



SwayLOC™

Installation Document

Off Road Only

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JK Rear 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. Is is the install guide for the Rear JK application. Some trimming of the pinch weld in the rear is required. It is recommended to run 4.5" backspaced wheels, or stock JK wheels with 1.5" wheel spacers added.

Please INSPECT PACKAGES before starting installation.

The package contains all of the parts as seen in the picture below



Figure 1 SwayLOC™ rear kit components



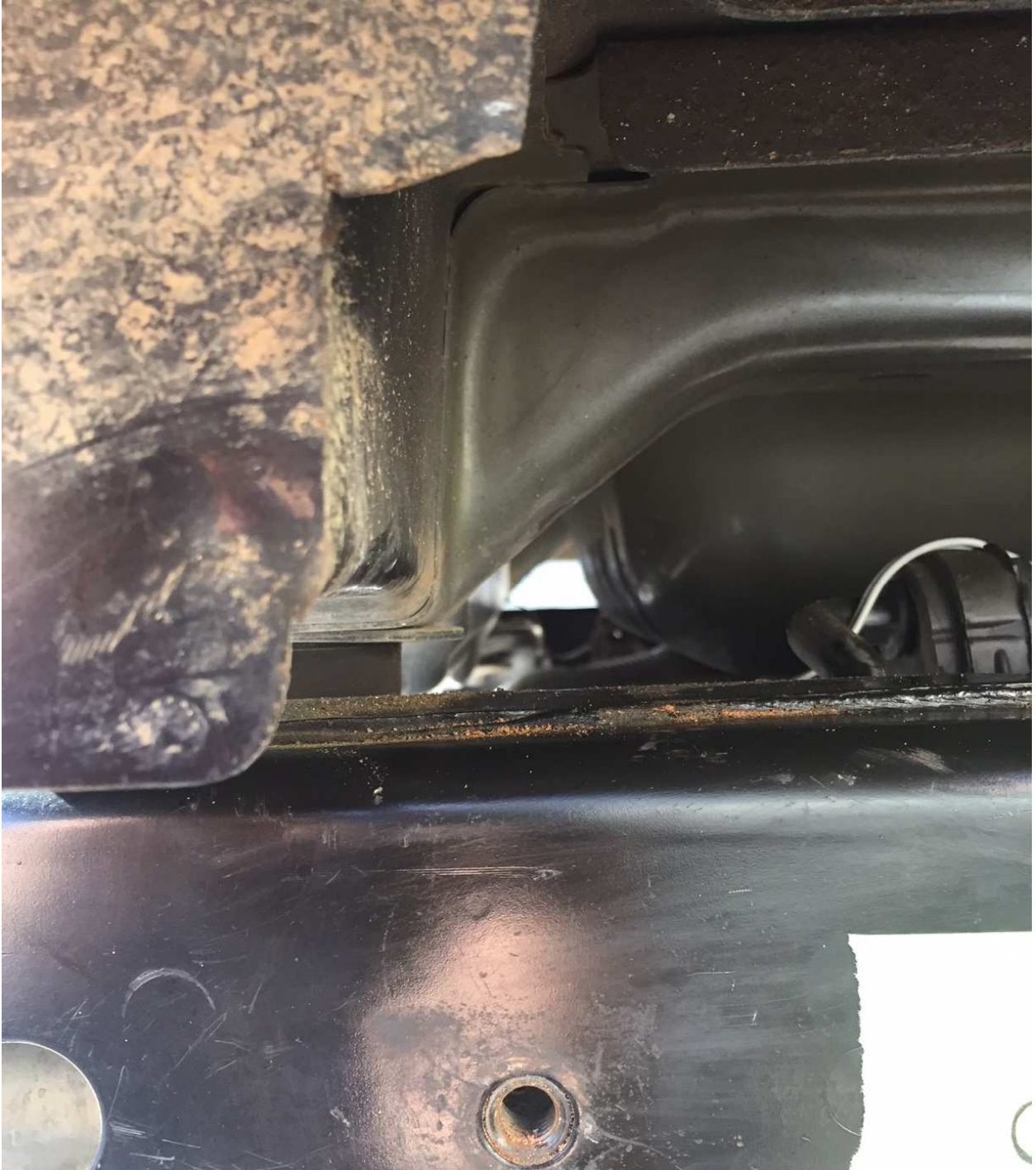
JK Rear SwayLOC installed

MECHANICAL INSTALLATION

1. The JK SwayLOC Rear installs above the rear frame rail, forward of the rear body mounts. There is an opening between the jack storage compartment and the subwoofer compartment that provides just enough room to pass the bars side to side. BUT, clearance is tight. If you have a stock rear bumper, it is far easier to install this by removing that first.

The installation of the rear SwayLOC mounting brackets to the side of the frame utilizes the 2 mounting locations for the stock bumper mounting. Those are the 2 bolts arranged top and bottom on the bracket in the image shown above. IF you have an aftermarket bumper and the mounting goes far enough forward to interfere with these points, you will need to modify the bumper mounting, as these brackets **MUST** be placed tight to the frame rail, the length of the torsion bars dictate this.

In the following photo, you can see the opening looking from side to side where the torsion bars will go. One thing to watch for, IF you mount the bar too far towards the rear, the angled area of the body supports may come in contact with the bar during bumps that cause the body mounts to flex, this will result in a resounding 'thump' that is hard to find. The mounting bracket holes are large enough to allow the bracket to be moved around a bit, ensuring there is no contact. But if you go too far forward, the subwoofer tub will be close to making contact as well. You will drill 2 holes in the frame to add the 2 extra mounting bolts, it is recommended to drill these holes larger than the 1/2" that the brackets have, to allow for this adjustability.



Note the angled surface on the left in the opening, and the subwoofer tub on the right of the opening.

In the event of an aftermarket bumper, or steering box re-enforcing plate that causes any area of the mounting surface to be farther away from the body than the other, it is recommended to duplicate that thickness in a spacer to place between the mounting surfaces that do not have interference. This will keep the whole assembly square with the body.

