Volkswagen MK5/MK6 Aluminum Front Subframe Locking Collar 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

ECS Tuning's Volkswagen Front Subframe Locking Collar Kit

Locking Collar and Torque to Yield bolt kit for MK5/MK6 Golf/Jetta

ES#3170120

Available in two different kits

Locking Collar and Torque to Yield bolt kit for B6 Passat/CC/Tiguan

ES#3177665

ECS Difficulty Gauge

1 - Easy Pro - 4

2 - Moderate Advanced - 3

Even the finest designs develop strange little problems from time to time, and VW Aluminum front subframes are known for "walking" or "shifting", creating clunks, squeaks, and groans while turning, accelerating, or braking. Even after performing VW's TSB repair with shims and replacement bolts, the problem can still come back. At ECS Tuning, we've designed a kit to keep this from happening. Our locking collars index the subframe and control arm brackets perfectly to the body, and also remove the gaps between the bolts and the subframe, eliminating any possibility for movement and the resulting noise.

Installation is fairly easy and it doesn't require too many tools. You're only looking at a couple hours of your time, and it's well worth the investment. Even though you'll only see minor changes at most, the front end alignment can be affected, so we recommend having one done after the installation. Thank you for looking to ECS Tuning for all your performance and repair needs. We appreciate your business!

TABLE OF CONTENTS

KIT CONTENTS - B6 PASSAT/CC/TIGUAN

(6) Locking Collars - Upper

(6) Locking Collars - Lower

(2) Control Arm Bracket Bolts
M12 x 100

(4) Steering Rack Bolts
M10 x 70

(2) Subframe Bolts -Lower
M12 x 110

(2) Subframe Bolts - Upper
M12 x 90

KIT CONTENTS - MK5/MK6 GOLF/JETTA

(6) Locking Collars - Upper

(6) Locking Collars - Lower

(2) Control Arm Bracket Bolts
M12 x 90

(4) Steering Rack Bolts
M10 x 76

(2) Subframe Bolts -Lower
M12 x 110

(2) Subframe Bolts - Upper
M12 x 90

REQUIRED TOOLS

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

Standard Automotive Tools | **Required For This Install** | **Available On Our Website**

- 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
- **Post Jack**
- **Air Nozzle/Blow Gun**
- Bench Mounted Vise
- Crows Foot Wrenches
- Hook and Pick Tool Set ES#2778980
- 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

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.

