



# Off Road Only

## SwayLOC™ Installation Document

### JK Dual Rate, Manual

SwayLOC™ is a dual rate Anti-Sway bar system that allows the operator an easy method of changing from on-road rate to off-road rate. The on-road rate is similar to the OEM Anti-sway bar but allows a more compliant ride on highway. The SwayLOC™ will absorb some of the jarring that may be transmitted to the vehicle thru the OEM Anti-sway bar. The off-road rate is unique in that the SwayLOC™ will allow full range of articulation on most vehicles, but will continue to provide resistance and will usually deliver a more balanced feel of the vehicle. This balanced feel is especially apparent when used with a rear anti-sway bar.

The package contains the parts as seen in the picture below.

Please **INSPECT PACKAGES** before starting installation.



**SwayLOC™ kit components**

- |  |                                   |
|--|-----------------------------------|
| A. Latching Arm,   | G. Tubular torsion bar            |
| B. Frame Bushings (2x) and spacers                           | H. Inner arm                      |
| C. Link assemblies, 4 rod ends, 6 aluminum links and 4 studs | I. Frame mount for bushing holder |
| D. Dual Hub Arm  | J. Installation Tool              |
| E. Hardware kit  | K. Axle Tab reinforcement         |
| F. Solid torsion bar   |                                   |



**NOTE: The following instructions will be for a Jeep Wrangler JK that does not have a frame mounted track bar brace, reinforcing bracket, or other device that extends away from the Original track bar bracket on the driver side of the frame rail.**

## **MECHANICAL INSTALLATION**

1. Remove factory swaybar and links. The four (4) bolts that mount the factory bar to the frame are RE-USED! Do not dispose of these during disassembly.
2. **Possible Jeep modifications to watch for during installation:**

It may be necessary (depending on how much lift, less lift, less likely the need) to modify the front body mount brackets on the frame. They may be wide enough that the arms will not swing past them. Simply grab with a vise grip and bend the rear leg of the forward body mount tighter to the frame to ensure clearance. You may need to do this on both sides.



You can see above the "S" on the SwayLOC sticker in the picture on the **right** where it will be close.

Another possible point of contact to watch for. Between the linkage for the SwayLOC and the passenger front coil spring mount, on the axle. There **MAY** be contact between the aluminum link and the spring bucket.

With the stock assembly removed, you may wish to bend the point of the lower spring mount that is close to contacting the link in the following photo, away from the linkage.

This will clear up any potential clearance issues that may show up after the installation is complete.

You don't need to move it much, 1/8" will most likely be enough. You can use a hammer to bend this down.



3. Install the Grey Aluminum mounts to the factory locations, with the large opening for the torsion bar towards the front of the vehicle. If the bushing was installed in the mount in the box, you will need to remove the bushing during the mount installation. Removing the grease zerk will be necessary, as the zerk keys into a hole in the bushing. Re-use the original bolts that held the factory swaybar.



The forward mounting hole is close to the diameter of the mounting bolt, the rear hole is oversized to allow the bracket to shift side to side as needed during install. Tighten the front bolt (approx. 45-55 ft lbs., or as tight as you can with a 1/2" ratchet of normal length.) and thread the rear bolt in by hand, but **leave it loose until the after the torsion bars are installed.**

4. Set the outer bar through the mounts. On a stock Jeep, the side labeled "Latching arm" is on the driver side. Place the torsion bar so that it is approximately centered side to side in the mounts. .

Rotate the torsion bar so that the point between the flat edges point towards the rear of the vehicle, the image shows an earlier single flat towards the rear.



In the event that a skid plate or bumper makes bar installation difficult, you may wish to install the inner bar inside the outer bar before you place the bars in the mounts.

5. Start the bushings on each side, over the bar and into the mounts. Note that there is a small hole drilled into the flange to note the rotation of the grease zerk hole. Make sure you identify this hole and rotate the bushing in the proper position to start with, making aligning it to the grease zerk easier.



