Revisions			
Rev.	Description	Date	Approved
-	Initial Release Per ECO 22-068	10/13/2022	K.B.

Jeep Gladiator 1-2” Lift Stage 1 Suspension System

Installation Instructions

Applications:

2019+ Jeep Gladiator Truck (JT)

TITLE: JEEP GLADIATOR STAGE 1 SYSTEM INSTALLATION INSTRUCTIONS		
SIZE: A	DWG NO: JT-STAGE1-INST	REV: -
	SCALE: N/A	PAGE 1 OF 9

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

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. 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 1 System. For improved performance, many additional options are available from Synergy Manufacturing. See 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

8851-1000 JEEP JT 1” STAGE 1 SYSTEM		
QTY	**Part Number**	**Description**
1	8863-10	Jeep JL/JT Front Lift Springs W/Lower Isolators – 1.0” (Pair)
1	8865-10	Jeep JT Rear Lift Springs – 1.0” (Pair)
1	8808-01	Jeep JT Rear Sway Bar Drop Brackets
1	8851-01	Jeep JL/JT Adjustable Front Lower Control Arms
1	8875-01	Jeep JL/JT Heavy Duty Adjustable Front Track Bar
1	8881-01	Jeep JT Adjustable Rear Track Bar
1	8855-02	Jeep JL/JT Front Sway Bar Relocation Brackets

8851-2000 JEEP JT 2” STAGE 1 SYSTEM		
QTY	**Part Number**	**Description**
1	8863-20	Jeep JL/JT Front Lift Springs W/Lower Isolators – 2.0” (Pair)
1	8865-20	Jeep JT Rear Lift Springs – 2.0” (Pair)
1	8057-10	Jeep Bump Stop Spacer Kit (2-4”)
1	8858-20	Jeep JL/JK/JT Rear Bump Stop Spacer – 2.0”
1	8808-01	Jeep JT Rear Sway Bar Drop Brackets
1	8851-01	Jeep JL/JT Adjustable Front Lower Control Arms
1	8875-01	Jeep JL/JT Heavy Duty Adjustable Front Track Bar
1	8881-01	Jeep JT Adjustable Rear Track Bar
1	8855-02	Jeep JL/JT Front Sway Bar Relocation Brackets

TOOLS REQUIRED

- Wrenches and Sockets, both SAE and metric
- 6mm Allen Wrench
- 1 1/4” and 1 1/2” Open End Wrenches or Large Crescent Style Wrench
- Torque Wrench
- Spring Compressor (Recommended)

ESTIMATED INSTALLATION TIME

4-5 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.
6. Loosen, but do not remove, all control arm hardware (axle side and frame side-22mm and 24mm).
7. Loosen and remove the axle side track bar bolt (21mm socket). Swing the track bar down and out of the factory axle side track bar bracket.
8. Loosen, and remove, the frame side track bar bolt (21mm socket). Make sure to support the track bar as you pull the bolt out and remove the stock track bar from the vehicle.

INSTALLING 8808-01 REAR SWAY BAR DROP BRACKETS

9. Remove the bolts just above the rear sway bar mounting holes that hold the brake line brackets to the frame(10mm).
10. 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.
11. 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.
12. Torque the small brake line bracket bolt to 20lb-ft and the large sway bar mount bolt to 70lb-ft.

INSTALLING 8858-20 REAR BUMP STOP SPACERS – Skip for 1" Lift Stage 1 System

13. 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.
14. Center punch the marks you made and drill the holes out to 3/8".
15. 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.
16. 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

17. 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.
18. 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.
19. Install the upper isolators on the Synergy springs.
20. 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.
21. With the springs in place raise the axle back up to prevent them from falling out. Replace jack stands under axle.
22. Install the rear shocks in the upper mounts.

23. 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 80 lb-ft and lower shock mounting hardware to 75 lb-ft.
24. Re-install the locker wiring harness and axle vent hose.
25. Re-install the sway bar end links and tighten the upper bushing bolt to 70lbs-ft and the lower TRE to 60lbs-ft.

INSTALLING THE 8881-01 ADJUSTABLE REAR TRACK BAR

26. 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. Torque the bolt and nut to 92lb-ft.
27. Bring the track bar down and slide it into the stock 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, then torque to 100lb-ft.

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

28. 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.
29. Torque the frame side track bar hardware to 92 lb-ft with the vehicle on the ground at ride height. Torque the axle side track bar hardware to 100 lb-ft with the vehicle on the ground at ride height.
30. Torque the lower control arm hardware to 120 lb-ft with the vehicle on the ground at ride height.
31. Torque the upper control arm frame side bolts to 120 lb-ft with the vehicle on the ground at ride height.

SETTING REAR TRACK BAR LENGTH AND PINION ANGLE

32. 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.
33. Once the rear axle has been centered, torque the pinch bolt on the track bar to 90 lb-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 but do not remove all control arm hardware (21mm socket).
5. Loosen, and remove, the frame side track bar bolt (21mm socket). Make sure to support the track bar as you pull the bolt out and swing the track bar down and out of the bracket.
6. Loosen and remove the axle side track bar bolt (21mm socket), and remove the stock track bar from the vehicle.
7. 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.

