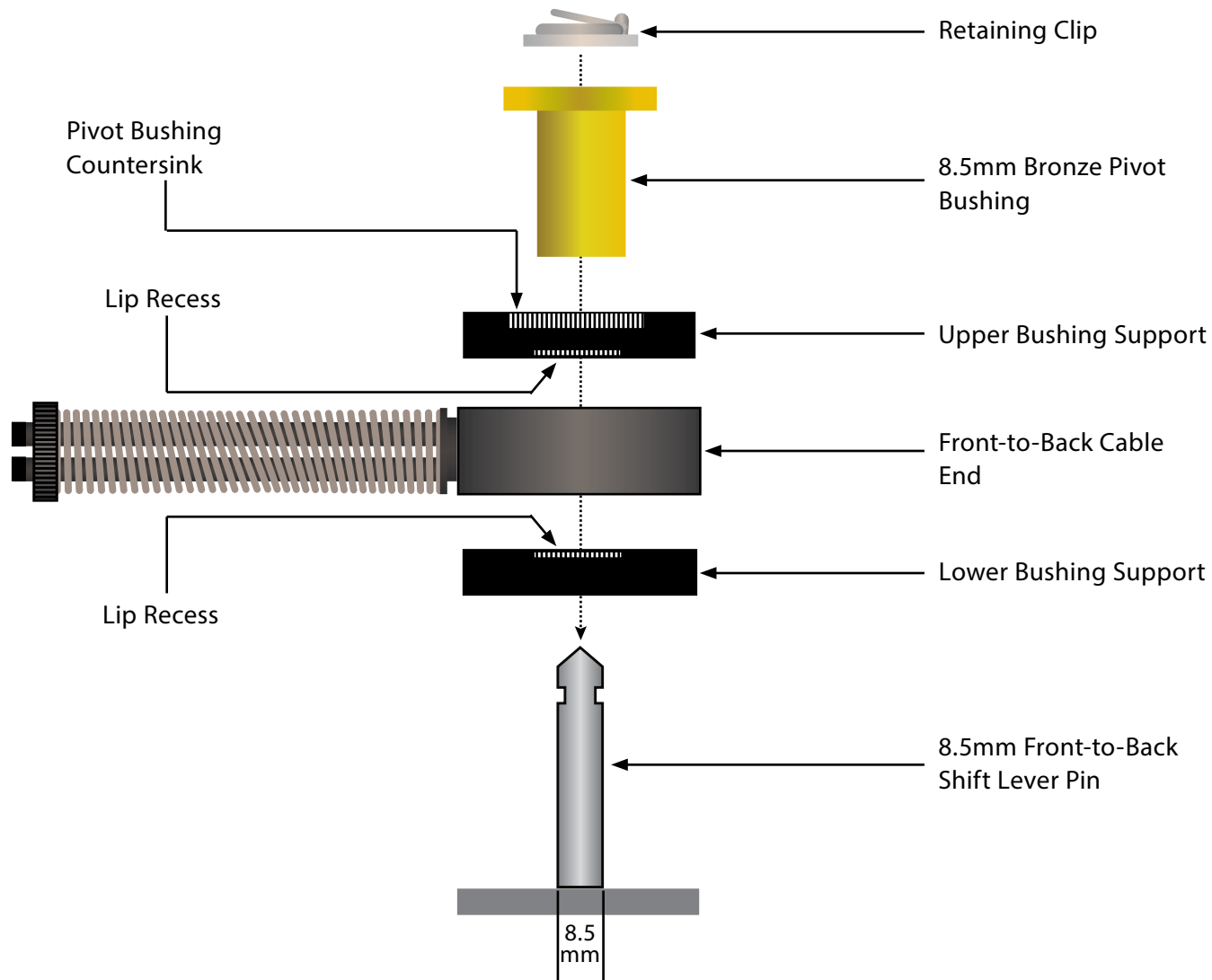
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VW 5 & 6 SPEED SOLID SHIFTER BUSHING APPLICATION FLOWCHART