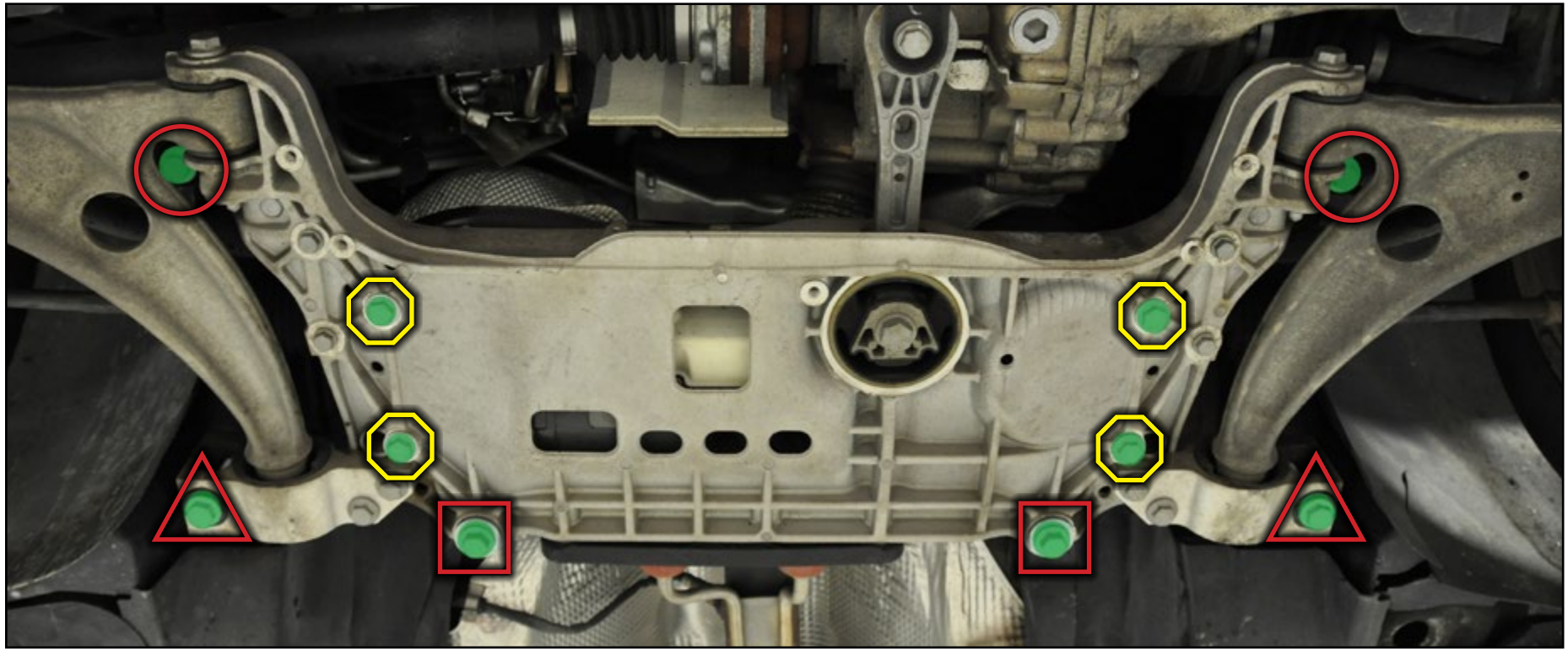
PREPARATION AND SAFETY INFORMATION

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.

SUBFRAME MOUNTING POINTS AND LOCKING COLLAR PLACEMENT



Lower Subframe Mounting Points - Install New Torque-to-Yield bolts with Locking Collars at these locations.

Control Arm Bracket Mounting Points - Install new Torque-to-Yield bolts with Locking Collars at these locations.

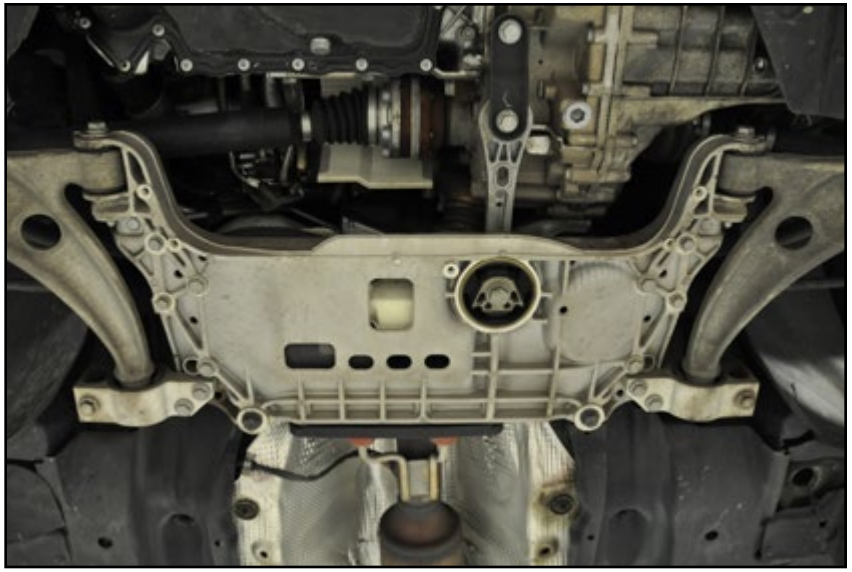
Upper Subframe Mounting Points - Install new Torque-to-Yield bolts with Locking Collars at these locations.

Steering Rack Bolts - Install new Torque-to-Yield bolts at these locations.

LOCKING COLLAR INSTALLATION

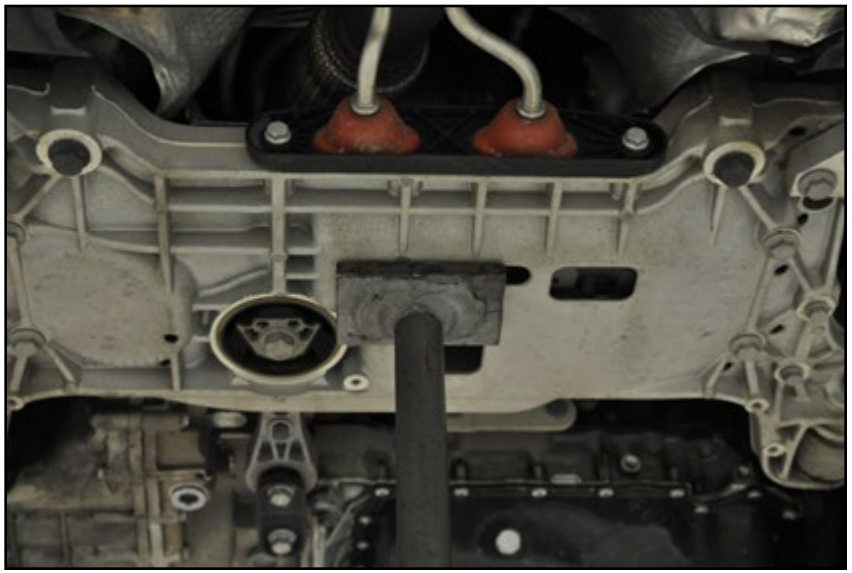
Step 1:

Safely raise and support your vehicle, then remove any skid plates or factory insulation panels which may be in the way. You will need to have full, unrestricted access to the subframe as shown in the picture.



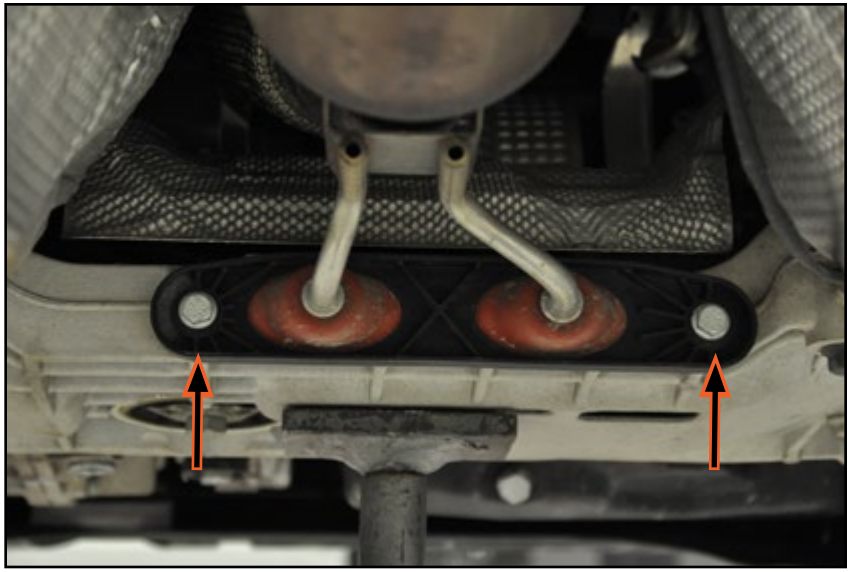
Step 2:

Use a jack post or floor jack to support underneath the subframe.



13mm Socket, Ratchet

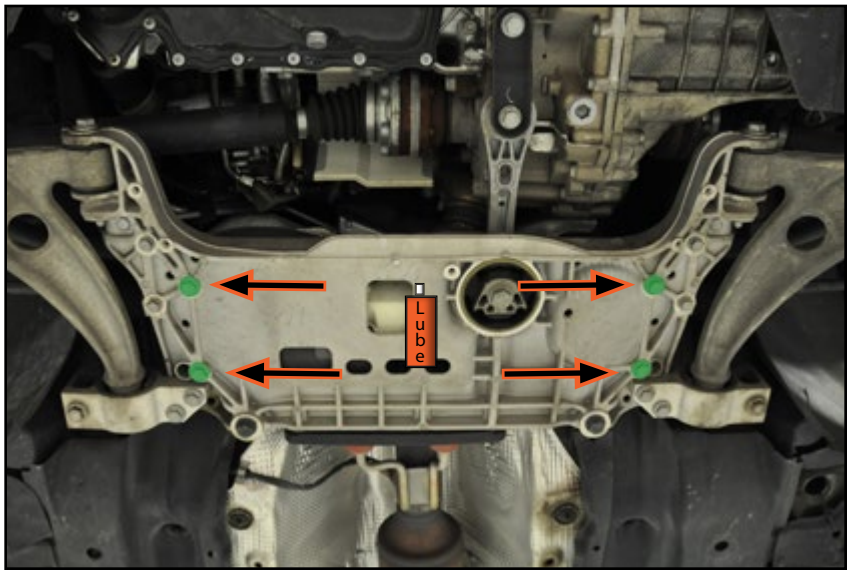
Remove the two exhaust hanger bolts so the subframe does not strain the exhaust when you lower it.