2. You will use the brackets to determine where to drill the 2 holes in the frame rails. Hold each bracket and align the mounting holes with the 2 retainers for the stock bumper supports. Mark the spots for the 2 new holes to be added. We've placed a piece of tape on the frame here to help highlight the marking of the holes. The bushing sleeves of the brackets will rest upon the top of the frame.

Again, we recommend drilling these oversize, we use a unit bit and bring them to apx $\frac{3}{4}$ " diameter to ensure the bracket can move enough to get the bar to clear the body both in forward and rearward positions.



3. Here you can see the holes drilled. Obviously, do resist drilling them so large that they intersect, the retainer that slips inside the frame that the bolts go into uses this arear between the holes to hold the bracket tight.



4. Once both sides are drilled, apply a small amount of grease to the inside of the bushings. Standard chassis grease will work fine.
5. Temporarily place the mounts in place, using the original bumper bracket mounting bolts to bolt them to the side of the frame.

6. Now, the pinch weld just rearward of the mounts will be trimmed to allow room for the arms to swing. You can see in the image to the right, we recommend trimming the vertical edge flush with the panel behind it. See the middle arrow.

The Top edge, notice the height of the cut in proportion to the bracket mounted on the left, it is better to cut higher than lower in this spot.

The lower edge, trim that at an angle rearward away from the SwayLOC area.

We recommend painting, or simply swiping some RTV along the cut edge to seal the raw metal and if you swipe RTV along the seam, it will seal up the opening between the layers.

Note: trim opposite side as well!

Now, remove the brackets and prepare to start assembling.



7. With the trimming done, and the bushings having a thin coating of grease on them, place the torsion bars above the frame rail, from side to side. **PAY SPECIAL ATTENTION**, the inner bar has a small hole appx 1.5" from the end of the bar on one end, this is the grease port to allow you to grease the bar intersection when its assembled. **MAKE SURE** That this end of the inner bar is on the **LEFT** (drivers side) if that is where you are mounting the latching arm. With the bar in place above the frame, slide the brackets in place on the proper sides, over the torsion bars and using the OEM bumper bracket mounting bolts, bolt them loosely in place. You can leave the mounting bolts loose until the arms are assembled, and then you can move the assembly forward and rearward to make sure you have clearance to the body.





