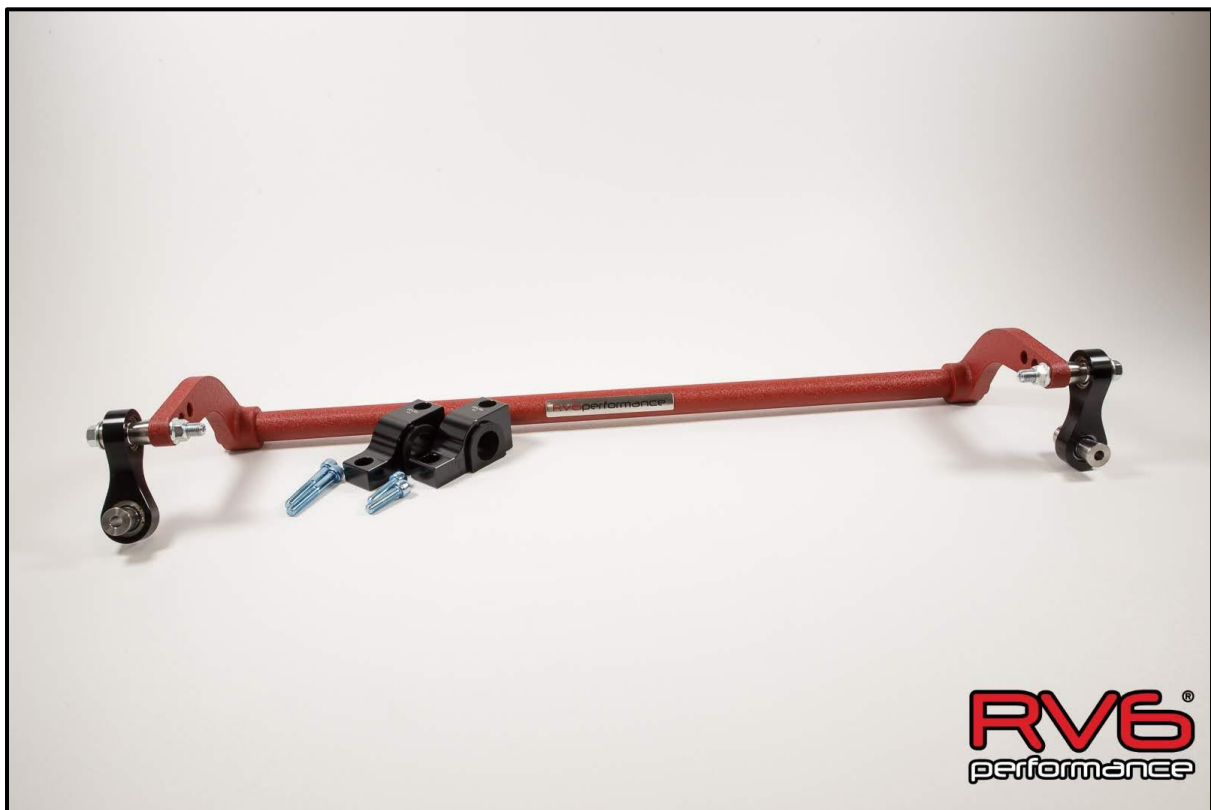


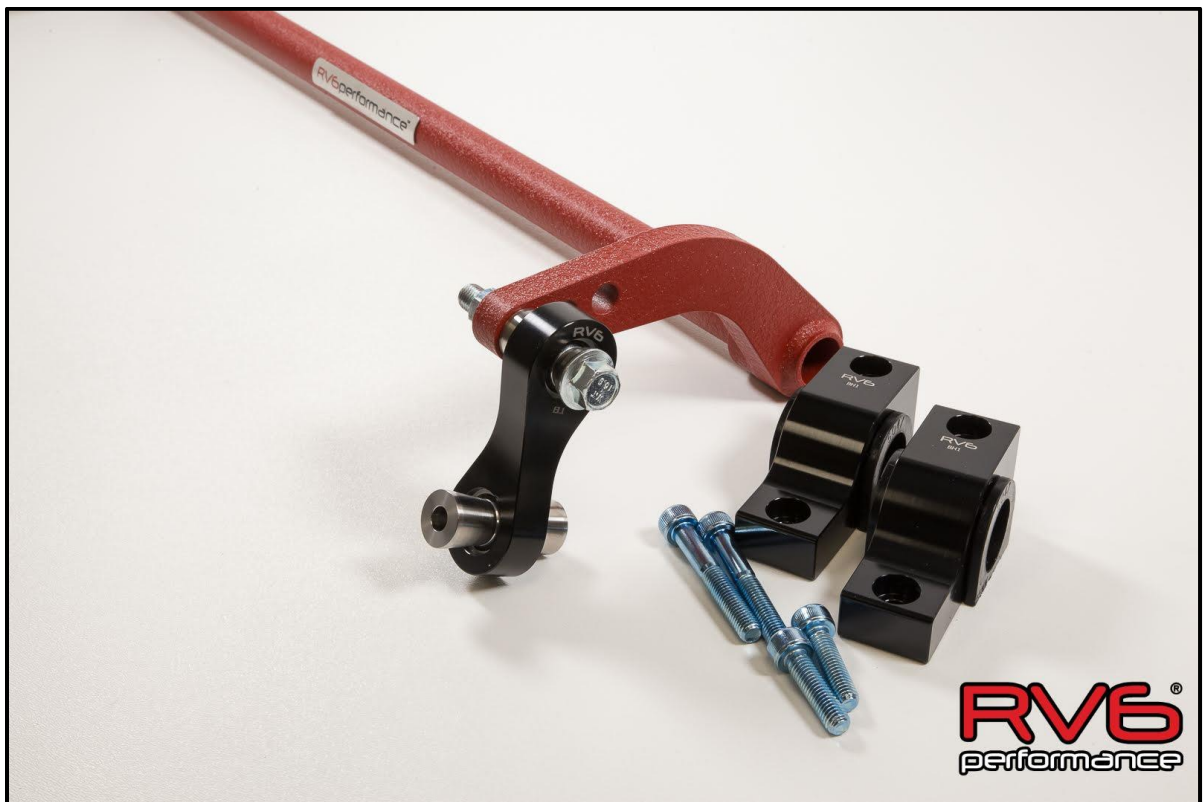
RV6 Performance Adjustable Rear Sway Bar Install Guide

This is an install guide written for the RV6 Performance adjustable rear sway bar kit for the 10th generation 2017+ FK8 Civic Type R. This adjustable sway bar kit provides 5 different stiffness settings to choose from, with the stiffest setting being nearly double that of the OEM rear sway bar. Increasing the rear sway bar stiffness will help the vehicle transfer load from the outboard tire to the inboard tire in a turn. By increasing the stiffness of the rear sway bar you can expect the following impacts:

- Reduced body roll in cornering conditions
- Increased rear tire grip by allowing both tires to better share the cornering loads
- Increased steering feel and a reduction in understeer

