1-TON STEERING INSTALL GUIDE

Thanks for purchasing our 1-ton steering upgrade! With proper installation and maintenance this system should give you years of worry free operation.

⚠ Please read these instructions in full before proceeding with the install. We recommend you have a trusted 4wd shop install this product if any part of this guide seems difficult.

Tools Needed

- Hand drill with a ½ chuck.
- 5/8 drill bit with ½ shank
- 11/16 drill bit with ½ shank (optional, but will prolong reamer lifespan)
- 7 degree reamer (1.5 inches per foot)
- Cutting/reaming oil (optional, but will prolong reamer lifespan)
- Common hand or air tools.
- A good penetrating oil (such as PB Blaser)
- Large adjustable wrench or 1-5/16" open end wrench (for jam nuts)
- Loctite® 271 Red (extremely important, do not skip this!)
- Paint marker

1. The rods themselves come unfinished, so take the time now to put a good coat of paint on them. The best way we have found to not foul up the threads, is to leave the Tie Rod Ends in the rods and wrap them with masking tape. This will keep paint off the jam nuts, threads, and TRE body itself.

    a. We recommend a few good coats of primer and the top coat of your choice.

2. Put the front of your vehicle on jack stands and pull the front tires.

3. Remove your stock steering from the knuckles.

    a. The stock castle nuts use a 3/4" deep well socket, if your stock TREs are worn you may need to put a jack under the TRE body and put some pressure on them (up into the knuckle.) This should allow you to loosen the nuts.

4. Remove your stock steering from the pitman arm.

    a. See 3:a if your having trouble.

5. Remove your steering stabilizer from its mount on the axle. You should now be able to remove the whole stock steering assembly.

6. Ream the pitman arm.

    a. If you have a drill press with a ½" chuck you may want to remove the pitman arm to ream it in the press. If not continue to 6:b.

i. If you need to remove the pitman arm use a 1-5/16” socket to loosen the pitman nut, then put some pressure on the pitman arm with a pitman arm puller.

ii. If you don’t feel the arm start to come off, don’t force the puller, they are easy to break. Just leave tension on the arm with the puller and tap all around the arm (the box end) with a hammer.

iii. Keep alternating pounding and tightening the puller and it will come off. Using some penetrating oil the night before will work wonders as well.

iv. Once it’s removed clamp it securely in your drill press and proceed to 6:b.

b. If you want to ream the pitman arm on the vehicle that is fine as well.

i. If you have an 11/16th drill bit, drill the current hole out to that. If you only have the 5/8” bit, then use that… it will work, but will require more reaming.

⚠ Be sure you are drilling parallel to the original hole. (See Figure 1)

Figure 1

ii. Once the hole is drilled, chuck up the reamer and lube it with cutting oil.

iii. Start to ream the pitman arm from the bottom, using more cutting oil as needed.

⚠ Be sure you are reaming parallel to the drilled hole. Hold the drill parallel the whole time, as a wobbly drill leads to a wobbly hole, which **will** result in wobbly TREs. (See Figure 2)


Figure 2

iv. There is no easy way to measure the depth of your taper, so be sure to check frequently with one of the TREs from the drag link.

⚠ Be sure you use one of the TREs from the drag link to check your progress, as they have a deeper taper than the ones from the tie rod.

v. Once the TRE fits through the hole and allows you to thread the castle nut on deep enough for the cotter pin to go through; you are done with the pitman arm. (see figure 3)

vi. If you pulled the arm to do the reaming on a drill press, re-install it now. Be sure to use the original lock washer, and also add red Loctite to the nut. Torque it to factory specs.

7. Ream the knuckles

i. Drill both left and right knuckle TRE holes out to 5/8".

⚠ Be sure you are drilling parallel to the original holes. (See Figure 1)

ii. Once the holes are drilled, chuck up the reamer and lube it with cutting oil.

iii. Start to ream the knuckles from the bottom, using more cutting oil as needed.

⚠ Be sure you are reaming parallel to the drilled holes. Hold the drill parallel the whole time, as a wobbly drill leads to a wobbly hole, which **will** result in wobbly TREs. (See Figure 2)

iv. There is no easy way to measure the depth of your tapers, so be sure to check frequently with one of the TREs from the tie rod.

⚠ Be sure you use one of the TREs from the tie rod to check your progress, as they have a shallower taper than the ones from the drag link.

v. Once the TRE fits through the hole and allows you to thread the castle nut on deep enough for the cotter pin to go through; you are done with the both knuckles. (see figure 3)

8. Reassemble the tie rod (if you disassembled it) being sure that the same amount of TRE threads are showing on each side of the rod.

9. Bolt the tie rod on with the longest TRE to the passenger side. Be sure the castle nuts are very tight, and that the hole for the cotter pin is visible between the points of the nut once it's tight. (see figure 3)

Figure 3

10. Install the cotter pins.

11. Bolt the tires and wheels back on the vehicle and center the steering as best you can visibly.

    a. With a helper and a tape measure, measure the distance between a common point on the front of the tires, and the rear of the tires. Be sure and use the same reference points for both measurements.

    b. Spin the tie rod forward or backward to adjust the toe-in. Your looking for anywhere from 0" – 1/8" of toe-in. Double check your measurements, add some red Loctite to the TRE threads, and tighten the jam nuts down.

12. Inside the vehicle, turn the steering wheel from lock to lock and find the center of its travel. Turn the key off and lock the wheel at a point near there.

13. Reassemble the drag link (if you disassembled it) being sure that the same amount of TRE threads are showing on each side of the rod.

14. Bolt the drag link on with the longest TRE to the passenger side. Be sure the castle nuts are very tight, and that the hole for the cotter pin is visible between the points of the nut once it's tight. (See Figure 3)

15. Twist the rod forward or backward until the front tires are pointing straight forward.

16. Lower the vehicle onto its tires.

17. Unlock the steering wheel and sight down both front tires. Using the sidewalls and the rear tires as a reference point; align them straight ahead by turning the steering wheel left or right.

18. Once the tires are pointing straight ahead, twist the drag link forward or backward to align the steering wheel to top center. The wheel may be off center to the left or right initially, but take it to center via the shortest way.

19. Once everything is centered double check your measurements, add some red Loctite to the TRE threads, and tighten the jam nuts down.

20. Take your paint marker and put a line across each of the jam nuts and the rods. (See Figure 4) These alignment marks will allow you to quickly see if your jam nuts are loosening.

    ⚠ It is VERY important that these jam nuts stay tight at all times. Always use red LocTite when you loosen or adjust them.

Figure 4

21. Be sure and grease all the TREs after the install, and frequently after that. This will greatly extend their lifespan.

22. It's always a good idea to have the front end professionally aligned to guarantee proper tire wear.

If you have any problems, questions, or concerns please feel to contact us. For this information use the "Contact Us" link on our webpage.

Some reference pictures: