Taylor Dynamometer

Changing out the End Seal, Inner Seal, Bearing and Packing Maintenance on a DX Series Dynamometer - Video Part Three

NOTE: Notice direction of parts during disassembly for proper reassembly. Spacers, seals, lock nuts and other parts are all directional and need to be assembled the right way to make sure the dyno seals and works properly.

NOTE: Two to three days in advance: Spray packing nut threads with penetrating oil. The packing nut will loosen easier.

1. Remove the torsional coupling if you have one. Pull the end cap off. No need to punch mark this as we did when rebuilding the torsional coupling. Instead, make a note that the vent cap is at the top of the end cap. The oil fill is at the bottom of the cap.

NOTE: Remove the oil bulb and oil line 1 hour prior to removal to allow the oil to drip and drain completely. Remember to put a pan underneath to catch the oil.

2. Remove oil seal and O-ring – replace.

3. Remove lock washer and lock nut; note direction. Unlock the lock nut by tapping up the tab. Use a spanner wrench and a hammer to knock loose the nut.

NOTE: Have someone hold the other end of the dynamometer while you're removing the lock washer and nut. This will make removal easier.

NOTE: Use jacking bolts to help remove the bearing carrier.

4. Remove the bearing carrier and oil slinger. There is a spacer ring behind the bearing. Note the direction of the spacer ring: small face of the ring faces toward the dyno. Keep the spacer ring with the bearing carrier because the space rings are different thicknesses on each side.

5. Before putting in a new bearing, remove old seal and press in a new oil seal. Note direction of the seal. The spring side of the seal faces toward the dyno. Put a small layer of Red RTV on the outside of the seal before you press it in. Bearing on the torsional coupling side is held in with a snap ring. The other side has no snap ring.

6. Now is the time to look at the packing. It's easier to do this from the front of the dynamometer rather than at the access point at the top. Remove the locking tab that holds the packing nut in place. Use a spanner wrench or a pry bar. Taylor recommends a pry bar.

NOTE: The packing keeps the water in the dynamometer. Once the packing nut is removed, check it. The packing nut can be cleaned up with a wire brush. The packing nut can be reused as long as it's not damaged or has a lot of wear.

7. The shaft is laying on the packing. You will have to lift the shaft in order to reach the packing material to remove it. Use a jib or bridge crane to lift the shaft to access the packing material. If you can turn the shaft a bit then you know you've lifted the shaft enough to get to the packing material.

8. Find the seam on the packing. Use a packing removal tool to remove the packing. Typically, four pieces of packing. If there are only a few threads left on the nut and even though the dyno hasn't leaked, you may still want to replace a few pieces of packing.

9. After all the packing is removed, use a right angle scraper to clean the grooves.

10. Next, clean up the parts you removed, press a new seal in the end cap, note direction of seal, spring side of seal faces towards the dyno. Put a small layer of Red RTV on the outside of the seal before you press it in. Assemble the bearing carrier with the spacer ring; note the direction of the spacer ring: small face of the ring faces toward the dyno, a new bearing (not directional), the snap ring (if you're doing the torsional coupling side), and a new O-ring.

11. Install new packing. This comes from Taylor precut with a beveled edge.

NOTE: Make sure the seams are staggered 90°. If you don't do that, you will have a leak. Use a punch to get the packing started. Use the packing nut to push the packing in place.

12. Add Anti-Seize compound all around the packing nut.

13. Drop the shaft and put the packing nut in place.

14. Lift the shaft. Getting the packing nut started may be a challenge. Adjust the crane up or down as needed. You will feel the nut catch. This action will push the packing in place. Put some tension on it to help the seal. Remove the packing nut and repeat steps 11-14 with every piece of packing you are installing.

15. Snug packing nut up and reinstall packing nut lock tab.

16. Use guide bolts to get everything lined.

NOTE: You can make up a set of guide bolts by taking bolts, cutting off the heads and grinding them flush.

17. Grease the inside of the new seal. You do not want a dry startup.

18. Bearing carrier can be installed in any position – it is not keyed. Make sure the spacer ring and snap ring are in place. You will have problems later on if these are not in place or not facing the right direction.

19. Pick up the shaft. Use a dead blow to finish installing the bearing carrier. Thread the bolts in. Remove the guides. Always put three bolts in. Use an impact wrench. Tighten bolts evenly.

20. Put the oil slinger back on, along with the lock washer and locknut. Note direction of lock nut: small face faces toward the dyno. No torque spec. Snug with a drift or spanner wrench. Line it up with the one of the tabs on the locknut. Fold one of the tabs over on the lock washer onto the lock nut.

21. Lubricate the O-ring and put it in the groove.

22. Install the end cap next. Grease the inside of the new seal. Use the alignment bolts. Put the end cap on with the vent cap up. Re-install the hardware.

NOTE: Replace the oil line from the holder to the bottom of the end cap.

23. Clean out the oiler cup. Use straight 10W oil.

NOTE: Let the oil cup sit for 6-8 hours and then refill.

24. Inspect for leaks.

25. Install the torsional coupling.

26. Use the same process for doing the opposite.

If you have any questions or need further support with your dynamometer and/or equipment, please contact Taylor Dynamometer (414) 755-0040 or email: service@taylordyno.com.