

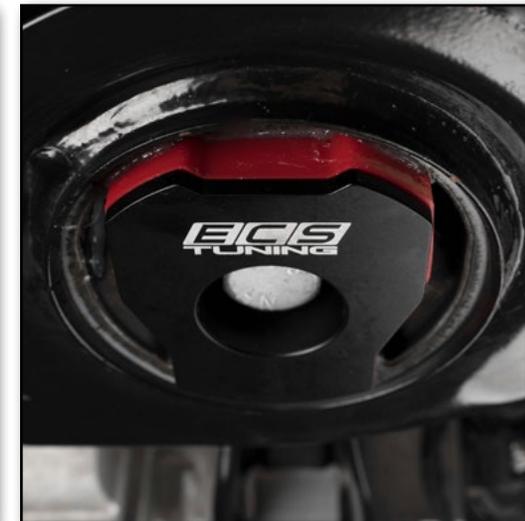


Volkswagen/Audi MQB 1.8T/2.0T Gen3 ECS Pendulum Mount & Bushing Insert Installation Instructions



Skill Level 1 - Easy

**Basic Skills
Required**



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

Audi 8V A3/S3 - VW MK7 Golf/GTI/R Pendulum Mount and Bushing Insert

When you put the pedal to the metal, you're looking for one thing to happen: Response. We're not talking slow, mushy, eventually get there with RPM's response, we're talking crisp, immediate, horsepower to the wheels, rubber on the ground, put you back in the seat, instant response. You know what we mean. What's one of the biggest things to steal this response time right out from underneath you? Your drivetrain mounts. Soft, cushy, original mounts will absorb the power that you're putting out and keep it from where you want it - on the asphalt. At ECS Tuning, we've engineered the perfect solution for the pendulum mount and subframe bushing on your Audi 8V A3/S3 or VW MK7 Golf/GTI/R.

The **pendulum mount** takes a beating on these cars, so if you're replacing a worn out original or simply upgrading for performance, you've come to the right place. We start with Billet 6061-T6 aluminum and custom machine the pendulum arm and transmission bracket. A stainless steel, Teflon®-lined spherical bearing couples the two pieces together, and a black anodized finish with laser etched logos is the finishing touch. This is more than just a mount - this is serious equipment, and with its unmatched durability and steely cool looks, it'll take everything you can throw at it.

The **subframe bushing** that supports the rear of the pendulum mount has one of the toughest jobs - absorbing relentless punishment during acceleration and deceleration, and keeping unwanted noise and vibration out of the chassis. Our new insert gives the OE bushing a "split personality". It allows it to retain its smooth and comfortable side, but flexes its muscle when the game is on. We first designed a polyurethane insert to fit perfectly into the voids of the OE bushing, providing instant performance. We finished it off with a black anodized, billet 6061-T6 aluminum bushing cap to protect the poly and tighten up the response.

Installation is quick and easy, and doesn't require too many tools. You'll be working under the car, so be sure you have the means to properly lift and support it. We've included all the necessary hardware you need for installation, so it'll be an easy one that you can enjoy. Thank you for looking to ECS Tuning for all your performance and repair needs, we appreciate your business!

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INSTALLATION OVERVIEW

There are several different kits available at www.ecstuning.com:

- The Pendulum Mount Kit ([ES#3135673](#)) includes everything shown on page 4.
- There are two different Subframe Bushing Insert Kits ([ES#3089014](#) & [ES#3477883](#)), both are shown on page 6.
Note: Information on how to identify the different subframe bushings can be found on page 7.
- We also have complete kits which include the Pendulum Mount Kit, Subframe Bushing Insert Kit, and our ECS Performance Engine and Transmission Mounts. Simply input your vehicle information at www.ecstuning.com, then go to:
 - **Engine > Mount > Performance > ECS**
 - **Drivetrain > Mounts > Transmission > Performance > ECS****Note:** When purchasing complete kits, be sure to order all required hardware. All Torque to Yield bolts MUST be replaced.

Regardless of the kit that you purchased, *begin your installation* on Page 11.

KIT CONTENTS - PENDULUM MOUNT



Pendulum Arm



Transmission Bracket

- The transmission bracket comes assembled with the bolt installed to keep everything together. Leave the bolt installed until you are ready to install the bracket per these instructions.



M10x75mm Bolt

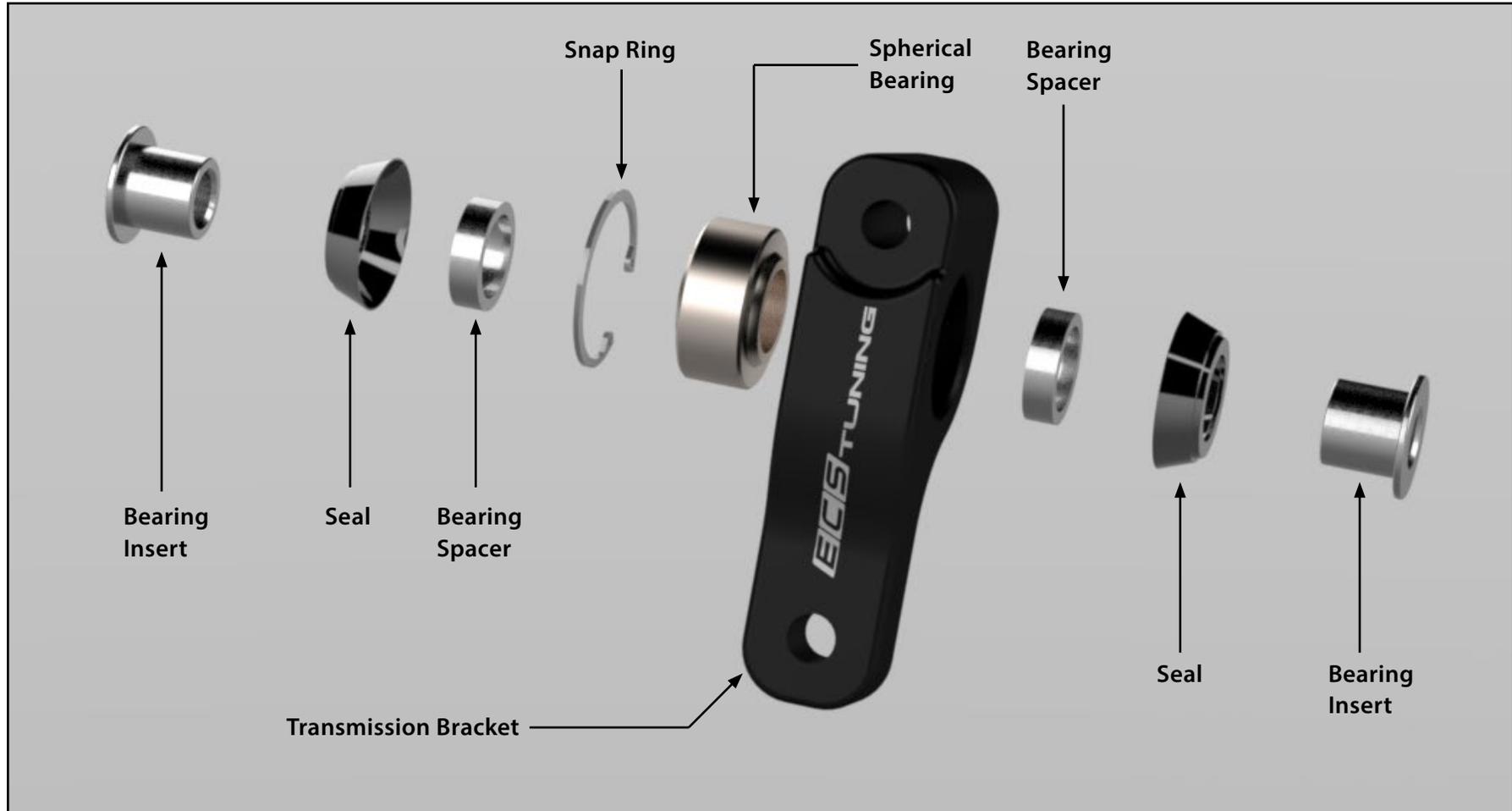


M10x50mm Bolt

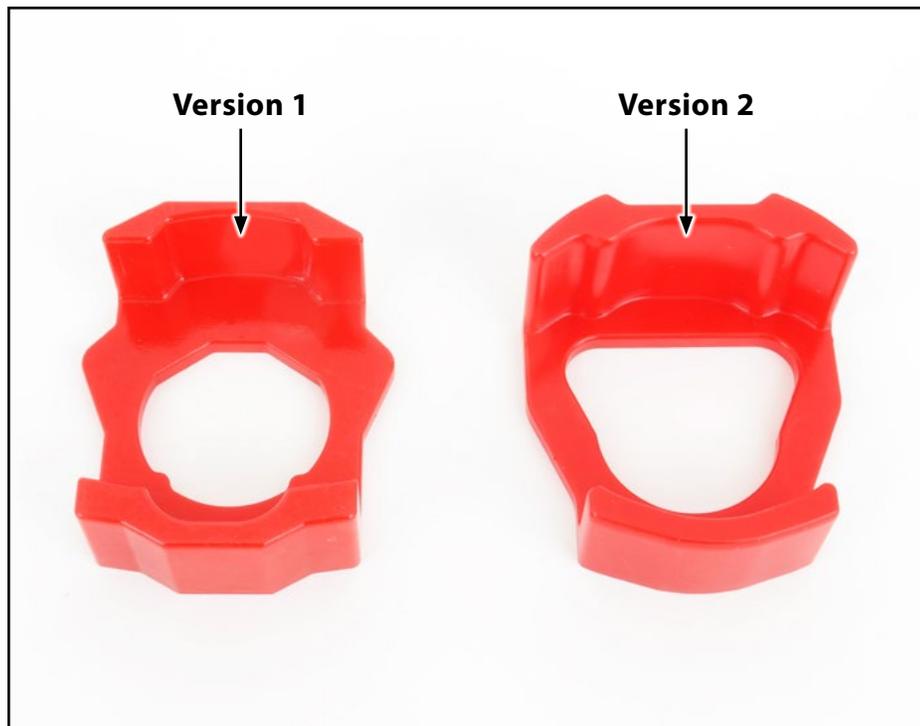


M14x50mm Bolt

EXPLODED VIEW - TRANSMISSION BRACKET



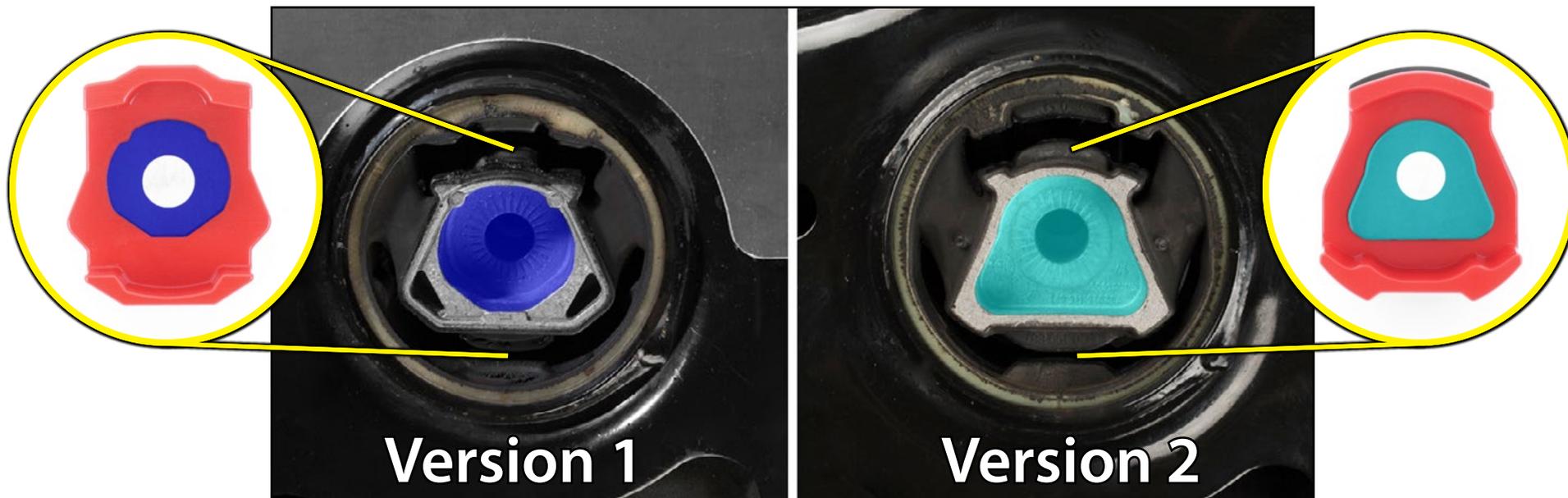
Note: The transmission bracket is shipped completely assembled and held together by the mounting bolt. If the bracket is disassembled for any reason, all components will easily assemble back into place. It is important to note that **both** of the **bearing inserts, seals, and bearing spacers** are identical components and can be installed on either side of the transmission bracket.

KIT CONTENTS - SUBFRAME BUSHING INSERT**Polyurethane Bushing Insert (LH = Version 1, RH = Version 2)***

*More information on the differences between Version 1 and Version 2 can be found on Page 7

**Billet Bushing Cap (LH = Version 1, RH = Version 2)*****M14x50mm Bolt****Poly Grease Pack**

VERSION 1 VS. VERSION 2 SUBFRAME BUSHINGS



Depending on the model and the production date of your VW/Audi, you will have one of the two subframe bushings shown above.