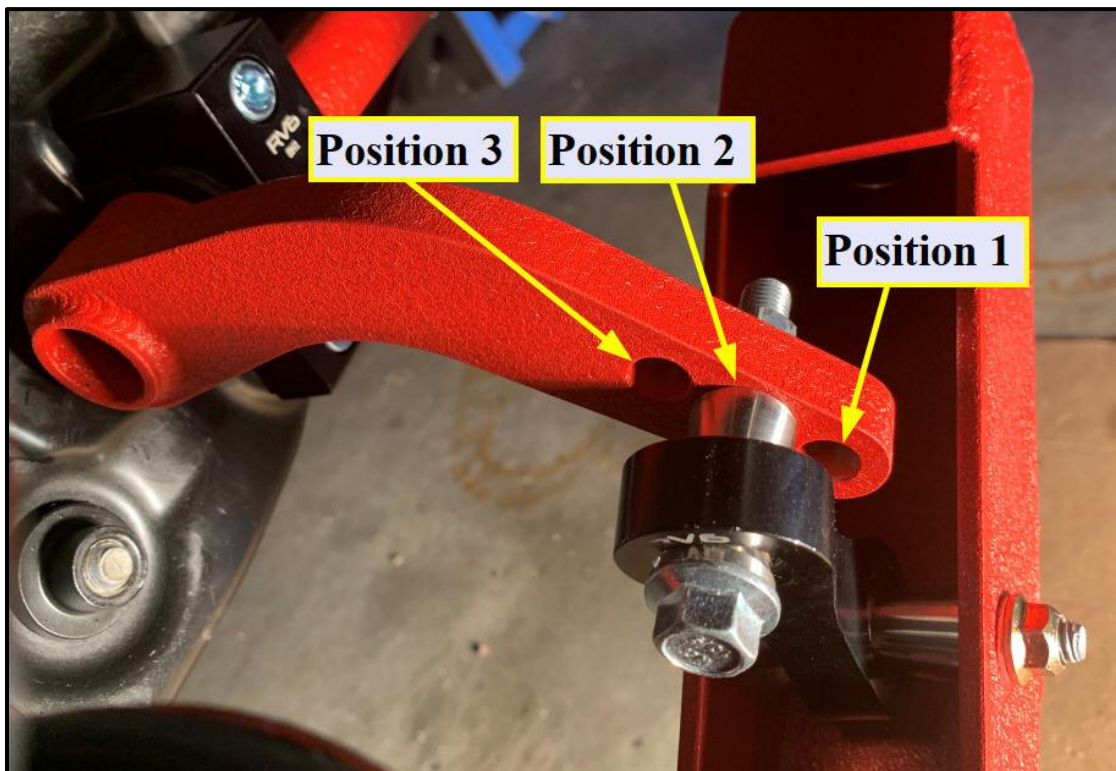
This sway bar kit includes a 1 piece sway bar and arm assembly, 2x solid end links, the hardware to connect the end links to the sway bar arms, as well as the bushings, mounts, and hardware to assemble the bar to the chassis. The main sway bar is coated with a high quality wrinkle red paint and the billet end links have a black anodized finish. RV6 Performance also offers the option to purchase the sway bar and end links independently of each other if desired.





The RV6 Performance rear sway bar allows 5 unique stiffness settings by providing 3 holes at the end of the sway bar arms. The end links may be assembled to different holes to fine tune the stiffness and the vehicle response based on an individual's driving style. The holes furthest from the main sway bar (towards the rear of the vehicle) will offer the least stiff setting and the holes closest to the main sway bar (towards the front of the vehicle) will provide the stiffest setting.

As an example, the below image will be used to clarify the possible stiffness settings of the rear sway bar. Each left and right sway bar arm has 3 setting options labeled position 1-3. A user may choose to assemble the end links to the same hole on the left and right sway bar arm, for instance position 1 on both arms, for the softest stiffness setting. A user could then move both left and right end links to position 2 on both left and right sway bar arms for the middle stiffness setting. A user may also use position 1 on one side of the sway bar and position 2 on the opposing side for a stiffness setting that is in between the first two examples. It is not required to have the same end link position on both right and left side sway bar arms.



The stiffness rates for this sway bar have been calculated to be:

- Position 1/1 = 700 lbs/in
- Position 2/1 = 825 lbs/in
- Position 2/2 = 950 lbs/in
- Position 2/3 = 1150 lbs/in
- Position 3/3 = 1350 lbs/in

For reference the OEM 10th generation 2017+ Civic Type R Rear Sway Bar stiffness rate is roughly 721 lbs/in.

Preface:

This guide details the installation of this rear sway bar kit on a 2017 Type R, #00561. Prior to assembly this vehicle had modifications to the rear suspension in the form of a separate aftermarket rear sway bar, aftermarket toe links and camber arms, solid rear knuckle bearings and the addition of a subframe rigid collar kit. Despite these changes the installation steps covered in this document will be identical to the process of working with fully stock components. The process detailed will be the same even if other suspension modifications such as lowering springs, coilovers, camber kits or alternative rear sway bars have been installed.

Note that any time suspension components are installed or altered a vehicle alignment should be performed to ensure the optimum settings are dialed in. Also note that in general when moving from compliant OEM style rubber bushings to solid bearings some increase in NVH can be expected.

To maximize the suspension response and the user control over rear tire alignment settings it is recommended to install the RV6 Performance lower camber arms, adjustable rear toe links, rear sway bar and the solid rear suspension bearings as an entire package.

For this document all directions mentioned are the same as if you are seated in the vehicle (IE forward means towards the front of the vehicle.) Also, for this document the terms "bushing" and "bearing" are used interchangeably. The term "Heim joint" refers to the spherical bearing and housing used to allow freedom of motion at specific component connections. Unless specifically mentioned when referencing hardware in the document below the size listed is for the tool size required, not the size of the hardware itself.

Always perform auto work in a safe manner. Never work underneath a vehicle without appropriate retention devices (jack stands or a lift.) Always wear proper protective equipment. Safety glasses and gloves are recommended. Other tools may be substituted based on availability or personal preference from the list provided below.

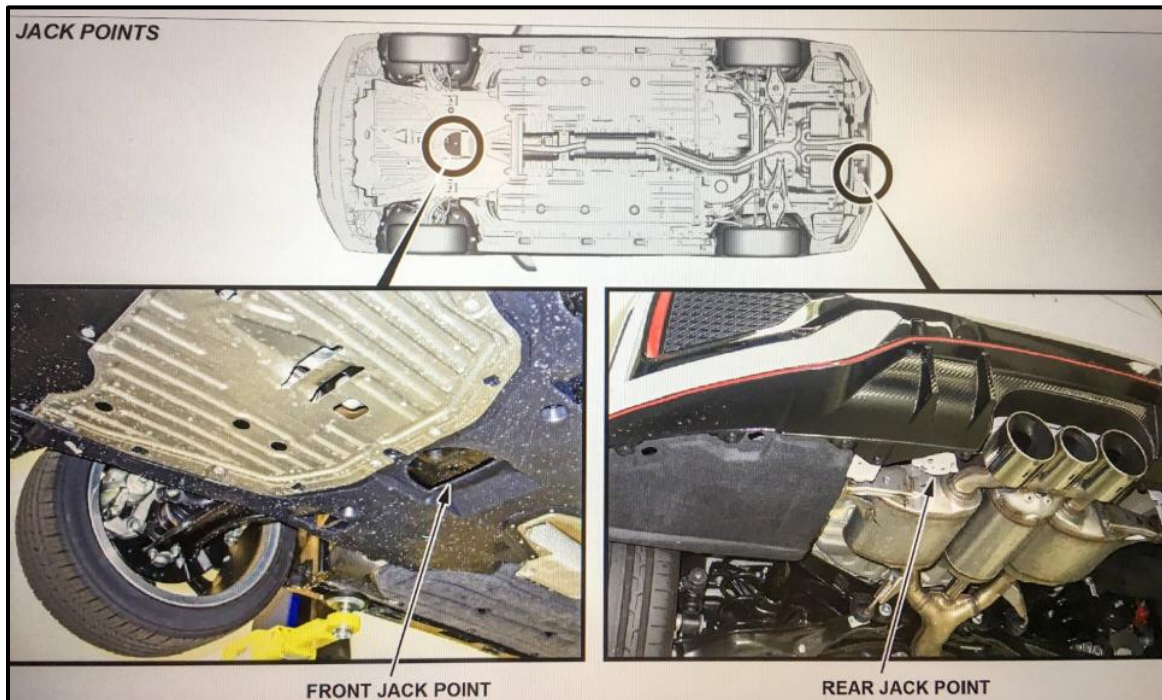
Tools Recommended:

- Socket Wrenches:
 - 3/8" or 1/2" Socket Wrench / Breaker Bar / Impact Gun
 - 12mm Socket
 - 17mm Socket
 - Various Extensions
 - Universal socket adapter (Flex Joint)
- Allen wrenches / Hex Bits
 - 6mm
- Ruler or Tape Measure
- 2x Floor Jack(s) or Lift
- Jack Stands (2-4x)
- PB Blaster (Or Similar Penetrating Liquid)

Installation Steps:

Step 1: Raise Vehicle and Install Jack Stands

- 1.1: Utilize the rear central jack location shown below to raise the rear of the vehicle and install jack stands under both the left and right rear retention points. Although not necessary, the front of the vehicle may also be lifted to maximize working space. If desired, utilize the front center jack location shown below to raise the vehicle and install jack stands under both left and right front retention points.



Note: Due to difficulty accessing the front central lifting location a smaller secondary jack may be used to partially raise the vehicle at the front lower retrieval hook (underneath the engine) or at one side jack stand location. Raise the vehicle enough to position the primary floor jack under the central lift location and proceed with raising the vehicle from there. Alternatively, vehicle ramps, low profile car jacks or full lift systems may be used. Install jack stands when enough clearance is obtained underneath the vehicle if not working on a lift system.

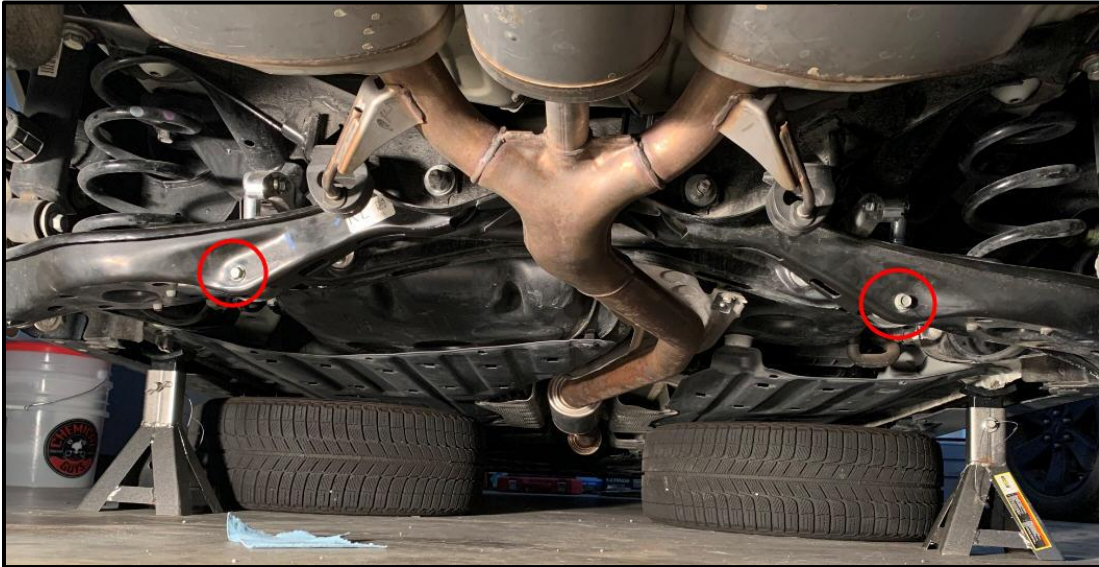
It is not required to remove the two rear wheels if only replacing the rear sway bar unless more working clearance is desired. All components can be installed and removed with the tires still assembled to the rear knuckle.

Step 2: Remove the Existing Rear Sway Bar and End Links

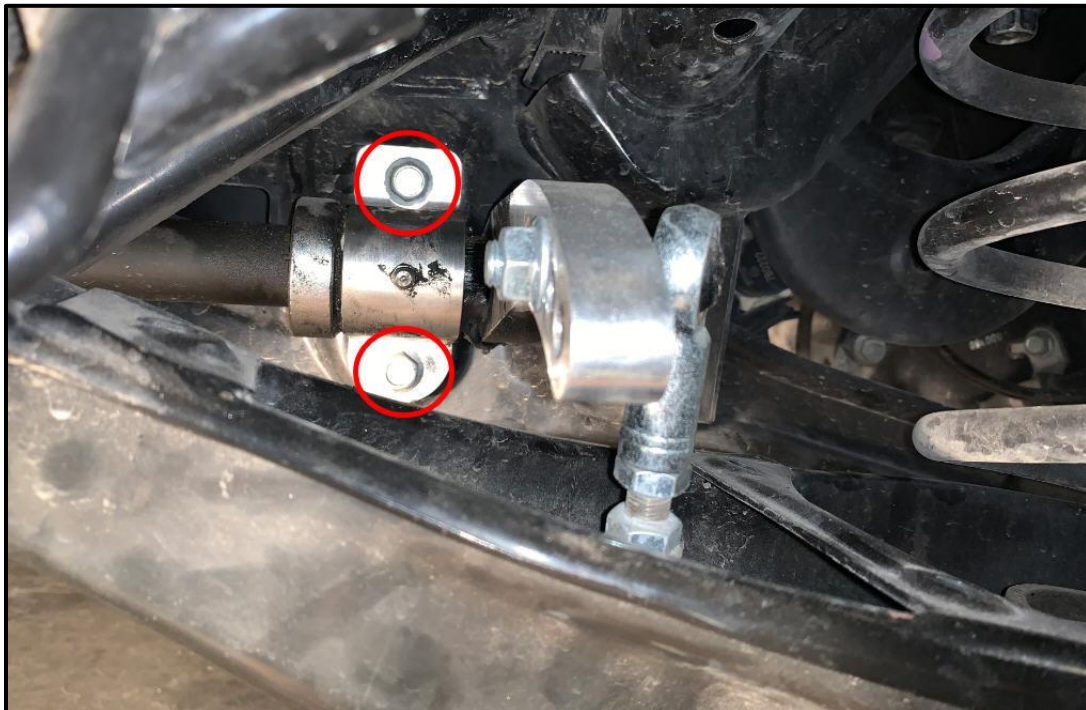
Note that for this step some images show an alternative aftermarket rear sway bar when referencing hardware that must be removed. However, the tool sizes detailed in this section are

specific to the OEM hardware. If removing an aftermarket sway bar it is advised to reverse the installation steps used for assembling the specific sway bar kit utilized.

