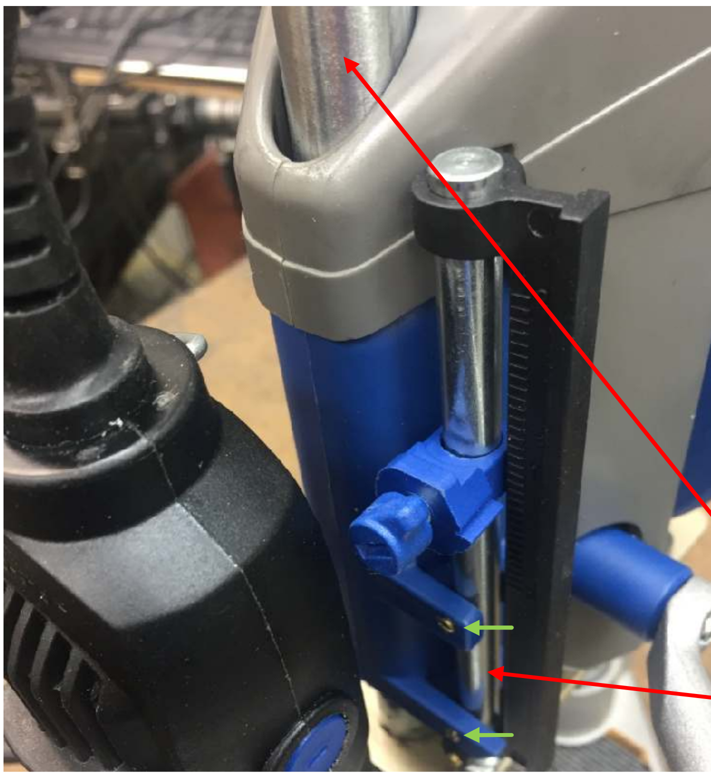
Improving A Dremel Drillpress, version 2.0

