# BMW E6x Poly Rear Differential Bushing Set
# Installation Instructions - ES4305727

**Skill Level 3 - Advanced**

**Thank you for purchasing your new BMW E6x Poly Rear Differential Bushing Set, we appreciate your business!**


## These installation instructions have been broken up into several sections:

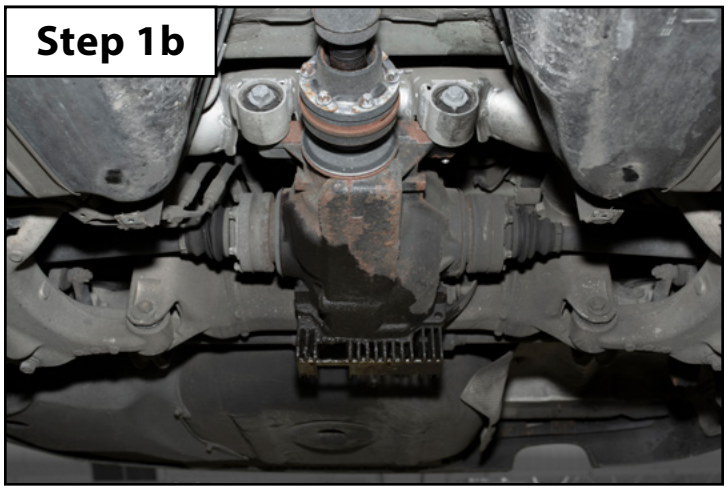
# Section 1: Removing the Rear Differential

**Step 1**

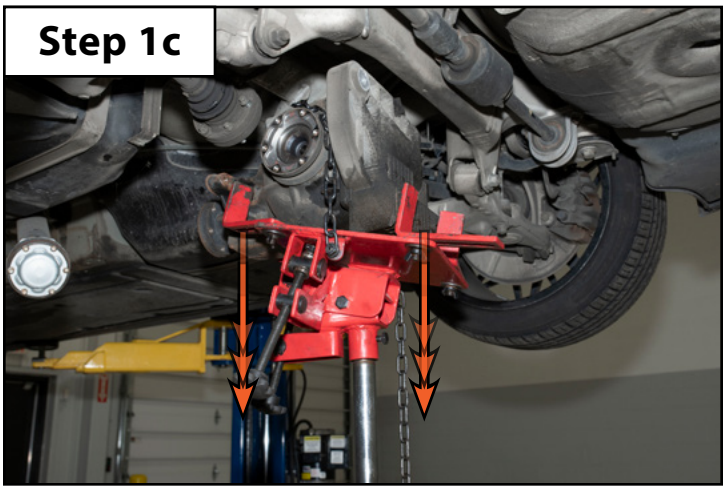
- Remove the rear diff from the subframe. This will include the following:
  - Remove the rear wheels.
  - Remove the exhaust system and heat shields (**Step 1a photo**).
  - Remove all applicable underbelly panels and braces.
  - Disconnect the driveshaft from the diff (**Step 1b photo**).
  - Remove the axle bolts from the diff (**Step 1b photo**).
  - Safely support the diff from below.
  - Remove the bolts from the rear diff bushings.
  - Remove the diff (**Step 1c photo**).

**Step 1a**


**Step 1b**



**Step 1c**



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# Section 2: Installing the New Poly Bushings