- 2.1: Remove the 1x 12mm head bolt securing the sway bar end links to the rear lower control arms (Red Circles) on both left and right sides of the vehicle, 2x bolts total. Note that the nuts for the end link connections located on the front side of the OEM lower control arms are welded to the arms directly and should not be rotated.



- 2.2: Remove 2x 12mm head bolts connecting the sway bar mounting brackets to the chassis on both left and right sides of the vehicle, 4x bolts total (Red Circles.)



- 2.3: Remove the sway bar from the vehicle. This will require some manipulation of the sway bar relative to the vehicle exhaust, chassis and control arms in order to gain the necessary clearance to remove.

Note: For the OEM sway bar the best method to remove the assembly was to fold the end links in as close to the main bar as possible. It is not required to detach the end links from the sway bar but doing so will provide additional freedom when manipulating the components. Additionally, to allow more movement of the sway bar assembly the flanged brackets securing the sway bar to the chassis were removed from the rubber mounts around the main sway bar. The flanged brackets will slide off the rubber mounts with minimal force.

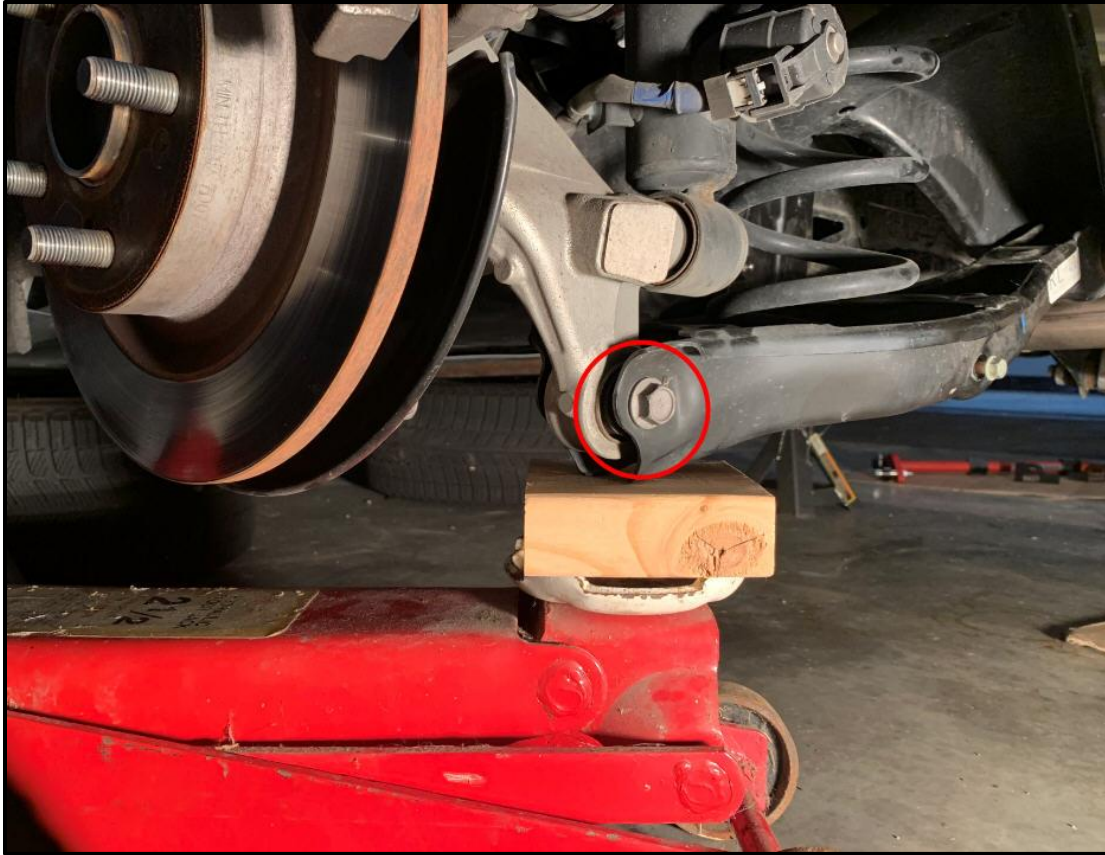
If desired, step 3 can be completed prior to fully removing the rear sway bar from the vehicle to maximize the amount of working space.

Step 3: De-Couple Rear Lower Control Arms

Due to the exact profile and one piece design of the RV6 Performance rear sway bar it benefits the assembly process to provide more working clearance by de-coupling the rear lower control arms from the rear knuckles. It is possible that there is a specific process to manipulate the rear sway bar into its final location without removing any other components. However, in order to reduce the risk of damaging the finish on the sway bar it was chosen to remove additional components to provide more assembly clearance.

The method described in this step is to detach the lower control arms from the rear knuckles and pivot the outboard ends downward. Note that this process is only valid after the sway bar end links have been disconnected from the lower control arm as described in Step 2.1. This provides clearance for the arms on the ends of the main sway bar to move into the appropriate final locations during assembly. Alternatively, the exhaust can be dropped to provide a similar amount of extra clearance if that is preferred over decoupling the lower control arms.

- 3.1: Position a floor jack underneath the control arms near the outboard mounting locations at the rear knuckles. It is advised to place a flat piece of scrap wood between the jack and the lower control arms to prevent damage to the painted surfaces during this process. Raise the jack until it is just starting to put pressure on the control arms but not so much that the vehicle is raised from the jack stands. Reference the image below.

