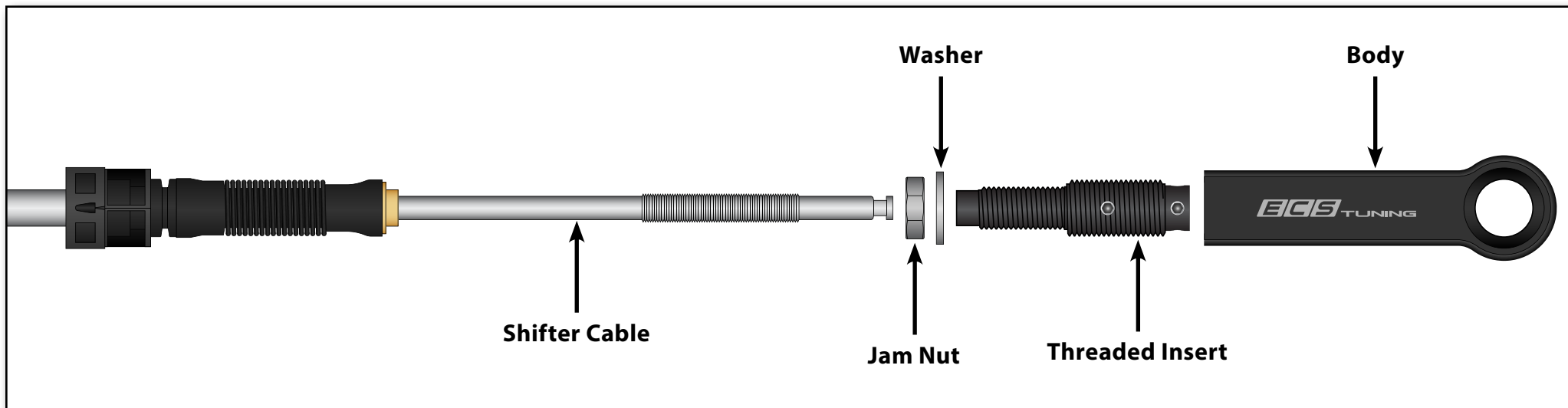




# Volkswagen Billet Adjustable Shifter Cable End Link Kit Installation Instructions



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.

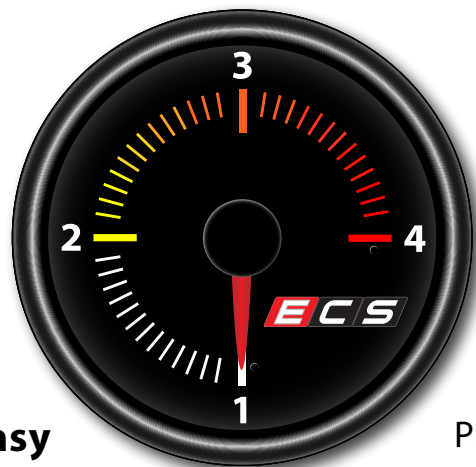
## INTRODUCTION

# VW Billet Adjustable Shifter Cable End Link Kits:

ECS Tuning Billet Adjustable Shifter Cable End Link Kits offer the following features:

- Fits both 5-speed and 6-speed applications
- Bronze pivot bushings - no lubrication required
- 6061 T-6 billet aluminum end link body
- In house designed by ECS Tuning Engineers
- All components included - no additional hardware required
- Easy installation

## ECS Difficulty Gauge



1 - Easy

2 - Moderate

Pro - 4

Advanced - 3

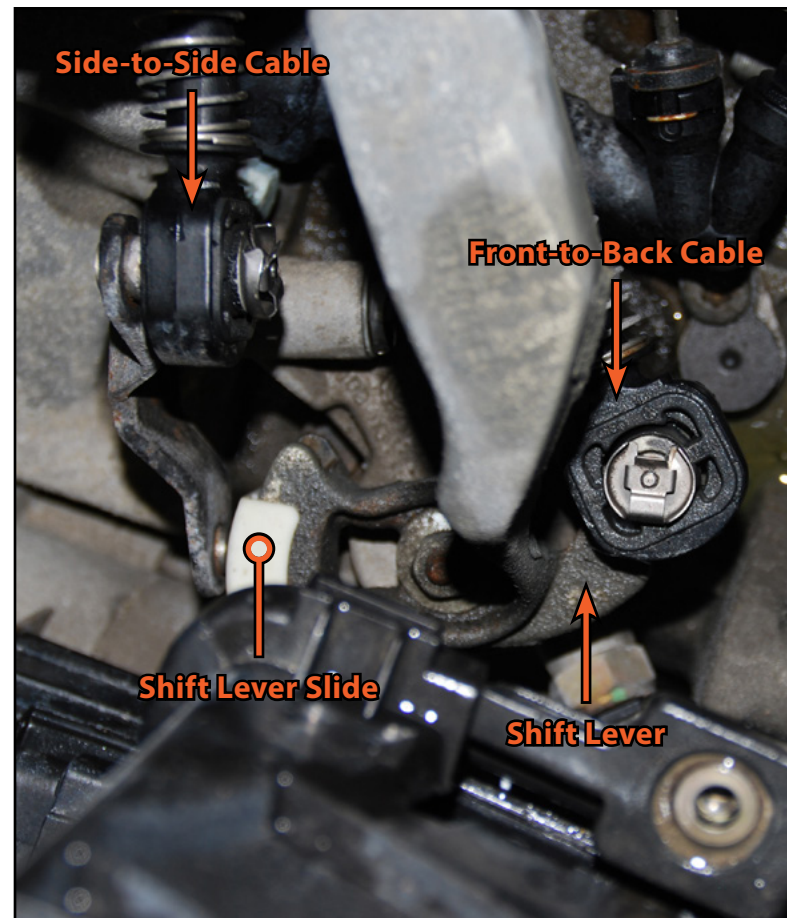
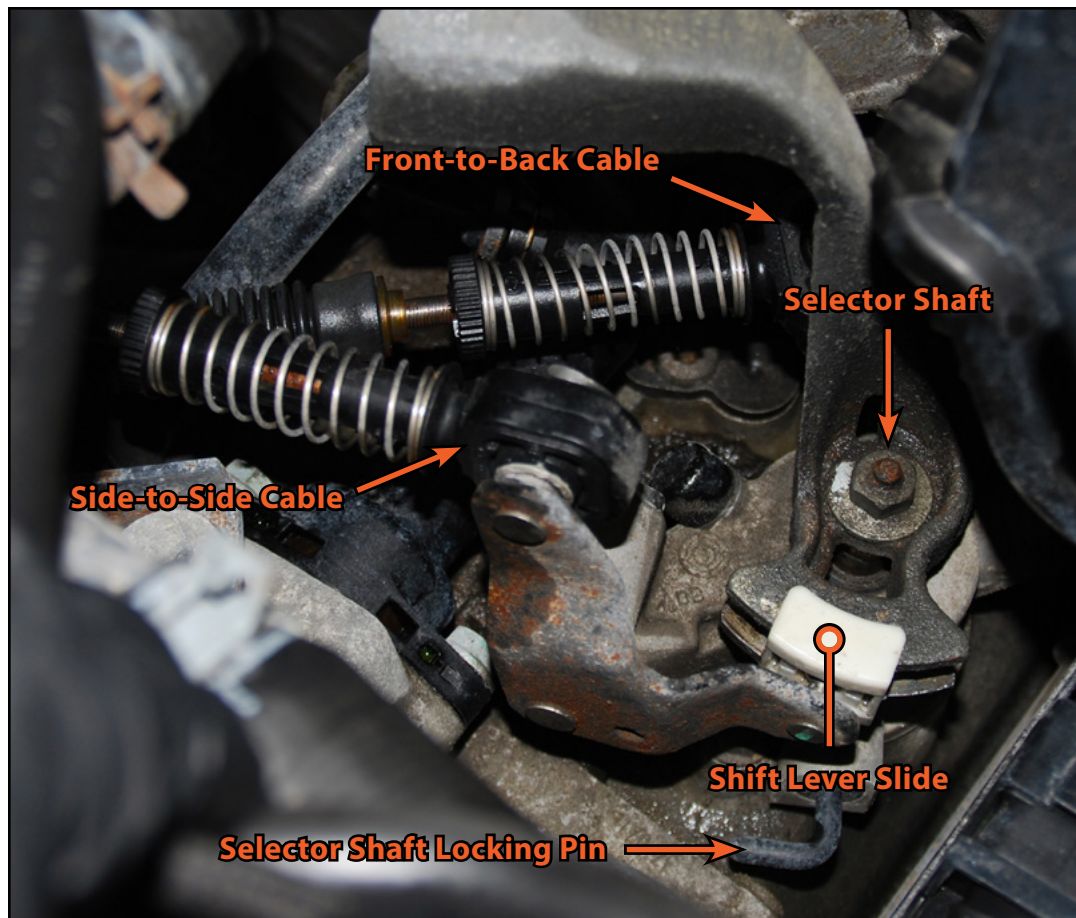
Looking to get rid of the rubbery feeling from your shifter? Installing one of our Billet Adjustable Shifter Cable End Link kits is the answer. No more than a short afternoon project, you can install this kit a couple of hours or less. Before you begin, read and familiarize yourself with these instructions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

