

KARCEPTS

ENGINEERED SOLUTIONS



Installation Instructions for Part #: KFSB-AP-XX Karcepts Front Sway Bar Kit for 2000-2009 Honda S2000

Specifically for track/autocross use, this sway bar kit offers zero compromises:

- Billet aluminum arms optimized for strength and weight utilizing the latest FEA software
- Like a blade style sway bar, roll stiffness can be adjusted quickly, and with one wrench
- Unlike a blade style sway bar, adjustments are finite, with no possibility of slipping position
- Rate adjustments are made with the vehicle on the ground, even at low ride heights
- 6 adjustment positions per sway bar arm
- Light weight, zero deflection solid sway bar mounts provided for precise feel
- Low friction, lubrication free, dirt resistant, solid polymer bearings require no maintenance
- Heat treated and plated steel alloy PTFE lined endlinks and all hardware included
- 32mm (1.25") diameter high-grade spring steel splined center section for consistent rates
- Center section available in many different wall thicknesses
- Stiffest setting yields 11% more angular twist on a given center section compared to any other splined style S2000 front sway bar on the market

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Parts Included With S2000 Front Sway Bar Kit

DESCRIPTION	QTY
HEAVY DUTY CABLE TIE	4
SOLID SWAY BAR MOUNT	2
M10X25 FLANGE BOLT	4
SPLINED SWAY BAR CENTER SECTION	1
CLAMP COLLAR	2
ANTI-SEIZE	1
LEFT SWAY BAR ARM	1
RIGHT SWAY BAR ARM	1
M12X50 SOCKET HEAD CAP SCREW	2
MALE ENDLINK HALF	2
3/8" ENDLINK LOCK NUT	2
FEMALE ENDLINK HALF	2
3/8" FLANGE NUT	*6

* Only quantity of 4 needed for assembly. Quantity of 2 extra provided as spares.

Tools Required

Torque Wrench

Sockets - 17mm, 14mm, 10mm hex bit, 9/16", 3/16" hex bit

1/2" Open End Wrench

9/16" Ratcheting Combination Wrench

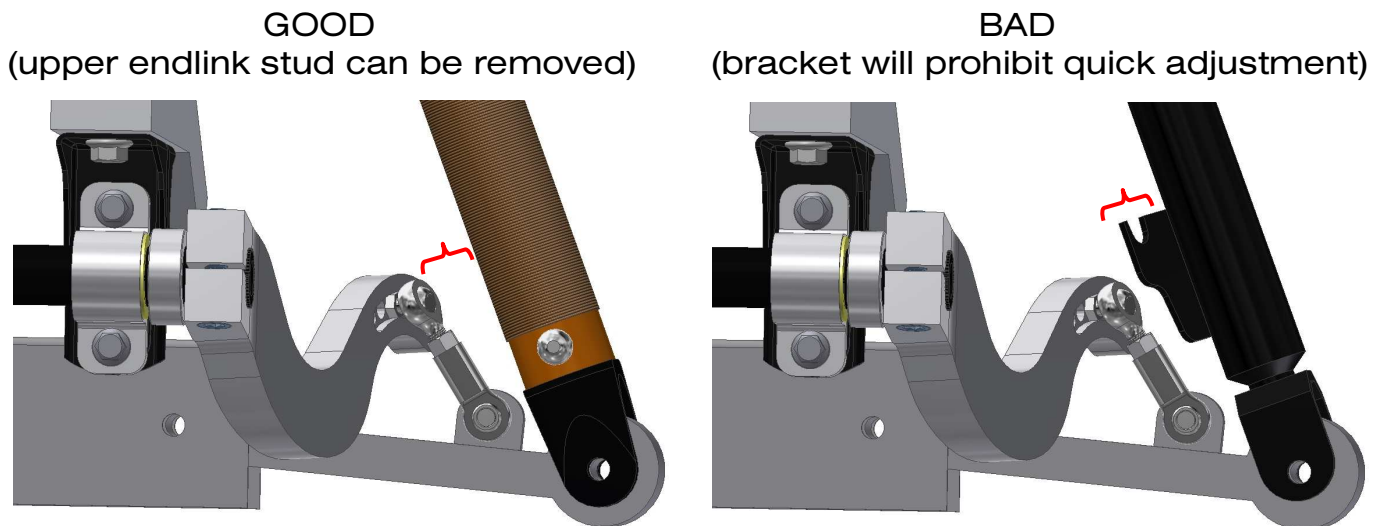
Tape Measure

Rubber Mallet

Note: Read all instructions before attempting installation. If you do not believe you are qualified in performing the necessary installation, please find an experienced professional who can. Due to the nature of racing components (external shock reservoirs, piggyback canisters, aftermarket brakes/brake lines, oversized wheels/tires), it is your responsibility to make certain adequate clearances between aftermarket chassis components and our sway bar are met. Karcepts, Inc. will not be held responsible for damaged components due to unresolved interference issues during installation.

