



BMW F2x/F3x Adjustable Rear Sway Bar Installation

Replacing the weak, undersized factory rear sway bar on your F2x/F3x with our upgraded Turner Motorsport sway bar will help to reduce body roll and understeer. Made of strong DOM tubing and blue powder coated for corrosion resistance, these sway bars perform as well as they look! We pair each sway bar with greasable polyurethane bushings, and black anodized 6061-T6 billet bushing brackets.

Our adjustable rear sway bars feature three mounting points for the end links, this allows you to easily fine-tune the sway bar stiffness and vehicle handling balance.

Install time: 15-30 minutes with the subframe removed (or partially lowered for better access)

Please familiarize yourself with these instructions before starting your install.



Rear Sway Bar Kit Parts List:

Upgraded Rear Sway Bar	(QTY 1)
Billet Bushing Brackets	(QTY 2)
Black Polyurethane Bushings	(QTY 2)

These installation instructions have been broken up into several sections:

1) Rear Sway Bar Installation

[\(Page 2\)](#)

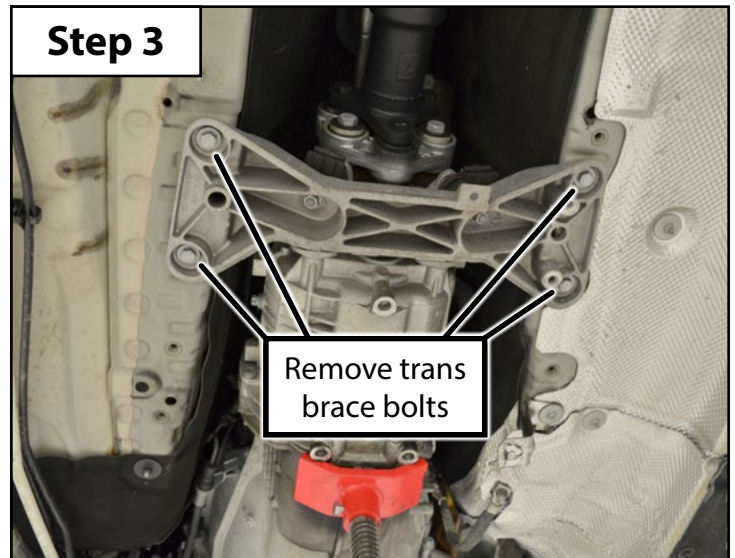
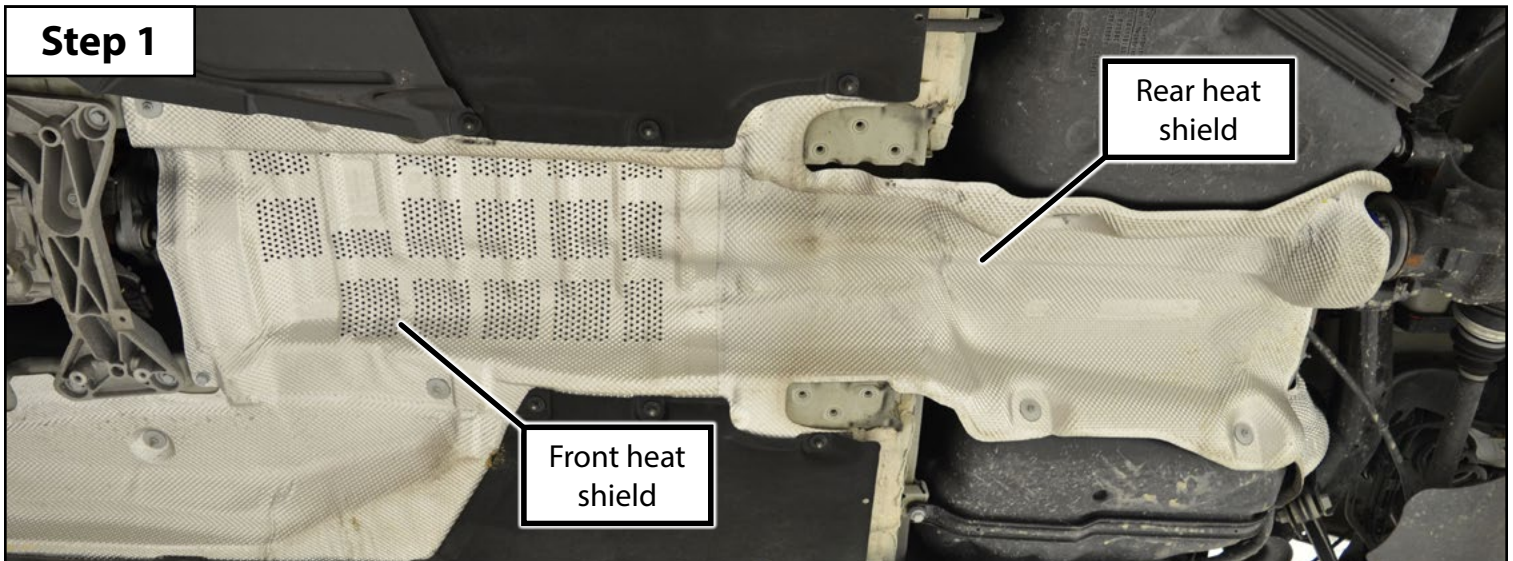
2) Rear Subframe Reassembly

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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.

