

ECS TUNING

Volkswagen MK4 and New Beetle
All Transverse Engines 1998-2006
Pendulum Mount 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

ECS Tuning Volkswagen MK4 Performance Pendulum Mount

ECS Tuning's Volkswagen MK4 Performance Pendulum "Dogbone" Mount leads the pack with the following features:

- Lightweight and strong 6061-T6 billet aluminum construction
- Black anodized for corrosion resistance
- Precisely formulated polyurethane for the perfect combination of durability and feel
- In-house designed by ECS Tuning Engineers
- Stainless steel spherical bearing
- Assembled with black phosphate hardware
- All mounting hardware included

ECS Difficulty Gauge



1 - Easy Pro - 4
2 - Moderate Advanced - 3

The pendulum mount on your MK4 Volkswagen has the critical job of controlling drivetrain movement under all the hard acceleration and deceleration you can throw at it, all while eliminating vibration transfer to the chassis. It's a common weak point in your driveline and can rob precious horsepower. With our new Performance Pendulum Mount, solve your problems and put your power to the ground, all with a quick and easy installation that you can perform in an afternoon. 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 Performance Pendulum Mount. We appreciate your business!

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It is very common for the two pendulum support mounting holes in the transmission case to strip out on MK4 Volkswagens. To familiarize yourself with this problem before you begin, refer to [page 6](#), [page 10](#), and [page 11](#).

Symbols:

The following symbols may be used throughout these instructions indicating special attention:



FORK IN THE ROAD: When there are different options within any given kit, we will direct you to the proper page and step to continue.



YIELD: Pause for a moment to double check component installation before you continue. Ignoring this can cost you time later during the installation.



CAUTION: Pay close attention to these warnings and instructions. Difficult installation, personal injury or component damage may occur if ignored.

