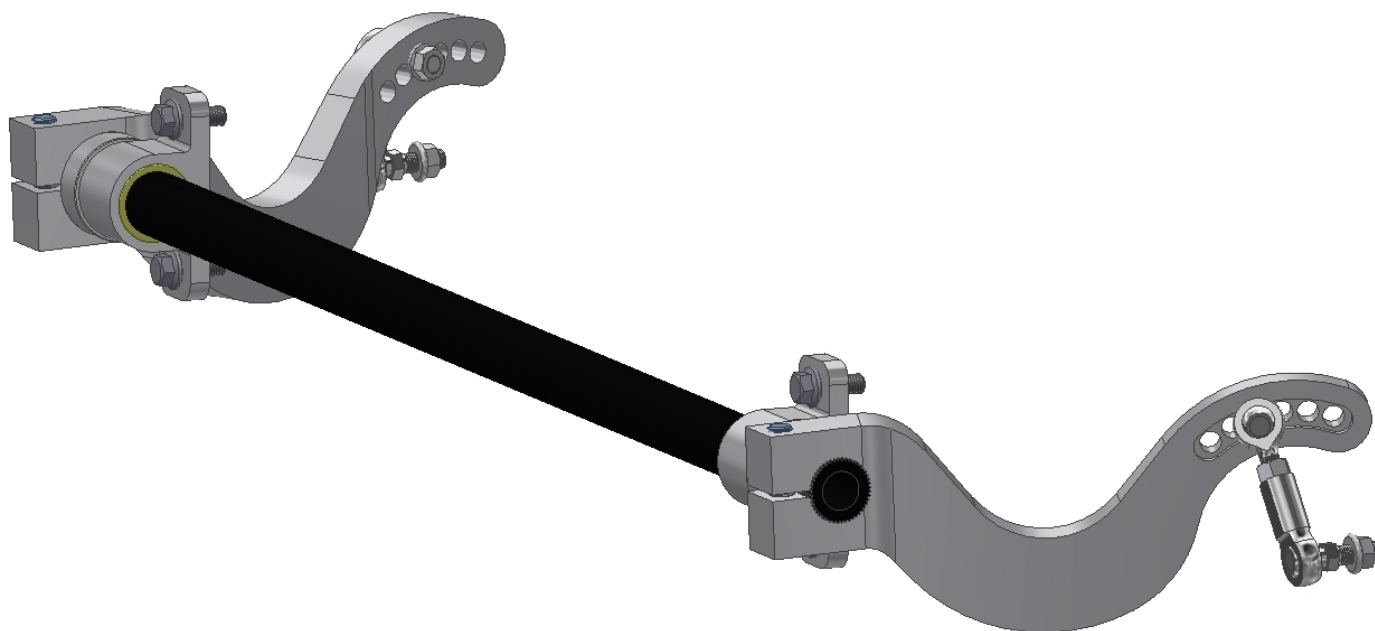


# KARCEPTS

## 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
- 11 possible adjustment settings, maximizing tunability and overall range
- Light weight, zero deflection solid sway bar mounts provided for precise feel
- Low friction, self-lubricating, solid polymer bearings eliminate bushing bind
- 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

Karcepts, Inc.  
[www.karcepts.com](http://www.karcepts.com)  
[sales@karcepts.com](mailto:sales@karcepts.com)