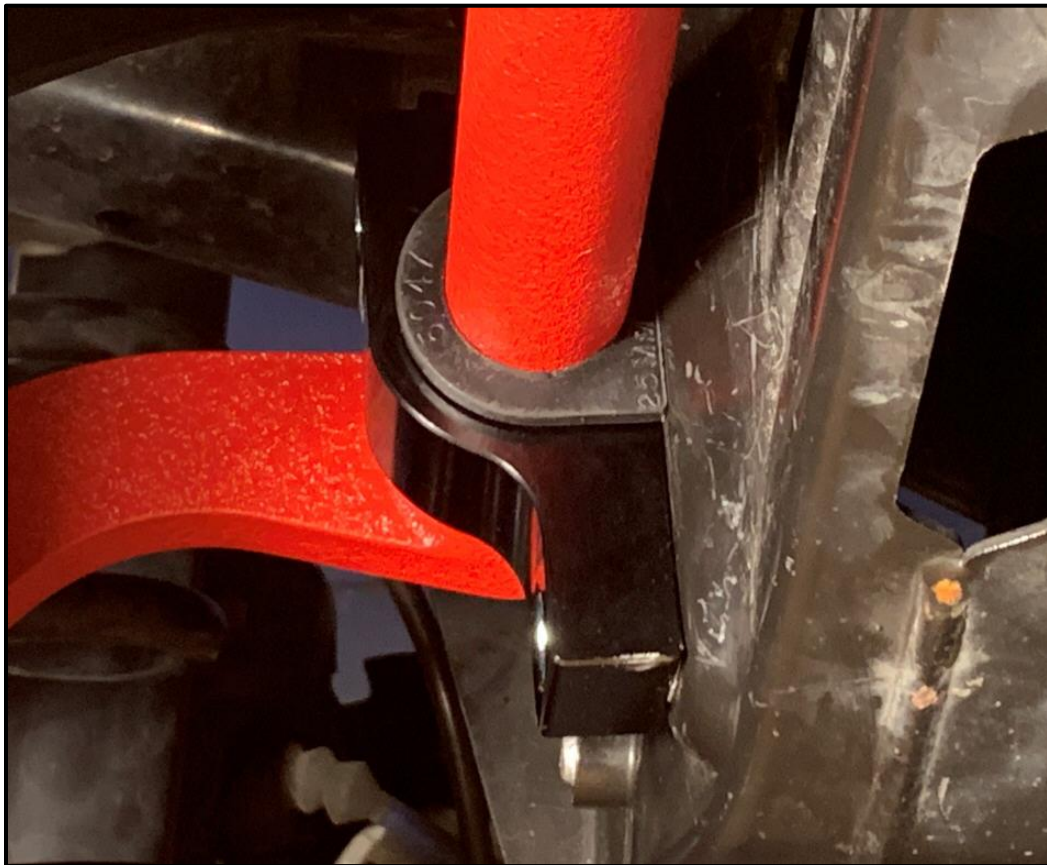


This step is required because the control arms have a load applied to them due to the suspension springs being slightly compressed in the system. Once the bolts described in Step 3.2 are removed the springs will try to release this stored energy and could cause the control arms to move forcefully and unexpectedly.

- 3.2: Remove the 1x 17mm head bolt securing the control arms to the rear knuckles (Red Circle in the image provided for Step 3.1) on both left and right sides of the vehicle, 2x bolts total. The front side of the control arms use an integrated threaded stud for these bolts and as such no backup wrench is needed. It is possible that these bolts may be difficult to remove due to the tension in the system described in Step 3.1. If unable to remove the bolt normally adjust the height of the floor jack to try and relieve any pressure on the bolt. The bolts will slide out of the rear knuckles with little effort once the control arms are in the proper position. Ensure the floor jack is in a locked position before removing these bolts.
- 3.3: Slowly lower the floor jack to release the stored energy in the suspension springs. The springs should remain attached to the lower control arms once the jack is lowered due to the rubber protrusions in the lower spring caps being seated in the respective features in the lower control arms. Lower the control arms as much as the working area allows. The springs and spring caps should be able to remain attached to the control arms during the remaining steps.
- 3.4: Remove the floor jack from the work area.

Step 4: Install the RV6 Performance Sway Bar Kit

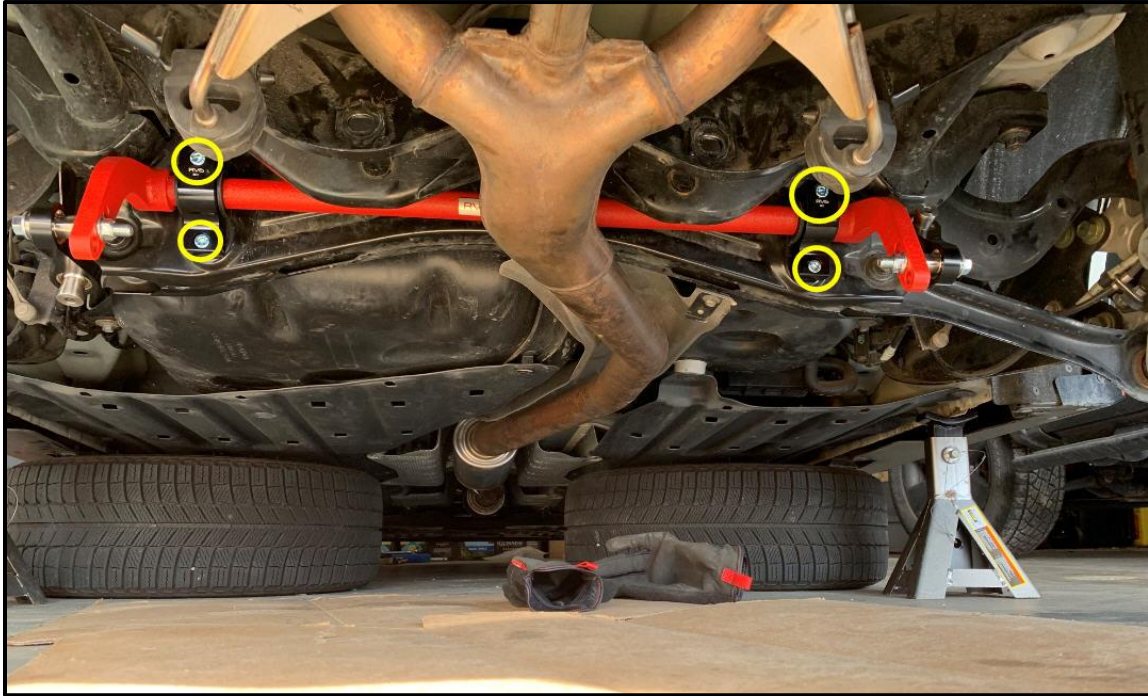
- 4.1: Prepare the RV6 Performance sway bar for installation by rotating the end links so they are in line with the sway bar arms. The intent here is to make the sway bar as compact as possible to allow the most clearance when positioning the components to the correct vehicle location.
- 4.2: Locate the sway bar loosely in the assembled position after manipulating around the exhaust and chassis. Note that when the bar is installed in the vehicle that the RV6 Performance name plate will be displayed right side up. Do not install with the name plate upside down.
- 4.3: Ensure the black mounting brackets are properly placed around each bushing and verify the following:
 - The thicker portion of the bracket is on the top side of the sway bar.
 - The flat surface of the urethane bushing is facing the front of the vehicle. This flat surface must mate up against the chassis when installed, see the image below. Rotate the bushing / mounting bracket as needed.



Note that as with the main bar, the RV6 logo etched onto the mounting brackets will be right side up.

- 4.4. After the mounting brackets are placed around the main sway bar loosely assemble the brackets to the chassis using the 4x supplied socket head cap screws (Yellow Circles.) The

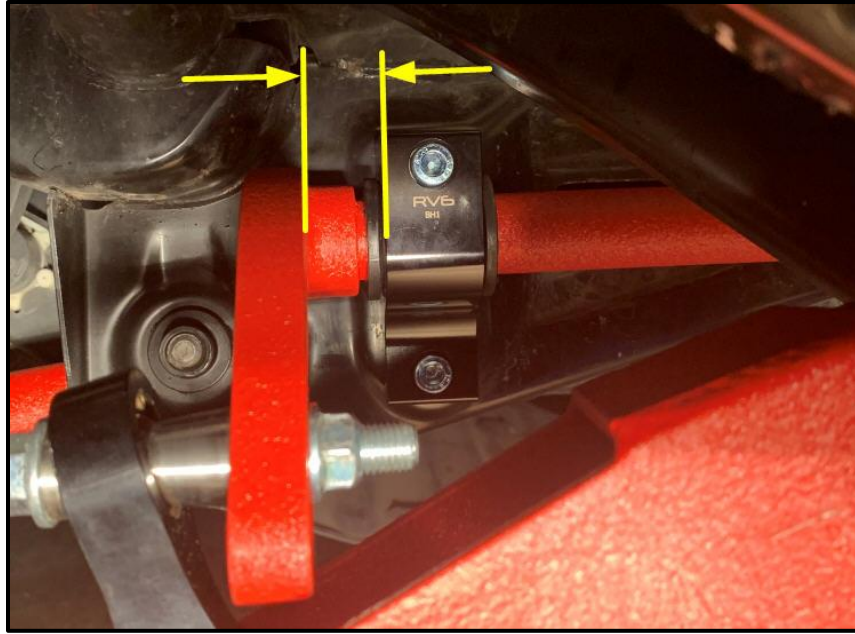
longer, 55mm length screw will assemble in the top position on each bracket and the shorter, 30mm long screw will assemble in the lower position. Tighten down the bolts such that they are securely holding the assembly to the chassis but loose enough that the sway bar can still be shifted left or right.



