



TRU-Turn JK Tie rod

Installation Document

Off Road Only

ph 651.644.2323

www.offroadonly.com

oro-info@offroadonly.com

The TRU-Turn will bolt onto the stock JK steering knuckles at the stock tapered tie rod mount and utilizes the lower unit bearing mounting bolt to retain the TRU-Turn hub.

To do this install, you'll need to remove the stock tie rod and disconnect the steering stabilizer from the stock tie rod and remove the bracket for the stabilizer from the tie rod, retain this bracket and u-bolts to reuse the OEM stabilizer mount if you wish.



Once the stock tie rod is removed, start the install by placing the TRU-Turn hubs over the stock steering knuckles. When placed on the knuckle the 5/8" bolt should pass up from the bottom as shown. **DO NOT** place a washer on the bolt before you insert it, **BUT DO** install the aluminum crush collar on the bolt first. Place a washer and the nut on the bolt. The aluminum crush collar should fit snugly in the lower hole of the bracket and will get tight into the taper in the knuckle. If it binds before the position shown in the picture on the left is reached, you may need to check for burrs or edges for misalignment and reinsert. This collar is important to keeping the 5/8" bolt in the center of the taper and will keep the bolt tight. Do not tighten yet.



Reinstall the wheel bearing retaining bolt and when that is tightened up the hub should pull into place properly, then tighten the 5/8" bolt. Torque the wheel bearing bolt to 90 ft lbs and torque the 5/8" bolt to 110 ft lbs. Once the 5/8" bolt is tight, the aluminum crush bushing should disappear into the opening as shown in the picture above.

You'll notice that the tie rod has a hole on the side of it for grease zerks. This hole is not threaded and is designed to use the straight zerk to thread the hole. We recommend using the straight zerk to thread the hole and then transfer the supplied 90 degree zerk in place of the straights with the zerk pointed the opposite direction of the tapered stud. This will allow you to install the tie rod with the zerk toward the rear of the vehicle by greasing from the bottom up.





Next, assemble the tie rod assembly by placing the $\frac{3}{4}$ " jam nuts on the tie rod end shanks. One nut is left hand and one is right hand, the left hand one has witness marks (little ticks on the wrench flats) to note it is left hand. Screw them all the way onto the tie rod end and then screw the tie rod ends into the tie rod, again the left hand thread end has a groove cut $\frac{1}{4}$ " from the end to denote it is left hand. We recommend coating the threads with anti-seize or other lubricant before assembly.

Install the tie rod ends into the tapered TRU-Turn hubs from the bottom up, place the castle nuts on the tie rod ends and tighten and cotter pin. Torque to 100 ft lbs.

TIE ROD END TO WHEEL CLEARANCE: The above instructions state to place the tie rod ends with the grease zerks to the rear, this will leave a casting point on the front of the tie rod ends, a blank for the grease zerk. In the event that there is contact between the tie rod end and the Jeep wheels, it will most likely be due to this casting point. This area can simply be ground down to gain extra clearance.



Now, to finish the install you need to complete the following in this order:

- Set the toe
- Replace the steering stops
- Adjust the draglink
- Complete stabilizer install.



To set the toe, we recommend having a professional alignment performed, but the process shown in the following picture will get you close enough to drive.



Utilizing a pair of straight edge materials (aluminum C-channel shown, available from most hardware stores) and a pair of bungee cords, attach the straight edges to the wheels as shown. Take care to not bend/deflect the straight edge with the tension of the bungees, but yet you need to have enough tension to keep the straight edges in place.

Place 2 tape measures in place as shown, make sure that the tapes are hooked to the same edge on the opposite side as well as the hook on the ends of the tape are equal and not deformed.

Also, check that the straight edges are placed as close to the center of the tire as possible as well as parallel to the ground. Also make sure the full weight of the Jeep is on the Jeep and the tires are on the ground, as having the front or rear axle raised will affect the measurement.

Now, simply adjust the tie rod to get the tape measure to read the same on the front and rear of the tire, this would be a Toe of Zero. Then turn the tie rod to make the front edge 1/16" narrower than the rear. This will be your starting point, 1/16" toe in.

Lock down the jam nuts on the tie rod once adjusted to the desired adjustment.



Draglink adjustment. At full turn to the right, the draglink tie rod end, shown in the above picture, may contact the tie rod depending on the rotation of the draglink.

We recommend to loosen the adjuster clamp near the steering box, rotate the draglink UP to gain as much clearance as possible and while holding it in that position, rotate the pitman arm tie rod end to the opposite direction and snug the clamps. Now, when you try to rotate the draglink, it should be bound tight. We need to allow for some movement, so grab the draglink and push harder than the clamp is tightened to get it to adjust just a little bit. When adjusted properly, the draglink should float up/down on the tie rod ends about 1" at the forward edge of the bend. Now, when turning to full lock right turn, the draglink tie rod end should not contact the tie rod as shown.



Steering stop adjustment. There are a pair of 3/8" x 1.25" bolts supplied in the kit, with nuts, these are to be used to replace the stock steering stop bolts. Due to the new geometry of the tie rod ends, the outside tire (left tire on a right turn) will turn farther than previous, so we need to adjust the stops to keep the tire from contacting the suspension components.

Before you remove the stock steering bolts, turn the wheel to full lock right and left, measure and determine the additional length that will be needed to make up the distance on the stop, remove the stock bolt and adjust the new bolt and nut to add these measurements and reinstall. Test that during full turn there is no contact on the axle shaft. You may also use this to limit the turning to keep tires off of control arms, etc, if necessary.

Steering stabilizer. You may be able to reuse the stock steering stabilizer and brackets, as long as your JK has a bracket that is held to the tie rod with a pair of U-Bolts it will transfer right over. Or if you wish to relocate the stabilizer up high, Off Road Only offers a relocation bracket that mounts the stabilizer between the draglink and the driver side of the swaybar mount. Contact ORO for details.