

## How to remove the factory rear sway bar and replace it with a Toyota Racing Development (TRD) rear sway bar on a 2009-2012 Toyota Corolla\* using jack stands.

***\*For Base, LE, and Sport Model ONLY***

This instructional manual will explain the step-by-step process of how to safely remove the rear sway bar from a 2009-2012 Toyota Corolla Base, LE, and Sport model and replace it with a Toyota Racing Development (TRD) rear sway bar.

The main reason to replace the factory rear sway bar is to improve the handling of the vehicle by reducing the vehicle's body roll. This is accomplished by installing a thicker rear sway bar that prevents chassis flex, thus keeping both wheels on the road when turning at higher speeds.

### **Before proceeding with this manual:**

1. Locate the vehicle's factory manual to identify the factory lift points on the vehicle.
2. Review the "Terms to Know" section at the end of this manual.
3. Understand how to operate all the equipment that is used in this manual.
4. Read over the entire manual at least once to verify that you have the mechanical skills to attempt this process.

### **Preparations**

The following lists represent the required and optional equipment needed to successfully accomplish this process. Do not attempt to proceed unless you have all the required tools to successfully accomplish this task.

#### **❖ *Required* Equipment:**

- One (1)- 2-Ton Hydraulic Floor Jack
- One (1)- Toyota Racing Development (TRD) rear sway bar
  - ◆ Part number: PTR11-12080
- One (1)- ½in Ratchet
- Two (2)- 22mm ½in Deep end socket
- A pair (2)- 1-Ton Jack stands
- Two (2)- Tire wheel stopper
- One (1)- ½ in Torque wrench
  - ◆ *Minimum* of 190ft/lb. torque capability
- One (1)- ½in Breaker bar
  - ◆ *Minimum of 17 inches in length*

❖ **Optional Equipment:**

- One (1)- ¼ in Ratchet
- One (1)- 10mm ¼ in socket
- One (1)- Can of WD-40
- One (1)- Shop towel
- One (1)- Tire iron

**Phase 1: Removal of the rear sway bar**

*\*Estimated time to complete: Minimum of 30-60 minutes.*

**Step 1:** Raising and securing the vehicle.

1) Park the vehicle on solid, level ground.

- **WARNING:** Never under any circumstance perform any work on unstable ground. This could lead to injury or death.

2) Set the transmission lever to Park (P) and shut off engine.

3) Set the Emergency brake and secure the front tires with the Tire wheel stoppers.

4) Go to the rear of the vehicle and locate the factory lift point.

5) Lift up the rear end of the vehicle at the factory lift point with the hydraulic floor jack.

- **Optional Step:** Before raising the rear end of the vehicle you can loosen the lug nuts to the rear tires with the tire iron. This will allow you to remove the tires *after* the vehicle is raised up in the air to allow for more light to reach the two bolts that will need to be removed later in the process.

6) Once the rear end is raised, locate the factory side-lift points towards the passenger rear doors and align a 1-ton jack stand to either side.

7) Slowly ease the weight of the car onto the jack stands by releasing the pressure on the floor jack.

- **Important Notice:** *Once the weight of the vehicle is set on the jack stands, shake the rear end of the vehicle to insure that the weight is properly distributed and balanced. If the rear end is not stable, then realign the jack stands and repeat the process until there is no movement.*

8) After determining that the car is stable, remove the floor jack and set it aside.

## Step 2: Removing the rear sway bar

- 1) Locate the 22mm nut and bolt on the right passenger side of the rear axle that secures the rear sway bar in place.
  - **Optional Step:** Spray the nut and bolt with WD-40 and let it soak for Five (5) Minutes. This will loosen up the rust and dirt to make it easier to remove.
- 2) Grab the 22mm deep end socket and attach it to the ½ in breaker bar.
- 3) Grab the second 22mm deep end socket and attach it to the ½ in ratchet.
  - **Optional Step:** Attach the 10mm socket to the ¼ in ratchet and remove the bolt that secures the ABS wire to the rear axle. This will make it easier to remove the 22mm nut and bolt.
    - ◆ **CAUTION:** Do not pull, tug, bend or damage the Anti- lock Brake System (ABS) wire. This will trigger the CHECK ENGINE light that will need to be reset with the proper equipment.
- 4) Grab the breaker bar with the attached 22mm socket and slide it over the 22mm nut.
  - **NOTICE:** The nut is located on the topside of the rear axle. The bolt end is on the bottom side of the rear axle.
- 5) Grab the ratchet with the attached 22mm socket and slide it over the 22mm bolt head.
- 6) Hold the ratchet in place while loosening the nut with the breaker bar.
  - **NOTICE:** The nut will be difficult to remove because it is torqued to 184 ft/lb. It will require a lot of force to remove.
- 7) Once it becomes easy to unscrew the bolt, hold the breaker bar in place and start unscrewing the bolt with the ratchet.
- 8) After the nut is completely unscrewed, pull the bolt out by sliding it downward and set it aside.
- 9) Repeat steps 2-8 on the left driver side.
- 10) Remove the rear sway bar by pulling it out of the rear axle towards the rear of the vehicle.