Note that the above image has the lower control arms completely removed from the vehicle. This was done both to provide more clarity in the above steps and to allow for aftermarket camber arms to be installed. The images in the remaining steps will show the OEM lower control arms being replaced with the RV6 Performance rear camber arms, but all steps will be the same if using the OEM lower control arms.

Step 5: Center the Sway Bar to the Chassis

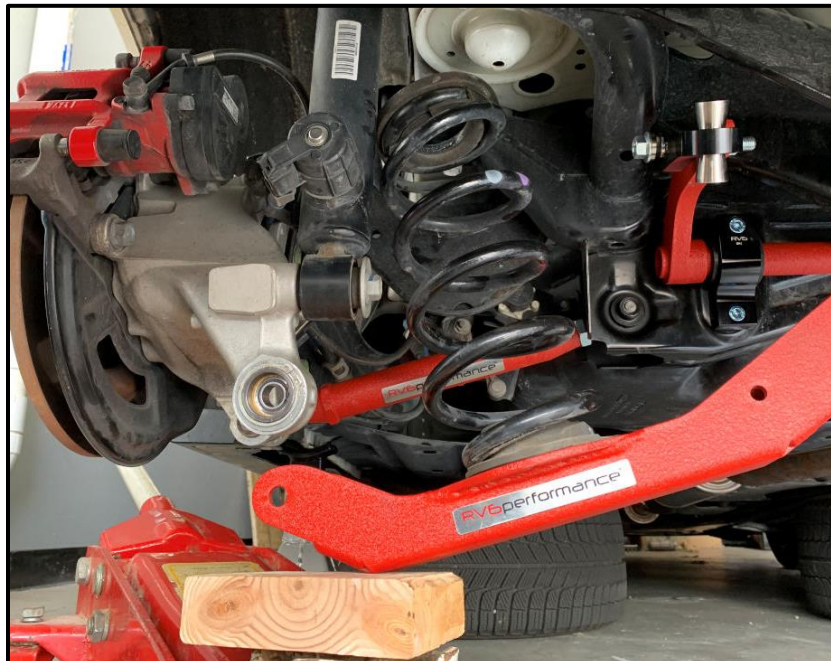
- 5.1: Before proceeding further the sway bar must be centered on the vehicle. Using a ruler measure the distance between the outboard edge of one mounting flange to the inboard edge of the sway bar arm on the same side. This is shown in the image below. Repeat the measurement on the opposite side arm and mount. Shift the whole sway bar assembly to the left or right of the vehicle as needed until the two dimensions are equal.



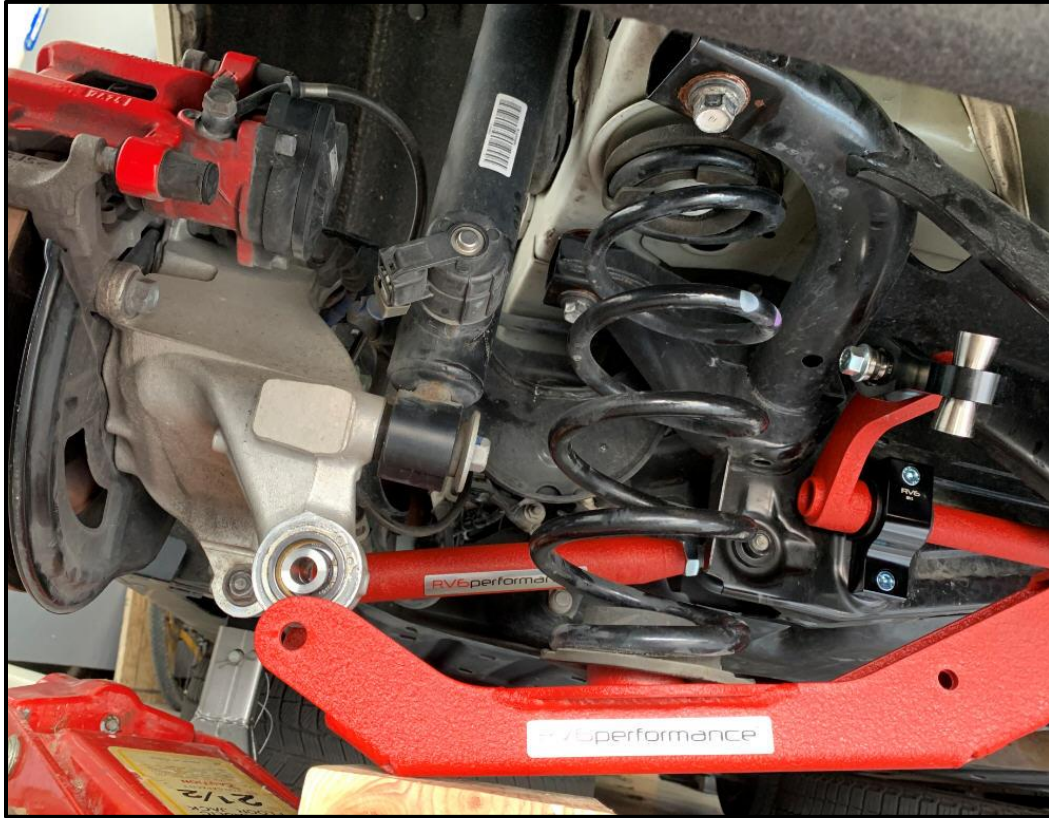
- 5.2: Rotate the rear sway bar upwards so that the arms are at the highest position possible to provide clearance to re-assemble the lower control arms. Reference the images throughout Step 6 to see the sway bar being in the position described here.

Step 6: Re-Install the Rear Lower Control Arms to the Rear Knuckles

- 6.1: Position a floor jack underneath the control arms near the outboard mounting locations. It is advised to place a flat piece of scrap wood between the jack and the lower control arms to prevent damage to the painted surfaces during this process.



- 6.2: Raise the jack enough such that the upper spring caps can be correctly positioned around the retention features in the chassis on both left and right sides of the vehicle. Raise the jack slightly once the correct alignment is achieved to hold the springs in place while the outboard bolts securing the control arms to the rear knuckles are installed. See the image below.



- 6.3: Continue to raise the jack as needed so that the outboard mounting locations of the lower control arms align with the mounting location in the rear knuckles. Secure the lower control arms to the rear knuckles using the 1x original 17mm head bolt on both left and right side of the vehicle, 2x bolts total. Note that the image below shows new hardware being used. This hardware was supplied with the rear camber kit. If re-using the OEM lower control arms replace with the original hardware as specified.

