Drive System Pictures. Gears hobbed on a mill with a piece of 10 tpi Acme threaded rod with teeth cut out of it. Clutch and gear wheel machined from HDPE. Gnashing done with a dremel and thin fiberglass cutoff wheel by hand. I marked dots on edge of gear using a piece of the all thread material as a gauge. I don't think being super accurate is important for this level of a job. They basically give a rough surface for the hob to grab and turn the wheel.

The clutch bolts to a split clamp made from 1/2" aluminum. Inner circles cut with hole saw. When using a hole saw on HDPE, bring the cutter into the work only long enough to fill the teeth (a couple revolutions), then pull out of the cut, turn drill press off, clean out teeth, then back in again, etc. Sounds like it would take forever, but it's actually quite quick, and the cuts turn out PERFECT. Push the drill into the cut too long, and the material in the teeth heats up and cuts grooves in the disk.

Hobbing with the all thread hob cuts very clean threads from the leading edge of the cut through the depth of the teeth, but as you can see from the picture it pulls fibers of plastic out the back end of the cut. I cleaned them up good as I could (which isn't great) but I'm going to call it a 'thread cleaning brush'.

*Update: the gears have been working fine. I added screw tension adjust inside the center of the tension spring. Spring pressure alone wasn't satisfactory.

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