

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SYNERGY MFG. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF SYNERGY MFG IS PROHIBITED.

Revisions			
Rev.	Description	Date	Approved
A	Initial Release Per ECO 20-001	1/6/20	A.S.
B	Revised Per ECO 20-019	2/4/20	A.S.



Jeep Wrangler 2" Lift Stage 1 Suspension System

Installation Instructions

Applications:

2018+ Jeep Wrangler 2 Door (JL)

2018+ Jeep Wrangler 4 Door (JLU)



TITLE:

**JEEP WRANGLER STAGE 1 SYSTEM
INSTALLATION INSTRUCTIONS**

SIZE	DWG NO:	REV
A	JL-STAGE1-INST	B
SCALE: N/A		PAGE 1 OF 9



JEEP WRANGLER STAGE 1 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

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.

PARTS LIST

8821-2000 JEEP JL 2 DOOR STAGE 1 SYSTEM		
QTY	Part Number	Description
1	8863-10	Jeep JL Front Lift Springs W/Lower Isolators – 2.0" 2 Door (Pair)
1	8864-10	Jeep JL Rear Lift Springs – 2.0" 2 Door (Pair)
2	8057-10	Jeep Bump Stop Spacer Kit (2-4")
1	8860-01	Jeep JL Rear Sway Bar Links
1	8886-02	Jeep JL Rear Sway Bar Drop Brackets
1	8855-02	Jeep JL Front Sway Bar Link Relocation Brackets
1	8856-01	Jeep JL Rear Track Bar Relocation Bracket
1	8818-01	Jeep JL Rear Parking Brake Cable Bracket
1	8851-01	Jeep JL/JT Adjustable Front Lower Control Arms
1	8875-01	Jeep JL/JT Heavy Duty Adjustable Front Track Bar

8841-2000 JEEP JLU 4 DOOR STAGE 1 SYSTEM		
QTY	Part Number	Description
1	8863-20	Jeep JLU Front Lift Springs W/Lower Isolators – 2.0" 4 Door (Pair)
1	8864-20	Jeep JLU Rear Lift Springs – 2.0" 4 Door (Pair)
2	8057-10	Jeep Bump Stop Spacer Kit (2-4")
1	8860-01	Jeep JL Rear Sway Bar Links
1	8886-02	Jeep JL Rear Sway Bar Drop Brackets
1	8855-02	Jeep JL Front Sway Bar Link Relocation Brackets
1	8856-01	Jeep JL Rear Track Bar Relocation Bracket
1	8818-01	Jeep JL Rear Parking Brake Cable Bracket
1	8851-01	Jeep JL/JT Adjustable Front Lower Control Arms
1	8875-01	Jeep JL/JT Heavy Duty Adjustable Front Track Bar



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.
- For non-Rubicon package Jeeps that will be used off road, we HIGHLY recommend our front sway bar end links and disconnect kit, part number 8859-01.

TOOLS REQUIRED

- Wrenches and Sockets, both SAE and metric
- 1 ¼" and 1 ½" Open End Wrenches or Large Crescent Style Wrench
- Torque Wrench
- Spring Compressor (Recommended)

ESTIMATED INSTALLATION TIME

2-3 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. Remove the rear shocks (18mm socket and wrench).
4. Remove the sway bar end links with a 18mm socket and wrench for the lower bolt and a 18mm wrench and a 6mm allen key for the upper stud. The 6mm allen is to prevent the stud from spinning. These will be re-used on the front, so be sure and save them.

INSTALLING 8886-02 REAR SWAY BAR DROP BRACKETS

5. Remove the two bolts holding the driver side rear sway bar bracket to frame (15mm socket). Discard hardware.
6. Loosen, but do not remove, hardware holding the passenger side rear sway bar bracket to frame (15mm socket). The sway bar should be loose and able to move.
7. Install an 8886-02 spacer block in between the driver side frame and sway bar bracket. Loosely install the provided hardware with a washer under the bolt head.
8. Remove the passenger side bracket from frame and discard hardware.
9. Install an 8886-02 spacer block in between passenger side frame and sway bar bracket. Loosely install the provided hardware with a washer under the bolt head.
10. Make sure the brackets and sway bar are centered. Torque mounting hardware to 35 lb-ft (17mm socket).

INSTALLING 8057-10 REAR BUMP STOP SPACERS

11. Install a single lower bump stop spacer through the forward hole on the stock bump stop pads. Torque hardware to 35 lb-ft.
12. Install a cap on each of the bump stop spacers for a total of 2" of bump stop spacing (minimum required, see Table 1 at end of instructions for recommended bump stop spacing). The cap can be 'snapped' on to the lower spacer with a mallet or a large prybar.