Version 1 (LH photos above) was used in:

- MK7 Golf/GTI models built up to 7/26/2015
- MK7 Golf R models (check your vehicle)
- Audi 8V A3/S3 (check your vehicle)
- Audi 8S TTRS (check your vehicle)
- Audi RS3 (check your vehicle)

Version 2 (RH photos above) was used in:

- MK7 Golf/GTI models built from 7/27/2015
- MK7 Golf R models (check your vehicle)
- VW Tiguan MQB
- Audi 8V A3/S3 (check your vehicle)
- Audi 8S TTRS (check your vehicle)
- Audi RS3 (check your vehicle)

We suggest that you look underneath your vehicle and confirm which bushing is equipped BEFORE ordering the insert. This is due to various VIN-splits and other determining factors. Please use the photos above as a reference if you need any help determining which version of subframe bushing you have in your vehicle. Notice how the ECS Billet Bushing Cap is designed to fill the open cavity around the bolt. This cavity shape is unique to each version of bushing, and can be used as an easy way to identify which version you have in your vehicle.

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](#)
- File Set
- Air Nozzle/Blow Gun
- Bench Mounted Vise
- 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](#)
- 1/4" Drive Torque Wrench
- 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
- Adjustable (Crescent) Type Wrenches
- 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

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.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and 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.

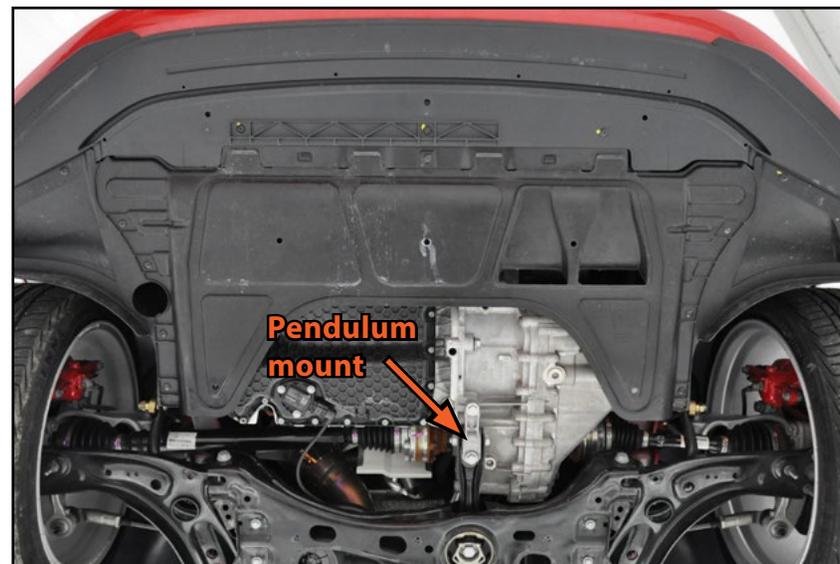


NEVER get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

Step 1:

Safely raise and support the vehicle. On some vehicles, such as this VW MK7, you have clear access to the pendulum mount and subframe bushing. Others may have full length insulation panels or skid plates which must be removed for access.



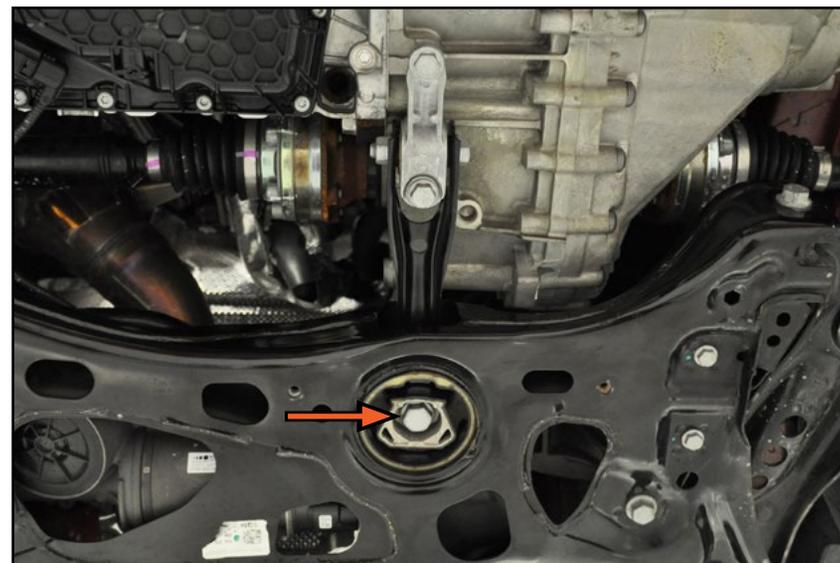
Step 2: 21mm Socket & Breaker Bar

Remove the subframe bushing bolt (arrow).



If you have purchased the complete kit or the pendulum mount kit, continue with step 3.