8. Remove the front shocks (18mm socket and wrench).
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. 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.
11. Pay close attention to orientation of upper spring isolators. Do not remove from the bump stop tube.
12. Remove the lower spring isolators. These are hard plastic and clipped to the axle.

INSTALLING 8855-02 FRONT SWAY BAR RELOCATION BRACKETS

13. Install the Synergy sway bar relocation brackets. Brackets are not right/left specific. They have a radius to accommodate the axle tube. Insert relocation brackets in between stock axle side sway bar link brackets and coil mounts. It may be necessary to tap brackets into place with a mallet.
14. 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.
15. 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.
16. With both pieces of hardware installed, tighten and torque to 70 lb-ft.

INSTALLING 8851-01 FRONT LOWER CONTROL ARMS

17. Raise the front axle back up to approximately ride height.
18. 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.
19. After freeing the brake lines from the brackets, remove one of the front lower control arms.
20. 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.
21. With one control arm installed, remove the other factory control arm and replace with a Synergy MFG control arm.
22. With both lower control arms installed lower the axle back down.

INSTALLING 8057-10 FRONT STACKING BUMPSTOP SPACERS – Skip for 1" Stage 1 System

23. If your front coil spring perch does not have a 3/8" hole in the center of it, centerpunch and drill the spring perch.
24. Tape together one stacking bumpstop spacer 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

25. Install the new Synergy lower spring isolators.

26. 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.
27. 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. If installing a 2" lift stage 1 system let the taped together bumpstops rest at the bottom of the spring for now.
28. With the springs in place, raise the axle back up to prevent them from falling out. Replace jack stands under axle.
29. If installing a 2" stage 1 system, 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 the stacking spacer 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.
30. Install a cap on each of the bump stop spacers. The cap can be 'snapped' on to the lower spacer with a mallet or a large prybar.
31. Install front shocks at this time. Torque upper shock bolts to 80 lb-ft and lower bolts to 75 lb-ft.
32. Re-install front axle disconnect and locker wiring (if so equipped).
33. Install the sway bar links on the 8855-02 relocation brackets. It is easiest to install the ends loose and then tighten in case the sway bar is not perfectly aligned.

INSTALLING 8875-01 FRONT TRACK BAR

34. Install the 'fixed' end of the track bar with the narrow forging on the axle side, using the factory nut and flag washer.
35. 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.

REINSTALLING WHEELS AND FINAL TORQUE

36. Re-install wheels and tires (if removed) and put vehicle back on the ground.
37. Torque track bar hardware to 110 lb-ft with the vehicle on the ground at ride height.
38. Torque lower control arm hardware to 190 lb-ft with the vehicle on the ground at ride height.
39. Torque upper control arm hardware to 80 lb-ft with the vehicle on the ground at ride height.

SETTING FRONT TRACK BAR LENGTH, CASTER AND CENTERING STEERING WHEEL

40. 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 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.
41. Once the front axle has been centered, torque the pinch bolt on the track bar to 90 lb-ft.
42. Next set front axle caster. We recommend somewhere between 5-6 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 lower control arms with a 1 1/2" open end wrench or large crescent type wrench. With the arms set to the correct lengths, torque the pinch bolts to 90 lb-ft.
43. 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. 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

Bolted Joint Location	Wrench Size	Torque
Front Upper Control Arm	18mm	80 lb-ft
Front Lower Control Arm	21/24mm	190 lb-ft
Front Track Bar	21mm	110 lb-ft
Front Sway Bar Relocation Brackets	17mm	70 lb-ft
Front Sway Bar End Links to Sway Bar	15mm	60 lb-ft
Front Sway Bar End Link Studs	3/4” or 19mm	80 lb-ft
Front Sway Bar Disconnect Bracket Lower Bolt	9/16”	60 lb-ft
Front Sway Bar Disconnect Bracket Upper Self-Tapper	1/2”	40 lb-ft
Front Upper Control Arm Heat Shields	10mm	40 lb-in
Front Bump Stop Spacer Bolt	5/16 Allen	35 lb-ft
Upper Shock (Front and Rear)	18mm	80 lb-ft
Lower Shock (Front and Rear)	18mm	75 lb-ft
Rear Track Bar Frame Side Bolt	21mm	92 lb-ft
Rear Track Bar Axle Bracket Bolts	21mm	100 lb-ft
Rear Upper Control Arm	21mm	120 lb-ft
Rear Lower Control Arm	21mm	120 lb-ft
Rear Sway Bar Brackets to Frame Large Bolt	19mm	70 lb-ft
Rear Sway Bar Brackets to Frame Small Bolt	10mm	20 lb-ft
Rear Sway Bar Link to Frame Brackets	19mm	70 lb-ft
Rear Sway Bar Link to Sway Bar	15mm	60 lb-ft
Rear Bump Stop Spacers	9/16”	60 lb-ft
Synergy MFG Control Arm and Track Bar Pinch Bolts	3/4” or 19mm	90 lb-ft
JT Lug Nuts	22mm	130 lb-ft

Table 2. Jeep Wrangler JT Recommended Tire Size With 2" Bumpstop Spacer

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