

PURPOSE:

The purpose of this external support resource document is to aid in installing a repair kit in a roller pump.

TOOLS REQUIRED:

- Socket/ Ratchet or Wrench, size 9/16" (7900 & 8900) 1/2" (4900 & 6900)
- Small prying tool/ flat blade screw driver
- Shop press
- 3/4" Press Tool (All Pumps)
- 1.5" diameter hollow inside press tool (4900 and 6900 Series only)
- 1.2" diameter press tool (4900 and 6900 Series Only)
- 1.7" diameter press tool (7900 and 8900 Series Only)
- 2.0" diameter press tool (7900 and 8900 Series Only)

PROCEDURE:

1. Remove pump from mount, then drain and rinse pump with water to avoid spilling any possible chemical. If you need help on how to drain and rinse a roller pump please refer to ESR-013.



2. Set on table slightly leaned back balancing on the shaft and the body of the roller pump
3. Use tool to remove 4 bolts.
4. Locate the nameplate on the end plate and use a pick or prying tool to remove the snap ring holding the end plate on.

- a. Pry the end out of the groove and slide the pick around the groove that the snap ring sits in while holding your other hand over the snap ring so that it can't spring out and get lost.



5. The end plate will need to be rotated so the edges can be pulled on to aid in removing plate.
 - a. Sometimes it can be hard to pull off end plate so a small pry bar or something similar may need to be used.



6. Now that the end plate is removed flip it around and push the nameplate out of its place from the inside.



7. Once the name plate is removed the seal and needle bearing need to be pressed out using a $\frac{3}{4}$ " press tool and replaced with the new bearing and seal. (If you do not wish to replace the needle bearing you may pry seal out with prying tool and replace with new seal using $\frac{3}{4}$ " diameter press tool)
 - a. Press the bearing from the outside of the endplate (lettered side) downward and continue until the bearing and seal fall out of the endplate.



8. Using a $\frac{3}{4}$ " diameter press tool press the new bearing in first. With the front of the end plate (side with lettering) facing up, press the bearing into the end plate with the lettering on the bearing facing towards the press tool, until the front of the bearing is flush with the face of the endplate.

Press on this side
of the bearing



- a. Flip end plate over and press the seal in next. The viton (rubber) lip should be facing the tool being used to press it in (or facing the inside of the pump).



9. Replace the nameplate and snap ring on the end plate.
 - a. Place the name plate in recess
 - b. Put one end of the snap ring into the groove then use a pick or pry tool to pry the other end of the snap ring into the groove.
 - c. Before moving on, ensure the snap ring is entirely in the groove.



10. The end plate is now rebuilt and may be set aside until final assembly.
11. Next, remove the rollers, rotor, and rotor key from the body of the pump.
 - a. Tip body upside down onto a table or work bench so the rollers, rotor, and key fall out and set aside



12. The bearing in the body of the pump is held in with a circlip that will need to be removed.
 - a. Using a small prying tool remove this circlip so the bearing can be removed.
 - b. It works best to pry under one side, so it is out of the groove, then slide the pry tool around the bearing bore while holding the circlip in place as best as you can to help avoid it springing in the air and becoming lost.



13. Press the shaft out of the body.
 - a. Place the pump so the inside of the body is facing up and use a press tool to press the shaft downward, toward the outside of the pump until the shaft is free and falls out of place.



- b. Set shaft aside for now.
 - c. Under normal circumstances the body bearing will come out of the body with the shaft. If it does not, it will need to be pressed out of the body, so the seal can be removed. ***If you have a 4900 or 6900 and the bearing does not come out of the body on the shaft, refer to the end of the document on steps to proceed***

14. Remove the seal from the body by using a prying tool or flat bladed screwdriver to push or pry it out of the bearing bore. (this may require the seal to be damaged, but It is fine)

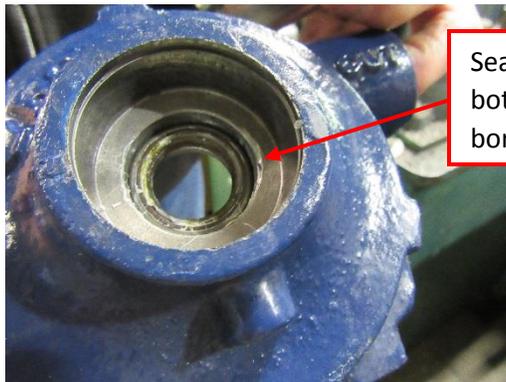


If you have a 4900 or 6900 series roller pump, follow steps 15-17

15. The body now needs to be flipped back over, so the outside of the pump body is facing upward, and the bearing/ seal bores are visible.