Take care to have the mount aligned so the bushing fits square to the mount. If necessary, you may tap the rear of the mount side to side, to get both mounts aligned perfectly to the bar and bushing. IF you force the bushing and damage the bushing as a result, you'll probably need to file the bushing to get it to fit. That will not be fun!

6. Once bushings are started over the bars and in the mounts, you may use a block of wood to tap them into place if necessary. Tap gently, as they fit is precise and if things don't slide together, they may be misaligned. Once the bushings are fully seated, install the grease zerks.



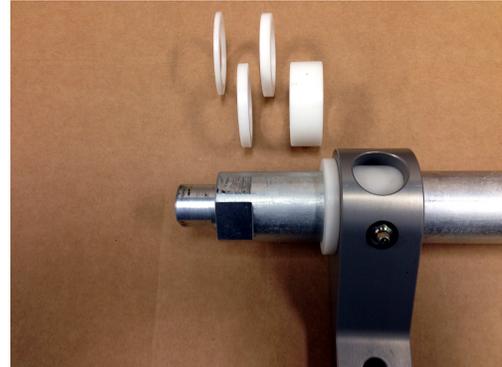
**SPECAIL NOTE:** The bushings have a port in them for the ability to grease the bar when installed. There is a mark on the outer flange of the bushing to indicate the position for this port. Rotate the bushing to align the port and mark with the grease port machined into the aluminum mounts.

Ensuring that once seated the port lines up with the zerk opening. The Grease zerk will go part way into the white bushing to prevent it from spinning so alignment is crucial. Once bushing is installed and port position is verified, install the grease zerks before continuing.

7. The 2 bushings are the same length. Adding the spacers will allow you to shift the assembly to one side or the other to get the arms to clear a modified track bar bracket.

On a standard install, place an equal thickness of spacers per side, until the spacers make up the distance to the flats on the outer torsion bar. Now, using the arms in their respective positions, hold the arm up to the bushing, as if it was installed on the arm, and move the arm thru its range of motion to ensure this position will work and not contact other components. If there is an interference, switch spacers from one side to the other to shift the assembly left or right to clear. You can remove the arms and switch spacers later, but its far easier to estimate closely and not have to remove the arms.

Again, standard configuration is mentioned in #9 as to which spacers go on which side. If the driver side arm may contact an aftermarket track bar brace, you may wish to shift the SwayLOC assembly farther to the driver side. Either way, when you transfer bushings from one side to the other, just ensure that all spacers are used to take up the gap.



If there is an added track bar bracket brace, or a steering box support brace, then the latching arm may not clear with all the spacers on one side. If this is the case, simply swap the latching and non-latching arms from side to side. The Non-latching dual hub arm, with its formed double offset, will gain more clearance at the linkage end to clear additional track bar brackets. The SwayLOC will operate the same whether the latching mechanism is on the left or right side. The only time the latching mechanism on the passenger side is a concern is on a Jeep that has a drag link flip kit, and a shallow lift. This MAY cause interference between the inner arm and the draglink, during left front tire stuff. Adjusting the links longer may help this condition, but ensure that there is room for uptravel on the arms if the links get longer.

8. If you haven't installed the inner bar, do so now. Installing lube on the bars is not as necessary now, as the latching side will be greased with a grease gun after installation, however, giving the inner bar a good light coat on the larger diameter ends of the bar will allow things to go together easier. Standard wheel bearing or chassis lube grease is good.



9. We recommend installing the dual hub arm on the torsion bars first. It may be on the passenger or driver side, depending on how your offset clears in the previous step.

Using the installation tool kit (Short length of tubing, length of stud, nut and washer) Start by putting the stud into the end of the inner torsion bar.

Place the arm in place for the bar to engage the hub and then heavy flat washer, small washer and nut to finger tight, then using a wrench slowly turn the nut and if necessary adjust the angle of the arm to get it to engage the hub. The bar should slide into the hub with just a little force on the wrench. If you must turn hard enough to possibly wreck the threads, you have something not aligned.



