

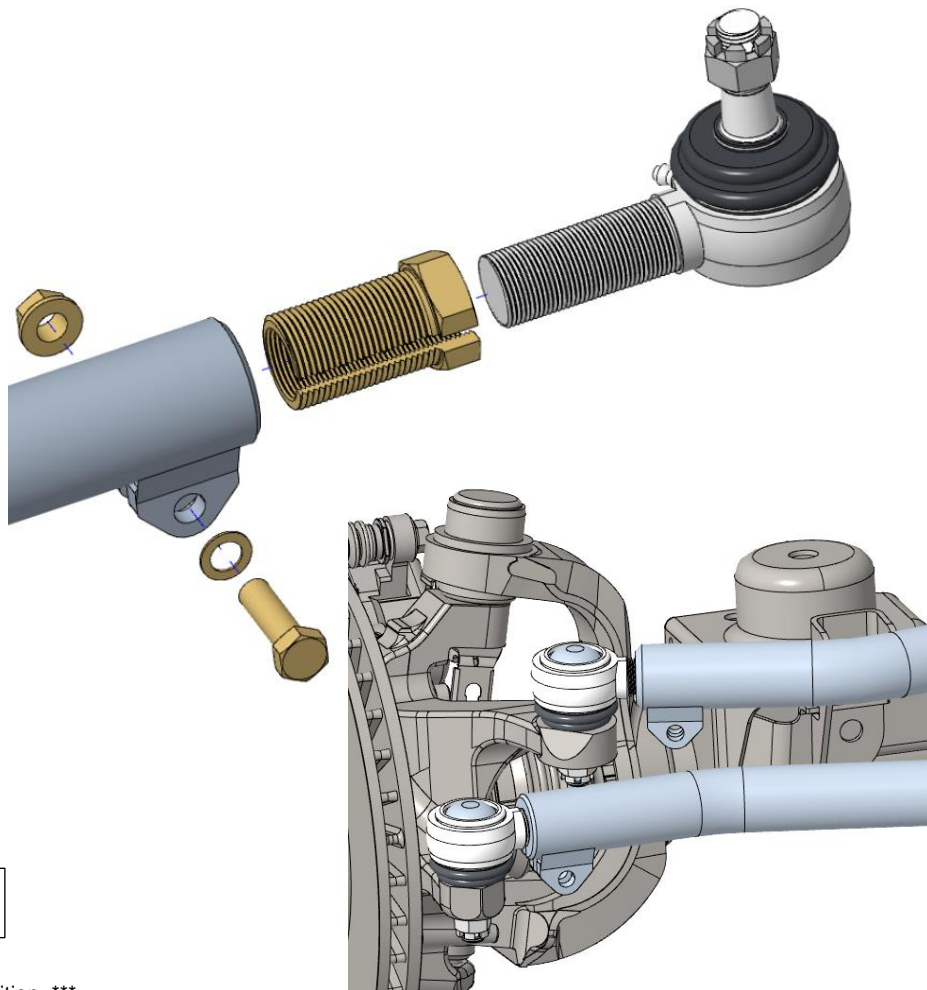
# IRON ROCK OFF ROAD

I-877-919-JEEP www.ironrockoffroad.com

WJ 1 Ton OTK  
Steering Kit

## Parts Checklist:

- HD Tie Rod 92351 (1)
  - HD Drag Link 92354 (1)
  - HD High-Angle Tie Rod End 95164 (2)
  - HD Anti-Flop Tie Rod End 95165 (2)
  - Track bar drop bracket 92207 (1)
  - #307 – Stabilizer Clamp Hardware**
    - Stabilizer Clamp 92303 (1)
    - Spacer Tube 77108 (1)
    - M12 x 110 cl10.9 (1)
    - M12 nylock flange nut (1)
    - 7/16 F436 washer (2)
  - #186 - Clamping Hardware 13312 (2)**
    - 3/8-16 X 1-1/4 Hex bolt gr8 (2)
    - 3/8-16 Nylock flange nut gr8 (2)
    - 3/8 Mil spec washer (2)
  - #291 – Double Adjuster & Grease Zerk 15768 (2)**
    - Double Adjuster 95137 (1)
    - Grease Zerk 95183 (2)
  - #80 - WJ Track Bar Drop Subframe Hardware (1)**
    - 7/16 x 1 1/4" gr8 hex bolt (2)
    - 7/16 gr8 hex nut (2)
    - 7/16 USS washer (8)
    - M12 x 70 cl10.9 hex bolt (2)
    - M12 cl10.9 hex nut (2)
  - #71 – WJ Steering Stabilizer Hardware (1)**
    - Steering Clamp 95018 (2)
    - 7/16 F436 washer (4)
    - M12 x 90 cl10.9 hex bolt (2)
    - M12 cl10.9 hex nut (2)
- Optional:** WJ Steering Stabilizer
  - Steering Stabilizer (2962) (1)

