

Post date:

Sunday, June 9, 2013 - 21:33

Last modified:

Saturday, December 27, 2014 - 22:38



Not that the lathe is loud, but while working at 750-1200 RPM the change gears can be heard, so the thought of a "*plastic*" idler gear came to mind with the hope it would quiet things down alittle (and WOW did it make a difference). Did alittle research around the net to see what different materials people have used to make change gears from (aside from metal) and Delrin came up quite a bit. Knowing only a little about gears more research was needed and came up with i needed to make an Involute Gear to replace the current middle 120/127 change gear on the lathe (***note: i do not cut a lot of metric threads so i did not see the need in making a compound gear, i only have a "Spin Indexer" (not a real dividing head) so im limited to only working with whole degrees - so a single 120 tooth gear was what i made).***

Heres what i did...

- Made a [Gear Cutter \(multi-tooth \)](#).
- Bought two 10MM bearings and a piece of 6" dia x .5" thick Delrin
- Made a sleeve which the two bearings will be pressed into and the Delrin gear will be press over (it might have been possible to just press a single bearing into the gear with out the sleeve).
- Turned, faced and bored the Delrin gear blank
- Mounted the blank in the Spin Indexer and started cutting.
- Made a washer that fits nice and snug around the bolt which the gear slides over

Cutting the gears teeth (took around an hour to an hour and 15mins to cut all the teeth)...



Gear done. The thin washer goes on the machine first, the bore is a tight fit to the "bolt" which the gear slide over (the bolt seam to be under size, 10MM on the low and the old gear and current bearings are sloppy) and the end which the gear will be seating on has a taper to it so it "centers" the bearing, i did the same to the knurled nut and it seamed to work out pretty good.





And here is it on the lathe... Boy, what a difference it made... im so happy i decided to do this now and not 2-10 years down the line... only time will tell if the gear will hold up, but from what i read and the amount of time i use the lathe, it should last for ever.



If the time comes and the gear fails in some kind of way, i will update this page stating the problem which has occurred, but till them...

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