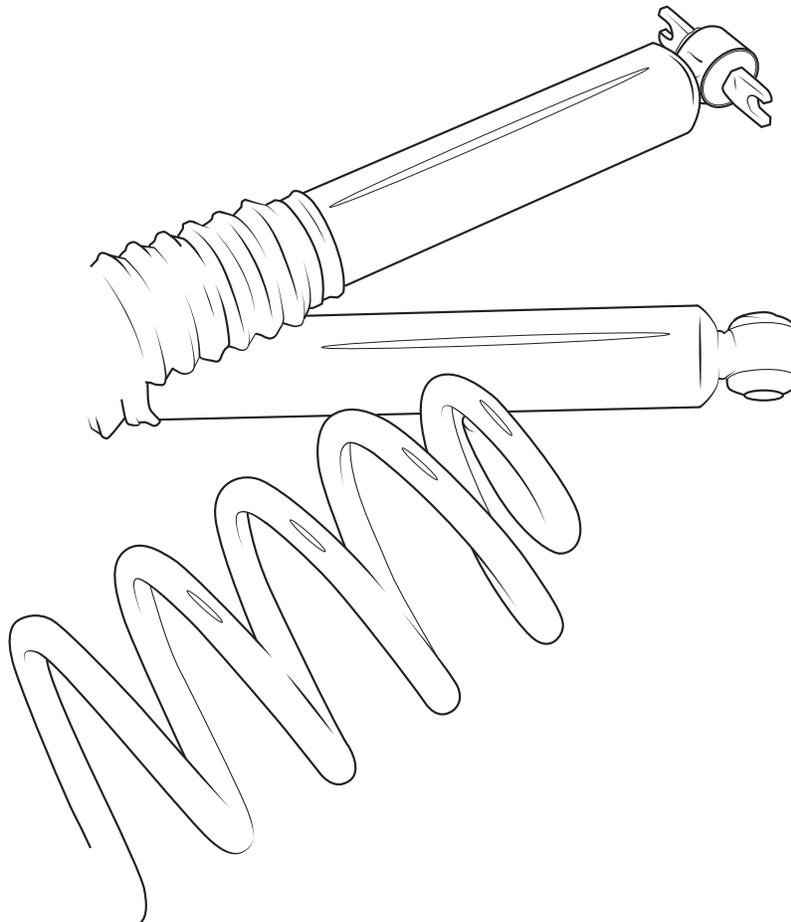




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**JK WRANGLER
3.5"–4.5" DUALSPORT SC
SUSPENSION
RIGHT HAND DRIVE**





PLEASE READ BEFORE YOU START

TO GUARANTEE A 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	REQUIRED TOOLS
Springs	4	Basic Standard and Metric hand tools
Shocks	4	3/8-in Drill Bit
Bump Stop Spacer Kit	1	5/8-in Drill Bit
Rear Track Bar (LHD system only)	1	7/8-in Drill Bit
Rear Track Bar Tower	1	
Brake Line Drop Bracket Set	1	
Rear Sway Bar End Links	2	
High Steer Kit	1	
Drop Bracket Kit	1	

Vehicle Applications 2007–Current Jeep JK Wrangler and Unlimited

Assumptions

Equipment that must already be present on your Wrangler

Stock JK frame and axles with all stock brackets intact.

2007–2011: Stock Exhaust-or equivalent position for clearance both where it crosses below the front driveshaft and over the rear tack bar.

2012+: An Exhaust modification is REQUIRED to clear the front driveshaft.

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: A small-diameter front driveshaft is recommended for clearance on 3.5"/4.5" systems and all 2007–2011 vehicles with automatic transmissions.

NOTE: 28–30 PSI is AEV's recommended tire pressure with our Suspension Systems.

Aftermarket Wheels—These are recommended both for adequate width to mount large tires and decreased backspacing for chassis and steering clearance.

NOTE: JK Sport factory 16-in wheels will NOT clear the new drag-link included in all Premium Suspension Systems. Any AEV JK wheel will solve the clearance issue or a set of 1.0-in thick wheel spacers with your stock wheels.

NOTE: Wheels with extremely negative offset may negatively affect ESP.

Install Time (Estimated)

Home/DIY/Shop 1st Install: 10–12 man/hrs; Shop 2nd or later install: 7–8 man/hrs.

Please take the time to read these instructions—*They are long because we want you to get the installation right the first time and enjoy the product immediately thereafter!* DO NOT start or attempt this product installation if you are unsure of your abilities or do not have the resources listed above. Be sure to check all specified torques with a torque wrench...too tight is not just right!!



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 floor jack under the center of the axle. Remove the wheels (Fig. 1).
2. Loosen but DO NOT remove all 8 control arm bolts. Detach parking brake cables from axle (Fig. 2).
3. Remove and discard the parking brake cable bracket (Fig. 3). On 4-door models the parking brake cable will need to be re-routed BELOW the frame cross-member. Reattach parking brake cable at axle.
4. Remove the track bar.
5. Remove Axle Vent from axle.