1. Quick Adjustment Preparations

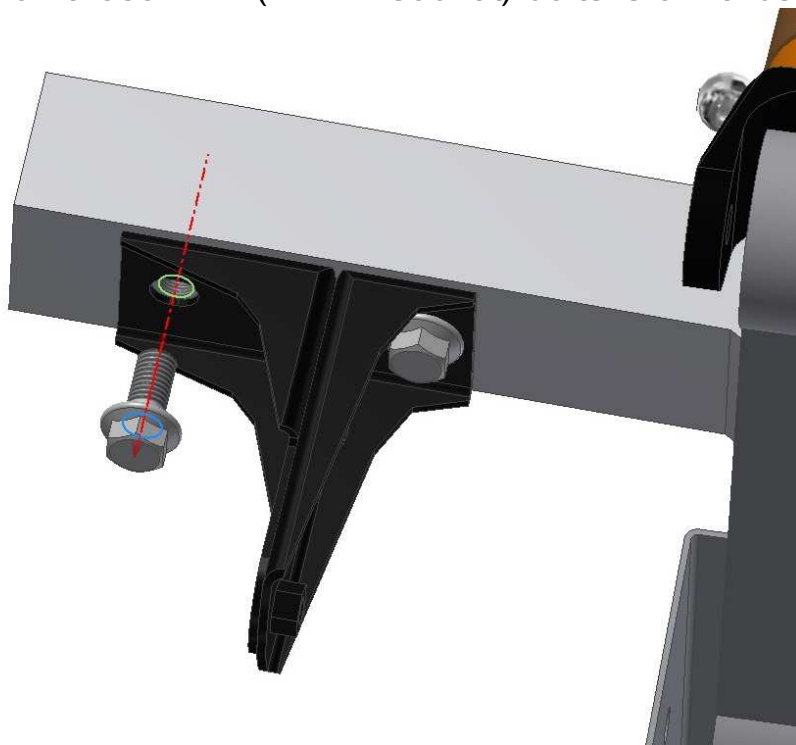
The quick adjustment feature of this sway bar kit relies on being able to remove and reposition the upper endlink stud into a new sway bar arm hole location while the vehicle is at ride height. Brake line mounting brackets, remote reservoir lines, nitrogen fill connections, and any other potential obstructions mounted inboard of the shock body will prohibit this feature. OEM shocks, Koni Sport shocks, and any other shocks with OEM style brake line mounting brackets can still retain quick adjustment functionality when swapping the left shock to the right side, and vice versa (effectively eliminating the interference without having to grind off the brake line brackets completely). Always re-secure brake lines to the shock bodies with heavy duty cable ties (provided). It's best to tie brake lines as high as possible onto the shock bodies, as this will keep the lines out of the way when performing an adjustment.



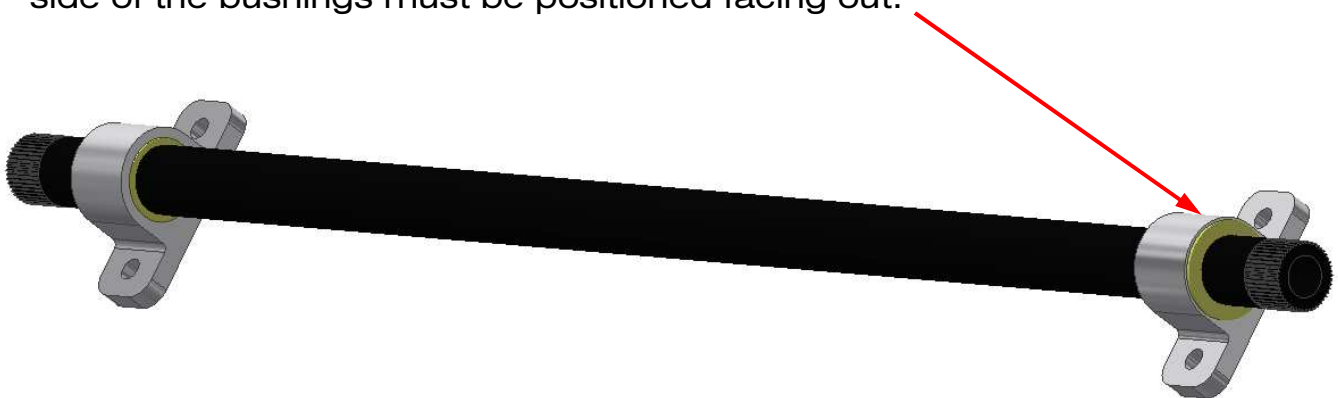
If choosing to not alleviate brake line bracket interferences for the quick adjustment option, the sway bar will function without interference issues; however, often times the brake lines themselves may still need to be cable tied higher onto the shock body to avoid potential contact with the sway bar arms.

2. Solid Mount/Center Section Installation

- A. Raise the front of the vehicle and support it with jack stands.
- B. Remove the front wheels, splash shield, sway bar, sway bar bushing holders, and endlinks.
- C. The factory sway bar mounting brackets (OEM steel brackets that mount under the frame rails) must be utilized in conjunction with the Karcepts Solid Sway Bar Mounts. Never use any other aftermarket sway bar mounts with this kit as they will alter the geometry. If the factory brackets are currently installed on the vehicle, now is a good time to double check their tightness to the frame. The factory torque spec on these M12 (17mm socket) bolts is 61 ft-lbs.



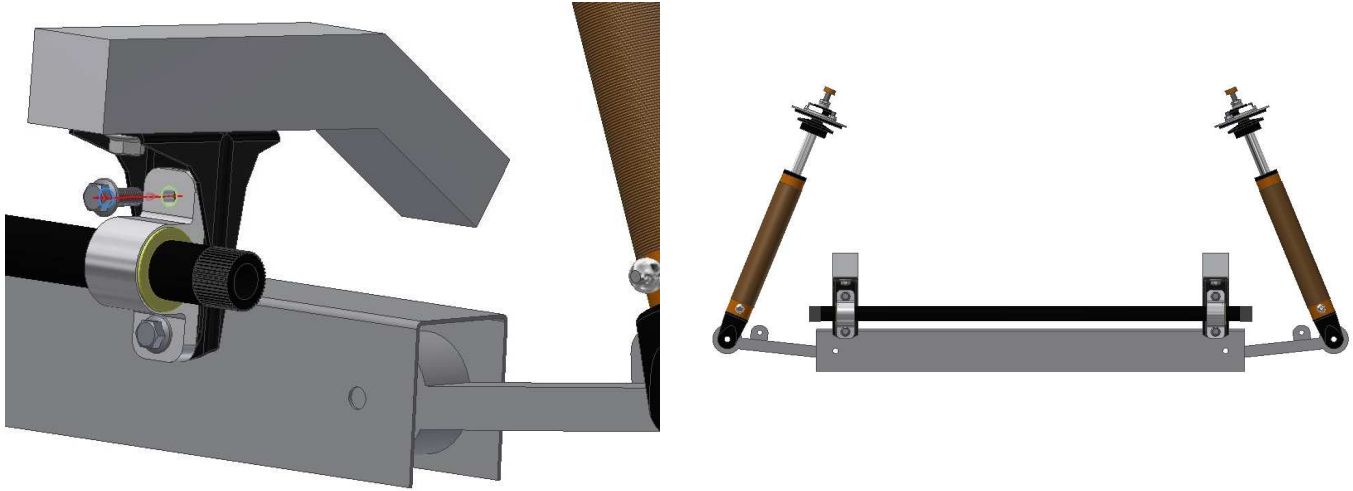
- D. Slide a solid mount onto each end of the splined center section. Upon first install, it can be normal if the mount bushings require some effort to slide onto the shaft. Note the orientation of the bushing inside each mount. The flanged side of the bushings must be positioned facing out.



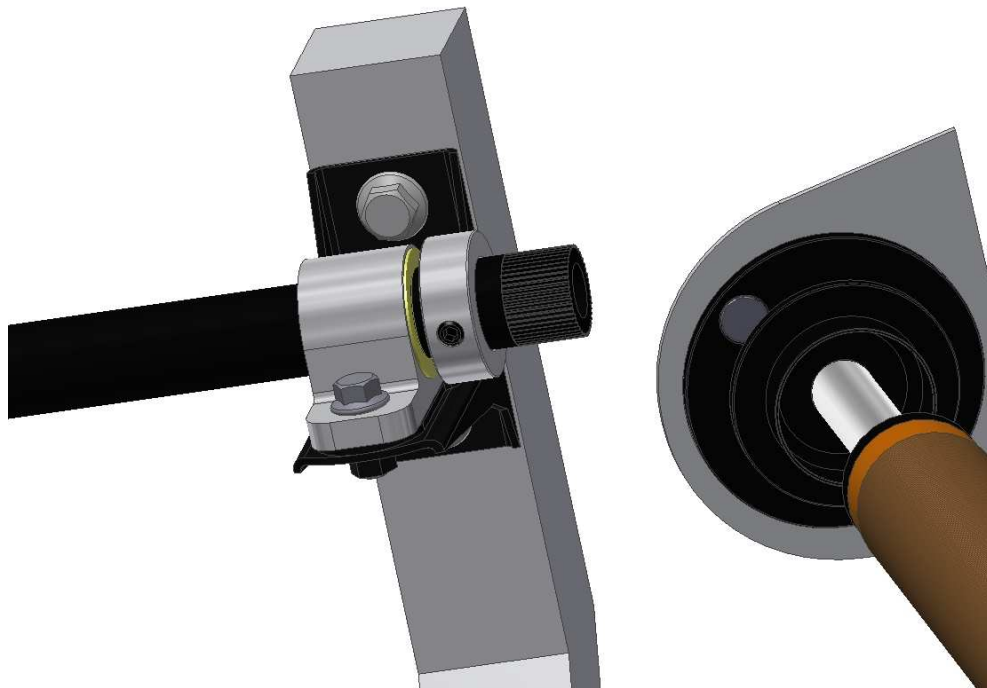
Do not oil the bushings with any form of lubricant. The polymer bushings are infused with solid lubricants and must break-in and run dry.

2. Solid Mount/Center Section Installation (continued...)

- E. Install the solid mount/center section assembly onto the factory sway bar mounting brackets with the provided M10x25 flange bolts and torque to 29 ft-lbs with a 14mm socket (Note: the factory brackets can be easy to cross-thread, so hand thread all 4 bolts finger-tight before torquing). Do not be alarmed if observing high friction levels when trying to rotate the center section at this time. With use, the bushings will break-in and free up quickly.

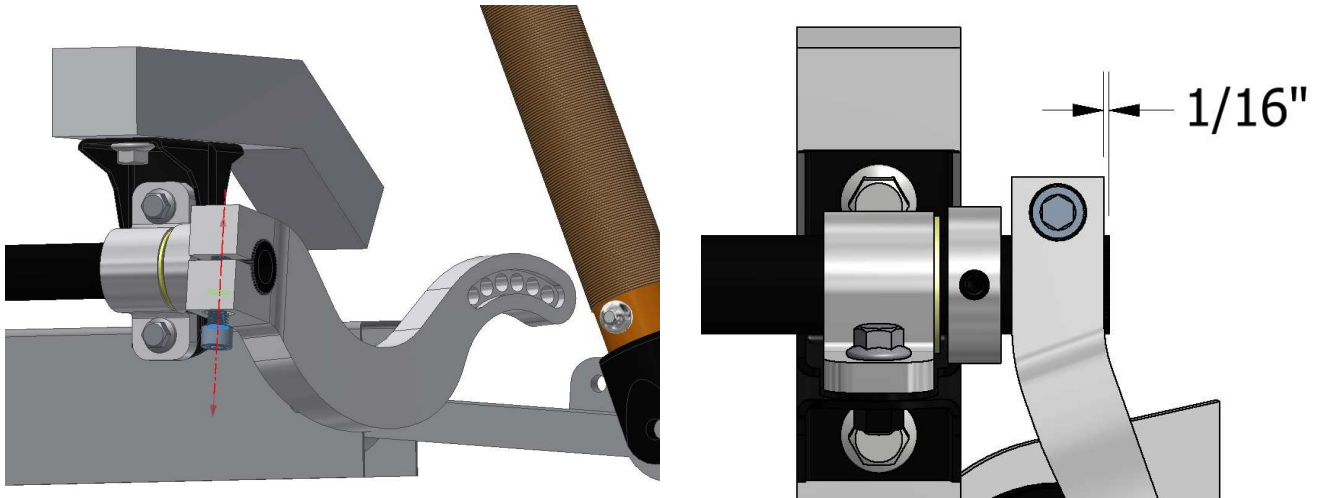


- F. Slide a clamp collar over each end of the splined center section. Leave the collar screws loose. There is no need to center the bar perfectly at this time. You will not be centering the bar based off how much shaft is protruding from the sides of the mounts as that does not always give a clear indication of true center (due to subframe position, eccentric alignment bolt positions, as well as excess hole clearance in the factory sway bar mounting brackets to the frame).



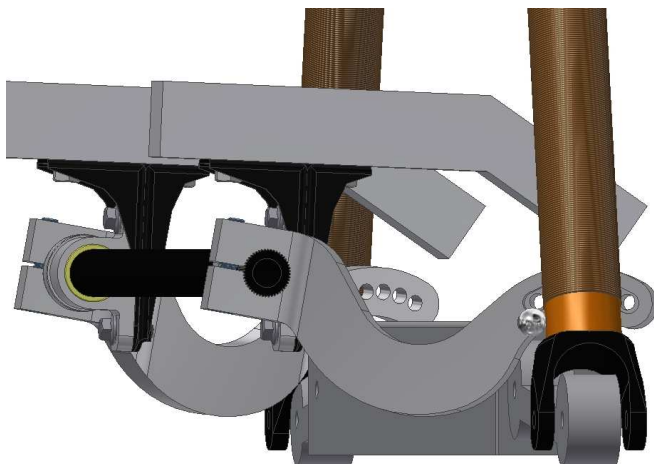
3. Sway Bar Arm Installation

- A. Apply the provided anti-seize onto the splines of the sway bar arms. Coat every tooth of the splines liberally; any excess can be wiped away after install.
- B. Slide the left sway bar arm over the splined end of the center section, leaving 1/16" of shaft protruding past the end of the arm. This is the optimal arm installation position. Thread the M12x50 socket head cap screw through the arm; and with a 10mm hex bit socket, torque to 75 ft-lbs.

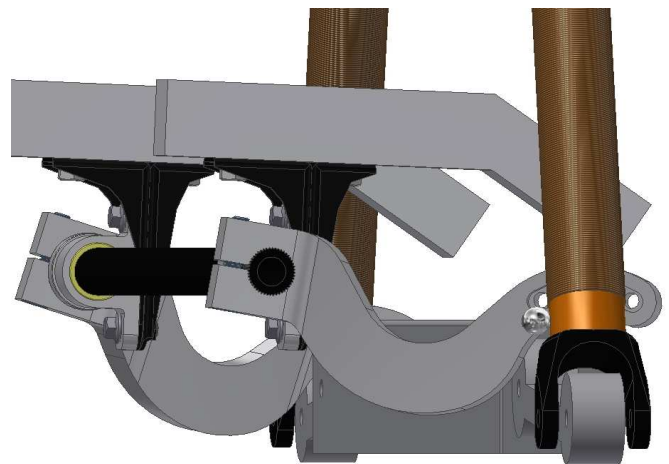


- C. Repeat the above for the right sway bar arm, making certain to clock the right arm onto the shaft splines to an exact mirror image as the left arm.

Arms clocked properly



Arms clocked incorrectly (off one tooth)



4. Quick Adjustment Setup

The quick adjustment feature of this sway bar kit is dependent upon:

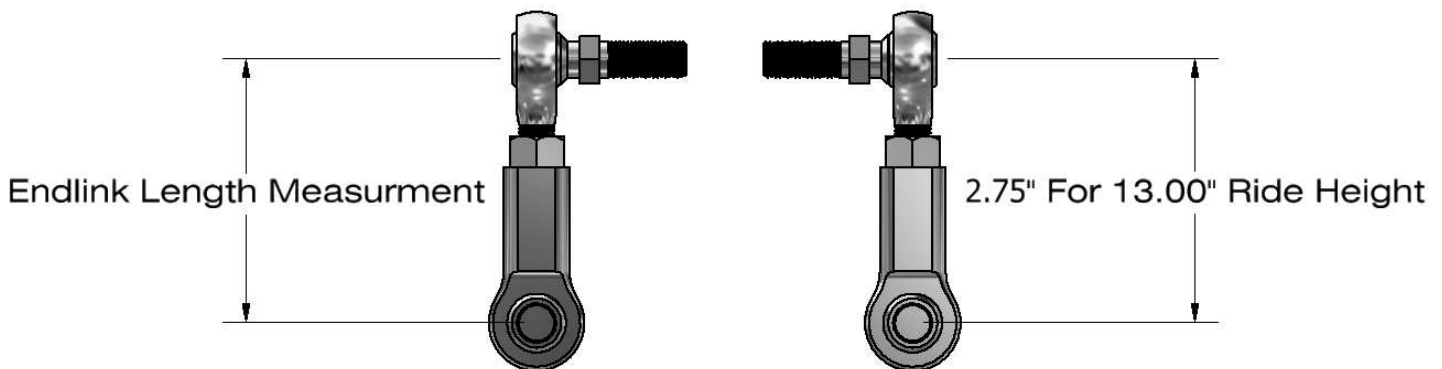
1. Arm installation position relative to center section (Section 3.B.)
2. Proper endlink length (subject to ride height & arm installation position)
3. Correct sway bar centering

Use the below table to determine ideal endlink length for your ride height:

RIDE HEIGHT ^{*1}	ENDLINK LENGTH ^{*2}
12.50"	2.63"
12.75"	2.69"
13.00"	2.75"
13.25"	2.81"
13.50"	2.88"
13.75"	2.94"
14.00"	3.00"
14.25"	3.06"
14.50"	3.13"

^{*1} Ride height is measured from the center of the hub to the bottom edge of the fender.

^{*2} Endlink length is measured from center of ball to center of ball.

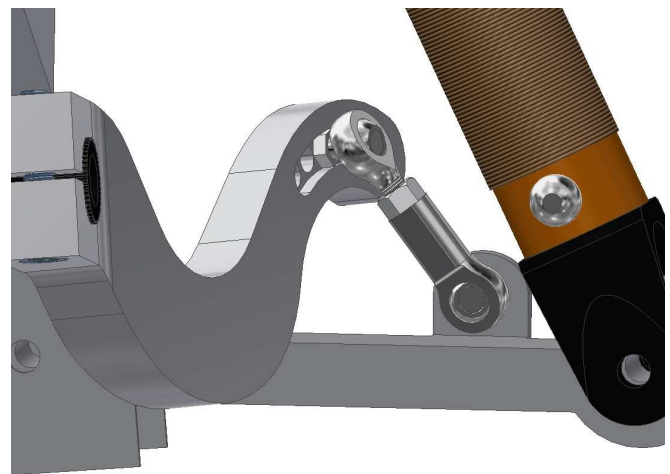
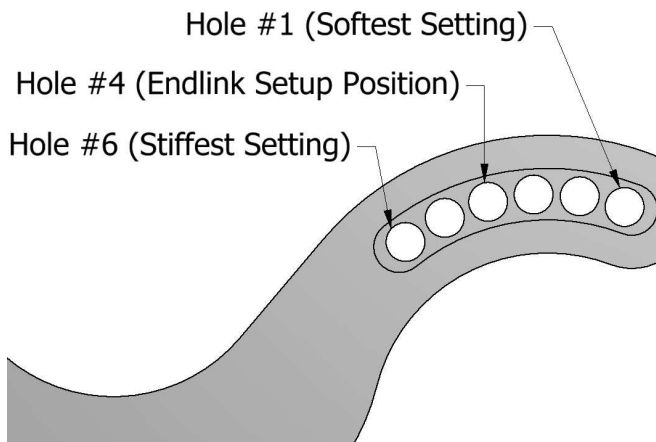


- A. Assemble left and right endlink assemblies with the provided male and female endlink halves and 3/8" endlink lock nuts. To start, set endlink lengths based on the table above. Note that when first attempting quick adjustment, if any interferences are discovered which prevent the adjustment, it may be beneficial to reset the arm installation position to a larger value than the specified 1/16" dimension from Section 3.B. If needing to perform this correction, endlink length must be increased the same additional increment in length that was added to the 1/16" arm installation position.

Depending on corner balance (differing heights per side of the car w/o driver), you may realize the left link and right link should differ in lengths per the above table. At this time, find a happy medium to set both endlinks to the same length. We will need the endlinks at equal length in order to center the bar at full droop. In future steps (after centering the bar), you may re-correct endlink length if finding the need to even do so. We have built in fairly large clearances on this design for ease of quick adjustment, so endlinks set at equal lengths even with slightly differing left to right ride heights most likely will not need any correction.

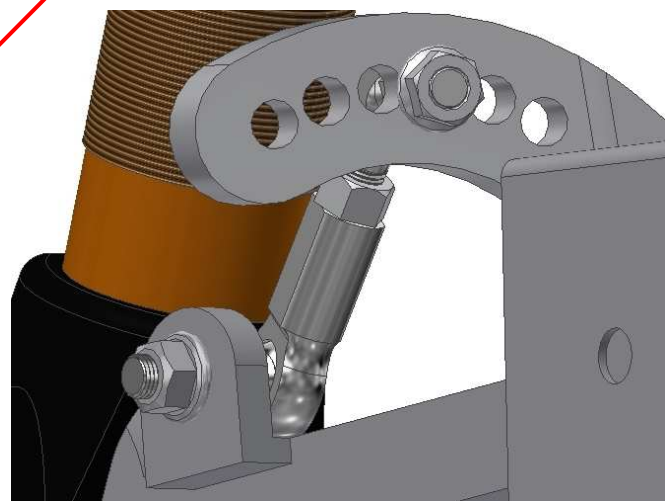
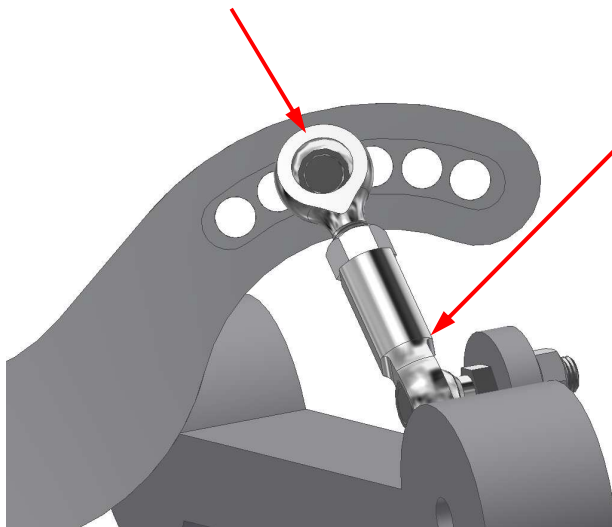
4. Quick Adjustment Setup (continued...)