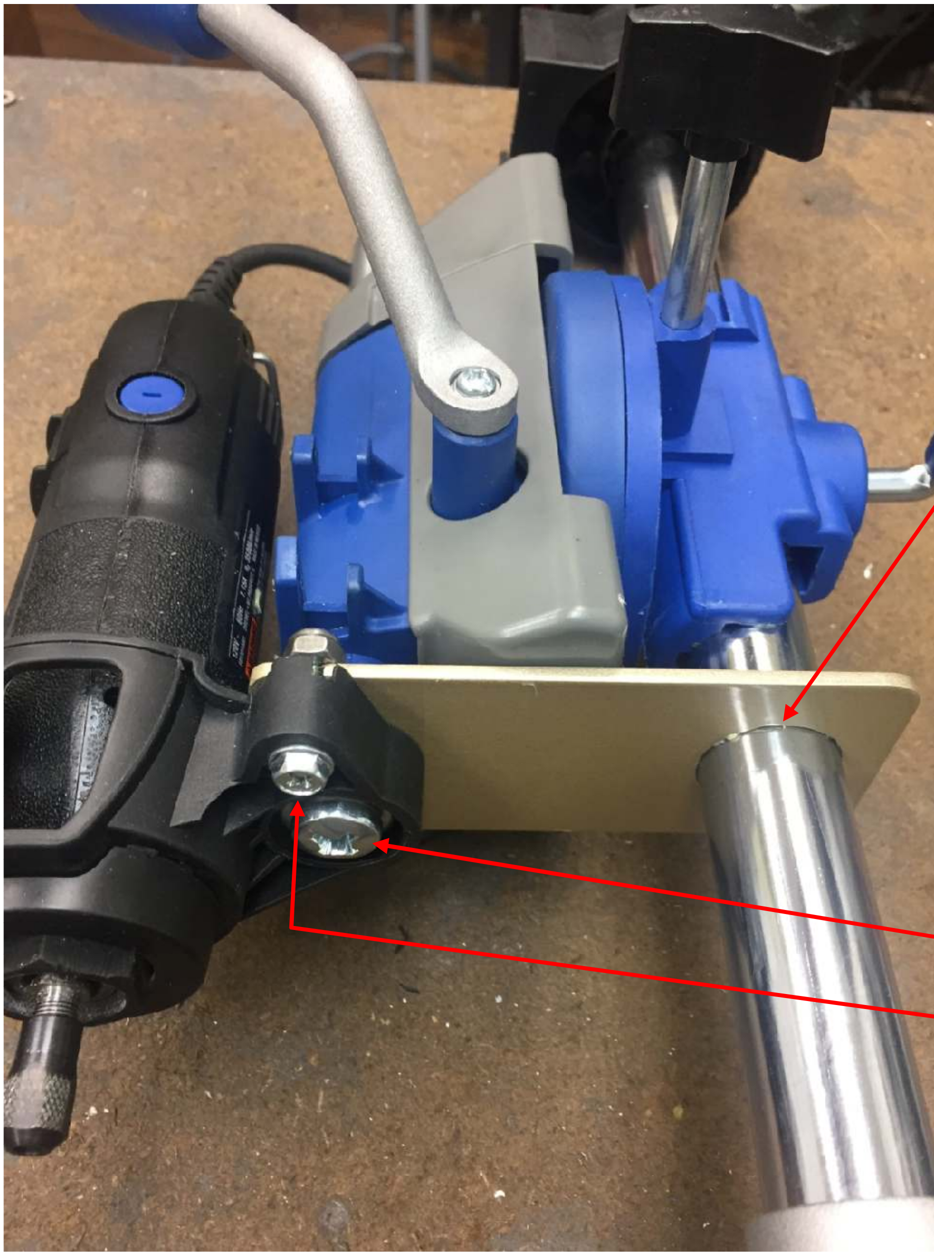
By R. G. Sparber



The Dremel drillpress is made mostly of steel and plastic. This is great for meeting a price point and, according to ratings I see on line, satisfies many users. But if you are trying to drill holes for a circuit board, it is a different matter. The side to side play (pivoting) of the spindle of the Dremel tool easily snaps off those tiny drill bits.

The pivoting is controlled by 4 set screws. Two of these screws ride in a slot cut into the ram and cannot be seen is the picture. The other two screws (green arrows) press on the depth stop rod. Tighten the set screws enough and most of the pivoting goes away. So does the ability to raise and lower the spindle.

The distance from the center of the ram to the contact points of these depth stop set screws is small. This means that any play between set screws and depth stop rod translates into a lot of pivoting of the spindle around the ram.



My solution was to increase the distance from the center of ram to the point that stops the rotation. This was done by fabricating a plate from 1/8" × 1 ½ " aluminum plate. One end was step drilled[2] out to 1". It is a sliding fit on the pillar.

The other end of the plate was cut to fit and drilled to match existing holes in the plastic support. The larger screw attaches to the ram while The smaller screw sits where the depth stop rod used to reside. A nylon lined nut prevents this screw from coming loose.

Even if the amount of play between pillar and 1" hole was the same as between set screws and depth stop rod, the angular play would be less because of the added distance. But since I drilled the holes in the plate associated with the two screws a little oversized, I was able to offset the plate so one side of the 1" hole is touching the pillar. I get no perceivable pivoting of the spindle but do sometimes get vibration between plate and pillar. A bit of grease helps reduce this annoyance.