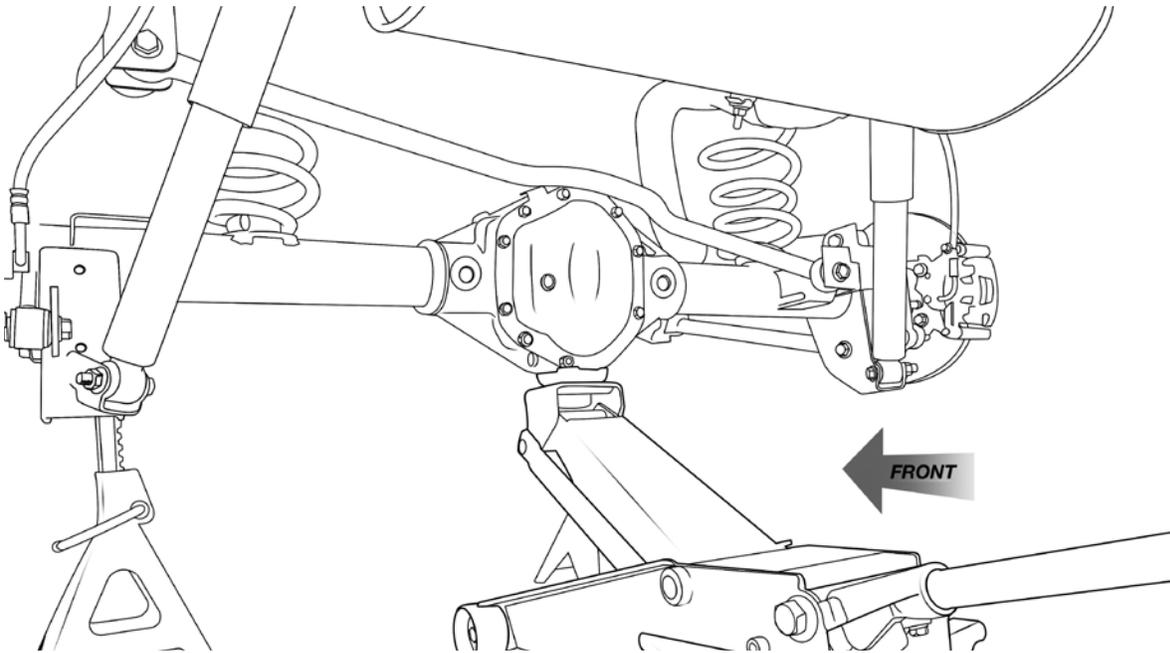


Figure 1

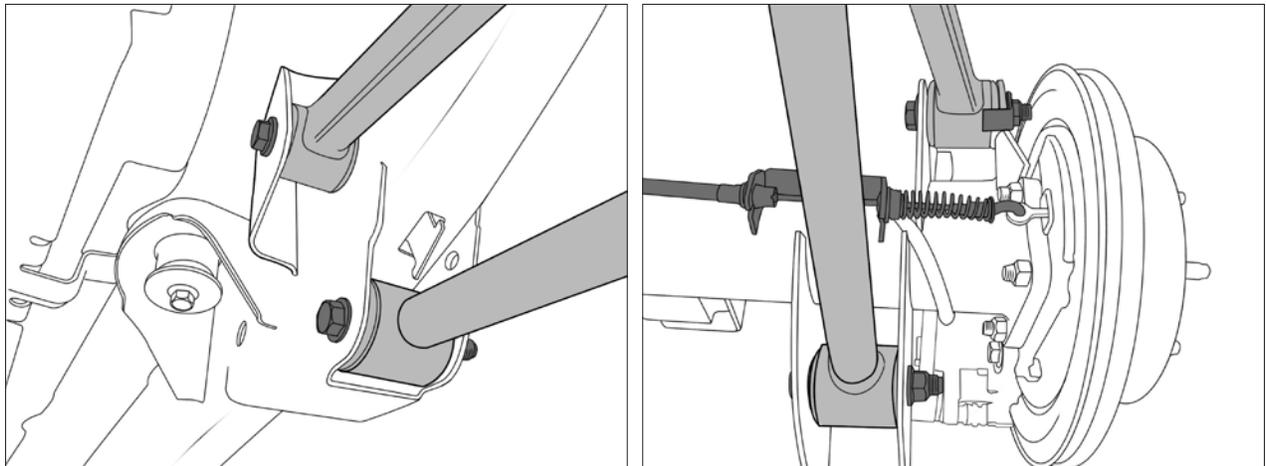


Figure 2

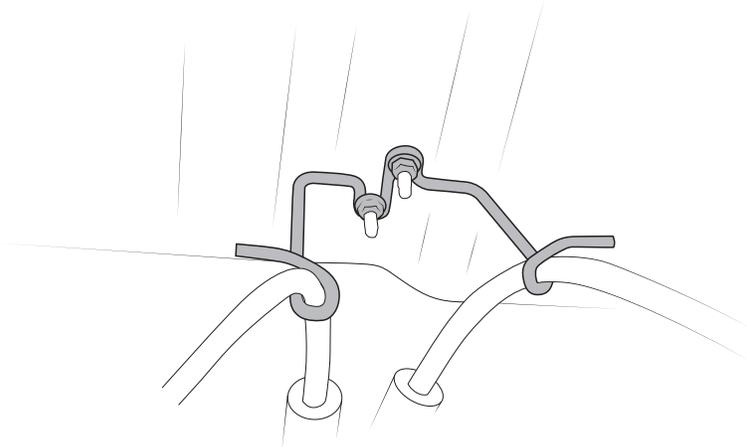


Figure 3

6. Remove the bolts that hold the brake lines to the frame (Fig. 4 A).
7. Remove the shocks (Fig. 4 B).
8. Remove the sway bar end links and save. You will reuse the hardware for the rear and the end links will be installed on the front of the vehicle. Note the orientation of the end links, the new end links will be installed in the same way (Fig. 4 C).

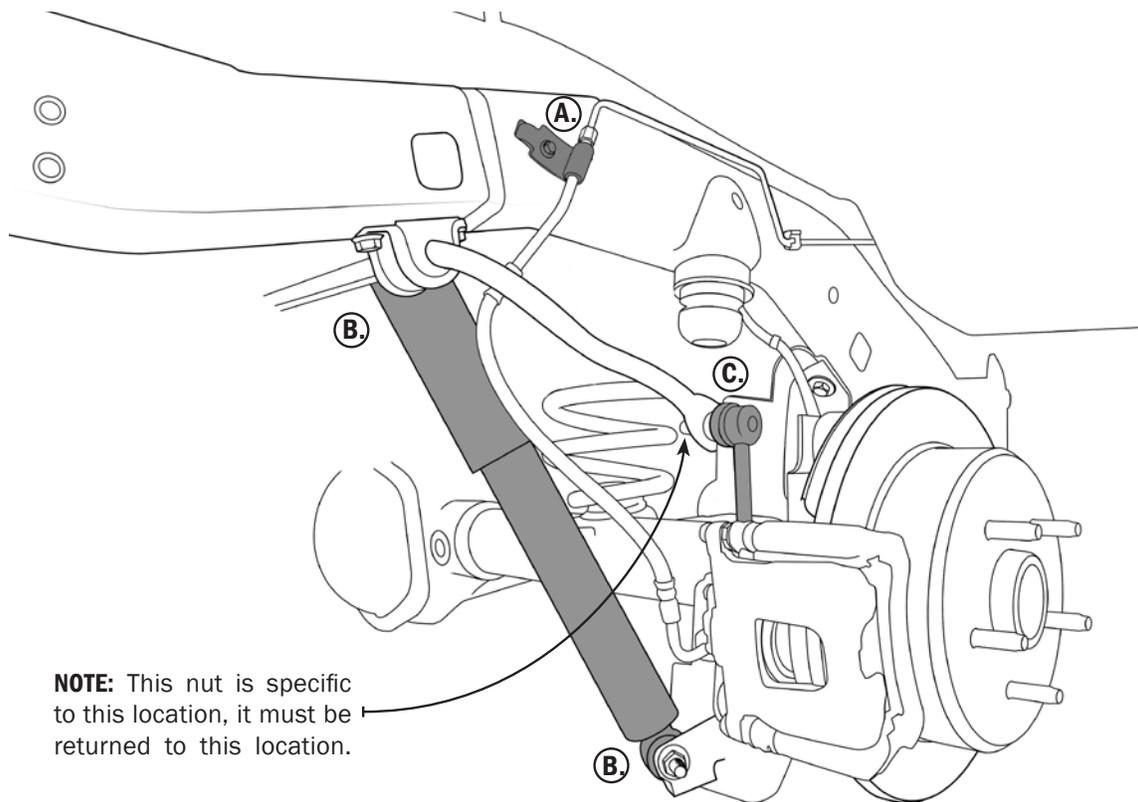


Figure 4



9. Carefully lower the axle using the floor jack enough to remove the springs. DO NOT overextend the wheel speed sensor or locker wiring, we recommend detaching the plastic fir tree cable ties from the axle and frame to allow sufficient movement. This pertains to wheel speed wiring and locker wiring if equipped.

10. Remove the factory springs.

11. Install the track bar tower.

A. Position the rear track bar tower on the axle and mark the hole as shown. (Fig. 5)

B. Remove the tower and drill the hole to 5/8"

C. Install the track bar tower with the supplied hardware using 2 of the 1/2" washers as spacers as shown. (Fig. 6) DO NOT TORQUE THE U-BOLTS TO MORE THAN 40 ft-lbs.