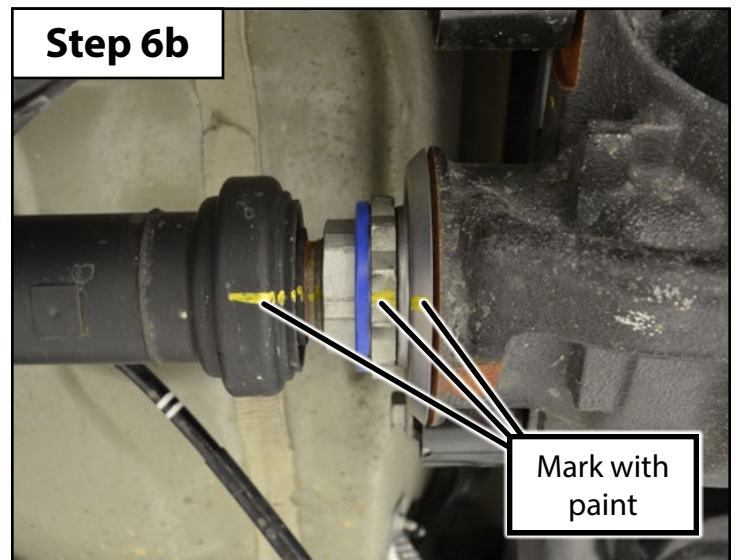
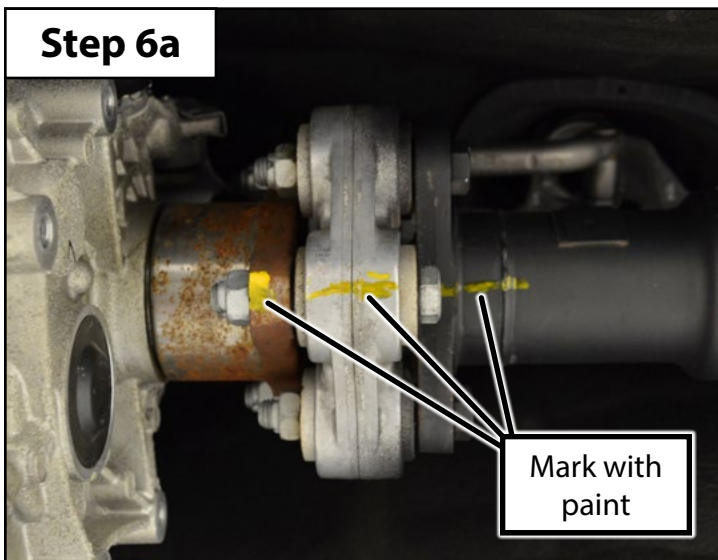
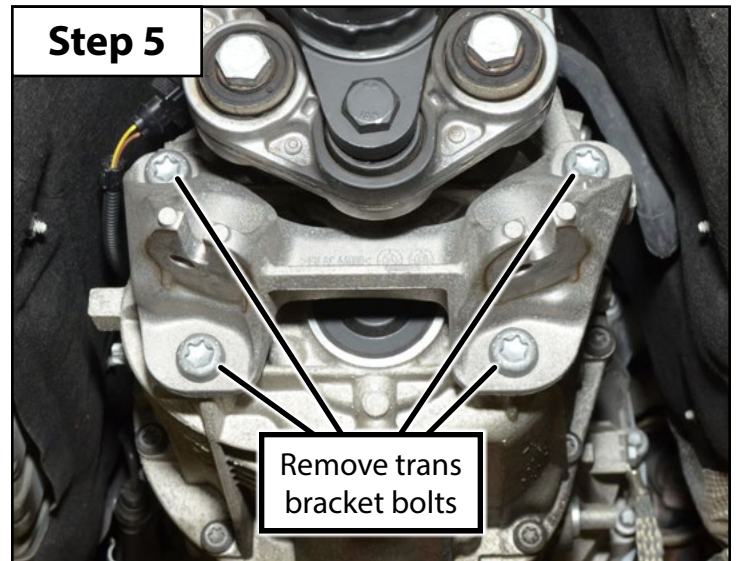
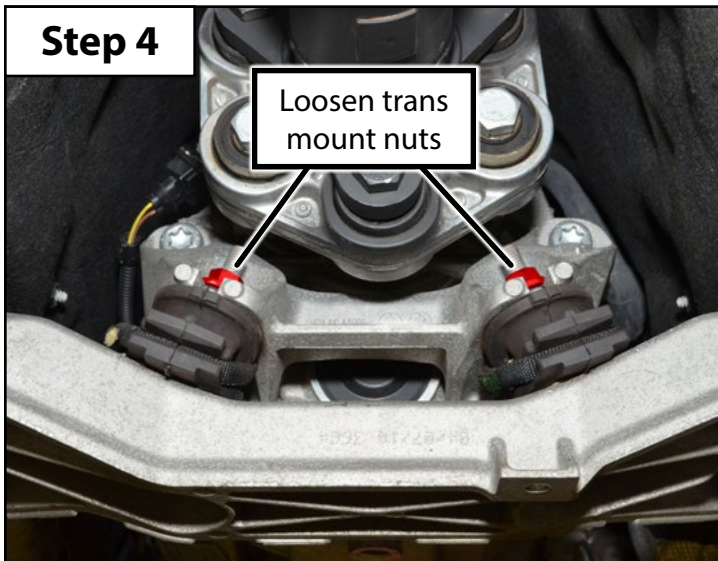
Section 1: Rear Sway Bar Installation

- Step 1**
- Remove the rear lower insulation panel which covers the transmission.
 - Remove the exhaust system.
 - Remove the front and rear exhaust heat shields.
- Step 2**
- Safely support the transmission from below.
- Step 3**
- Remove the four 13mm bolts which secure the transmission brace to the chassis.



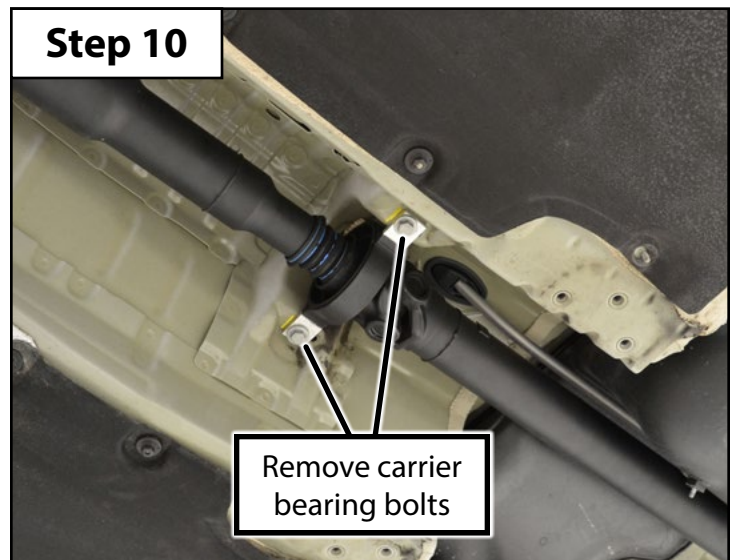
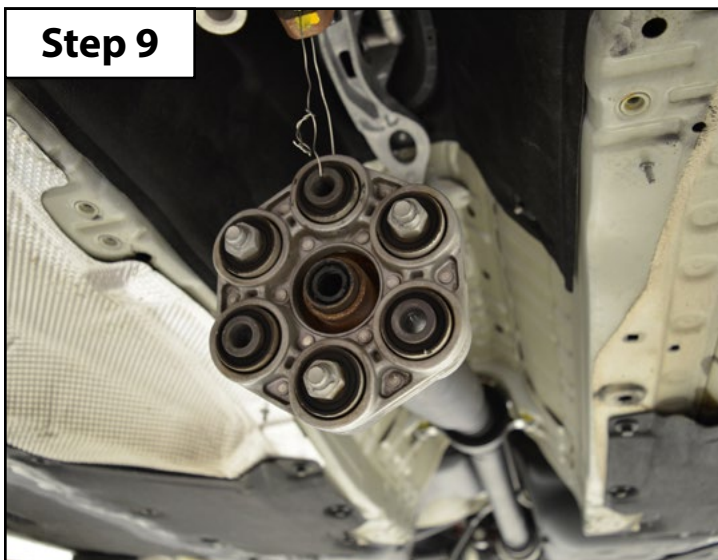
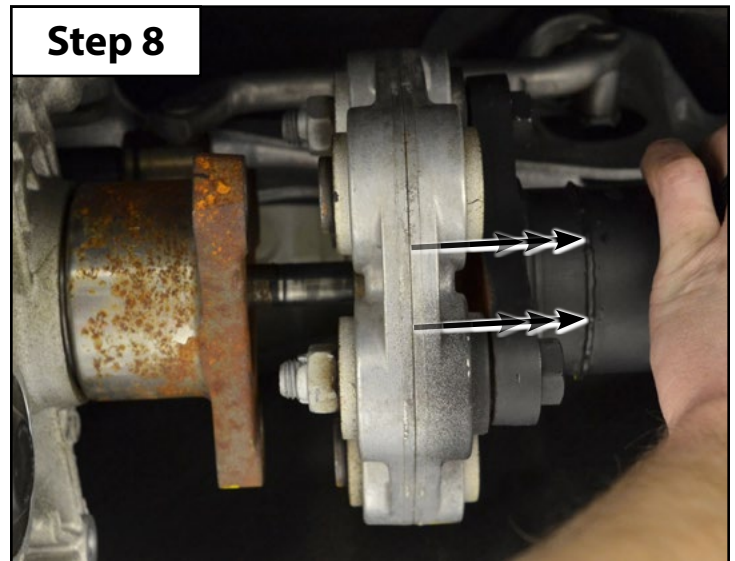
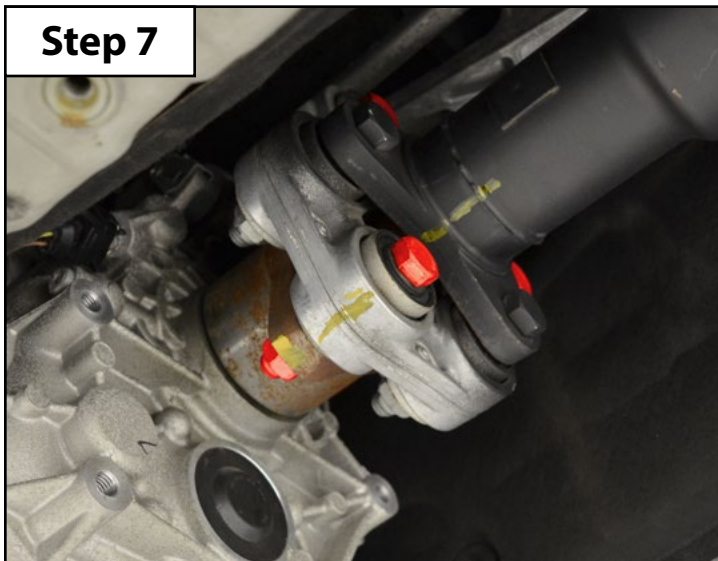
Section 1: Rear Sway Bar Installation

