ECS Tuning Front Sway Bar 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.

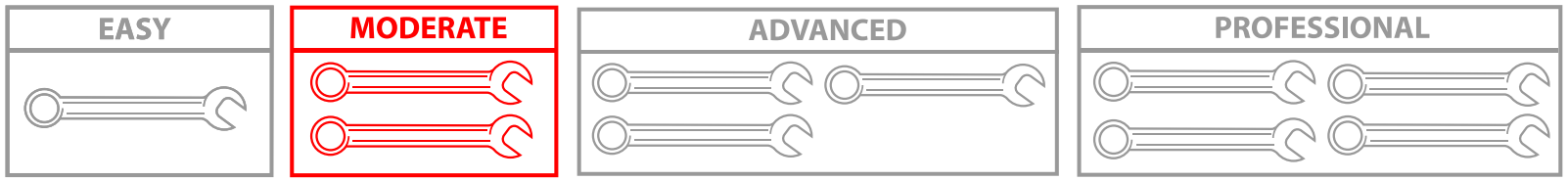
INTRODUCTION

ECS Tuning Front Sway Bar Kit ES#2143226

This ECS Tuning Front Sway Bar Kit Includes the following:
- 26mm ECS Tuning Sway Bar
- ECS Tuning Sway Bar Brackets
- Subframe Spacers
- All of the required hardware for replacement

ECS Tuning OEM Front Sway Bar Bracket and Bushing Kit ES#2786512

The ECS Tuning OEM Front Sway Bar Bracket and Bushing Kit includes the following:
- Two 23mm ECS Tuning Polyurethane Front Sway Bar Bushings
- ECS Tuning Sway Bar Brackets



Installing an ECS Tuning Front Sway Bar or installing polyurethane bushings and new brackets on your original sway bar is a basic weekend project that will reward you with improved handling and the quality of the finest products available. Plan accordingly based on your experience level. Before you begin, read and familiarize yourself with these instructions and make sure you have all the required tools on hand. As with any type of suspension work, we recommend a four wheel alignment with a qualified repair facility. Thank you for purchasing our ECS Tuning Front Sway Bar kit. We appreciate your business!

TABLE OF CONTENTS

NOTE

This sway bar kit will fit a number of different applications. We have used a MKV GTI in creating these instructions. Depending on your application, you may discover some very minor differences, however the overall procedures and steps will be the same. These instructions will cover the installation of an ECS Tuning 26mm sway bar and also ECS Tuning Sway bar brackets and polyurethane bushings on an original sway bar.

FRONT SWAY BAR KIT CONTENTS


Lower Sway Bar Brackets


Subframe Spacer Plates


Steering Shaft Bolt


Sway Bar Bushings


Upper Sway Bar Brackets


26mm Front Sway Bar


Engine Torque Support Bolt M10 x 75


Engine Torque Support Bolt M10x35


4 Steering Rack Bolts
M10 x 76


4 Subframe/Control Arm Bolts
M12 x 1.5 x 90


Grease Pack


2 Rear Subframe Bolts
M12 x 1.5 x 110


4 Sway Bar Bolts
M8 x 75

REQUIRED TOOLS

NOTE

We recommend that you have a complete selection of tools and the necessary equipment for automotive repair. Below is a list of the specific tools that will be required to install your ECS Tuning sway bar. Additional tools may be required for any issues that arise during installation such as rust, corrosion, or broken and stripped fasteners.

These tools are available at ecstuning.com

- 17mm Protecta-Socket (for lug nuts)..... ES#2221243
- 3/8" Drive Torque Wrench ..... ES#2221245
- 1/2" Drive Torque Wrench ..... ES#2221244
- 14 x 1.25 Wheel Hanger..... ES#2678092
- Flat Blade Screwdriver(s) ..... ES#2225921
- Torx Drivers T25 and T30 ..... ES#11417
- 1/2" Drive Impact
- Flashlight or Trouble light
- 1/4" Drive Ratchet
- 1/4" Drive Sockets: 10mm
- 3/8" Drive Ratchet, Extensions
- 3/8" Drive Sockets: 12mm, 13mm, 16mm, 18mm
- 1/2" Drive Ratchet
- 1/2" Drive Sockets: 16mm, 18mm
- Allen Wrenches: 5mm
- Drill Bits: 12mm
- Ball Pein Hammer
- Transmission Jack or similar equipment

SHOP SUPPLIES AND MATERIALS

- Hand Cleaner/Degreaser..... Available at ecstuning.com..... ES#2167336
- Shop Rags ..... Available at your local auto parts store
- Aerosol Spray Lubricant/Penetrating Oil..... Available at your local auto parts store

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

- 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 SWAY BAR

Step 1:

Safely raise and support the vehicle and remove the front wheels. We are using a 17mm protecta socket to protect against chips or scratches and a wheel hanger to support the wheel while removing the lug bolts.

Step 2:

Remove the two interior steering shaft cover fasteners (arrows) using a flat blade screwdriver, then lift the cover off and place it to the side.

REMOVING THE ORIGINAL SWAY BAR

Step 3:

Make sure the steering is in the straight ahead position and then using a 13mm socket, remove the bolt for the steering shaft u joint (arrow).

CAUTION

Once the steering shaft is disconnected from the steering rack, make sure the steering wheel remains centered. Do not unlock the steering wheel or move it from center or the airbag spring will be damaged

Step 4:

Pull the u-joint up off the steering rack and swing it off to the side.

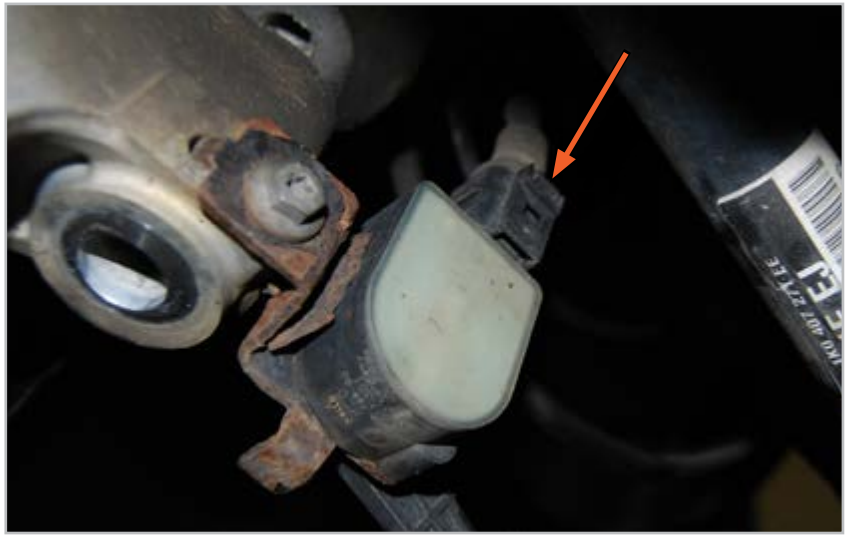
REMOVING THE ORIGINAL SWAY BAR

Step 5:

Underneath the vehicle, remove the skid plate or lower insulation panel, depending on what is installed on your vehicle. Most aftermarket skid plates, such as what is shown here, will utilize the original hardware from the insulation panels. A T25 and T30 Torx driver, and possibly a screwdriver should be all that is required for removal.

Step 6:

On the LH side, disconnect the headlight level sensor connector (if equipped). It is located above the lower control arm. Using a small flat blade screwdriver, carefully release the locking tab (arrow) then pull the connector off the sensor.



REMOVING THE ORIGINAL SWAY BAR

Step 7:

Using a 10mm socket, remove the nut for the headlight level sensor arm bracket (if equipped), and remove the bracket from the lower control arm.

TECH TIP

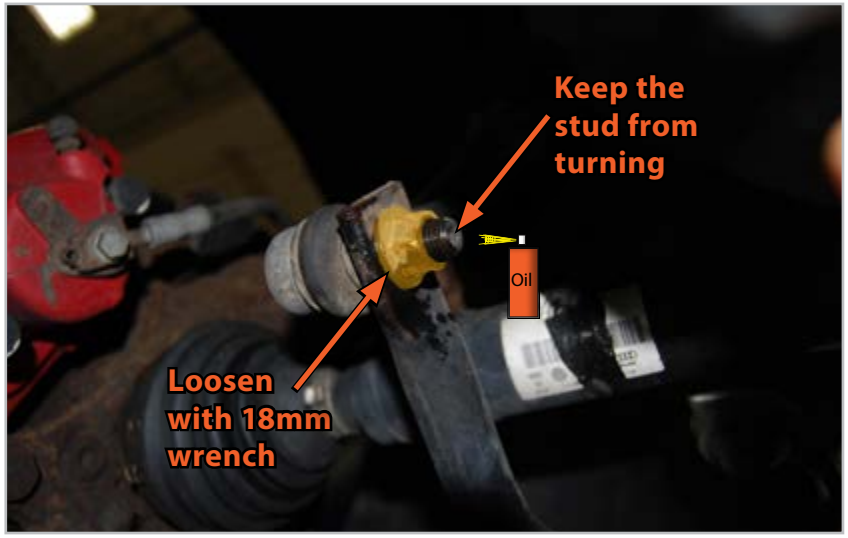
It is a good idea to use a spray lubricant/penetrating oil on this nut and any of the rusty fasteners you encounter during this installation. It can mean the difference between relatively easy removal or frustration with seized and broken fasteners.

Step 8:

Remove the left and right sway bar end links from the sway bar. Use an 18mm wrench on the nuts and a 5mm allen to keep the link stud from spinning while loosening the nuts.

TECH TIP

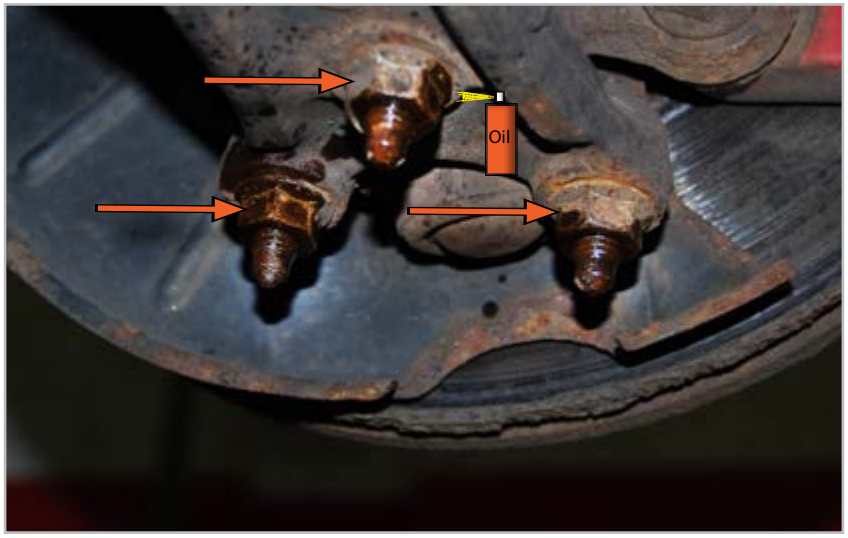
It is very common for these end link nuts to be extremely difficult to remove. You cannot heat them or the end link will be ruined. The best method is to clean the exposed stud with a wire brush and lubricate it with penetrating oil. Then work the nut back and forth gently until you are able to remove it.



REMOVING THE ORIGINAL SWAY BAR

Step 9:

Using a 16mm socket, remove the three lower ball joint nuts from each side.



Step 10:

Pull down on each lower control arm to separate it from the ball joint. There may be rust and corrosion between the ball joint and control arm. If they do not separate easily you can use a prybar between the two to get them apart.

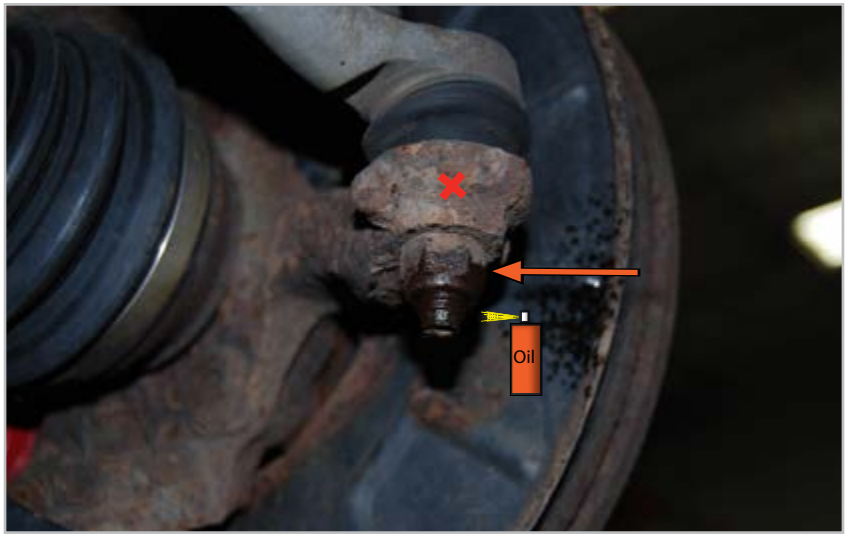
REMOVING THE ORIGINAL SWAY BAR

Step 11:

Using an 18mm socket, remove both outer tie rod end nuts (arrow). Then, separate the tie rod ends from the wheel bearing housing.

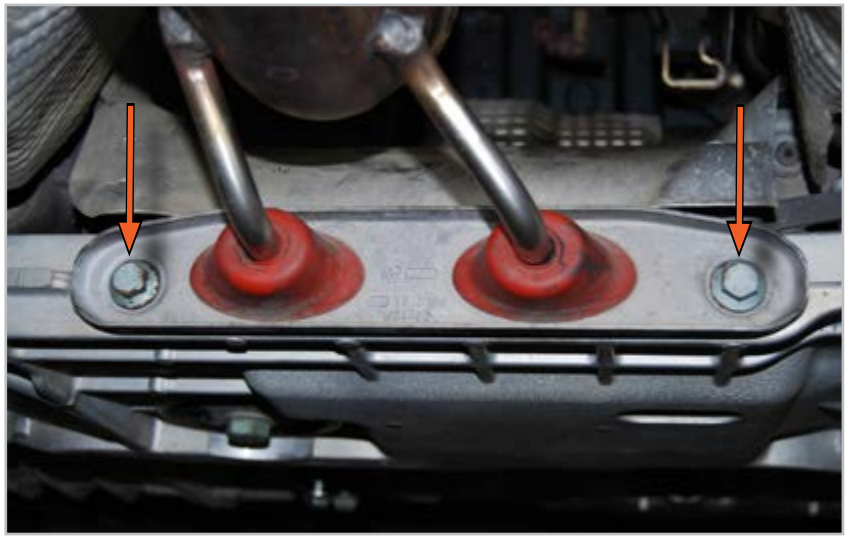
TECH TIP

If you do not have a tie rod end separator, the tie rod end can be removed by striking the wheel bearing housing (at the "X" in the picture) with a ball pein hammer. This will cause the tie rod end to pop out of the housing.



Step 12:

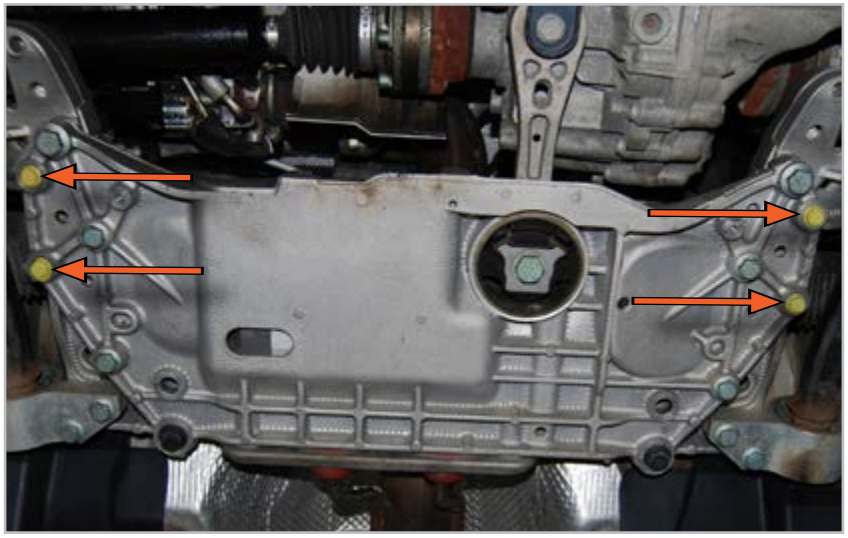
Using a 13mm socket, remove the two exhaust hanger bolts on the rear of the subframe (arrows).



REMOVING THE ORIGINAL SWAY BAR

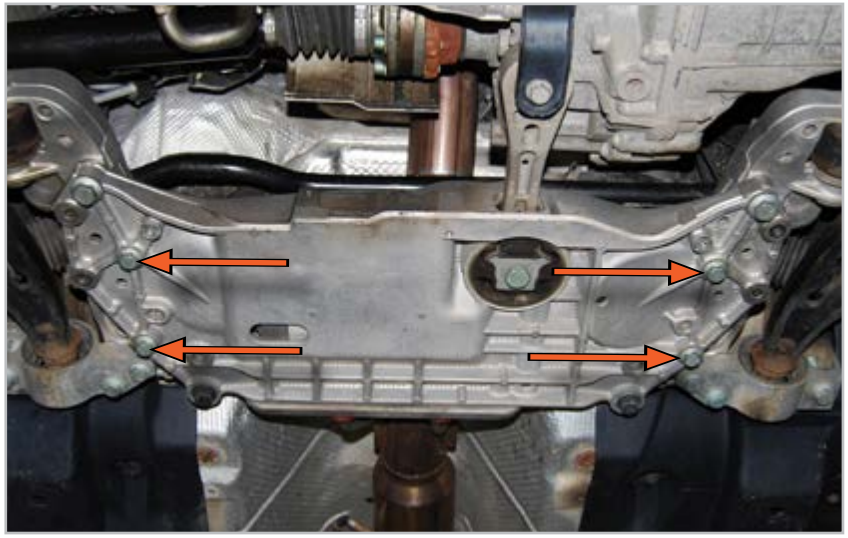
Step 13:

Using a 13mm socket, remove the four sway bar bolts (arrows).



Step 14:

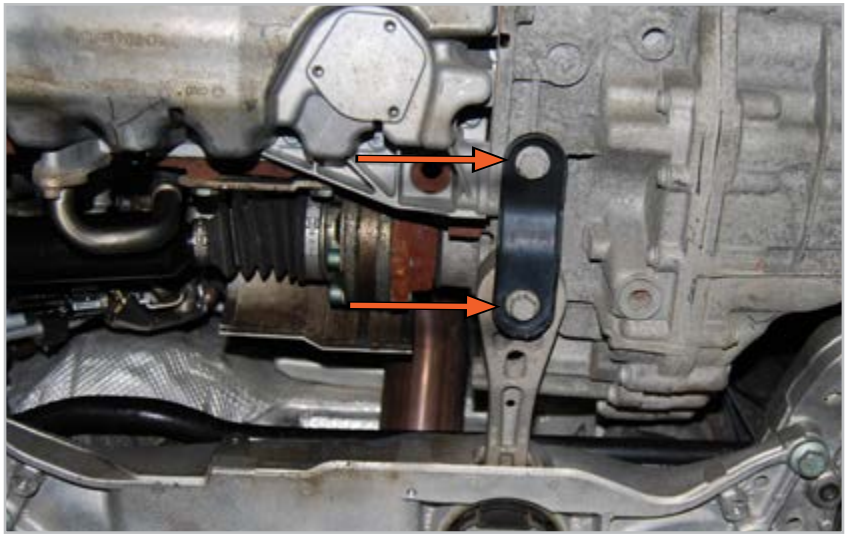
Using a 16mm socket, remove the four steering rack bolts (arrows).



REMOVING THE ORIGINAL SWAY BAR

Step 15:

Using a 16mm socket, remove the two engine torque support bolts (arrows) from the underside of the transmission.



Step 16:

Place a transmission jack securely under the subframe.

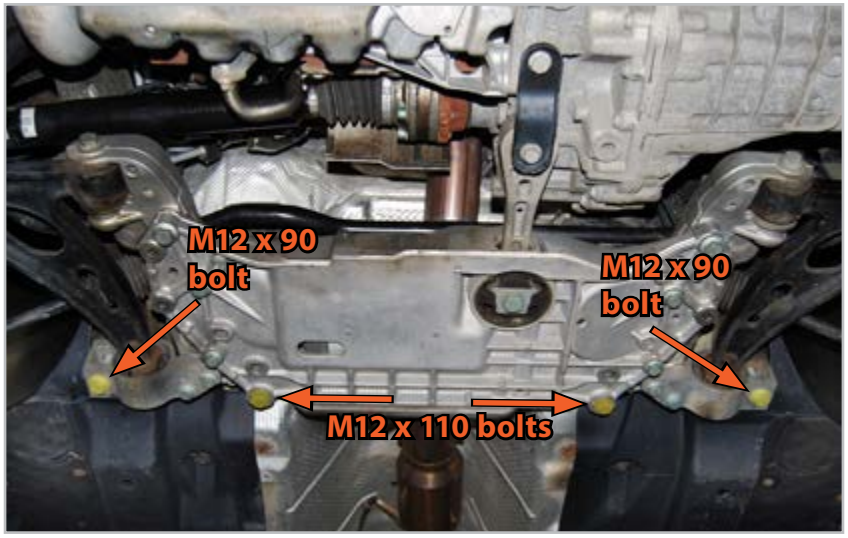
A NOTE ABOUT SUBFRAME ALIGNMENT

Volkswagen has specialty tools intended for fixing the position of the subframe before removal. Due to the cost of the tools and the limited number of times they would be used, it is not cost effective for most people to purchase these. Even with the use of these tools, an alignment is always recommended. We recommend making reference marks to help with the alignment of the subframe. See page 25 for additional information.

REMOVING THE ORIGINAL SWAY BAR

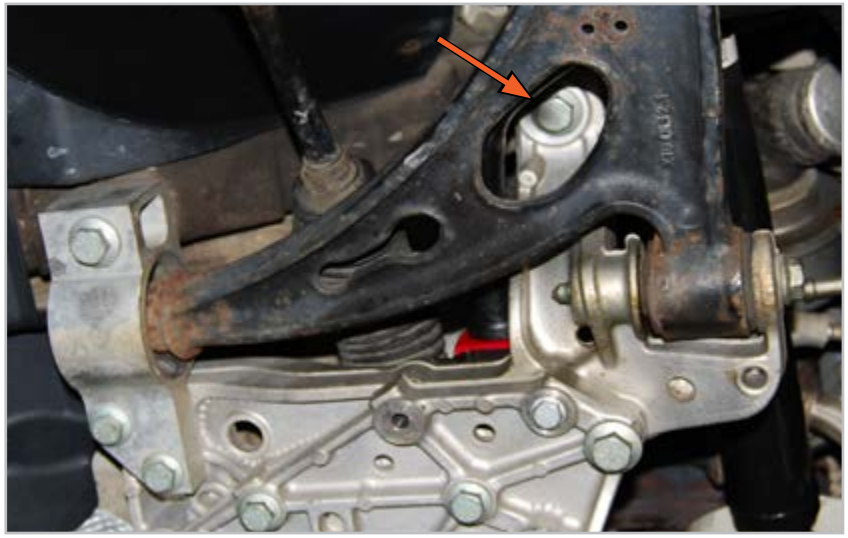
Step 17:

Using an 18mm socket, remove the two M12 x 110 rear subframe bolts and the two M12 x 90 rear control arm bolts. For clarity, they are shown in this picture without the jack in place.



Step 18:

Using an 18mm socket, remove the two forward M12 x 90 subframe bolts. The two forward bolts are more difficult to see but can be easily accessed with a socket on the end of an extension. This picture shows the RH forward bolt location (arrow).



REMOVING THE ORIGINAL SWAY BAR

Step 19:

Lower the subframe slowly until you have just enough room to access the steering rack wiring harness on the LH side. Using a 10mm deep socket and a 1/4" drive ratchet, remove the bolt securing the wiring harness to the steering rack. You will not be able to see this bolt, it is hidden in the subframe (arrow).

Step 20:

Release the wiring harness clip (arrow) from the mounting tab on the steering rack. It is located on the LH side, just a few inches away from the bolt in the previous step.

REMOVING THE ORIGINAL SWAY BAR

Step 21:

Lower the subframe slowly until you have clear access to the sway bar as shown in the picture.

CAUTION

Be careful the subframe does not slip off the jack. It is helpful to have someone steady the subframe while you remove and replace the sway bar.

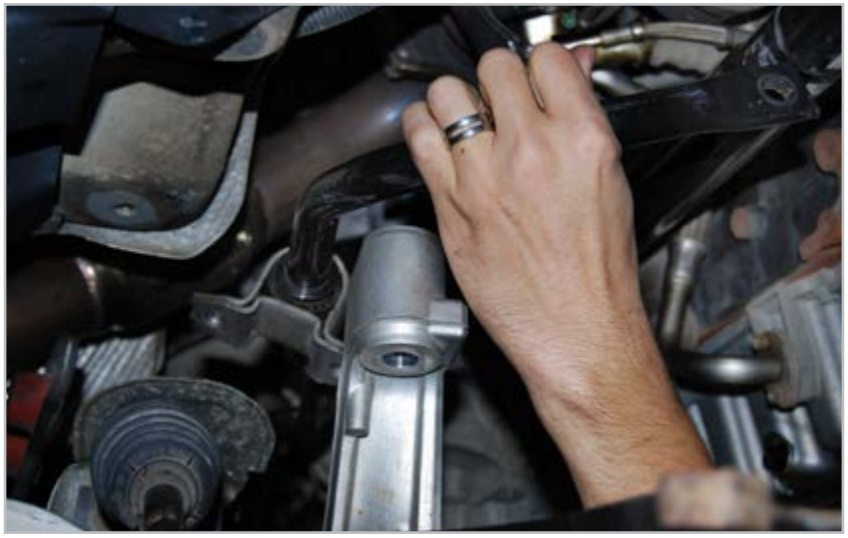
Step 22:

Lift the steering rack and position it slightly to the rear. This will give you the necessary clearance to remove the sway bar easily. The steering rack is indexed in place by dowel pins. You may need to use a screwdriver to help release the dowel pins as shown in the picture.