12. Re-install rear track bar hand tight as shown. This will be tightened later at ride height. (Fig. 6).

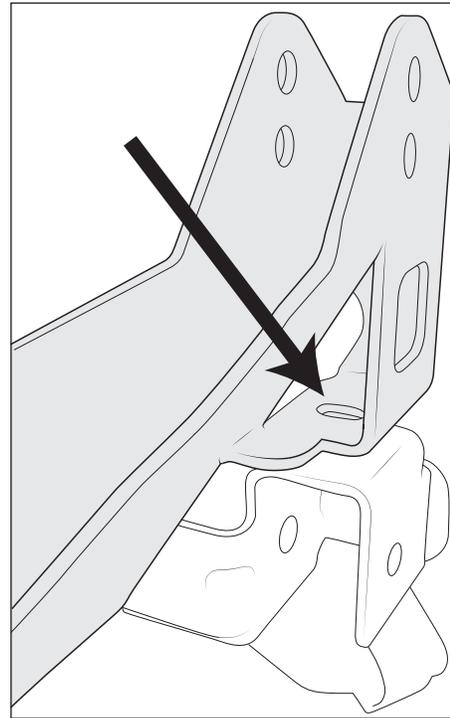


Figure 5

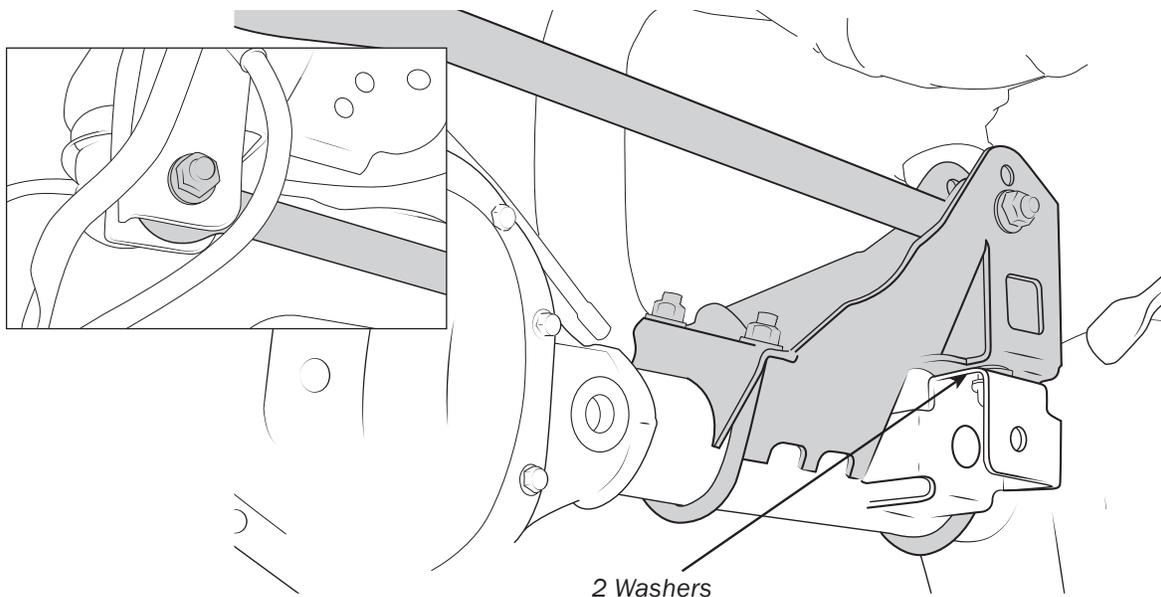


Figure 6



13. Install AEV springs making sure to properly index them on the axle spring seat (Fig. 7).

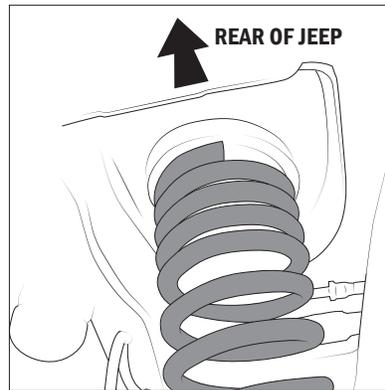


Figure 7

14. Install new shocks at upper mount. **NOTE: If installing Remote Reservoir Shocks, refer to Figure 8 for proper orientation to prevent damage to reservoir hose. It is critical that the hose for the remote reservoir shocks do not come into contact with any other parts. Remember that the shock will move as the axle travels through its range of motion, so you must be very diligent in the routing of this hose.**

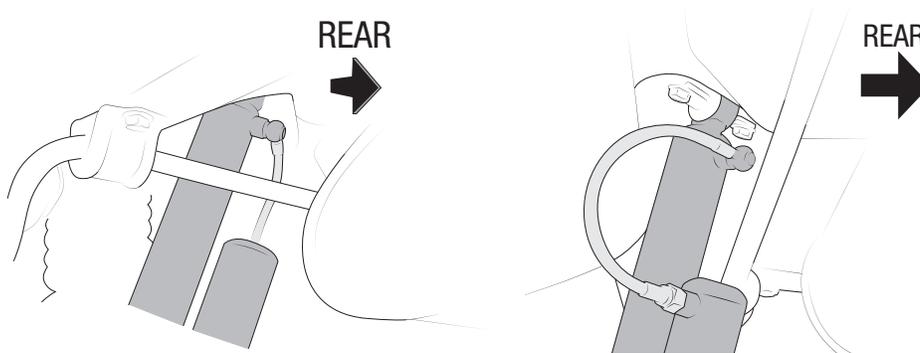


Figure 8

15. Raise axle slowly and guide springs into position.

16. Install AEV sway bar end links and tighten.* Re-install lower shock nut and bolt and tighten* (refer to Fig. 4-B.) Install brake line drop brackets as shown (Fig. 9) and tighten.*

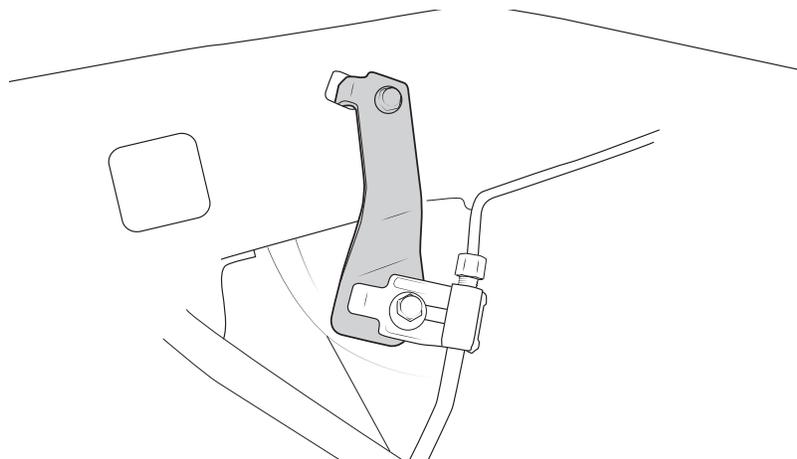


Figure 9

*Refer to Appendix for proper torque specs



17. Reroute Axle Vent as shown (Fig. 10).

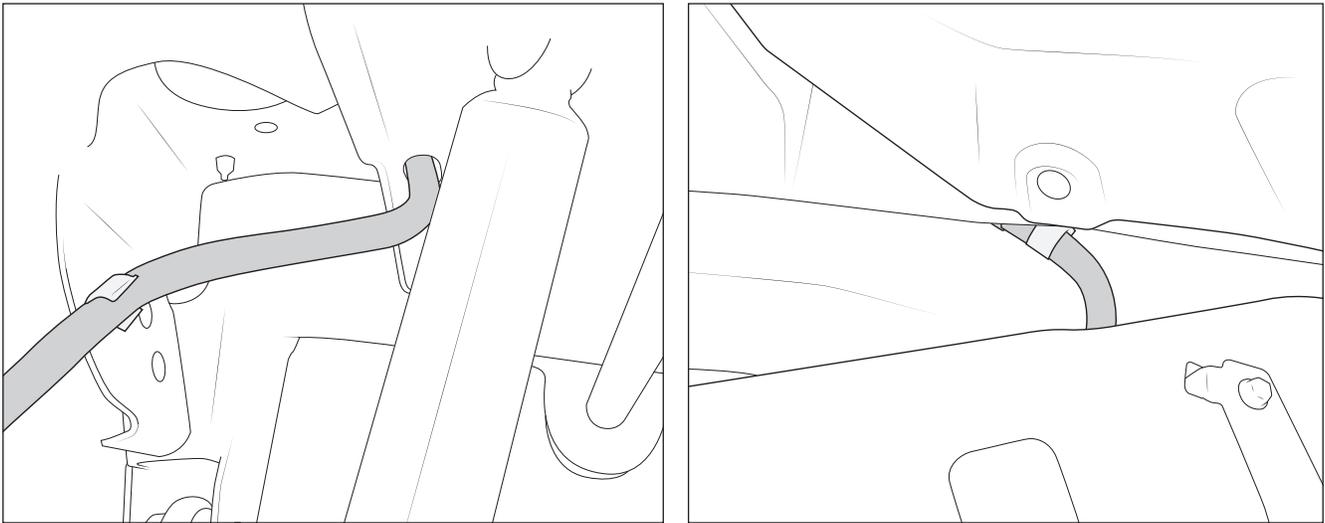


Figure 10

18. For **2007–2013** JK and JKU it is necessary to trim the pinch seams (and rocker guards on Rubicon models) if running 35" tires or larger. (Fig. 11). For **mid-2013 and newer** JK and JKU only the Rubicon rocker guard needs to be trimmed. Remove the end cap and trim 1" (from rear). Follow standard touch-up painting procedures to prevent corrosion on all cut surfaces.