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6-Speed Shifter Cable Identification .....	<a href="#">pg.5</a>
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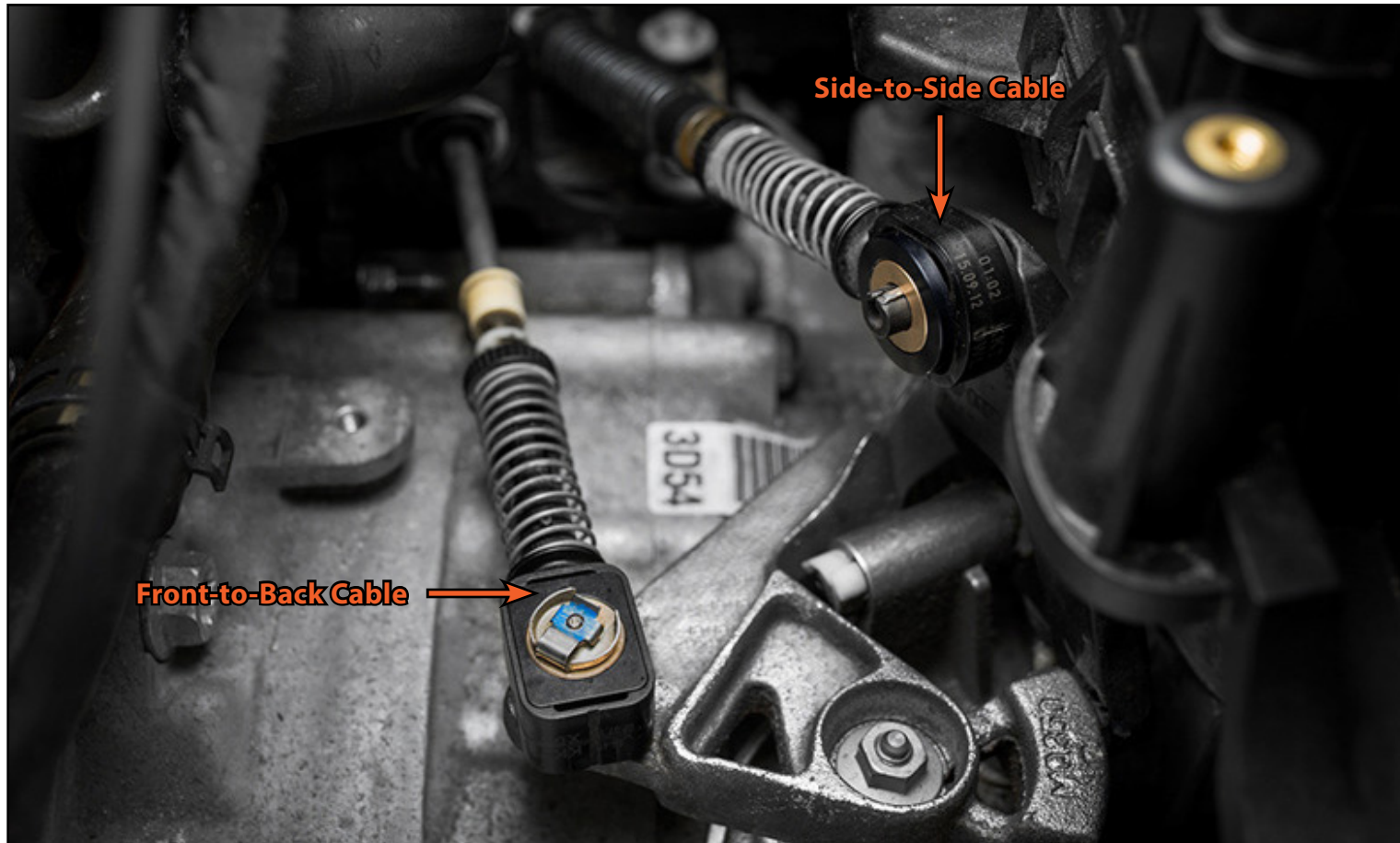
## 5-SPEED SHIFTER CABLE IDENTIFICATION

All Volkswagen 5-speed transmission shifter cables will have this orientation, regardless of the end style of the shifter 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.

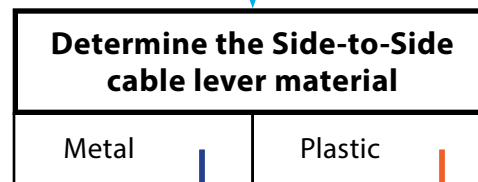
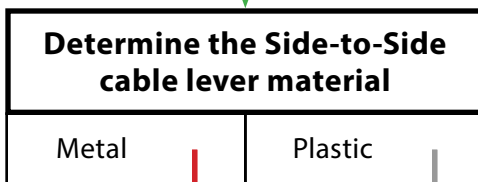
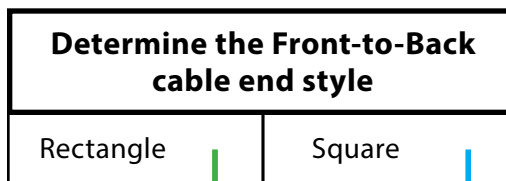
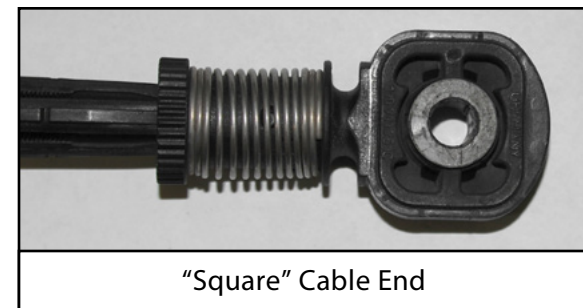
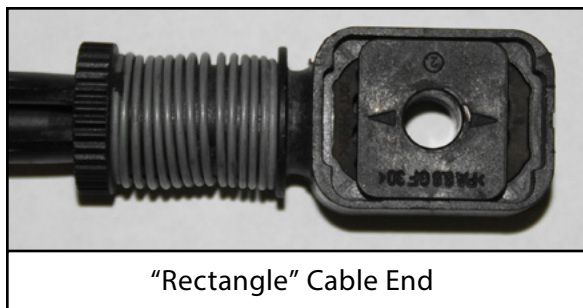


## 6-SPEED SHIFTER CABLE IDENTIFICATION

All Volkswagen 6-speed transmission shifter cables will have this orientation, regardless of the end style of the shifter 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.



# SHIFTER CABLE END LINK KIT APPLICATION FLOWCHART



<b>Required Kit:</b> <a href="#">ES#3170890</a> <a href="#">Page 7</a>
Front-to-Back: 8.5mm
Side-to-Side: 8mm

<b>Required Kit:</b> <a href="#">ES#3170891</a> <a href="#">Page 8</a>
Front-to-Back: 8.5mm
Side-to-Side: 10mm

<b>Required Kit:</b> <a href="#">ES#3200744</a> <a href="#">Page 9</a>
Front-to-Back: 10mm
Side-to-Side: 8mm

<b>Required Kit:</b> <a href="#">ES#3200745</a> <a href="#">Page 10</a>
Front-to-Back: 10mm
Side-to-Side: 10mm

**KIT CONTENTS - ES#3170890**



Billet Adjustable Shifter Cable End Link Assembly  
**(QTY 2)**



**Front-to-Back Bushing Insert**  
8.5mm **(QTY 1)**



**Side-to-Side Bushing Insert**  
8mm **(QTY 1)**



M14 Washer  
**(QTY 2)**

**KIT CONTENTS - ES#3170891**



Billet Adjustable Shifter Cable End Link Assembly  
**(QTY 2)**



**Front-to-Back Bushing Insert**  
8.5mm **(QTY 1)**



**Side-to-Side Bushing Insert**  
10mm **(QTY 1)**



M14 Washer  
**(QTY 2)**



**KIT CONTENTS - ES#3200744**



Billet Adjustable Shifter Cable End Link Assembly  
**(QTY 2)**



**Front-to-Back Bushing Insert**  
10mm **(QTY 1)**



**Side-to-Side Bushing Insert**  
8mm **(QTY 1)**



M14 Washer  
**(QTY 2)**

**KIT CONTENTS - ES#3200745**



Billet Adjustable Shifter Cable End Link Assembly  
**(QTY 2)**



**Front-to-Back Bushing Insert**  
10mm **(QTY 1)**



**Side-to-Side Bushing Insert**  
10mm **(QTY 1)**



M14 Washer  
**(QTY 2)**

**REQUIRED TOOLS**

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

**Standard Automotive Tools**

- Protecta-Sockets (for lug nuts).....[ES#2221243](#)
- **3/8" Drive Ratchet**.....[ES#2765902](#)
- 3/8" Drive Torque Wrench .....[ES#2221245](#)
- **3/8" Drive Deep and Shallow Sockets**.....[ES#2763772](#)
- **3/8" Drive Extensions**.....[ES#2804822](#)
- Hydraulic Floor Jack .....[ES#240941](#)
- Torx Drivers and Sockets .....[ES#11417/8](#)
- 1/2" Drive Deep and Shallow Sockets .....[ES#2839106](#)
- 1/2" Drive Ratchet
- 1/2" Drive Extensions
- 1/2" Drive Torque Wrench .....[ES#2221244](#)
- 1/2" Drive Breaker Bar.....[ES#2776653](#)
- **Trim/Moulding Tools**.....[ES#517779](#)
- Crows Foot Wrenches
- **Hook and Pick Tool Set**.....[ES#2778980](#)

**Required For This Install**

- **1/4" Drive Ratchet**.....[ES#2823235](#)
- **1/4" Drive Deep and Shallow Sockets**.....[ES#2823235](#)
- **1/4" Drive Extensions** .....[ES#2823235](#)
- **Plier and Cutter Set**.....[ES#2804496](#)
- **Flat and Phillips Screwdrivers**.....[ES#2225921](#)
- Jack Stands .....[ES#2763355](#)
- Ball Pein Hammers
- Pry Bar Set.....[ES#1899378](#)
- Electric/Cordless Drill
- Wire Strippers/Crimpers
- Drill Bits
- Punch and Chisel Set
- **Hex Bit (Allen) Wrenches and Sockets**.....[ES#11420](#)
- Thread Repair Tools .....[ES#1306824](#)
- **Open/Boxed End Wrench Set**.....[ES#2765907](#)

**Available On Our Website**

**Specialty Tools**

- **Volkswagen Shifter Alignment Pin**.....[ES#2848851](#)

## SHOP SUPPLIES AND MATERIALS

**Standard Shop Supply Recommendations:** We recommend that you have a standard inventory of automotive shop supplies before beginning this or any automotive repair procedure. The following list outlines the basic shop supplies that we like to keep on hand. Shop supplies with a hyperlink are available on our website.