**Step 1**

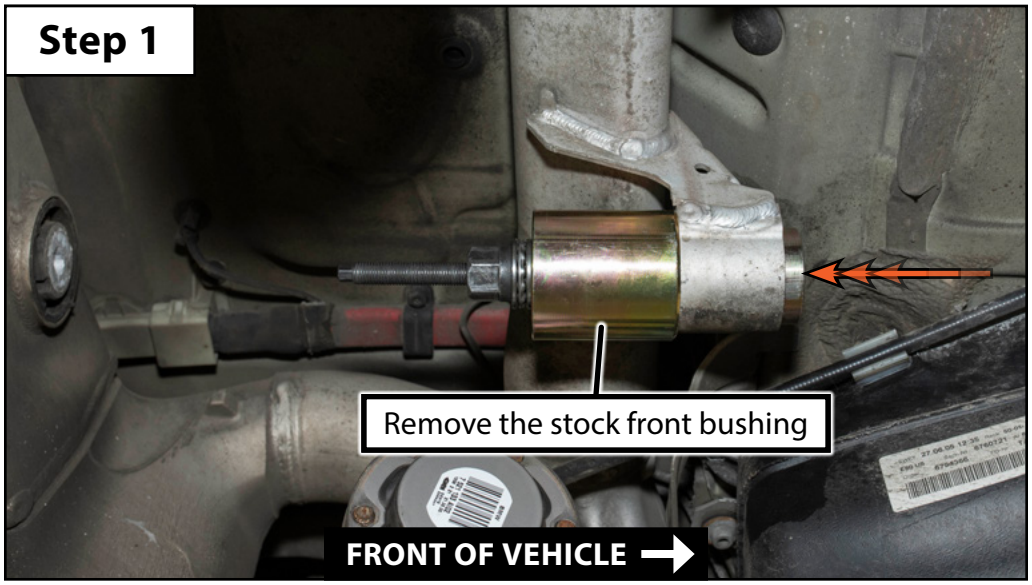
- Press the stock front bushing out of the subframe (**Step 1 photo**).
  - Our Schwaben Subframe & Differential Bushing Tool Set can be used for this.
- Clean out the bushing bore as needed to remove any rust or leftover bushing material (not shown).
  - Scotch-Brite™ pads work very well for this.

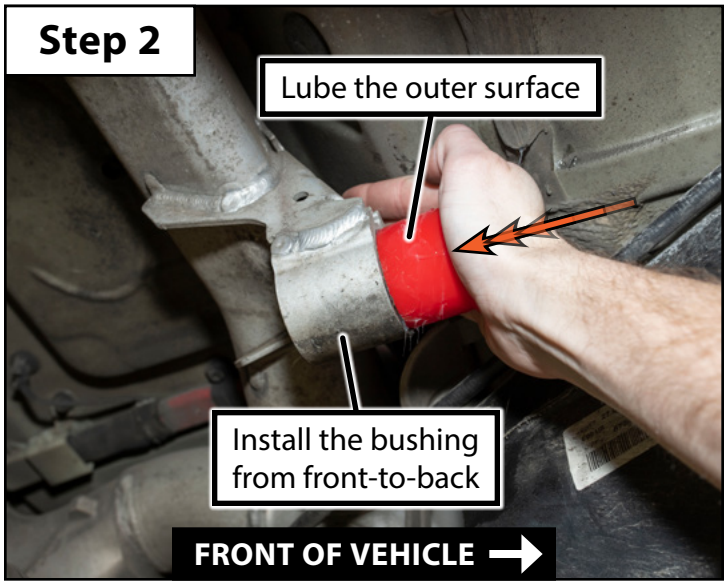
**Step 2**

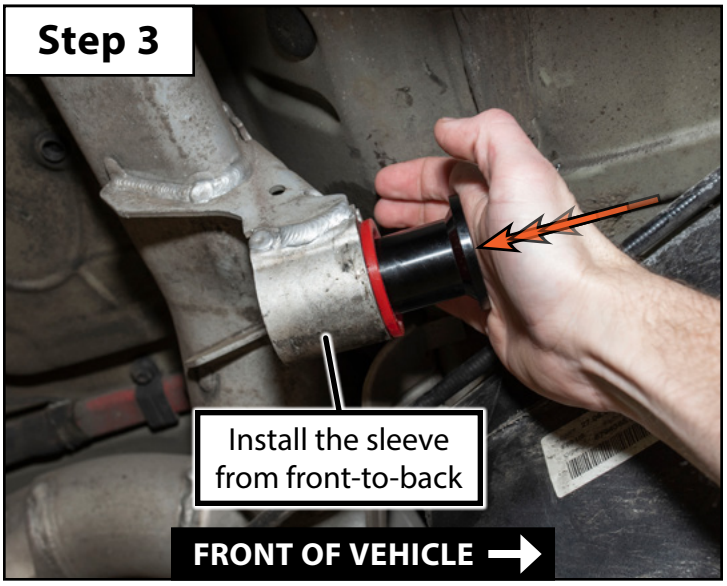
- Remove the center sleeve from the poly bushing, apply lube to the outer bushing surface.
- Push the poly bushing into the subframe from front-to-back as shown (**Step 2 photo**).
  - ***The lip on the poly bushing must be on the back side of the plate***.