INSTALLING 8864 REAR SPRINGS

13. Remove the brake line bracket from the axle with a 10mm wrench.
14. Loosen, but do not remove, the frame side track bar bolt. (21mm socket).
15. Loosen and remove, the frame side track bar bolt. (21mm socket). Swing the track bar down and out of the factory axle side track bar bracket. Pull the bar towards the rear of the vehicle while swinging it up above the stock bracket. Hang the track bar from a bungee or other strap from the frame or the exhaust.
16. Loosen, but do not remove, all control arm hardware (axle side and frame side).
17. If the vehicle is a Rubicon model, remove the rear locker wiring harness from the differential.
18. Remove the parking brake cables from the caliper and tabs on the axle. Let the cables hang loose for now.
19. 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.
20. 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.
21. Install the upper isolators on the Synergy springs.



22. 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.
23. 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.
24. With the springs in place raise the axle back up to prevent them from falling out. Replace jack stands under axle.

INSTALLING 8860-01 REAR SWAY BAR LINKS

25. Install the Synergy sway bar links. The tie rod end goes into the sway bar, with the nut on the inside of the bar, towards the frame. The bushing end of the link attaches to the axle, just as the stock end link, on the outside of the axle tab (towards the wheel/tire).
26. 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)
27. Torque the sway bar link hardware. Torque lower bolts to 60 lb-ft and upper nut to 50 lb-ft.
28. Tighten the jam nut with a 19mm wrench, using an 18mm wrench to hold the tie rod end.
29. Install the rear shocks in the upper mounts.
30. 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.
31. Re-install the brake line brackets, locker wiring and parking brake cables.

INSTALLING THE 8856-01 REAR TRACK BAR RELOCATION BRACKET

32. Slide the Synergy Rear Track Bar Relocation Bracket over the top of the factory bracket. It may be necessary to tap the bracket down with a rubber mallet. When correctly positioned the lower bolt hole on the bracket should align with the stock track bar bolt hole.
33. Insert the lower plate into the factory track bar bracket. Loctite the provided 35mm long bolt and insert it up through the plate and through the Track Bar Relocation Bracket. Install the provided nut tab on the back of the bracket and thread the bolt into the nut tab. Leave hardware hand tight.
34. Install the spacer sleeve in the factory track bar, and Loctite and install a provided 90mm long bolt and washer through the lower bolt hole. Leave hand tight.
35. Bring the track bar down and slide it into the Synergy Rear Track Bar Relocation Bracket. Loctite and install a 90mm bolt through the bracket and track bar.
36. With all hardware installed, torque the bottom (35mm long) bolt and the lower 90mm bolt to 110 lb-ft.

INSTALLING THE 8818-01 PARKING BRAKE CABLE BRACKET

37. Remove the bolt holding the parking brake cables to the body above the fuel filler hoses (13mm socket).
38. Pull the cables towards the front of the Jeep, so that they no longer run above the cross member and fuel lines but instead are below them.
39. Remove the two nuts holding the rear TPMS module to the cross member (10mm socket). Slide the Synergy Parking Brake Cable Bracket over the studs and re-install the nuts.
40. Slide a rubber grommet up each parking brake cable bracket until they are in a position that allows them to fit into the Synergy Parking Brake Cable Bracket. Install both cables in the bracket.
41. Re-install the parking brake cables on the tabs on the axle housing and re-connect the cables to the arms on the brake backing plates. Test to verify the cables are operating correctly by setting the parking brake with the lever in the vehicle and making sure the axles will not spin.

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

42. 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.



43. Torque the frame side track bar hardware to 110 lb-ft with the vehicle on the ground at ride height.
Torque the axle side track bar hardware to 110 lb-ft with the vehicle on the ground at ride height.
44. Torque the lower control arm hardware to 90 lb-ft with the vehicle on the ground at ride height.
45. Torque the upper control arm frame side bolts to 120 lb-ft and axle side hardware to 95 lb-ft with the vehicle on the ground at ride height.

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. Save hardware.
4. Loosen and remove the frame side and axle side track bar bolts (21mm socket). Remove the stock front track bar.
5. Loosen but do not remove all control arm hardware (21mm socket).
6. Remove the brake line brackets from lower control arms (15mm socket) and coil mounts (10mm socket).
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 brakes 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



JEEP WRANGLER STAGE 1 SYSTEM INSTALLATION INSTRUCTIONS

- 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.
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 should be pointing 'in' towards the center of the Jeep. Install the new control arms with the adjuster at the frame end. 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 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 8863 FRONT SPRINGS

23. Install the new Synergy lower spring isolators.
24. 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.
25. Install a single lower bump stop spacer through the hole in the center of the axle side spring pad. Torque hardware to 35 lb-ft. 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.
26. 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.
27. With the springs in place, raise the axle back up to prevent them from falling out. Replace jack stands under axle.
28. Install a cap on each of the bump stop spacers for a total of 2" of bump stop spacing (minimum required, see table for recommended bump stop spacing). The cap can be 'snapped' on to the lower spacer with a mallet or a large prybar.