- Hand Cleaner/Degreaser - [Click Here](#)
- Pig Mats - for protecting your garage floor and work area from spills and stains - [Click Here](#)
- Spray detailer - for rapid cleaning of anything that comes into contact with your paint such as brake fluid - [Click Here](#)
- Micro Fiber Towels - for cleaning the paint on your car - [Click Here](#)
- Latex Gloves - for the extra oily and dirty jobs - [Click Here](#)
- Medium and High Strength Loctite Thread lock compound - to prevent bolts from backing out - [Click Here](#)
- Anti-Seize Compound - to prevent seizing, galling, and corrosion of fasteners - [Click Here](#)
- Aerosol Brake/Parts Cleaner - for cleaning and degreasing parts
- Shop Rags - used for wiping hands, tools, and parts
- Penetrating oil - for helping to free rusted or stuck bolts and nuts
- Mechanics wire - for securing components out of the way
- Silicone spray lube - for rubber components such as exhaust hangers
- Paint Marker - for marking installation positions or bolts during a torquing sequence
- Plastic Wire Ties/Zip Ties - for routing and securing wiring harnesses or vacuum hoses
- Electrical tape - for wrapping wiring harnesses or temporary securing of small components

## 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.

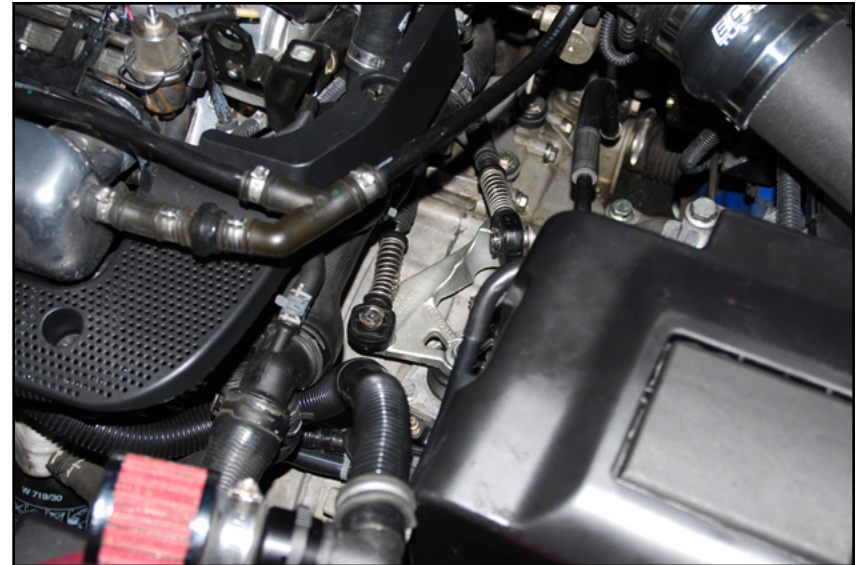


**NEVER get underneath a vehicle that is supported only by a jack, and ALWAYS make sure that the vehicle is securely supported on jack stands.**

## REMOVING THE ORIGINAL SHIFTER CABLE ENDS

### Step 1:

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



### Step 2:

Place the transmission in neutral.



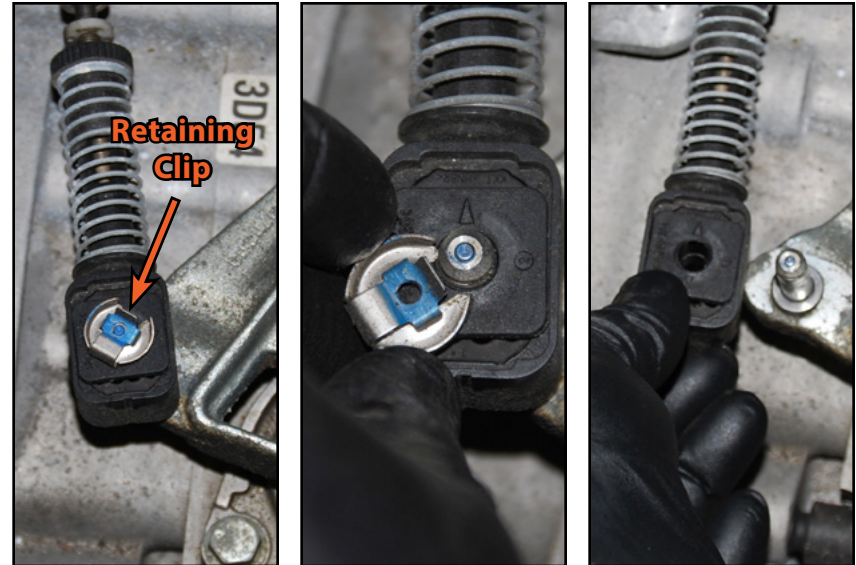
## REMOVING THE ORIGINAL SHIFTER CABLE ENDS

### Step 3:

Remove the front-to-back shifter cable end from the shift lever.

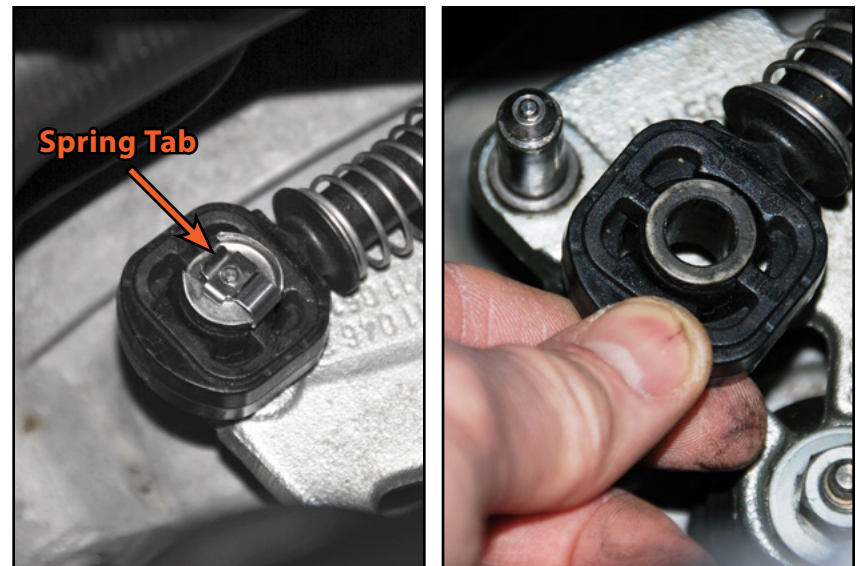
#### Rectangle Cable End:

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.



#### Square 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.



## REMOVING THE ORIGINAL 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.

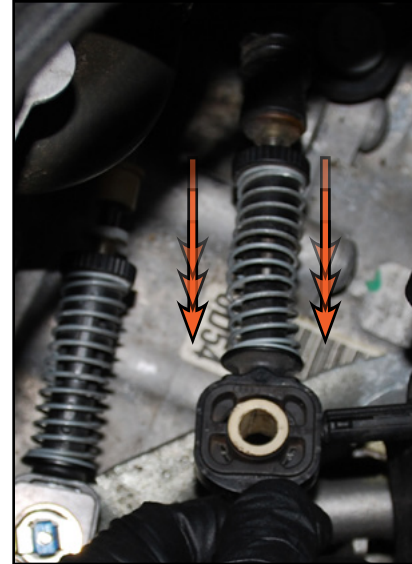




## REMOVING THE ORIGINAL SHIFTER CABLE ENDS

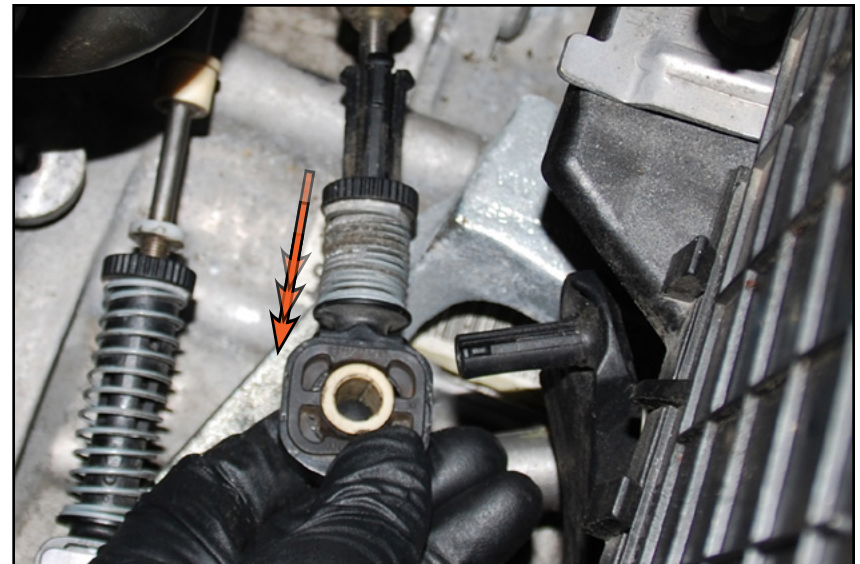
### Step 5:

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  $\frac{1}{8}$  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.