**Step 3**

- Press the sleeve into the bushing from front-to-back as shown (**Step 3 photo**).
  - You may need to tap this sleeve in with a soft-face or deadblow hammer.
  - ***We do not recommend lubing the outer surface of the sleeve***.

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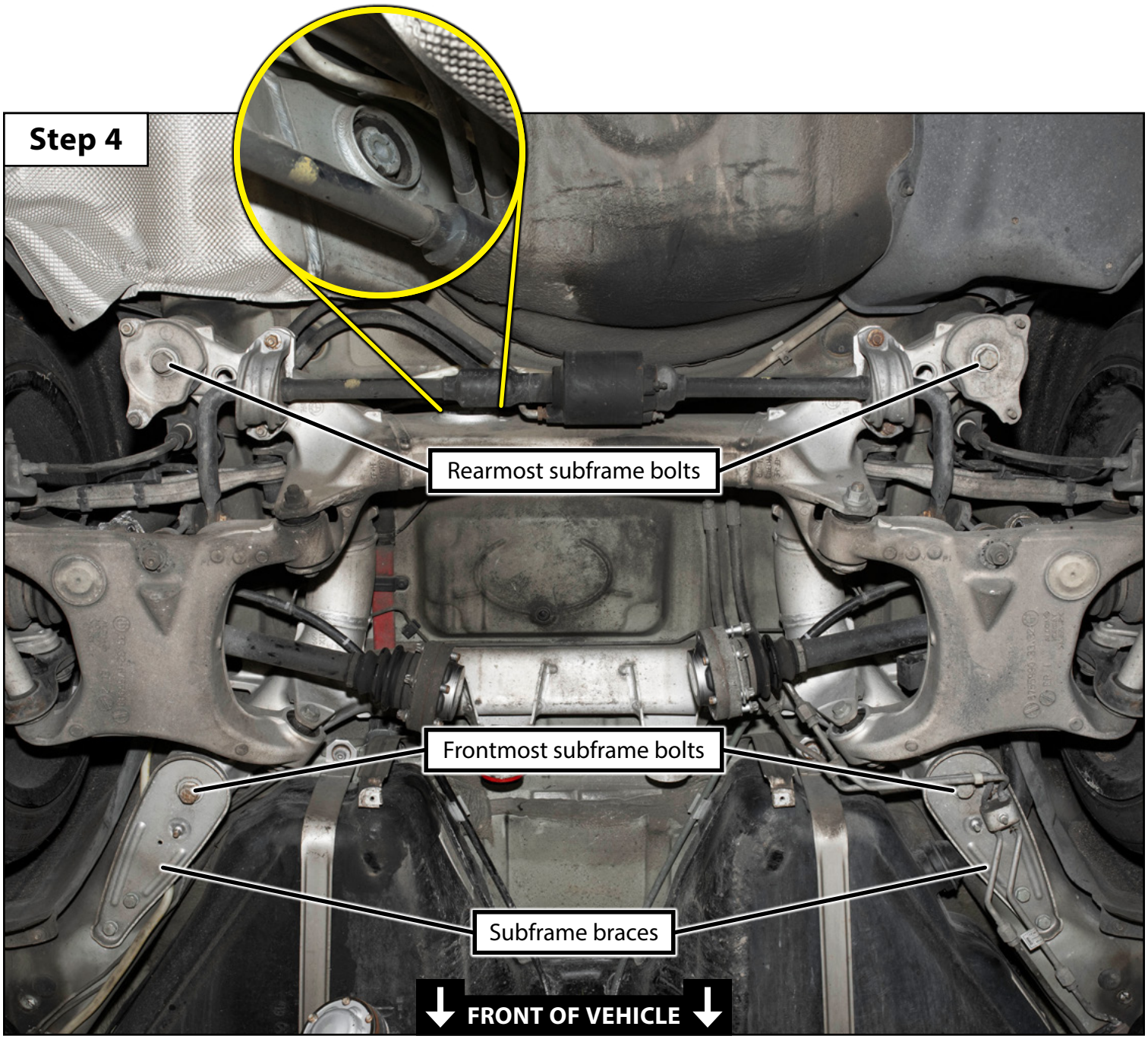
# Section 2: Installing the New Poly Bushings