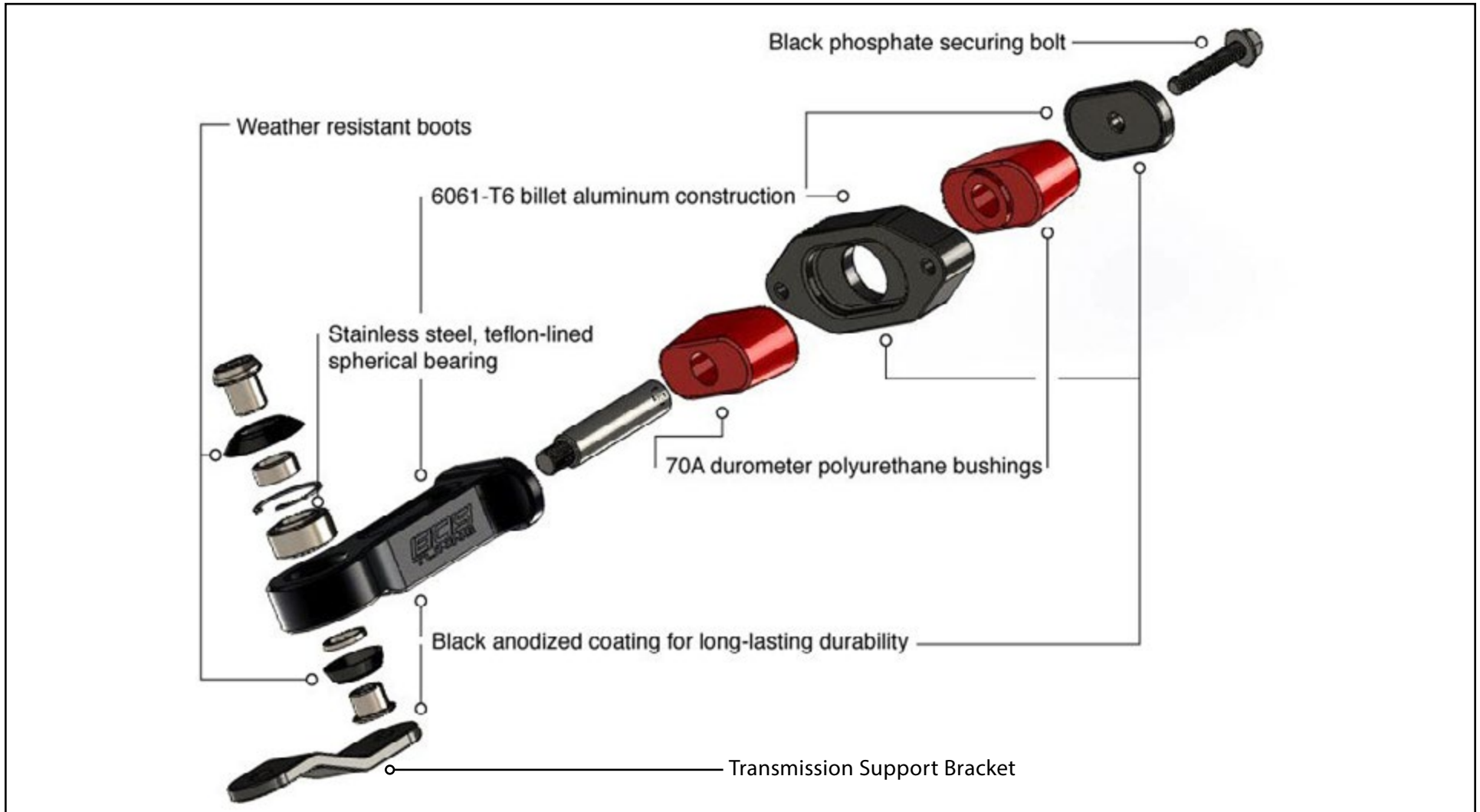


STOP: The upcoming steps require specific preparation and/or assistance in the interest of safety. Please read ahead in the instructions and prepare before continuing.

KIT CONTENTS



PENDULUM MOUNT EXPLODED VIEW



REQUIRED TOOLS

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

Below is a list of the tools we used to install our ECS Tuning Performance Pendulum Mount. Additional tools may be required for any issues that arise during installation such as rust, corrosion, or broken and stripped fasteners. Tools with a part number listed are available on our website - click on their [ES# link](#) to view them.

- 3/8" Drive Ratchet..... [ES#2765902](#)
- 3/8" Drive Torque Wrench..... [ES#2221245](#)
- 3/8" Drive Sockets: 13mm, 16mm [ES#2763772](#)
- 3/8" Drive Extensions
- Side Cutters
- Torx Drivers (for insulation panel removal)..... [ES#11417](#)

ADDITIONAL RECOMMENDATIONS

It is very common for the two pendulum mount holes in the transmission case to strip out on MK4 Volkswagens (see [page 10](#)). If this happens on your car, it can easily be repaired using our Metric Thread Repair Kit. Visit our website for kit details and watch the video to see how to perform thread repairs.



Metric Thread Repair Kit [ES#1306824](#)

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.

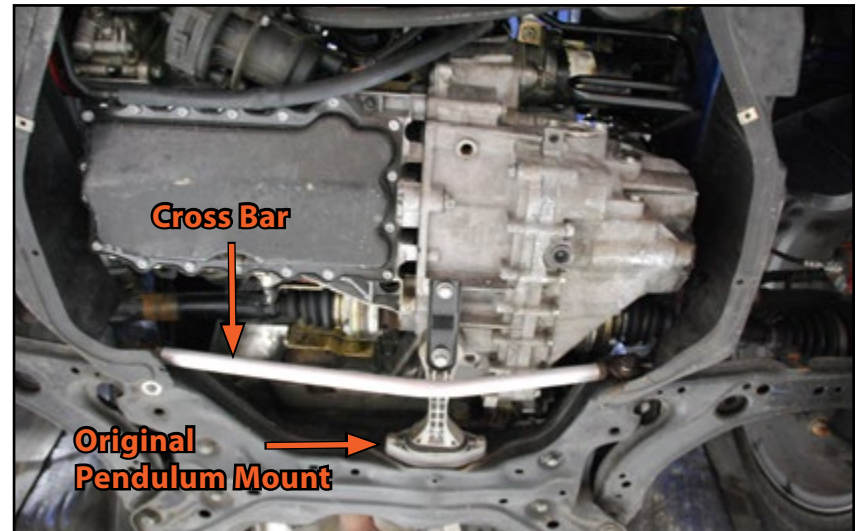


Never get underneath a vehicle that is supported only by a jack. Always make sure that the vehicle is securely supported on jack stands.