- Step 4**
- Loosen the two nuts which secure the transmission to the mounts (highlighted in **RED** in the Step 4 photo below).
- Step 5**
- Pull the transmission brace rearward to slide the mounts off of the transmission and remove it from the vehicle.
 - Remove the transmission bracket bolts (shown in the Step 5 photo below).
- Step 6**
- Mark the driveshaft, transmission output flange, and rear differential with paint as shown in the Step 6a and Step 6b photos below.
 - These marks will be used to realign all of the connections during reassembly. Failure to properly realign these components will likely result in high speed vibrations.



Section 1: Rear Sway Bar Installation

- Step 7**
- Remove the three bolts which secure the flex disc to the transmission output flange (highlighted in **RED** in the Step 7 photo below).
- Step 8**
- Pull the driveshaft rearward until it slides off of the transmission output flange.
- Step 9**
- Secure the front end of the driveshaft.
 - This can either be done with mechanic's wire from above, or with jack stands from below.
- Step 10**
- Remove the two bolts which secure the driveshaft carrier bearing to the chassis.
 - Secure the center of the driveshaft.
 - This can either be done with mechanic's wire from above, or with jack stands from below.



Section 1: Rear Sway Bar Installation

- Step 11**
- Next, you need to decide whether or not you want to completely remove the driveshaft.
 - If you only plan to lower the rear subframe enough to install the new sway bar, it is possible to support the driveshaft from above or below and lower it in tandem with the subframe. You need to avoid stressing the joint between the differential and the driveshaft to prevent it from being damaged.
 - If you want to completely remove the driveshaft and get it out of your way, you will need to acquire two specialty tools (listed in the text below).

IF YOU ARE REMOVING THE DRIVESHAFT:

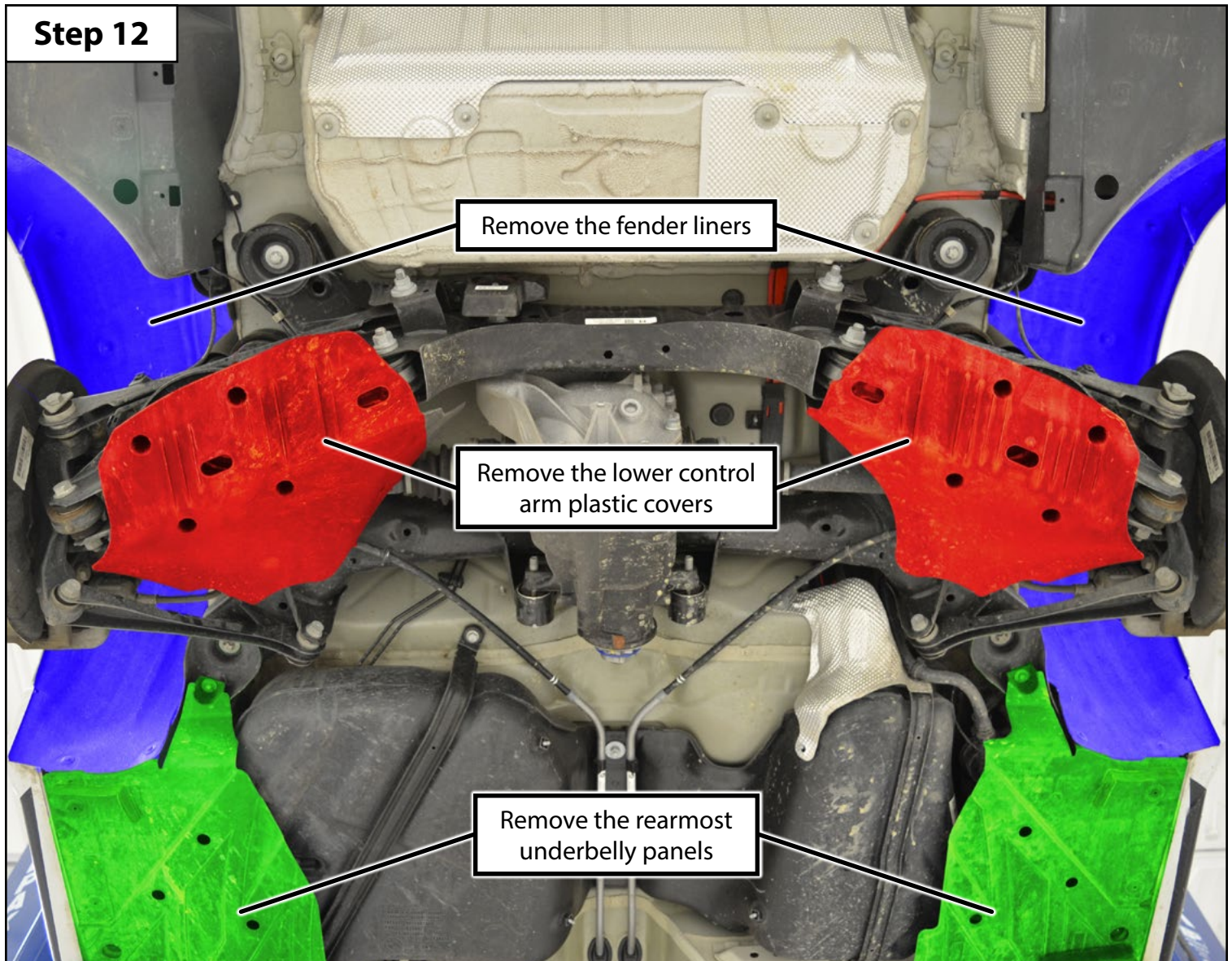
- Apply the parking brake or have an assistant apply the brake pedal.
- Loosen the nut which secures the driveshaft to the rear differential.
 - It is important to note that this is a RH thread nut, but it is attached to the rear differential **NOT** the driveshaft.
 - This means that if you are looking at the rear of the vehicle (as shown in the Step 11 photo below) you will need to rotate the nut **CLOCKWISE** in order to loosen it.
- This step requires two specialty tools:
 - Driveshaft Tool Extension: [T#172669](#)
 - Driveshaft Tool Head: [T#173231](#)

