

JK Wrangler Ultimate Steering System

2007-2018 Jeep Wrangler JK & JKU Part number: KSS-JK-150H, Revision 2/22/18

Thank you for purchasing the Trail Forged JK Wrangler Ultimate Steering System. We hope you will be as pleased with this product as we are. Tag us in a review on Facebook and we'll hook you up with 10% off your next order. We love seeing pictures of our products in action too; send photos to <u>info@trailforged.com</u> or tag us on FB or IG for a chance to be our feature rig.

Installation should only be performed by an experienced mechanic, if you do not have all the necessary tools, experience, or confidence to undertake this project, please seek help before beginning. This should only take a few hours start to finish, so let's get to it.

Tools Required:

- · Floor jack and jack stands
- Wheel chock
- · Large crescent wrenches or open end wrenches (1-2")
- · Large sockets, with impact or wrench
- Small sledge hammer
- PB Blaster or similar (recommended)
- · Pitman arm puller
- Drill and 3/4" drill bit or bridge reamer, 51/64" drill bit or chucking reamer
- Torque wrench
- 33mm or 1 5/16" wrench or socket
- Cutting and welding implements (if weld on bracket chosen)
- · Additional sizes of wrenches and sockets depending on specific application and previous modification

Phase 1 - Jack Up and Remove Tires

- 1. Chock rear wheels, jack up front and place on stands. You can support from the body but keep in mind axle droop and how high your stands are; we chose to support under the axle/control arm mounts.
- 2. Remove front tires. (DON'T tighten lugs back down with this; use a torque wrench please. I don't want to hear back that you stripped out lugs and studs by going a few ugga duggas too far.)



Phase 2 - Remove Factory Steering Kit

- 1. We suggest hosing down the tie rod connections and pitman arm connection with some PB Blaster first.
- 2. Remove nuts securing tie rod and drag link, remove links.
- 3. Remove steering stabilizer.
- 4. Remove pitman arm
- 5. If also switching to high trackbar and bracket, remove track bar.

Phase 3 - Drill Knuckles and Pitman Arm

- 1. Drill left and right lower knuckles to 3/4". We used a 3/4" bridge reamer that we had at the shop because we have found it self-centers a little easier, but a standard 3/4" drill bit should do the job. If using a drill bit we suggest starting from the bottom and drilling up to help center the bit in the existing taper. Make sure drill hole is perpendicular to the knuckle.
- 2. Drill drag link arm on passenger knuckle to 51/64" We suggest drilling under size and reaming to size for the most accurate hole, but you can use a standard drill bit. Ensure hole is perpendicular to the knuckle face, and is as close to on size as possible. We also suggest knocking off the edge on the bottom of the hole, a large countersink works well, or simple file or sandpaper.
- 3. Drill pitman arm to 3/4". Again, we used the bridge reamer. You will likely need to remove the pitman arm to do this.
- 4. Remove metal chips and debris from knuckles and pitman arm.
- 5. Reinstall pitman arm, torque to 185 ft-lbs.

Phase 4 - Install Trackbar Relocation Bracket and Track Bar

- 1. Skip this step if you already have a raised axle side trackbar bracket installed. (Must be 3" above original trackbar mounting location.)
- 2. Weld on Bracket



- 1. Cut off original track bar bracket
- 2. Weld replacement bracket parts together. We recommend installing joint and bolt, tacking bracket, them removing joint to finish weld.
- 3. Locate and weld bracket to axle. Align bracket so tabs point at chassis side bracket and are straight up at ride height.
- 4. Clean and paint or corrosion protect as you choose.
- 3. Bolt on Bracket
 - 1. Install bolt in bracket
- 4. Install new track bar with Johnny Joint at axle side. Adjust axle position at ride height.
- 5. Torque 9/16 bolts to 130 lb-ft.

