

1830 Installation

Background

The Ford 7.5-inch differential is unique in C-Clip designs because the pinion shaft cannot be removed when a low gear ratio (high numerical ratio) is installed - the ring gear is too thick. To solve this problem, Ford cuts away a portion of the original pinion shaft for over half its length, which will not allow it to be used with your new LOCK-RIGHT.

LOCK-RIGHT Engineering has developed a pinion shaft that will allow the pinion shaft to remain in the differential case yet will enable the locker to be installed. The following procedure describes this special installation, for thick ring gears only. If the pinion shaft can be removed while the differential case is in the vehicle, install the LOCK-RIGHT as shown in the enclosed manual.

Disassembly

1. Remove inspection cover.
2. Slide the pinion shaft over the teeth.
3. Remove the C-Clips.
4. **IMPORTANT!** remove and discard the O-Ring, if present, from the C-Clip groove in each axle shaft!!
5. Pull both axle shafts out six inches.
6. Use a center punch to mark the bearing cap and carrier on the ring gear side with one mark and on the other side with two marks.
7. Remove the bearing caps.
8. Remove the differential case along with the bearing races and shims.
9. Put a single small grind mark on the outside of the bearing race and the shim that are on the side with one punch mark so that they can be placed back on the same side during assembly.
10. Remove the ring gear from the differential case.
11. Remove the differential case internal parts.

Assembly of the LOCK-RIGHT into the Differential Case

1. Put grease on the thrust washers and couplers.
2. Place a pin into each of the deep (window) holes in the drivers.
3. Place a spacer into the center of each driver.
4. Place the couplers and thrust washers into the differential case.
5. Place the drivers into the differential case, onto the coupler teeth.
6. Install the new pinion shaft and also loosely install the pinion shaft retaining bolt. It will be removed again later.
7. Install the ring gear.

Assembly of the Differential Case into the Vehicle

1. Place the bearing race with the mark on it on the proper end of the differential case. Place the other race on the other end of the case.
2. Install the differential case and shims into the vehicle (be sure to place the marked shim on the proper side).
3. Install the correctly-marked bearing caps on each side.
4. Torque the bearing cap bolts.
5. Remove the shaft retaining bolt.
6. Push the pinion shaft outward toward the retaining bolt side by about 3/16-inch. **NOTE:** A slot is located on one side of the pinion shaft near the end by the hole. This slot corresponds to the side on which the grooves are located and can be used to turn the shaft with a screwdriver.
7. On the side of the assembly where the slot on the shaft end points, separate the driver and coupler teeth. Reach in through the cutout in the driver teeth with a small pick or awl and push the spacer into the curved grooves in the pinion shaft. This positioning of the spacer allows insertion of the C-Clip.
8. Push the axle shaft into the coupler until the C-Clip groove is accessible.
9. Insert the C-Clip through the cutout in the driver and into the groove in the axle shaft. **NOTE:** If replacing a limited slip differential, be sure to obtain two original Ford C-Clips. Some aftermarket clips are dished and will not function properly.
10. pull the tire out to seat the clip.
11. Using a screwdriver in the slot, rotate the pinion shaft 180 degrees. This movement pushes the spacer down over the first C-Clip and re-locates the grooves in the shaft over the second spacer.
12. Repeat steps 8 - 11 for the second C-Clip.
13. Push the shaft back into the case so that it is ready for the retaining bolt. The grooves in the shaft move inward so that the spacer is now locked in place.
14. Install the pinion shaft retaining bolt.
15. Perform the tire rotation test as described in the installation manual.
16. Replace the cover and add oil.
17. Be sure to read and understand the driving instructions in the LOCK-RIGHT Owner's Manual.
18. Climb!

Manual Addendum #1000-762