- B. Install the male half of endlinks into Hole #4 of each sway bar arm and secure with the 3/8" flange nuts. Proper torque on this nut is 23 ft-lbs, but since this is the adjustment nut, it's impractical to assume you'll be using a torque wrench every time you make a sway bar change. Just tighten these nuts by feel approximately close to 23 ft-lbs. Plan to use a 9/16" ratcheting combination wrench on this nut for quickest adjustments when the vehicle is on the ground. Install female half of endlinks into the FRONT side of the lower control arms (NOTE: The factory endlinks were mounted on the rear side of the lower control arms). Use a 1/2" open end wrench (to hold the endlink studs from spinning) along with a 9/16" socket to secure the lower 3/8" flange nuts, and torque to 28 ft-lbs. Two extra 3/8" flange nuts are included as spares in case any get lost during adjustment.



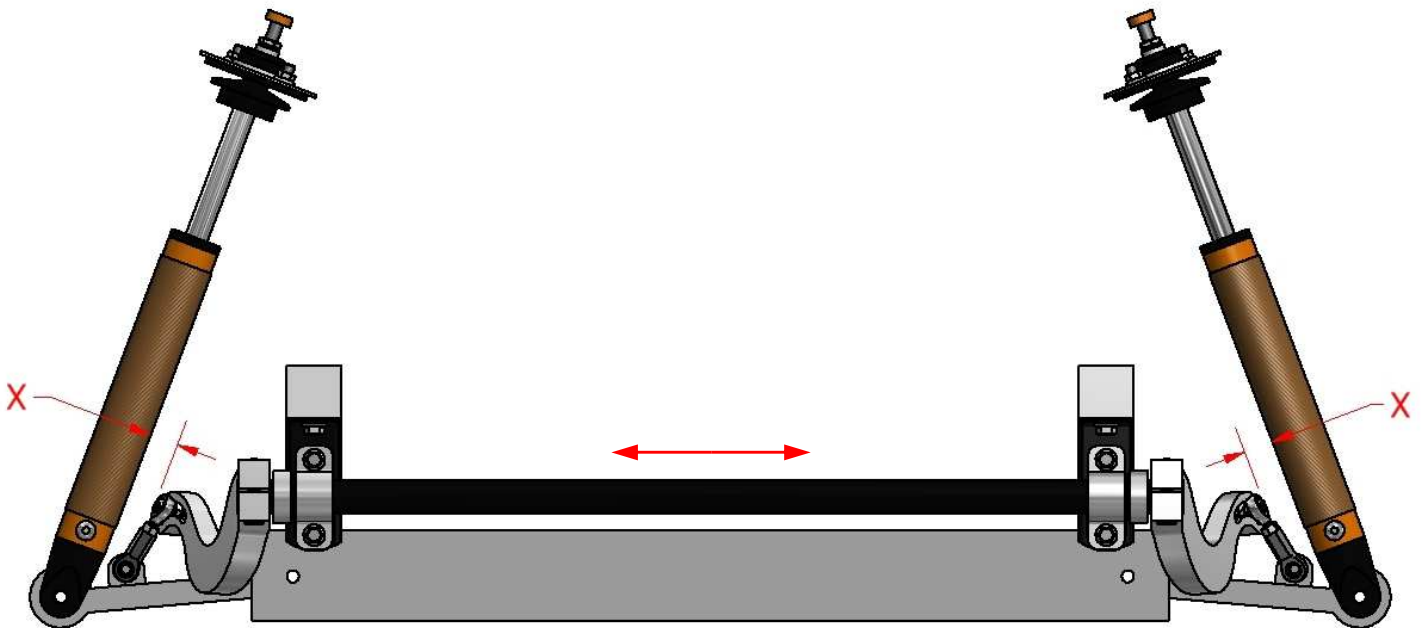
Male half of endlink

Female half of endlink



4. Quick Adjustment Setup (continued...)

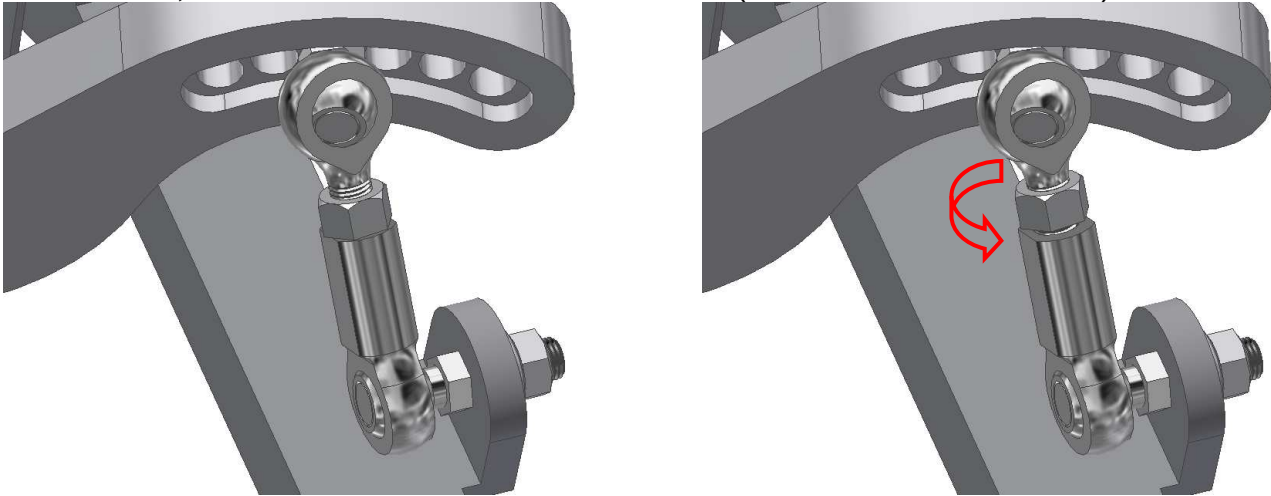
- C. Assuming all bolts and endlinks are tight (but with clamp collars still loose), center the sway bar assembly by comparing the distance between the endlinks and the shock bodies. Use a tape measure (or calipers) to assist in the centering. Again, centering the bar based off how much shaft is protruding from the sides of the mounts does not give a clear indication of true center (due to subframe position, eccentric alignment bolt positions, as well as excess hole clearance in the factory sway bar mounting brackets to the frame). You may get lucky where that method could work out; but chances are, you must base the centering off the distance between endlinks and shock bodies as shown below. If necessary, use a rubber mallet to tap on the sway bar arms to adjust the position until center is found. Once in position, slide clamp collars tight up against the bushings of the solid mounts and torque clamp collar screws to 11 ft-lbs (132 in-lbs) with a 3/16" hex bit socket. Make certain there is no clearance between the solid mounts and the shaft collars once torqued. After 500 miles (or one race event) of break-in, grab a hold of the sway bar center section with both hands, and with all your strength, try to rock the bar side to side, back and forth (make sure the vehicle is securely supported before doing so). If you feel any side to side play (which is prone to occur after break-in), you will need to reset the shaft collars to get rid of the excess clearance. Any side to side play will attribute to knocking or clanking noises and may promote excessive wear on the bushings.



