

A Sanding Block Using a Belt, Version 1.0

By R. G. Sparber

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I learned of this sanding block from “PB Machines” on homemadetools.net:

<https://www.homemadetools.net/forum/amazing-new-tool-i-reinvented-file-78988>

He designed and built this great looking “Porche” that permits the quick swapping out of belts. I was content making a 50 cc scooter.



My first attempt at duplicating the sanding block involved two blocks of 2 by 4’s and tensioning screws. The screws jack the blocks apart.

At first, I rounded the end of the larger block but then realized this was not necessary. I only needed to round off the corners.



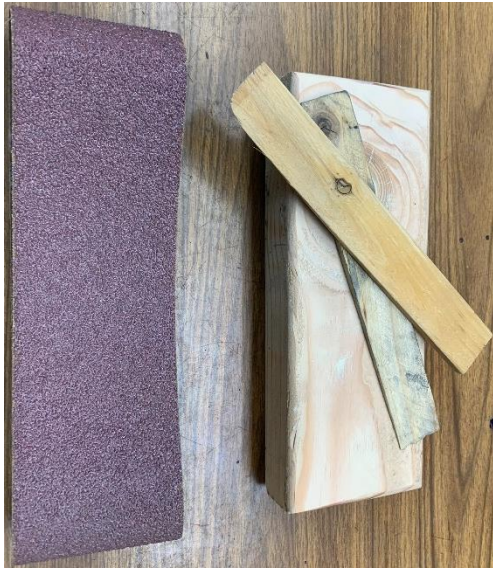
I punched holes in the belt to permit the screws to pass through. The smaller block was drilled with a #7 drill and went through to the surface of the larger block. Then I drilled ¼-inch holes in the larger block about 1-inch deep. Before assembling, I placed a ¼-inch ball bearing in each hole, which made turning the screws easier. When I turned in the screws, they cut their own threads in the smaller block.

The tool worked well but seemed a bit complicated. After all, I need one of these tools for each grit of sandpaper.

After sleeping on it, I came up with version II.

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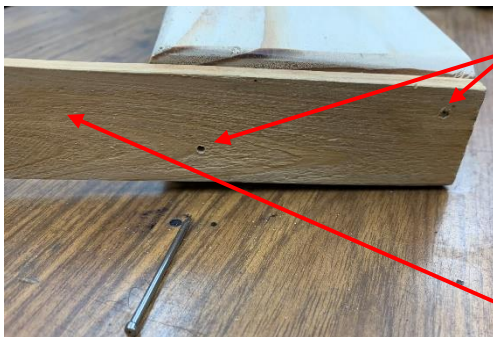
Tada!



This tool also uses a 2 by 4 block. I calculated its length from the size of the 3-inch wide belt. Take the circumference and subtract 3-inches. Then divide by 2. For example, for a 21-inch belt, I first subtract 3 to get 18. Then I divide by 2 to get 9-inches.


I rounded the corners at one end of the block, to a $\frac{1}{2}$ -inch radius. The two faces of the block were smoothed on my belt sander.

Rounding these corners makes the perimeter of the block less. This excess provides the room for the two shims.



I predrilled two holes in one of the shims to prevent splitting before driving finishing nails.

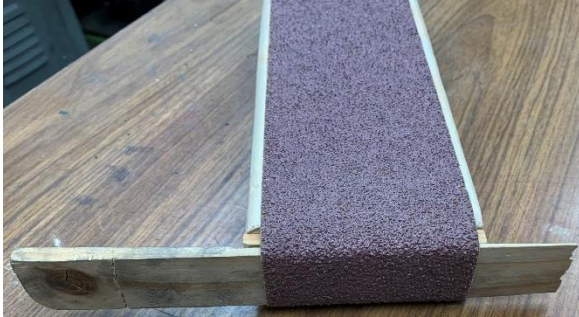
The shim looks like a right triangle from the side.

 Put the base of the triangle against the block.

The excess was then sawed off and corners rounded.



I slid the 3 by 31-inch belt onto the assembly.



The slack reduced as I slid the second shim into position. The base of the shim faced the belt.

The belt did initially stretch, so I waited a few minutes and pushed the shim in a bit more.



When the belt stopped stretching, I cut the thin end of the shim off.



The fat end of the shim was cut such that about ½-inch stuck out. This permits me to tighten the belt a bit more and also gives me something to grab when I need to remove the shim.

PB Machines's design made it easy to change belts, but the tool required a lot of machining. Changing out a belt on my model is difficult, but making the tool is easy.

There is no superior design here. It depends on what matters to you.

Acknowledgment

Thanks to “PB Machine” for one terrific tool!

I welcome your comments and questions.

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