## 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

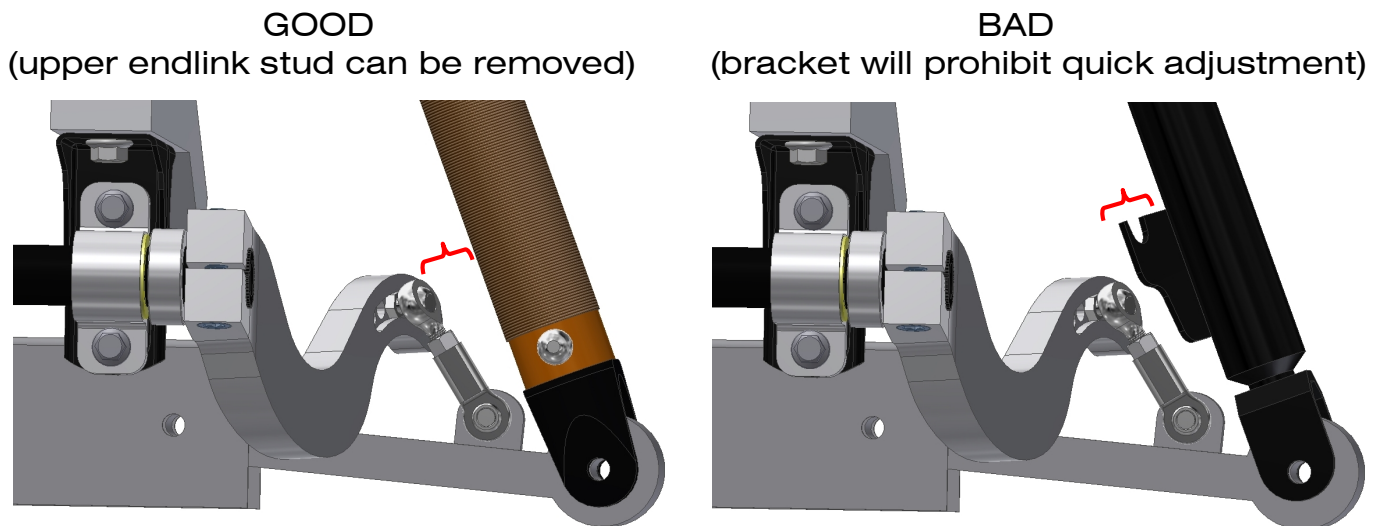
Tape Measure

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.

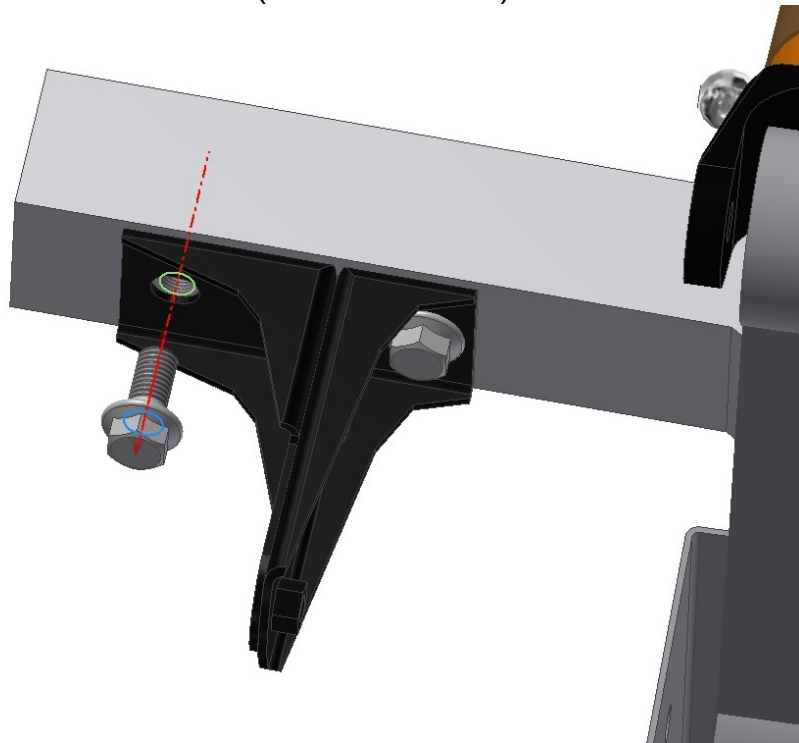
# 1. Quick Adjustment Preparations (continued...)

Procedure for OEM shock flip:

- A. Remove left and right shock assemblies from the vehicle with the 2x nuts on the top mounts and 1x bolt on the lower control arm. You will also have to disconnect the brake line with the one bolt tying it to the shock body. Since the OEM shock assemblies are quite long, you may additionally need to temporarily remove the upper control arms to make things a little easier. Just be careful to avoid damaging the ABS sensor wires if removing UCAs.
- B. With shock/spring assemblies off the vehicle, take one shock assembly and observe the positioning onto the opposite side of the vehicle. You will still position the shock onto the lower control arm with the welded nuts facing the rear of the vehicle. While holding the shock in this orientation on the opposite side of the vehicle, you will observe the studs of the top hat are not going to line up properly with the holes in the upper shock tower without rotating the top hat.
- C. Unscrew the middle nut on the top hat as far as possible while still keeping the nut engaged with the threads (so the assembly does not spring apart). This relieves some spring preload to allow easier top hat rotation. Spray WD-40 between the top of the spring and underside of the top hat. Before attempting top hat rotation, observe the lower spring perch and rotate the assembly in the direction needed to make sure the lower end of the coil spring stays forced against the lower spring perch. This guarantees the only spring rotation will occur at the top hat itself. Now rotate the top hat so the studs of the hat will fit the new shock tower location. The best way to rotate the top hat assembly would be to flip it upside down and have the top hat and studs rest inside the jaws of an open vice. There is no need to clamp the jaws on the top hat, but use the jaws as a stop for the studs. Now insert a long punch or large screwdriver into the lower shock mounting hole. This will provide enough leverage to cause rotation between the top hat and top of the spring. You may additionally be able to use the shock tower holes to capture the top hat in place while attempting rotation as well. If having any difficulty with this process, a more tedious but sure way to complete the task would be to remove the springs all together with spring compressors. However, with enough lubrication and force, you should not have to resort to that method.