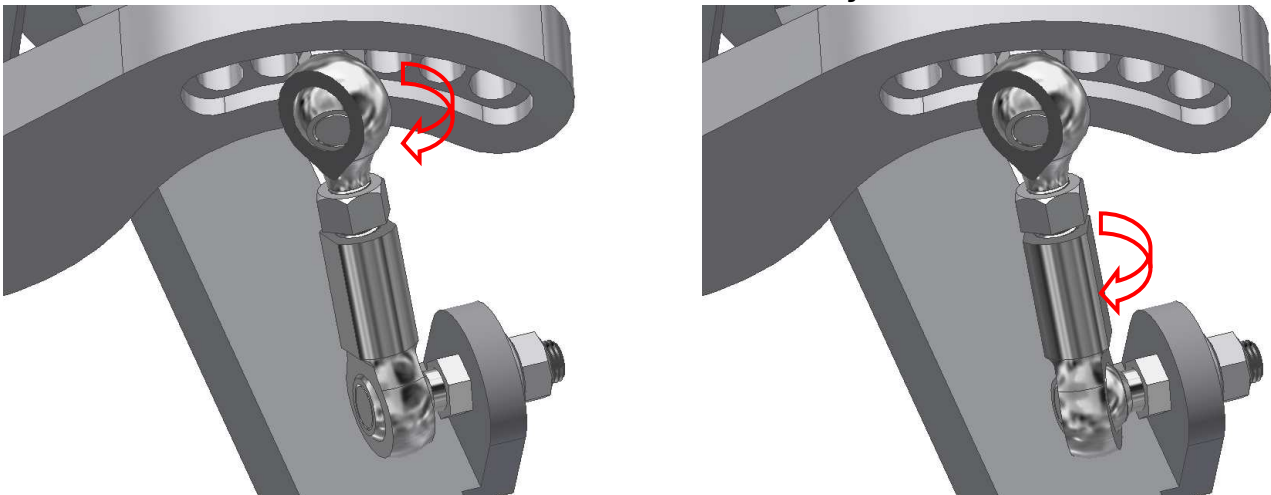
4. Quick Adjustment Setup (continued...)

- D. The endlinks must be set to achieve maximum articulation when installed in the current #4 Hole setting.

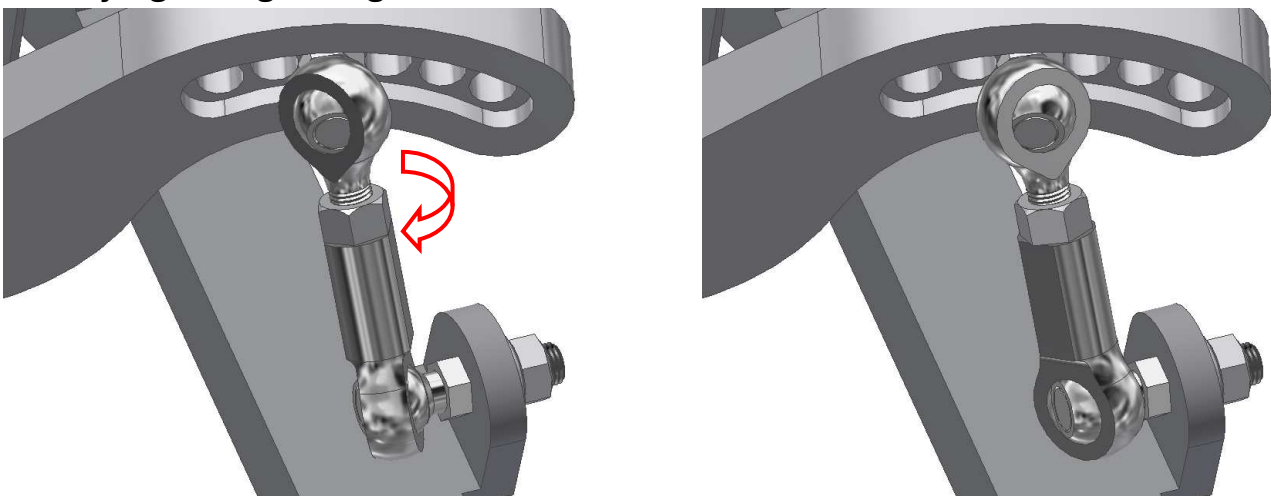
To do so, first loosen the endlink lock nut (middle nut of endlink).