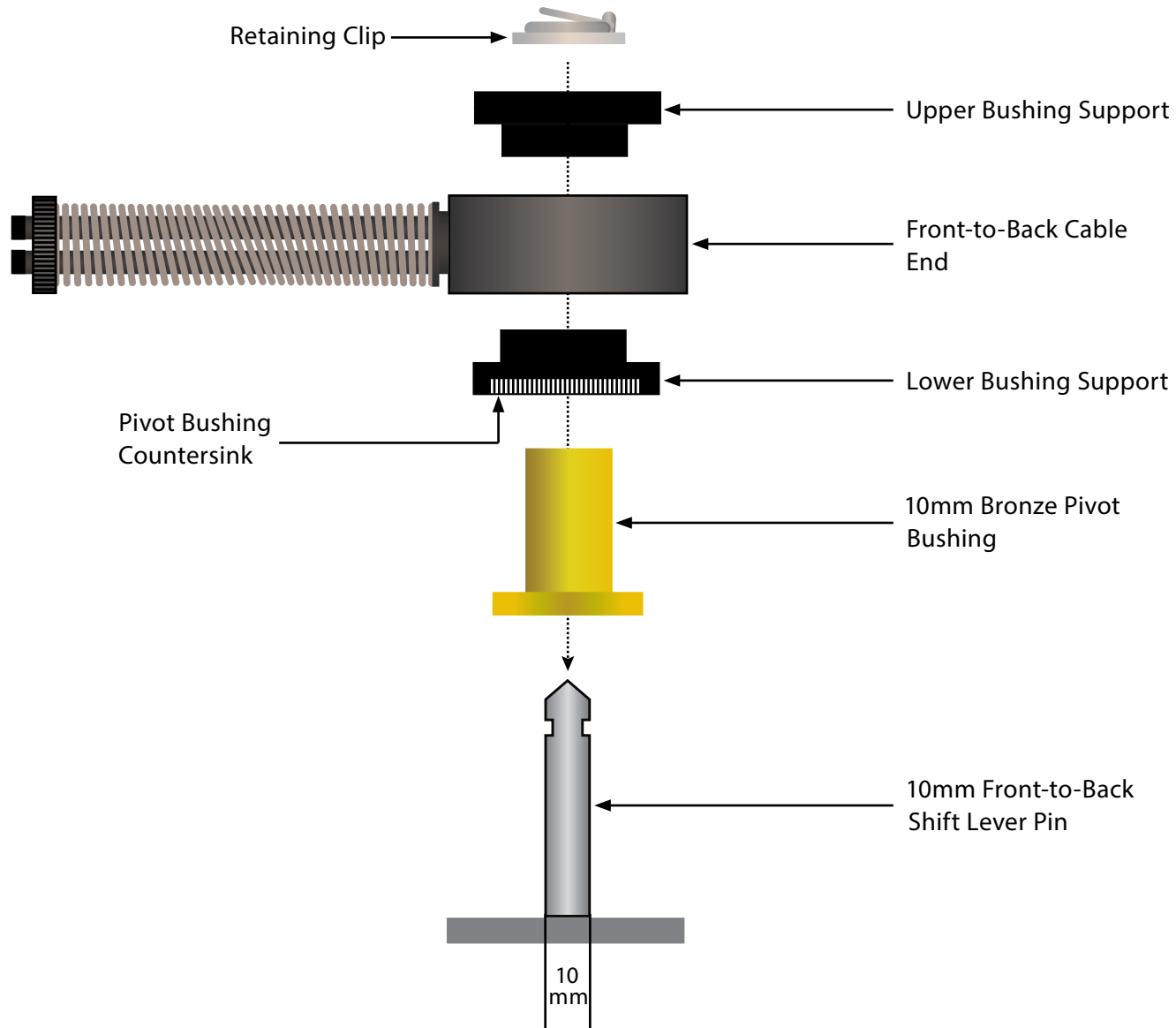


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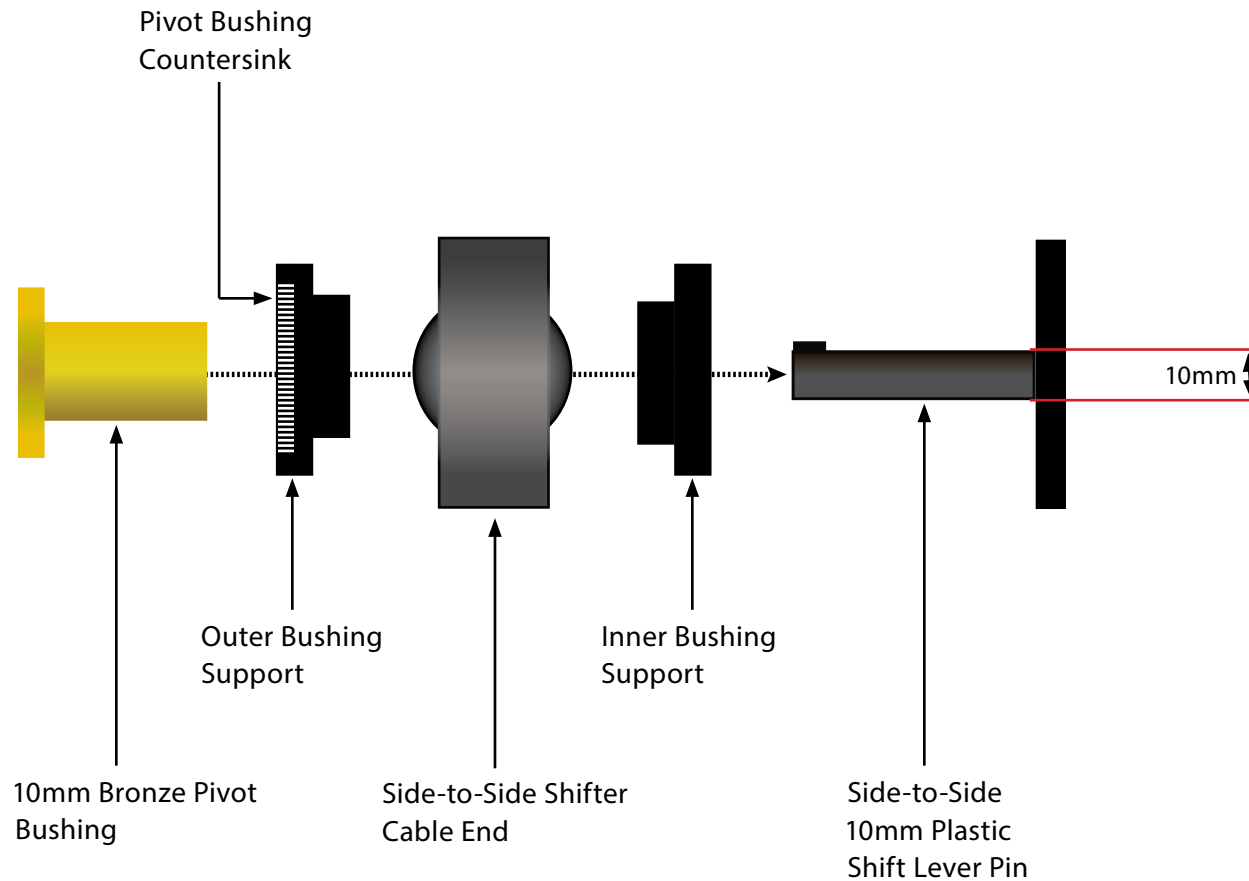
ASSEMBLY CHART A: FRONT-TO-BACK, RECTANGLE 8.5MM BUSHING