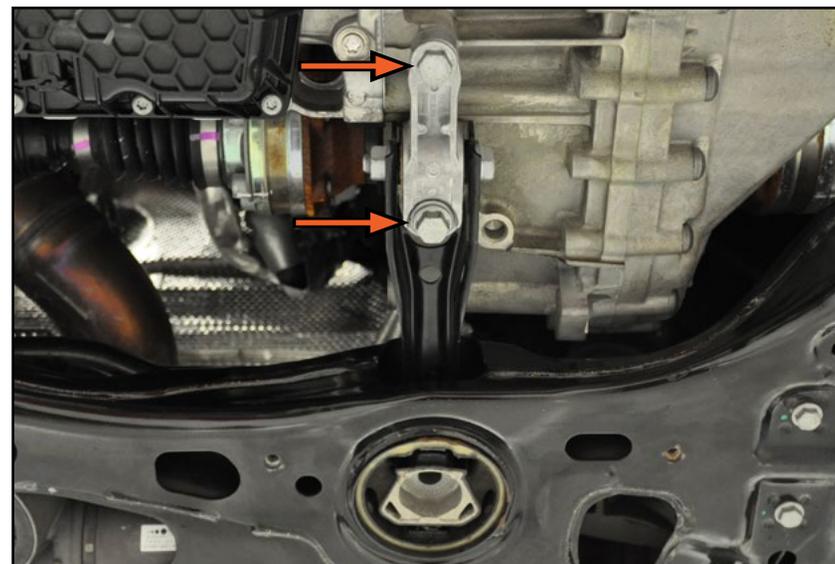
If you have purchased the subframe bushing insert kit only, skip to step 13 on [Page 17](#).



PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

Step 3: 16mm Socket & Breaker Bar

Remove the two transmission bracket bolts.



Step 4:

Pull down just slightly on the front of the original pendulum mount, then slide it forward out of the subframe bushing and remove it.



PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

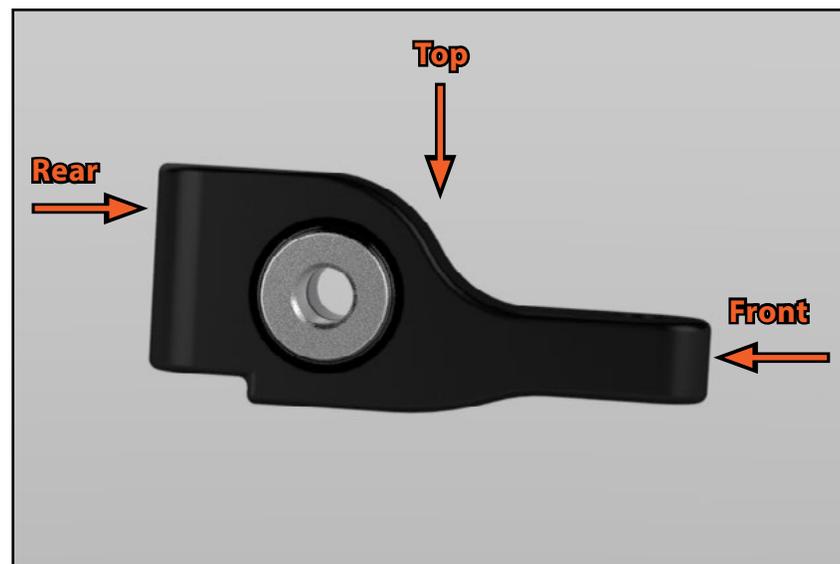
Step 5:

Identify the top of the pendulum arm. When oriented correctly as shown in the photo, the ECS Tuning logo, of course, will be right side up. Note the rear of the arm that fits into the subframe bushing must be oriented "up" or it will not fit.



Step 6:

Now identify the top and bottom of the transmission bracket. In its installation position, the bottom of the bracket will have the ECS Tuning logo on it and the top is stepped to fit onto the transmission. The thicker end of the bracket is oriented toward the rear of the car.



PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

Step 7:

While holding the bearing inserts and seals in place, unthread the nut and remove the bolt from the transmission bracket.



If you accidentally drop any of the transmission bracket components or they slip out of place, refer to the exploded view on [Page 5](#) for easy reassembly.

Note that **both** of the **bearing inserts, seals, and bearing spacers** are identical components and can be installed on either side of the transmission bracket.



Step 8:

While squeezing them inward and holding the transmission bracket components in place, make sure that both seals are fully seated against the side of the bracket as shown. The seals **should not** sit down into the bearing bore.



PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

Step 9:

While still squeezing the transmission bracket components into place, slide it into the pendulum arm then install the zinc bolt and nut. Thread the nut on by hand but do not tighten it at this time.