## 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.



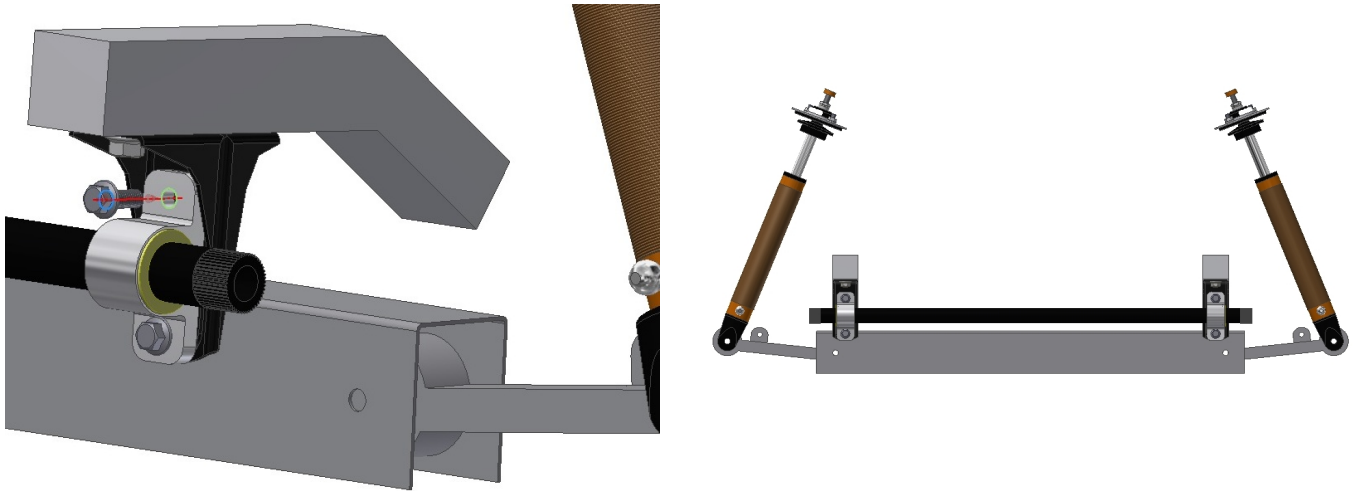
- D. Slide a solid mount onto each end of the splined center section. Upon first install, it can be normal if the mount bushings require some effort to slide onto the shaft. Note the orientation of the bushing inside each mount. The flanged side of the bushings must be positioned facing out.



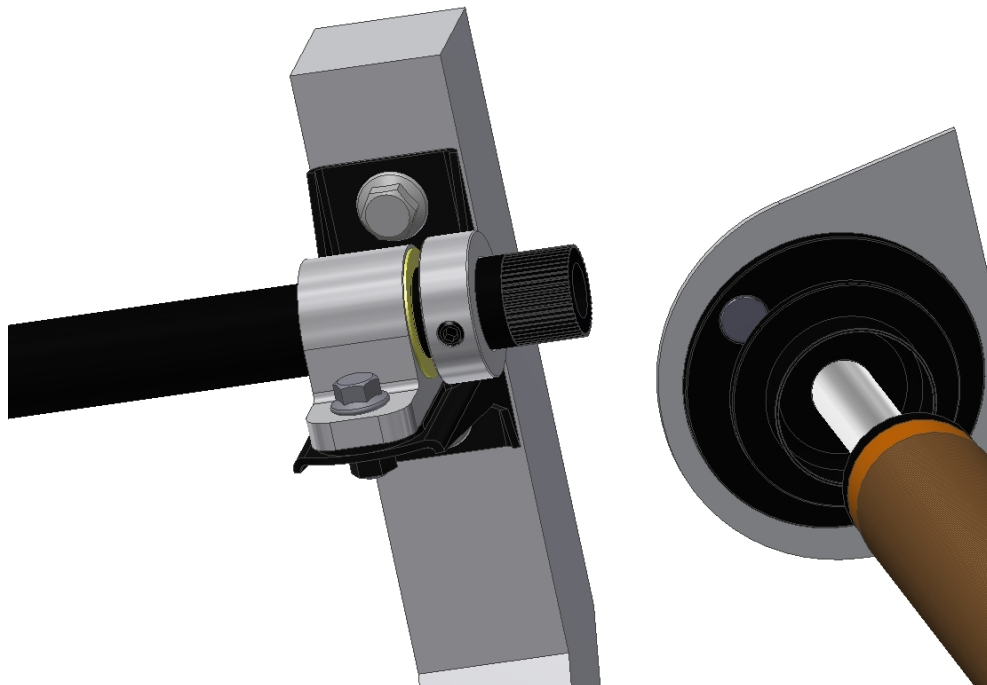
Do not oil the bushings with WD-40 or PTFE sprays. The polymer bushings are self-lubricating, but an NLGI #2 lithium grease can also be utilized to prolong life.

## 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.

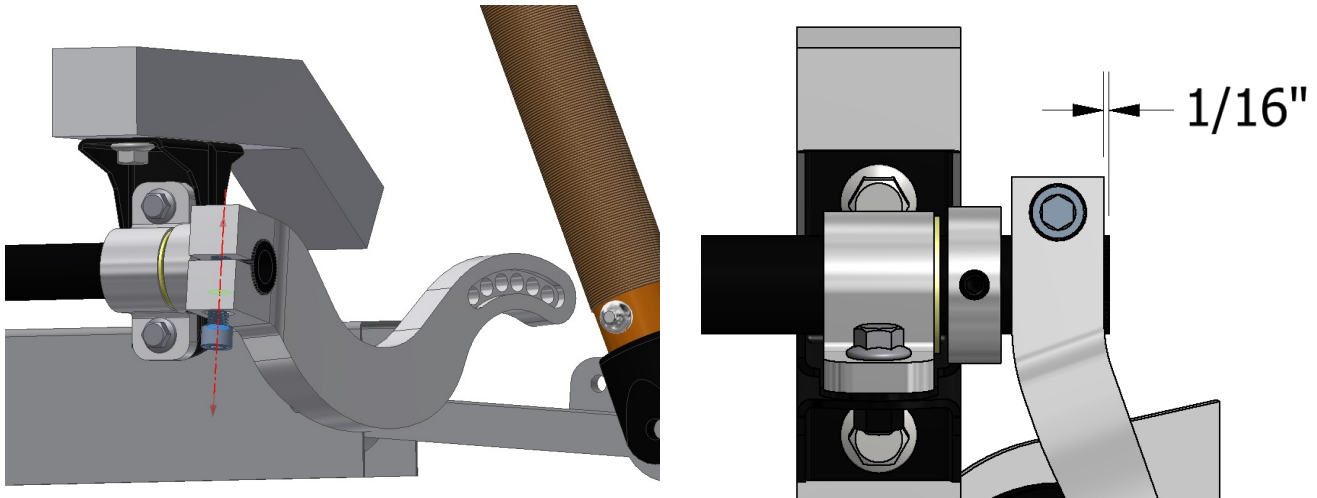


- F. Slide a clamp collar over each end of the splined center section. Leave the collar screws loose. There is no need to center the bar perfectly at this time. You will not be centering the bar based off how much shaft is protruding from the sides of the mounts as that does not always give a clear indication 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).



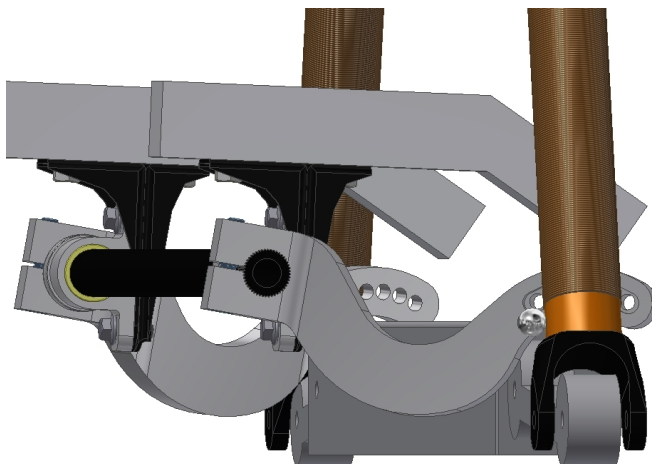
### 3. Sway Bar Arm Installation

- 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 80 ft-lbs.

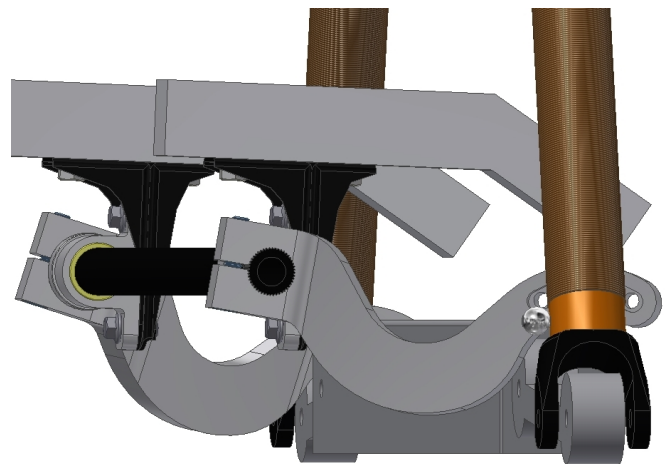


- C. Repeat the above for the right sway bar arm, making certain to clock the right arm onto the shaft splines to an exact mirror image as the left arm.