8. We will start assembling the arms to the bars by mounting the dual hub arm (Non-latching, passenger side arm) to the inner bar. Slide the inner bar towards the passenger side to allow you to work with just the inner bar to start with.

Included in the package is an "installation tool kit". This kit contains a 2" long stud, some washers, a nut and a 1" long piece of the outer torsion bar tubing. You will use this package to pull the torsion bars into the arms. For the inner bar to the dual hub arm, install the stud into the bar, far enough that the threads will not pull out. It should screw in about $\frac{1}{2}$ ". Place the arm over the stud, place the large flat washer over the stud, followed by the small washer and the nut. Now, ensuring that the bar is rotated to match the opening in the hub, keep the arm perpendicular to the torsion bar and slowly, using a $\frac{1}{2}$ " wrench, turn the nut and walk the bar into the hub. We find it is easiest to rotate the arm down and let it hang while we install this first bar to the hub. **MAKE SURE** you have the clearance to swing the arm back up into position before you fully install this in this hanging position. When the bar is fully installed (NOTE: It may stop just short of being flush with the hub) insert the $\frac{3}{8}$ " clamping bolt and tighten this to 40 ft lbs. place the heavy flat washer and $\frac{1}{2}$ " long cap screw on the end of the bar to cover the end.



9. With the inner bar installed, we will now get the outer bar installed on this dual hub arm. Move the installation stud to the opposite side. IF the short, inner arm hub will slide onto the outer bar, put that in place, even if it doesn't slide all the way in place, this net step will push it into place. IF it doesn't start nicely, then leave it off, and finish the dual hub side first. Place the short piece of tubing over the install stud and the inner bar, then the large washer, small washer and nut again. Now, as you tighten the nut, you will push the outer bar into the dual hub arm. Snug it up, BUT make sure the V shape of the torsion bar is rotated to match the hub. IN the finished position, the V point will point forward. With it rotated correctly, and a slight amount of pressure on the nut, you can rotate the arm slightly and feel when it engages the bar. Once the bar is turning with the arm, then continue to work the bar into the arm with the nut. You may look thru the slot in the hubs to ensure that the bar is fully inserted into the hub, and once it is, install the $\frac{3}{8}$ " clamping bolt and torque to





40 ft lbs.

10. IF the inner arm got installed in step 9, insert the 3/8" clamping bolt and torque to 40 ft lbs. Note, with the outer bar fully inserted in both the dual hub large hub as well as the inner arm mounted and inserted flush with the end of the outer torsion bar, then there should be very little, if any gap between the installed arms and the bushings in the mounts.

NOTE: We and found it simple to place a screwdriver or other object thru the rod end mounting hole, to hold the arms in place while finishing the arm installation.



11. Before we finish the latching arm install, best to finish the mounting bolts. There are 2 machined nut assemblies that have tangs on them, allowing you to reach the nut in thru the slots in the frame and start the 1/2" bolts supplied. We recommend forming that tang to allow the tang to protrude from the slot, and then grab it with a vise grip in a method that will allow you to hold it in place and start the 1/2" bolts. Once you have the bolts started on both sides, then we need to make sure the bars are not hitting the body, and then tighten them up.

With the bolts loose, slide the assembly towards the rear on both sides, and you should be able to feel when it makes contact with the body. Ideally, you want to move it forward about 3/16" from this point, on both sides. This will gain you enough clearance to prevent the 'thump' from the body interference during a bump situation.

Once you have adjusted the position on one side, snug the mounting bolts and adjust the opposite side. Snug those bolts and go back to the first side, ensuring that your happy with the position. Sometimes, depending on the position of one side, adjusting the other may after the first. When your happy with the positions, tighten the 1/2" bolts to 90 ft lbs.