Now, rotate both the top and bottom of the endlink halves clockwise until they bottom out on themselves and will not rotate any further clockwise.



Finally, tighten the endlink lock nut. Once secure, you can rotate the endlink by hand and should observe a good amount of sweep back and forth on the link, verifying a large range of articulation has been achieved.



5. Quick Adjustment Procedure

Reinstall the splash shield, wheels/tires, and get the car back on the ground. Drive the vehicle for 500 miles (or one race event) to allow the bushings and endlinks time to free up. The car is now ready to test the Quick Adjustment Procedure.

The adjustment procedure of this sway bar kit should take no longer than 3 minutes to complete with adequate practice and knowledge of the product. Before attempting to make a sway bar adjustment quickly at the track or between autocross runs, we highly recommend spending a good hour practicing and gaining familiarity with the product/procedure. When first learning the procedure, it's best to crank the wheel full lock to the right when adjusting the left arm position and vice versa (so that you can view what you are doing). With experience and feel, you will want to keep the wheels pointed straight ahead (which decreases the amount of time to adjust). Follow the below steps exactly as provided. If trying to take any short-cuts with the procedure, you may cause yourself excess time or frustration.

1. Loosen and remove the adjustment nut on the back side of the left sway bar arm with a 9/16" ratcheting combination wrench. Set the nut aside and remove the stud of the endlink from the arm. If there is any difficulty removing the stud, skip to Step 2. Articulate the endlink around as required, and insert the stud of the endlink into the new desired hole position. Pay attention to the wrench flats on the endlink stud as well as the machined slot of the sway bar arm. The flats will need to lie within the slot of the sway bar arm. At this initial stage it can be common for the endlink stud to not want to install completely within the slot of a new hole location (pushing up or down on the sway bar arm itself can help seat the stud). If there is any difficulty seating the stud fully within the arm, just leave the stud sitting partially inserted into the new hole position. If able to seat the stud fully into the new hole/slot (3/8" of thread will protrude from the back of the arm), thread back on the adjustment nut, but leave the nut a few turns loose.
2. Loosen and remove the adjustment nut on the back side of the right sway bar arm. Since the left adjustment nut is loose, it should be extremely easy to remove and reposition the right endlink. If any difficulties, simply push up or down on the sway bar arm, and all should be free to reposition. If there are still problems removing the stud, skip to the Quick Adjustment Troubleshooting on the following page. Affix the right endlink stud into the new desired adjustment hole by making certain the wrench flats of the stud are seated fully into the machined slot of the arm. Reinstall the adjustment nut. If you were able to seat the left stud fully into the hole/slot of the left arm from Step 1, you may tighten the right adjustment nut completely; otherwise, leave the right nut a few turns loose.
3. If you were able to seat the left stud fully from Step 1, then your final step is to simply tighten down the left adjustment nut completely and you are done with the quick adjustment. Otherwise, you now need to complete the adjustment and seating of the left endlink stud into the new desired hole position (while the right nut is still loose). Reinstall the left adjustment nut and tighten completely. Now go back to tighten the right adjustment nut and you are done with the quick adjustment.

6. Quick Adjustment Troubleshooting

If following the Quick Adjustment Procedure, there should be no issues completing all 3 steps. If any difficulty with the procedure, this can mean one of a few things:

1. If the vehicle is sitting on extremely un-even pavement, there could be difficulties due to additional preload. It is very possible to perform the procedure on a sloped or inconsistent surface; but when too extreme, issues removing and installing the endlinks can occur. Reposition the vehicle on a more level surface and retry the procedure.
2. Double check to make certain left and right sway bar arms are clocked in sync with each other.
3. Double check to make certain the sway bar is centered properly.
4. Double check to make certain the proper endlink lengths are used per the table in Section 4. If ride height is different between left and right sides of the vehicle (w/o driver, due to corner balance settings), set left and right endlink lengths accordingly. Additionally, if the arm installation position was adjusted to a larger value than the specified 1/16" dimension from Section 3.B., the endlink lengths must be increased (from the table values) the same additional increment in length that was added to the 1/16" arm installation position.
5. Double check to make certain endlinks have been set to achieve maximum articulation per Section 4.D.
6. If all else fails, then an additional endlink adjustment will be necessary. To begin, first determine which endlink would need to be lengthened and which side would need to be shortened in order to remove the preload. On the link that would need to be shortened, crack loose on its middle lock nut and shorten the link one full turn. Re-test the Procedure. If still difficult, move to the other side of the vehicle and lengthen that side's endlink one full turn. Re-test the Procedure. Keep adjusting and re-testing the Quick Adjustment Procedure until you are able to remove and reposition the links freely into and out of the arm holes. Alternate sides when adjusting the links in order to keep both links as close to the Section 4 table values as possible. To test thoroughly, it's best to make an adjustment, then test drive the vehicle briefly, stop the vehicle on a new area of pavement, and try again. It should not be necessary to deviate from the endlink length table values by more than 1/8" per side. Additionally, do not allow endlink lengths to pass the extremes of the table values (i.e. no endlink should be shorter than 2.63" or longer than 3.13").

If there are any issues installing endlinks into Hole #2 due to shock body interference, this can mean one of two things:

1. Test installing endlinks into Hole #2 on both sides of the vehicle. If only one side has interference, the sway bar is not centered properly. Re-center the sway bar correctly and try again.
2. Shock bodies larger than 2.3" in diameter may encounter this interference. To correct, reset the arm installation position (Section 3.B.) to a larger value than the specified 1/16" until clearance is achieved. Endlink length must also be increased from the Section 4 table values by the same additional increment of length that was added to the 1/16" arm installation position.

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