Step 11



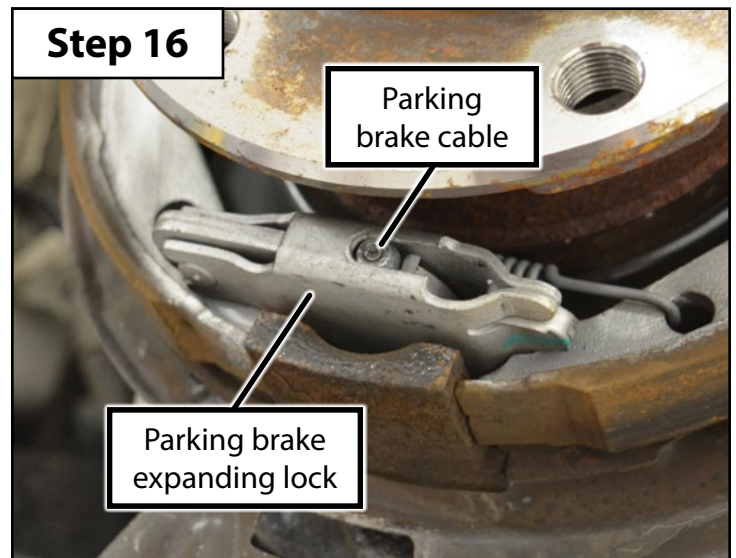
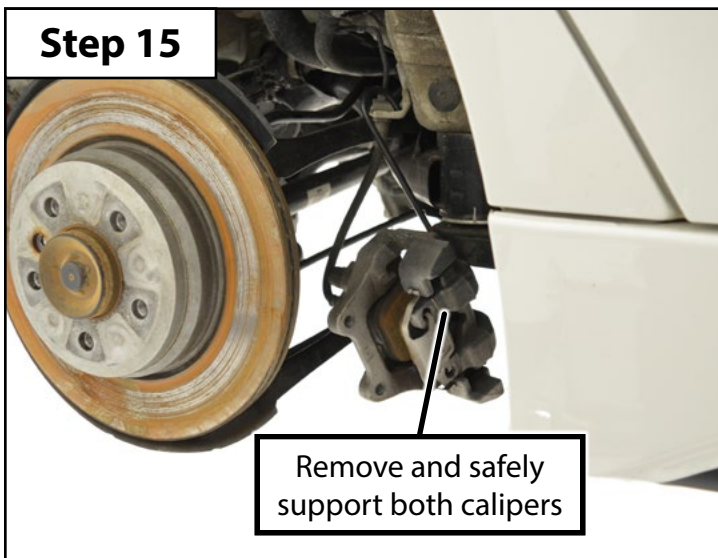
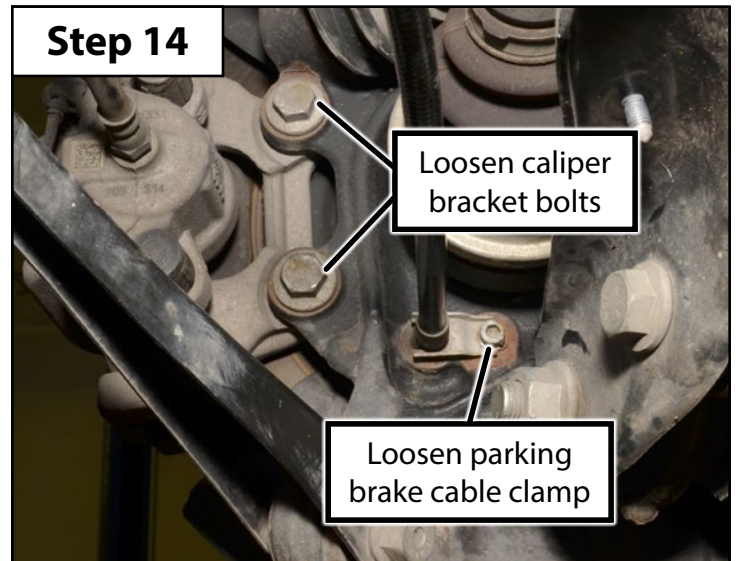
Section 1: Rear Sway Bar Installation

- Step 12** • Remove the rear lower control arm plastic covers (highlighted in **RED**), the fender liners (highlighted in **BLUE**), and the rearmost underbelly panels (highlighted in **GREEN**) from both sides of the vehicle.



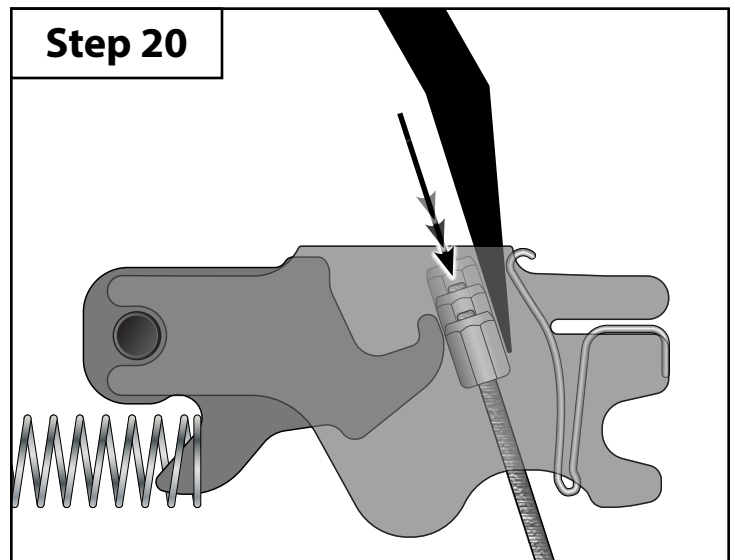
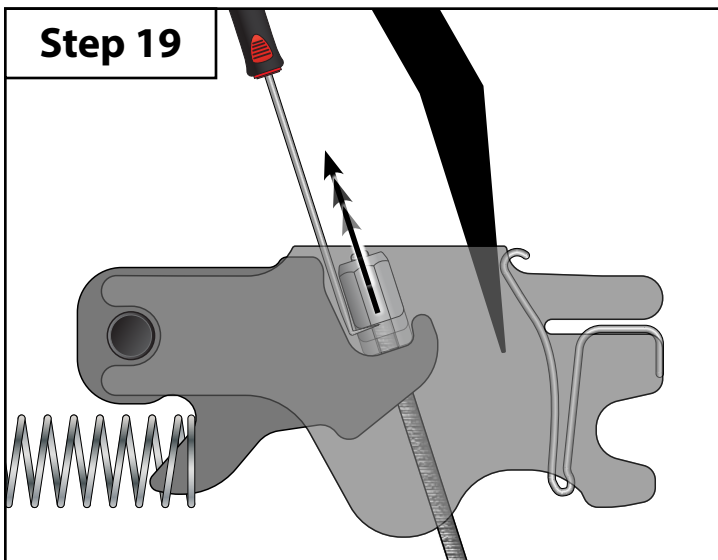
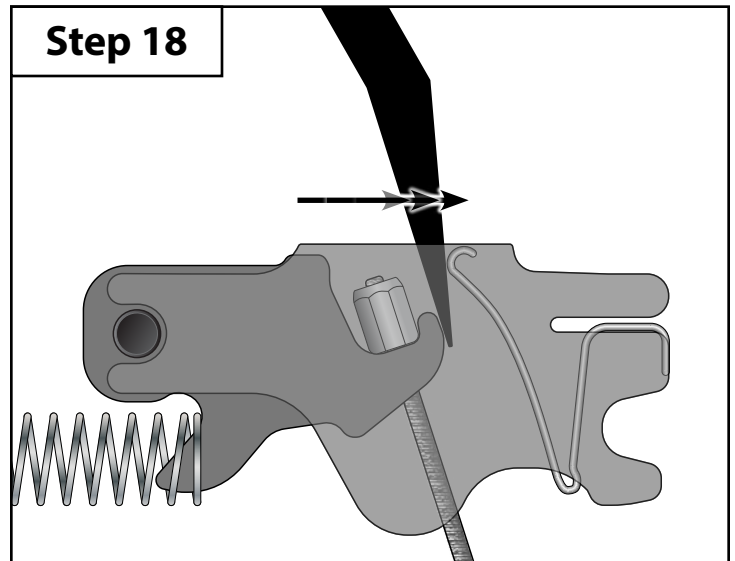
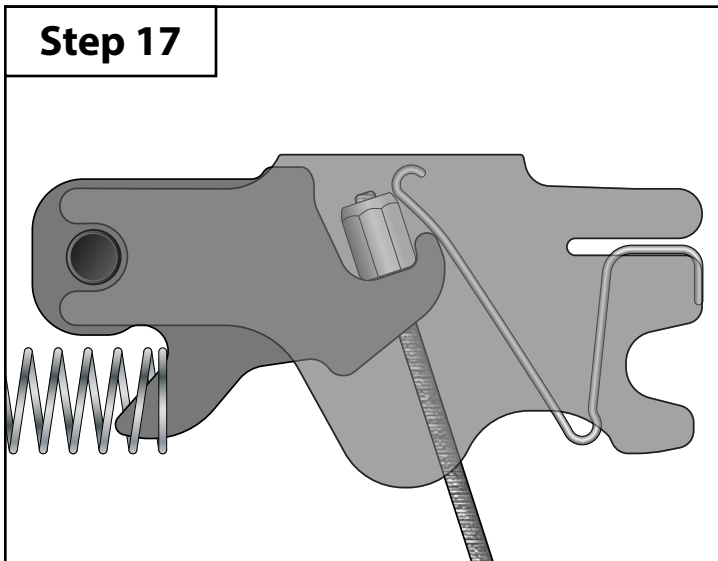
Section 1: Rear Sway Bar Installation

