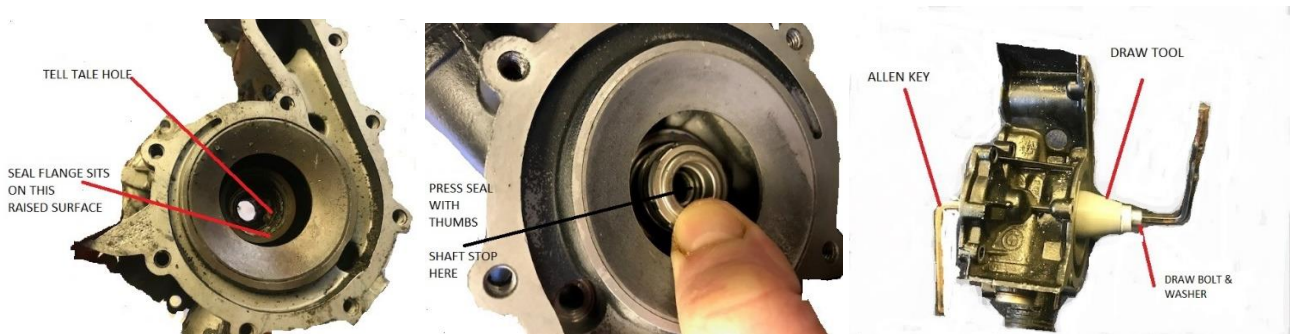


K series water pump seal Installation. (Not for the old impeller shaft with the external thread nut-held cast iron impeller. These can be directly replaced by Motorworks' impeller shaft COA61793).

- 1) Assuming your pump is stripped & cleaned.
- 2) Make sure the 'tell-tale' hole in the casting between the seals is clear.
- 3) Install the inner 'garter' seal using the insert tool, very gently tap the seal in.



- 4) Install the outer 'mechanical' seal. Use a large socket that can go over the top of the seal without interfering with it, as a 'dolly', to tap down the mechanical seal outer edge flat-down 'home' on its housing. It is not recommended that you use the draw tool for this.
- 5) Smear some suitable grease or oil the impeller shaft lightly.
- 6) **BE CAREFUL.** By hand, very gently push up the impeller shaft in from the back of the housing through the garter seal. Hold the mechanical-seal's top down with your thumbs and close your hands so you 'squeeze up' the impeller shaft, keeping your thumbs on the seal, up to a 'natural' stop-point a few millimetres down inside end of the seal. Go too far through at this point risks pulling the seal apart and you'll have to buy another.



- 7) Put over the 'draw-tool' so the edge of that sets down on the edge of the mechanical seal at the bottom.
- 8) There is an 6mm allen key hole at one end of the impeller shaft. You may find clamping the allen key in a vice and hold the assembly on to stop the shaft turning & convenient way to hold the assembly.
- 9) Insert a suitable length M8 bolt, around 55 to 60 mm long, down through the draw-tool to 'pick-up' the thread inside the impeller shaft. It is advisable to use a washer under the head of the bolt & you may need to shim it further with more washers, or less, to get the required length to pull the shaft through the tool. (There is a little variation in the distance you'll be able to push the impeller shaft through and this draw-tool fits both types of pump, so we don't supply a bolt with it).
- 10) Turn the bolt to draw the impeller shaft through the seal. The draw-tool will stop the seal raising too far and tearing itself apart. You may need to find another bolt or may have to re-shim to get to draw it through far enough. It all depends upon the bolt you have & how far down the seal the shaft has stopped.
- 11) The impeller shaft gear should finally sit just under the lip of the gasket face but not hard against the pump housing stopping rotation of the impeller. If you go too tight, you can loosen the bolt & tap back the shaft gently and then re-tighten the bolt on the draw tool to set the gear in the right place.
- 12) When you're happy with the installation, unscrew the bolt & remove draw-tool.
- 13) Put the new spacer on top of the impeller shaft, then the pressed steel type impeller blades and finally the bolt for the shaft. Depending upon the year of manufacture of your old pump impeller shaft, you may need to buy a new bolt Motorworks part no. ENA60853. Tightening torque is 33 Nm, 24 lb ft.

The new set up should feel smooth to turn but with light resistance. It should not spin freely.