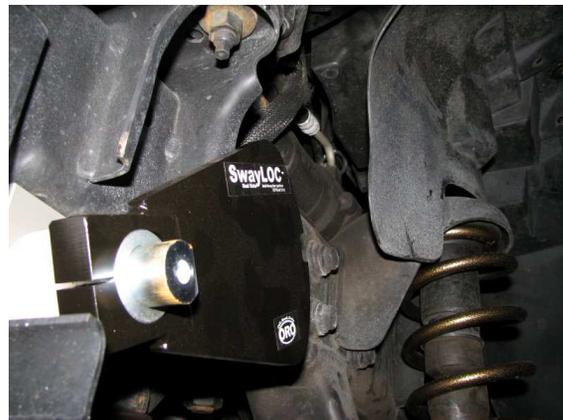
Once it is started, seat the bar completely by turning the nut. Once seated, clamp the hub tight using the 3/8" cross bolt. Remove the install tool.

Now, push the arm back towards the large bar and rotate it so that the torsion bar will engage the hub, point between dual flats towards the rear will result in the arm being horizontal to ground.

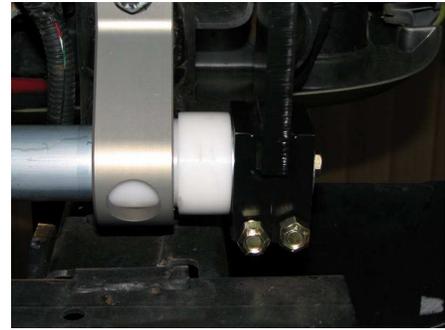
Move to the other side. Use the length of tube with the install kit over the inner bar, and again use the stud, washers and nut to install. Tightening the nut here will force the outer bar into the hub on the other side. You may need to slightly rotate the arm up/down to get the bar to engage with the hub when there is a small amount of force placed on the small nut. When you can tell that the arm is engaged, and tightening the nut feels like the bar is being inserted into the hub, continue until you feel increased resistance. That resistance is likely the bar being fully seated (Inspect thru the slot where the bolt tightens, use a zip tie or other fine tip device to determine if the end of the outer bar has made it to the seam between inner and outer hubs) then simply tighten that hub clamping bolt. The dual hub side is now done. Remove the tube from the end of the torsion bar, and continue by installing the short arm on the torsion bar.

10. Prepare the inner arm for clamping with the 3/8" cross bolt and nut. Place it over the inner bar, and align with the outer bar. The inner bar should stick out beyond the outer arm slightly. Use the install tube over the inner bar as a spacer. Now using the large flat washer, small washer and nut like before, position the arm in proper rotation with the bar and tighten the nut.

Wiggle or adjust the arm as necessary and this should allow the arm to slide into place by tightening the nut. Once it is fully seated, tighten the cross bolt.



11. At this point, there should not be a large gap between the bushings and the inside edge of the arms on either side. A total gap of no more than 1/16" is ideal. If the gap is larger than that, you may not have a torsion bar fully seated in the hubs of the arms, or you need to add a thin spacer to make up the gap. Inspect for the bar insertion into the lug hub on both sides and if one is not seated, loosen the 3/8" bolts and use the install tool to put more pressure to get it to seat.



Once you are this far with the arms to the torsion bars, now you must tighten the rear aluminum mounting bracket bolt.

Install the latch thin washer and the grease zerk in the latching end of the torsion bar. Lube once assembly is complete. Picture of the grease zerk screwed into the torsion bar.



12. Finally, install the latching arm. With a manual latching mechanism, flip the gray lever to the pointed end of the arm, this will open the latch and allow room to assemble. IF you are doing an air operated latch, then locate one of the 1/2" nuts to assemble the links (jam nut or the friction lock nut either will work) grip the arm and latch mechanism, and slide the mechanism toward the pointed end of the arm. The spring will attempt to slide it back to the closed position, place the nut in the gap that opens when you slide it. This will hold the latch open and allows for the latching arm to be assembled without the latch getting in the way.