16. Next, use a 1.2" diameter press tool to press the new body seal back into the body of the pump. It is critical the seal is pressed below the lip that is designed to stop the bearing once it is pressed deep enough. If the seal is not pressed far enough down the pump will not spin freely and this could result in a damaged seal.



Seal lower than
bottom of bearing
bore

17. After the seal is pressed, using a 'rolling' motion, insert the rounded end of the shaft into the seal (Not the side with the 'D' shaft or keyway machined in it). Make sure to use the 'rolling' motion or it could fold the seal over causing the pump to leak.



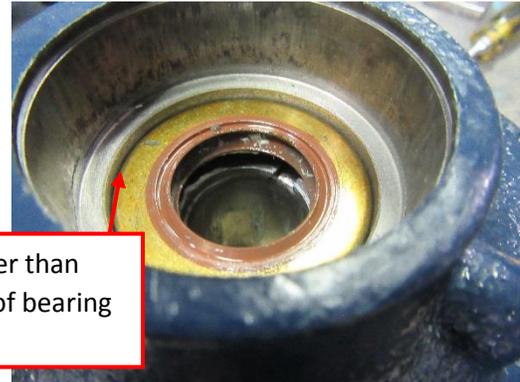
- a. Using a hollow inside 1.5" outer diameter press tool, press on the outer race of bearing in until reaches the bottom of the bearing bore.



If you have a 7900 or 8900 series roller pump, follow step 18

18. Flip the body back over so the bearing bore (and outside) of the pump are facing upward, then replace the seal and bearing.

- a. Using a 1.7" diameter press tool, press the seal into the body ensuring the seal is below the lip that the bearing will bottom out on. If the seal is not pressed below this lip the pump will not spin freely and could damage the seal upon reassembly.



- b. Using a 2.0" diameter press tool, press on the outer race of the bearing until it bottoms out on the bearing bore.



- c. Insert the rounded end of the shaft (not the side with the keyway machined in it) through the bearing and seal and towards the inside of the pump.



- d. Press the shaft in until the snap ring on the shaft becomes close to touching the bearing



Reassembly

19. Replace the snap ring into the groove above the bearing on the bearing bore of the body.
- This works best by putting one side of the snap ring into the groove, and while holding the ring in, prying the opposite side at the same time to get the ring into the groove.



20. Now place the body and shaft assembly back onto a bench or table and tilt it back so it is balancing on the shaft and body.
21. Spin the shaft so the keyway is facing the top of the pump and place the key in the opening on the shaft.



22. Slide the rotor onto the shaft, then replace the rollers. The rollers can go in either way and will not affect the performance of the pump.

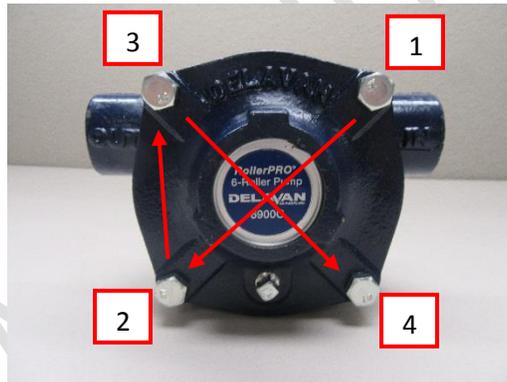


23. Add in new square seal ring if needed. (pry out using a pick, and replace with new)
24. Replace end plate onto the rest of the pump assembly
 - a. This step can be difficult if not done properly.
 - b. It is best to add some grease around the lip of the seal to help keep the spring that is on the seal in place.

- c. When assembling the end plate onto the shaft use a 'twisting' and 'rolling' motion to keep the spring in place.



25. Once the end plate is back onto the rest of the pump replace the 4 bolts. Tighten bolts in a diagonal pattern from one corner to the opposite corner. (Follow order below)



***Follow these instructions if you have a 4900 or 6900 series roller pump and when pressing the shaft out the body bearing stayed in the body.**

1. Press out the bearing from the body.
2. Press the bearing back onto the shaft. If you have a 4900 series press the bearing on from the 'D' shaft side and keep pressing it until the top of the bearing is approximately 1.55" from the end of the shaft. If you have a 6900 series press the bearing on from the round side of the shaft until it is nearly flush with the snap ring that is on the shaft.
3. Continue back to step 19 and follow the rest of instructions to rebuild your roller pump.