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Revisions			
Rev.	Description	Date	Approved
A	Initial Release Per ECO 17-047	11/2/17	A.S.



## Jeep Wrangler Heavy Duty Drag Link Installation Instructions

Applications:  
2007-2018 Jeep Wrangler (JK)



TITLE:  
**JEEP JK HEAVY DUTY DRAG LINK  
INSTALLATION INSTRUCTIONS**

SIZE	DWG NO:	REV
<b>A</b>	<b>8000-01-INST</b>	<b>A</b>
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!

Now for the lawyer part:

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**

<b>8000-01 JEEP JK DRAG LINK</b>		
<b>QTY</b>	<b>Part Number</b>	<b>Description</b>
1	4139-L	Single Plane Heavy Duty TRE (with castle nut, cotter pin, dust boot and zerk)
1	4131-L	Heavy Duty TRE (with castle nut, cotter pin, dust boot and zerk)
1	800001-01-PC	Jeep JK Drag Link Tube, Powdercoated
1	8000-02	Jeep JK Drag Link Flip Adapter
1	3622-07-18-PL	Synergy Double Adjuster Sleeve
1	-	7/8-18 LH Jam Nut
1	-	1/2-20 UNF 1.75" long Grade 8 Bolt and Lock Nut

## **General Notes**

- These instructions are also available on our website. Check the website before you begin for any updated instructions and additional photos for your reference.
- Replacement tie rod ends and boots are available from Synergy MFG, see parts listing above for appropriate part numbers.
- ‘Flipping’ the drag link to above the steering knuckle **SHOULD ONLY BE DONE IN CONJUNCTION WITH RAISING THE AXLE SIDE TRACK BAR MOUNT**, otherwise severe bump steer will occur.
- ‘Flipping’ the drag link to above the steering knuckle requires 3 inches of bump stop spacer to prevent the drag link interfering with the vehicle frame at full bump.
- The Synergy drag link will work with springs up to 6 inch. Spring heights over 3 inch should be running the drag link in the flipped position with an axle side track bar relocation bracket.

## **Tools Needed**

- Wrenches/Sockets/Pliers (Basic Hand Tools)
- Hammer/Pickle Fork/TRE remover
- 7/8" Drill Bit and Drill (For optional flip adapter installation for high steer)
- Tape Measure
- Two Large Crescent Wrenches

## **Estimated Installation Time**

**.5-1.5 Hours**

## INSTALLATION

1. Start with the vehicle on flat, level ground. Remove the passenger side wheel and tire and support the axle on jackstands. Turn the steering wheel to point the wheels straight ahead and either lock the steering column or use the seatbelt or a tie down to prevent the steering wheel from rotating.
2. Loosen the nuts securing the tie rod ends at the knuckle and the pitman arm. Leave them on the tie rod ends with only one or two complete turns of engagement. This will prevent the drag link from falling when the tie rod end tapers separate.
3. Remove the factory drag link from the steering knuckle and pitman arm. A couple of sharp blows with a large hammer to the steering arm and pitman arm will usually pop the tapers loose. Alternatively, a pickle fork or other tie rod end separator tool will work.
4. Note: steps 5 and 6 are for high steer drag link flip conversion with 8000-02 flip adapter. Only flip the drag link in conjunction with a raised axle side track bar bracket. If bolting drag link into the stock location, proceed to step 7.
5. To install the drag link above the knuckle, the stock tapered hole must be drilled out to accept the 8000-02 flip adapter. Drill out the knuckle using a 7/8" drill bit. Drilling metal works best at low RPM and lots of pressure on the bit. Too high of drill speeds will overheat the bit and cause it to go dull quickly. Ensure the hole is drilled square to the flat on the knuckle and not at an angle. **See Figure 1.**



**Figure 1. Drilling out Knuckle for Flip Adapter**

6. Once the hole is drilled to size, install the flip adapter. The flip adapter should be a slightly snug fit. If it is too tight, clean out the hole to make sure there are no burrs left. You should not need to hammer the adapter into the knuckle. **See Figure 2.**



**Figure 2. Flip Adapter Being Installed in Knuckle**

7. The drag link comes assembled with the tie rod ends fully threaded in. Make sure the dust boots are seated on the lip of the tie rod ends and retaining rings are installed. Depending on vehicle lift height and drag link installation orientation, the overall length required will vary from vehicle to vehicle. If you are simply replacing the drag link you had and making no other changes, then measure the length (center of tie rod end to center of tie rod end) of your stock drag link and adjust the new one to match. If you are making other changes at this time (flipping the drag link, installing lift springs, etc.) then some trial and error will be needed to determine the correct drag link length.
8. Attach the straight end of the drag link to the pitman arm with a castle nut. **See Figure 3.** Leave the castle nut hand tight. Swing the bent end of the drag link over towards the steering knuckle and observe the length change required to get the tie rod end to install in the hole in the knuckle. Adjust the drag link length as needed to get the tie rod end to drop into the hole on the knuckle. **See Figure 4.** Make sure the adjuster sleeve end is adjusted by turning the adjuster sleeve and not the tie rod end. The amount of thread of the adjuster sleeve and tie rod end showing should be the same.