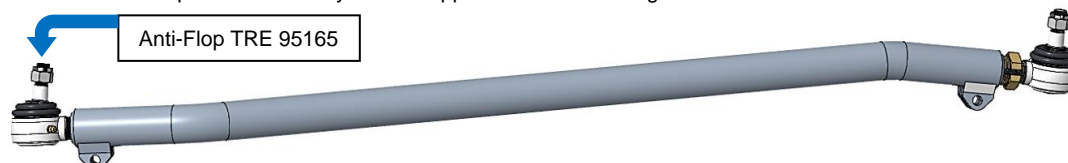


## Before you begin:

- \*\*\*Ensure that all parts are present and in good condition. \*\*\*
- Read and understand all installation instructions.
- 17" Wheels with 4.5" of backspace or less are recommended for Standard UTK, required for OTK. OEM wheels including JK/JL take-off wheels recommend a wheel spacer of 1.0" minimum for Standard UTK, required for OTK.
- Tools required:
  - Sockets, wrenches, ratchet
  - Anti-seize and grease gun w/ multi-purpose grease.
  - Torque wrench
  - \*Tapered reamer only for Over The Knuckle (OTK) installation
  - Over The Knuckle install requires minimum 4" lift, track bar drop bracket, reaming, and slight grinding of the passenger knuckle (less than 1/4").

## Prepare Parts for installation:

1. Apply anti-seize to all threads.
2. Install the included grease zerks into all tie rod ends.
3. Install the double adjuster all the way into large threaded end of the drag link and tie rod. **\*Reverse threads\***
4. Thread one high-angle TRE 95164 fully into the double adjuster end of the drag link and tie rod.
5. Thread one anti-flop TRE 95165 fully into the opposite end of the drag link and tie rod.



6. Install 3/8"x 1-1/4" bolt with thin washer into clamping tabs. Secure with nylock nut. Do not tighten at this time.
7. Measure center to center on existing drag link and tie rod. Record lengths here: Drag Link \_\_\_\_\_ Tie Rod \_\_\_\_\_
8. Roughly adjust the drag link and tie rod to the existing measurements. If needed, adjust out the anti-flop tie rod end. Ensure the double adjuster end has approximately equal amounts of threads showing on the adjuster and tie rod end.

### **Over The Knuckle Installation (OTK): \*Requires track bar drop bracket\***

9. Remove the factory drag link and tie rod.
10. Ream the tie rod holes on the knuckle first.
  - a. Use the slowest speed on your drill and be sure that the drill is perfectly square to the knuckle while reaming.
  - b. Check fitment frequently by installing a tie rod end and castle nut onto the knuckle.
  - c. Stop reaming when the cotter pin hole becomes visible with the castle nut hand tight.
  - d. Torque the castle nut to 50 ft-lbs. then align the castle nut with the cotter pin hole. Do not install cotter pins at this time.
  - e. If the cotter pin will not fit, then continue reaming the knuckle. Repeat until the cotter pin just fits through the castle nut.
11. Ream the drag link hole using the method above. It is very important that you do not ream the drag link hole too far. This will cause interference between the castle nut and the tie rod.
12. Install the new tie rod onto the knuckles starting with the passenger side first. Tip: position the cotter pin hole in tie rod end so it is easy to install cotter pins later.
13. Torque castle nuts to 50 ft-lbs. then align the castle nut with the cotter pin hole. Do not install cotter pins at this time.
14. The tie rod should bend forward, clamping tabs point down. Tighten the clamping bolt on the passenger side knuckle to keep the bar from rotating, it will be torqued later.
15. Install the new drag link onto the knuckle then onto the pitman arm. Tip: position the cotter pin hole in tie rod end so it is easy to install cotter pins later.
16. Torque castle nuts to 50 ft-lbs. then align the castle nut with the cotter pin hole. Do not install cotter pins at this time.
17. The drag link should bend forward at the knuckle, clamping tabs point down. Tighten the clamping bolt on the passenger side knuckle to keep the bar from rotating, it will be torqued later.
18. Install wheels and cycle the steering lock to lock.
  - Due to variances in knuckle casting, some minor grinding (less than 1/4") may be needed on the passenger knuckle for OTK tie rod clearance when steering fully to the right. See picture.
  - \*Low offset wheels - Example: OEM JK/JL wheels. For maximum clearance, 17" wheels with 4.5" of backspace or less are recommended. A minimum 1.0" wheel spacer is required when using low offset OEM JK/JL wheels.
19. Install castle nuts onto all tie rod ends. Do not install cotter pins at this time.