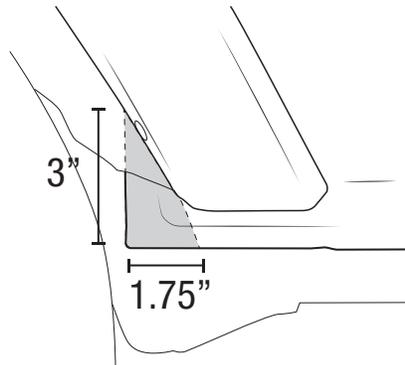


Figure 11

19. Reinstall wheels and tighten lug nuts, working in a star pattern.*

DO NOT install the rear bump stop spacers at this time. These will be installed after the control arms are torqued at ride height.

It is time to install the front suspension, however DO NOT tighten track bar or control arms at this time. These will be torqued AFTER the front suspension is complete.



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 floor jack under the center of the axle. Remove the wheels (Fig. 12).

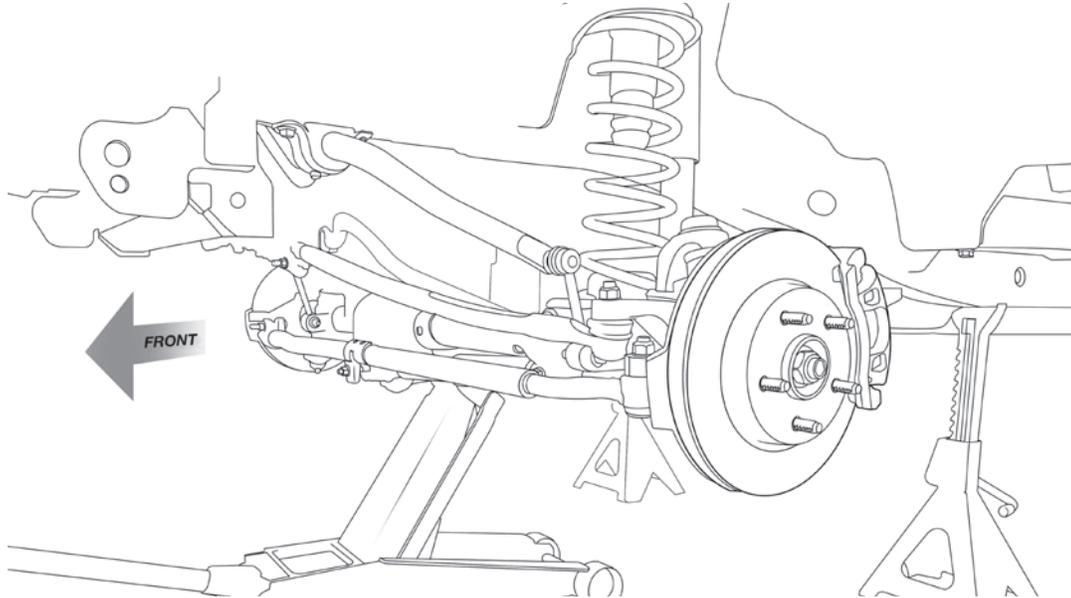


Figure 12

2. **Disconnect the drive shaft at the Axle end.** Make sure to mark both sides of the connection so you can properly align it when you reconnect it (Fig. 13). Tie loose end of the drive shaft up so it will not hang down. **Failure to follow this step may result in damage to your drive shaft.**

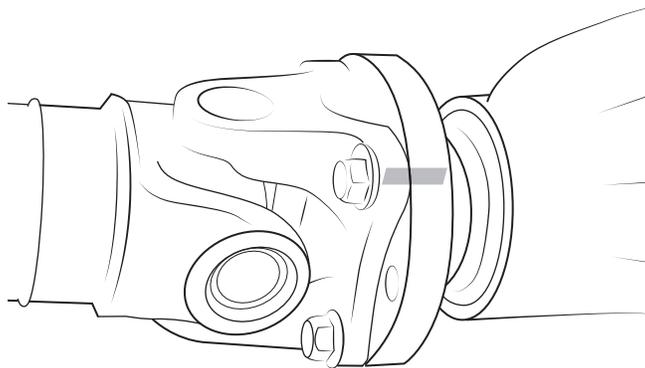


Figure 13

3. Remove the automatic transmission skid plate and set aside.
4. Loosen but DO NOT remove all 8 control arm bolts.
5. Remove the following parts:
 - Steering drag link (coupler to knuckle portion only)
 - Steering damper
 - Tie rod



- On **2007-2010** models only, loosen but DO NOT remove the frame-side track bar bolt. Remove and save the axle-side track bar bolt and flag nut (Fig. 14).

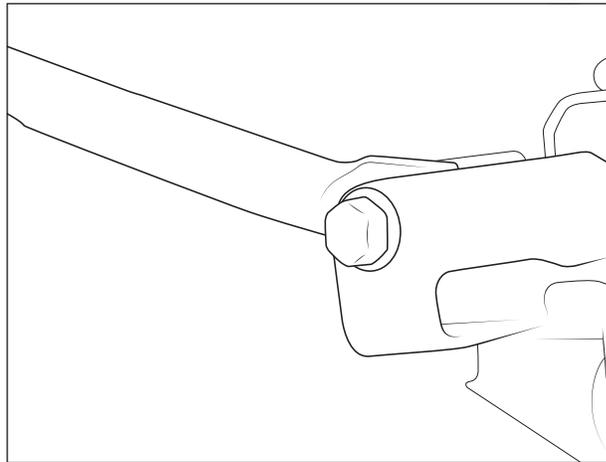


Figure 14

NOTE: On Rubicon models, remove the “fir tree” zip ties holding the speed sensor wiring to the frame and upper control arm. On Rubicon models, unplug the locker connectors at the axle to keep from over extending the wires during install.

- Move the Axle Vent down and attach as shown (Fig. 15).

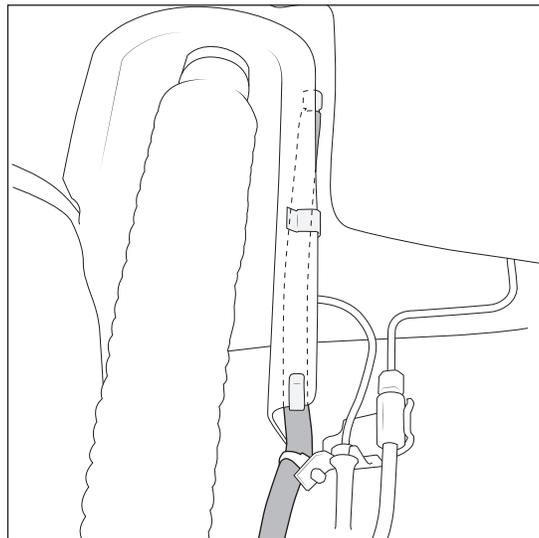


Figure 15



8. Remove and save all sway bar links and hardware. Note orientation, new links will be installed in the same way (Fig. 16)

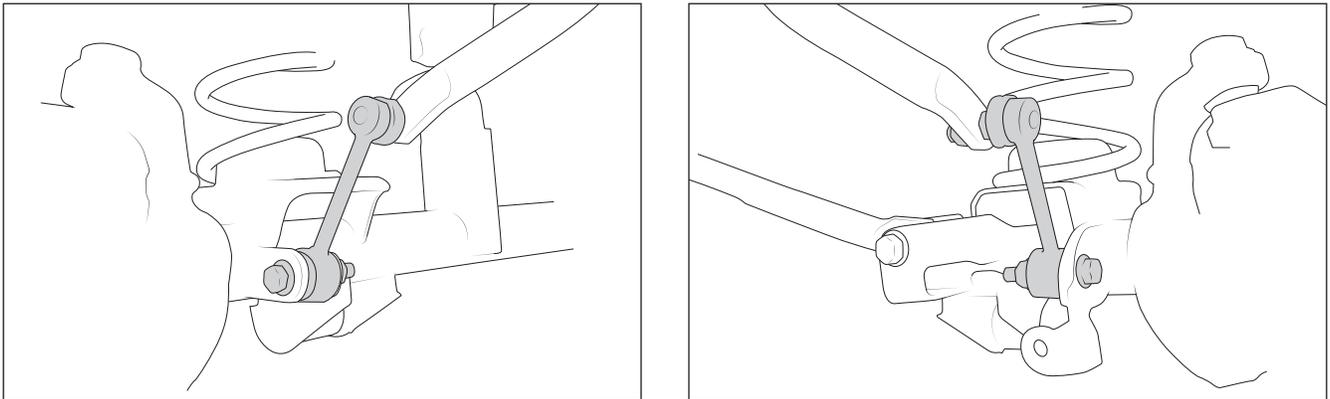


Figure 16

9. Remove shocks and save all shock mounting hardware.
10. For **2010 and older** models, remove the bolt holding the brake line to the frame.
11. For **2011 and newer** models, remove and discard factory bracket from the brake line (Fig. 17).