Phase 5 - Install HD Crossover Steering Kit

- 1. Additional photos provided below of mounting.
- 2. Press in drag link knuckle stud from bottom up. Use provided press sleeve on top of knuckle, washer, and the standard grade 8 non lock nut, lubricate threads with anti-sieze or other lube, tighten nut until stud is seated into knuckle. Remove all hardware on top.
- 3. Begin by installing drag link at the pitman arm. Order is: long bolt and washer, pitman arm, misalignment spacer, heim, misalignment spacer, washer, nut. Do not torque yet. We highly recommend checking axle droop to make sure the heims do not bind under flex; this is especially important on higher lifts and vehicles with a lot of droop travel.
- 4. Install drag link at knuckle end on to stud. Heim with misalignment spacers go directly onto knuckle, then washer, then nut. Do not torque.
- 5. Install tie rod. Order on the passenger side is: short bolt, washer, heim, knuckle, washer, nut. Do not torque.
- 6. Install driver side tie rod end. Order is: short bolt, washer, stainless spacer, heim, stainless spacer, knuckle, washer, nut. Do not torque.
- 7. Set toe by removing one side of tie rod, twist entire tie rod in 180 degree increments to adjust both heims out, and one end only for final fine tuning. We suggest a very small amount of toe in for best ride, tire wear, and steering feel. When adjusted, ensure that the tie rod bends point it straight forward, not angled up or down. When tightening jam nuts, ensure they are clocked so that the tie rod can twist slightly by hand throughout the entire steering range of motion. This is critical so as not to loosen or prematurely wear out heim joints. When toe is set and jam nuts are tight, final tighten 3/4" hardware at both ends to 300 lb-ft.
- 8. Align steering wheel angle by adjusting heims in or out similar to above tie rod method. Make sure the thread engagement on the heim joints is similar left to right. Bend in drag link is provided to clear track bar bracket and various steering stabilizer set ups. It should be pointing forward. Check clearance throughout steering range and under droop and bump conditions. Once wheel position is set and jam nuts tight, torque outer hardware to 200 lb-ft.
- 9. Recheck all torque specs after driving to ensure they don't loosen or settle.
- 10.(Optional) Install steering stabilizer with optional stabilizer bracket. Be sure to place bracket in the appropriate position to allow the stabilizer full range of motion.
- 11.Reinstall tires, torque to 100 ft-lbs, and then go wheel!



Notes:

- 1. Due to extremely tight clearances between passenger drag link stud and tie rod, some contact of the tie rod and the stud head is normal, and will not compromise strength or performance in any way.
- 2. Ensure jam nuts are TIGHT! Loose jam nuts can be identified by an intensifying clunk sound and if not rectified can cause damage to threads and steering vagueness.
- 3. We lubricate our heims with PTFE dry lube semi frequently, more often in winter months, or after muddy or dirty trail rides. A simple squirt of lube now and then will increase joint life significantly.
- 4. Some slight clunking noise is normal from any heim steering system as the joints freely allow the links to rotate. Driving quickly over rough surfaces is usually when you may notice this.







Notes: These instructions are meant to be a general guideline and not a factory certified service procedure. We are not responsible for any failures or issues that may arise in others' installs. This product is intended <u>for</u> <u>offroad use only</u>, vehicle owner assumes all responsibility by purchasing and/or installing this product.

Returns: All returns must be complete within 30 days of purchasing, in original packaging, unmodified, and as shipped in uninstalled condition. Buyer must contact Trail Forged to receive a return authorization before returning product. Returns are subject to inspection, and a 15% restocking fee.

Warranty: This product is backed by a limited lifetime warranty against bending or breaking of rods and links only. This warranty is non-transferrable and covers original purchaser only. Warranty is void if modified in any way, installed improperly, or not used in it's intended application. Purchaser must contact us for all warranty claims, and pay return shipping of damaged product back to us as well as shipping of replacement part.

Not Covered: Worn bushings, heims, rod ends, jam nuts, etc. Damage to threads or inserts due to improper thread engagement, tightening, or contaminants. Damage from corrosion, either on items sold bare or coated as damage can occur in shipping, installation, and use. Products or components which have been subjected to abuse, accident, alteration, modification, improper installation, tampering, negligence, misuse, or products installed on a vehicle used in sanctioned racing events. A race is defined as any contest between two or more vehicles, or any contest of one or more vehicles against the clock, whether or not such contest is for a prize.