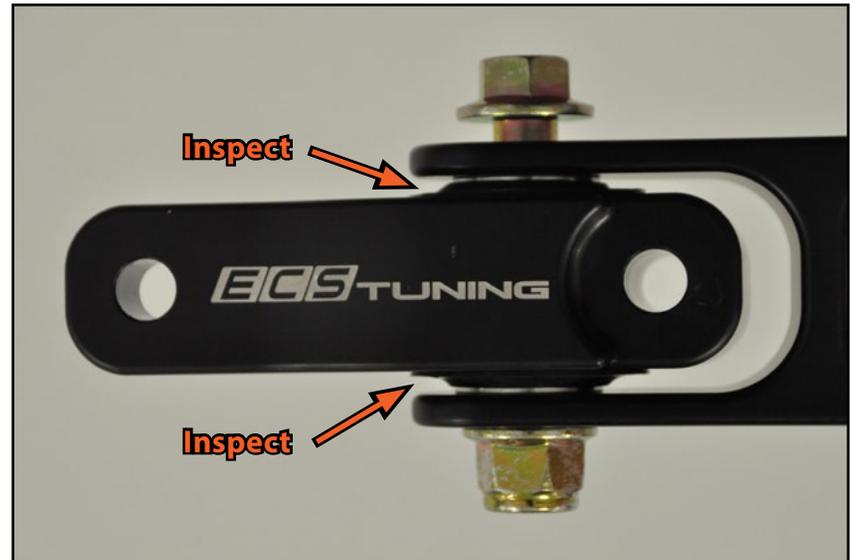


Make sure that both the bracket and the arm are oriented properly. Shown here is a view of the top side.



Step 10:

Take the time and double check the seal installation to make sure they are both flat against the side of the transmission bracket. Shown here is a view of the bottom of the trans bracket.



PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

Step 11:

Slide the assembled pendulum mount back into the subframe bushing until the holes in the transmission bracket are lined up with the mounting holes in the transmission case.



Step 12: 16mm Socket & Torque Wrench

Thread the two new transmission bracket bolts into place and torque them to 50 Nm (37 Ft-lbs), **we will come back and tighten these bolts more later**. Do not tighten the zinc bolt and nut at this time.



If you have purchased the complete kit, continue with step 13 on the next page.

If you have purchased the pendulum mount kit only, skip to [Page 19](#).



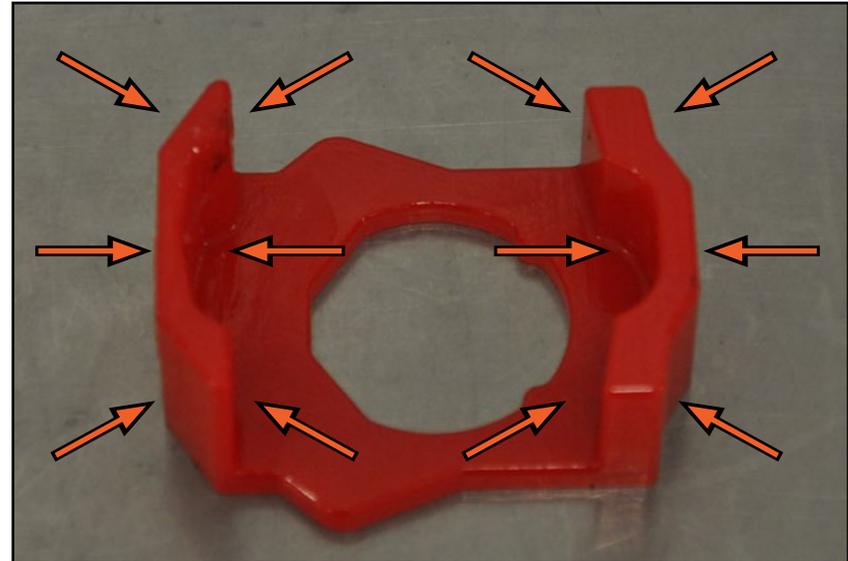
PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

Step 13:

Apply the poly grease (included with the subframe bushing kit) onto the inner and outer surfaces of the side wings of the polyurethane bushing insert, as indicated by the arrows.



We recommend wearing latex gloves, this grease is very sticky and difficult to wash off.



Step 14:

Slide the insert into the original subframe bushing, the shape and contour will only allow it to fit one way.

