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Revisions			
Rev.	Description	Date	Approved
-	Initial Release Per ECO 22-076	10/20/2022	K.B.



## Jeep Gladiator 3-4" Lift Stage 3 Suspension System

Installation Instructions

Applications:

2019+ Jeep Gladiator Truck (JT)



TITLE:  
**JEEP GLADIATOR STAGE 3 SYSTEM  
INSTALLATION INSTRUCTIONS**

SIZE	DWG NO:	REV
<b>A</b>	<b>JT-STAGE3-INST</b>	<b>-</b>
SCALE: N/A		PAGE 1 OF 12



## JEEP GLADIATOR STAGE 3 SYSTEM INSTALLATION INSTRUCTIONS

Thank you for purchasing the best aftermarket products available for your vehicle. We strongly feel that the parts you are about to install should meet or exceed your expectations for performance. Proper assembly is critical to the performance of these components and the vehicle as a whole. Please take the time to carefully read these instructions and familiarize yourself with the installation procedure before working on your vehicle. If you have any questions, PLEASE contact Synergy Manufacturing BEFORE beginning installation. Thanks again for supporting Synergy – enjoy the performance benefits of the best aftermarket products available for your vehicle!

**Synergy Manufacturing**

**Phone: (805) 242-0397**

**Email: [support@synergymfg.com](mailto:support@synergymfg.com)**

Modifying or otherwise altering vehicle components may cause the vehicle to handle differently than originally designed. It is the driver's responsibility to familiarize themselves with the performance and handling characteristics of the modified vehicle. Vehicles with larger diameter than stock tires must be driven carefully and cannot be expected to perform as stock or meet OEM performance with regard to handling, braking or crash performance. Ensure all replacement components are compatible with vehicle capacities so as not to overload components, especially tires. It is up to the individual to ensure that the vehicle and all components are compatible with the intended vehicle use, including load ratings, road conditions, and driver abilities. Thorough and frequent vehicle inspections are recommended to ensure a safe and reliable state of readiness, especially after off-highway use.

### GENERAL NOTES

- These instructions are also available on our website; [www.synergymfg.com](http://www.synergymfg.com). Check the website before you begin for any updated instructions and additional photos and videos for your reference.
- These instructions are intended as a supplement to the instructions included with each of the components in this kit. These instructions describe the best way to install all of these components together. For specific instructions, reference the instructions included with each product.
- This system is designed to improve the off-road and on-road performance of the Jeep while allowing for larger tires to be installed. This is considered a Stage 3 System. For improved performance, many additional options are available from Synergy Manufacturing. See [www.synergymfg.com](http://www.synergymfg.com) for additional systems and upgrade paths.
- Synergy Manufacturing coil springs are much longer than the stock springs to allow for additional wheel travel. Because of this, spring installation can be challenging without proper tools and experience. We recommend a coil spring compressor with interchangeable yokes such as the Fairmount 31655 or similar.



## PARTS LIST

<b>8853-3000 JEEP JT STAGE 3 SYSTEM</b>		
<b>QTY</b>	<b>Part Number</b>	<b>Description</b>
1	8863-30	Jeep JL/JT Front Lift Springs W/Lower Isolators – 3.0” (Pair)
1	8865-30	Jeep JT Rear Lift Springs – 3.0” (Pair)
1	8057-10	Jeep Bump Stop Spacer Kit (2-4”)
1	8858-30	Jeep JL/JK/JT Rear Bump Stop Spacer – 3.0”
1	8861-11	Jeep JT Rear Sway Bar Links
1	8855-11	Jeep JL/JT Front Track Bar Relocation Bracket
1	8859-11	Jeep JL/JT Front Sway Bar Links
1	8851-01	Jeep JL/JT Adjustable Front Lower Control Arms
1	8853-01	Jeep JL/JT Adjustable Front Upper Control Arms
1	8870-01	Jeep JT Adjustable Rear Upper Control Arms
1	8071-01	Jeep JT Adjustable Rear Lower Control Arms
1	8877-01	Jeep JT Rear Track Bar Relocation Bracket
1	8800-01	Jeep JL/JT Heavy Duty Drag Link Kit
1	8866-02	Jeep JT Rear Extended Brake Lines