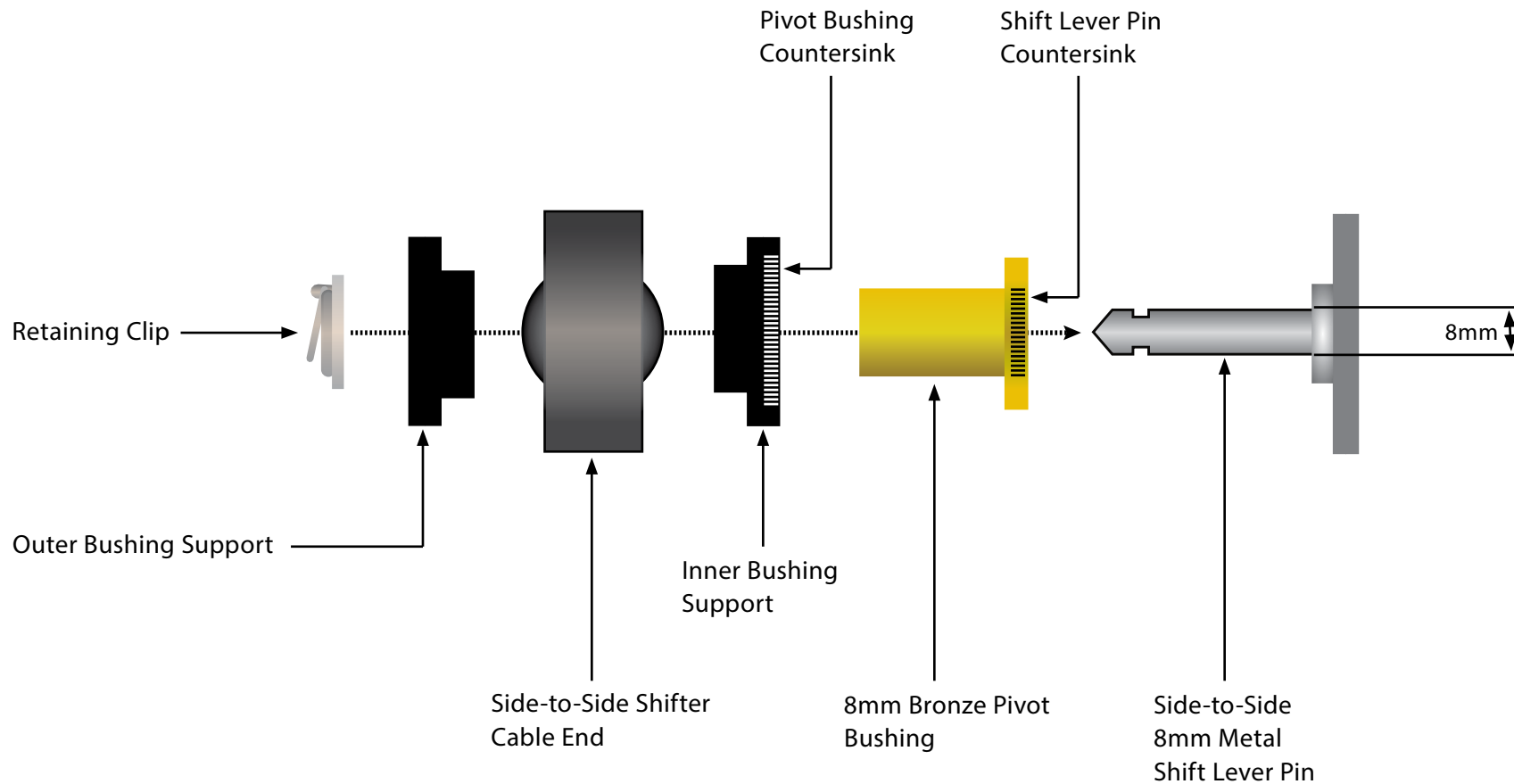
ASSEMBLY CHART B: FRONT-TO-BACK, ROUND 10MM BUSHING



ASSEMBLY CHART C: SIDE-TO-SIDE PLASTIC PIN, ROUND 10MM BUSHING



ASSEMBLY CHART D: SIDE-TO-SIDE METAL PIN, ROUND 8.0MM BUSHING



ECS TUNING SOLID SHIFTER BUSHINGS



8mm Bronze Bushing w/
Countersink



8.5mm Bronze Bushing



10mm Bronze Bushing



Round Bushing Support w/
Countersink



Rectangle Bushing Support



Rectangle Bushing Support
w/Countersink



Round Bushing Support

REMOVING THE SHIFTER CABLE ENDS

Step 1:

You must first remove the original airbox or intake system in order to gain access to the shifter cables. With some aftermarket intake systems, such as the one shown here on this MKIV, you may already have enough access to perform the installation.