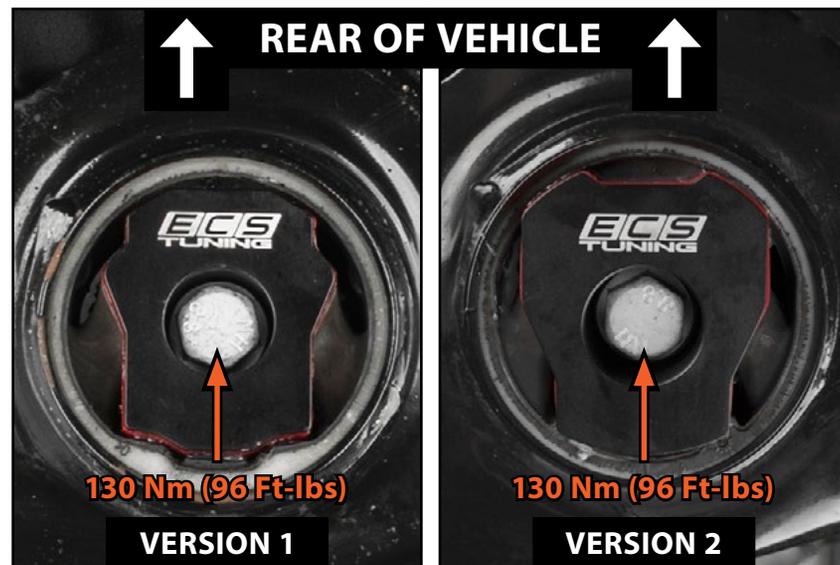


PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

Step 15: 21mm Socket & Torque Wrench

Position the bushing cap on the bottom of the polyurethane bushing insert with the ECS logo facing toward the rear of the vehicle. Install the new M14x50mm bolt and torque it to 130 Nm (96 Ft-lbs), **we will come back and tighten this bolt more later.**

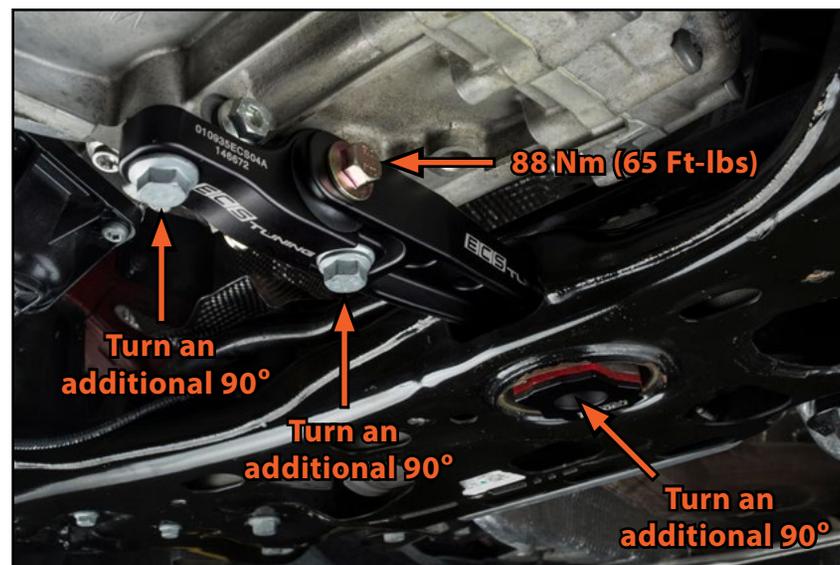
If you have purchased the subframe bushing insert kit only, your installation is complete!



Step 16: 16mm, 18mm, & 21mm Sockets, Torque Wrench, Breaker Bar

Rotate the two transmission bracket bolts and the subframe bushing bolt an additional 90°, then torque the zinc bolt and nut to 88 Nm (65 Ft-lbs).

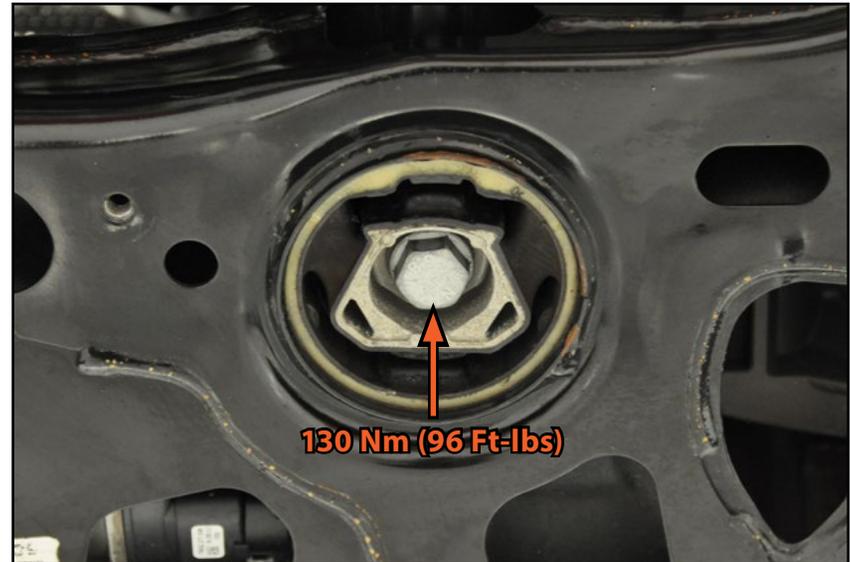
Your Pendulum Mount and Bushing Insert installation is complete!