<b>8853-4000 JEEP JT STAGE 3 SYSTEM</b>		
<b>QTY</b>	<b>Part Number</b>	<b>Description</b>
1	8863-40	Jeep JL/JT Front Lift Springs W/Lower Isolators – 4.0” (Pair)
1	8865-40	Jeep JT Rear Lift Springs – 4.0” (Pair)
1	8057-10	Jeep Bump Stop Spacer Kit (2-4”)
1	8858-40	Jeep JL/JK/JT Rear Bump Stop Spacer – 4.0”
1	8861-11	Jeep JT Rear Sway Bar Links
1	8808-01	Jeep JT Rear Sway Bar Drop Brackets
1	8855-11	Jeep JL/JT Front Track Bar Relocation Bracket
1	8859-11	Jeep JL/JT Front Sway Bar Links
1	8851-01	Jeep JL/JT Adjustable Front Lower Control Arms
1	8853-01	Jeep JL/JT Adjustable Front Upper Control Arms
1	8870-01	Jeep JT Adjustable Rear Upper Control Arms
1	8071-01	Jeep JT Adjustable Rear Lower Control Arms
1	8875-01	Jeep JL/JT Heavy Duty Adjustable Front Track Bar
1	8800-01	Jeep JL/JT Heavy Duty Drag Link Kit
1	8866-02	Jeep JT Rear Extended Brake Lines
1	8881-01	Jeep JT Heavy Duty Adjustable Rear Track Bar
1	8877-01	Jeep JT Rear Track Bar Relocation Bracket



## TOOLS REQUIRED

- Wrenches and Sockets, both SAE and metric
- 1 1/4" and 1 1/2" Open End Wrenches or Large Crescent Style Wrench
- Torque Wrench
- Spring Compressor (Recommended)
- Floor Jack and Jack Stands
- Prybar
- 6mm Allen Wrench
- Drill, 3/8" and 1/2" drill bits, and center punch

## ESTIMATED INSTALLATION TIME

**5-6 Hours**

## INSTALLATION

### REAR OF VEHICLE

1. Start with the vehicle on flat, level ground. Make sure the vehicle is in gear or park and the front wheels are chocked. If working on the ground, raise vehicle up and place frame on jack stands. Support axle with jackstands.
2. Remove rear wheels and tires.
3. Disconnect the rear axle vent and locker wiring harness.
4. Remove the rear shocks (18mm socket and wrench).
5. Remove the sway bar end links with a 18mm socket and wrench for the upper bolt and a 18mm wrench and a 6mm allen key for the lower stud. The 6mm allen is to prevent the stud from spinning.

### INSTALLING THE 8866-05 REAR EXTENDED BRAKE LINES

6. Unclip the ABS wires that are attached to the rear brake lines.
7. Pull the spring clips that hold the brakelines to the frame.
8. On one side, loosen and remove the banjo bolt(15mm) at the caliper then loosen and disconnect the brake line at the frame(12mm and 16mm wrenches) and remove the stock brake line.
9. Install the caliper side first with new copper sealing washers and reuse the stock banjo bolt, then reconnect the frame side.
10. Reinsert the spring clip that holds the frame side brakeline.
11. Repeat steps 8-10 for the other side of the jeep.
12. Tie the ABS wires onto the new brake lines as best you can.
13. At this point it is suggested that you bleed the rear brakes. Either using a power bleeder type brake bleeding tool or with assistance from another person. Make sure there is no air coming out of the rear brake bleeding ports.

### INSTALLING 8808-01 REAR SWAY BAR DROP BRACKETS – Skip for 3" Lift

14. Remove the bolts just above the rear sway bar mounting holes that hold the brake line brackets to the frame(10mm).



15. Install the Synergy Rear Sway Bar Drop Brackets over the factory sway bar mounting points and in between the brakeline bracket and frame rail. Use the factory bolt to hold the brakeline bracket and sway bar drop bracket on to the frame.
16. Use the shorter M12 bolt and washer from the 8808-01 hardware kit to secure the drop bracket to the frame in the original sway bar link bolt hole.
17. Torque the small brake line bracket bolt to 20lb-ft and the large sway bar mount bolt to 70lb-ft.

#### **INSTALLING 8871-01 JT REAR LOWER CONTROL ARMS**

18. Loosen the axle side track bar bolt (21mm socket).
19. Loosen, the frame side track bar bolt (21mm socket).
20. Loosen, but do not remove, all control arm hardware (axle side and frame side-22mm and 24mm).
21. Adjust the Synergy 8871-01 control arms so that they are fully collapsed (as short as they will go).
22. Remove one rear lower control arm. Save hardware.
23. Install a Synergy 8871-01 control arm with the fixed end at the axle side and the adjustable end at the frame side. The bend should be oriented so that there is the most ground clearance, and the pinch bolt should be oriented up. Adjust the length as necessary by rotating the silver double adjuster sleeve with a 1 1/2" open end wrench or Crescent style adjustable wrench. Once the bolt holes line up, re-install the stock hardware, but do not torque at this time.
24. Repeat steps 22 and 23 for the other side of the vehicle.

#### **INSTALLING 8870-01 JT REAR UPPER CONTROL ARMS**

25. Adjust the Synergy 8870-01 control arms so that they are fully collapsed (as short as they will go).
26. Remove one rear upper control arm. Save hardware.
27. Install a Synergy 8870-01 control arm with the fixed end at the frame side and the adjustable end at the axle side. The arms install with the pinch bolt down. Adjust the length as necessary by rotating the silver double adjuster sleeve with a 1 1/4" open end wrench or Crescent style adjustable wrench. Once the bolt holes line up, re-install the stock hardware, but do not torque at this time.
28. Repeat steps 26 and 27 for the other side of the vehicle.

#### **INSTALLING 8858 REAR BUMP STOP SPACERS**

29. You will need to drill two holes in each bump pad in order to mount the bumpstop spacers. Use the supplied template or measure and mark out the holes on each bumpstop. The holes are on the centerline of each bump pad and 7/8" and 3 7/8" back from the front edge of the bump pad.
30. Center punch the marks you made and drill the holes out to 3/8".
31. Then line up the holes in the bumpstop extension with the holes you just drilled in the rear axle bump pad. The bumpstop extension is angled and the overhanging portion should be towards the front of the Jeep.
32. Insert two 3/8-16UNC x 1" long bolts with washers into the holes from the top down. Install a 3/8-16UNC top lock nut and washer onto each bolt. Tighten the bolts. Torque to 60lbs-ft.

#### **INSTALLING 8865 REAR SPRINGS**

33. If working with the vehicle on the ground, it is easiest at this point to support the center of the axle with a floor jack and remove the jackstands from under the axle. If using a lift, lower the axle.
34. Lower the axle far enough to remove the rear springs and upper isolators. Be very careful not to damage any brake lines or electrical lines.
35. Install the upper isolators on the Synergy springs.
36. Install the Synergy rear springs, making sure the upper isolators are properly seated. There is a 'nub' on the top of the upper spring isolator that must fit into a hole in the spring perch on the frame.
37. With the springs in place raise the axle back up to prevent them from falling out. Replace jack stands under axle.
38. Install the rear shocks in the upper mounts.



39. Raise the axle up (use a tall jack stand to support the front of the vehicle if it is on a lift) or lower the vehicle down so that the rear shocks fit into the mounting brackets. Torque upper shock bolts to 80lb-ft and lower shock mounting hardware to 75lb-ft.
40. Re-install the locker wiring and vent hose.

**INSTALLING 8861-11 REAR SWAY BAR LINKS**

41. Install the Synergy sway bar links. The tie rod end goes into the sway bar, with the nut on the outside of the bar, towards the tire. The bushing end of the link attaches to the axle, just as the stock end link, on the outside of the sway bar drop brackets (towards the wheel/tire).
42. It may be necessary to use a 14mm open end wrench on the flats on the stud to prevent the stud from turning while tightening the nut (15mm wrench).
43. Torque the sway bar link hardware. Torque lower bolts to 60lb-ft and upper bolt and nut to 70lb-ft.
44. Tighten the jam nut with a 19mm wrench, using an 18mm wrench to hold the tie rod end.