Step 2:

Place the transmission in neutral.



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REMOVING THE SHIFTER CABLE ENDS

Step 3:

Remove the Front-to-Back Shifter Cable end from the shift lever.

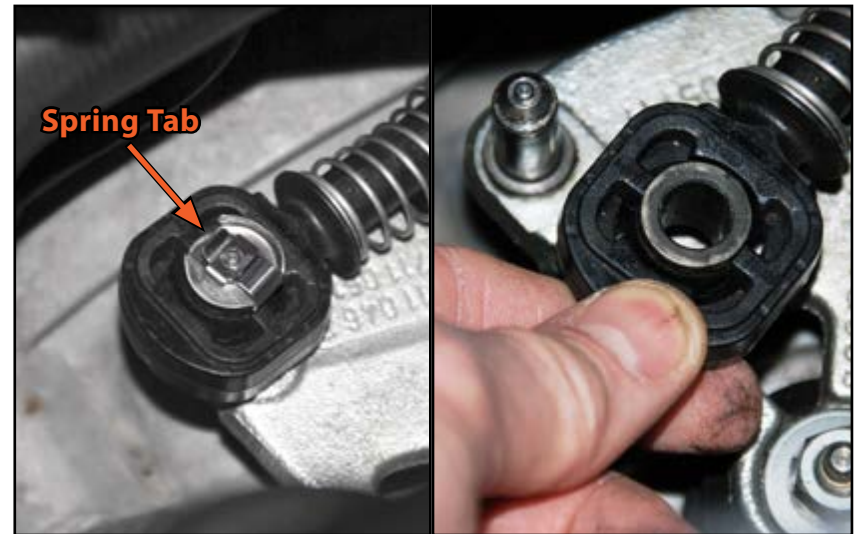
Rectangle Cable End:

First remove the retaining clip by pulling up lightly on the spring tab and sliding the clip off of the shift lever pin, then lift off the cable end.



Round Cable End:

First remove the retaining clip by pulling up lightly on the spring tab and sliding the clip off of the shift lever pin, then lift off the cable end.



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REMOVING THE SHIFTER CABLE ENDS

Step 4: Needle Nose Pliers

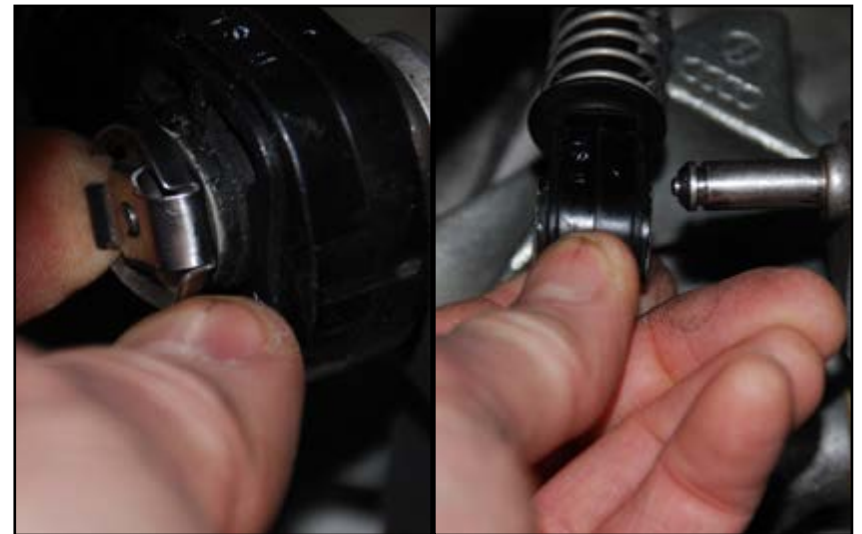
Remove the Side-to-Side cable end from the relay lever.

Plastic Pin:

This cable end is retained by a small plastic nub on the end of the shift lever pin. You may be able to pull this cable end off by hand, however if it is too tight, insert a small pair of needle nose pliers between the cable end and shifter linkage and gently pry it off.

Metal Pin:

First remove the retaining clip by pulling up lightly on the spring tab and sliding the clip off of the relay lever pin, then slide off the cable end.



