

# WMMTC

## AFC CONTROL



**Product:** Camaro Spec Adjustable Heavy Duty Sway Bar Package

**Part Number:** 440-402001-G

**Applications:** Chevrolet Camaro SS, and ZL1 2012 - Current

**Description:** These racing sway bars are engineered to be a lightweight, adjustable sway bar system for the 2012+ Camaro ZL1 and SS

**What's in the box:**

- (1) – Front Sway bar
- (1) – Rear Sway Bar
- (1) – Bag of bushings and grease

**Difficulty of Installation:** **Beginner** |-----x-----| **Advanced**

**Reason:** This product is a very straight forward to install and requires only basic tools.

**Expected Installation Time:** 2 Hour and 10 Minutes

**ZL1 Recommended Tools:**

- 8mm box end
- 13mm deep socket and ratchet
- 15mm box end
- 15mm socket
- 18mm box end
- 18mm socket
- Long ratchet extension and swivel

**SS Recommended Tools:**

- 7mm box end
- 13mm deep socket and ratchet
- 15mm box end
- 15mm ratchet
- Long ratchet extension and swivel

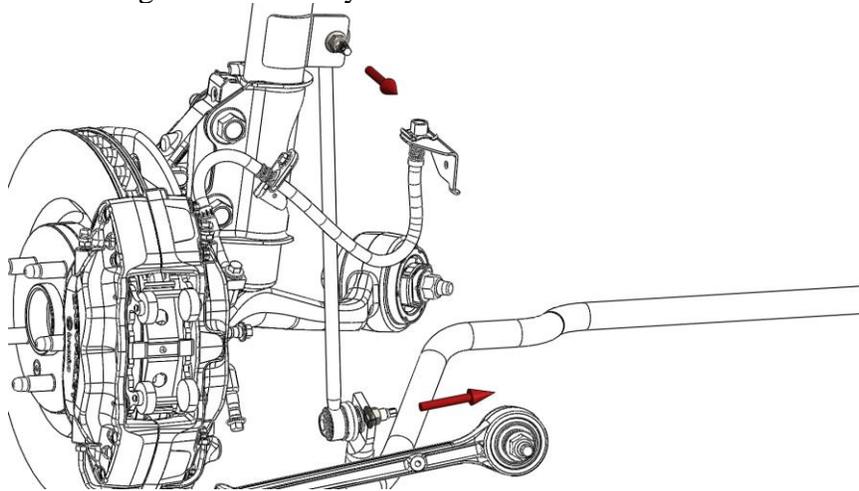


**Jack or lift car into the air. If using a floor jack, properly support the vehicle with jack stands. Remove wheels.**

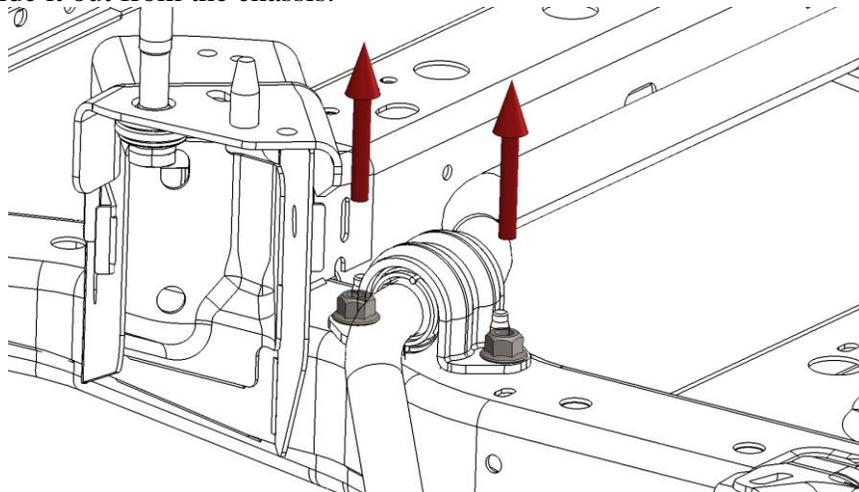
### **OEM Sway Bar Removal –**

For ZL1 Only – First remove the two button fasteners holding the ZL1 engine bay partition in place covering the front tie rods at both sides of the car and temporarily pull the flexible material aside to allow the sway bar to pass through. Remove ZL1 under tray.

For both ZL1 and SS Models - Remove the nuts attaching the end links to the front struts and front sway bar. Use an 8mm (7mm for SS) wrench to secure the end link stud and 18mm (15mm for SS) box end wrench to remove the nut. Be careful not to use a high speed driver such as an impact gun to remove the nuts from the end link studs. Galling of the threads and seizing of the nuts may occur.



