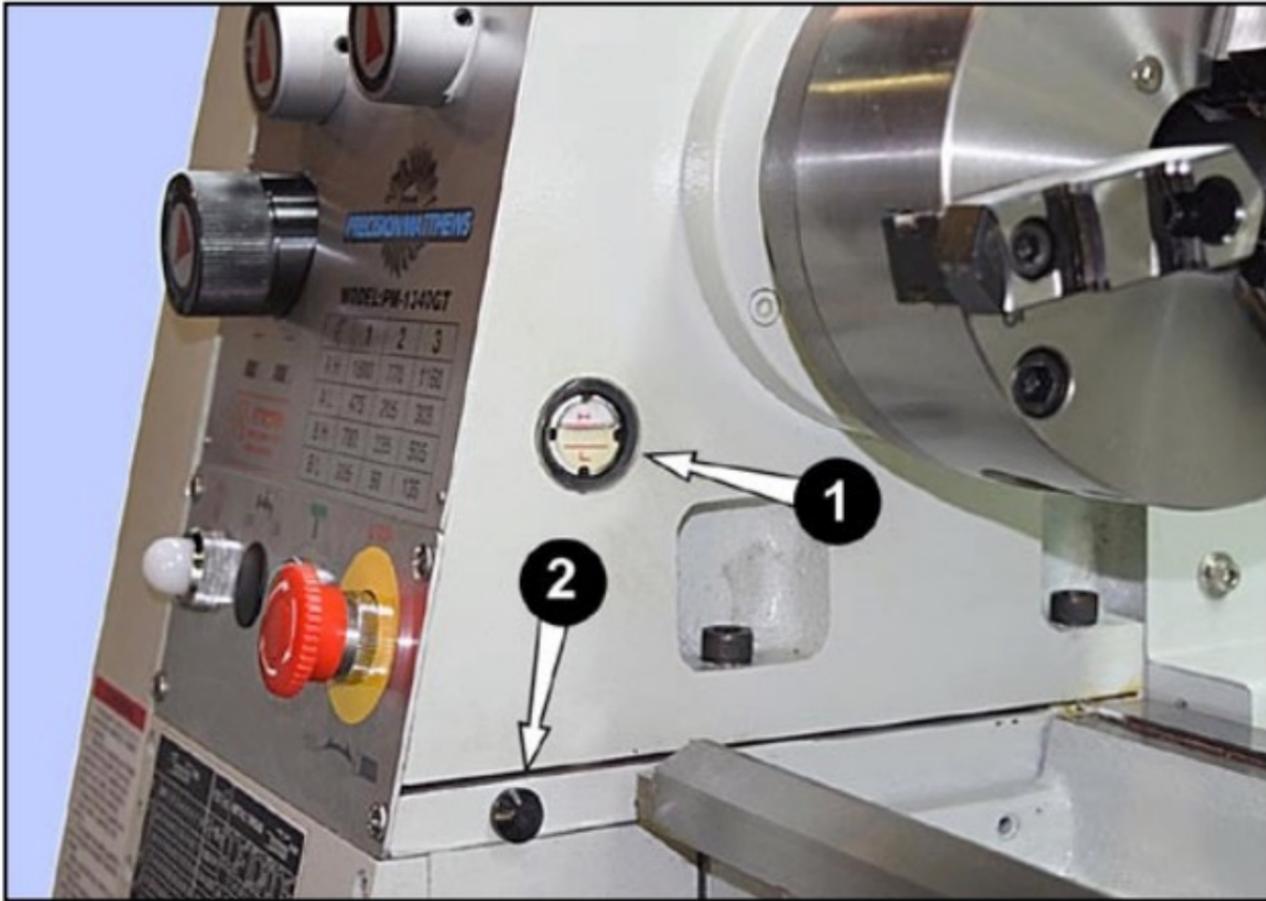


From: David P. Best david@davidpbest.com  
Subject:  
Date: November 7, 2020 at 9:21 PM  
To:



First, what convinced me to do it was the crappy (unnoticed) oiler port for the drive shaft bearings. Shown here as #2 in the new manual (which I didn't have when I started the project):

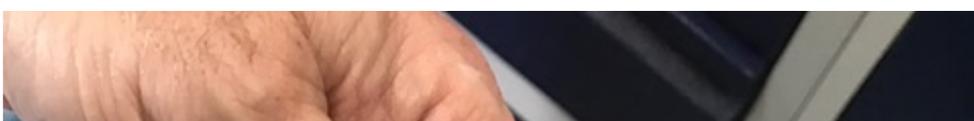


That oil port is responsible for getting oil to the bearings for the threading lead screw, but most importantly, for the drive shaft that turns the feed shaft to the apron just below it. If you fail to oil that port, the drive shaft will seize up, and since the clutch is downstream from the gear shaft inside the Norton change box, the result is that the main change gears (under the cover one the left side of the machine) will start to grind, and you end up with broken teeth on those gears. Been there done that. After my change gears had been badly damaged, I decided a complete diagnosis was required.

When I got into what was going on, I had to completely disassemble the Norton gearbox. Getting the gear shaft that turns the feeding shaft out of that gearbox was a major effort. Once I got it out, I saw why. The bearing for that gear shaft is a bronze bushing with a spiral oil recess fed by a tiny copper tube from the oil port tray above. On my lathe, something nasty had gotten into that bearing and turned to hard tar. Here's what that bearing looks like once I got all the tar and crap out of it (if you look closely towards the top rear of that bronze bearing you can see the copper tube that feeds it from above):



When I got the shaft out and cleaned it up:







BTW, outside end of that shaft (with the two v-shaped notches) is the clutch (ball bearings on springs) that will give way if you stall the feed shaft downstream. If you ever want to adjust that clutch, let me know.