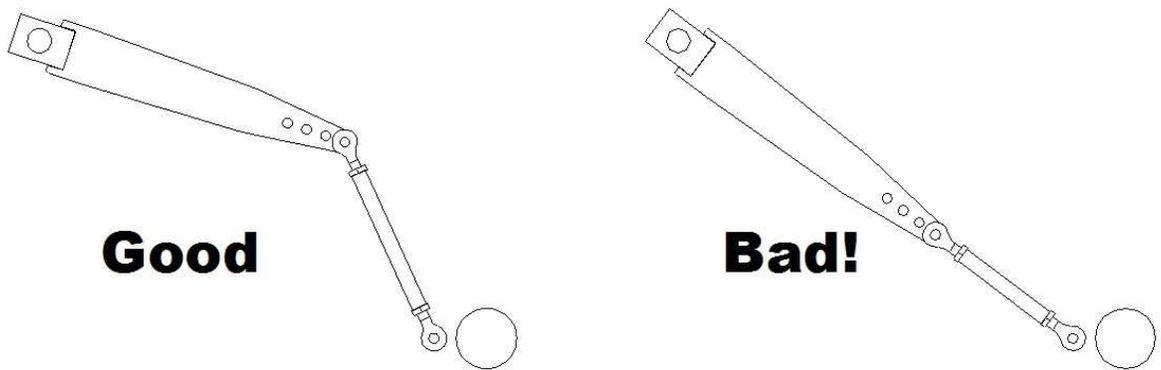
Now, again using the stud and washer and nut from the installation tool, place the arm on the inner torsion bar, and position it so that the flat of the torsion bar inserts into the hub. Once in position, use the nut to draw the arm into place. Once seated, there should be a small gap between the inner and outer arm hub. 1/16" to 3/32" (Or about the thickness of a dime) is perfect.



13. Now, assemble the links.

There is a common theory that the arms must remain horizontal to the ground. This does hold true to get the best, symmetrical operation of the off road bar, however, with the strength of the On Road bar being much heavier, this requirement is second to the most important part, make the linkages as long as you can, providing the arms don't contact frame or other obstructions on the upward swing. The worst thing that can happen, having the links adjusted too short. This would cause the swaybar arms and links to become the limit strap upon full droop, and that will cause undo stress and wear, possibly failure of some components.

Adjust so the arms are close to level. Increasing the angle upwards may help to get the tires to clear during full turn, lock to lock. What you want to compare, look at the range of uptravel in your front suspension. Look at the shock, to see how far it would travel before stopping or if its adjusted correctly, look at the bumpstop inside the spring. If there is 3" from the bumpstop to the foamy cushion, allow for that foamy cushion to compress completely, if there is 5" of up travel then you simply make sure that from the point where you have your arms set at, there is 5" of room to swing upward. The best way to check the droop portion is to simply do a test. Attach a linkage with the arm where you think it will work, and then with a jack (or other safe method) raise the jeep until the tire starts to come off the ground. IF at that point, the linkage and the arm are NOT in a straight line, then the linkage is long enough.



The linkage should be assembled like the following image.  
**Note: The top of the image is towards the center of the vehicle.**



Note in this image that the black spacers have a side with a chamfer, this allows rod end clearance for maximum misalignment. The friction lock nuts have had a chamfer cut on the back side to also allow this clearance. The top lock nut will start easily on the bolt from the chamfer side, but not from the friction lock formed side.

On the axle end, we include the C shaped tabs to be bolts on with the links. The idea here is to reinforce the strength of the factory axle tab. If you have a replacement axle, or a bracket that is different than stock, then this may be omitted.

Simply place the C tabs outside of the factory tabs, bolt them in place with the hardware as shown above. IF or When you can, have them welded with a MIG welder. Simply weld the tips of the C to the axle tubes, and this will make the tabs strong enough to not bend.



14. Assemble the links. Using the 1/2" studs, put together any of the 2.5", 3.5", or 4.5" link pieces in any combination to get the length you determined best for your application.