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:

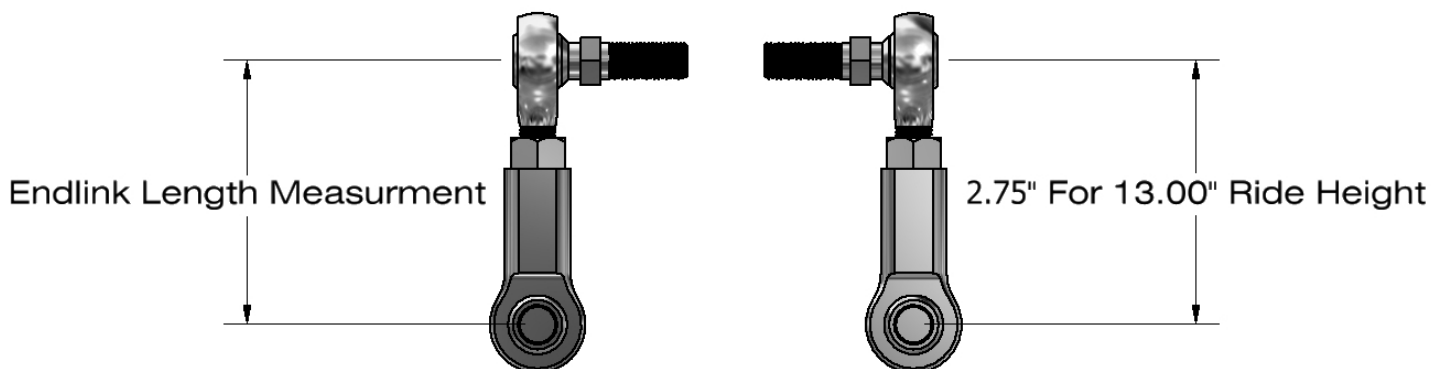
1. Arm installation position relative to center section (Section 3.B.)
2. Proper endlink length (subject to ride height & arm installation position)
3. Correct sway bar centering

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

RIDE HEIGHT <sup>*1</sup>	ENDLINK LENGTH <sup>*2</sup>
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"

<sup>\*1</sup> Ride height is measured from the center of the hub to the bottom edge of the fender.

<sup>\*2</sup> Endlink length is measured from center of ball to center of ball.



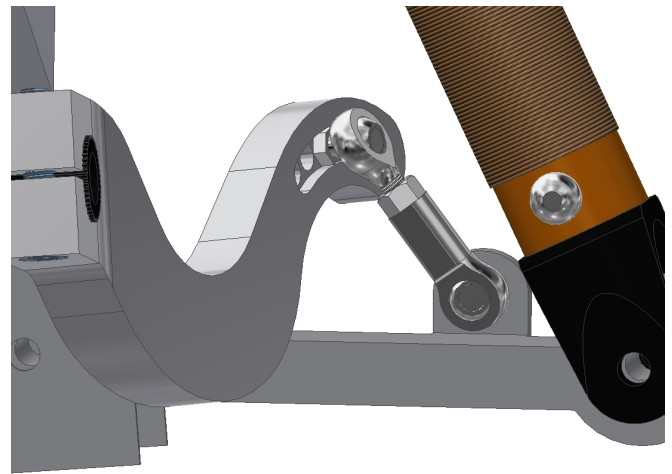
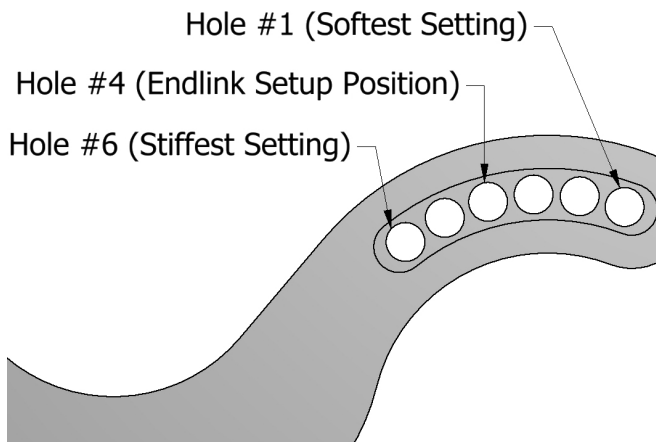
- A. Assemble left and right endlink assemblies with the provided male and female endlink halves and 3/8" endlink lock nuts. To start, set endlink lengths based on the table above. Note that when first attempting quick adjustment, if any interferences are discovered which prevent the adjustment, it may 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 realized 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.