**Step 4**

- The rear bushing is a bit tough to access thanks to the tight space between the rear subframe and the spare tire well. Lowering the rear of the subframe an inch or two is the easiest way to gain some extra space to work.
- To do this you will need to:
  - Safely support the rear of the subframe from below
  - Remove the plastic covers from the front of the subframe
  - Remove the 16mm bolts which secure the subframe braces to the chassis
  - Loosen the 21mm frontmost subframe bolts slightly
  - Loosen, ***but do not remove***, the 21mm rearmost subframe bolts
    - Use these bolts to lower the rear of the subframe one to two inches
  - We strongly recommend placing jack stands or another suitable safe support apparatus underneath the rear subframe while you work

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# Section 2: Installing the New Poly Bushings

**Step 5**

- Remove the stock rear bushing from the subframe using the OEM tools or equivalent (**Step 5 photo**).
  - This bushing can be removed from either direction, but it is easier to pull it from back-to-front with the differential out of the way.
- Clean out the bushing bores as needed to remove any rust or leftover bushing material (not shown).
  - Scotch-Brite™ pads work very well for this.

**Step 6**

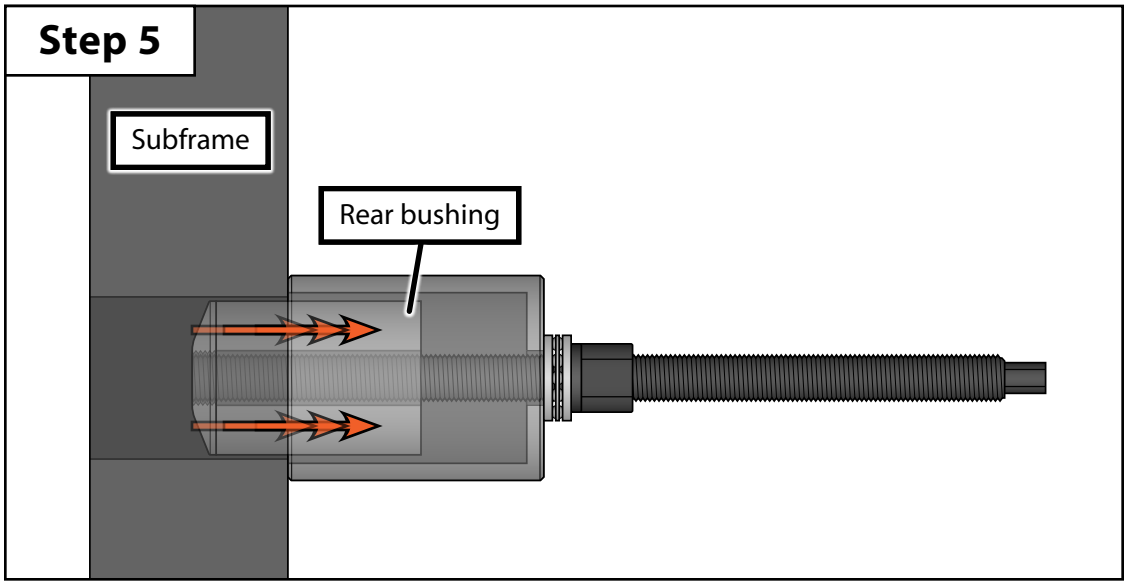
- Remove the center sleeve from the poly bushing, apply lube to the outer bushing surface.
- Push the poly bushing into the subframe from back-to-front as shown (**Step 6 photo**).
  - ***The lip on the poly bushing should be on the back side of the subframe***.