INSTALLING 8875-01 FRONT TRACK BAR

29. Install the 'fixed' end of the track bar with the narrow forging on the axle side, using the factory hardware. Thread the hardware into the flag nut but leave hand tight.
30. 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. Leave hardware hand tight at this time.
31. Install the sway bar end links, removed from the rear of the vehicle, in the front with factory hardware. The bushing end of the link attaches to the axle, on the inside of the tab (towards the center of the vehicle). It may be necessary to use a 6mm allen key to prevent the upper stud from spinning. It is necessary to re-use the factory flag nut on the passenger side. The sheet metal 'flag' may be removed if desired. Torque lower bolts to 60 lb-ft and upper nuts to 50 lb-ft.
32. Re-install brake line brackets, front axle disconnect and locker wiring (if so equipped).

REINSTALLING WHEELS AND FINAL TORQUE

33. Install front shocks at this time. Torque upper shock bolts to 80 lb-ft and lower bolts to 75 lb-ft.
34. Re-install wheels and tires (if removed) and put vehicle back on the ground.
35. Torque track bar hardware to 110 lb-ft with the vehicle on the ground at ride height.
36. Torque lower control arm hardware to 190 lb-ft with the vehicle on the ground at ride height.
37. 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

38. 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.
39. Once the front axle has been centered, torque the pinch bolt on the track bar to 90 lb-ft.
40. Next set front axle caster. We recommend somewhere between 4.5-6 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 lower 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 90 lb-ft.
41. 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.



JEEP WRANGLER STAGE 1 SYSTEM INSTALLATION INSTRUCTIONS

Table 1. Jeep Wrangler JL Recommended Bump Stop Spacing

Wrangler Model	Fenders	Wheel Backspacing	Tire Size	Bump Stop Spacing
Rubicon	Unmodified Stock	Stock	37 Inch	3 Inch
Rubicon	Unmodified Stock	Stock	35 Inch	2 Inch
Rubicon	Unmodified Stock	4.5 Inch or less	37 Inch	4 Inch
Rubicon	Unmodified Stock	4.5 Inch or less	35 Inch	3 Inch
Rubicon	Trimmed Stock or High Clearance	Stock	37 Inch	2 Inch (Optimal)
Rubicon	Trimmed Stock or High Clearance	Stock	35 Inch	2 Inch
Rubicon	Trimmed Stock or High Clearance	4.5 Inch or less	37 Inch	3 Inch
Rubicon	Trimmed Stock or High Clearance	4.5 Inch or less	35 Inch	2 Inch
Non-Rubicon	Unmodified Stock	Stock	35 Inch	3 Inch
Non-Rubicon	Unmodified Stock	Stock	33 Inch	2 Inch
Non-Rubicon	Unmodified Stock	4.5 Inch or less	35 Inch	4 Inch
Non-Rubicon	Unmodified Stock	4.5 Inch or less	33 Inch	3 Inch
Non-Rubicon	Trimmed Stock or High Clearance	Stock	35 Inch	2 Inch (Optimal)
Non-Rubicon	Trimmed Stock or High Clearance	Stock	33 Inch	2 Inch
Non-Rubicon	Trimmed Stock or High Clearance	4.5 Inch or less	35 Inch	3 Inch
Non-Rubicon	Trimmed Stock or High Clearance	4.5 Inch or less	33 Inch	2 Inch

Table 2. Jeep Wrangler JL 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 Bracket	17mm	70 lb-ft
Front Sway Bar End Links	18mm	60 lb-ft
Front Upper Control Arm Heat Shields	10mm	40 lb-in
Upper Shock (Front and Rear)	18mm	80 lb-ft
Lower Shock (Front and Rear)	18mm	75 lb-ft
Rear Track Bar	21mm	110 lb-ft
Rear Upper Control Arm to Frame	21mm	120 lb-ft
Rear Upper Control Arm to Axle	21mm	95 lb-ft
Rear Lower Control Arm	21mm	90 lb-ft
Rear Sway Bar Brackets to Frame	17mm	35 lb-ft
Rear Sway Bar Link to Axle	18mm	60 lb-ft
Rear Sway Bar Link to Sway Bar	15mm	50 lb-ft
Bump Stop Spacers	¼" Allen Key	35 lb-ft
Synergy MFG Control Arm and Track Bar Pinch Bolts	¾" or 19mm	90 lb-ft