16mm Socket, Ratchet

Remove the four steering rack bolts (refer to the chart on page 9). It is important to remove these four bolts ***before*** removing any subframe bolts, so when the subframe is lowered it does not put any pressure or strain on the steering rack and/or column.

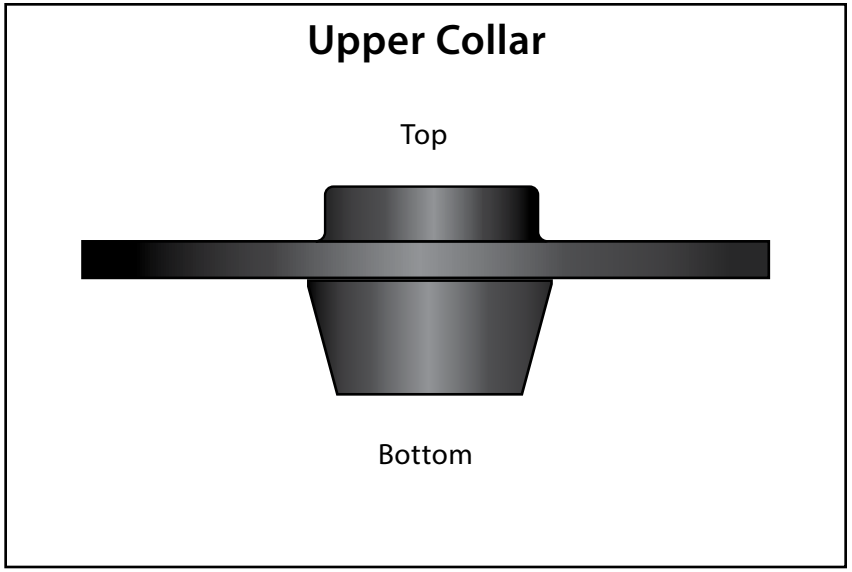
Use caution and lubricate these steering rack bolts from the top before loosening. It is common for dirt and corrosion to build up on the threads where they pass through the steering rack mounting feet. Lubricate and work them back and forth as necessary until they thread out easily.



LOCKING COLLAR INSTALLATION

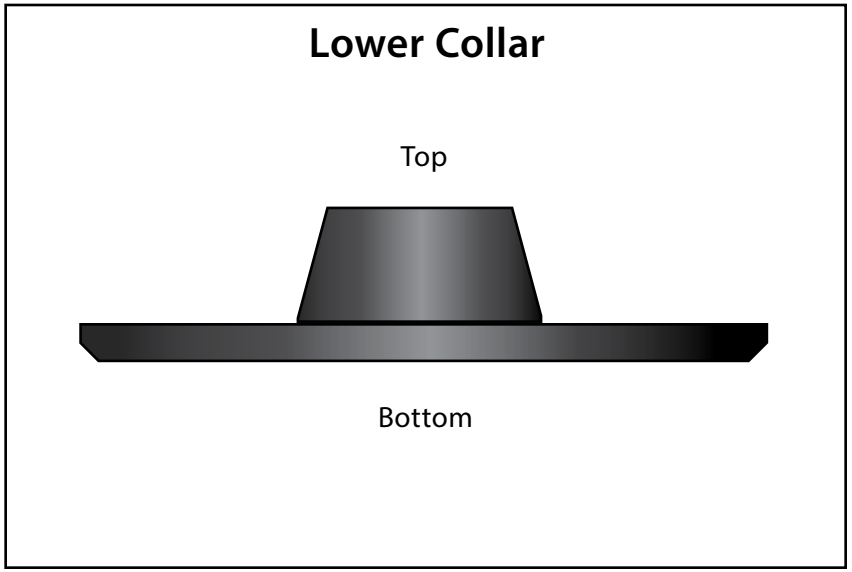
Step 5:

Ok, it gets easy from here. First, take a close look at the locking collars. The uppers, as shown on the right, have a tapered sleeve on the bottom that fits into the subframe and a raised lip on top that fits into the body.