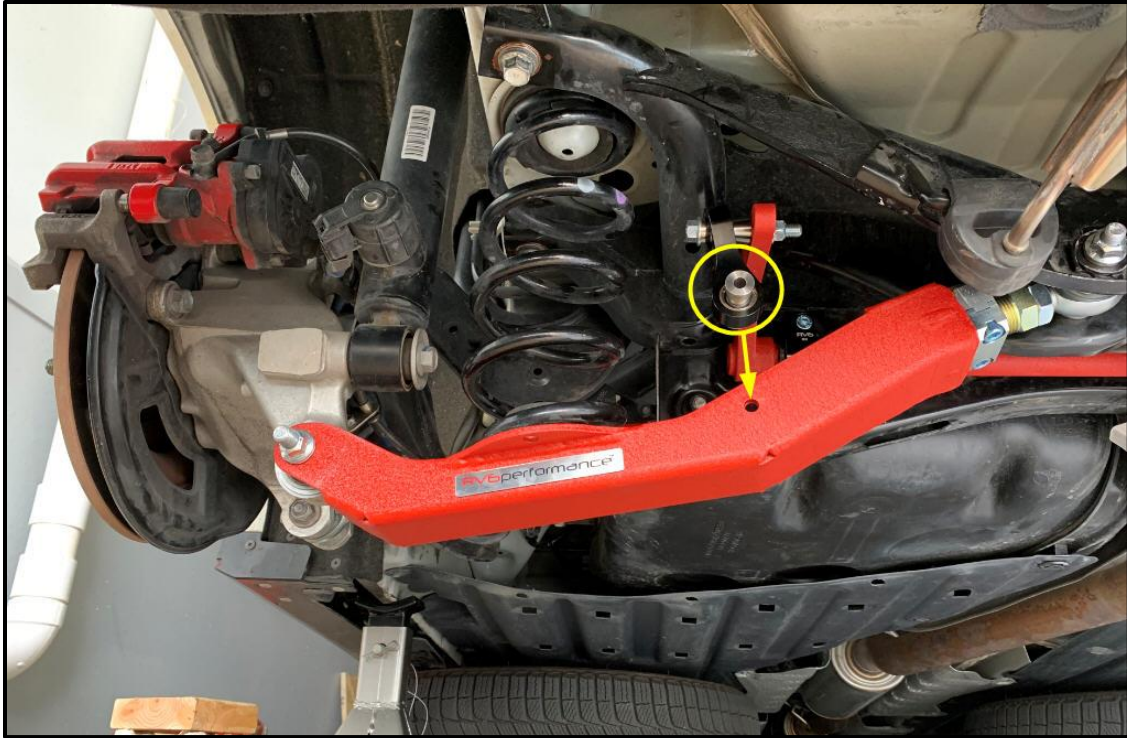


The rear knuckles may require some slight manipulation to align the mounting holes with the lower control arms. A pry bar can be used to leverage the knuckle itself until alignment is achieved. Alternatively, a pin / punch can be partially inserted into the mounting holes and used to move the components into alignment with each other so the hardware can be inserted from the opposite side of the joint. Take care to not damage any components if either of these methods are used.

- 6.4: Once the lower control arms are retained in place lower the floor jack and remove it from the work area.
- 6.5: Ensure the rubber protrusions on the lower spring caps are still seated in the lower control arm holes.

Step 7: Connect End Links to Lower Control Arm

- 7.1: Rotate the end links relative to the rear sway bar ends such that the lower heim joints align with the mounting holes in the lower control arms (Yellow Circle.) Re-use the 1x 12mm head bolt originally installed in the vehicle to connect the end links to the lower control arms on both left and right sides, 2x bolts total. The main sway bar should be able to rotate in the chassis mounts to help manipulate all components into position.



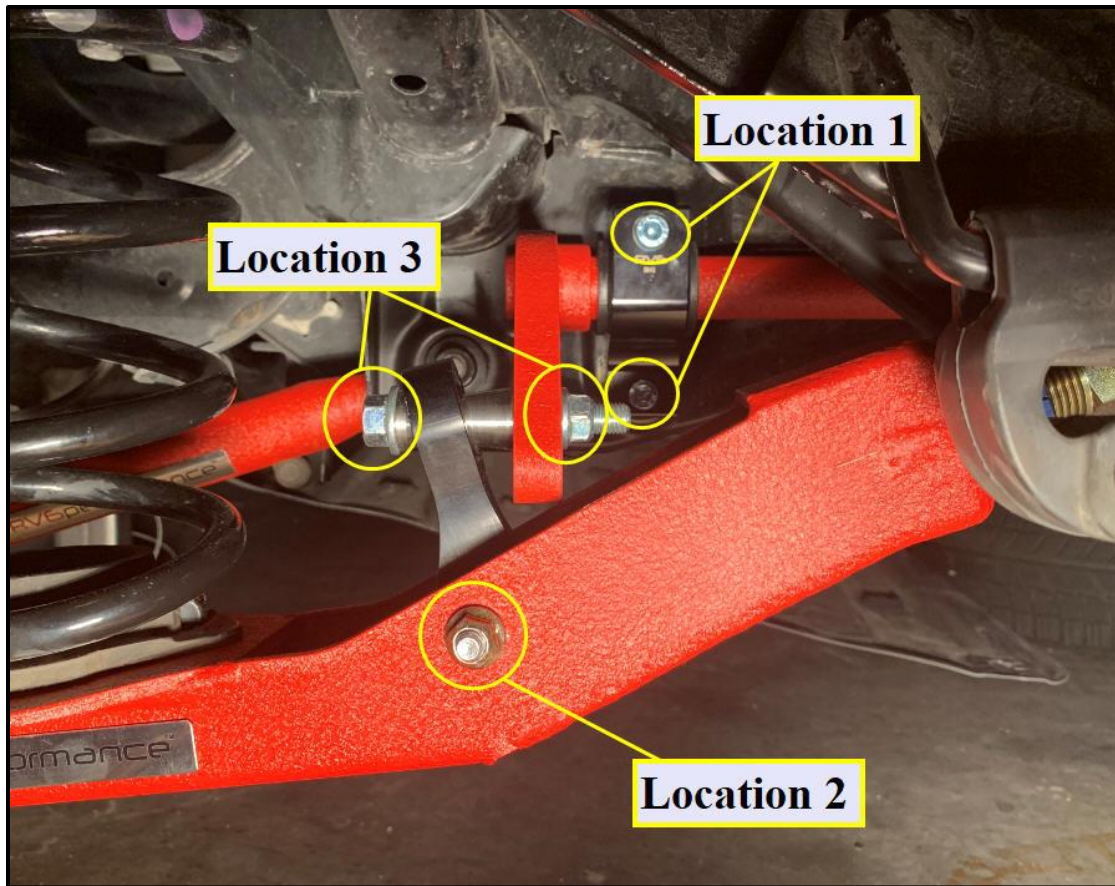
It may be possible that the sway bar end links will not rotate inboard enough to line up with the holes in the control arm initially. This is mainly due to the amount the rear suspension droops or hangs when the vehicle is lifted. If needed, place a floor jack under the outboard ends of both left and right lower control arms similar to the process described in Step 3. Raise both jacks and control arms in small increments until the proper alignment is seen between the end link bearings and the holes in the lower control arms. This is shown in the images below.