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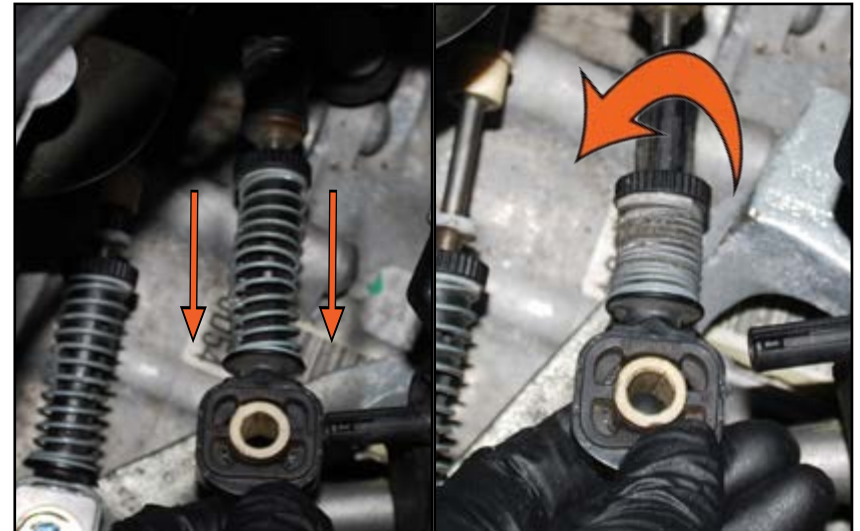
REMOVING THE SHIFTER CABLE ENDS

Step 5:

Unlock both shifter cable ends. The procedure is the same for both, regardless of end style: Grasp the knurled round end of the cable lock mechanism and pull it forward until the spring is completely compressed. Then simply turn it about 1/8 of a turn to the left and it will lock in place. It is properly locked when you release your grip and the spring remains compressed.

Step 6:

With both end locks released, pull both cable ends off of the shifter cables.



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INSTALLING THE BUSHING SUPPORTS-RECTANGLE CABLE END

Step 1:

First, we are going to install the new bushing supports in the rectangle cable end. To begin with, the cable end will look like this.

NOTE

If you have two "round" cable ends on your vehicle, skip to [page 23](#).



Step 2: Flat Blade Screwdriver

Pry the original plastic bushing out of each side of the cable end.

NOTE

The original cable end has no actual "top" or "bottom", both sides are the same and it will not matter if the cable end gets flipped over during disassembly. However, once our new Solid Shifter Bushings are installed, there will be a definite "top" and "bottom" to the cable end.



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INSTALLING THE BUSHING SUPPORTS-RECTANGLE CABLE END

Step 3:

Once you have removed both original plastic bushings, the rectangle cable end will look like this. Note the small lips on each side formed into the original rubber dampening insert. Our bushing supports are designed to fit around these lips.



Step 4:

Inspect and identify the bushing supports for the rectangle cable end. They are named in reference to their installation positions. The upper bushing support has a large countersink on one side for the bronze pivot bushing and a small recess on the other side to fit around the rubber insert lips as described in step 3.

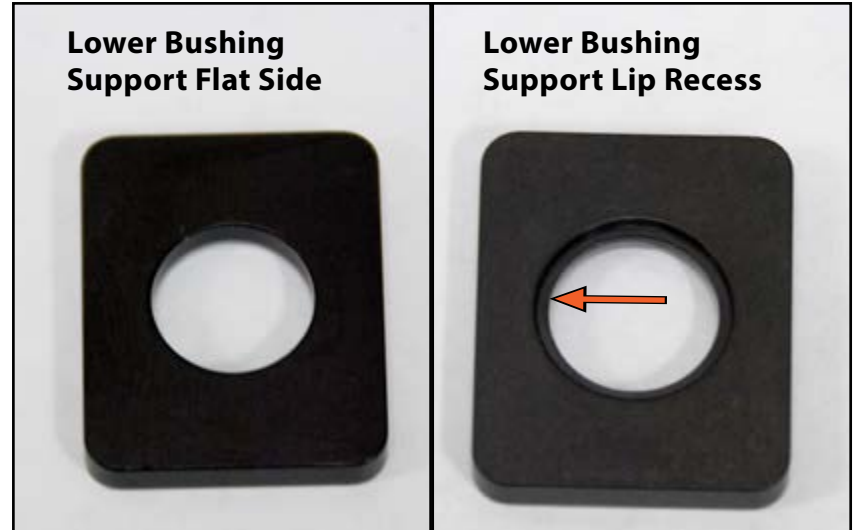


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INSTALLING THE BUSHING SUPPORTS-RECTANGLE CABLE END


Step 5:

The lower bushing support is flat on one side and has a small recess on the other side for the rubber insert lips described in step 3.



Step 6:

Now that you have identified the new bushing supports, install them into the end of the rectangle cable. Start with either one and place the edge of it into the cable end as shown.

 Make sure the lip recess is facing in.



NOTE

You may also reference Assembly Chart "A" on [page 9](#).

INSTALLING THE BUSHING SUPPORTS-RECTANGLE CABLE END

Step 7:

Place the cable end on the edge of a workbench with the bushing support that you are installing facing up and push down on it with the palm of your hand. This will require moderate pressure and you will both feel and hear it snap into place. Install both bushing supports using this method, making sure the lip recess faces in on each side and the pivot bushing countersink and flat side both face out.



Step 8:

The assembled top side of the rectangle cable end should look like this with the pivot bushing countersink facing up.



INSTALLING THE BUSHING SUPPORTS-RECTANGLE CABLE END

Step 9:

The assembled bottom side of the rectangle cable end should look like this with the flat side facing down.