REMOVING THE ORIGINAL PENDULUM MOUNT

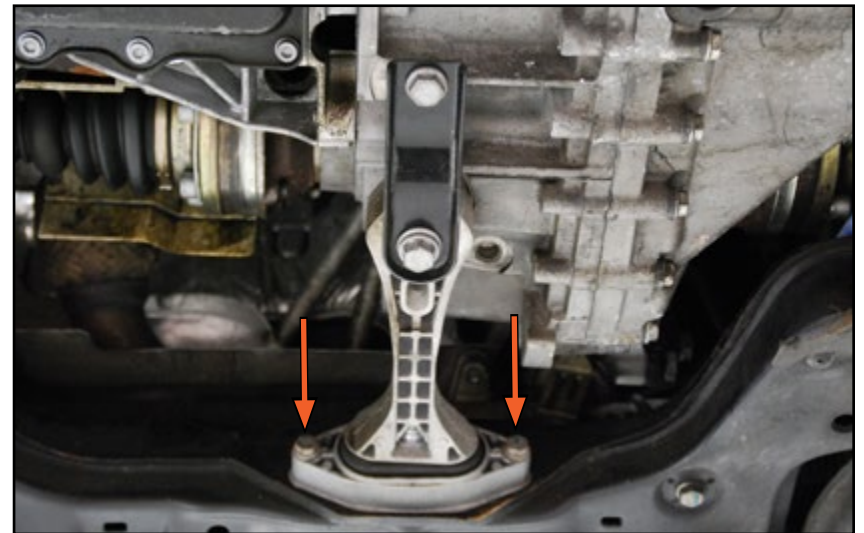
Step 1:

Safely raise and support your car and remove the lower insulation panel or skidplate, depending on what you have installed. If your car is equipped with a subframe cross bar such as the one pictured here, you may have to remove it as well. This will give you access to the original pendulum mount.



Step 2: 13mm Socket, Ratchet

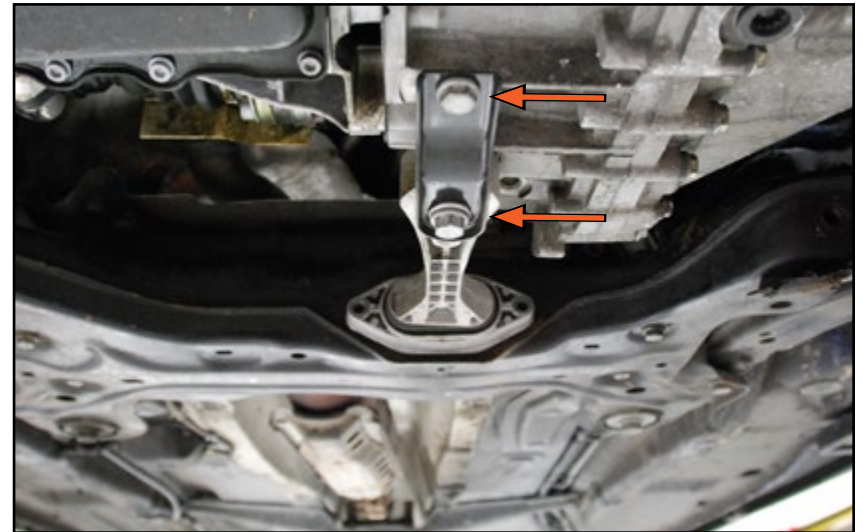
Remove the two pendulum mount to subframe bolts and discard them.



REMOVING THE ORIGINAL PENDULUM MOUNT

Step 3: 16mm Socket, Ratchet

Remove the two pendulum mount to transmission bolts, then pull the original mount forward to remove it from the subframe. Discard these bolts too, new ones are included with your new mount.

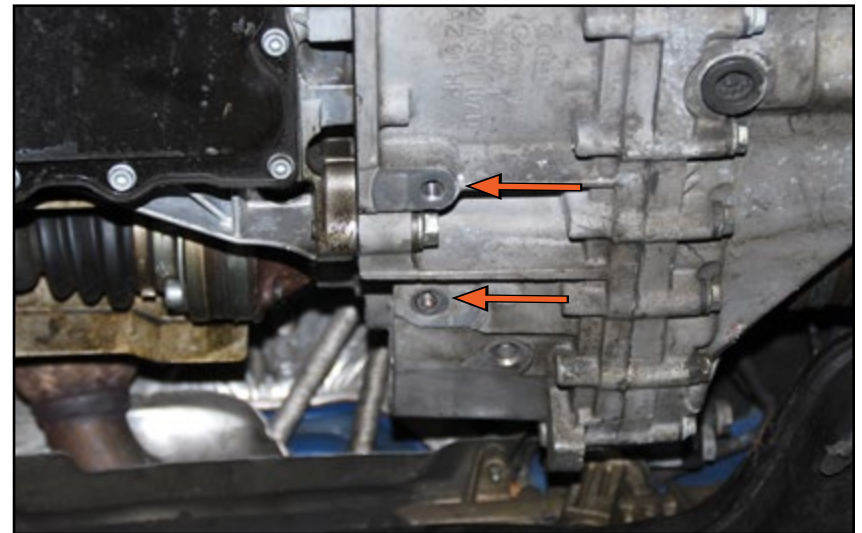


Step 4:

Closely inspect the threads in the two mounting holes on the transmission case. Clean them thoroughly and if they are damaged or stripped, you will need to use a thread repair kit to install a helicoil. View our tool recommendations on [page 6](#).

TECH TIP

Some signs that may indicate damaged threads can include: Loose bolts when you begin, missing bolts, bolts that are difficult to remove, bolts that come out with aluminum stuck in the threads, bolts that will not tighten, or visibly missing threads in the transmission case.



BOLT TORQUE SPECIFICATIONS



Read this information thoroughly before you install your new ECS Pendulum Mount.

It is very common for the two pendulum mount holes in the transmission case to strip out on MK4 Volkswagens. There are many different published torque specifications for these bolts (M10 x 70 and M10 x 30) as well as the two M8 mount to subframe bolts. The specifications vary to the extent of multiple discrepancies for any given model year depending on build date, transmission, model year, engine code, and information source. The lack of a 100% specific published torque specification and the fact that stripped threads in the transmission case are very common, can require a certain amount of mechanical “feel” and judgment when torquing these bolts. We are using the torque specification that we feel is the best one for this application. As you continue with this installation, keep in mind the following points:

Driving your vehicle with loose bolts can cause severe damage to the transmission case.

Do not under tighten the bolts to avoid stripped threads. It is better to perform a thread repair now than risk damage to the transmission case.

Signs that may indicate damaged threads can include: Loose bolts when you begin, missing bolts, bolts that are difficult to remove, bolts that come out with aluminum stuck in the threads, bolts that will not tighten, or visibly missing threads in the transmission case.

• A note about 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 them to the Nm or Ft-lb specification. **Stage Two** - tighten each one the additional specified number of degrees. To prevent over torquing it is important to mark each fastener with paint **immediately** after performing the second stage or “stretching” of the bolts. Note that some bolts may have two stages of torquing before the final stage of “stretching” the bolts.