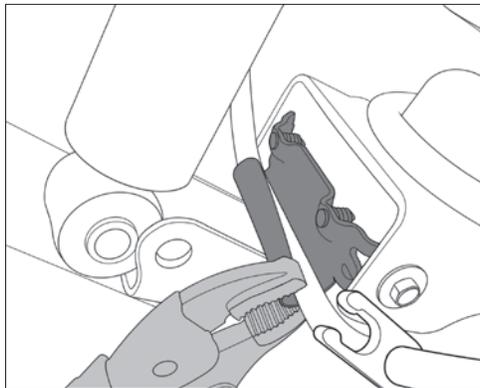


Figure 17

12. Lower axle and remove springs. DO NOT remove factory isolator.

NOTE: On most late model JK and JKU, there is a cross member tube extending far enough out of the frame to interfere with the front sway bar. We recommend trimming this just outbound of the weld (Fig. 18). Remember to follow proper painting procedures to prevent corrosion.

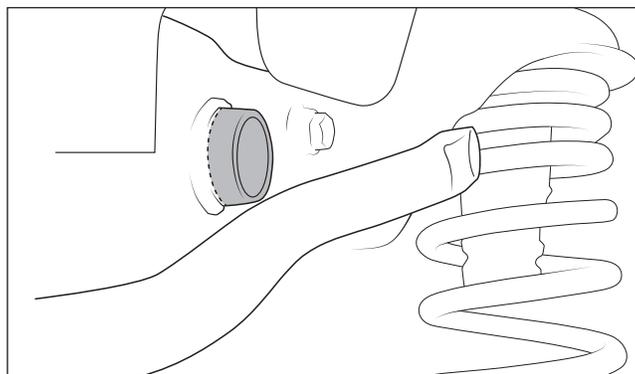


Figure 18



13. If you are installing Remote Reservoir Shocks install the reservoir bracket at this time (Fig. 19).



Figure 19

14. Remove the differential cover bolts but DO NOT remove the differential cover. Attach the differential bracket to the differential with the new supplied bolts as shown (Fig. 20). Torque to 18 ft-lbs.
NOTE: There are two different brackets depending on which front axle you have.

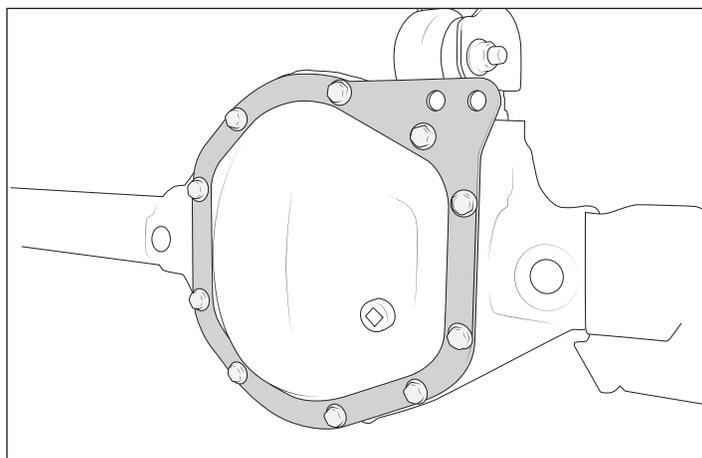


Figure 20

15. Attach the rear part of the track bar bracket to the differential cover bracket as shown. Leave loose at this time. Install spacer as shown (Fig. 21).

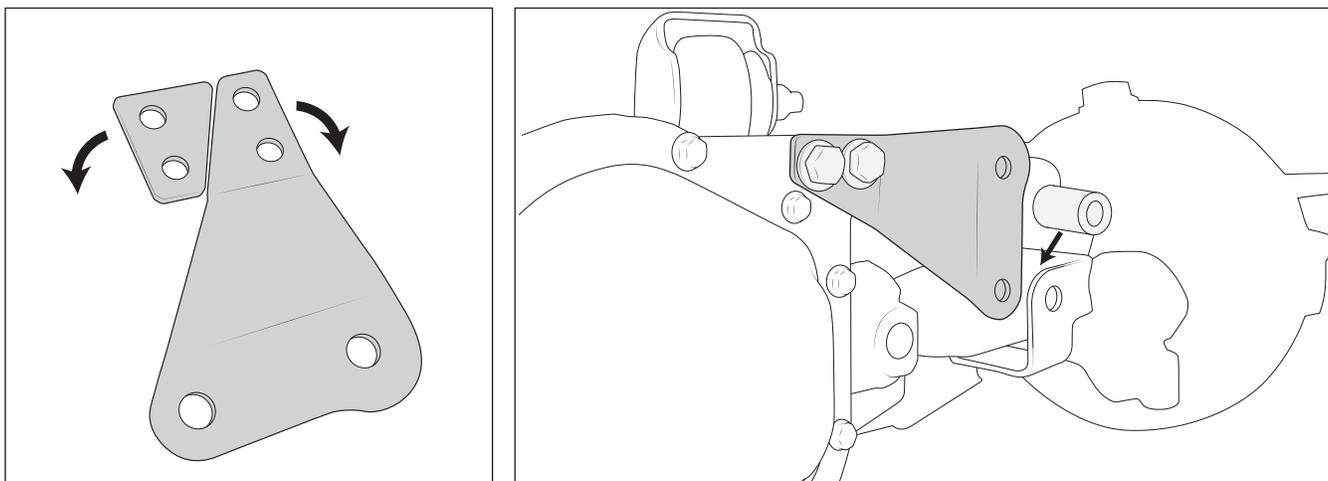


Figure 21



16. Pre-assemble the front part of the track bar bracket as shown using the supplied bolt, washers, and free-spinning nut (Fig. 22).

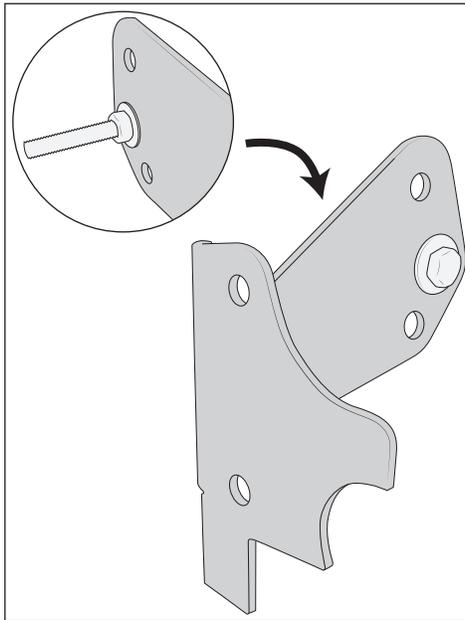


Figure 22

17. Attach the front part of the track bar bracket with the supplied hardware (Fig. 23).

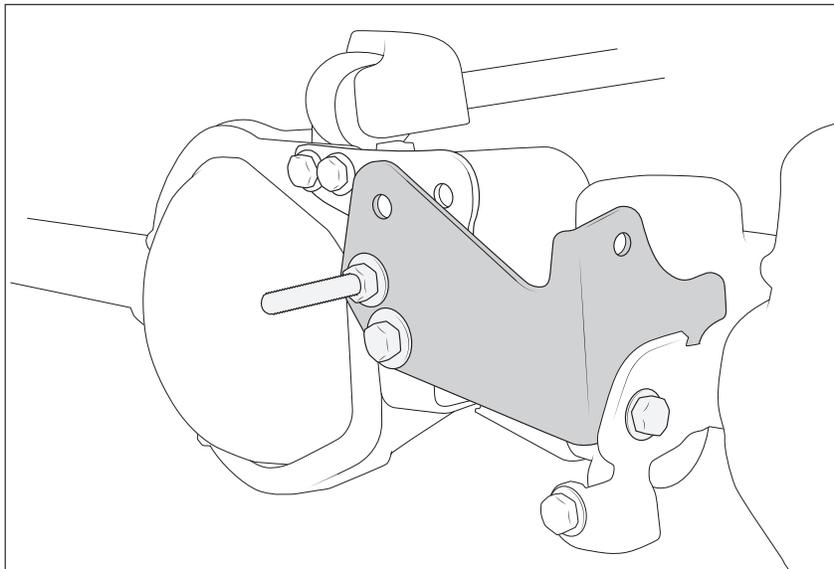


Figure 23

18. You may now tighten and torque all fasteners.



19. Install driver-side sway bar relocation bracket. Position sway bar bracket over the axle tube as shown (Fig. 24). Use the supplied 1/2" x 1 1/2" bolt to attach the bracket to the axle and tighten to 100 ft-lbs.

