

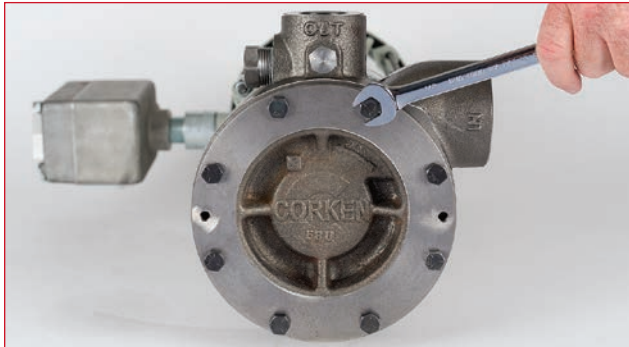
Setting the Proper Clearance for a Turbine Pump (Models C, DL, & F)

If the performance of the turbine pump is not what it once was, the clearance between the pump cover and impeller should be adjusted. When the gap becomes too large, pressure and capacity will drop off. Use the following shimming procedures to tighten up the gap/clearance and improve the performance.

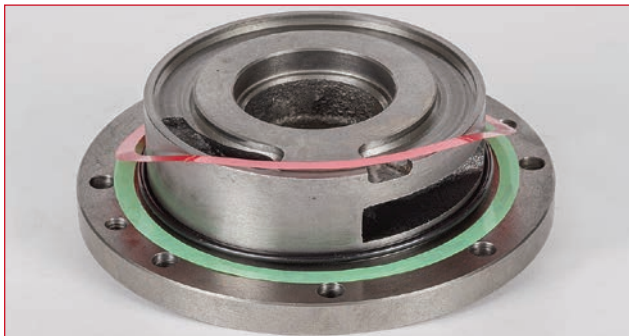
NOTE: Before performing any maintenance procedures, make sure the pump and system have been depressurized.

For best results, keep hands, work area, and all parts clean prior to installation.

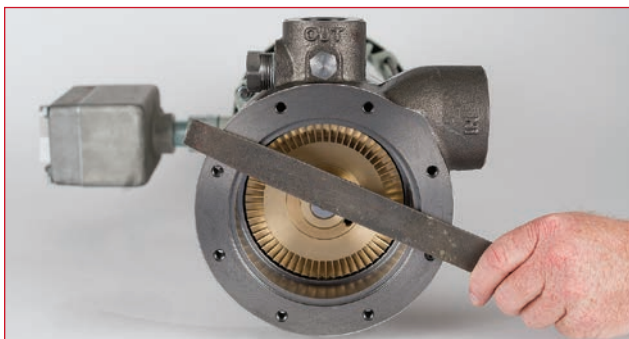
1. With a ½" wrench, loosen the eight bolts in the pump cover and remove.



2. Remove the shims from the pump cover. NOTE: Red shim is 0.002" and green is 0.003".



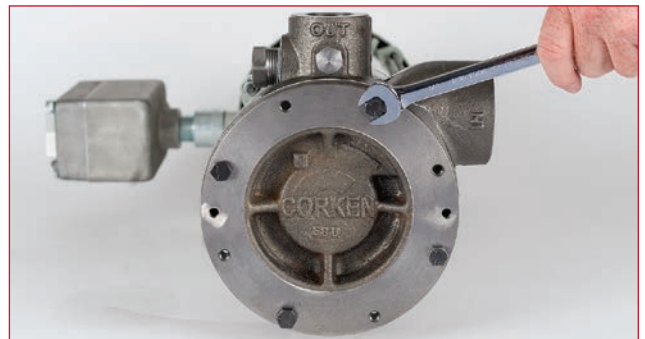
3. Clean the mating surface on the front of the pump case using a file or sandpaper as shown.



4. Clean the mating surface on the back side of the pump cover using a file or sandpaper as shown.



5. Using only one of the two original shims, install the red shim (0.002") with the pump cover using only 4 bolts (alternating holes) and tighten.



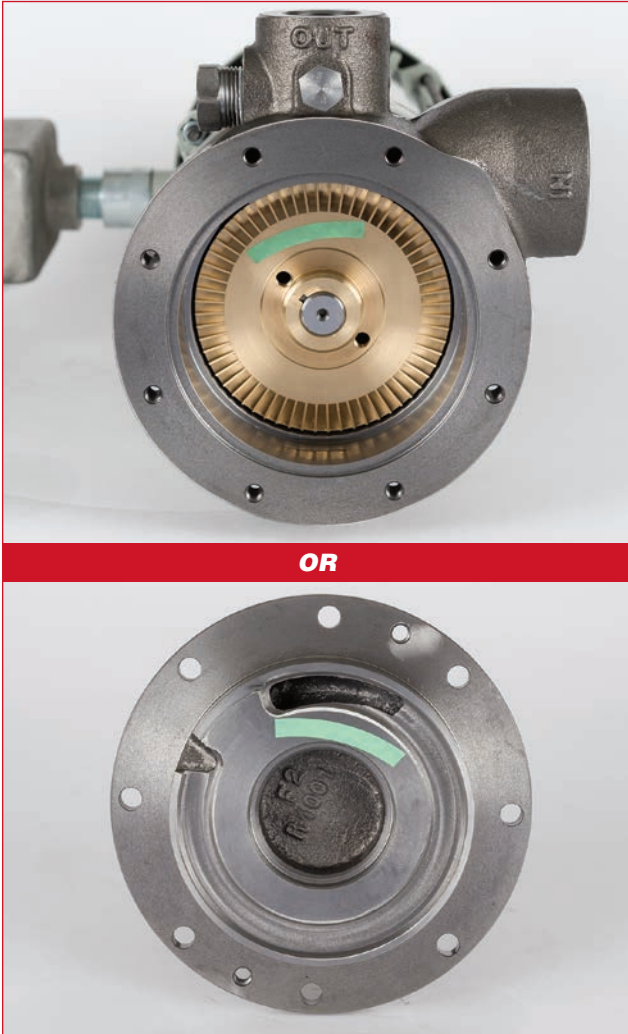
6. C-Model pumps: Insert a small screwdriver into the fan guard between two blades and try to spin the fan as shown and note whether the impeller rubs or is locked up.



- F or DL model pumps: Rotate the shaft by hand as shown and note whether the impeller rubs or is locked up.



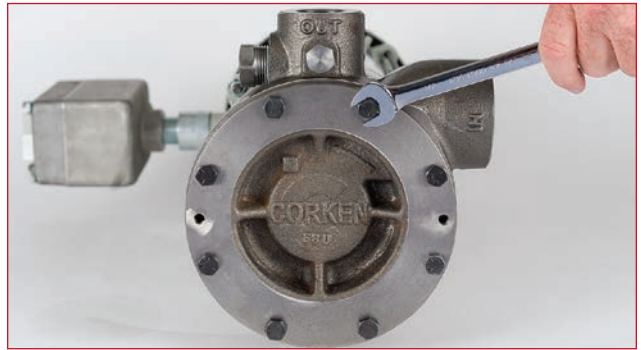
7. If the fan/shaft rotates freely, remove the red shim and install the pump cover using four bolts. Note again whether the impeller rubs or is locked up.
8. If the impeller rubs or is locked up, remove the pump cover, install one red shim, and skip to step twelve. If the impeller does not rub or lock up, proceed to step nine.
9. If the impeller does not rub or lock up after removing the red shim, cut a small piece of a shim and place it on either the impeller or cover as shown in the photos and install the pump cover using four bolts. If the impeller rubs or is locked up, the pump does not require any shimming. Remove the small piece of shim and skip to step twelve. If the impeller does not rub or lock up after applying a small piece of shim, proceed to step ten.



10. Run a file around the inner edge of the pump cover as shown in the photo. Removing all burrs ensures the pump cover bottoms out on the pump casing.



11. Install the pump cover using four bolts. If the impeller still does not lock up after filing the inner edge of the pump cover and removing all shims, it is no longer in tolerance and should be replaced. After installing the new impeller, repeat the shimming process starting with step five.
12. Secure the pump cover using the eight bolts and tighten in a criss-cross pattern. If the pump impeller turns freely, it is now ready for service.



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