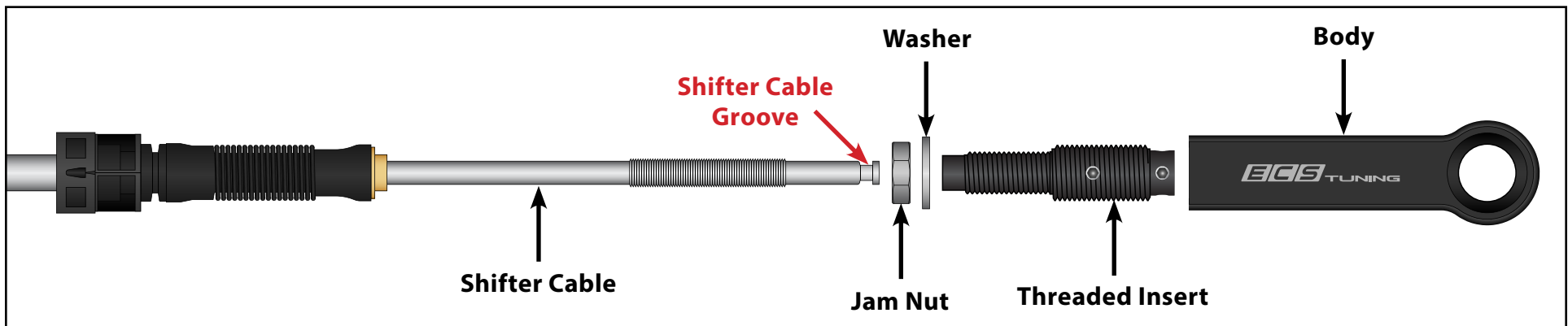
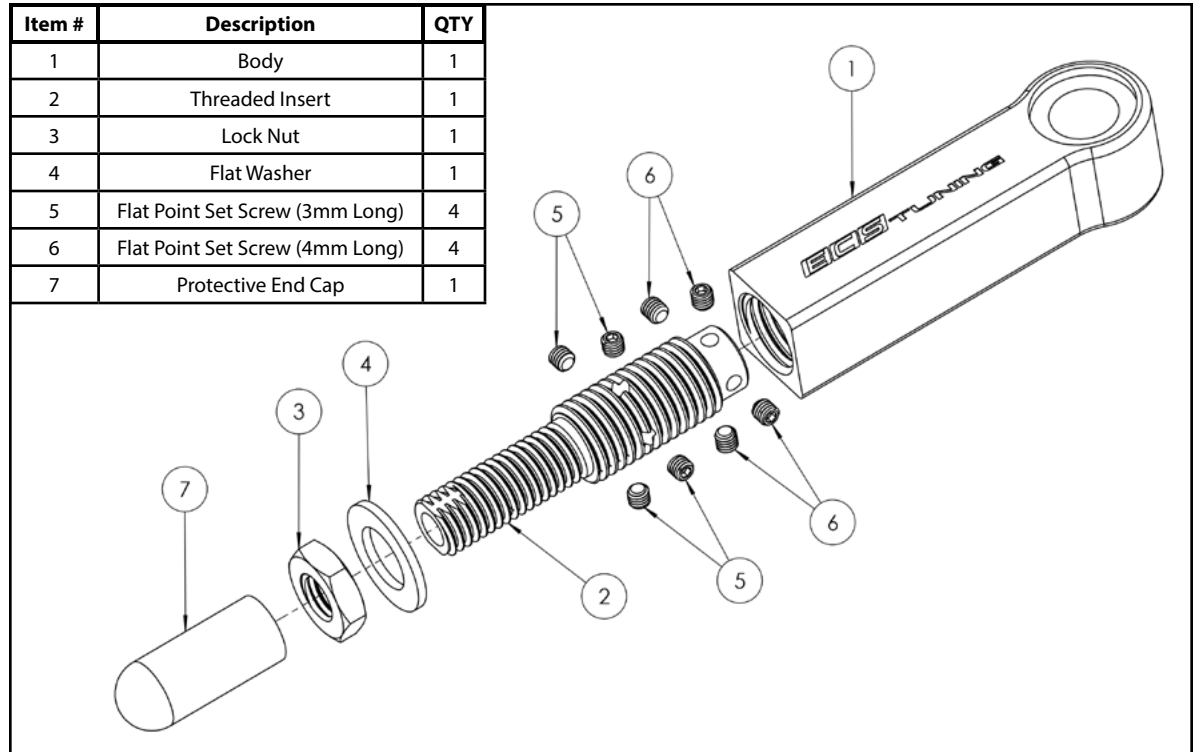


# INSTALLING THE BILLET ADJUSTABLE SHIFTER CABLE END LINKS

## Overview:

Before getting started, familiarize yourself with the exploded view of the end links (on the right) and also the installation order of components (below).

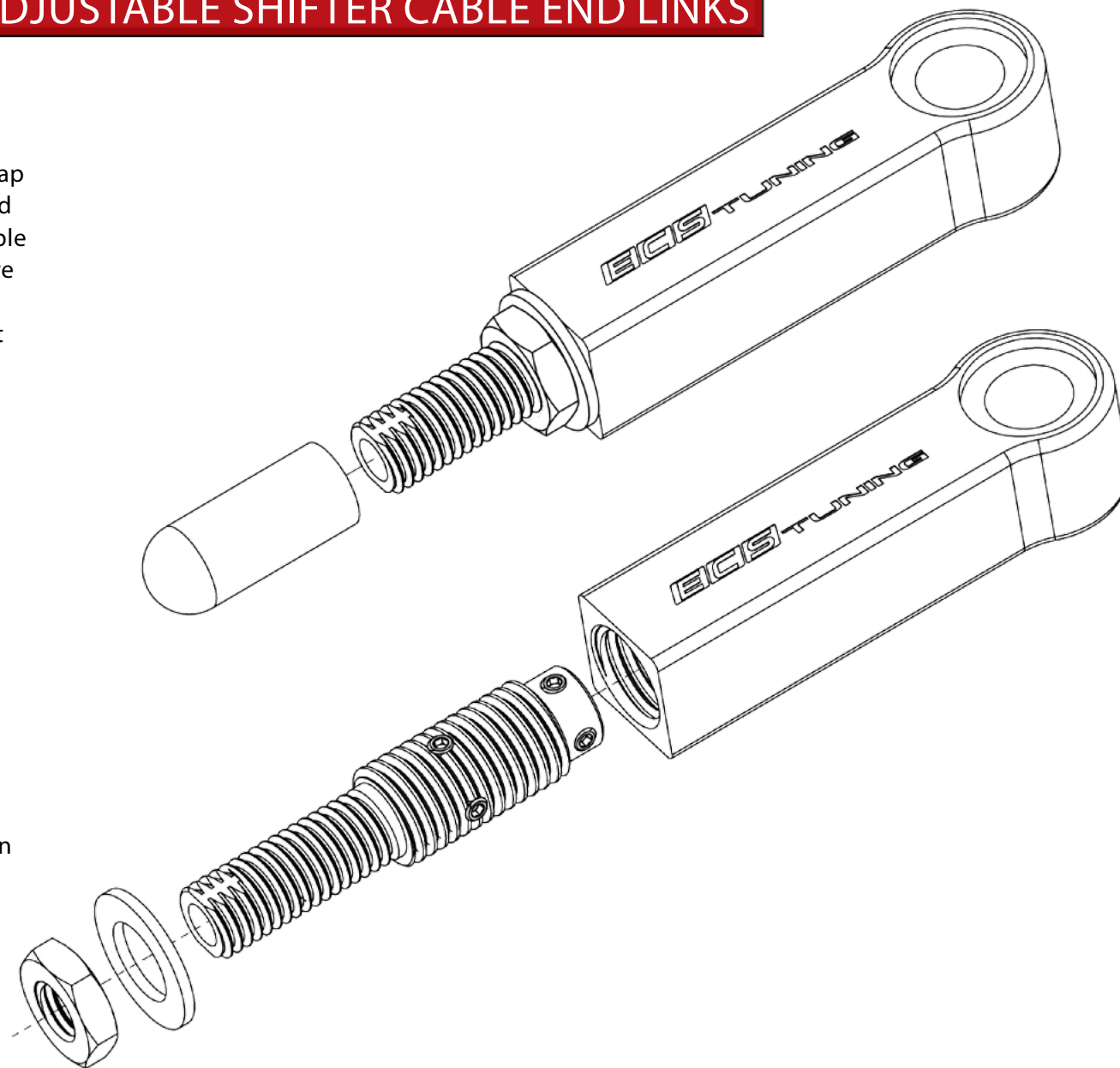
Item #	Description	QTY
1	Body	1
2	Threaded Insert	1
3	Lock Nut	1
4	Flat Washer	1
5	Flat Point Set Screw (3mm Long)	4
6	Flat Point Set Screw (4mm Long)	4
7	Protective End Cap	1



## INSTALLING THE BILLET ADJUSTABLE SHIFTER CABLE END LINKS

### Step 1:

While holding the end link over a clean work surface, carefully remove the protective end cap (top illustration). The set screws which are used to secure the threaded insert to the shifter cable can fall out during shipping, and the protective end cap is there to capture them in case this happens. Be careful while doing this, these set screws are **VERY** small, and the last thing you want is for one to go rolling away never to be seen again!



Next, remove the jam nut and the washer, then unscrew the threaded insert from the body (bottom illustration).