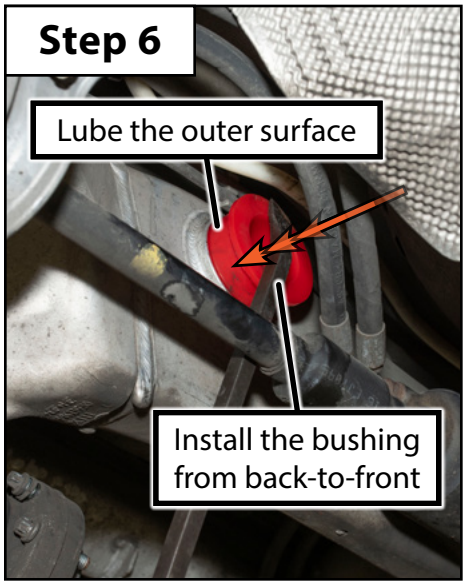
**Step 7**

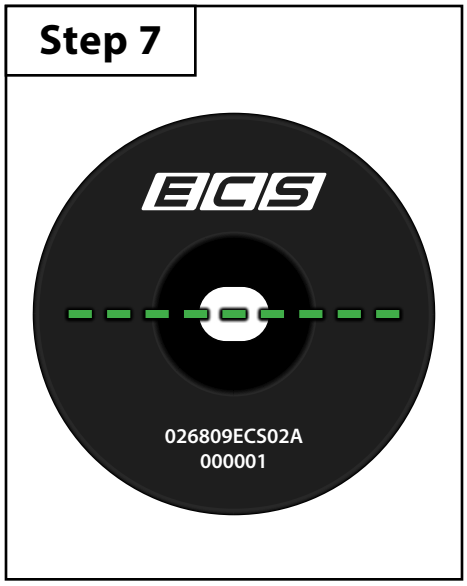
- Take note of the slotted hole inside the sleeve (**Step 7 photo**).
  - ***This slot must be level side-to-side once installed into the bushing***.

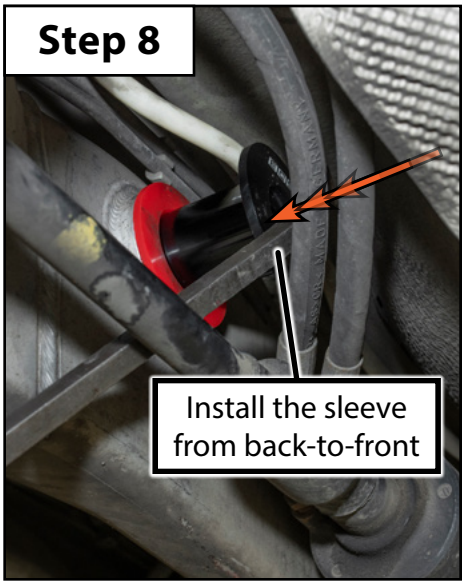
**Step 8**

- Press the sleeve into the bushing from back-to-front as shown (**Step 8 photo**).
  - You may need to tap this sleeve in with a soft-face or deadblow hammer.
  - ***We do not recommend lubing the outer surface of the sleeve***.