**INSTALLING THE 8877-01 REAR TRACK BAR RELOCATION BRACKET**

45. Remove the lower axle end track bar bolt and nut and slide the track bar up out of the mount. Support the end of the track bar up and out of the way.
46. Drop the 8877-01 Rear Track Bar Relocation Bracket over the top of the factory track bar mount. Loosely install the 9/16-12 x 3.5" long bolt with washer in the lower hole of the bracket and through the original mounting location in the stock bracket. Use the supplied spacer inside the stock bracket and the 9/16-12 top lock nut and washer on the back side. Do not tighten yet!
47. Slip the U-bolt up from the bottom around the axle tube and through the mounting ears on bracket. Use the supplied 3/8-16 nylock nuts and washers on the threaded ends of the U-bolt. Hand tighten at this time.
48. Mark the location of the hole in the drivers side of the bracket for the 1/2" bolt.
49. Center punch and drill the hole out to 1/2". You can drill this with the bracket in place, or remove the bracket and drill.
50. Once the hole is drilled and the bracket is put back in place with the 9/16 bolt and U-bolt, install the 1/2-13 x 1" bolt and washer through the side of the bracket. Use the supplied 1/2-13 top lock nut and washer on the inside.
51. Torque the 3/8" U-bolt nuts to 30lb-ft. Do not over tighten U-bolt nuts! Next, torque the 9/16" track bar bolt to 150lb-ft and then the 1/2" bolt to 90lb-ft
52. If installing with the 3" lift system, reinstall the factory track bar, bolt and flag nut in the upper mounting location of the relocation bracket and skip to step 55. If installing with the 4" lift system, remove the upper frame side track bar bolt and nut and remove the rear track bar from the vehicle.

**INSTALLING THE 8881-01 ADJUSTABLE REAR TRACK BAR – Skip for 3" Lift**

53. Install the adjuster side of the Synergy Adjustable Rear Track Bar into the frame side track bar mount and reuse the factory track bar bolt and nut.
54. Bring the track bar down and slide it into the rear axle track bar mount. You may need to turn the double adjuster sleeve to make the track bar longer or shorter to get the bolt holes to line up. Reinstall the factory track bar bolt and flag nut.

**REINSTALLING WHEELS AND FINAL TORQUE (MAY BE DONE AFTER FRONT IS DONE)**

55. Re-install wheels and tires (if removed) and put vehicle back on the ground. Make sure the suspension is settled by rocking it back and forth carefully.
56. Torque the frame side track bar hardware to 92lb-ft with the vehicle on the ground at ride height. Torque the axle side track bar hardware to 100lb-ft with the vehicle on the ground at ride height.
57. Torque the lower control arm hardware to 120lb-ft with the vehicle on the ground at ride height.
58. Torque the upper control arm frame side bolts to 120lb-ft with the vehicle on the ground at ride height.



### **SETTING REAR TRACK BAR LENGTH AND PINION ANGLE**

59. If using the 8881-01 adjustable rear track bar, with the vehicle back on the ground on all 4 wheels, use a straight edge up against the side of the rear tires and measure from the straight edge to the fenders. The measurement should be the same on each side. If not, then the rear track bar needs to be adjusted. To adjust the track bar, rotate the adjuster sleeve with a 1 1/4" open end wrench or large crescent type wrench. If the measurements are different by 1/2", then the track bar needs to be adjusted by 1/4". Turning the adjuster sleeve clockwise will shorten the track bar, and make the passenger side tire to fender measurement larger.
60. Once the rear axle has been centered, torque the pinch bolt on the track bar to 90lb-ft.
61. Next set the rear pinion angle. For a stock rear drive shaft or an aftermarket double cardan CV shaft point the rear pinion at the rear driveshaft carrier bearing. For standard u-joint driveshafts the pinion yoke or flange angle will need to match the angle at the carrier bearing yoke or flange. Adjust the double adjusters on the rear control arms with a 1 1/2" open end wrench or large crescent type wrench.
62. Double check that both lower control arms measure the same length. With the arms set to the correct lengths, torque the pinch bolts to 90lb-ft.