INSTALLING THE BUSHING SUPPORTS-ROUND CABLE END

Step 1:

Now we are going to install the bushing supports in the "round" cable end. The "round" cable ends come in two different sizes, however the procedure for installing the bushing supports is the same.



Step 2:

To begin with, the cable end will look like this.



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INSTALLING THE BUSHING SUPPORTS-ROUND CABLE END

Step 3: Flat Blade Screwdriver

Pry the original plastic pivot bushing out of the center of the rubber dampening insert.

NOTE

The original cable end has no actual "inner" or "outer" or "top" and "bottom", both sides are the same and it will not matter if the cable end gets flipped over during disassembly. However, once our new bushing supports are installed, there will be a definite "inner" and "outer" or "top" and "bottom" to the cable end.



Step 4: Flat Blade Screwdriver

Pry the original dampening insert out of the round cable end. The original insert is molded around the four small corner braces of the cable end and you will have to tear the rubber at the corners to remove it, but you will not find it difficult. The inset picture shows the cable end with the insert removed so you can see the location of the corner braces.

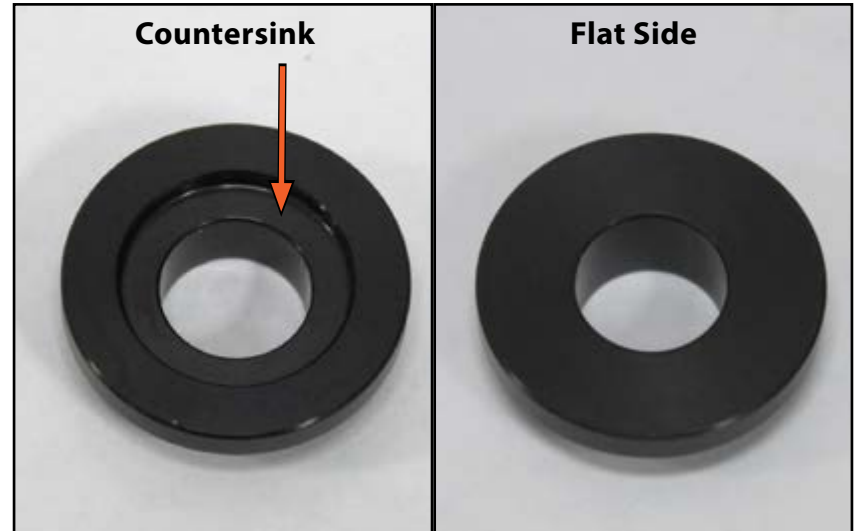


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INSTALLING THE BUSHING SUPPORTS-ROUND CABLE END

Step 5:

Reference [Assembly Charts](#) "B", "C", and "D" on pages 10, 11, and 12 to identify the bushing support positions for the round cable end. Each pair is exactly the same, but their installation positions are different depending on your application. Each pair will have one with a flat side and one with a countersunk side. The stepped sides on each support are the same and fit into the original cable end.

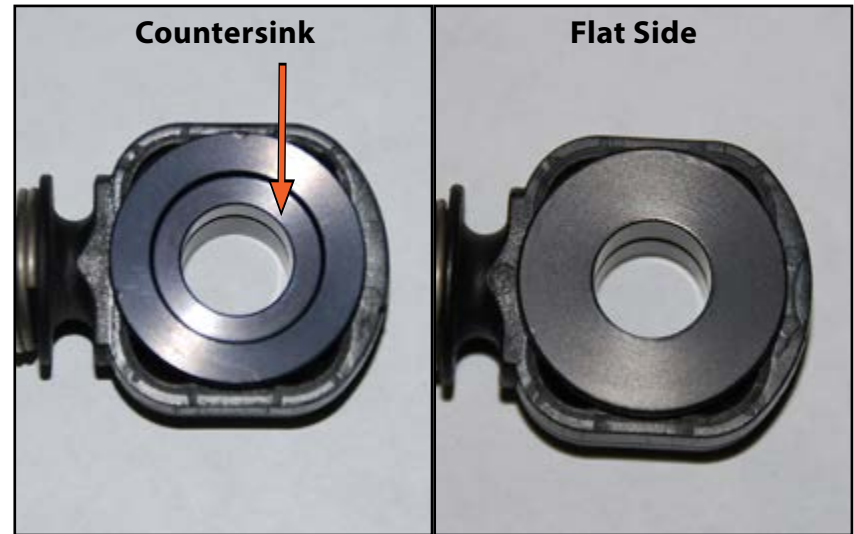


Step 6:

Push the bushing supports into the round cable end. They will push in very easily. The assembled cable end should look like the pictures on the right.

NOTE

You may actually remove these bushing supports then re install them as you install the cable end back onto the vehicle. Steps 5 and 6 here were primarily to familiarize you with how they fit into the cable end.



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RECTANGLE CABLE END INSTALLATION

Step 1:

First we will install the rectangle cable end. Slide the cable end over the front-to-back shifter cable then position it on top of the shift lever pin as shown in the picture. Make sure the top and bottom bushing supports are located in their correct positions. Do not release the cable lock at this time.

NOTE

You may also reference Assembly Chart "A" on [page 9](#).

