

A Chain Drilling Guide, Version 1.0

By **Владимир (Vladimir)** as told to **R. G. Sparber**

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This chain drilling tool is a great example of turning junkyard scrap into a useful tool.

The body is made from a leaf spring taken from a truck. This metal is very tough, making it difficult to drill. However, it is far more resistant to wear than mild steel.

The post is 4.2 mm in diameter.



To use the tool, first drill a 4.2 mm hole in the part.



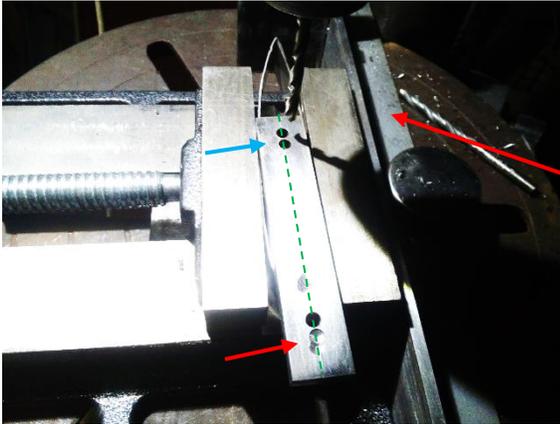
Then fit the post into the hole.

The guide hole can be located at any angular position and will be exactly the same distance away from the first hole. Next, the drill was run through the guide hole with no need to measure or worry about lateral movement.

Since the metal is tough, the drill will not cut into the guide hole.

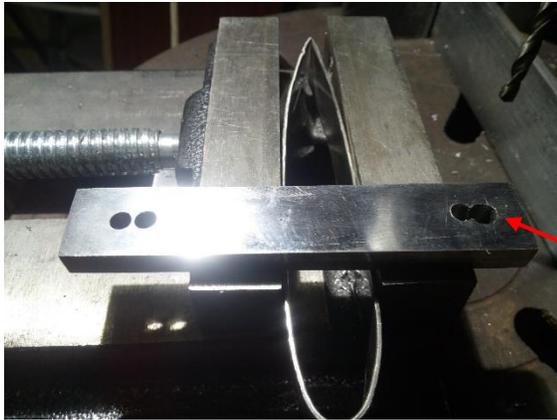
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Making the Tool



Drilling this very tough metal was not easy. After a few “learning passes” (red arrow), I finally was able to drill through (blue arrow).

The bar was clamped in my drill press vise and placed against my fence. This guaranteed that all holes would be on the same (green) line. It was then just a matter of getting the spacing between the guide pin hole and the guide hole right (blue arrow).



The guide pin hole and the guide hole are nicely aligned with the major axis of the bar. They are 0.7 mm apart. Each hole is 4.2 mm in diameter.

The learning holes are not pretty but won't effect the operation of the tool.



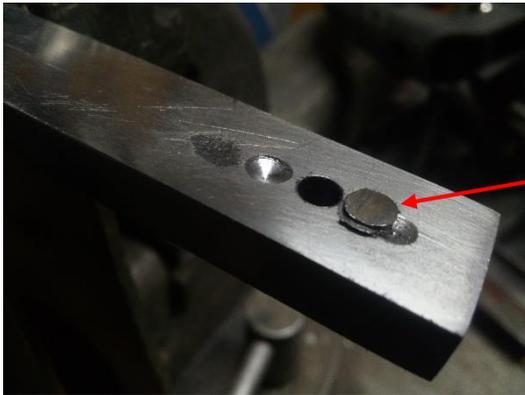
A piece or close fitting rod was forced through the guide pin hole.

It is a tight fit and you can see a thin sliver of metal peeling off.

The shallow trial holes helped me figure out how to drill this metal. The drill has to be sharp, at the proper angle, and at the correct RPM. Using plenty of cutting oil is also essential.



The pin extends out the bottom enough to securely engage the hole to be drilled in the part.



The top of the pin was sawed off.



It was then TIG welded in place.



At the other end of the bar, one of the learning holes was about to become useful.



The hole was tapped M6. Given how tough the metal is, lots of cutting oil was used and I went slow. It would have been easy to snap even this large tap off.



After deburring, a bolt with a nut threaded on was screwed into the hole. The nut was then tightened. Finally, the bottom of the screw was ground flush with the bottom of the bar. I didn't want anything catching as the bar was rotated during use.



The finished tool will outlast all of us.

The Back Story

Владимир (Vladimir) is a member of the homemadetool.net community. He speaks Russian, I speak English. Through the magic of an online translation tool, we were able to exchange ideas. The text was not always crystal clear but the pictures filled in the gaps.

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