### **FRONT OF VEHICLE**

1. Start with the vehicle on flat, level ground. Make sure the vehicle is in gear or park and the front wheels are chocked. If working on the ground, raise vehicle up and place frame on jack stands. Support axle with jackstands.
2. Remove front wheels and tires.
3. Remove the sway bar end links with an 18mm socket and wrench for the lower bolt and an 18mm wrench and a 6mm allen key for the upper stud. The 6mm allen is to prevent the stud from spinning.
4. Loosen and remove the frame side and axle side track bar bolts (21mm socket). Remove the stock front track bar.
5. Remove the front draglink. Use a 21mm wrench to loosen the nut and then a large hammer or pickle fork to separate the TREs from the knuckle and pitman arm.
6. Loosen but do not remove all control arm hardware (21mm socket).
7. Remove the brake line brackets from lower control arms (15mm socket) and coil mounts (10mm socket).
8. Disconnect the electrical plug from the front axle disconnect. If the vehicle is a Rubicon model, remove the front locker harness from the differential. Loosen wiring by removing zip ties and clips.
9. If working with the vehicle on the ground, it is easiest at this point to support the axle with a floor jack and remove the jackstands from under the axle. Due to the differential being off to one side it may be difficult to lower the axle evenly.
10. Remove the front shocks (18mm socket and wrench) and lower the axle down.
11. With axle fully lowered, remove the stock springs. Remove the springs by unseating them from the lower spring perch and removing the bottom towards the rear of the vehicle.
12. Pay close attention to orientation of upper spring isolators. Do not remove from the bump stop tube.
13. Remove the lower spring isolators. These are hard plastic and clipped to the axle.

### **INSTALLING 8851-01 FRONT LOWER CONTROL ARMS**

14. Raise the front axle back up to approximately ride height.
15. The factory brake lines are crimped to brackets which bolt to the factory lower control arms. The brake lines must be removed from these brackets. We recommend simply cutting the brackets close



to the brake lines, leaving the crimped-on section of bracket on the brake lines. This eliminates the possibility of damaging the brake lines. Alternatively, the brackets may be fully removed by either carefully cutting open the bracket with a cutoff wheel or prying the brackets open with a pry bar. This may be easier to do with them still attached to the factory control arms.

16. After freeing the brake lines from the brackets, remove one of the front lower control arms.
17. The Synergy MFG control arms are left and right specific. Be sure they are installed correctly and the flex joints are aligned properly. The flex joint at the adjuster end of the control arm is angled so that the bushings are put in a zero-bind condition at ride height. The threaded shank of the flex joint should be pointing 'in' towards the center of the Jeep. Install the new control arms with the adjuster at the frame end and the fixed end at the axle. The arms are bent in for tire clearance, and up for ground clearance. The bends should be in, towards the center of the Jeep. Be sure to orient them correctly and with the pinch bolts facing up. Reuse the factory mounting bolts. It is easiest to install the frame side first, then swing the axle side up into the axle-side bracket.
18. With one control arm installed, remove the other factory control arm and replace with a Synergy MFG control arm.
19. With both lower control arms installed lower the axle back down.

#### **INSTALLING 8853-01 FRONT UPPER CONTROL ARMS**

20. Remove the heat shields covering the frame side upper control arm bolts (10mm head). Depending on engine configuration, it may not be possible to access both upper and lower bolts holding the heat shields to the mount. In this case, it is possible to only remove the lower bolt and bend the heat shield out of the way.
21. Remove the factory right side upper control arm (18mm head). The frame side uses a flag nut that goes through the frame. Certain engine configurations may not allow the bolt to come fully out without removing or moving other nearby components.
22. The Synergy MFG control arms are right and left specific. Be sure they are installed correctly with the pinch bolt facing up and the bend facing in and down, towards the center of the Jeep. The bends are to clear the frame and the motor mounts. Reuse the factory mounting bolts. Install the right-side Synergy MFG control arm and snug hardware.
23. Repeat steps 21 and 22 for the left side upper control arm.

#### **INSTALLING 8057-10 FRONT STACKING BUMPSTOP SPACERS**

24. If your front coil spring perch does not have a 3/8" hole in the center of it, centerpunch and drill the spring perch.
25. Tape together the stacking bumpstop spacers and one bumpstop top cap with painters tape and insert one assembly into each front spring. Continue 8057-10 install by installing the front springs.