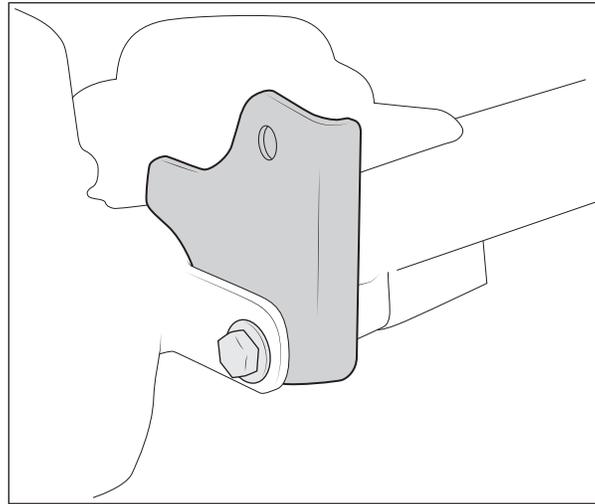


Figure 24

20. Reattach the track bar.

- A. Raise the axle until the axle-end of the track bar can be lined up with the uppermost holes in the new brackets. It may be necessary to pry the brackets apart to allow the track bar to drop in easily. TIP: Using a ratchet strap to move the axle over will help with aligning the holes.
- B. Insert original track bar bolt and flag nut through the passenger-side front axle brackets and track bar but DO NOT tighten at this time (refer to Fig. 31)

21. Install AEV front springs and bump stops.

- A. Drill a 3/8 inch hole in the center of the axle bump stop pad (Fig. 25-A).
- B. Place bump stop spacer inside springs (Fig. 25-B).
- C. Install AEV springs, keeping factory isolator in place. Make sure to properly index the springs on the lower spring seat.
- D. Install and tighten supplied bump stop spacer hardware. Torque to 22 ft-lbs.

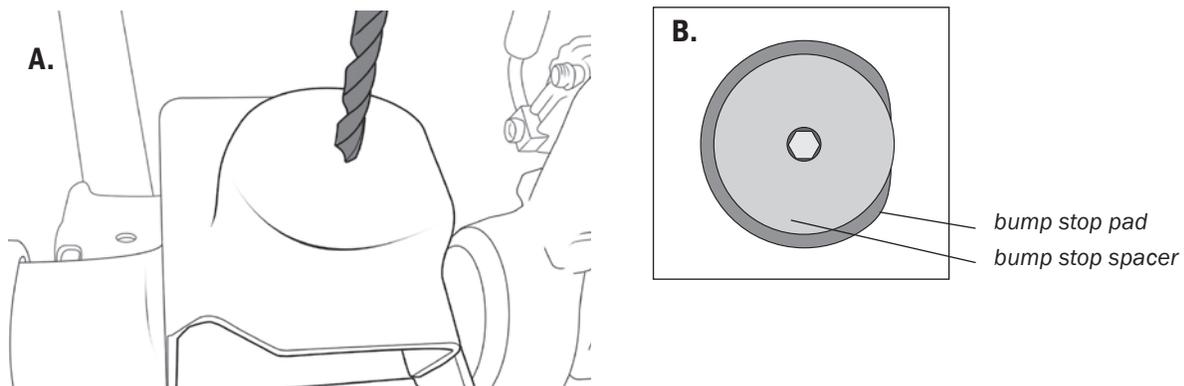


Figure 25



22. Install sway bar end links

- A. Use the factory REAR end links removed earlier or end links with the same overall length as factory rear JK or JKU end links.
- B. For each side attach the upper end stud to the sway bar in the same manner as the original front links had been (nut on frame side of bar). NOTE: The upper stud has a different thread than the rest of the M12 fasteners in the suspension—it is a “normal” pitch versus a “fine pitch.” Tighten to 40 ft-lbs. (refer to Fig. 16 for proper orientation.)
- C. The lower ends of the links will attach to the inboard side of the new brackets on the axle using the original hardware. Torque to 40 ft-lbs.

23. Install shock doubler brackets

- A. Install Shock Doubler brackets on both sides as shown using supplied hardware (Fig. 26).
- B. Install shocks in Shock Doubler brackets as shown using supplied hardware (Fig. 26).
- C. Install shocks in the upper mount. DO NOT over compress the bushings.
- D. If using remote reservoir shocks, use the supplied hose clamps to secure the reservoir portion of the shock into the bracket. CLAMP ROTATION IS CRITICAL, pay attention to prevent contact with the washer bottle (Fig. 27).

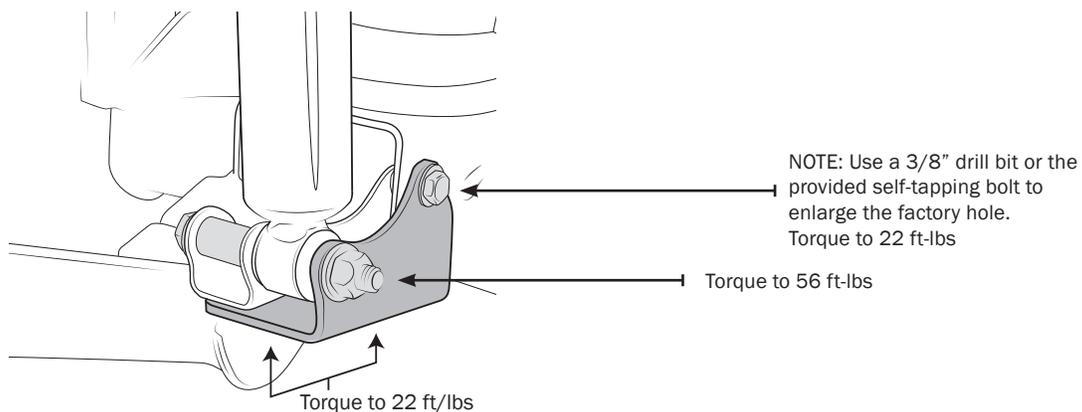


Figure 26

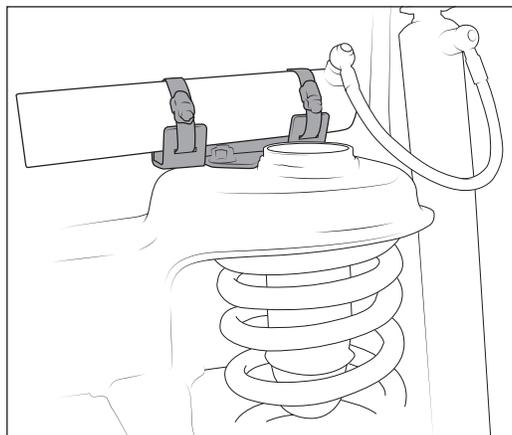


Figure 27



24. Install high-steer draglink

- A. First, drill out the tapered hole in the upper (draglink) arm on the passenger-side knuckle to make it a 7/8" diameter straight hole as shown (Fig. 28). Be sure to drill as straight and steady as possible to avoid a loose connection. Insert the supplied taper-to-straight adapter sleeve into the hole.