### **Track Bar Subframe Installation:**

20. Remove the track bar from frame mount.
21. Insert track bar drop subframe into track bar mount using M12 bolt and washers. Do not tighten at this time.
22. Swing subframe up until it contacts underside of frame rail. (Passenger side)
23. Mark 2 holes on pinch seam for drilling.
24. Drill these holes with 7/16" drill bit.
25. Apply touch up paint to drilled holes.
26. Swing subframe back up into place and install the two 7/16 bolts using washers.
27. Torque bolts to 65 ft-lbs.
28. Reinstall track bar into drop bracket.
29. Torque track bar bracket bolt to 80 ft-lbs.
30. Torque track bar bolt to 80 ft-lbs.



### **Tie Rod Alignment Procedure:**

31. **A professional alignment is recommended and will result in the safest handling and minimized tire wear.** As a temporary solution, with careful measurements you can set your toe-in fairly accurately using a tape measure.
32. Make sure the vehicle is on a level surface and the front tires are raised slightly off the ground with jack stands under the axle and the vehicles weight on the suspension.
33. Make a mark anywhere on the tread area of each front tire. The marks do not have to be in the same spot on each tire. This method ensures that your measurements are accurate regardless of rim and tire runout, even bent rims or untrue tires will not affect the measurement.
34. Measure from one mark to the other making sure your measurement is parallel to the axle housing and your marks are facing exactly forward. This is your front measurement.
35. Rotate tires so the marks are facing exactly backward. Measure from one mark to the other making sure your measurement is parallel to the front axle housing. This is your rear measurement.
  - For 29-32" tire diameter** (measured): adjust your tie rod until the front measurement is 1/16" less than your rear measurement.
  - For 33-36" tire diameter** (measured): adjust your tie rod until the front measurement is 1/8" less than your rear measurement.
36. Re-check your measurements.
37. Ensure the high-angle tie rod end is in the middle of its travel. Torque both clamping bolts to 50 ft-lbs.
38. Lower your vehicle from the jack stands.
39. Double check to ensure that all fasteners are tight.

### **Drag Link Adjustment:**

40. Using an adjustable wrench spin double adjuster until the drag link length exactly matches your original length.  
\*\*If more than 1/2 inch of threads are exposed on double adjuster end disconnect passenger side and unthread the tie rod end 1/4 inch. \*\*
41. Twist the high-angle tie rod end so it is in the middle of its travel. Torque both clamping bolts to 50 ft-lbs.
42. Torque castle nuts to 50 ft-lbs. then align the castle nut with the cotter pin hole. Install cotter pins.
43. With wheels installed, steer fully left and right, double check for interferences between all the steering components.

### **Steering Stabilizer Installation & Adjustment (Over The Knuckle):**

44. With the Toe-in adjusted and the Jeep at ride height, turn the steering wheel to the left until full lock is reached. This should be the point where the steering stabilizer would be fully collapsed: its shortest length.
45. The steering stabilizer runs from the drag link to the track bar itself.
46. Install a small steering clamp onto the track bar. Use the provided M12 x 90 bolt from hardware kit #71 to attach the stabilizer to the steering clamp. Place a 7/16 washer on each side and between the stabilizer and the steering clamp.
47. Install a large steering clamp from **HK #307** onto the drag link.
48. Attach the other end of the stabilizer to the clamp on the drag link using the M12 x 110 bolt, nut, and washers from **HK #307**.
49. Ensure the stabilizer is fully collapsed by compressing it by hand.
50. Note the location of the stabilizer clamp on the drag link.
51. Extend the stabilizer slightly (approx. 1/8") and tighten the clamp.
52. Torque the stabilizer clamp to 65 ft-lb at the bracket.
53. The stabilizer should now be centered with the tires pointed straight ahead.
54. Double check by cycling the steering both directions to ensure stabilizer does not limit your steering angle.



### **Steering Wheel Alignment:**

55. Ensure all fasteners are torqued to spec and cotter pins are installed.
56. Go for a short test drive.
57. Note steering wheel angle when driving straight and steady.
58. Drive straight into your working area making sure steering wheel angle matches angle during the test drive.
59. Loosen only the double adjuster clamp on drag link.
60. Turn only the double adjuster until steering wheel is straight.
61. Ensure the high-angle tie rod end is in the middle of its travel. Torque the clamping bolts to 50 ft-lbs.
62. Double check steering stabilizer placement by cycling the steering both directions to ensure stabilizer does not limit your steering angle.
63. Test drive again, recheck steering wheel angle.
64. Repeat steps if necessary.

### **Final Safety Warning:**

\* Re-torque all fasteners after 100 miles, and frequently inspect all safety critical steering components. It is the responsibility of the installer to ensure all fasteners are properly tightened after installation and to ensure the owner knows his/her ongoing responsibility. It is the responsibility of the owner of the vehicle to be sure all safety critical components are inspected frequently, especially after off road or other demanding use.