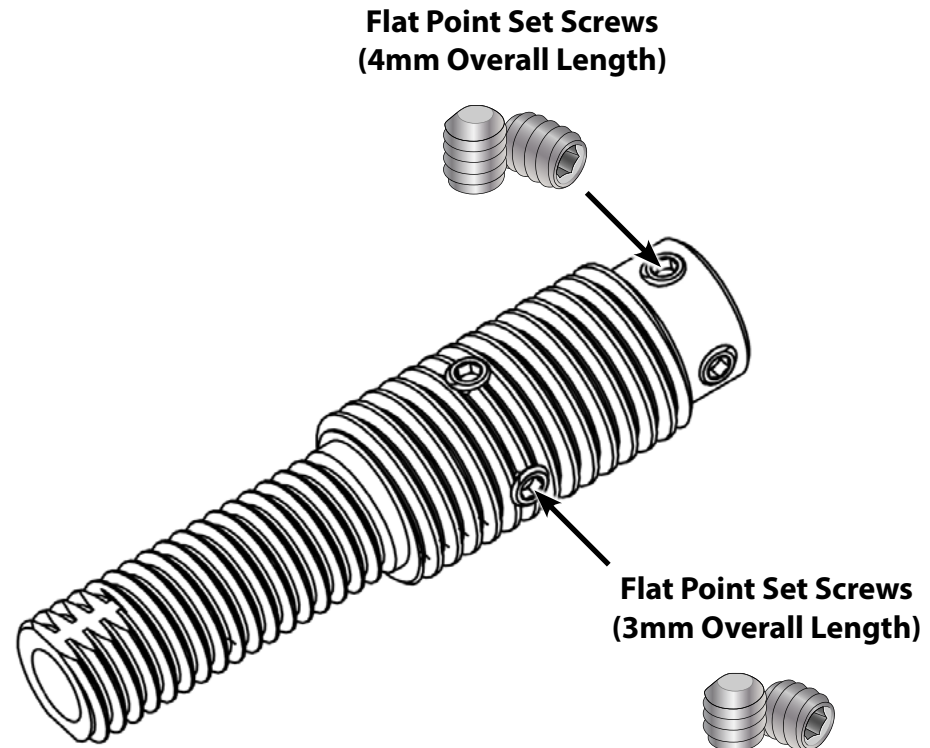
# INSTALLING THE BILLET ADJUSTABLE SHIFTER CABLE END LINKS

## Step 2:

Confirm that the correct set screws are in the two locations shown below. Both set screws have flat points, but the shorter screws (#5 in the chart on Page 18) **MUST** be inserted through the threads location shown below, and the longer screws (#6 in the chart on Page 18) **MUST** be inserted through the machined end of the threaded insert as shown below. Once the screws have been confirmed to be in the correct locations, proceed to the next step.



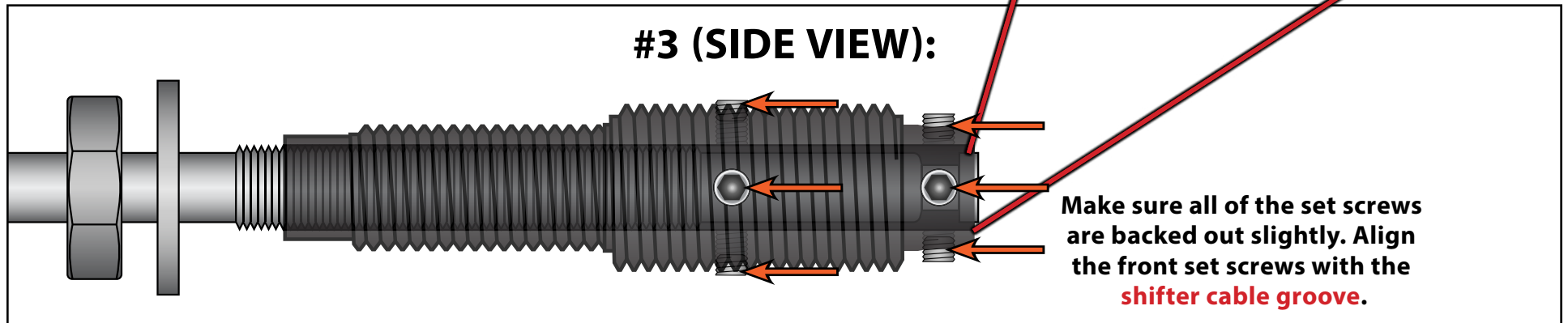
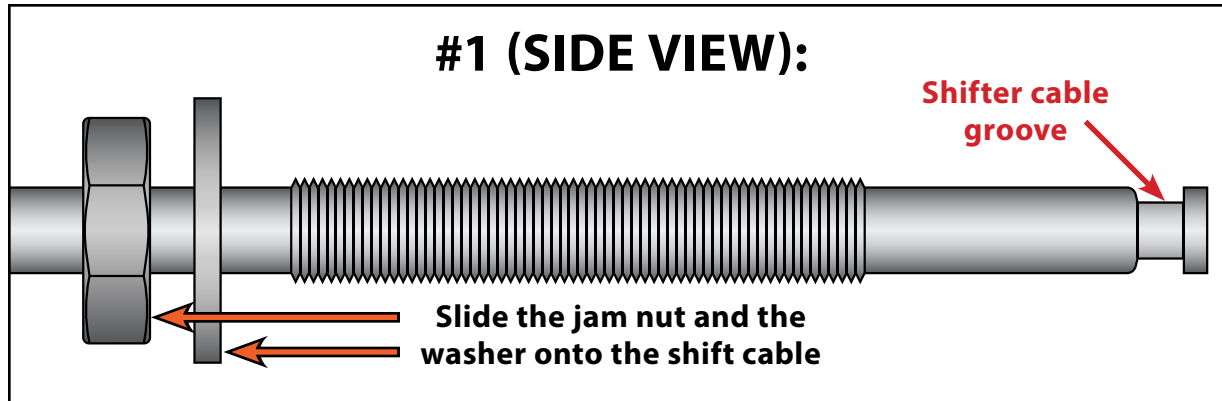
We recommend applying a single drop of **BLUE** loctite to each of these set screws to keep them from backing out once installed.



# INSTALLING THE BILLET ADJUSTABLE SHIFTER CABLE END LINKS

**Step 3:** 2mm Allen

Begin by sliding the jam nut and the washer over the shifter cable (illustration #1), then make sure that all of the set screws are backed out enough to slide the shifter cable through (illustration #2). Finally, slide the threaded insert onto the cable as shown (illustration #3), making sure that the front row of set screws are aligned with the shifter cable groove.



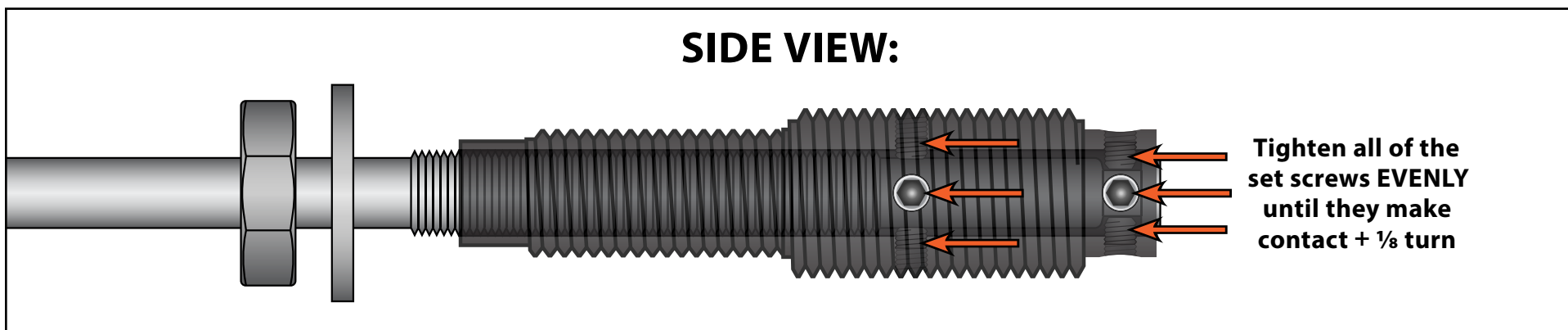
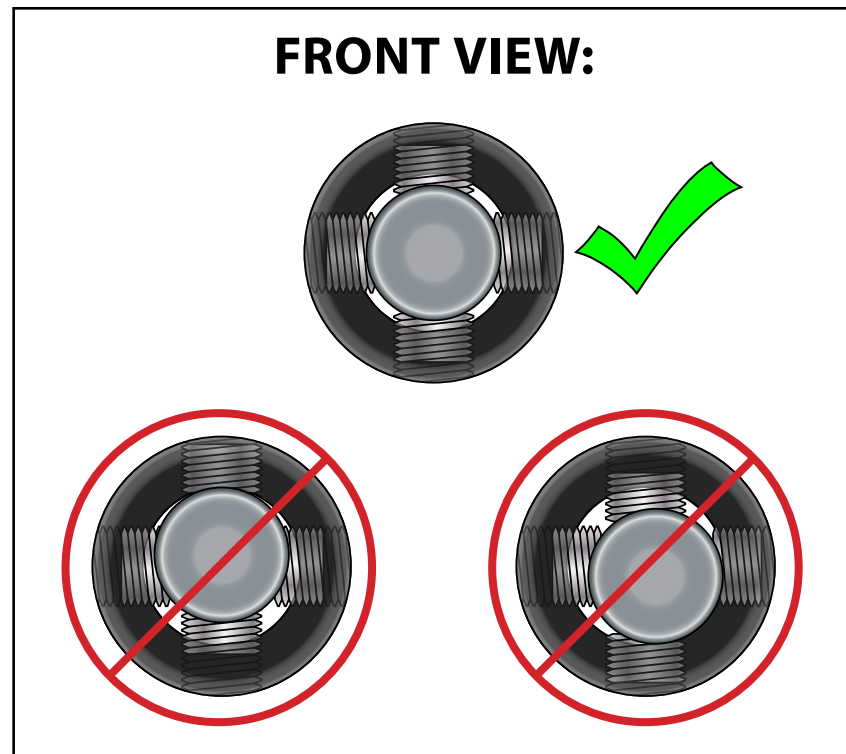
# INSTALLING THE BILLET ADJUSTABLE SHIFTER CABLE END LINKS

**Step 4:** 2mm Allen

Align the threaded insert so that the set screws along the front edge will thread into the cable groove, then tighten all of the set screws, paying close attention to the following guidelines:

- The longer set screws need to engage inside the groove on the end of the shifter cable.
- All of the set screws **MUST** be threaded in evenly to ensure proper clamping on the shifter cable, this is shown in the illustration on the right.