- Step 13** • Disconnect and remove the ride height sensor from the control arm.
- Step 14** • Loosen (**but do not remove**) the caliper bracket bolts from the rear spindles.
• Remove the parking brake clamps from the rear spindles.
- Step 15** • Remove the caliper bracket bolts from the rear spindles and safely support the calipers.
• Do not let the calipers hang by the brake hoses.
- Step 16** • Remove the rear brake rotors.
• We need to disconnect the parking brake cable from the expanding lock, this procedure will be outlined on the next page.



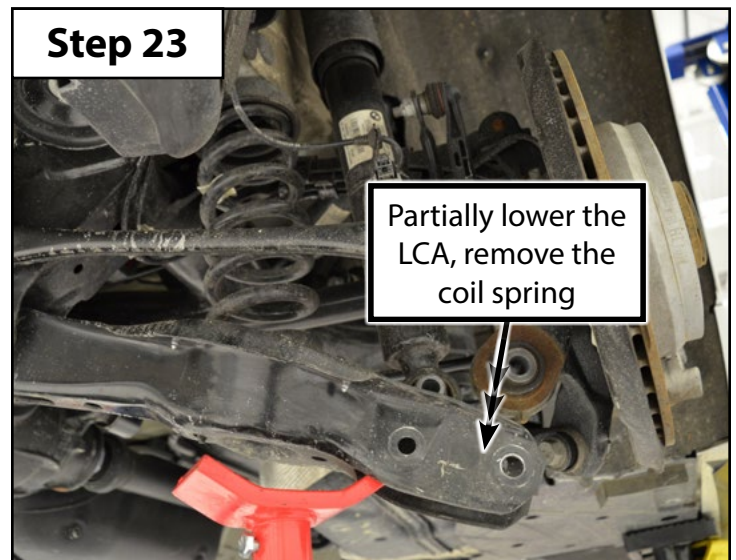
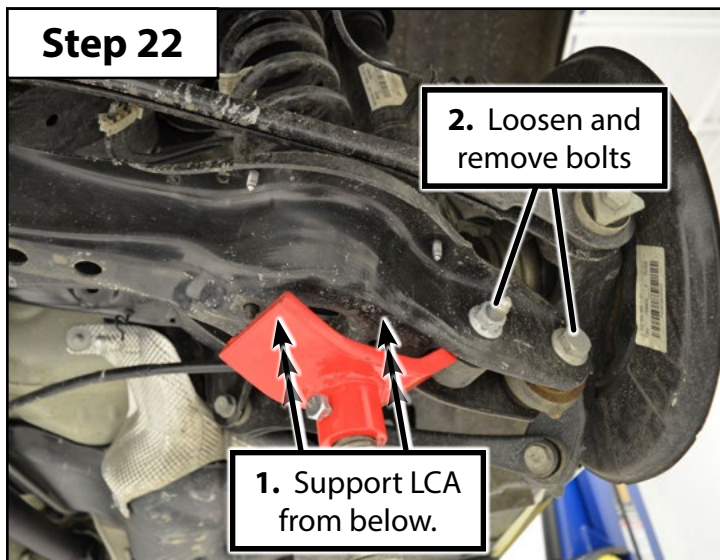
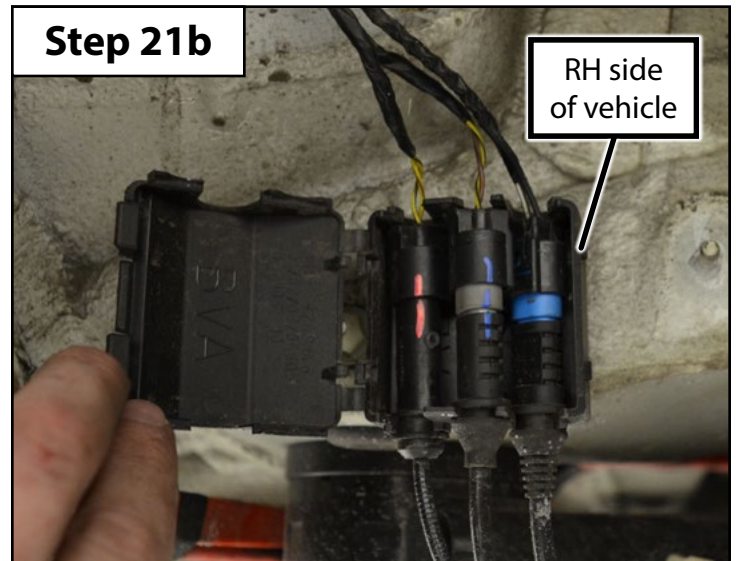
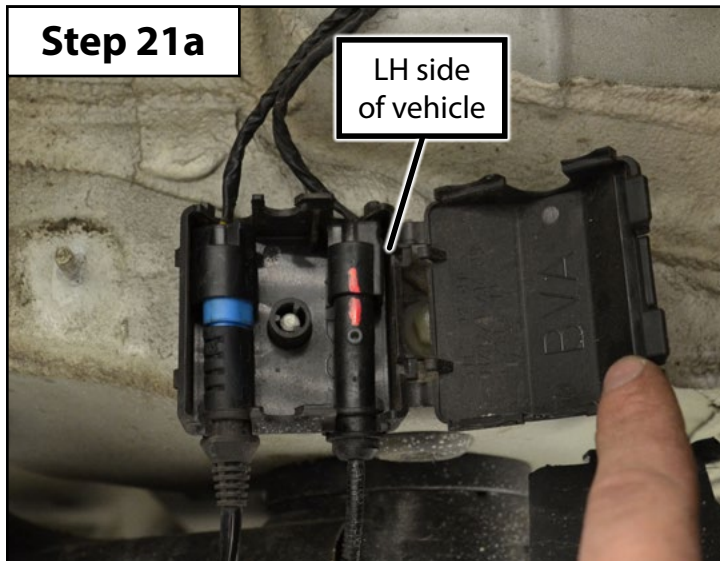
Section 1: Rear Sway Bar Installation

- Step 17**
- Take a moment to observe the Step 17 illustration below.
 - Here we can see that the parking brake cable is cradled inside the expanding lock, and the internal spring applies pressure to hold the cable in place.
- Step 18**
- Pry the spring away from the cable as shown in the Step 18 illustration below.
- Step 19**
- Use a small pick to pull the cable out of the expanding lock as shown in the Step 19 illustration below.
- Step 20**
- Pull the cable out of the expanding lock as shown in the Step 20 illustration below.