INSTALLING THE NEW ECS PENDULUM MOUNT

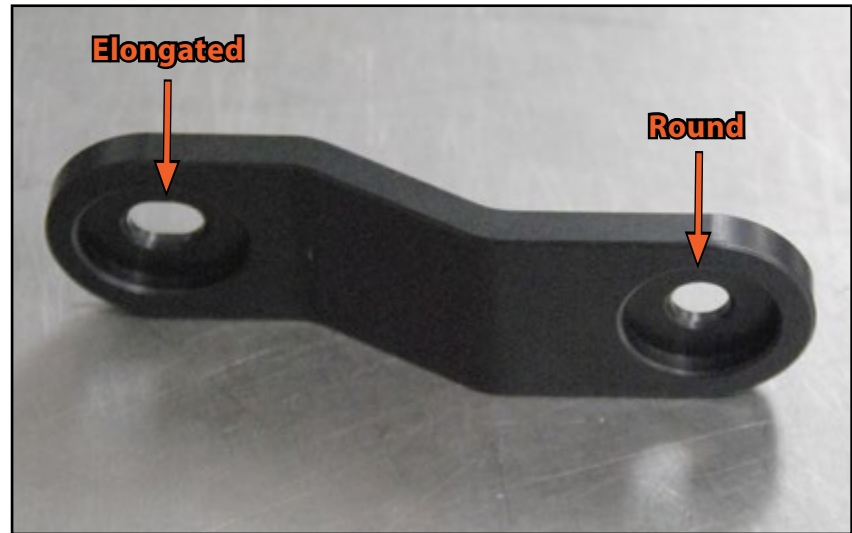
Step 1: Side Cutters

Unpack your new pendulum mount and cut the wire tie holding the transmission support bracket to the spherical bearing. After you cut the tie, be careful to hold the collars together on the top and bottom of the bearing or they will fall out. If they do fall out, reassembly is simple. Refer to the exploded view on [page 5](#).



Step 2:

Inspect the transmission support bracket. Note that it has one round hole and one elongated hole, and both are recessed on one side.



INSTALLING THE NEW ECS PENDULUM MOUNT

Step 3:

Insert the new M10 x 70 bolt through the round hole in the transmission support bracket, with the head of the bolt located in the recess in the bracket.

NOTE

The new M10 x 70 bolt does not have a washer like many of the original bolts and is intended to be installed without one.

Step 4:

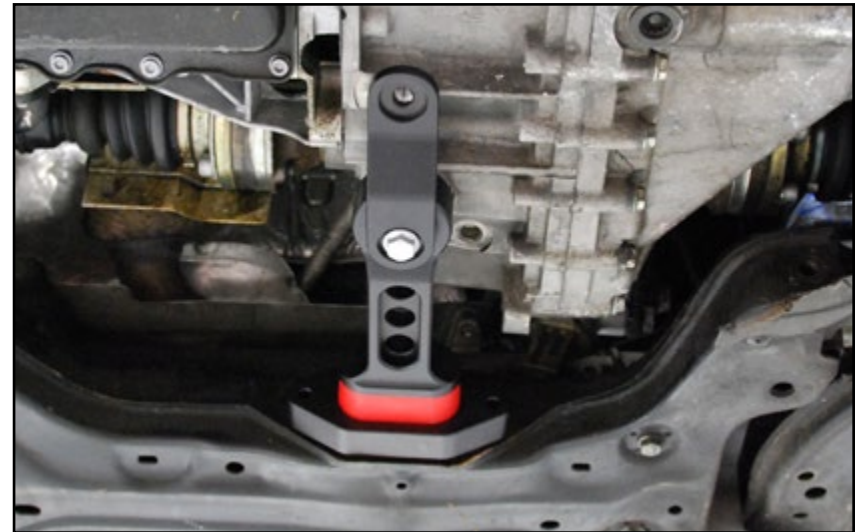
While holding the bolt in place and supporting the collars on the spherical bearing, slide the bolt through the bearing as shown.



INSTALLING THE NEW ECS PENDULUM MOUNT

Step 5:

Slide the rear of the pendulum support into the subframe, then thread the M10 x 70 bolt into the rear hole of the transmission case. **Do not tighten** the bolt at this time.



Step 6: 16mm Socket, Torque Wrench

Thread the new M10 x 30 bolt through the transmission support bracket and into the front hole in the transmission case. Torque both of the bolts to 40 Nm (30 Ft-lbs) + 90 degrees.



INSTALLING THE NEW ECS PENDULUM MOUNT

Step 7: 13mm Socket, Torque Wrench

Swing the transmission rearwards as necessary to line up the pendulum mount at the subframe, then install the two M8 bolts included with the kit. Torque them both to 20 Nm (15 Ft-lbs) + 90 degrees.



Step 8:

Reinstall your cross bar (if equipped) and your lower insulation panel or skid plate.

Your ECS Tuning Performance Pendulum Mount Installation is complete!



Your ECS Tuning Performance Pendulum Mount 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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