#### **INSTALLING 8863 FRONT SPRINGS**

26. Install the new Synergy lower spring isolators.
27. The new Synergy springs are stamped with a part number. The last two digits of the part number indicate which side of the vehicle they go on. The -01 is the driver side (left) spring. The -02 is the passenger side (right) spring. The flat end of the spring is the bottom.
28. Install the new Synergy springs, being careful to ensure the upper spring isolators are correctly oriented. There is a 'nub' on the top of the upper spring isolator that must fit into a hole in the spring perch on the frame. Let the taped together bumpstops rest at the bottom of the spring for now.
29. With the springs in place, raise the axle back up to prevent them from falling out. Replace jack stands under axle.
30. Un-tape the bumpstop spacer parts at the bottom of the coil spring. Push the top cap out of the way and insert a 3/8 socket cap screw through one of the stacking spacers and into the hole in the spring perch. Thread a washer and nut onto the bottom of the screw and torque to 35ft-lbs. Accessing the



driver side nut can be done from either the front or the back of the spring perch. The passenger side can only be accessed from the rear.

31. Install either another stacking spacer and cap or just a cap on each of the bump stop spacers that are now fastened to the axle to get the desired amount of bumpstop. The spacers and caps can be 'snapped' on to the lower spacer with a large prybar, prying through the coil spring.
32. Install front shocks at this time. Torque upper shock bolts to 80lb-ft and lower bolts to 75lb-ft.
33. Re-install front axle disconnect and locker wiring (if so equipped).

#### **INSTALLING 8855-11 FRONT TRACK BAR RELOCATION BRACKET**

34. Slip the 8855-11 bracket over the stock track bar mount on the front axle. Insert a spacer inside the track bar bracket between the bracket and stock mount and use an M14 x 80mm bolt, nut and washers in the stock track bar bolt location to hold it all together. Do not torque yet.
35. Install a 1/2" x 3.0" bolt and washer through the side where the stock sway bar links attach to the axle and use the supplied nut tab inside the track bar relocation bracket to secure the bolt.
36. Use a 10mm wrench and remove the upper screw on the pass side holding the Front Axle Disconnect skid plate on.
37. Slip the provided U-bolt around the axle tube from the back side and through the mounting ears on the driver's side of the track bar relocation bracket. Use the supplied 3/8" nylock nuts and washers to secure the U-bolt and bracket into place. Torque to 30lb-ft.
38. Torque the track bar relocation bracket hardware at this point. Torque the M14 bolts to 125lb-ft and the 1/2" bolt to 80lb-ft.
39. Install the Synergy sway bar relocation brackets on the drivers side of the axle. The bracket has a radius to accommodate the axle tube. Insert the relocation bracket in between stock axle side sway bar link brackets and coil mounts. It may be necessary to tap the bracket into place with a mallet.
40. Loosely install an M12 bolt through the stock sway bar mount and the Synergy sway bar link relocation bracket. Use a washer under the head of the bolt and under the nut. We recommend installing the hardware with the bolt head facing 'out' towards the wheel/tire.
41. Align the inner Synergy sway bar link relocation bracket hole with the hole in the lower spring perch. Loosely install an M12 bolt through the spring perch and the Synergy sway bar link relocation bracket. Use a washer under the head of the bolt and under the nut. We recommend installing the hardware with the bolt head facing 'out' towards the wheel/tire.
42. With both pieces of hardware installed, tighten and torque to 70lb-ft.

#### **INSTALLING 8875-01 FRONT TRACK BAR – Skip for 3" Lift**

43. Install the 'fixed' end of the track bar with the narrow forging on the axle side, using the M14 x 70mm long bolt, nut and washers and leave hand tight.
44. Swing the track bar up into the frame side bracket. Adjust the track bar length using the double adjuster so that the factory bolt will fit through the bar and bracket.

#### **INSTALLING 8800-01 HEAVY DUTY DRAG LINK**

45. Drill out the pass side knuckle drag link mount to 7/8". Ensure you are drilling square to the flat on the knuckle where the TRE mounts.
46. Insert the flip adapter into the 7/8 hole from the top down. The flip adapter should be a slightly snug fit. Do not use a hammer to install the flip adapter. The flange on the flip adapter should seat on the surface of the knuckle with the slot oriented toward the front of the vehicle.
47. The drag link will need to be adjusted to fit your jeep. Typically, non-Rubicon models will need to have the non-double adjuster side tie rod end threaded all the way in, while Rubicon models will need will need the non-adjuster side tie rod end threaded out approximately a 1/2" from fully collapsed. A good starting point is to measure your stock drag link length and adjust the Synergy Heavy Duty Drag Link to match for now. Do not tighten the pinch bolts at this time.