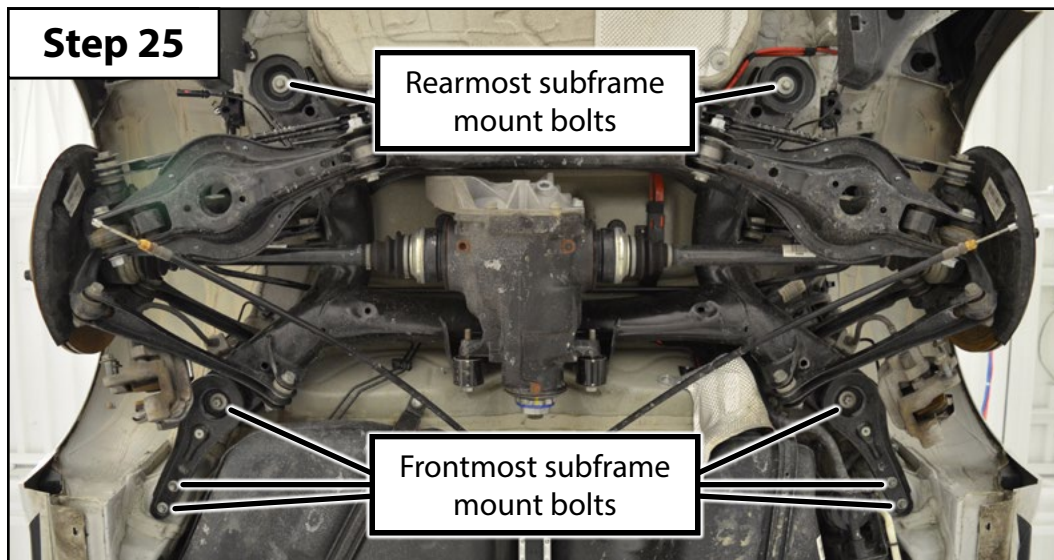
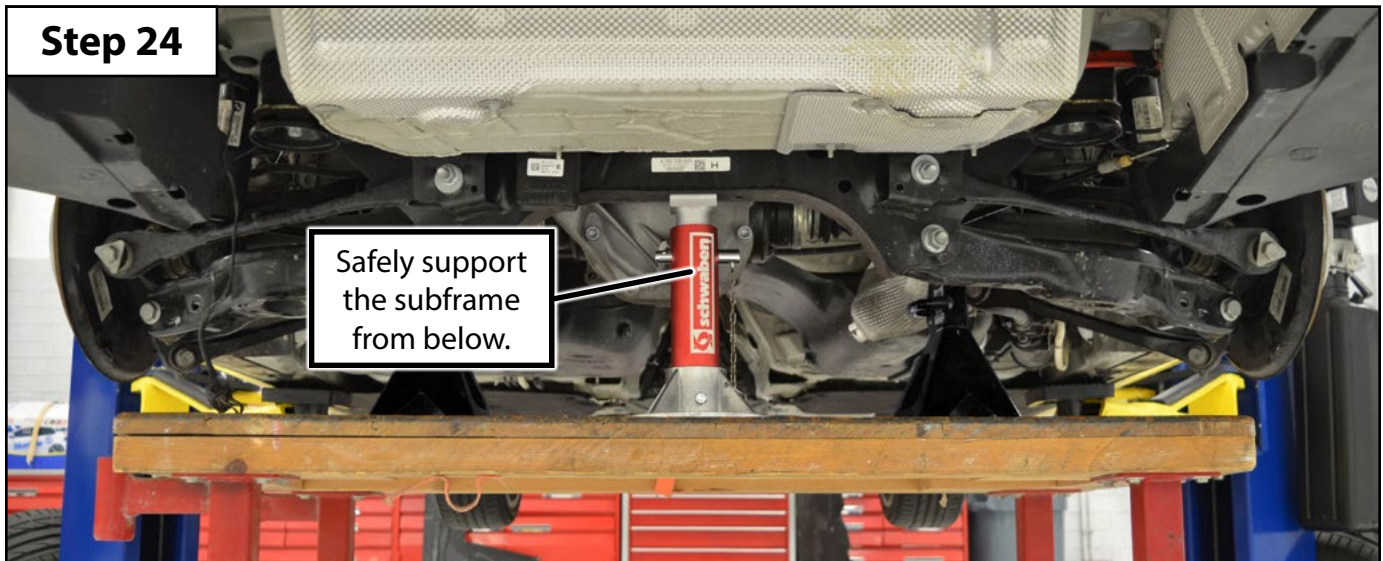
Section 1: Rear Sway Bar Installation

- Step 21**
- Mark the electrical connectors between the rear subframe and the chassis for easy reinstallation (shown in the Step 21a & Step 21b photos below).
 - Disconnect the harnesses and swing them out of the way.
- Step 22**
- Working on the LH side of the vehicle, safely support the lower control arm from below.
 - Loosen and remove the lower shock bolt and the spindle bolt.
- Step 23**
- Slowly lower the control arm downward off of the shock and spindle until the spring is no longer compressed.
 - Remove the coil spring.
 - Repeat steps 22 and 23 to remove the RH coil spring.



Section 1: Rear Sway Bar Installation

- Step 24**
- Safely support the rear subframe from below.
- Step 25**
- Loosen and remove the subframe bolts.
 - Working slowly and carefully, partially lower the rear subframe (or remove it).

