

Sway Bar Swap From MKIV Supra TT To SC300

What do sway bars do?

Sway bars help control lateral force by compressing both sides of the suspension. Without a sway bar, when you turn right, the left side (outside) of the car dips while the right side (inside) extends the spring. These transfers a majority of the cars weight to outside of the turn. This is bad because you lose the advantage of 4 tires gripping to the road, and the driver gets a headache from his head smacking the door window. So Lexus installed a decent sway bar that is a balance between luxury and sport. These sway bars transfer the high suspension compression on the left side (outside) of the car to the right side (inside) suspension. Hence, they minimize the cars tendency to sway. The factory Lexus SC bar transfers a relatively low percentage of the compression to opposite car in order to maintain ride quality. If Lexus put a 100% stiff bar in the car, both sides of the suspension would be equal at all times. If you hit a bump with the right side of the car, the whole front of the car would feel the bump.

What is the difference between the SC and the Supra TT?

There are a few differences in the mounting position, stiffness, and geometry of the two cars. The SC has a very loose suspension that is between Luxury and Sport. The Supra TT has a suspension between Sport and Race. The SC front sway bar is hollowed out to provide more flex.

The bends in the bar are less sharp than the Supra's attributing to the looseness. Both cars use the same mounts, diameter, and endlinks. However, the rear of the

SC is a whole different setup than the Supra. The SC mounts the bar to the trunk floor while the supra utilizes a much more direct route across

the rear subframe mounts. The bar is shorter, stiffer, and of similar diameter overall. Because the bar does not zig-zag thru the rear of the car, it maintains dramatically less twist and therefore minimizes sway much more efficiently.



Front Bars SC (top) vs Supra (bottom)



Rear Bars w/mounts SC (bottom) vs Supra (top)

What parts do you need to do the swap?

You will of course need to search for some OEM Supra TT sway bars. I found mine for only \$40 shipped. Although you can reuse the front sway bar bushings, you should just purchase new ones. The subframe mounts are expensive but mine were pretty worn out as you can see. The rear brackets and bushings clip on to these subframe mounts and therefore they will need to be ordered too.

\$40-\$100 93-98 Supra TT Sway Bars

\$18.46 Front SC Sway Bar Bushings (L48815-24051) x 2

\$64.18 Rear Supra SubFrame Mounts Right (T52205-14020) x 1

\$64.18 Rear Supra SubFrame Mounts Left (T52206-14010) x 1

\$11.80 Rear Supra Sway Bar Brackets (T44832-14050) x 2
\$10.34 Rear Supra Sway Bar Bushings (T48818-14060) x 2

What tools will you need to do it yourself?

Jack with two or more jack stands
Lug wrench
Torque Wrench
12mm Socket
14mm Socket
22mm Socket
Allen wrench set
Dremel with metal shaving carbide bit or round file.
Time: 2.5hours
Skill level: 4 (1=can only change tire 10=Lexus Chief Mechanic)

Instructions:

Step 1: Safety First!! Park your car on a flat surface. Check your hydraulic jack for leaks. Insure you have gloves, safety glasses, and quality jack stands. Find a couple of bricks or blocks to stop the car from rolling while off the ground.

Step 2: Front suspension (45mins). Un-torque both wheels before jacking. Jack front of the car on both sides and remove both front wheels. Remove 14mm endlink bolt where it connects to the swaybar. This bolt maybe rusted and require the use of an allen wrench to assist. Next, remove the lower splash guards by removing the 12mm screws. This will give you access to the sway bar mounts. Using a 12mm socket, remove 2 bolts in each side. Now wiggle the bar out being careful not to damage any hoses or the belts. You may need to remove the passenger side plastic cover to free up more space. Once out of the car, simply reverse these steps bolting the Supra's bar back in the same place. Before tightening the mounts, insure that you center the bar in the bushings so that both endlinks are vertical and equal. Replace the covers, 14mm endlinks nuts, and front wheels.

Step 3: Rear Bar Removal (30mins). No need to remove rear wheels. CAUTION: use blocks, or bricks to stop the car from rolling forward while lifting the rear of the car. Lift car on both sides equally. Remove 14mm endlinks nuts where the sway bar ends. You again may require the aid of the allen wrench of nut lubricant like wd40. Unbolt 2 bushing brackets by removing 4 12mm bolts. Remove sway bar, you may need to separate the muffler pipes at the joint to allow for space to pull the bar thru. However, there is enough space to get it out without unbolting muffler.

Step 4: Subframe mount swap (45mins). Now, you need to remove the factory SC subframe mounts. You will require the 22mm socket with a fairly long socket wrench, breaker bar, or pipe extension to apply enough torque. The 22mm nut holds the subframe to the



SubFrame Mounts SC
(left) vs Supra (right)



SubFrame Mounts SC
(left) vs Supra (right)

mounts. You can remove both of the nuts without worry. However, you may not want to remove the both mounts at the same time because the suspension can shift and be difficult to bolt back together. I would suggest removing one side at a time. Start with the right and unbolt all 4 12mm bolts. Then back the left side mount out about ½ way. This will allow the subframe mounts to slide off without touching anything else. You will now need to slightly modify the Supra subframe mounts by grinding out the inside bolt holes to match up better. It is highly recommended to do this step for proper alignment. I used a dremel with a carbide grinding bit that took only 1min per mount. When you get these lined up, install the new mounts. They both should have arrows that show the direction to the front of the car. However, the sway bar mounts are offset and need to be mounted so that they are closer together. If you install them on the wrong sides, the sway bar mounts will be farther apart and not allow for the free movement of the bar.



Step 5: Mounting Supra Bar (30 mins): Snake the new bar into position. Sway bar brackets slide onto the rear subframe mounts. Reuse the two 12mm bolts from the SC sway bar mounts to bolt the new sway bar mounts to the subframe mounts. Bolt the endlinks to the new sway bar.

Performance difference:

The car is more agile while maintaining excellent ride characteristics. I started with the rear bar first, and then drove it around the block. Noticeably more oversteer as I

could easily throw the rear end around but the front still lagged behind and was sloppy. After changing the front bar, the two worked in harmony to allow for incredible control while maintaining excellent ride. I could feel the difference immediately after taking the first turn. The new setup minimized body roll and made the car respond much faster to quick slaloming. I do not have a skid pad, g-analyst, or lateral meter. But I would guesstimate that the suspension handles about 30% better. The factory spec states .87g on a skid pad. I would think that the car now handles closer to the .98g that the Supra TT specs at. However, your mileage may vary because I have the Eibach lower springs and larger wheels.

Conclusion:

While this upgrade begins as a \$40 purchase of used Supra TT sway bars, it ends up costing about \$200. For the money, I would say that it is worthwhile and an excellent upgrade. If you were going to upgrade to the Supra TRD sway bars or any other Supra sway bar setup, you would still need to do the “lower subframe mount” swap. Therefore, it is an excellent value if you do upgrade you will not lose your investment.