**Figure 3. Drag Link Installed In Pitman Arm**



**Figure 4. Drag Link at Knuckle End – Needing to be Adjusted to Fit**

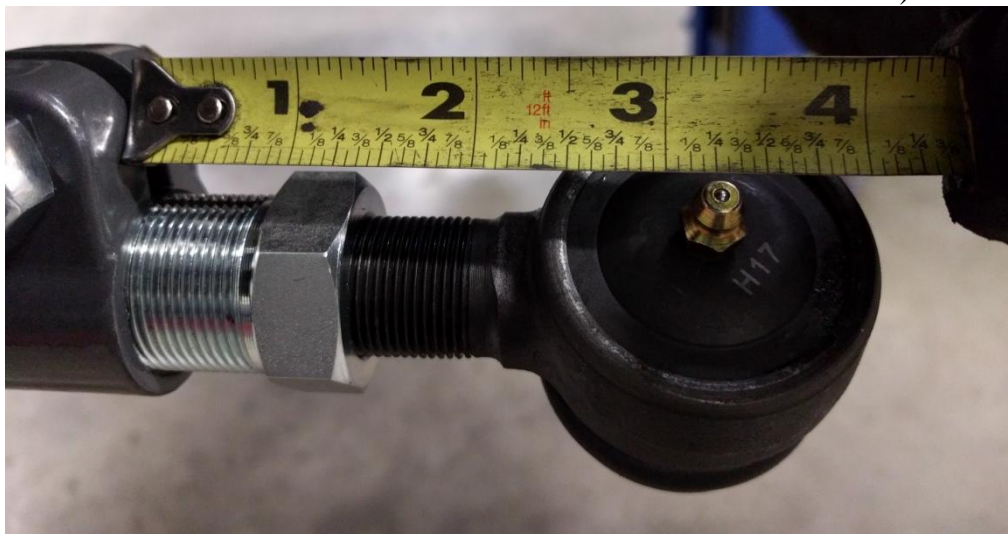
**IMPORTANT**

DO NOT ADJUST KNUCKLE SIDE TIE ROD END OUT SO THAT MORE THAN 1.75" OF THREAD IS SHOWING (NOT INCLUDING JAM NUT) **SEE FIGURE 5.**



**Figure 5. Minimum Thread Engagement on Knuckle Side of Drag Link**

DO NOT ADJUST PITMAN ARM SIDE DOUBLE ADJUSTER FARTHER THAN 3.25" OUT (FROM CENTER OF TIE ROD END TO END OF DRAG LINK) **SEE FIGURE 6.**



**Figure 6. Minimum Thread Engagement on Pitman Arm Side of Drag Link**

9. Once the bar is close to the correct length to install, install it into the knuckle and torque both castle nuts (pitman arm and knuckle side) to 55 lb-ft and install cotter pins. If cotter pin hole does not align with castle nut, **TIGHTEN** the castle nut slightly until it does. Never loosen castle nuts to align cotter pin holes.
10. Reinstall passenger side wheel and tire and put the Jeep back on the ground. Remove steering wheel strap if used and drive the jeep back and forth a short distance to verify that the steering wheel is straight. If the steering wheel needs to turn right to be centered, shorten the drag link. If the steering wheel needs to turn left to be centered, lengthen the drag link. At this point length changes should be made on the pitman arm side with the double adjuster.
11. Once the steering wheel has been set straight, align the drag link so the bend is flat and towards the front. The bend should not point up or down, but forward. **See Figures 7 and 8.** Torque the ½” pinch bolt on the pitman arm end of the drag link to no more than 90 lb-ft. Tighten the jam nut on the knuckle side as tight as possible. The use of two large crescent wrenches is recommended. At this point, install grease zerks if they haven't been installed already. Joints come pre greased.



**Figure 7. INCORRECT Orientation of Drag Link**



**Figure 8. CORRECT Orientation of Drag Link**

12. Finally, take a short test drive to verify that the steering wheel is indeed centered. If the steering wheel is not centered the ESP light will come on, so make sure you adjust the drag link so the steering wheel is perfectly centered. After the test drive confirm the orientation of the drag link to make sure it has not moved from the position it was originally set at. The pinch bolt bung should point rearward and slightly up. See **Figure 9.**



**Figure 9. Correctly Oriented Drag Link**

13. Double check all bolts / torques before driving and recheck bolt torques after 100 mi of driving or after off road use. Grease joints at regular intervals with one pump of grease. DO NOT over grease! Over greasing the joints will cause damage to the dust boots.

**Installation is Complete**