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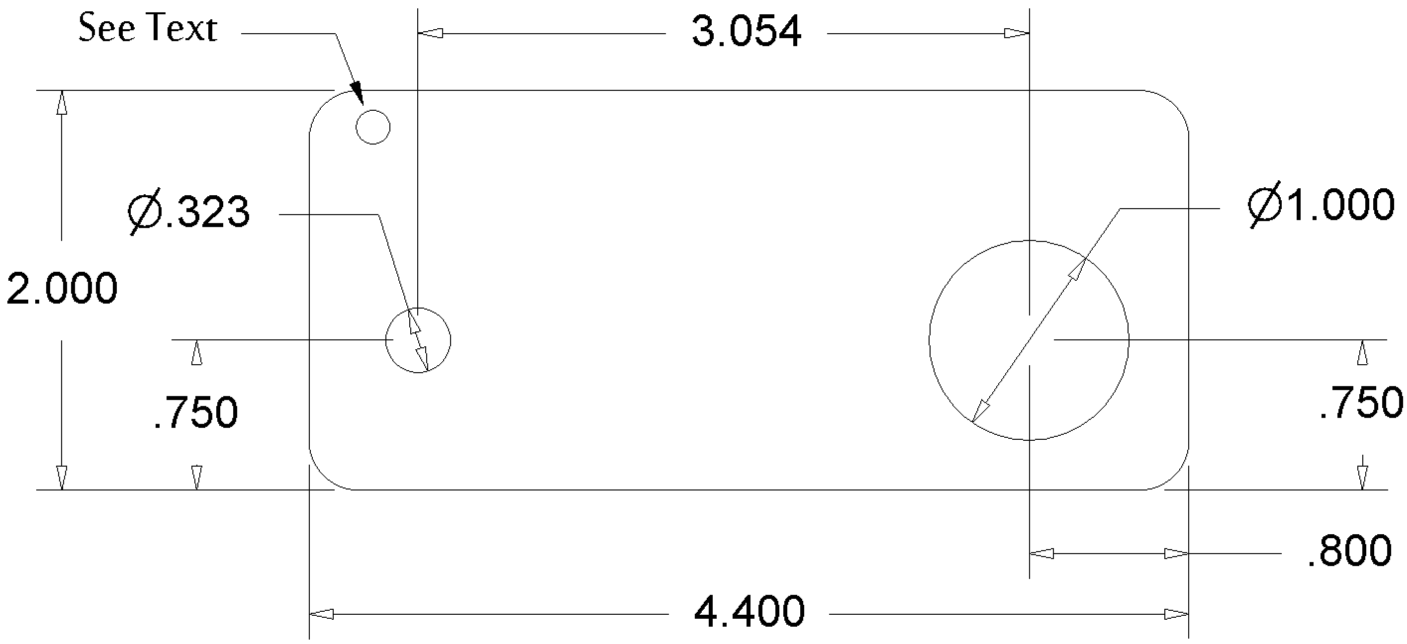
[2] I started with a spotting drill, then sequentially used ¼", ½", ¾", and 1" drill bits. The goal was to limit the amount of metal removed at each step in the process and thereby limit the risk of the drill grabbing the aluminum plate.



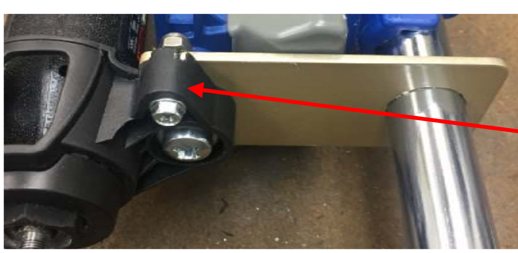
Material: 1/8" aluminum plate

If necessary, carefully file the 1 inch hole to a sliding fit on the pillar. Trial fit the plate and note where there is interference. File off that part of the bore and try again.

The distance between holes was taken from the actual part since it was all cut to fit. You can always enlarge the 0.323 inch diameter hole (a "P" letter drill[3]) until the large screw can pass through while the plate is mounted on the pillar.

File the corners to a pleasing radius.

I placed the 0.323 inch and 1 inch holes on center but this did not leave much room for the third hole. The drawing reflects the redesign.



With the plate on the pillar and the large screw securely in place, use the plastic flange to guide a drill into the plate. Select a drill bit that is a close fit to the plastic hole. You only need to drill in enough to cut a cone. Then remove the plate and finish drilling the hole. This is much easier than trying to exactly locate this third hole.

[3] If you only have fractional drill bits, use a 11/32 inch drill which is 0.335 inches in diameter.

Acknowledgments

Thanks to my students at Glendale Community College, Glendale, AZ, for presenting me with this problem.

Thanks to Bruce E. Stemplewski for suggesting I provide more detail.

I welcome your comments and questions.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

Rick Sparber
Rgsparber.ha@gmail.com
Rick.Sparber.org