Once the set screws have all been evenly threaded in until they make contact, tighten each of them an additional 1/8 turn.

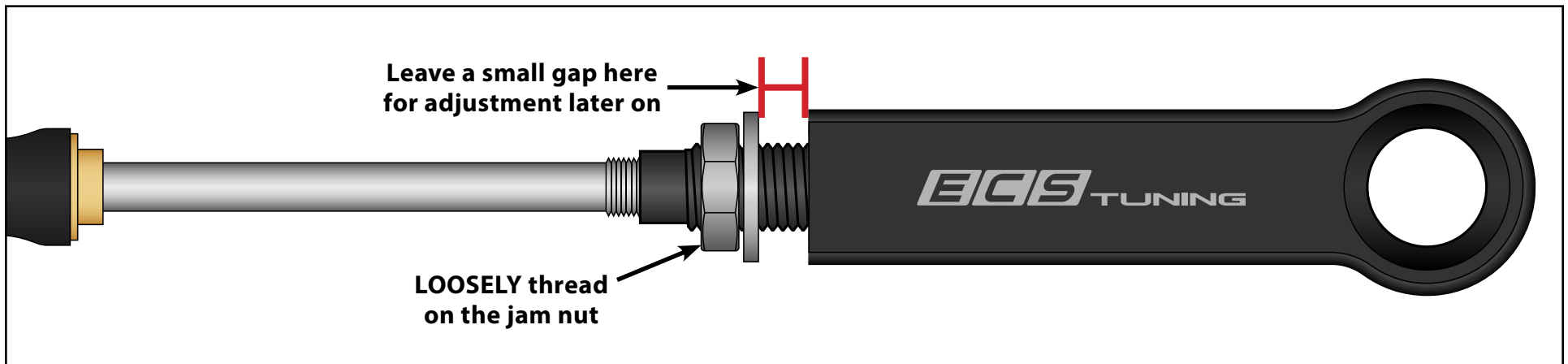
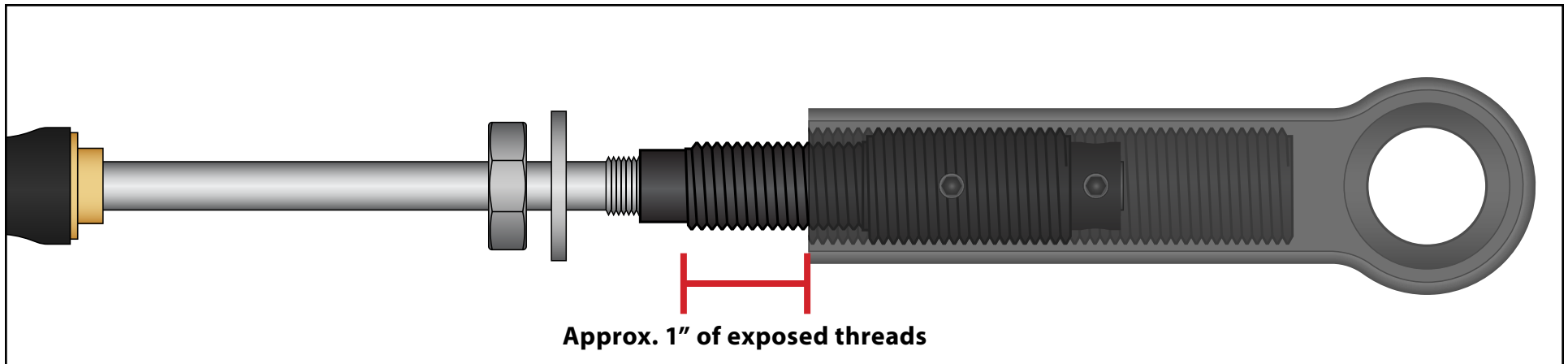


# INSTALLING THE BILLET ADJUSTABLE SHIFTER CABLE END LINKS

## Step 5:

Loosely spin the body onto the threaded insert (illustration #1), then thread the jam nut onto the insert by hand (illustration #2), leaving a small gap as shown to allow for end link adjustment.

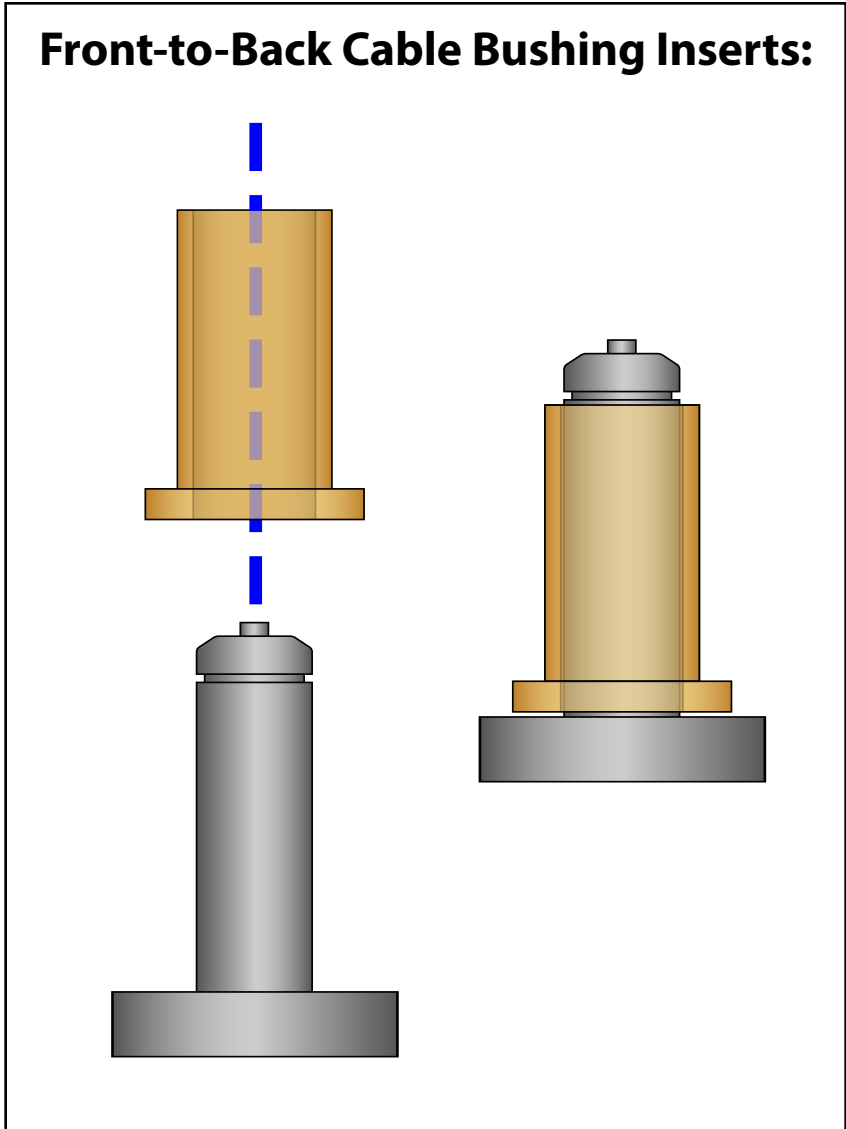
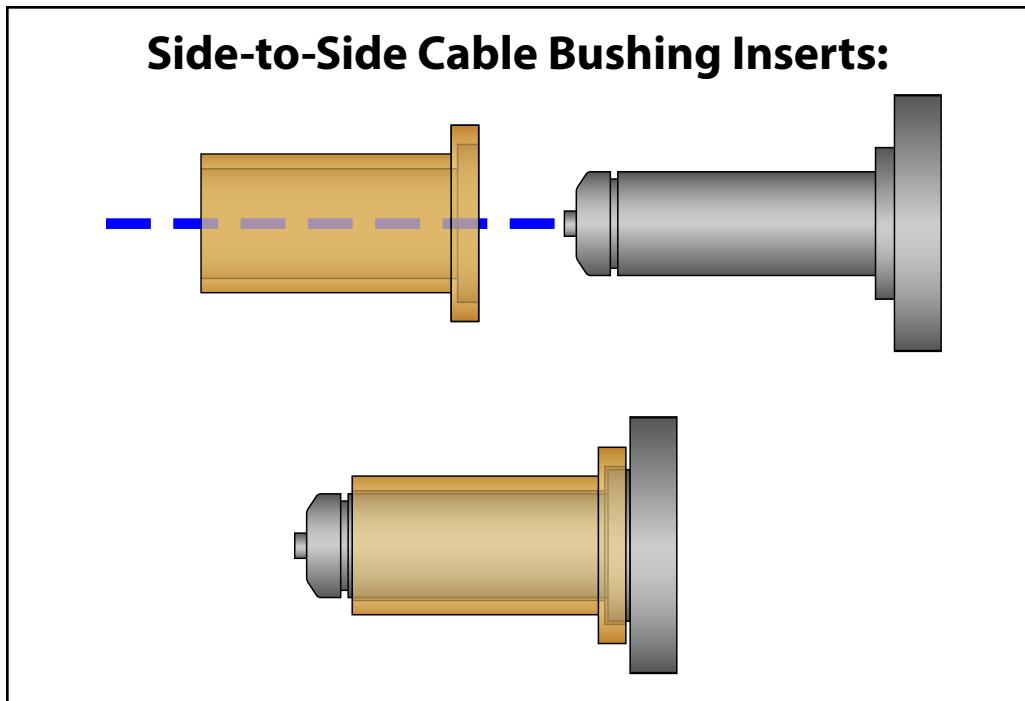
Repeat steps 1-5 to install the other shifter cable end link.