48. Install the drag link with the adjuster towards the pitman arm. Loosely tighten the TRE nuts. Do not install the cotter pins yet.

**INSTALLING 8859-11 FRONT SWAY BAR LINKS**

49. Identify the right and left side end links. There is a zerk fitting at the lower bushing on each end link, it should face forward, towards the front of the vehicle. The bend in the link should be oriented so that the bushing end is closer to the wheel and the tie rod end is closer to the center of the vehicle. The axle side mounting width is wider than the sway bar side mounting width.
50. Adjust the links to the same length and install the links to the sway bar with the nuts facing in towards the frame. Use an open end 14mm wrench to hold the flats on the stud next to the dust boot and torque the nut to 60lb-ft with a 15mm socket.
51. Install the sway bar links to the 8855-11 brackets on the axle. Use the factory sway bar link mounting bolts to attach the sway bar links to the brackets. Make sure the metal sleeve is installed in the spherical sway bar bushing end. Use an 18mm socket and wrench to torque the bolts to 60lb-ft.

**REINSTALLING WHEELS AND FINAL TORQUE**

52. Re-install wheels and tires and put vehicle back on the ground.
53. Torque track bar hardware to 110lb-ft with the vehicle on the ground at ride height.
54. Torque lower control arm hardware to 190lb-ft with the vehicle on the ground at ride height.
55. Torque upper control arm hardware to 80lb-ft with the vehicle on the ground at ride height.

**SETTING FRONT TRACK BAR LENGTH, CASTER AND CENTERING STEERING WHEEL**

56. With the vehicle back on the ground on all 4 wheels, use a straight edge up against the side of the front tires and measure from the straight edge to the fenders. The measurement should be the same on each side. If not, then the front track bar needs to be adjusted. To adjust the track bar, rotate the adjuster sleeve with a 1 ¼" open end wrench or large crescent type wrench. If the measurements are different by ½", then the track bar needs to be adjusted by ¼". Turning the adjuster sleeve clockwise will shorten the track bar, and make the passenger side tire to fender measurement larger.
57. Once the front axle has been centered, torque the pinch bolt on the track bar to 90lb-ft.
58. Next set front axle caster. We recommend somewhere between 6-7 degrees. For reference 6 degrees of caster correlates to 90 degrees on the front diff cover flat. This must be measured at ride height on a level surface. Usually this means the front lower control arms are at approximately 24.5" long center to center. Adjust the double adjusters on the front control arms with a 1 ½" open end wrench or large crescent type wrench. With the arms set to the correct lengths, torque the pinch bolts to 90lb-ft.
59. Finally, the steering wheel needs to be set to straight. Drive the Jeep forwards and backwards a short distance while making sure the Jeep is going straight. Notice the orientation of the steering wheel. Stop the vehicle, put in park or in gear and set the parking brake. Adjust the drag link so that the steering wheel is pointing straight ahead. Keep in mind that while adjusting the drag link, do not thread the double adjuster tie rod end out further than 3.5" from the end of the forging to center of the zerk fitting. Similarly, do not thread the non-double adjuster tie rod end out further than 3" from the end of the forging to the center of the zerk fitting. Tighten both tie rod end castle nuts to 55lb-ft and install the cotter pins. Make sure to tighten both pinch bolts to 90lb-ft. With the steering wheel adjusted, take a short test drive. It is usually necessary to adjust the drag link length at least twice to get the steering wheel perfectly centered.

**INSTALLATION IS COMPLETE**

**CHECK ALL BOLT TORQUES AFTER APPROXIMATELY 100 MILES OF DRIVING, AND AFTER EACH OFF-ROAD TRIP**



**Table 1. Jeep Wrangler JT Bolt Torques**

<b>Bolted Joint Location</b>	<b>Wrench Size</b>	<b>Torque</b>
Drag Link Tie Rod End Castle Nuts	13/16"	55lb-ft
Front Upper Control Arm	18mm	80lb-ft
Front Lower Control Arm	21/24mm	190lb-ft
Front Track Bar	21mm	110lb-ft
Front Track Bar Relocation Bracket	22mm	125lb-ft
Front Track Bar Relocation Bracket	3/4"	80lb-ft
Front Track Bar Relocation Bracket U-bolt	9/16"	30lb-ft
Front Sway Bar Relocation Bracket	17mm	70lb-ft
Front Sway Bar End Links to Sway Bar	15mm	60lb-ft
Front Sway Bar End Link Bolts	18mm	60lb-ft
Front Upper Control Arm Heat Shields	10mm	40lb-in
Front Bump Stop Spacer Bolt	5/16 Allen	35lb-ft
Upper Shock (Front and Rear)	18mm	80lb-ft
Lower Shock (Front and Rear)	18mm	75lb-ft
Rear Track Bar Frame Side Bolt	21mm	92lb-ft
Rear Track Bar Axle Bracket Bolt	21mm	100lb-ft
Rear Track Bar Relocation Bracket	7/8"	150lb-ft
Rear Track Bar Relocation Bracket	3/4"	90lb-ft
Rear Track Bar Relocation Bracket U-bolt	9/16"	30lb-ft
Rear Upper Control Arm	22+24mm	120lb-ft
Rear Lower Control Arm	22+24mm	120lb-ft
Rear Sway Bar Brackets to Frame Large Bolt	19mm	70lb-ft
Rear Sway Bar Brackets to Frame Small Bolt	10mm	20lb-ft
Rear Sway Bar Link to Frame	19mm	70lb-ft
Rear Sway Bar Link to Sway Bar	15mm	60lb-ft
Rear Bump Stop Spacers	9/16"	60lb-ft
Brake Caliper Banjo Bolts	15mm	26lb-ft
Brake Hardline Nut at the Frame	12mm	15lb-ft
Synergy MFG Control Arm and Track Bar Pinch Bolts	3/4" or 19mm	90lb-ft
JT Lug Nuts	22mm	130lb-ft



**Table 2. Jeep Wrangler JT Recommended Tire Size With 3” Bump Stop Spacing**

Wrangler Model	Fenders	Wheel Backspacing	Tire Size
Rubicon/Mojave	Unmodified Stock	Stock	37 Inch
Rubicon/Mojave	Unmodified Stock	4.5 Inch or less	37 Inch
Rubicon/Mojave	Trimmed Stock or High Clearance	Stock	37 Inch
Rubicon/Mojave	Trimmed Stock or High Clearance	4.5 Inch or less	39 Inch
Max Tow	Unmodified Stock	Stock	37 Inch
Max Tow	Unmodified Stock	4.5 Inch or less	36 Inch
Max Tow	Trimmed Stock or High Clearance	Stock	37 Inch
Max Tow	Trimmed Stock or High Clearance	4.5 Inch or less	37 Inch
Non-Rubicon	Unmodified Stock	Stock	35 Inch
Non-Rubicon	Unmodified Stock	4.5 Inch or less	36 Inch
Non-Rubicon	Trimmed Stock or High Clearance	Stock	35 Inch
Non-Rubicon	Trimmed Stock or High Clearance	4.5 Inch or less	37 Inch

**Table 3. Jeep Wrangler JT Recommended Tire Size With 4” Bump Stop Spacing**

Wrangler Model	Fenders	Wheel Backspacing	Tire Size
Rubicon/Mojave	Unmodified Stock	Stock	37 Inch
Rubicon/Mojave	Unmodified Stock	4.5 Inch or less	38 Inch
Rubicon/Mojave	Trimmed Stock or High Clearance	Stock	37 Inch
Rubicon/Mojave	Trimmed Stock or High Clearance	4.5 Inch or less	40 Inch
Max Tow	Unmodified Stock	Stock	37 Inch
Max Tow	Unmodified Stock	4.5 Inch or less	37 Inch
Max Tow	Trimmed Stock or High Clearance	Stock	37 Inch
Max Tow	Trimmed Stock or High Clearance	4.5 Inch or less	38 Inch
Non-Rubicon	Unmodified Stock	Stock	35 Inch
Non-Rubicon	Unmodified Stock	4.5 Inch or less	37 Inch
Non-Rubicon	Trimmed Stock or High Clearance	Stock	35 Inch
Non-Rubicon	Trimmed Stock or High Clearance	4.5 Inch or less	37 Inch