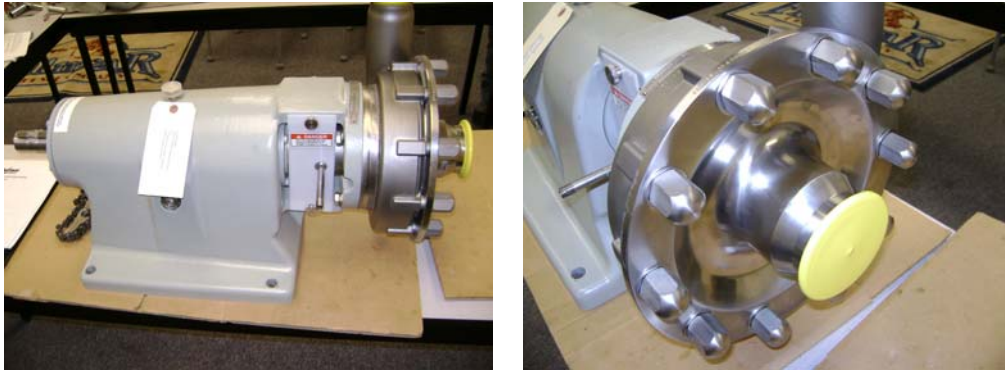


***Task Instructions for Seal Replacement - Fristam FPH 3542
Disassembly (with double mechanical seal)***



Model FPH3542 with double mechanical seal. Remove cover nuts with 1" wrench. Remove flat washers.



Remove cover.



Remove the two water pipes from either side of the pump housing. Loosen the four guard screws and remove two plastic shaft guards from either side of the pump bearing block.



Place a chain wrench on the pump shaft near the coupling to keep the shaft from rotating while loosening the impeller nut with a 15/16" socket wrench. Remove the impeller nut and impeller gasket.



Remove the impeller from the pump shaft. Use impeller pullers to assist in removing the impeller, as needed. Be careful not to damage the threads on the end of the pump shaft.



Remove gasket from back of the impeller, if it sticks to impeller. This gasket may stay positioned in the groove of the seal driver. Remove impeller key from the pump shaft.



Remove the rotating seal assembly which includes the impeller gasket, seal driver, rotating seal, seal spring, and rotating seal o-ring. To remove this assembly from the shaft, place the impeller pullers on both sides of the assembly and pull toward the end of the pump shaft. Be careful not to drop this assembly as the seal face could be damaged.



Remove seal driver from the rotating seal. Remove the seal driver o-ring from the shaft, then remove gapping spacer from the shaft. Do not discard the gapping spacer as it will be reused during reassembly.



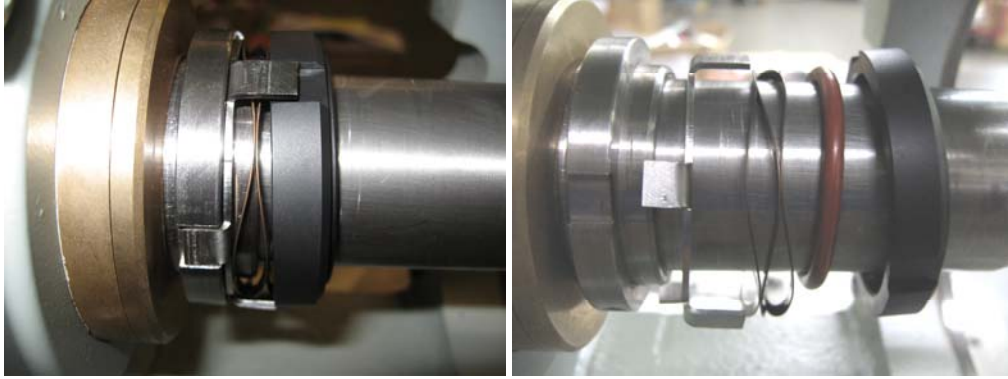
To remove the stationary seal and the flush seal components, the pump housing needs to be removed. Remove the four pump housing bolts and lock washers, which attaches the pump housing to the bearing block, using a 3/4" wrench. Carefully slide the pump housing off the end of the pump shaft, ensuring that the stationary seals (which are mounted in the pump housing) do not contact the pump shaft.



Place the pump housing on its hub. Remove the stationary seal by placing your fingers on the ID of the stationary seal and pulling it toward the front of the housing. The stationary seal o-ring should come out with the stationary seal.



