

I've been slowly rebuilding the transmission and thought I share what I'd come up with to stretch/shrink the teflon seals which is a bit tricky without the expensive Kent Moore tools. It worked a treat for me!

DISCLAIMER - This worked for me - use at your own risk...

Bits required:

Some patience.

Medium Flat file.

Fine toothed hand saw.

PVC tubing - various diameters (51mm internal diameter PVC pipe shown - approx. 1mm of material removed for internal diameter of 50mm)

Clear plastic sheet - I used an A4 sized sheet of overhead projector transparency sheet (alternatives could be old X-ray films, or trimmed from the plastic box you get some business shirts in).

Boiling water - to soften up the seals a bit for stretching.

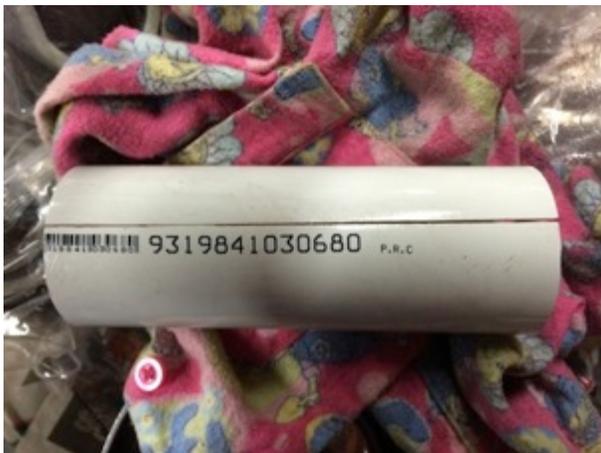
Trans Fluid / Assembly goo to lubricate seals/tool

Various size worm drive clamps to compress the seals/PVC tubing.

First step is to make the PVC pipe seal shrinking tools - important not to have cut off the old seals. If you stretch off the old seals off, you can 'practice' stretching/resizing them before using new seals. The PVC tubing needs to be a larger diameter than the shaft diameter that the seals install on. This is so you can trim the PVC to match the diameter of the seal so when its clamped, it's compressing the seals to the required size. You don't want a gap when fully compressed as the teflon seal might end up with a bulge in the gap and not seal properly in the transmission.

The PVC tubing is cut (with a fine tooth saw) length-wise down one side. The aim is to have the pipe so when clamped it is compressing the seal evenly to the diameter of the steel shaft. To remove the material from the cut, I used a flat file in the cut slot and gently clamping the PVC pipe onto the file, filed the PVC until it was the right size. This also ensures fairly even removal of the plastic and that slight adjustments to the size can be made. Clean the pipe thoroughly before use.

This is the finished pipe with about 1mm removed:



To stretch the seals, I used an A4 sized sheet of overhead projector transparency sheet that I'd kept for painting along skirting boards to keep the paint off the walls instead of masking tape. I knew it would come in handy one day! :-) Alternatives could be old X-ray films, or the plastic box you get some business shirts in.

The plastic is rolled into a slightly tapered tube around the steel shaft and the seal (I soften my up with a few minutes in boiling water) is slid along the taper.



Below shows the extent of the stretch of the seal - I've used the old ones as an example with the correctly sized new ones visible in their grooves.

If you were worried about the edge of the plastic cutting the seal, put some trans fluid on the sheet and rotate the seal clockwise (in this case) so there's no possibility of a cut.



I resized them one at a time starting with fitting the lowest seal first and then fitted the tube over all the seals to compress them. The seals will obviously be loose in the seal groove.

At this point fit the plastic tube over the seal by prying the pipe apart at the cut slot (a bit tricky) so it fits over the seal/s, but doesn't dislodge them. Just allowing the pipe to naturally take its normal size again starts the resizing process. I squeezed the pipe gently to help resize the seals and then took the tube off again so I could confirm the seals were seated properly.

The pic below shows the tube fully clamped down. Did I mention it's important that the seal is seated correctly in the seal slot? Watch the slot gap as you tighten the worm drive clamps to keep an eye on the seal as it

compresses. I had no issues with the seal getting trapped. Note the worm drive clamps are over the bottom and top seal positions.



Other view of tube and clamps.



The finished result:



Another version of the tool for the other teflon seals:

