# 4” DualSport RT Suspension

## For 2018+ JL Wrangler

INSTALLATIONGUIDE

## NEW PRODUCT

Please visit www.aev-conversions.com to view the most current installation guide for this product.

This is a new product and we want to make sure that you receive the latest and most accurate information based on customer feedback, product revisions, and/or model year updates. We value customer feedback, so we encourage you to contact our Technical Support department if you have any suggestions on how to make the installation of this product easier or if you have any questions regarding the installation of this product. AEV’s Technical Support can be reached by email at tech@aev-conversions.com or by giving us a call at (248)-926-0256.

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Approved By: Sean Williams
Last Updated: 06/15/2026

## PLEASE READ BEFORE YOU START

To guarantee quality installation, we recommend reading these instructions thoroughly before beginning any work. These instructions assume a certain amount of mechanical ability and are not written nor intended for someone not familiar with auto repair.

| INCLUDED PARTS | QTY |
|---|---|
| Conbox | 1 |
| Shock Kit | 1 |
| Front Geo Bracket Kit | 1 |
| Front Spring Kit | 1 |
| Rear Spring Kit | 1 |
| High Steer Mount Kit | 1 |
| High Steer Tie Rod | 1 |
| AEV Steering Damper | 1 |

| REQUIRED TOOLS |
|---|
| Common Hand Tools |
| Torque Wrench |
| Jack and Jack Stands |
| Drill |
| 1/2” Drill Bit |
| 9/16” Drill Bit |
| Red Threadlocker |

**Vehicle Applications:** 2018+ Jeep JL Wrangler Rubicon, Extreme Recon, and Moab. Wide Track Axle Models Required.

**Vehicle Assumptions:** Stock JL frame and axles with all stock brackets intact Stock Front and Rear Driveshafts

**NOTE:** Aftermarket units with double-Cardan joints will require a rear axle pinion angle adjustment that is NOT provided in these systems.

**NOTE:** 32–35 PSI is AEV’s recommended tire pressure with our DualSport Suspension™ Systems. Aftermarket Wheels: These are recommended both for adequate width to mount large tires and decreased backspacing for chassis and steering clearance. AEV JL Low Offset wheels are optimized to work with this suspension system for maximum clearance to chassis components and vehicle body/flares. Maximum wheel backspacing is 5.2" or less for 37x12.50 tires and 4.9" or less for 39x13.50 tires.

**Install Time:** Approximately 9 hours.

## FRONT SUSPENSION

1. Raise Jeep and support the frame using jack stands or a hoist, such that the front axle can be lowered enough to remove the springs. Support the axle by placing the floor jack under the center of the axle. Remove the wheels.

2. Begin installation by first installing the AEV High Steer Suspension Kit. Reference the AEV High Steer Suspension Kit installation instructions (SKU: 52060007AA). Install the High Steer Kit per the instructions, but there are a few steps of the installation you will wait to do until the rest of the AEV 4" Suspension Kit is installed before finishing the high steer. See below for notes on this.

   A. Do not re-install the passenger side sway bar end link per the high steer installation instructions. We will install the new extended sway bar end link later in the suspension install. The factory end links on the RH and LH side of the vehicle can be removed and discarded but save the hardware. Leave the sway bar disconnected until the new AEV springs are installed.

   B. At the end of the high steer install, do not torque the track bar to spec. The track bar will be torqued to spec after the rest of the suspension is installed. Leaving the track bar loose installed will assist in being able to lower the axle enough to install the new AEV springs.

3. Once the high steer kit is installed on the front suspension, we will proceed with the installing the rest of the AEV 4" Front Suspension. Ensure the axle is supported with an axle jack before proceeding.

4. Loosen but DO NOT remove all 8 control arm bolts.

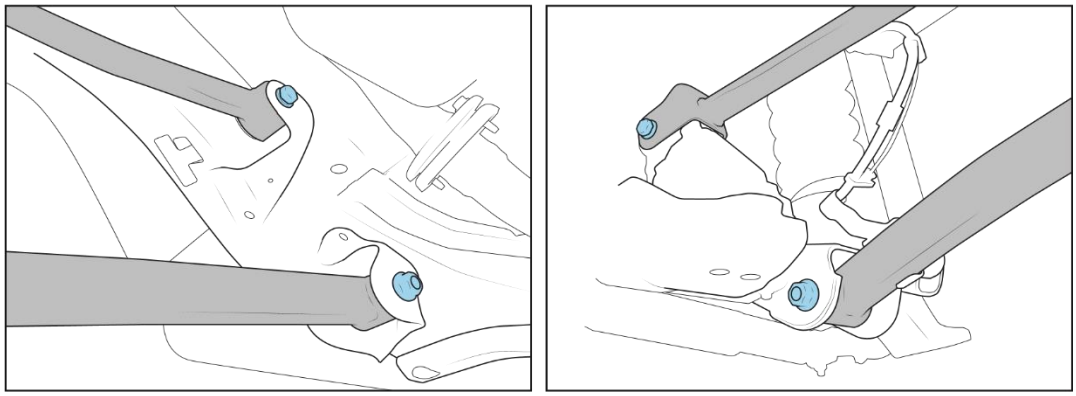

*Figure 1*

5. Disconnect brake line brackets at frame, electrical connector for axle disconnect, and push fastener for axle disconnect to allow extra droop. Do this on both sides of the vehicle.

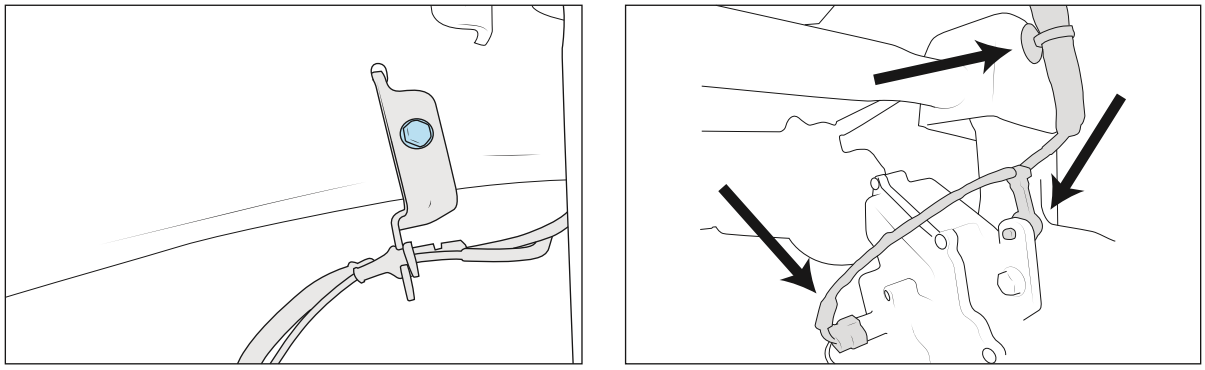

*Figure 2*

6. Remove factory shocks from both sides of the vehicle and save the hardware.

7. Locate the brake line bracket that is attached to the lower control arm. Being very careful not to damage the rubber line, use vice grips or a pry bar and open the bracket to remove the brake line. This brake line needs to be removed from the bracket to allow enough slack at droop for the new AEV 4" suspension. Once the brake line is free from the bracket, you can remove the bracket from the control arm and discard.

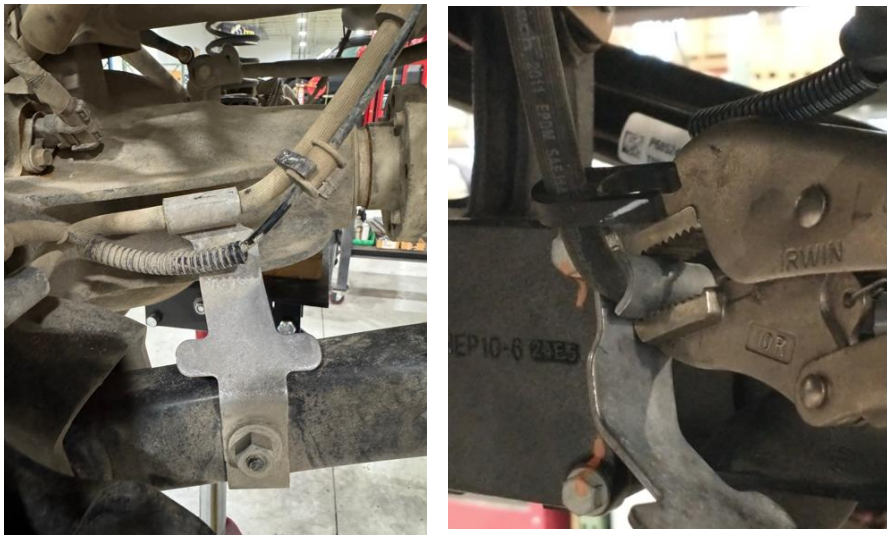


*Figure 3*

Do this on both sides of the vehicle.

8. Lower the axle and remove the springs. DO NOT remove the factory rubber isolator.

9. Install the upper bumpstop extensions.

   A. Remove urethane bumpstops from inside spring towers. These simply press into place, so remove them by wiggling them downward and sideways, or carefully prying with large channel locks.

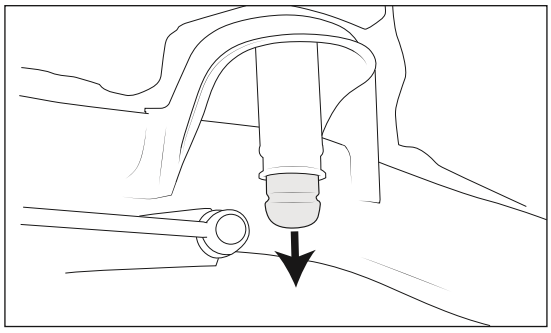

*Figure 4*

B. Reinstall urethane bumpstops into new AEV aluminum extensions. Lube them with glass cleaner or detergent to make install easier.

C. Install extensions into factory bumpstop mounts. Using magnet or socket extension, install M12x25 flange bolt from top of spring tower. Torque bolts to 40 ft-lb

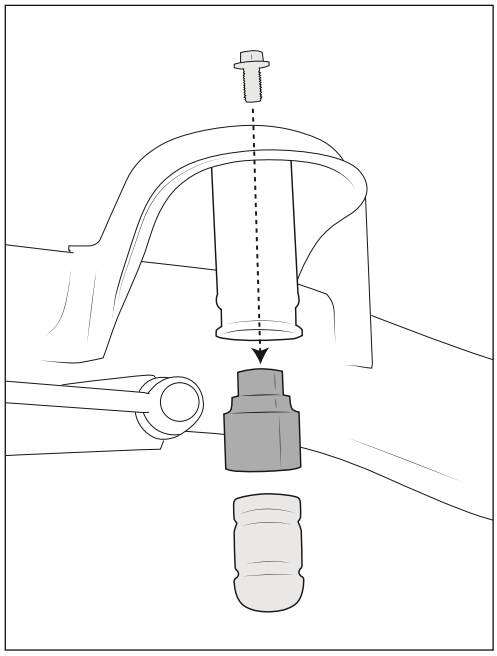

*Figure 5*

10. Install Springs

A. For installing the suspension on a 2.0L, 3.6L, or 392 Gas JL, remove passenger lower spring isolator by carefully prying it upward away from axle. Install front spring shim to bottom of isolator, passing

molded stud through hole in shim. Reinstall assembly onto axle spring seat. JL has more weight on right side of vehicle than left, so this helps it sit level. Shim sits underneath isolator on axle. NOTE: Not used on EcoDiesel.

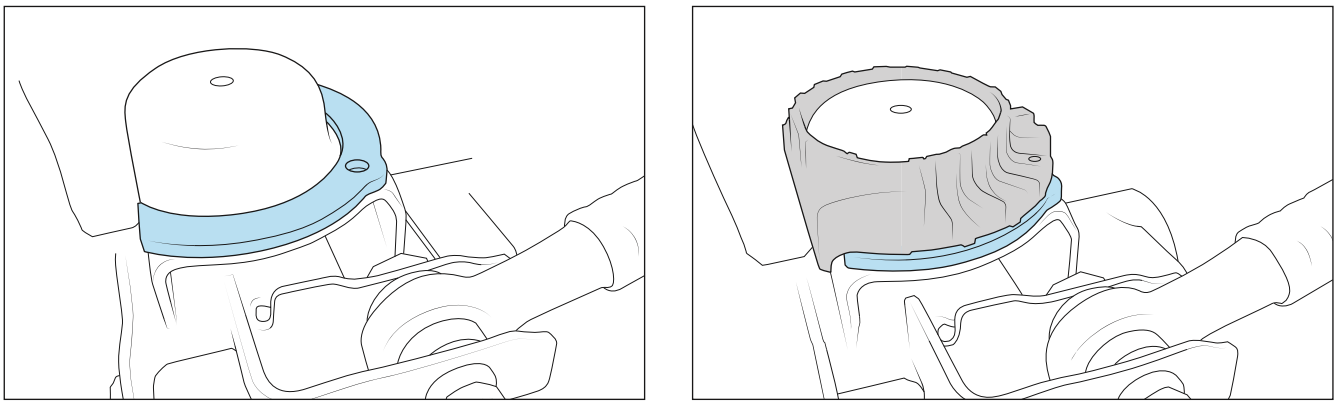

*Figure 6*

B. Install the Front AEV springs making sure to properly index them on the lower isolators. Be careful the springs don't snag the thin outer lip of the isolators. If the upper isolators fall out during assembly or disassembly, reinstall them by making sure the top locating posts pass through the holes in the spring tower. Raise axle to retain springs in place.

C. NOTE: For Gas 3.6L and 2.0L Jeeps, if you are planning to run 39" Tires, install the provided 1" axle side bump stop puck to the lower spring isolator on both sides of the vehicle. Use the provided M10 x 40mm Flat Head Bolt and M10 nut to secure the bump stop to the isolator. Torque to 40 ft-lbs or until snug if you cannot access the bolt with your torque wrench. The brake line bracket attached to the lower isolator may need to be removed on the passenger side of the vehicle to gain tool access to secure the puck. This step can be done with the springs installed, if done before, you may have difficulty getting the spring installed over the top of the bump stop. This axle side bump stop is not needed if running 37" Tires and is not needed on EcoDiesel.

*Figure 7*

11. Install new front shocks (33-364407) at upper and lower mounts using factory hardware. Note, the upper shock bushing is offset. Install the shock with the longer bushing sleeve end facing inward, pushing the shock further away from the frame. The AEV sticker label should be facing outward. Torque to the specs called out at the end of the instruction sheet.

12. Install the new AEV sway bar end links. The front end links will be the shorter of the two end links versions provided in the kit.

    A. For each side, attach the upper end link stud to the sway bar in the same manner as the original front end links. The nut should be on the inboard frame side of the sway bar.

    NOTE: 2024 and newer vehicles come from the factory with M14 upper end link studs. AEV fastener packs include spacers to adapt to this larger hole in the sway bar.

*Figure 8*

B. The driver side lower end link will attach in the factory location using the original hardware, with AEV provided washer added to the inboard side of driver side link only. Torque to 40 ft-lbs.

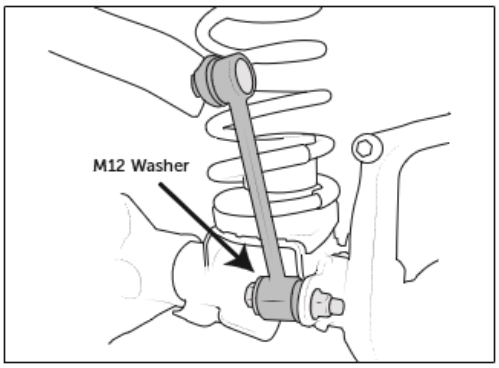


*Figure 9*

C. The passenger side lower end link will attach to factory location using the bolt and flag nut previously removed from this location during the high steer installation. Torque this bolt to 89 ft-lbs.

*Figure 10*

13. Reattach the brake line brackets at the frame, electrical connector for axle disconnect, and push fastener for axle disconnect. Ensure there is minimum ¾" clearance between the brake hose and the upper control arm. Lightly bend the frame side brake hose bracket to gain this clearance if needed.

14. Install the Stamped Geometry Correction Brackets (Refer to the instructions for this product. (PN AEV30413 / SKU NJL20500)
    A. Ensure the square caster washer is set to the proper orientation for the JL 4" lift height as shown in the Geo Bracket Instruction Sheet.

B. **NOTE:** If the Jeep has an aftermarket front driveshaft and/or is going to be used for significant rock-crawling, it is recommended to swap the upper control arms side-to-side. They are normally bent down and inboard to clear the frame, but once lifted this bend gets closer to the front axle pinion/yoke on the driver's side. Swapping is possible once lifted and will improve clearance to the pinion yoke area. The control arms are switched between sides. THIS STEP IS REQUIRED ON 392 Hemi models to clear the vibration damper on the pinion.

15. Reinstall wheels and tighten lug nuts, working in a 'star pattern'. Lower vehicle onto wheels so that it is sitting at ride height.

16. You can now tighten all fasteners to factory specifications while the vehicle is at ride height. Torque specs are found at the end of this instruction sheet.

## REAR SUSPENSION

1. Raise Jeep and support the frame using jack stands or a hoist, such that the rear axle can be lowered enough to remove the springs. Support the axle by placing the floor jack under the center of the axle. Remove the wheels

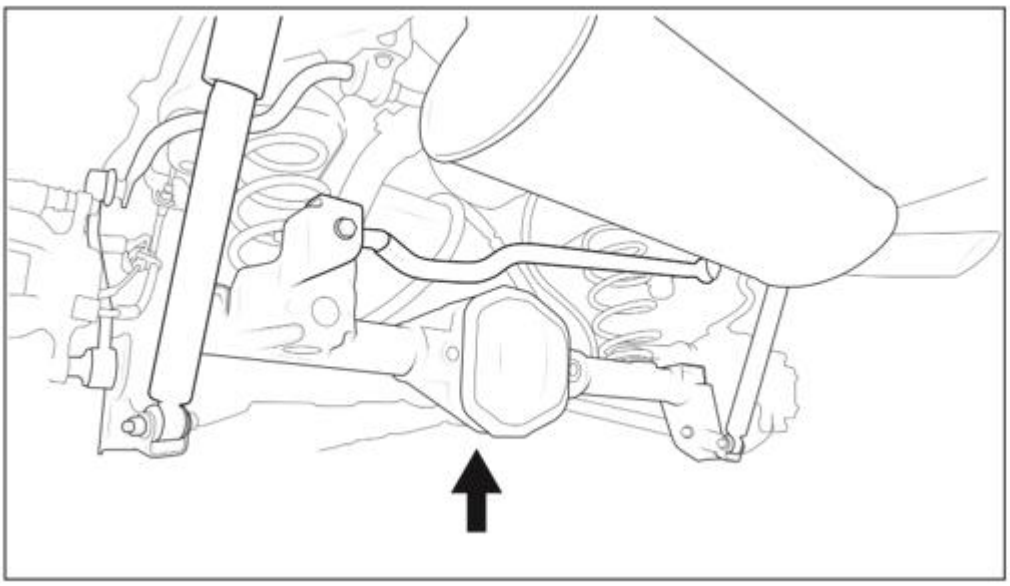

*Figure 11*

2. Remove the factory shocks and save hardware.

3. Loosen but DO NOT remove all 8 control arm bolts and both track bar bolts.

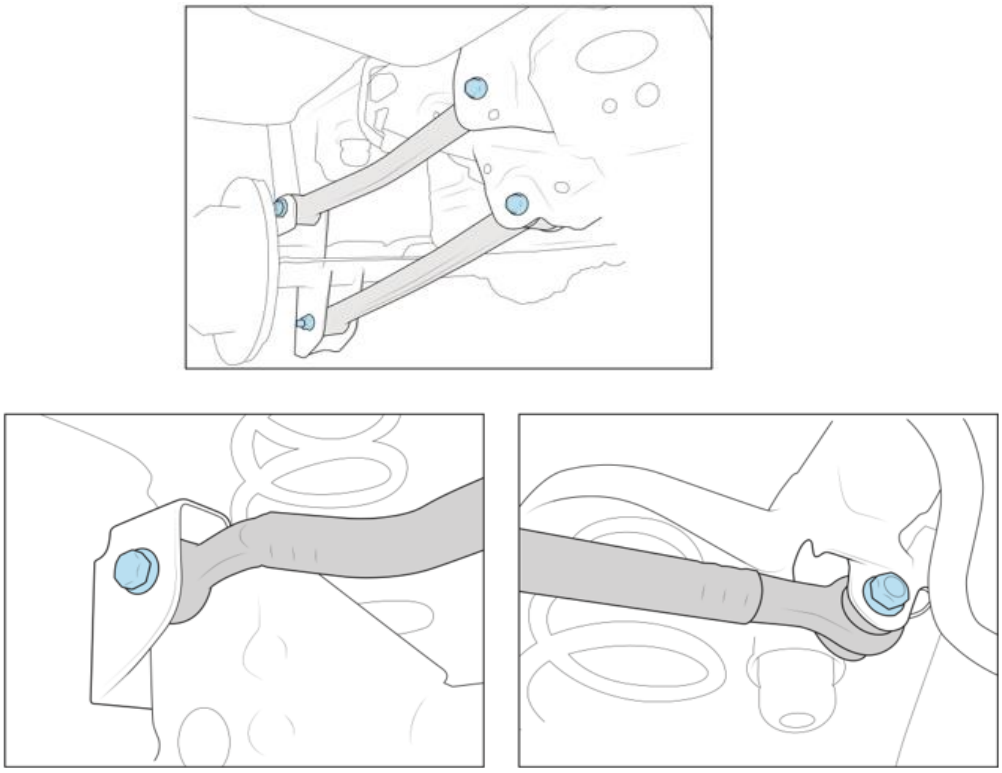

*Figure 12*

4. Remove the sway bar end links and retain the mounting hardware. See below for adding spacer blocks to vehicles, this will be dependent on the engine on your jeep.
    A. 3.6L / 2.0L / 392 Gas Engine Vehicles Only: Remove the sway bar from the frame and discard the hardware. Reinstall in the same orientation adding the AEV spacer blocks using the supplied M10 x 55mm bolts and washers.

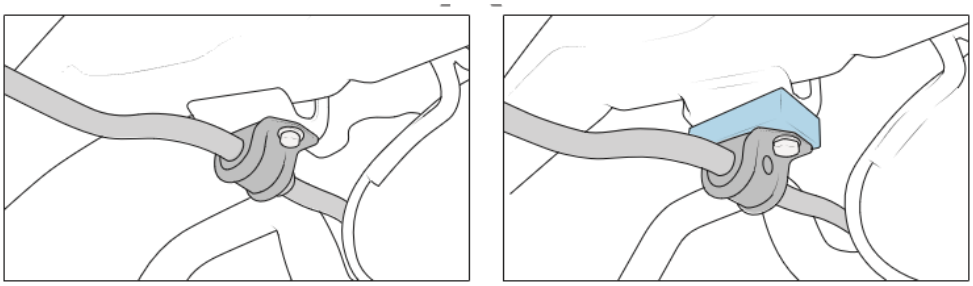

*Figure 13*

B. EcoDiesel Vehicles Only: Mark hole 1” above existing end link holes on axle brackets and drill new 1/2” hole in that location on both sides of vehicle. This is required because the DEF tank does not allow the sway bar to be lowered like the gas engine vehicles

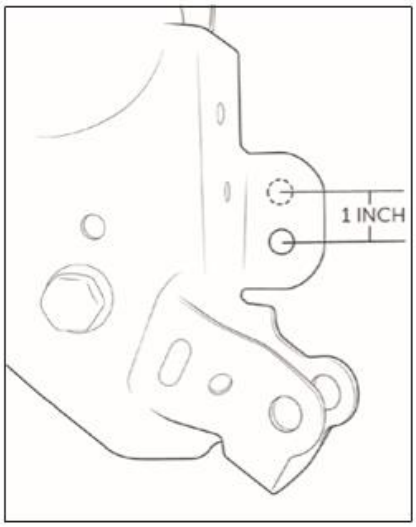


*Figure 14*

5. Remove the brake line bracket from the axle side upper control arm mount on both sides of the vehicle. This is needed to give the brake line enough slack when the axle is dropped. Save hardware for reinstallation.

*Figure 15*

6. Disconnect the rear differential locker wire connector from the axle and remove wire harness retaining clip from the axle bolt shown to free the wire harness from the axle.

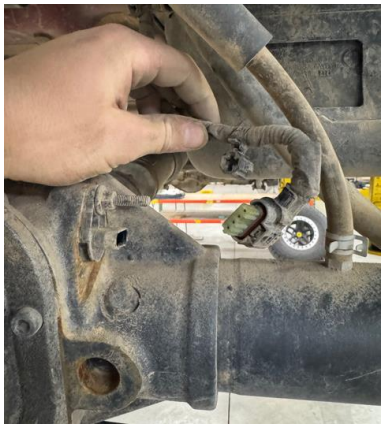

*Figure 16*

7. Lower the axle enough to remove the factory springs from the vehicle and keep the rubber isolators set aside.
8. Remove the brake caliper brackets and rotors from both sides of the vehicle. Set all hardware aside for reinstallation.

*Figure 17*

9. With the Caliper and Rotor off on each side, remove the parking brake cable from the retaining notch below the lower spring bucket by pulling the cable inboard enough to free the brake line from the notch. A flare nut wrench can be used to assist. Once free, you should be able to have enough slack to free the parking brake cable from the actuating lever on the on the brake assembly. If the cable won't provide enough slack to release from the axle end, the adjustment nut at the body attachment point can be loosened to gain more slack. We suggest marking the nut location before loosening for easier adjustment back to original setting later.

*Figure 18*

10. Once both sides of the parking brake cable are loose, locate the plastic retaining clips shown below on the frame crossmember. Pull the retaining clips off the bolts to free the cable from the crossmember. Remove the clamp attached to the parking brake cable as well.

*Figure 19*

11. Take the loose parking brake cables and feed them back up over the crossmember and then reroute them underneath the crossmember. Due to the new taller lift height, the parking brake cables need to be routed underneath the crossmember to ensure there is enough slack in the lines during suspension travel.

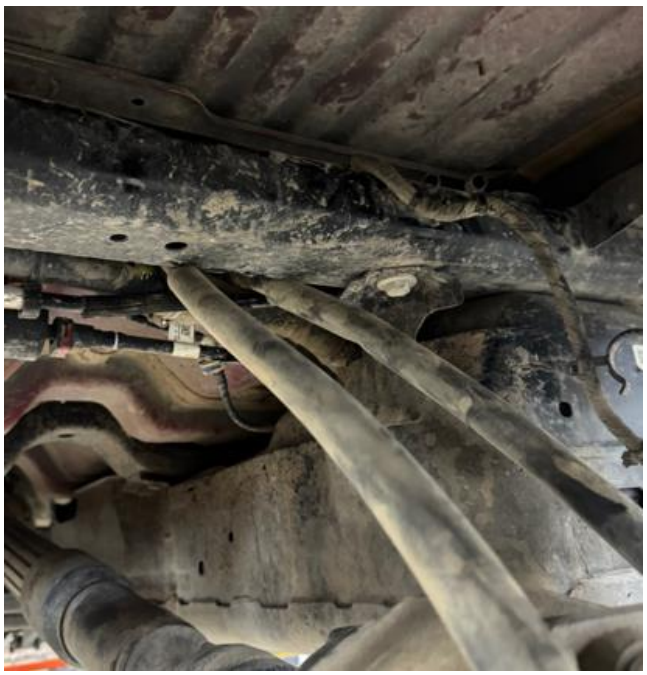

*Figure 20*

12. Working on one side of the vehicle at a time, we will install the new AEV control arm relocation brackets.

    A. Remove the upper and lower control arm bolts at the axle end. Remove the control arm ends from the factory axle bracket. Set hardware aside.

    B. Locate the smaller hole above the factory lower control arm attachment hole on the axle bracket. This hole will need to be drilled out to M14 or 9/16”, this will be our new lower control arm attachment point. Once drilled, debur and treat with rust preventative.

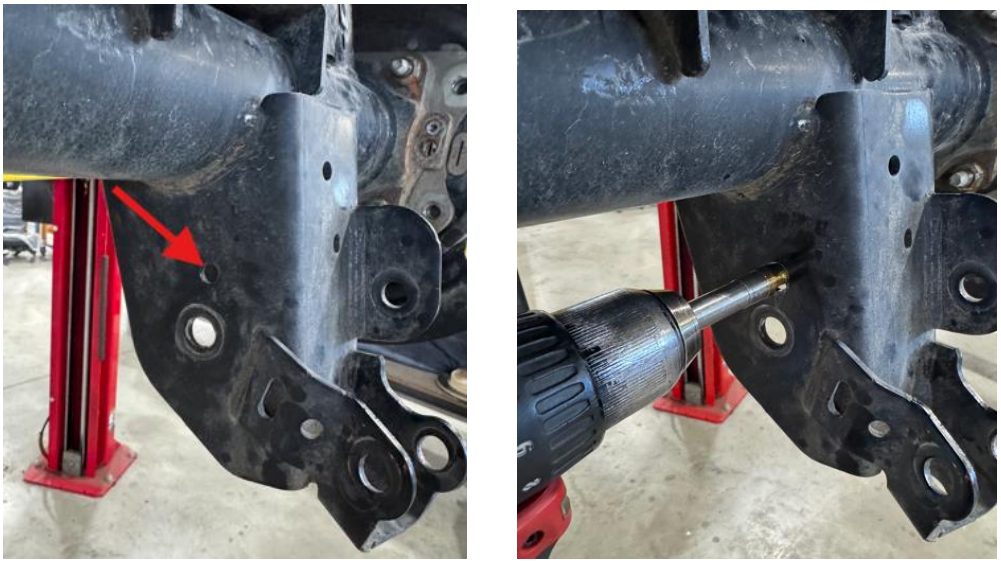

*Figure 21*

C. Locate the correct sided AEV Rear Control Arm Relocation Bracket. Align the bracket to the factory control arm axle bracket, with the curved arm of the new AEV bracket aligning to the new hole that you had previously drilled as shown. The curved arm should be on the inboard side to align with the lower axle bracket.


*Figure 22*

D. With the bracket properly aligned, place a provided M14 x 100mm bolt and crush sleeve spacer through the middle hole of the control arm bracket in the factory upper control arm location. Loosely secure with provided M14 nut.

*Figure 23*

E. Align the upper control arm end into the new control arm bracket upper attachment hole. Loosely secure with M14 bolt and flag nut previously removed from the factory upper control arm attachment hole.

*Figure 24*

F. Align the lower control arm end into the new control arm bracket lower attachment hole using the M14 bolt and nut previously removed from the factory lower control arm at the axle end.

*Figure 25*

G. Torque the middle bolt securing the new AEV bracket to the factory axle bracket to 90 ft-lbs. Leave the two other bolts securing the control arms loose until the vehicle is at ride height. Once at ride height, torque to spec shown at the end of the instruction sheet.

13. Take the parking brake cable end that should still be loose and feed this through the clearance hole on the curved arm of the new control arm relocation bracket. Reattach this back into the factory position on the actuating lever. Then re-attach the cable to the retention notch on the axle below the factory spring bucket.

*Figure 26*

14. Do the same steps on the opposite side of the vehicle so that both control arm relocation brackets are installed and the parking brake cables are routed and attached back to the brake assembly. Then proceed to next step.
15. Once the control arm brackets are installed and the E-brake cable is properly routed and reattached to the brake assembly, reinstall the rotors and brake calipers on both sides of the vehicle using the hardware that was previously removed. Apply red threadlocker and torque the brake caliper bracket bolts to 74 ft-lbs during reinstallation.

16. Rear Track Bar Tower Installation

    A. Disconnect the axle end of the track bar and save hardware.

B. Install the track bar tower in the orientation shown. For most Gas and Diesel Jeeps, you will utilize the lower of the two holes in the center of the bracket (B). For 392 and Xtreme Recon variants, you will utilize the upper hole.

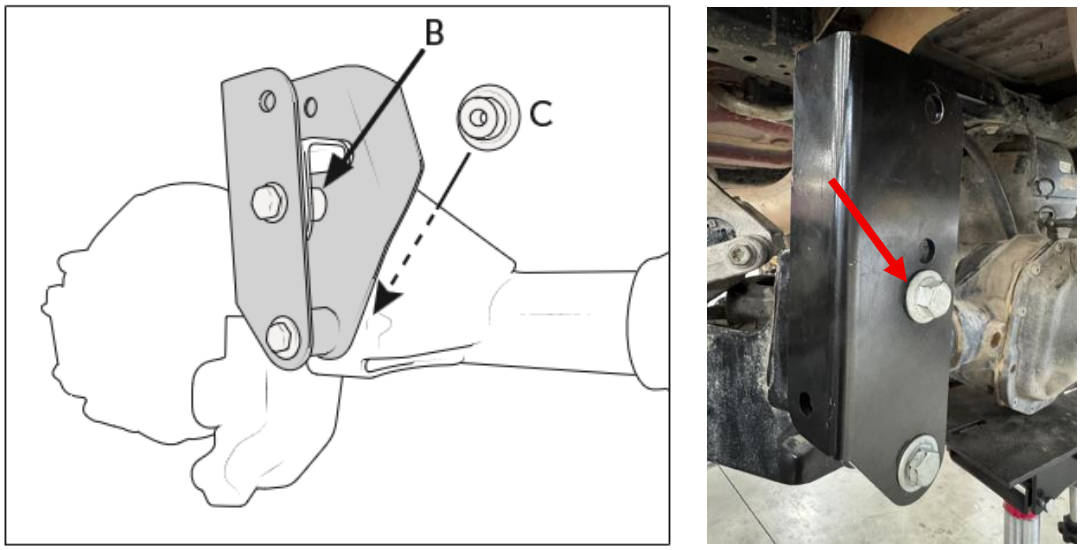


*Figure 27*

C. Place the provided track bar spacer in location (B) as shown above through the middle hole in the track bar. Install a provided M14 x 80mm bolt and washer through the hole and crush sleeve, loosely secure with M14 nut.

D. Install alignment puck into back side of factory axle bracket (side facing toward front of vehicle) and through the lower tube on track bar tower. Some resistance is normal to fully seat the alignment puck. Install M12 x 90mm bolt and washer from outer side of bracket, through alignment puck, and install M12 nut. Nut may need to be tightened to fully seat alignment puck. Torque the lower M12 bolt to 75 ft-lbs and the middle M14 bolt to 90 ft-lbs.

E. Reinstall track bar to top hole using supplied M14 x 80mm bolt and washer, secure with M14 bolt. Leave the top M14 bolt securing the track bar loose, this will need to be torqued to spec at ride height.

F. On the passenger facing side of the new track bar bracket, there is a hole that will be used to provide extra support for the taller bracket. A hole will need to be drilled into the factory axle bracket. Use a center punch to mark the center of the hole and drill a pilot hole in the axle bracket. After the pilot hole is drilled, proceed to drill out this hole to ½". Treat with rust preventative.

*Figure 28*

G. Install the provided M12 x 35mm bolt and washer through this hole and secure with M12 nut. Torque to 70 ft-lbs.

*Figure 29*

17. AEV spring installation

A. For all gas (2.0L, 3.6L, 392) vehicles, install rear spring shim to passenger side axle spring seat. JL has more weight on right side of vehicle than left, so this helps it sit level. Shim sits on top of isolator on axle.

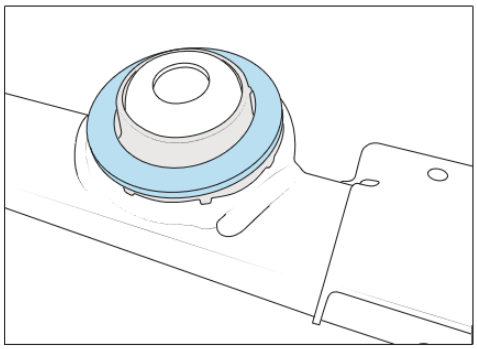

*Figure 30*

B. Install rear AEV springs making sure to properly index them on the upper isolators. If the isolators fall out during assembly or disassembly, reinstall them by making sure the top locating post passes through the hole in the frame pad. The isolator can be held in place during spring installation using small needle nose vise-grips to hold alignment tab above spring seat in frame.

18. Install new rear shocks at upper mount using factory hardware (PN 33-364414). The shock body sits at the top with AEV graphic facing outward at vehicle.

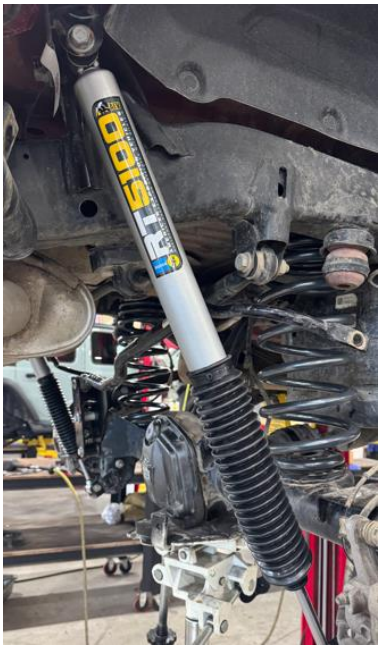


*Figure 31*

19. Raise axle slowly and guide springs into position.

20. Re-install lower shock nut and bolt and tighten. Install AEV sway bar end links (the longer of the two versions supplied in the kit) using factory hardware and tighten. Note: For diesel JLs, utilize the new hole you had drilled in the prior step to secure the lower end link end.

21. Reinstall the brake line bracket that was previously removed from the factory axle bracket on each side.

*Figure 32*

22. Reconnect the rear differential wire connector that was previously removed.

23. Reinstall the wheels and tighten lug nuts, working in a 'star pattern'. Lower vehicle onto wheels so that it is sitting at ride height. Torque all fasteners to spec called out at the end of the installation sheet.

24. Once the fasteners are all torqued to spec, install the rear bump stop brackets. The longer end of the upper pad should be pointed towards the front of the vehicle. Use the provided M10 x 25mm bolt and washers to align the bump stop to the axle pad and secure with the provided M10 flange nut. Torque to 45 ft-lbs.

*Figure 33*

**TIP**: It is good practice to mark each major bolted suspension connection such as these with a paint pen. Draw a line that runs from bolt head or nut to the adjacent bracket material. This will allow a visual inspection to easily

catch bolts that work loose. After approximately 100 miles, you should perform a complete visual inspection and re-torque any suspect bolts as well as your wheel lug nuts.

AEV recommends having a professional alignment done at this point.

AEV recommends the use of the provided ProCal SNAP to calibrate for the new tire size. Please follow the instructions that come with your ProCal SNAP.

AEV recommends 32–35 PSI tire pressure with our Suspension Systems.

## Torque Specifications

| JOINT | TORQUE (FT-LB) |
|---|---|
| Front UCA to Axle | 80 |
| Front UCA to Frame and AEV Brackets | 80 |
| Front LCA to Axle | 190 |
| Front LCA to Frame and AEV Brackets | 190 |
| Front Brake Hose to LCA | 15 |
| Front Track Bar to Axle | 110 |
| Front Track Bar to Frame | 110 |
| Front Sway Bar Link to Axle | 60 |
| Front Sway Bar Link to Sway Bar | 60 |
| Front Lower Shock to Axle | 75 |
| Front Upper Shock to Frame | 80 |
| Rear UCA to AEV Axle Bracket | 95 |
| Rear UCA to Frame | 120 |
| Rear LCA to AEV Axle Bracket | 90 |
| Rear LCA to Frame | 90 |
| Rear Track Bar to Axle and AEV Brackets | 90 |
| Rear Track Bar to Frame | 90 |
| Rear Sway Bar Link to Axle | 60 |
| Rear Sway Bar Link to Sway Bar | 50 |
| Rear Lower Shock to Axle | 75 |
| Rear Upper Shock to Frame | 80 |