PENDULUM MOUNT AND BUSHING INSERT INSTALLATION

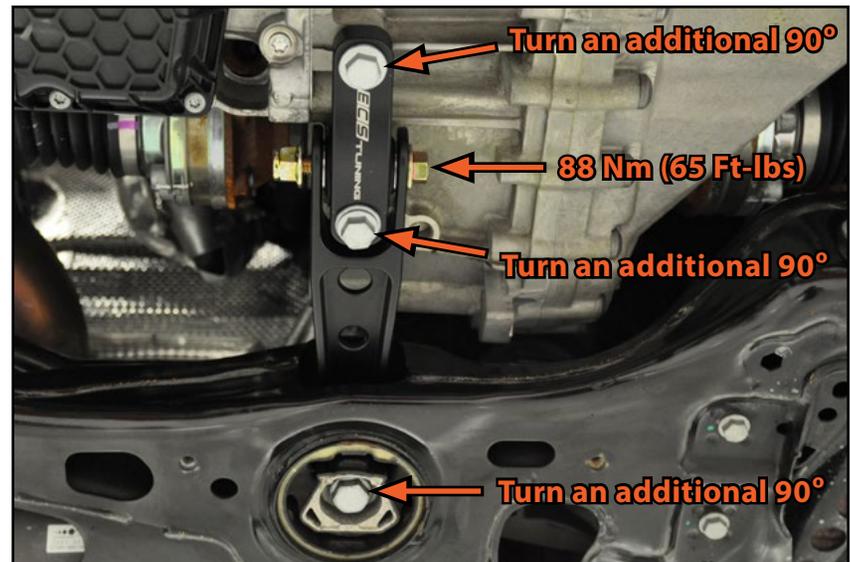
Step 13: 21mm Socket & Torque Wrench

Install the new M14x50mm bolt into the subframe mount and torque it to 130 Nm (96 Ft-lbs), ***we will come back and tighten this bolt more later.***



Step 14: 16mm, 18mm, & 21mm Sockets, Torque Wrench, Breaker Bar

Rotate the two transmission bracket bolts and the subframe bushing bolt an additional 90°, then torque the zinc bolt and nut to 88 Nm (65 Ft-lbs).



Your Pendulum Mount installation is complete!

TORQUING TIPS

Torque to Yield or “Stretch” Bolts

Many bolts will have a torque specification listed in the format - xx Nm (xx Ft-lbs) + xx degrees. These bolts are torque to yield bolts, commonly referred to as “stretch” bolts. The correct procedure for torquing these bolts is:

Stage One - Torque the bolt(s) to the initial Nm or Ft-lb specification. If there is more than one, be sure to torque them in the correct sequence.

Stage Two - Tighten or “stretch” the bolt(s) the additional specified number of degrees. If there is more than one, be sure to follow the correct sequence.

Note - Some bolts may have two or more stages of torquing before the final stage of “stretching” the bolts.

When tightening more than one bolt in a specified sequence, be sure to mark each fastener with paint **immediately** after performing the final stage or “stretching” of the bolts. This will ensure that you keep track of which bolts have already been “stretched”.

All Torque to Yield bolts should only be used once and should be replaced each time they are removed. If they are reused, they will not be able to achieve the proper clamping force with the specified torque.

Lubrication

Torque specifications are always listed for a dry fastener (**no** lubrication) unless specified otherwise.

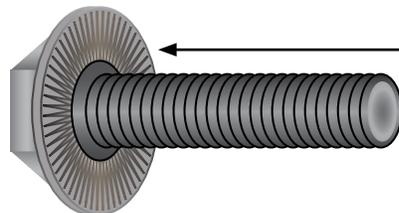
Some fasteners require lubrication on the threads -or- on the contact surface while torquing. These fasteners will be listed with the specific location and type of lubrication required. Always follow manufacturers recommendations exactly.

Lubricating a fastener that is intended to be installed dry and then torquing it to factory specifications will increase the clamping force and stress on the fastener and components, which can result in damage or failure.

Do not lubricate the threads of any fastener unless it is specifically recommended by the manufacturer.

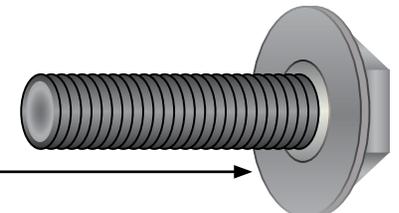
Ribbed vs. Non-Ribbed Bolts

Ribbed and Non-Ribbed bolts in the same location generally require a different torque specification.



A ribbed bolt is identified by the ribs on the contact surface

A non-ribbed bolt is identified by the smooth contact surface



SCHWABEN - BUILD THE ULTIMATE TOOL COLLECTION

At ECS Tuning, we carry a line of high quality Schwaben Tools and Equipment to help you build your ultimate tool collection. Never before has affordability and quality been so closely related. Our entire Schwaben line is subjected to strict in house testing for strength and durability. See what we have to offer and equip your garage without breaking the bank.



Your Pendulum Mount and Bushing Insert 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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