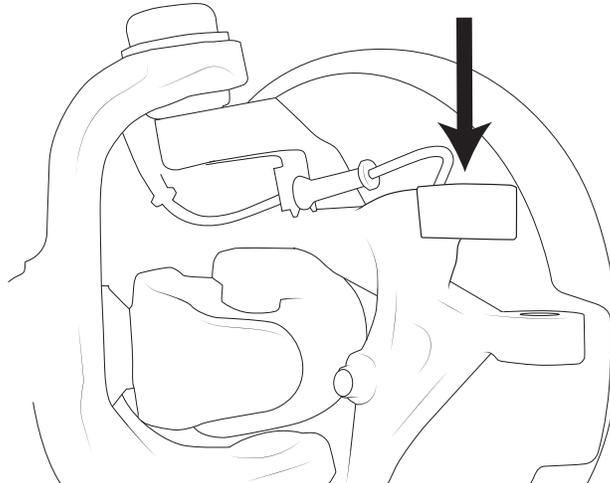


Figure 28

- B. Apply anti-seize compound to the threads of the new draglink and thread it into the adjuster sleeve until the amount of thread showing is similar to the amount showing on the short side that is still attached to the pitman arm.
- C. Insert the tie rod end of the draglink into the adapter sleeve. DO NOT use the original TRE nut, use the new 14mm locking flange nut provided in your kit. This supplied nut has a larger flange that can adequately cover the 7/8" hole. Torque to 65 ft-lbs. DO NOT use an impact gun, over-torque can damage the draglink.
- D. Install tie rod. Torque both sides to 65 ft-lbs.

25. Install new steering damper

- A. To position the tie rod bracket properly, measure 22 3/4" from the edge of the tie rod tube to the center of the stud as shown. (Fig. 29) Rotate the tie rod bracket until the stud is pointing just forward of straight up. Tighten the mounting bracket at this location. After the mounting bracket is tight, tighten the factory steering stabilizer to bracket nut, torquing to 37 ft-lbs.
- B. Attach the damper to the new High Steer axle bracket orienting the hardware as shown (Fig. 30).
- C. Attach the damper to the factory tie rod bracket using one of the supplied 7/16" washers. Torque to 35 ft-lbs.

Rotate the black rubber boot on the damper so that the drainage holes are on the bottom.

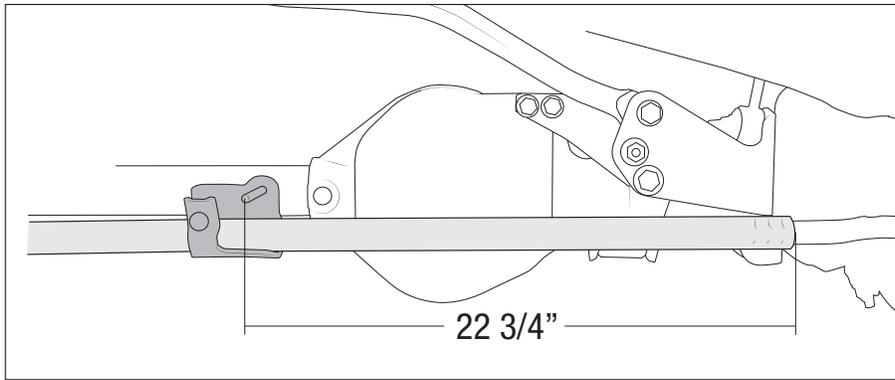


Figure 29

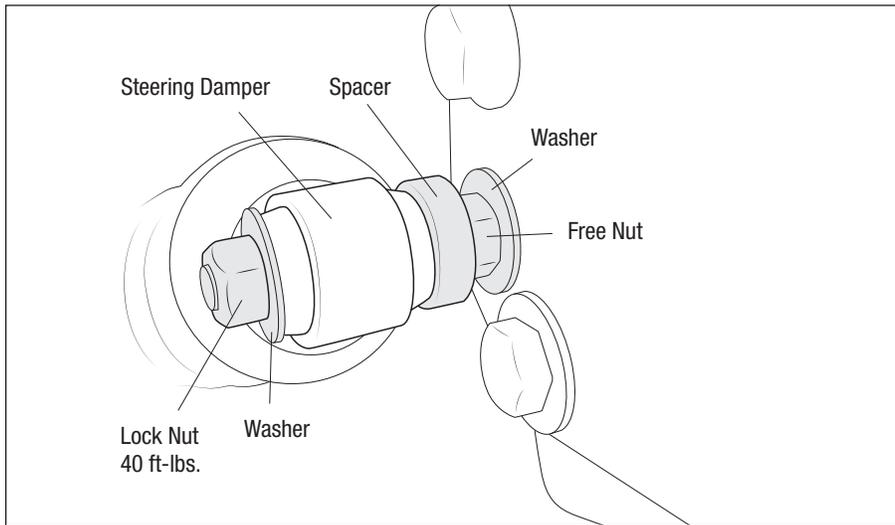


Figure 30

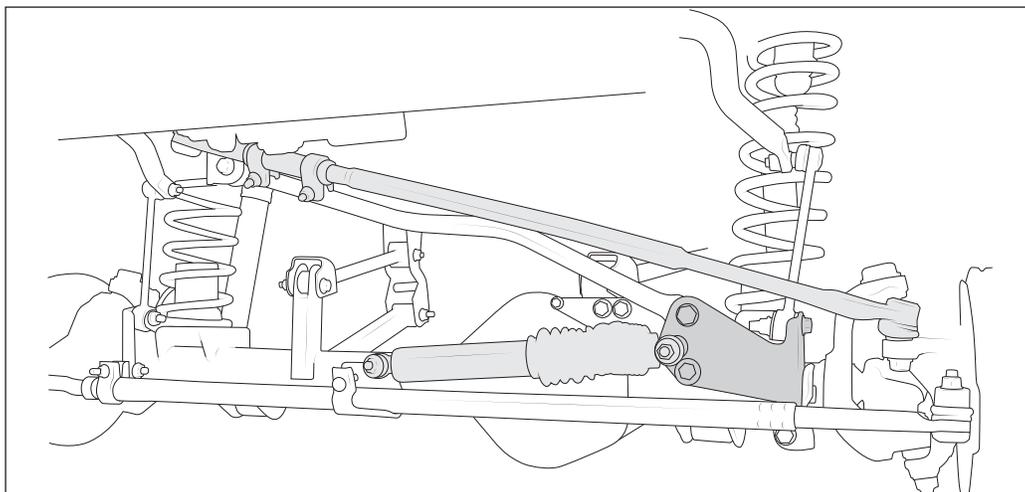


Figure 31



26. For **2007–2010** model year JK's install the front brake line drop brackets tightening to 8 ft-lbs (Fig. 32).

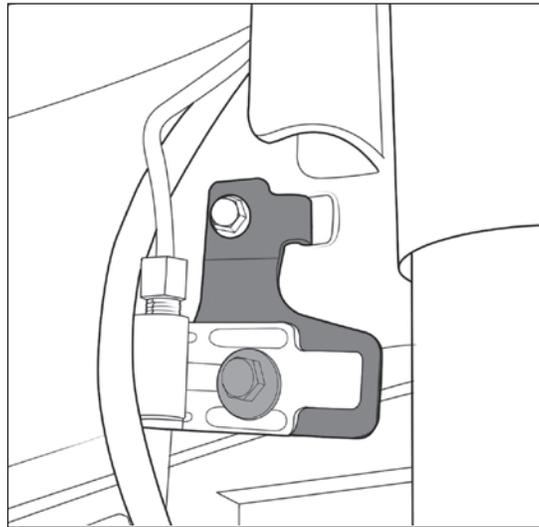


Figure 32

27. For **2011 and newer** models, use supplied zip ties to secure the brake line to the shock as shown. For Remote Reservoir shocks, secure brake line to the spring (Fig. 33).