To remove the flush seal components, turn the housing over and place it on the housing studs. Remove the four retaining ring bolts on the housing with a 7/16" wrench. Remove the retaining ring, stationary water seal and flat gasket from the housing.



Now remove the rotating water flush components from the pump shaft, which include the rotating water seal ring, the water seal o-ring, the water seal spring and the water seal drive ring. The water seal driver may be left on the shaft.

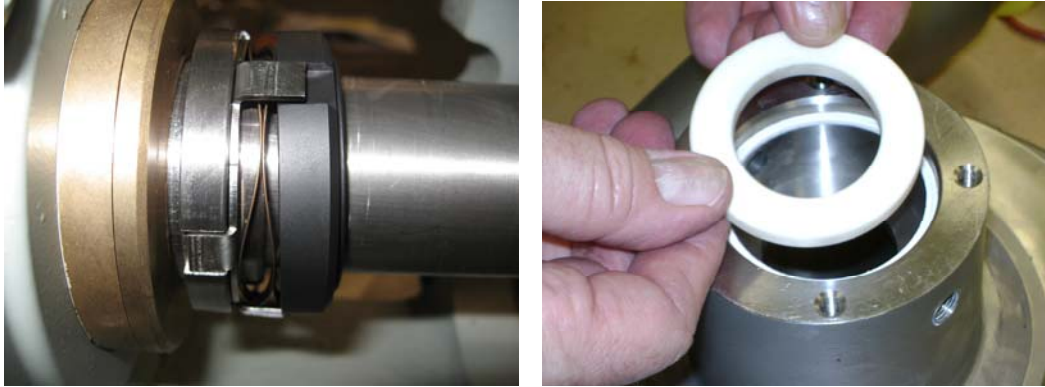


The above pictures show the components of the rotating water flush seal assembly. Note that the o-ring fits inside of the rotating seal ring. The longer tabs of the water seal drive ring fit into the slots on the outside of the rotating seal.

Task Instructions for Seal Replacement - Fristam FPH 3542 Assembly

You are now ready to install the new seal and reassemble the pump head.

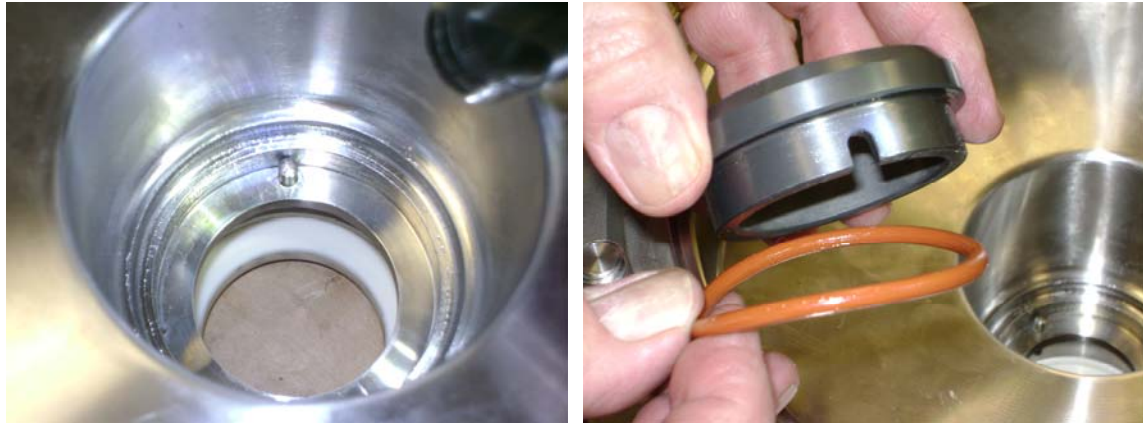
Note: when installing the new seal components make sure that you use all of the components supplied with the replacement seal kit. Using some of the old components may reduce seal life.



Slide the water seal drive ring onto the pump shaft with the shorter tabs facing the water seal driver. Align the short tabs with the slots in the seal driver. Slide the new seal spring onto the pump shaft and position it against the seal drive ring. Lubricate the new water seal o-ring with a food grade lubricant. Place the o-ring inside the rotating water seal ring and slide the assembly onto the pump shaft. Align the tabs in the water seal drive ring with the slots in the water seal ring. With the pump housing sitting on the housing studs, place the new stationary seal flat gasket on the shoulder inside the hub of the housing. Place the new ceramic water seal insert into the back of the housing, over the flat gasket.