Step 6:

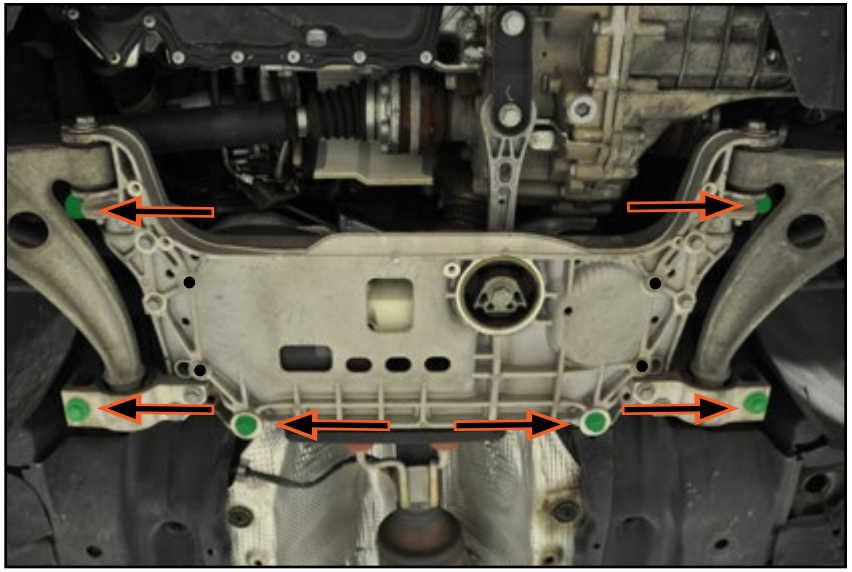
The lower collars, as shown on the right, have a tapered sleeve on top that fits into the subframe and they are flat on the bottom.



LOCKING COLLAR INSTALLATION

Step 7: 18mm Socket, Ratchet, Extension

Now, remove the upper subframe bolts, (accessible through the holes in the lower control arms), the lower subframe bolts, and the control arm bracket bolts. (Refer to the diagram on page 9).



Upon removing the lower subframe bolts, check for the presence of the factory TSB shims between the subframe and body and be sure to remove them if present. **DO NOT** reinstall these shims.

TECH TIP

As you remove the bolts, match them up with the new ones from your kit and keep track of the bolt locations. This will make assembly quicker.

Step 8: Blow Gun

Lower the jack slightly so the subframe separates from the body by about 10mm. You only need to lower the subframe just enough so the upper Locking Collars can be installed.

Thoroughly blow out between the subframe and body at all bolt locations. You will find a lot of dirt and small stones built up here, and you do not want to trap it in when installing the locking collars.

LOCKING COLLAR INSTALLATION

Step 9:

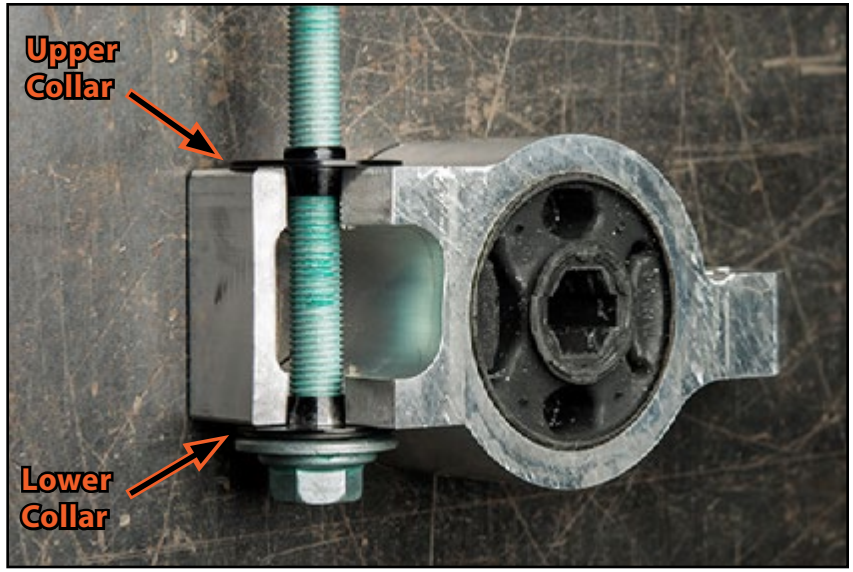
Install all 12 of the subframe locking collars using the new Torque to Yield bolts supplied with the kit. For each collar location, position them in place, then install the bolt only about 2 or 3 turns. The cutaway on the right is an example of how the collars fit. Be sure to position the upper and lower collars correctly. Use the following pages for additional reference:

Page 4: Kit Contents B6 Passat/CC/Tiguan

Page 5: Kit Contents MK5/MK6 Golf/Jetta

Page 9: Bolt Location

Page 12: Locking Collar Orientation



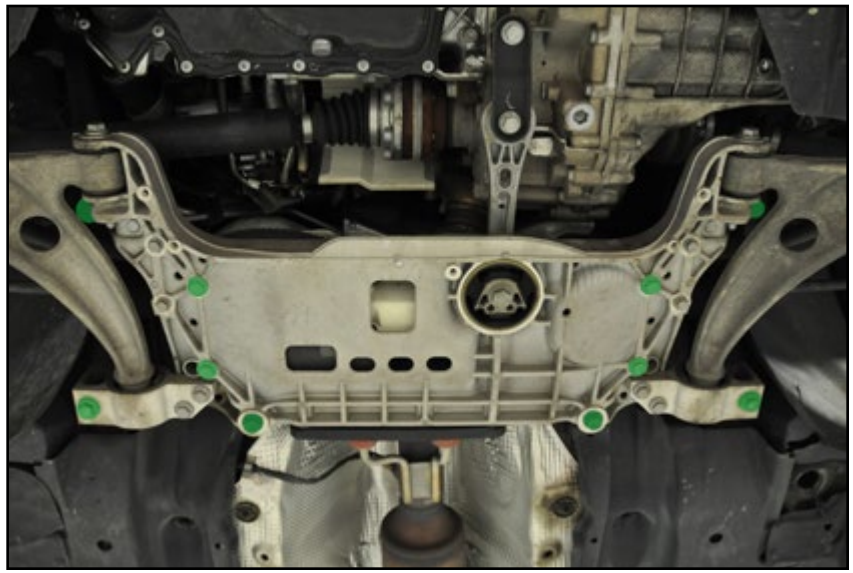
Step 10:

Once all of the Locking Collars are in position, evenly tighten all of the bolts by hand, then thread the new steering rack bolts into place and tighten them by hand.

Finally, torque all of the new bolts to the proper specification listed on Page 16.

Reinstall the exhaust hanger bolts and the skid plate or lower insulation panel (if removed).

Your Locking Collar 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.

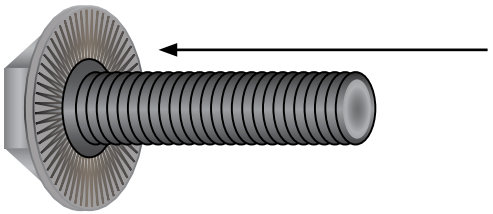
Some fasteners require lubrication on the threads -or- on the contact surface while torquing. These fasteners will be listed with the specific location and type of lubrication required. Always follow manufacturers recommendations exactly.

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.

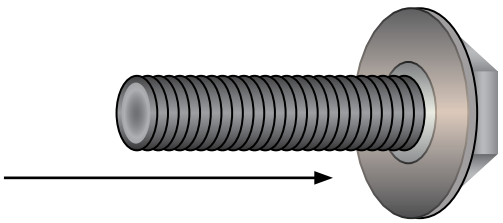
Ribbed vs. Non-Ribbed Bolts

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



TORQUE SPECIFICATIONS

B6 Passat/CC/Tiguan

Control Arm Bracket Bolts M12 x 100 ..... 70 Nm (51 Ft-lbs) + 180 degrees
Steering Rack Bolts M10 x 70 ..... 50 Nm (36 Ft-lbs) + 90 degrees
Subframe Bolts - Lower M12 x 110 ..... 70 Nm (51 Ft-lbs) + 90 degrees
Subframe Bolts - Upper M12 x 90 ..... 70 Nm (51 Ft-lbs) + 180 degrees