Remove the four 13mm nuts attaching the sway bar bushing brackets to the sub frame. This is most easily accomplished from the top of the engine bay using a long extension, swivel, and 13mm socket. This can also be done from underneath the vehicle with a 13mm ratcheting box end wrench. Once the sway bar is free from the end links and brackets slide it out from the chassis.

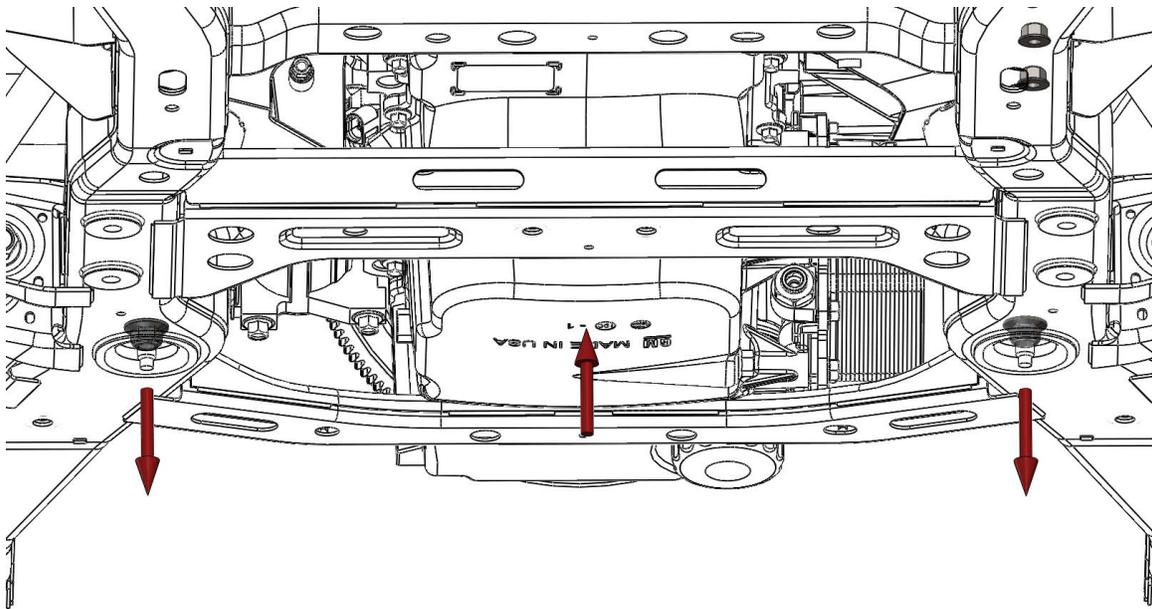


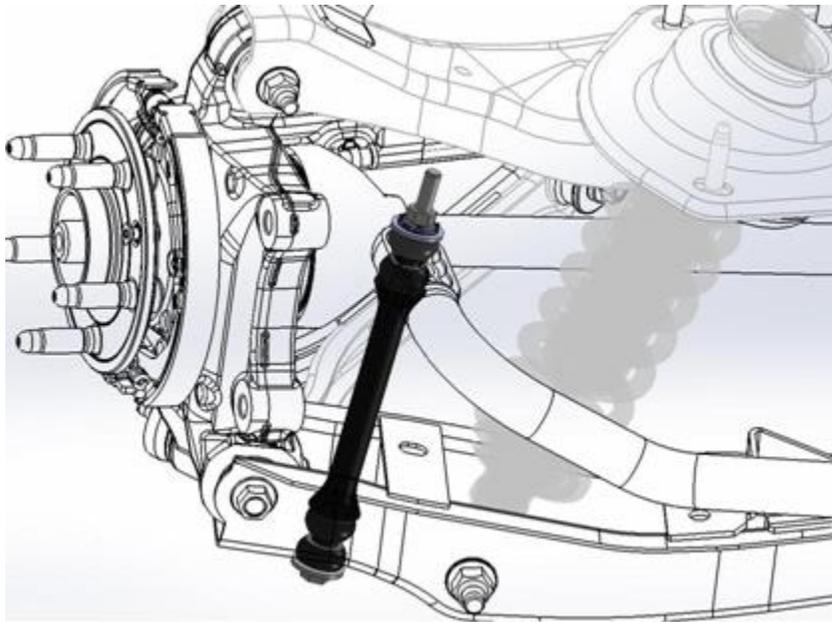
### **Special note about removing front sway bar from the vehicle**

While it may be possible to remove the front sway bar without lifting the engine, it certainly makes the job much more difficult. An effective way to gain more clearance needed to remove the OEM front sway bar is to lift the engine 2 inches. To do so, remove the two 18mm nuts securing the engine mounts to the front sub frame. Using a screw or floor jack and a protective block of wood carefully jack the engine up on a structural portion of the oil pan, being very careful not to damage the cast aluminum oil pan. Only lift the engine as much as necessary, about 2 inches or until the studs of the engine mounts are just about to lift out of the front sub frame. Once the engine is lifted and the sway bar is disconnected from both the end links and bushing brackets, slide and rotate the sway bar out from the vehicle.