Replace the retaining ring onto the hub of the housing and install the four retaining ring bolts. Tighten with the 7/16" wrench to 4.5 ft.-lbs.



Turn the housing over and place it on the housing hub. Lubricate the stationary seal o-ring and place it on the new stationary seal. Place the stationary seal and o-ring into the bottom of the pump housing. Align the notch in the stationary seal with the pin in the housing. Press the stationary seal into the housing until it snaps into place. Wipe the seal face clean with a soft cloth to remove any oil or grit.



Carefully slide the pump housing over the pump shaft and push it against the bearing block, ensuring that the stationary seals (which are mounted in the pump housing) do not contact the shaft. Note: the stationary seals may be damaged if they make hard contact with the pump shaft.



Check the rear water seal assembly and make sure the short tabs of the water seal drive ring are positioned in the slots of the water seal driver. Install the four pump housing bolts with lock washers through the bearing block into the pump housing. Tighten them with the 3/4" wrench to 55 ft.-lbs.



Place the new rotating seal spring into the rotating seal between the pins and the front seal face. Lubricate the new rotating seal o-ring and place it inside the rotating seal.



Align the pins on the rotating seal with the grooves on the seal driver and press the two components together. Wipe the seal face clean with a clean, soft cloth. Slide the gapping spacer onto the pump shaft. Note: it is important to use the same gapping spacer that was removed, as this is unique to your pump. This gapping spacer is what established the proper gap behind the impeller when the pump was assembled at Fristam.



Lubricate the new seal driver o-ring and place it on the shoulder in front of the rotating seal. Note: This o-ring can alternately be placed on the pump shaft, up against the gapping spacer.



Slide the rotating seal assembly onto the shaft so the face of the rotating seal meets the face of the stationary seal.



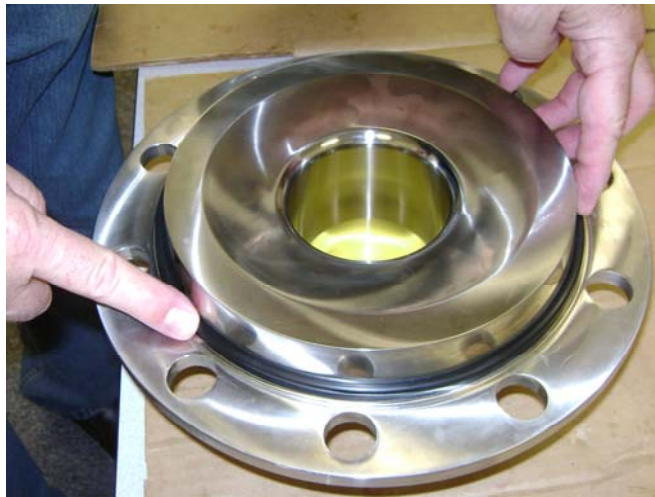
Lubricate the impeller gasket and place it into the groove on the seal driver. This gasket seals on the back side of the impeller. Place the impeller key into the shaft keyway.



Slide the impeller onto the pump shaft. Lubricate the impeller gasket and place in the groove of the impeller nut. Thread the impeller nut with gasket onto the shaft.



Place the chain wrench on the shaft near the coupling to keep the shaft from rotating while tightening the impeller nut with the 15/16" socket wrench. Tighten to 40 ft.-lbs. The picture at the right shows the pump serial number stamped on the side of the cover. Align this serial number with the matching serial number that is stamped on the pump housing when assembling the cover to the housing.



Place a new cover gasket on the pump cover. Note: you may need to stretch the cover gasket so that it fits more easily on the cover. The cover gasket needs to be ordered separately from the seal kit.



Install the cover onto the pump housing. Note: Align the serial numbers on the cover and housing. Place the flat washers and thread the cover nuts onto the housing studs. Tighten the cover nuts to 45 ft.-lbs. using a cross-tightening technique.

Remove the chain wrench and rotate the impeller shaft to ensure the impeller moves freely. If it does not, recheck your assembly to make sure that gaskets aren't pinched and everything is seated properly.

Replace the two water pipes and the two plastic shaft guards with four guard screws.