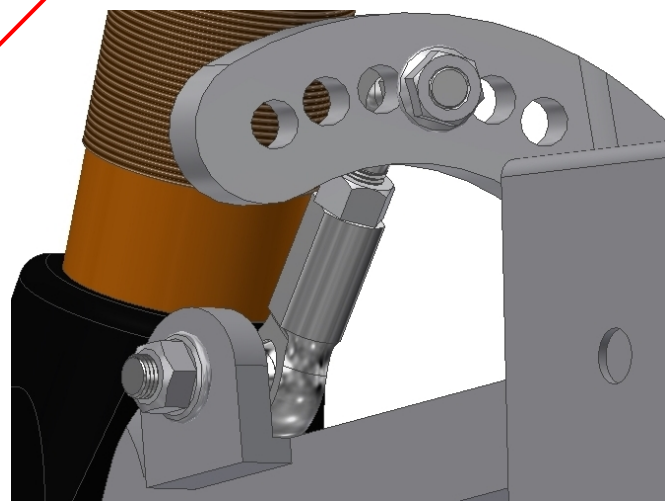
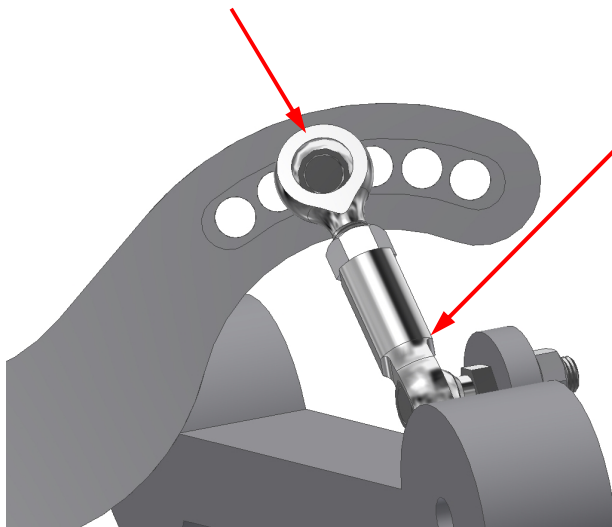
## 4. Quick Adjustment Setup (continued...)

- 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 29 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 29 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 29 ft-lbs. Two extra 3/8" flange nuts are included as spares in case any get lost during adjustment.



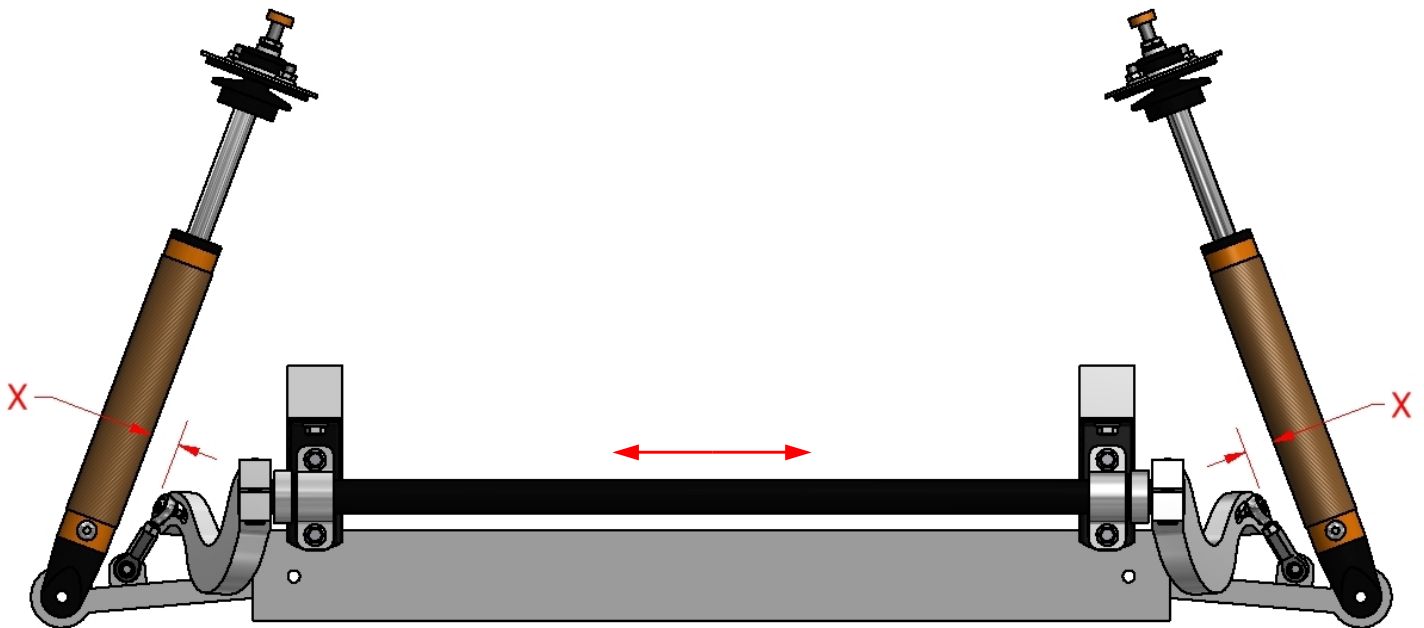
Male half of endlink

Female half of endlink



## 4. Quick Adjustment Setup (continued...)

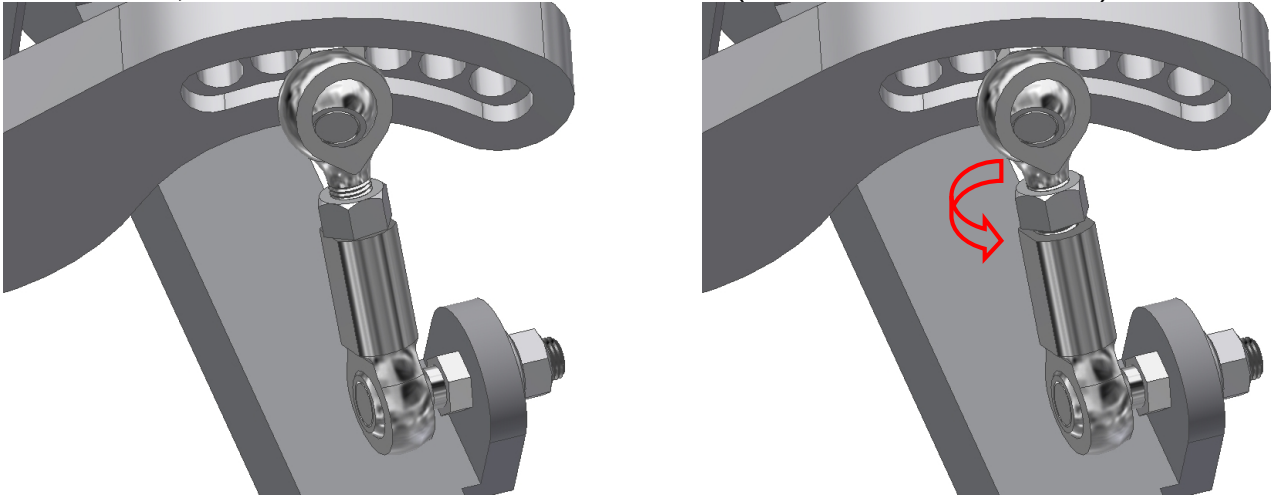
- C. Assuming all bolts and endlinks are tight (but with clamp collars still loose), center the sway bar assembly by comparing the distance between the endlinks and the shock bodies. Use a tape measure (or calipers) to assist in the centering. Again, centering the bar based off how much shaft is protruding 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.



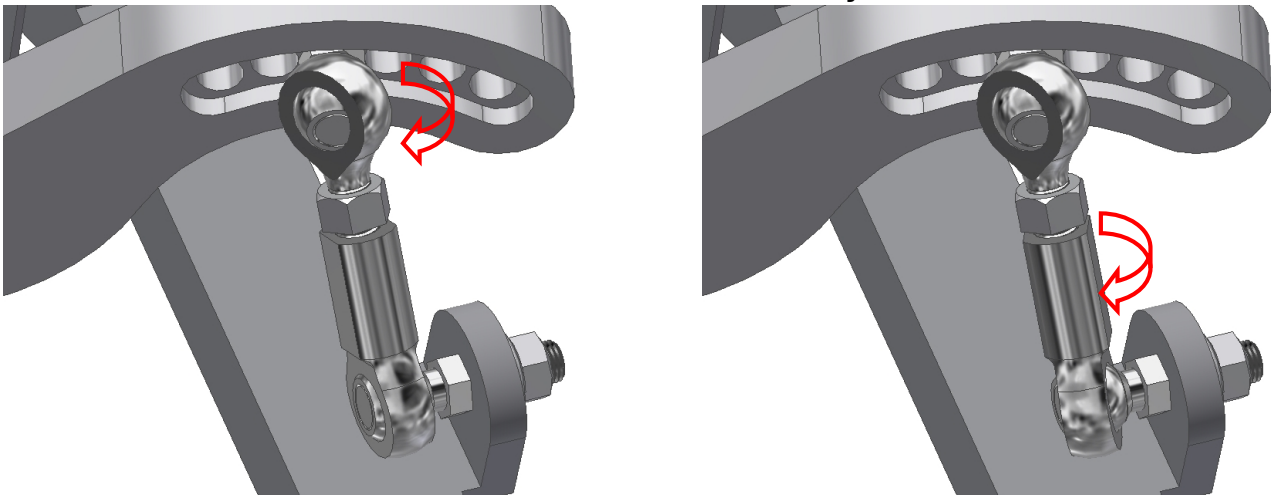
## 4. Quick Adjustment Setup (continued...)