NOTE

If you have two "round" cable ends on your vehicle, skip to the correct "round" installation procedure for your vehicle, beginning on [page 28](#).

Step 2:

Align the 8.5mm bronze pivot bushing on top of the shift lever pin for the Front-to-Back cable.

NOTE

No lubrication is needed for this bushing.



RECTANGLE CABLE END INSTALLATION

Step 3:

Push the pivot bushing through the support bushings and onto the shift lever pin until it is fully seated.



Step 4:

Install the retaining clip.

NOTE

Leave the cable lock engaged and the spring compressed at this point. It will need to remain compressed for shifter adjustment.



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ROUND CABLE END INSTALLATION FRONT-TO-BACK 10MM

Step 1:

Refer to the Assembly Chart "B" on [page 10](#) for the correct assembly of the round cable end on this application.

Place the 10mm bronze pivot bushing onto the shift lever pin for the Front-to-Back shifter cable.

NOTE

No lubrication is needed for this bushing.



Step 2:

Place the lower bushing support onto the bronze pivot bushing. Make sure the side with the countersink is facing down.



ROUND CABLE END INSTALLATION FRONT-TO-BACK 10MM

Step 3:

Slide the cable end over the Front-to-Back cable, then position it onto the shift lever and bushing support as shown in the picture.



Step 4:

Install the upper bushing support into place on the Front-to-Back shifter cable end and install the retaining clip.

NOTE

Leave the cable lock engaged and the spring compressed at this point. It will need to remain compressed for shifter adjustment.



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ROUND CABLE END INSTALLATION 10MM PLASTIC PIN

Step 1:

Refer to the Assembly Chart "C" on [page 11](#) for the correct assembly of the round cable end on this application.

Slide the cable end back onto the Side-to-Side cable, then position it over the relay lever pin, making sure the support bushings are positioned as indicated on Assembly Chart "C".



Step 2:

Push the new 10mm bronze pivot bushing over the relay lever pin and through the new support bushings.

NOTE

It will require moderate pressure to push the bushing over the pin, however you should not have any trouble doing it by hand. If it seems to require excessive force and you cannot get the bushing on, proceed to step 3 for an installation tip.

NOTE

No lubrication is needed for this bushing.

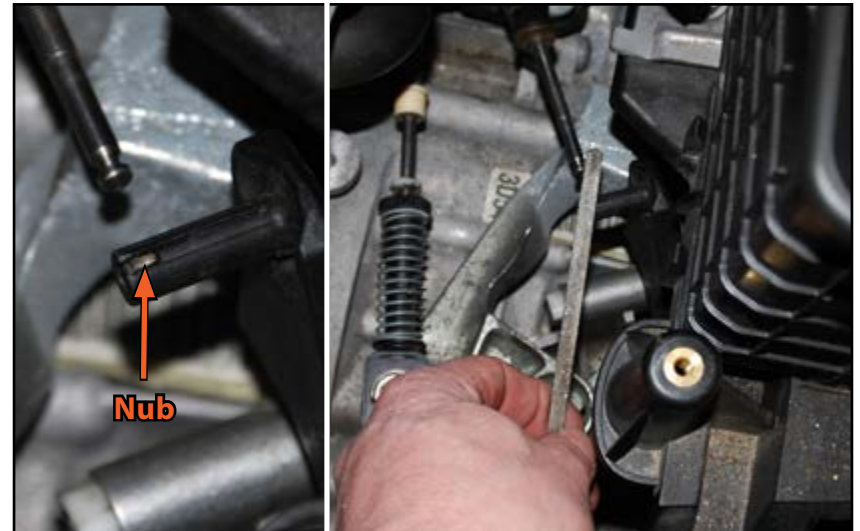


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ROUND CABLE END INSTALLATION 10MM PLASTIC PIN

Step 3: Small File

The new bronze bushings are a very precise fit to the relay lever pin. On some vehicles, we have found it difficult to push the bushing over the nub on the end of the pin. If this is the case with your installation, simply take a small file and lightly file the nub - only a very small amount - and you will find that you will then be able to install the bushing. You only need to remove a few thousandths of material (the thickness of a sheet of paper) in order to make this work.



Step 4:

In order to get the bushing fully seated, you may need to place a socket over the end of the bushing then grip the back of the relay lever and squeeze the two together.

NOTE

Leave the cable lock engaged and the spring compressed at this point. It will need to remain compressed for shifter adjustment.



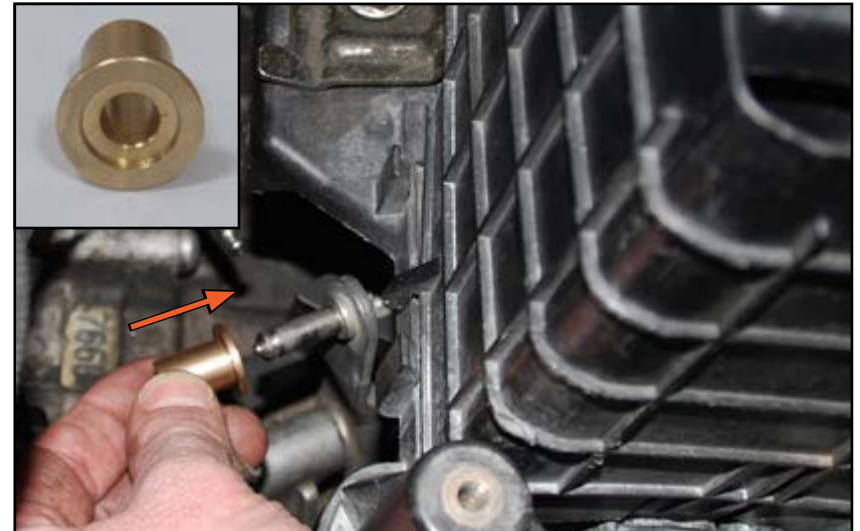
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ROUND CABLE END INSTALLATION 8.0MM METAL PIN

Step 1:

Refer to the Assembly Chart "D" on [page 12](#) for the correct assembly of the round cable end on this application.