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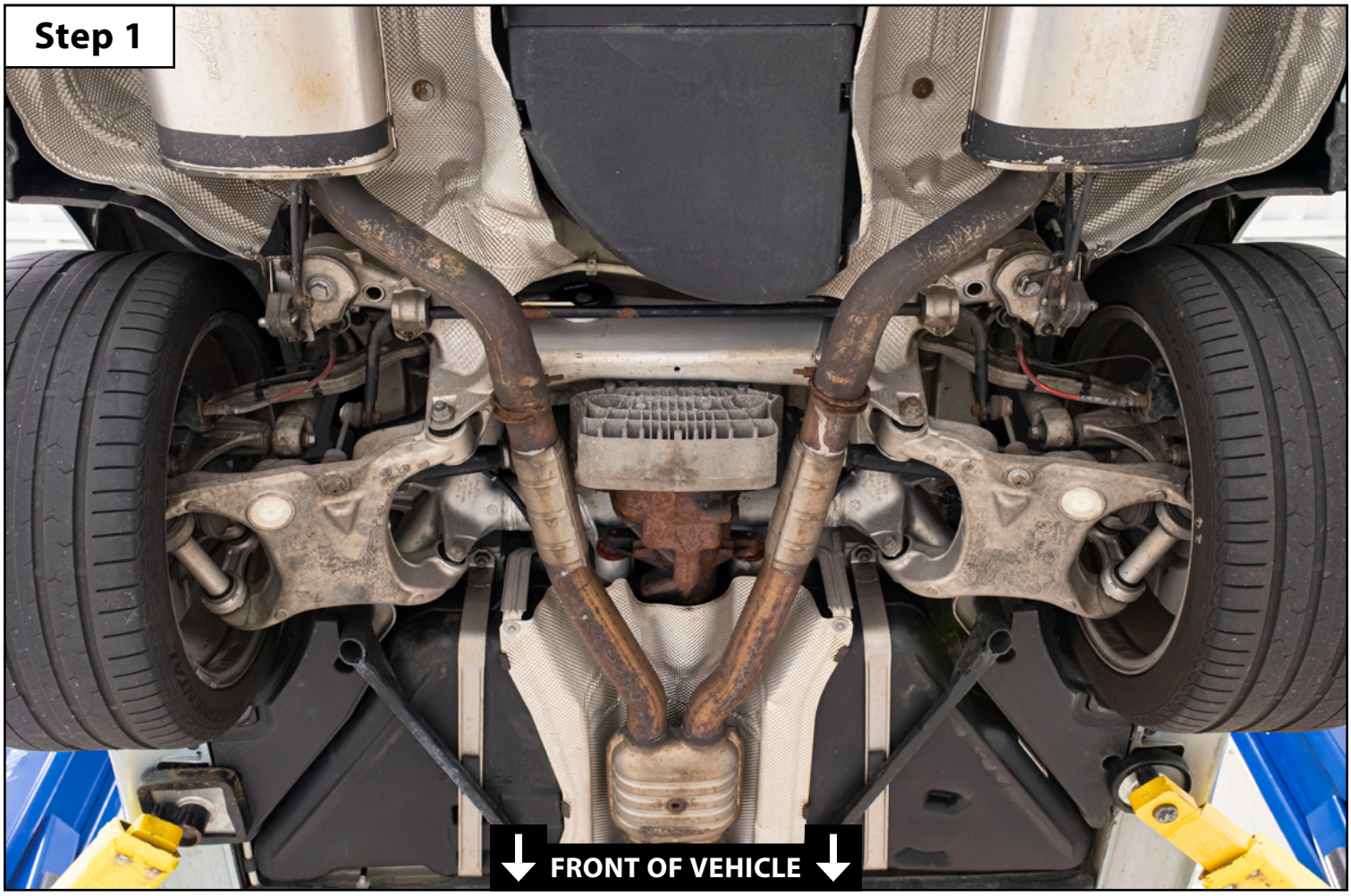
# Section 3: Reassembly

**Step 1**

- Torque the subframe bolts using the torque table below for reference.
- Lift the differential up into the subframe, then thread in the mounting bolts by hand.
- Torque the differential mounting bolts using the torque table below for reference.
- Reinstall the CV axles and driveshaft using the torque table below for reference.
- Reinstall the exhaust system and adjust if needed.
- Reinstall the rear wheels.

| Bolt Location: | Type/Thread: | Notes: | Torque: |
|---|---|---|---|
| Rear subframe to chassis | M14x138mm | | 165 Nm |
| Rear differential to rear subframe | M12x87mm bolt (forward mount) | | 100 Nm |
| | M14x110mm bolt & nut (rearward mount) | | 165 Nm |
| CV axle to differential (Torx w/ribbed teeth) | M8x40mm (silver) | Always replace | 52 Nm |
| | M10 (silver) | Always replace | 80 Nm |
| | M12x50-10.9 (black) | Always replace | 135 Nm |
| Driveshaft to differential flange | M10 compression nut (w/universal joint) | | 64 Nm |
| | M10 Torx bolt (w/universal joint) | | 85 Nm |
| | M8 compression nut (w/CV joint) | | 32 Nm |
| | M10 compression nut (w/CV joint) | | 64 Nm |
| | M10 Torx bolt (w/CV joint) | | 70 Nm |
| | M8 finned nut | | 43 Nm |
| | M10 finned nut | | 70 Nm |
| | M10-10.9 ZNS screws and nuts (shiny zinc coating) | Always replace | 20 Nm + 90° |

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