

Improving the Harbor Freight Drill Press Locking Clamp, Version 2.0

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When I want to use my Harbor Freight 9 Inch Drill Press Locking Clamp, my goal is to clamp something and not fiddle around. Clamping the stock before drilling is a matter of safety. Sure I can hold the stock with my hands but that little voice in my head says to clamp it. It doesn't take much fiddling around before that little voice

fades. So how do I reduce the fiddling so I listen to that voice?



There are two sources of fiddling. The first is that anchor nut. I must reach under my drill press table and rotate this heavy and odd shaped nut onto the stud. There is no way to spin it. Besides, there are far more threads on this stud than needed for my drill press table.



The second distraction is that adjustment bolt on the end of the handle. It takes a lot of turning to go from full open to full closed. Since there isn't much force on this bolt, it could spin if there was

only a little flywheel and crank on the end.

Time to rework yet another Harbor Freight tool!

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My first step was to toss that strange nut into my junk drawer². Then I ran a 3/8-16 die over the stud to clean up the threads. I think this actually forced the metric thread³ that was on there to *become* SAE. No matter, I got away with it in this application. Not a good idea if the pull force was large.



Then I spun on a nut as a guide and filed off the last 1/4 inch of thread. This made it easier to align the new nut by feel plus require fewer turns to snug it up.



My new nut was made from a scrap of 1-1/4 inch diameter mild steel from my junk drawer. The hole was drilled 27/64 and then tapped 3/8-16. I spread Go2 Glue on the OD and attached a strip of emery cloth. You can see that it bunched up a little but I was able to cut out the bulge and add more glue.

² I rarely throw any metal away. Far too often, these bits are exactly what is needed in a future project. Every time this strategy succeeds, I call it “feeding the disease”.

³ Likely a 10 x 1.5 metric thread.



It is now easy to hold the nut under the drill press table and engage the first thread. Then spinning it snug takes just a second.



The adjustment screw was fitted with a disk of mild steel I found in my junk drawer.

The disk already had the hole which was slightly undersized. A few minutes on my lathe with a boring bar and I was ready to press the disk over the knurled head of the screw.

The disk even had a hole tapped $\frac{1}{4}$ -20 near its perimeter. I found a scrap spacer in my junk drawer, drilled it out with an F drill, and ran a bolt through it. I didn't like the feel of the points of the bolt on my hand so knocked them off on my lathe. The threads of the bolt were damaged near the end which made it perfect for locking in place. I rarely get this lucky.

I then put a dab of synthetic grease on the thread and end of the adjustment screw to make it turn easily.



With this crank (red arrow), I can hold the end of the clamp (white arrow) and quickly turn this screw in and out.

If I de-load the screw by pushing the paw (green arrow) forward, I can spin with the flywheel.

Note the wood under the part being drilled. It increases the clamping friction. Without this friction, the part tends to turn due to the force of drilling and having a single clamping point. That can be dangerous plus risks ruining the part and/or drill bit.

After publishing Version 1.0 of this article, Björn Lindström of Sweden contacted me with an excellent modification.



Björn suggested replacing the spin-on nut with a fixed bar⁴.



You then place the clamp at 90° to the slot in the Drillpress table and



rotate into alignment. The clamp is now locked in place.

There is just enough clearance between the block and table to get a smooth action.

A small amount of rubber in the bottom of the blind hole made it easy to get the proper alignment of the block to the clamp plus prevents rotation.

This is a shining example of collaboration. I'm so glad that Björn shared his idea with me!

⁴ Yes, this is another scrap from my junk drawer. Those two holes in the face of the block are leftovers.

I welcome your comments and questions.

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