REMOVING THE ORIGINAL SWAY BAR

Step 23:

Raise the sway bar up and lift it over the subframe on the RH side as shown in the picture.



Step 24:

Finish removing the sway bar by bringing it forward and down on the RH side, while guiding the LH side between the subframe and steering rack.

NOTE

If you are using this document as a guide to replace your original sway bar bushings with ECS Tuning polyurethane sway bar bushings and brackets (ES#2786512), proceed to the next page. If you have purchased a 26mm sway bar kit (ES#2143226), then proceed to page 21.

REPLACING BRACKETS AND BUSHINGS ON AN ORIGINAL SWAY BAR

Step 1:

Clamp your original sway bar in a soft jaw vise. Then using a 12mm drill bit, drill out the nut sleeves holding the original sway bar brackets together.

Step 2:

Once both sleeves are drilled out, you will be able to easily remove the original brackets and bushings.

REPLACING BRACKETS AND BUSHINGS ON AN ORIGINAL SWAY BAR

Step 3:

Lubricate the inside of the new polyurethane bushings with the grease included in the kit. Make sure you are using the correct bushings. The original sway bar requires the use of 23mm bushings. The size will be marked on the end of each (inset photo).

Step 4:

Install the bushing over the sway bar on each side and slide it into place next to the stop. You are now ready to re install the original sway bar. Follow the installation procedures beginning with step 3 on page 22.

NOTE

The slot in the sway bar bushings can be located on either the front or rear of the sway bar.

INSTALLING THE NEW SWAY BAR

Step 1:

Lubricate the inside of the new polyurethane bushings with the grease included in the kit.

Step 2:

Install a bushing over each side of the sway bar and slide it into place next to the stop.

NOTE

The slot in the sway bar bushings can be located on either the front or rear of the sway bar.

INSTALLING THE NEW SWAY BAR

Step 3:

Install the sway bar in reverse of the way you removed it: Guide the LH side between the steering rack and the subframe, then lift the RH side over the subframe and set the sway bar in place in front of the steering rack.

NOTE

Adjust the position of the steering rack as necessary to allow the sway bar to easily drop in place.

Step 4:

Place a lower sway bar bracket under each sway bar bushing, making sure the holes in the brackets are facing towards the outside of the car and the raised portion of each bracket is facing up (LH side shown).

INSTALLING THE NEW SWAY BAR

Step 5:

Install the upper sway bar brackets in place over each sway bar bushing, making sure the mounting holes are facing towards the outside of the car (LH side shown).

Step 6:

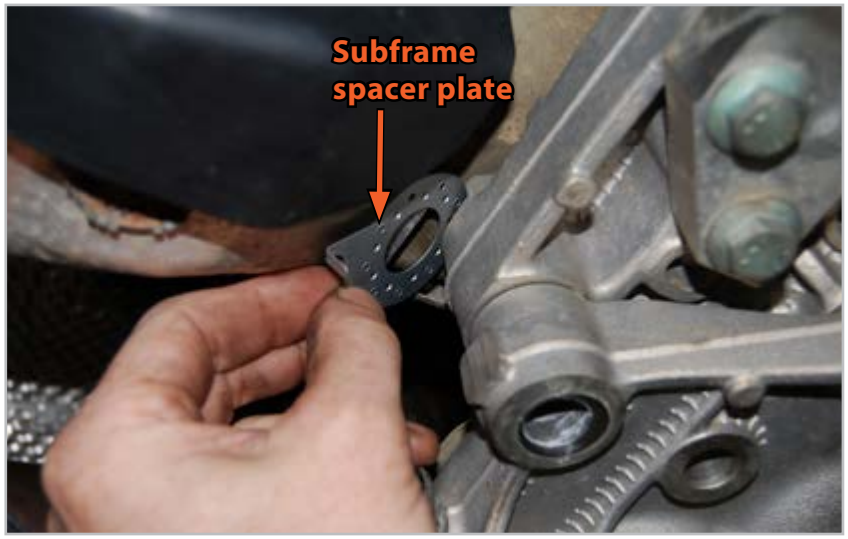
Make sure the sway bar brackets are fully seated as shown in the picture at right.

The basic installation process from this point is the reverse of removal, however for convenience and accuracy we have provided you a step by step checklist along with torque specifications and additional information pertinent to this procedure.

- [ ] Make sure the steering rack seal is clean (see the picture at right).
- [ ] Loosely install the four sway bar bolts and the four steering rack bolts.
- [ ] Raise the subframe partially and attach the wiring harness clip.
- [ ] Install the wiring harness retaining bolt.
- [ ] Raise the subframe up until it meets the body.
- [ ] Loosely install two new M12 x 90 forward subframe bolts.
- [ ] Loosely install two new M12 x 90 rear control arm bolts.
- [ ] Install the rear subframe spacer plates between the subframe and body as shown in the picture on the right.

NOTE

These subframe spacer plates are for noise prevention and should be installed whether or not they were originally. If they were already installed, discard the old and use the new plates.



- [ ] Loosely install the two rear subframe M12 x 110 bolts.
- [ ] Align the subframe and hand tighten the subframe and control arm bolts.

A NOTE ABOUT SUBFRAME ALIGNMENT

Volkswagen has specialty tools intended for fixing the position of the subframe before removal. Due to the cost of the tools and the limited number of times they would be used, it is not cost effective for most people to purchase these. Even with the use of these tools, an alignment is always recommended. It is acceptable to make reference marks for the alignment of the subframe and in most cases, as shown in the picture on the right, the subframe will leave a "footprint" which can be helpful during re-alignment. Take your time and slowly adjust the subframe back and forth as necessary until it is lined up.

- [ ] Torque the subframe and control arm bolts to 70 Nm+90 degrees (52 Ft-lbs+90 degrees).
- [ ] Torque the steering rack bolts to 50 Nm+90 degrees (37 Ft-lbs+90 degrees).
- [ ] Torque the sway bar bolts to 20 Nm+90 degrees (15 Ft-lbs+90 degrees).
- [ ] Install the exhaust hanger.
- [ ] Install the engine torque support and torque the bolts as follows:

  • 8.8 Strength class bolts: 40 Nm+90 degrees (30 Ft-lbs+90 degrees)
  • 10.9 Strength class bolts: 50 Nm+90 degrees (37 Ft-lbs+90 degrees)

- [ ] Install the ball joint nuts and torque them to the following specification:
  - Cast suspension control arm: 60 Nm (44 Ft-lbs)
  - Aluminum or Sheet Steel control arm: 100 Nm (74 Ft-lbs)
- [ ] Install the tie rod ends and torque them to 20 Nm+90 degrees (15 Ft-lbs+90 degrees).
- [ ] Connect the sway bar links and torque them to 65 Nm (48 Ft-lbs).
- [ ] Install and connect the headlight level sensor.
- [ ] Install the skid plate or insulation panels.
- [ ] Install the steering shaft u-joint and torque the bolt to 30 Nm (22 Ft-lbs).
- [ ] Install the steering shaft cover.
- [ ] Install the wheels and torque them to 120 Nm (89 Ft-lbs).

TORQUE SPECIFICATIONS

Ball Joint Nuts Aluminum or Sheet Steel Control Arm	100 Nm 74 Ft-lbs	(Page 26)
Ball Joint Nuts Cast Control Arm	60 Nm 44 Ft-lbs	(Page 26)
Engine Torque Support 8.8 Bolts	40 Nm+90 degrees (30 Ft-lbs+90 degrees)	(Page 25)
Engine Torque Support 10.9 Bolts	50 Nm+90 degrees (37 Ft-lbs+90 degrees)	(Page 25)
Forward Subframe Bolts	70 Nm+90 degrees (52 Ft-lbs+90 degrees)	(Page 25)
Rear Control Arm Bolts	70 Nm+90 degrees (52 Ft-lbs+90 degrees)	(Page 25)
Rear Subframe Bolts	70 Nm+90 degrees (52 Ft-lbs+90 degrees)	(Page 25)
Steering Rack Bolts	50 Nm+90 degrees (37 Ft-lbs+90 degrees)	(Page 25)
Steering Shaft U-joint Bolt	30 Nm 22 Ft-lbs	(Page 26)
Sway Bar Bolts	20 Nm+90 degrees (15 Ft-lbs+90 degrees)	(Page 25)
Sway Bar Links	65 Nm 48 Ft-lbs	(Page 26)
Tie Rod Ends	20 Nm+90 degrees (15 Ft-lbs+90 degrees)	(Page 26)
Wheels	120 Nm (89 Ft-lbs)	(Page 26)

• A note about torque to yield or "stretch" bolts: Many bolts will have a torque specification listed in the format - xx Nm+xx degrees (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.

Your Front Sway Bar installation is complete!

These instructions are provided as a courtesy by ECS Tuning.

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