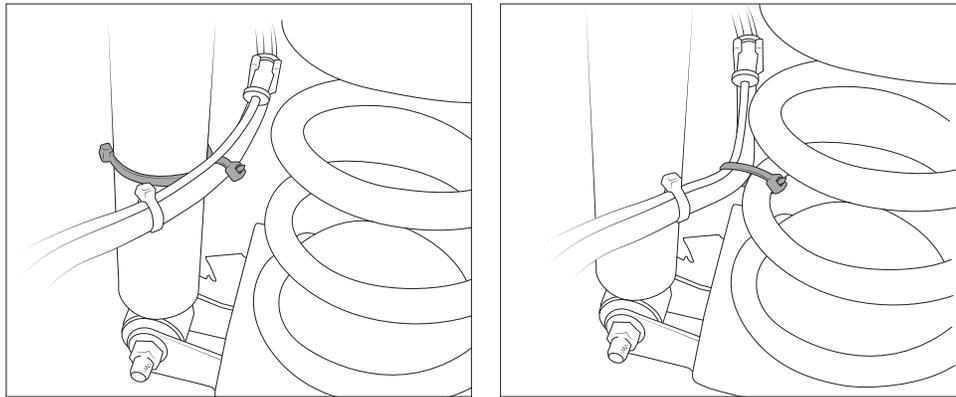


Figure 33

28. Install the automatic transmission skid plate.

For **2011 and newer**, use the 4 supplied spacers, 2 at each side of the skid plate (Fig. 34).

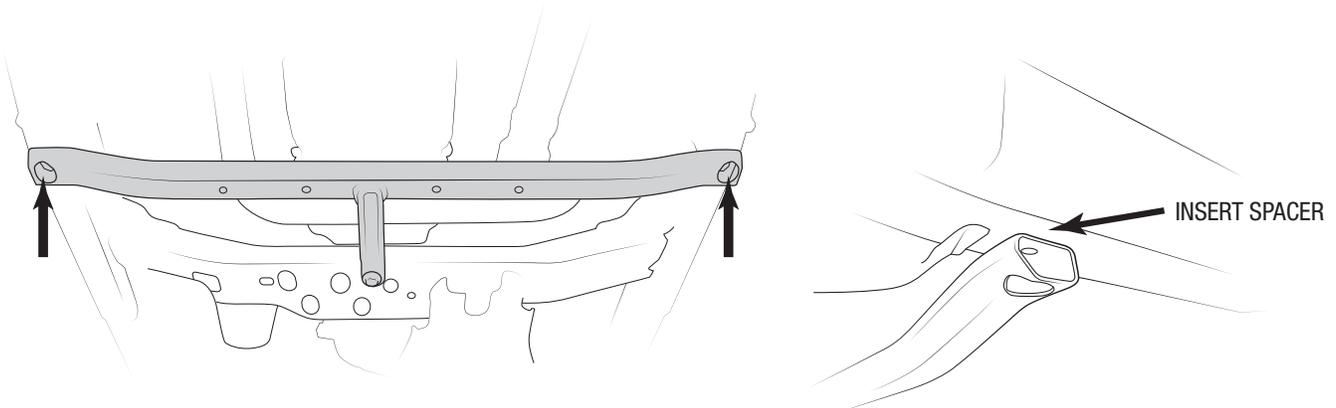


Figure 34



For **2007-2010**

- A. Hold the skid plate in position and mark where the skid plate will need to be trimmed. Trim the skid plate as shown and paint for corrosion protection (Fig. 35).
- B. Install the skid plate using the 4 supplied spacers, 2 at each side (Fig. 35).

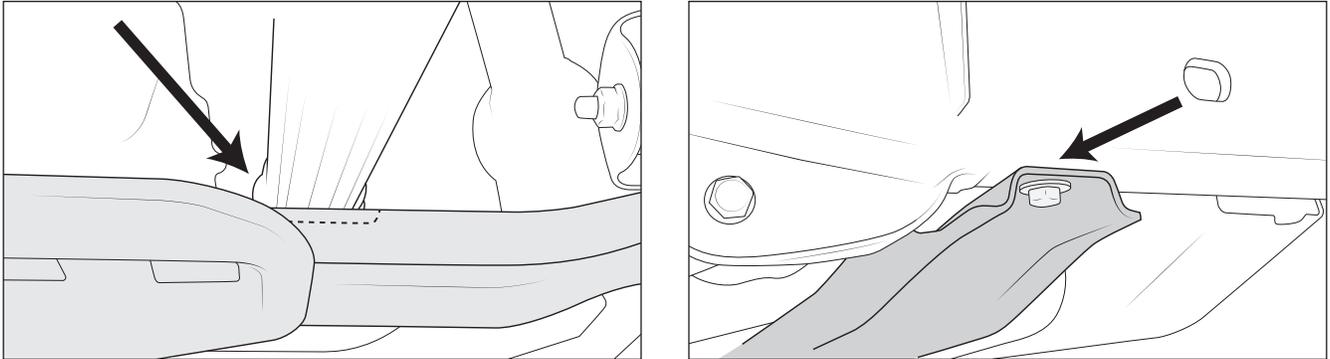


Figure 35

- C. Reinstall wheels and tighten lug nuts, working in a “star pattern.” Place Jeep on level ground. Reconnect the drive shaft making sure to properly align your marks.
- D. Install JK Geometry Correction Front Control Arm Drop Brackets using instructions included in kit.
- E. You may now tighten all fasteners to factory specifications.* Too tight is NOT just right.
- F. Install new Bump Stop Spacers on the rear axle as shown (Fig. 36) using the supplied hardware. DO NOT reverse the orientation from what is shown (screws should be inboard.)

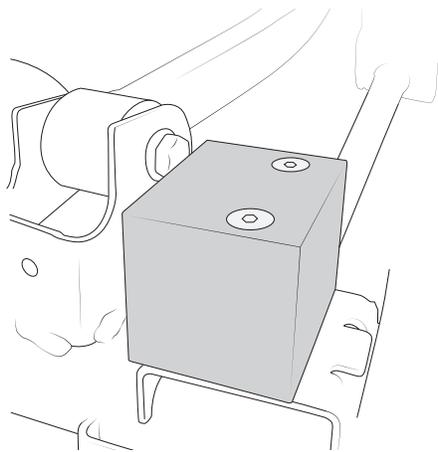


Figure 36

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. While your Jeep is on the alignment rack is the correct time to use the AEV ProCal to assist with centering the steering wheel. Please follow the instructions that come with your ProCal.

AEV recommends 28–30 PSI tire pressure with our Suspension Systems.

*Refer to Appendix for proper torque specs

APPENDIX

JK FACTORY TORQUE SPECIFICATIONS

*nominal torque shown in ft-lbs.

Front Suspension & Steering		
UCA bushings	M12	75
LCA bushings	M14	125
Track bar bushing frame	M14	125
Track bar bushing axle	M14	125
Stabilizer end link top	M12	65
Stabilizer end link bottom	M12	75
Shock Absorber	upper M12 bayonet	20
	lower M12	56
Steering gear		87
P/S pump to engine		21
High pressure hose pump		22
Hoses to steering gear		21
Intermediate shaft, all points	M10	42
Intermediate shaft toe plate		100 in. lbs.
Steering damper	axle M12	50
	cross-link M12	50
Pitman arm to gear	7/8	195
Pitman to drag link nut	M14	78
Drag link to knuckle nut	M14	63
Tie rod to knuckle nut	M14	63
Tie rod clamp	M10	45
Drag link clamp	M10	26

Rear Suspension		
UCA bushings	M14	125
LCA bushings	M14	125
Track bar bushing frame	M14	96
Track bar bushing axle	M14	111
Stabilizer bar sill bushing	M10	45
Stabilizer bar to link	M12	66
Stabilizer bar link to axle	M12	75
Shock Absorber	upper M8	37
	lower M12	56

Cab Mounts		
	M10 short bolts	45
	M12 stud FESM	80

Powertrain Mounts		
	M10 bracket to block	45
	M12 bracket to block	90
	M12 Isolator to frame	85
diesel	bracket to engine	85
diesel	M12 Hydro mt to bracket	65
diesel	M12 Hydro mt to frame	65

Transmission Mount		
	M10 trans to mount	40
	M10 mount to frame	40

Wheels		
(5" bolt circle/1.75" offset)	5 x 1/2" stud	105

Driveline		
T-case companion flange nut		210
Front driveshaft	to front axle	80
	to t-case	22
Rear driveshaft	to rear axle	22
	to t-case	22