Slide the 8.0 mm bronze pivot bushing onto the relay lever pin. Note that the end of this bushing has a countersink for the inner shoulder of the lever pin (Inset Photo).



Step 2:

The bronze pivot bushing should be fully seated onto the relay lever as shown.



NOTE

No lubrication is needed for this bushing.

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ROUND CABLE END INSTALLATION 8.0MM METAL PIN

Step 3:

Slide the cable end back onto the Side-to-Side cable, then onto the shift lever pin and bronze bushing, making sure the inner and outer bushing supports are properly positioned. Do not release the cable lock at this time.



Step 4:

Reinstall the retaining clip on the relay lever pin.



NOTE

Leave the cable lock engaged and the spring compressed at this point. It will need to remain compressed for shifter adjustment.

SHIFTER ADJUSTMENT

Step 1:

Both cable ends should still be in the “unlocked” position. If not, unlock them again as you did on [page 17](#) steps 5 and 6. Also note the top of the selector shaft where it enters the transmission (red circle). This will be relevant in step three on page 35.

NOTE

We are performing this adjustment on a MKVI 6-speed transmission. Different model years and 5-speed transmissions will appear different but the procedure is exactly the same. Refer to [page 6](#) to reference the shifter on a 5-speed transmission.

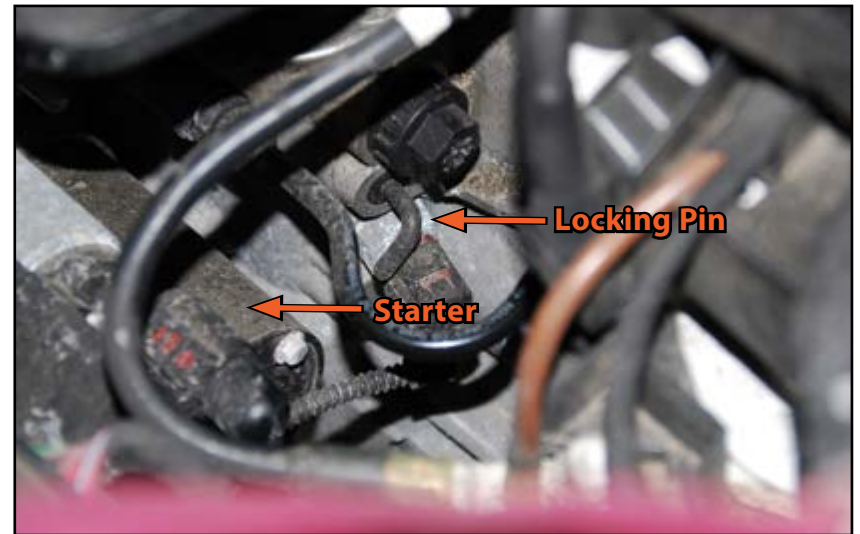


Step 2:

Locate the selector shaft locking pin in the transmission housing. It is located on the LH (Driver's) side, just behind the starter.

NOTE

Reference [page 6](#) for 5-speed selector shaft locking pin location.



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SHIFTER ADJUSTMENT

Step 3:

The transmission should be in neutral and you should be able to move the selector shaft up and down with ease. Push down on the selector shaft (see page 34, step 1) until it is approximately in the middle of its travel. Push in on the locking pin (identified on page 34, step 2) and gently move the selector shaft up and down until the pin engages the alignment hole in the selector shaft and pushes into the transmission. Turn the locking pin upward slightly and release the pressure on the selector shaft. When properly engaged, the pin will stay in place and you will not be able to move the selector shaft.



Step 4: Non Marring Trim Tool

Inside the car, gently pry up the shifter boot, then lift it over the shift knob.



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SHIFTER ADJUSTMENT

Step 5:

Lift up the insulator underneath the shift boot.



Step 6:

Insert the Volkswagen alignment pin or a similar tool through the alignment hole in the shifter stick and into the alignment hole in the base of the shifter.

NOTE

Any round tool such as a drill bit or punch can be used, but the fit must be very snug or the shifter adjustment will not be successful.



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SHIFTER ADJUSTMENT

Step 7:

Back under the hood, lock both cable ends by turning the knurled ends to the right until they release and the springs are expanded.



Step 8:

Pull out the locking pin in the transmission housing.

Pull the alignment pin out of the shifter.

Reinstall the shifter insulator and boot.



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Your Volkswagen Solid Shifter Bushing installation is complete!



These instructions are provided as a courtesy by ECS Tuning.

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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