# INSTALLING THE BILLET ADJUSTABLE SHIFTER CABLE END LINKS

## Step 6:

Install the supplied bushing inserts onto the pins which are located on the front-to-back and the side-to-side levers. Be sure to install the bushing inserts onto the pins with the "flange-side first" as shown in the illustrations on this page, regardless of the bushing diameter or lever material.



***With the shifter cable end links and bushing inserts in place, it's time to adjust the shifter cables!***



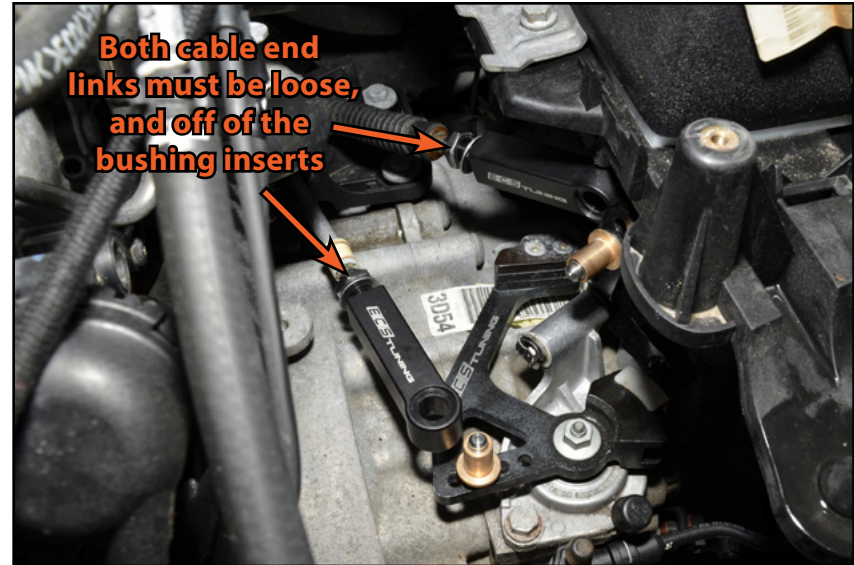
# SHIFTER CABLE ADJUSTMENT

**Step 1:** 19mm Wrench

Before we begin, ensure that the jam nuts on both cable end links are loose. If not, back them off a few turns.



We are performing this adjustment on a MK6 6-speed transmission. Different model years and 5-speed transmissions will appear different but the procedure is the same. Refer to [Page 4](#) for information on the 5-speed transmission shifter.

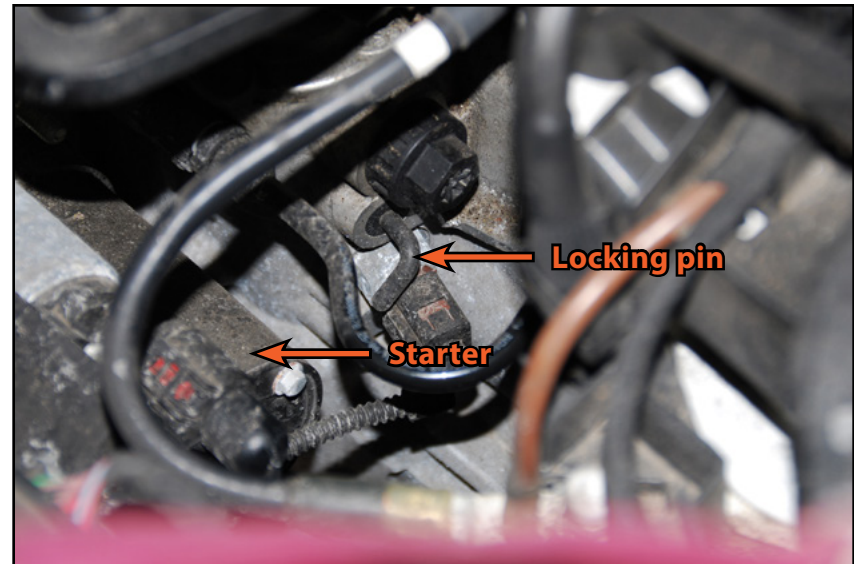


**Step 2:**

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



Reference the instructions on [Page 4](#) for the 5-Speed transmission locking pin location.



## SHIFTER CABLE 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 until it is approximately in the middle of its travel. Push in on the locking pin 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: Trim Removal Tool

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



## SHIFTER CABLE 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.



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.

## SHIFTER CABLE ADJUSTMENT

### Step 7:

Now that both the shifter and the selector shaft have been locked into place, we need to lengthen or shorten the length of the new shifter cable end links until they can be installed into place. This is done by simply rotating the body clockwise to shorten it, or counter-clockwise to lengthen it.



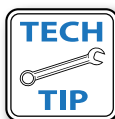
We recommend attempting this on the front-to-back shifter cable first, we will repeat this process on the side-to-side shifter cable later on.



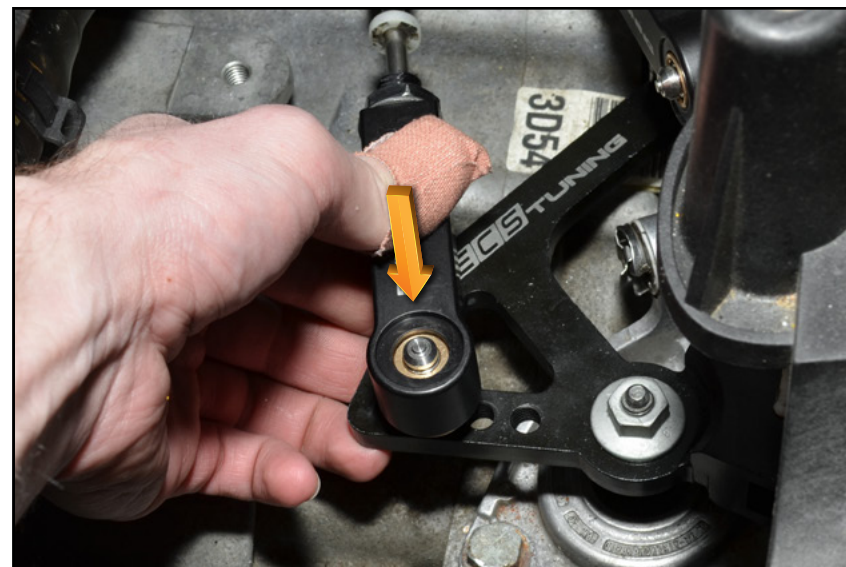
### Step 8:

When you think you have the end link set to the correct length, try to push it down onto the bushing insert as shown on the right. This may take a little bit of manipulation in order to get the end link to slide down the bushing, we found it easiest to slightly lift the cable side of the end link while trying to push the body into place.

Once the end link can be pushed down all the way into position on the bushing insert you will know that you have achieved the correct length.



It is a good idea to periodically check the locking pin and make sure that it hasn't backed out of the selector shaft while you are adjusting the end link length.



## SHIFTER CABLE ADJUSTMENT

### Step 9:

Once the shifter cable end link length has been set, place the supplied washer inside the recess on top of the body (LH photo), then secure the end link into place with the original clip (RH photo).



### Step 10: 19mm Wrench



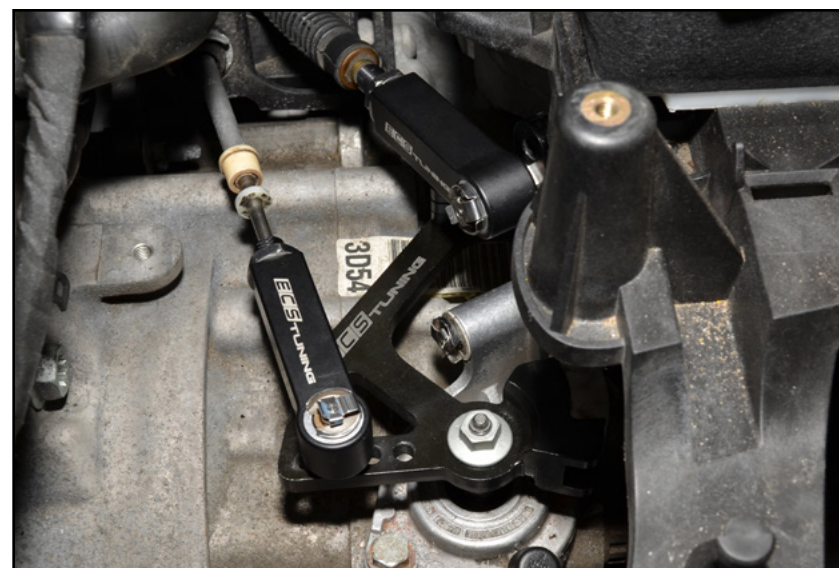
If your vehicle is equipped with a **PLASTIC** side-to-side shift lever, **repeat steps 7-8** to install the side-to-side shifter cable end link, tighten the jam nut on each of the end links until snug, then continue to [Page 30](#).



If your vehicle is equipped with a **METAL** side-to-side shift lever, **repeat steps 7-9** to install the side-to-side shifter cable end link, tighten the jam nut on each of the end links until snug, then skip to [Page 31](#).



If you have difficulty installing the side-to-side end link onto the bushing insert, try removing the clip from the side-to-side lever and pushing the lever outward slightly. This will make it easier to slide the end link on and off as you check the length.



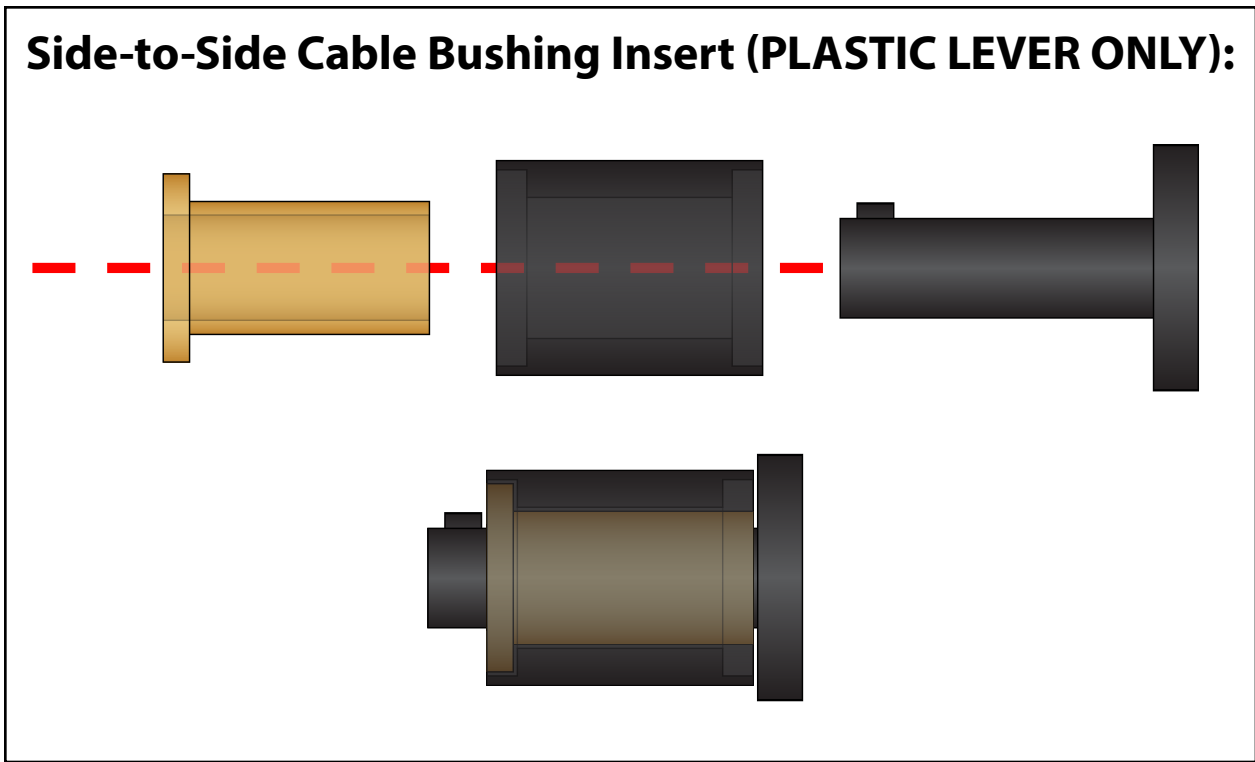
## PLASTIC SIDE-TO-SIDE CABLE LEVER SUPPLEMENT

**This supplement is only applicable to vehicles which are equipped with a plastic side-to-side lever. If you have a metal side-to-side shift lever, skip to [Page 31](#).**

Once you have completed the shifter cable adjustment, pull the side-to-side shifter cable end link off of the lever one final time, remove the bushing insert and place it into the cable end link in the opposite direction as shown in the illustration and photo below, then reinstall the cable end link and bushing onto the shift lever. The large end of the bushing insert **MUST** be installed as shown so that it is able to lock the entire assembly into place.



Vehicles which are equipped with plastic side-to-side shift levers **DO NOT** use the M14 washer which is included with all adjustable shifter cable end links. This washer can simply be discarded.

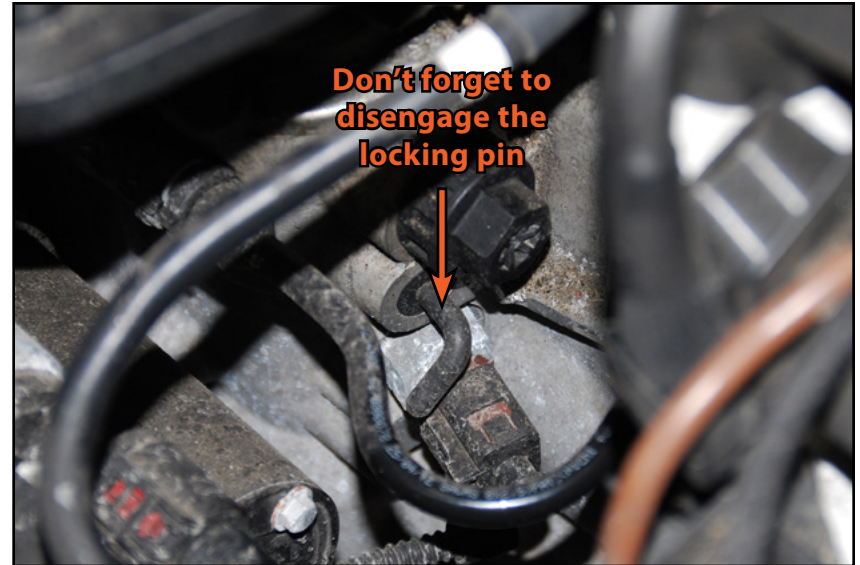


## SHIFTER CABLE ADJUSTMENT

### Step 11:

Disengage the locking pin from the selector shaft.

Pull the alignment pin out of the shifter.



### Step 12:

Reinstall the shifter insulator and boot.

Check shifter operation and confirm that all gears can be selected.

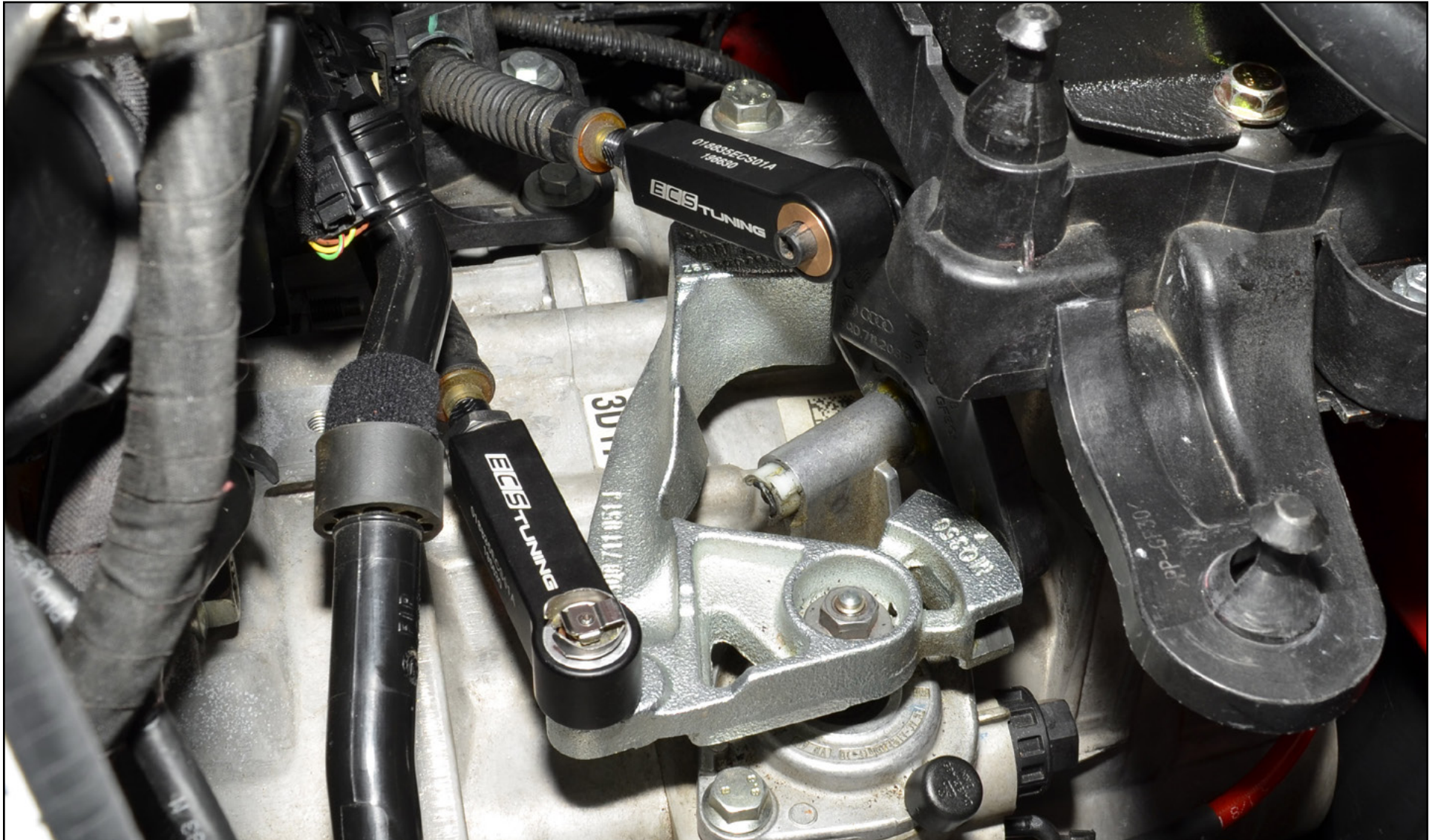


***Your Billet Adjustable Shifter Cable End Link Kit installation is complete!***





Your Billet Adjustable Shifter Cable End Link Kit 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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