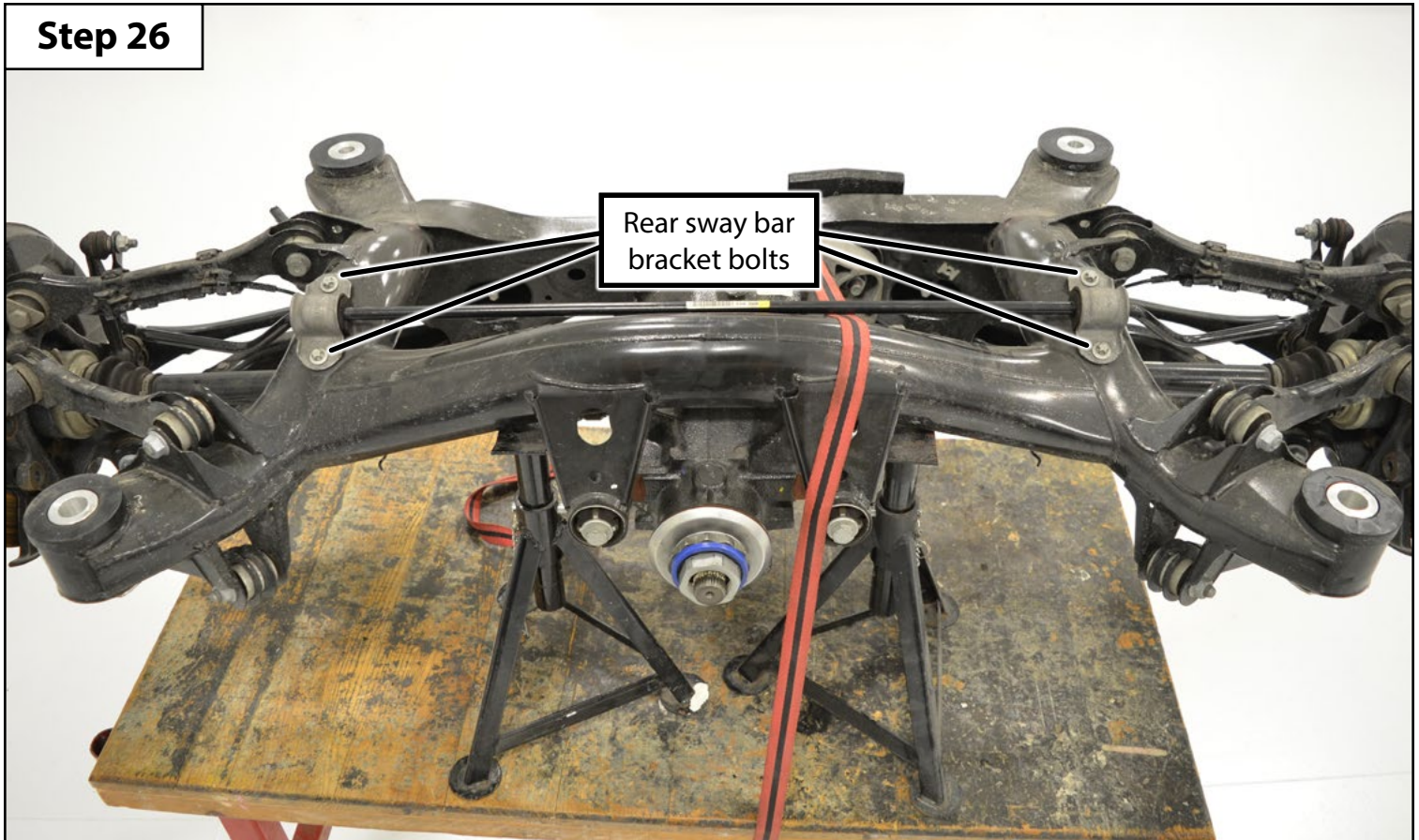


Section 1: Rear Sway Bar Installation

Step 26

- This photo shows the subframe removed from the vehicle for better visibility.
- Remove the bolts which secure the OEM sway bar to the subframe.
- Remove the sway bar by sliding it out between the subframe and the body.

Step 26



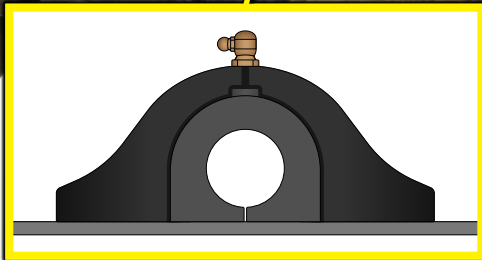
Section 1: Rear Sway Bar Installation

Step 27

- Install the new bushings and brackets onto the new sway bar.
 - Reference the **YELLOW** inset photo for proper bushing orientation.
- Note the orientation of the sway bar and how it bends around the suspension arms.
- Install the new sway bar onto the subframe and tighten the bolts to 28 Nm.

Step 27

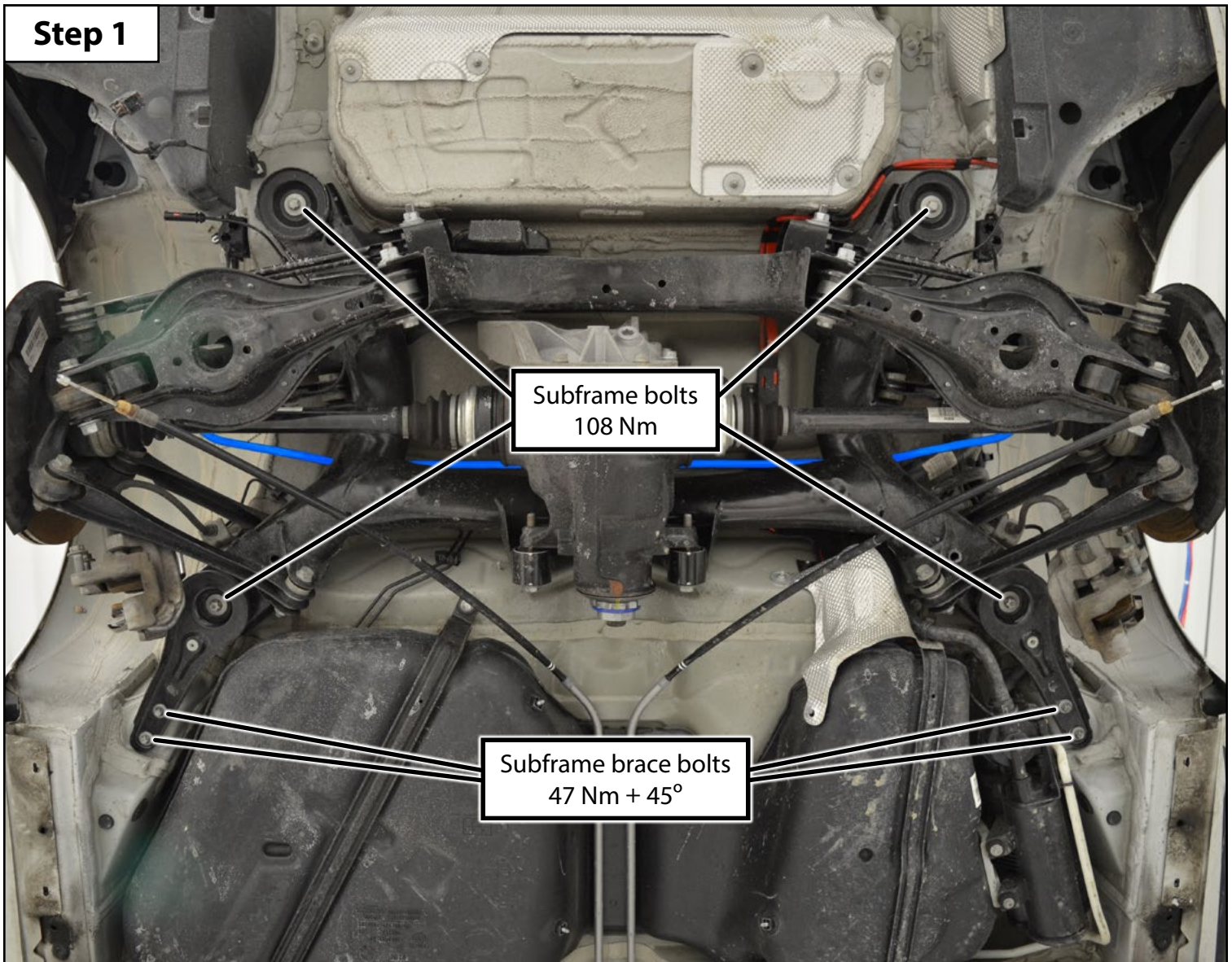
Replace these bolts, torque to 28 Nm (20 Ft-lbs)