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

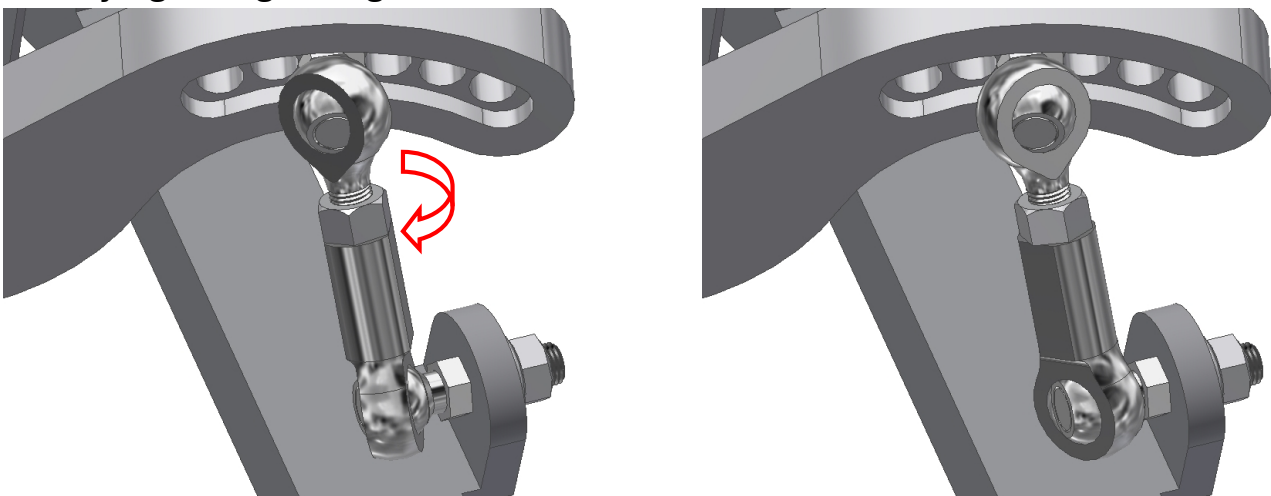
To do so, first loosen the endlink lock nut (middle nut of endlink).



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.

## Sway Bar Disclaimer:

Karcepts Sway Bars are designed for race purposes. Only solid, low friction polymer bearings are utilized in our sway bar kits. No rubber or soft polyurethane is used. Endlink construction is steel on steel (with only a Teflon liner between the ball and race of our endlinks). Additionally, Karcepts Sway Bars are of a 3-piece design, comprised of a NASCAR/Speedway style splined center section, with mating splined aluminum sway bar arms. Karcepts Sway Bars are also capable of stiffness levels far greater than OE, and almost always greater than any other aftermarket bar available. The above factors are why racers choose our products; however, if Karcepts Sway Bars are utilized for daily driving, additional NVH (noise, vibration, harshness) may be observed. Karcepts, Inc. tries to its fullest extent to minimize NVH as much as possible, even with such a rigid design. Few customers have ever claimed our bars add unwanted vibration or harshness. However, in some cases, noises have been reported. In general, most clicks, knocks, clanks, and squeaks can still be eliminated with proper maintenance.

## Sway Bar Maintenance:

Below are maintenance procedures that may be helpful in resolving any undesired sway bar noises:

1. Verify everything is tight and installed exactly as specified in the Karcepts Installation Instructions. With such a solid design, any loose part can make all kinds of clatter. If the clamp collars have any gap between them and the mount bushings, the bar can shift side to side and make some sounds. Additionally, all torque specifications must be followed, especially on the sway bar arms and clamp collars. You must obtain the properly sized torque wrench(es) and hex bit socket(s) to install and maintain your Karcepts Sway Bar Kit.
2. The most common noise issue on a 3-piece bar is at the splined connections between the steel center section and the aluminum sway bar arms. The noise can sound like a metallic clicking, often confused with endlink noise. Other times it can make a knocking or clanking noise, so it is always best to address the splined connections first. Some bars and arms never encounter the issue, others may show up one time and need addressed, and yet a few may require a constant maintenance schedule. To eliminate sounds caused from the splined connections, loosen the sway bar clamping bolts, slide the arms off of the center section, rotate the center section within the mounts 60-90 degrees, re-lubricate the splines of the sway bar arms with a liberal amount of anti-seize, then re-install the arms onto the center section and torque bolts to the proper Karcepts supplied torque specifications.
3. For a creak or squeak type noise, apply a NLGI #2 lithium grease on the surfaces between the mount bushings and center section. Some Karcepts Sway Bar Mounts include grease fittings to make this task easier. WD-40 and PTFE sprays are not recommended on the sway bar mount bushings. If a squeak is still prevalent, try spraying the spherical endlink connections with lube to see if the noise goes away. An endlink squeak would be a rare instance on a Karcepts Sway Bar, but it may be possible.

## Sway Bar Maintenance (continued...):

4. If driving slowly over a bumpy surface and some clatter is observed, that may likely be attributed to a small amount of endlink play. In most instances you can run the sway bar with endlink play for a long time and there will be no ill effects (other than possible sounds at low speeds). Endlink play is something that can develop over time. Endlinks ordinarily are going to be a wear item, especially when running stiff sway bar settings. Endlink wear can also be magnified if racing in classes that mandate soft factory springs. Karcepts, Inc. has spec'ed out the endlinks in all applications to achieve the greatest life possible, but endlink life will vary based on customer use. In general, you should be able to get at least 2 race seasons out of a set of supplied Karcepts Endlinks. However, extreme applications may require endlink replacement once a year. It is best to physically remove and inspect endlinks to determine if play has built up between the ball and race of an endlink. It may also be possible to spray the spherical connections with lube. If noises subside immediately, then endlink play is most likely the contributing factor.

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