Simply screw the stud in one end until the dimple hits the end of the link. This next picture shows the dimple on the stud. Screw the next link onto it, and simply twist tight by hand. When done you should be leaving no gap.



**NOTE: Make sure to use the jam nuts to force the connection as tight as possible, Failure to get these threads tight will likely result in wearing out the threads in the aluminum.**

In the event that you have other suspension parts that change the tabs or a custom axle, you will need to adjust, space or modify the mounting as necessary to get it all to work. Ideally, you should have the linkage parts as straight up and down as possible. A small angle to either side will be OK.

Here you can see the C-Shaped Tab mounted to the factory tab. This is the previous screwed on studs for the rod ends, the new design as shown above will be a simply thru bolt to attach to the axles.



Final step, adjusting the last link. You don't need to have the links the same length side to side. They will likely be close, but the final adjustment, you will want to have the vehicle parked on a flat level surface, with the tires aired properly. Then adjust the final link length so that the latch will easily engage into the slot on the inner arm. IF this is not adjusted in this manner, and the linkage is a bit to long or short, it may cause a pull left or right when the latch does become engaged. Once links are all adjusted, make sure to tighten the jam nuts on either end of the aluminum linkage. **These nuts left loose make cause the linkage threads to wear.**



## **Operating the SwayLOC™ with the Manual Lever**

The manual lever system is very simple and should be very straight forward. The grey lever that sits above the latch itself that has the small coil spring attached to the back of it, controls the pressure of the spring upon the latch.

When the lever is flipped forward, the coil spring pulls the latch forward, toward the keyed slot and will hold it engaged once the latch passes over the slot.

To disengage for off-road flexible mode, simply lift the coil spring end of the grey lever, and rotate toward the rear of the Jeep, and the lever once over center will flop down against the arm. The latch will clunk as it moves to the rear and disengages. IF the latch does not move once the arm is flipped to the rear, then there is most likely pressure on the latch, keeping it engaged. Simply rocking the Jeep side to side may result in enough movement to lessen the force on the latch and allow it to clunk open. If the Jeep is parked with the front axle more than slightly askew to the frame, then you may need to drive for a short distance before it will unlatch. Please listen for the clunk or stop to verify that it is disengaged before you force the Jeep to flex, as failure to disconnect may result in failure, most likely to the linkage attachment to the axle brackets.

To re-engage for highway use, simply flip that lever from the rear toward the front. Now when the latch passes over the slot, it should slide into place and deliver great on road performance. If the latch does not line up with the keyed slot, do not worry. During driving, it will slip into the keyed slot.

The SwayLOC™ installation is now complete.

## **MAINTENANCE**

Once installed, periodic maintenance to the latch system is to keep the latch clean and operating. With the air controlled, simply listen to the sound of the engagement and release. With 50 PSI or greater the SwayLOC™ disconnection should report a resounding “bang” as the air cylinder forces the latch open. Switching the SwayLOC™ off should result in a sound of air rapidly escaping, but you will most likely not hear the tab engaging. Any change in the sounds should be a key telling you that it may be time for maintenance.

With the manual lever control, if the latch is sticky or resisting movement, then cleaning is needed.

Maintenance is as simple as keeping the latch clean. After some mud encounters, you may be able to free things up by flowing water thru the latch area, washing out the silt that is collecting. In the event that there is more debris inside than you can flush out, simply removing the socket head cap screws will allow you to disassemble the latch from the arm, and then can clean and rinse the area out well. We recommend resisting from lubing the latch area, as we feel that most lubricants will attract dust and cause more problems. The only lube that we've found that we like is the dry lube that you can get at bicycle shops for bike chains, as this stuff will not wash off or attach dust, usually, and this has worked well, but filling the latch slot full of mud will still prevent the latch from operating as designed.

## **Greasing the SwayLOC**

With the new improvements to the SwayLOC design, most of the maintenance is simply periodic greasing of the 2 bushing mounts as well as a couple shots on the end of the torsion bar to lube the intersection of the bars.

**Thank you for your purchase of the SwayLOC™ Dual Rate Swaybar.**