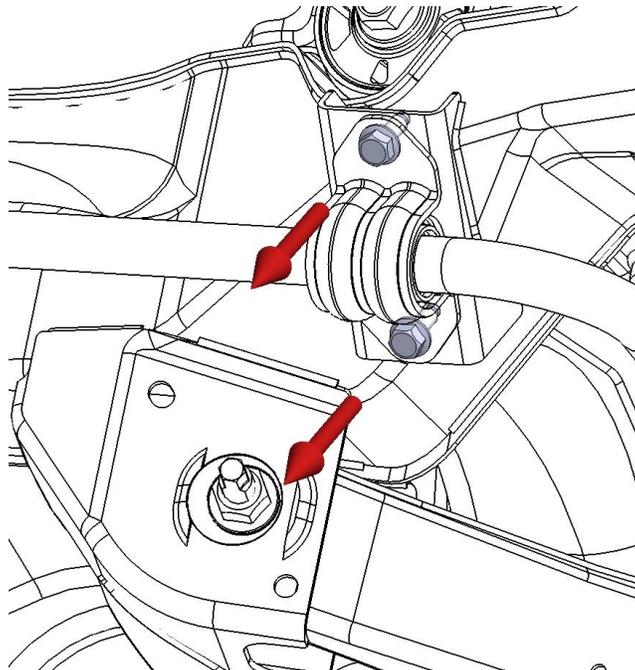
This procedure can be performed on both ZL1 and SS models.

**If you choose to use this method be extremely careful to support your engine properly as damage to the oil pan may require replacement of the oil pan.**





Disconnect factory rear end links from the sway bar using a 15mm socket on top and a 15mm wrench at the bottom to secure the center rod. Once the center rod is removed from the end link sleeve, remove the end link sleeve and set aside.



Unbolt the 2 15mm bolts from both sway bar bushing brackets. Remove rear sway bar from vehicle.

## Installation Procedure

### ZL1 Front

The aFe Control front polyurethane bushings are slit for ease of install. Slide in the front bar into the car and position the bar in place on the vehicle before installing bushings. Once properly positioned use the supplied grease and lubricate the inside of the front sway bar bushings and the outside of the sway bar just *outside* of the locating rings. Install the poly bushing over the bar by opening the bushing and slipping it over the bar. Slide the provided gold brackets onto the new bushings on the bar, position the holes in brackets onto the studs in the chassis and tighten factory nuts to secure entire sway bar assembly in place.

Reuse the factory end links to connect the new aFe Control sway bar to your front struts. Slide the end link studs into the sway bar and the front struts. Hold the end link stud in place and tighten the end link nut with the 8mm and 18mm wrenches to the appropriate torque value listed in the Fastener Torque section of these instructions.

Reinstall button fasteners holding the engine bay partition in place. Reinstall ZL1 under tray.

### Special note for 2012 SS Owners

Installation and positioning of the sway bar to the chassis is the same as the ZL1, however some 2012 SS models might have 10MM end link studs. In 2012 GM started updating the front end links to a stronger, 12MM version. This sway bar kit is designed around the 12 mm studs. If your car has 10MM end links, we recommend you purchase the 12MM, FE4 end links from GM. It might be necessary to drill out your strut to accommodate the larger 12mm stud.

### Rear

Slide rear bar in place between the chassis and the exhaust components.

Using the supplied grease, lubricate the inside of the rear sway bar bushing and the outside of the sway bar where the bushings will sit. You can test fit the sway bar and note the position of the bushings for lubrication. Install the bushings on the *inside* of the locking rings. Secure the sway bar assembly on to the subframe using the supplied gold brackets and the factory bolts. Reassemble rear endlinks to desired position on adjustable sway bar and torque to the specification listed below.