Section 2: Rear Subframe Reassembly

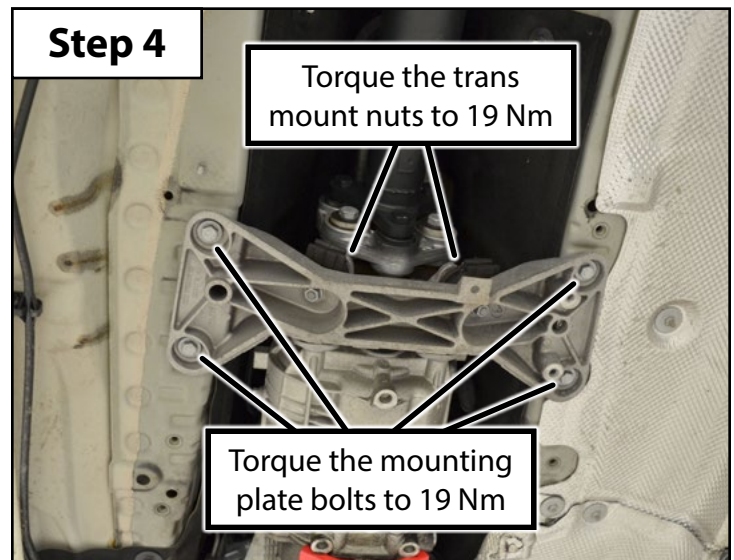
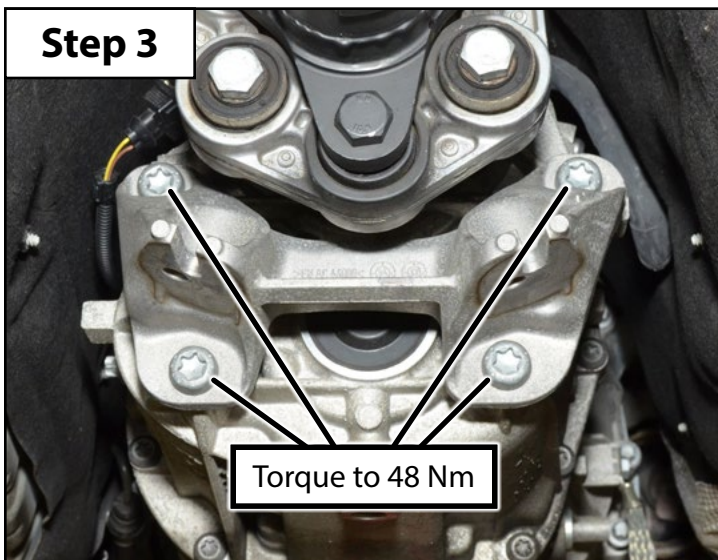
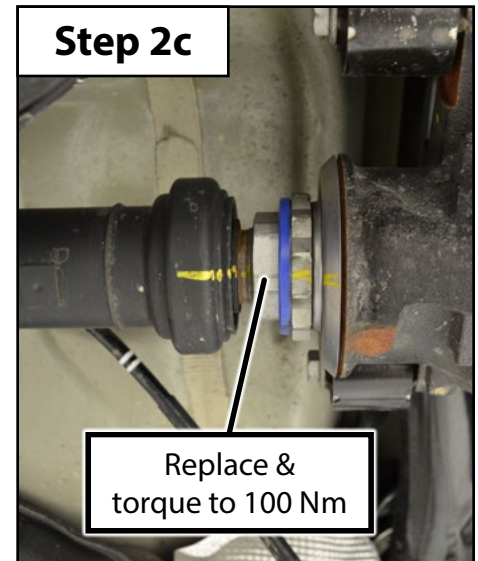
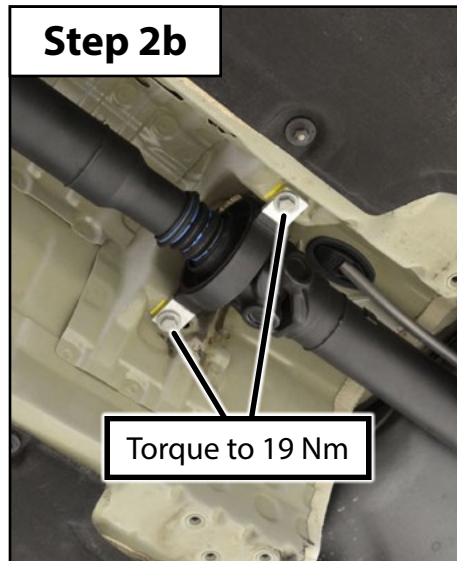
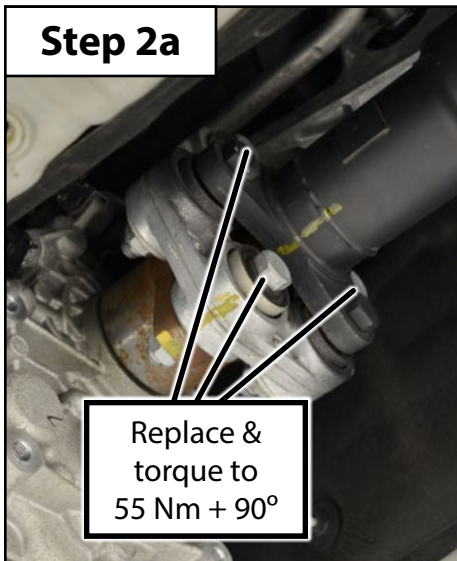
Step 1

- Lift the rear subframe back up into place underneath the vehicle.
- Tighten the subframe bolts to 108 Nm (Step 1 photo below).
- Tighten the subframe brace bolts to 47 Nm + 45° (Step 1 photo below).



Section 2: Rear Subframe Reassembly

- Step 2**
- Reinstall the driveshaft. This will require several steps:
 - Replace the three bolts which secure the flex disc to the transmission output flange. Torque them to 55 Nm + 90° (Step 2a photo).
 - Torque the two driveshaft carrier bearing bolts to 19 Nm (Step 2b photo).
 - IF YOU REMOVED THE DRIVESHAFT ONLY:** Replace the nut which secures the driveshaft to the rear differential. Torque it to 100 Nm (Step 2c photo).
- Step 3**
- Torque the four transmission mounting bracket bolts to 48 Nm (Step 3 photo).
- Step 4**
- Torque the four transmission mounting plate bolts to 19 Nm (Step 4 photo).
 - Torque the two transmission mount nuts to 19 Nm (Step 4 photo).



Section 2: Rear Subframe Reassembly

- Step 5**
- Reinstall the rear coil springs (Step 5 photo).
 - Replace the lower shock bolts and nuts. Torque them to 100 Nm + 90° (Step 5 photo).
 - Replace the lower control arm outer nuts (LCA to wheel carrier). Torque them to 165 Nm (Step 5 photo).
- Step 6**
- Be sure to orient the grease fittings so that they are easily accessible for future service (Step 7 photo).
 - We found that when the 90° fittings are turned toward the sides of the vehicle we could reach them from the wheel well without removing any panels.
- Step 7**
- Install the sway bar end links into the new sway bar and tighten them to 56 Nm.
 - Reference the Step 6 photo below and choose your desired stiffness setting.
- Step 8**
- Replace the rear caliper bracket bolts. Torque them to 30 Nm + 90°.
 - Reconnect the parking brake cable.
 - Reinstall the rear wheels.
 - Test the parking brake and adjust if needed.
 - Perform a 4-wheel alignment.