## **PHASE 2: installation of the TRD rear sway bar**

- 1) Grab the TRD rear sway bar and slide it into the rear axle. Make sure to align the holes where the bolts will slide through.
  - **NOTICE:** The TRD sway bar has a plaque on the middle of the bar. This plaque contains the letters "TRD." Make sure that the plaque is not upside down when installing. Otherwise flip the bar until the letters are right side up.
  - **Optional step:** Using the shop towel, wipe away any grime and dirt from the rear axle. This will help avoid getting any dirt or grime on the bolt threads.
- 2) Grab the 22mm bolts and slide them down into the rear axle and sway bar holes FROM THE TOP.
  - **NOTICE:** Make sure to slide the bolts in from the top as opposed to from the bottom. This will make it easier to remove if this process needs to be repeated in the future and it will make it easier to double check the torque specifications.
- 3) Grab a 22mm nut and screw it on to the right passenger bolt. Tighten by hand until you are unable to tighten. Repeat this step on the left driver bolt.
- 4) Grab the torque wrench and set it to 184ft/lbs. of torque.
- 5) Attach a 22mm deep end socket to the torque wrench and slide it over the right passenger side 22mm nut.
- 6) Grab the ½ in ratchet with the 22mm deep end socket and slide it over the right passenger side 22mm bolt head.
- 7) Holding the ½ in ratchets in place, begin torquing the nut with the ½ torque wrench until it clicks. This indicates that it has torqued the bolt to the required 184ft/lbs.
  - **CAUTION:** Once the torque wrench clicks, do not attempt to torque the bolt any further. Doing so could damage the bolt.
- 8) Repeat steps 4-7 on the left driver side.
  - **NOTICE:** if you removed the 10mm bolt, re-insert the bolt and tighten it. Do not apply a lot of force to it.
- 9) Grab the 2-ton hydraulic floor jack and align it to the rear lift point of the vehicle. Lift the vehicle until the weight of the car is only on the hydraulic floor jack.
- 10) Remove the jack stands on either side of the car and set them aside.
- 11) Slowly release the pressure from the hydraulic floor jack to lower the vehicle to the ground.
- 12) Once on the ground, remove the hydraulic floor jack and remove the front tire wheel stoppers on both sides.

### **PHASE 3: Test drive**

- 1) Slowly drive the vehicle around the block and listen for strange noises. If any strange noises occur, stop the vehicle and tow it home.
  - **NOTICE:** An example of a strange noise can be defined as any noise that was not present prior to the removal and replacement of the rear sway bar. Examples can range from metal to metal contact, a scraping noise that is coming from the rear suspension of the vehicle, or a squeaking that does not go away.
  
- 2) If the vehicle feels normal, the replacement of the rear sway bar was successful.
  - **NOTICE:** After driving 50 miles, check the torque on all nuts and bolts to verify that none of them have loosened up. This is a preventative measure to avoid any unforeseeable complications that might arise from a loosened nut or bolt.

### **Conclusion**

After performing this process, there should be a significant improvement in the way that the vehicle handles while turning at higher speeds. This will also reduce the understeer of the car and reduce the vehicle's body roll.

### **Terms to know**

**Understeer:** *To have a tendency to turn less sharply than is intended*

**Body roll:** *The load transfer of a vehicle towards the outside of a turn.*

**Chassis flex:** *Is a lack of rigidity in a motor vehicle's chassis.*

**Torque wrench:** *Is a tool used to precisely apply a specific torque to a fastener such as a nut or bolt*

**Rear sway bar:** *is a part of an automobile suspension that helps reduce the body roll of a vehicle during fast cornering or over road irregularities.*

**Mechanical skills:** *aptitude for understanding and using machines or tools.*