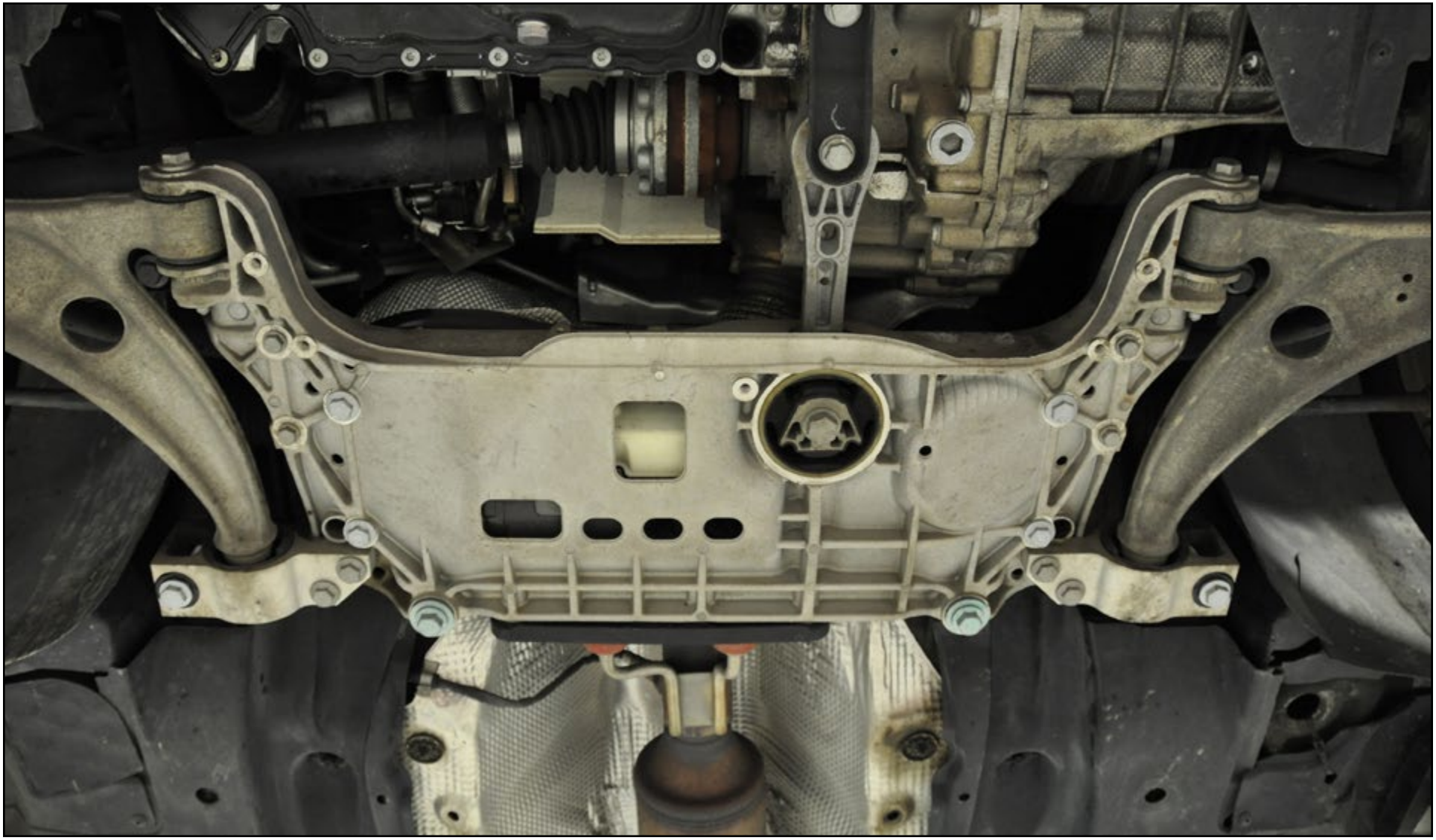
MK5/MK6 Golf/Jetta

Control Arm Bracket Bolts M12 x 90 ..... 70 Nm (51 Ft-lbs) + 90 degrees
Steering Rack Bolts M10 x 76 ..... 50 Nm (36 Ft-lbs) + 90 degrees
Subframe Bolts - Lower M12 x 110 ..... 70 Nm (51 Ft-lbs) + 90 degrees
Subframe Bolts - Upper M12 x 90 ..... 70 Nm (51 Ft-lbs) + 90 degrees

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 Locking Collar installation is complete!



These instructions are provided as a courtesy by ECS Tuning

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