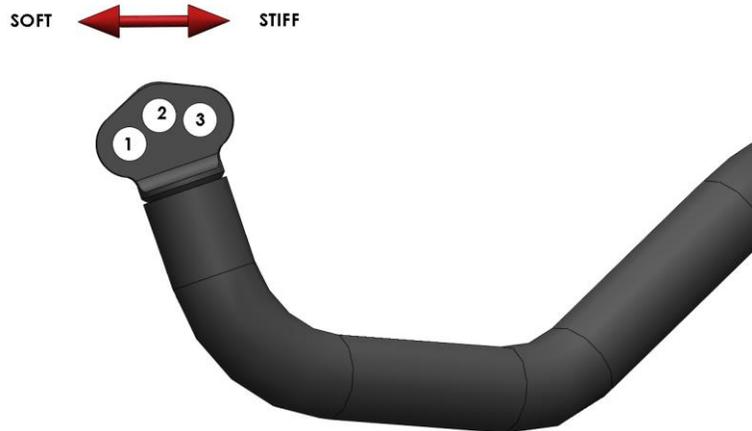
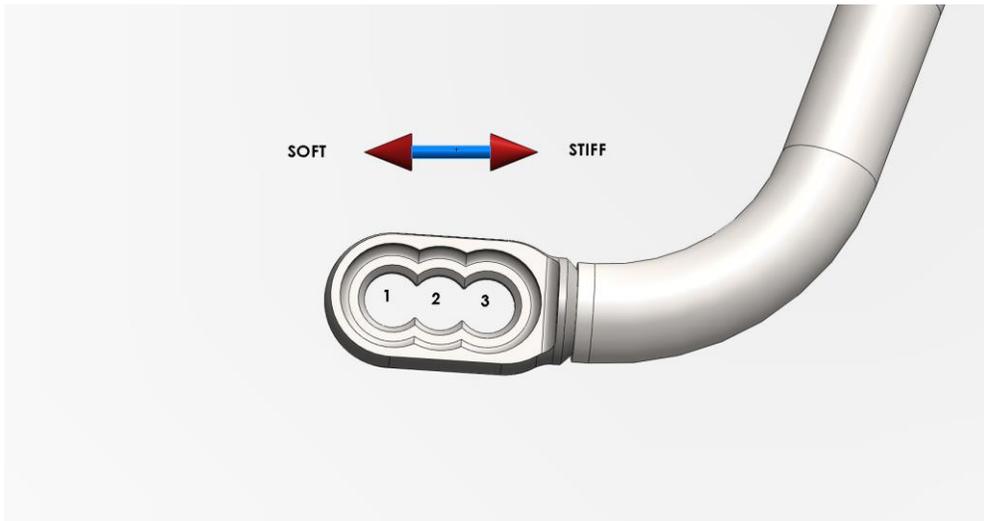
### Fastener Torque

Front End link Nuts	33 ft/lbs (45 N-m)
Front Bushing Bracket Bolts	34 ft/lbs (46 N-m)
Rear Endlink Nuts	19 ft/lbs (25 N-m)
Rear Endlink Bracket bolts	16 ft/lbs (19 N-m)

## Initial setup

For the initial setting of the sway bars we recommend position **2** for both the front and rear sway bars. For most applications this will be a satisfactory setting and is a good starting point for all cars.

Please contact aFe Control Customer Support with any questions!



## Sway Bar Tuning Guidelines

The sway bars are your largest tuning tool and are capable of affecting the balance of the car during each phase of a corner; corner-entry, mid-corner and corner-exit. However, the mid corner section is especially useful for sway bar tuning. Corner-entry and corner-exit are considered transition periods. During these transition periods the shocks are capable of modify the balance of the car. During mid-corner shock setting has no affect on the balance and adjustments are done with the sway bar. In other words, sway bars could correct a corner-entry or corner-exit balance problem but, shocks can not correct a mid-corner balance problem. This is the reason that sway bar tuning should ideally be done during mid-corner.

When tuning sway bars it is best to find a long constant radius turn at which you can incrementally increase speed until the limit of traction is found. There are three possible scenarios at the limit of traction.

1. The front tires exceed their limit of traction first. This condition is commonly called under-steer, push or tight.
2. The rear tires exceed their limit of traction first. This condition is commonly called over-steer, tail-happy or loose.
3. The front and rear tires exceed their limit of traction at the same moment. This condition is commonly called a four-wheel-drift or neutral balance.

After you have determined the behavior of the car it is possible to change this balance by changing the sway bar settings.

Let's take a look at case one for a moment. The front tires are being asked to carry a cornering load higher then they are capable of. However, the rear tires are not being asked to carry as high of a cornering load as they are capable of. By either moving the front sway bar to a softer setting or the rear sway bar to a stiffer setting you will remove some of the cornering responsibility from the front tires and add it to the rear tires.

The general rule of sway bar tuning is to soften the end that needs additional traction. It is also equally as effective to stiffen the end that needs less traction. Typically in the Camaro we tune with the rear sway bar because track adjustments on the rear sway bar are easier. Use the rear sway bar as the coarse adjustment and fine tune with the front which is a finer adjustment.

Lower numbers are a softer setting. Higher numbers are a stiffer setting.

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