Only tighten the OEM bumper bolts if you are not re-using the stock bumper support brackets.



12. Now, finish the arm installation by installing the latching arm. IF you have a manual version, flip the lever to the open position, so that latch doesn't interfere with the inner arm as its being assembled. IF you have an air version, slide the latch open and place one of the 1/2" nuts from the linkage kit between the cylinder mount and the sliding latch part, holding it open.
13. Again, using the installation stud in the end of the torsion bar, place the arm over the stud, install the large washer, small washer and nut, snug it up and rotate the arm to get the bar to align with the arm. Once it is in proper rotation, snug the nut and work the bar into the arm. Once it is fully

seated (Again, it may not sit completely flush when seated) insert the 3/8" bolt and tighten to 40 ft lbs.

14. Now, the large, thin flat washer will cover the end of the torsion bar, and the grease zerk to retain it, cover the end of the torsion bar on the latching arm side. Once you are done, pump some grease into this zerk, as well as the bushings to lube for use.

15. Now it is time to assemble the linkage pieces and put the linkages pieces in place. There is 2, 12" pieces of aluminum linkage included, along with a pair of each of the following, 2.5", 3.5" and 4.5". Use the all thread sections to screw the linkage piece together. Make sure that as these go together, they **MUST** be tight together, otherwise the threads will wear and possibly pull out of the linkage pieces eventually. There is small divot in the center of the studs, to make sure that it inserts equally into both halves.



16. Depending on your tire clearance and your suspension travel, you will want to assemble the linkages to have the arms angled upward or downward. There is a maximum uptravel point, as the arms will contact the body eventually.

You will reuse the lower stock swaybar mounting points for the lower connections.

17. With the linkage lengths determined, place a jam nut on the rod end and leave appx 1/2" of thread exposed. Using the shorter 1/2" bolts, pass the bolt from the outside, thru the first part of the arm, thru the rod end and then second part of arm. Use a locking nut that does **NOT** have a chamfered edge machined into it. **MAKE SURE** that the bolt length is not enough to grab the brake line as it swings past. (see arrow on image to right) IF there is contact, either cut the bolt off shorter or move the brake line.



18. On the lower, we include some black spacers with a tapered edge, this is to go against the rod end to allow for more misalignment. The chamfered nut goes on the opposite side of the rod end, again to allow for more clearance. The lowers will have the bolts passed thru the OEM mounting holes, from the outside towards the inside. Slide the spacer on with the tapered edge towards the center. (The kit will have a longer and shorter spacer. Place the shorter spacer on the passenger side. Arrow shows point of spacer install) install the rod end and then the chamfered nut.



19. Before you adjust the second linkage, re-engage the latch by flipping the lever towards the rear, or remove the nut if air model, and move the arm to engage the latch. Now, adjust the second linkage to this length. DO NOT adjust the linkages equal in length, as this could cause a twist in the chassis and a resulting pull to one side or the other.

20. With the linkages installed, tight and brake lines clear of obstruction, grease the bushings and inner bar if you haven't already and then you're ready for a test drive, unless you need to reinstall the rear bumper.



Operating the SwayLOC™ with the Manual Lever

The manual lever system is very simple and should be very straightforward. 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. If the latch is not loaded with the Jeep being slightly twisted, then 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 slightly twisted 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.

MAINTENANCE

Once installed, the only real maintenance to grease the inner torsion bar and 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 actually engaging. Any change in the sounds should be a key telling you that it may be time for maintenance.

With the manual lever control, simply flip the lever unlocked, and rock the Jeep slightly if the latch is loaded to get it to unlock. AT that point, you should be able to move the latch assembly fore and aft rather easily. If it is sticky or resisting movement, then cleaning is needed.

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 you 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. As this has worked well, filling the latch slot full of mud will still prevent the latch from operating as designed.

NOTE: Forcing the Jeep to articulate with the SwayLOC™ engaged may result in component failure, please ensure that when you disengage the latch, that it does in fact disengage. This is typically determined by listening for the “clunk” as it moves to the extent of travel.

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