Step 8: Apply Final Torques

- 8.1: Reference the below image for the locations requiring specific torques during re-assembly. The image below only shows one side of the sway bar assembly - the opposite side of the vehicle will have identical locations to torque. The torques to apply are as follows:
 - Location 1 (Sway bar mounting bracket socket head cap screws - 4x bolts total): 36 ft*lb
 - Location 2 (Sway Bar End Links to Rear Lower Control Arms - 2x bolts total): 30 ft*lb
 - Note this is the torque when re-using the OEM hardware. The image above shows the hardware supplied with the RV6 Performance lower camber arm kit, which should be torqued to 36 ft*lb.
 - Location 3 (Sway Bar Arms to End Links - 1x bolt per side): 40 ft*lb



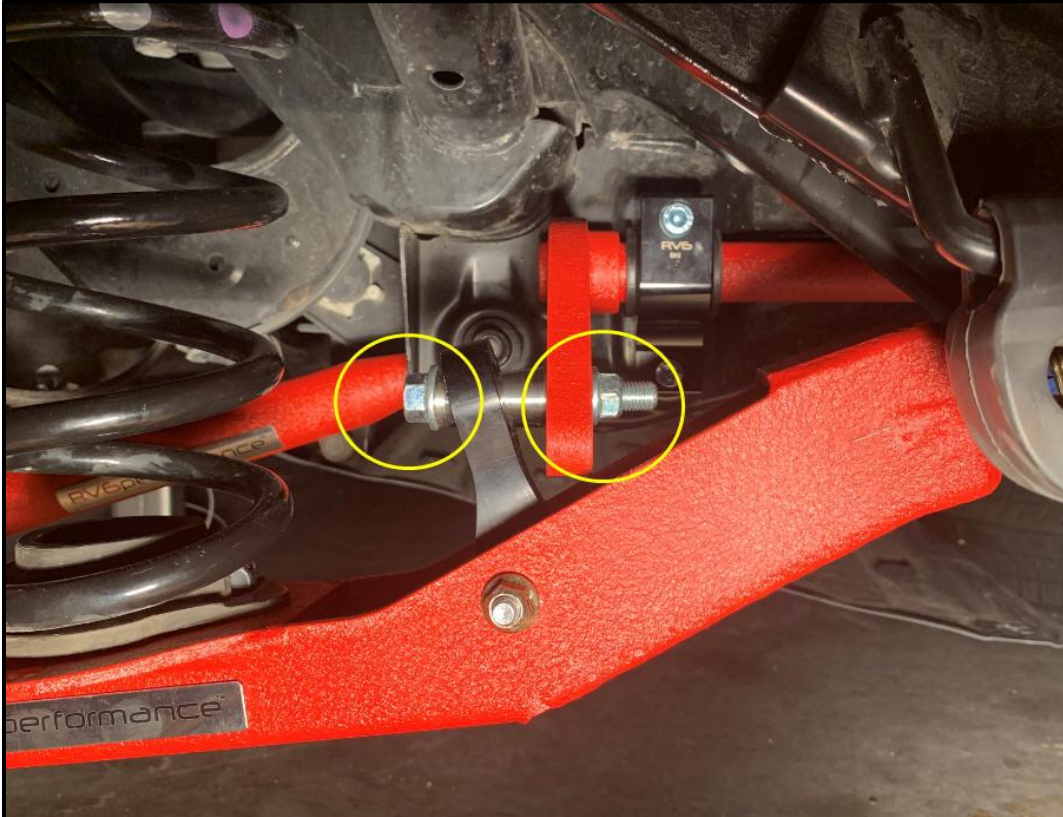
Step 9: Wrap Up the Installation

- 9.1: Once all components have been installed verify that the sway bar is still centered as detailed in Step 5. Adjust as needed.
- 9.2: Re-install the rear wheels onto the respective hubs if removed.
- 9.3: Lower the vehicle to the ground after removing the retention method used to keep it elevated.
- 9.4: Ensure proper torques are set at each lug nut. Stock lug nuts must be torqued to 94 ft*lb.

Step 10: Adjust Sway Bar Stiffness (If Desired)

As mentioned in the introduction the RV6 Performance rear sway bar kit is adjustable between 5 different stiffness settings. It is not required to raise the vehicle in order to adjust the stiffness settings. Refer to the stiffness rates listed in the introduction to help determine which sway bar arm hole positions to assemble the end links into. The steps to adjust the stiffness are as follows.

- 10.1: Ensure the vehicle is on solid and level ground. If the vehicle is not on level ground the sway bar may become loaded (similar to the loading that occurs when the vehicle is turning) and as such end link disconnection could be difficult or dangerous.
- 10.2: Utilizing 2x 14mm open ended wrenches loosen and remove the bolt securing the end link to the rear sway bar arm (Yellow Circles.) Perform this step on one or both end link to sway bar arm connection as needed. If the hardware connecting an end link to the sway bar arm is difficult to remove attempt loosening the end link hardware on the opposite side end link to sway bar arm connection and rotating the main sway bar relative to the mounts on the chassis.



- 10.3: Adjust the end link to the desired position and re-install the hardware removed in Step 9.2.
- 10.4: Ensure the hardware is sufficiently tightened and torqued to the values listed in Step 8.1.

Step 11: Complete a Vehicle Alignment

- 11.1: After the installation has been completed have a 4 wheel vehicle alignment performed by your preferred auto service shop to ensure the proper wheel settings are obtained. It is recommended to have an alignment completed immediately after installing these components. No issues should arise from driving short distances without an alignment (such as driving to the location performing the service) but care should be taken to not drive in an aggressive manner.

Driving the vehicle aggressively prior to having an alignment completed could result in abnormal or excessive component and tire wear.

Tips and Tricks:

- Unless specifically mentioned the order of the instructions to remove the above components is arbitrary. The parts discussed in this document can be removed in any order.
- PB Blaster or a similar penetrating liquid can help reduce the effort required to initially loosen bolted joints that may have seized over time and reduce the risk of shearing hardware during removal. Spray a small amount on the joints to be removed and let sit for at least 15 minutes before attempting to break hardware loose.
- When initially breaking hardware loose in a given joint by hand exercise a smooth and steady application of torque to minimize hardware failure. Avoid sudden bursts of force applied to the socket wrench (no "jerking" motions.) Alternatively, use of an impact gun is an effective way to remove stubborn hardware due to the hammering style of rotary torque the tool generates.
- If using an impact gun, ensure that you are utilizing impact grade sockets and extensions. These generally have a black finish instead of chrome. Damage to non-impact grade hardware is likely if used with an impact gun. This is especially relevant regarding universal (flex) socket joints.
- To minimize the risk of lost hardware it is recommended to loosely re-install any bolts or nuts in their respective housings or studs once the components are disconnected.
- Anti-seize compound may be applied to any hardware to prevent the threads from becoming seized and aid with future disassembly. If chosen, take note that this lubricates the bolted joint and less torque is required to obtain the same bolt clamping force. The above dry torque values should be reduced by roughly 15-20% when utilizing anti-seize.
- When re-torquing joints that utilize a pattern of bolts (3 or more) apply the torque evenly across all bolts. To ensure proper joint clamping it is not recommended to fully torque one connection then move on to the next, but rather to gradually torque all connections in an alternating pattern until the full torque is achieved at each connection.
- For purchasing and additional details on the above described kit please visit RV6 Performance's website at:
 - <https://www.rv6-p.com/rv6-17-civic-type-r-2-0t-fk8-rear-sway-bar-with-endlink.html>

Rev	Description	Date	Writer
A	Initial Release	02/26/2020	B. Shatto
B			
C			
D			