

Custom Capacity Strap Clips, Version 1.1

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My kayak seat has a lot of excess $\frac{3}{4}$ -inch wide strap. I've been around long enough to know that cutting off this strap is an invitation for needing it later. But how do I neatly stack it? Flat clips would be nice, but they must be secure. This means they must be sized for the number of straps being held.

These clips are made from $\frac{1}{2}$ -inch schedule 40 PVC pipe. This puts the material cost at around 5-cents per inch of width, although I have plenty of short pieces of scrap that will work fine.

You will need a means of cutting the pipe, a belt sander is nice but sandpaper or a file will do. A hot air gun is essential. *Do not use an open flame as this will cause the plastic to outgas dangerous fumes.*

You will also need some scraps of flat stock that can be stacked up to match the thickness of the straps. I use aluminum. And finally, a vise with smooth jaws gives the clips a smooth finish. My jaws have a diamond cut, but I line them with pieces of aluminum angle.

If your strap is wider, you will need to use a larger diameter pipe. The process should be the same.

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I'm using PVC snips to cut off the pipe.



The length will equal the width of the finished clip.

I could cut the pipe axially, but then I would have to line up the bend. It would never come out right. So instead, I leave the pipe uncut for now.



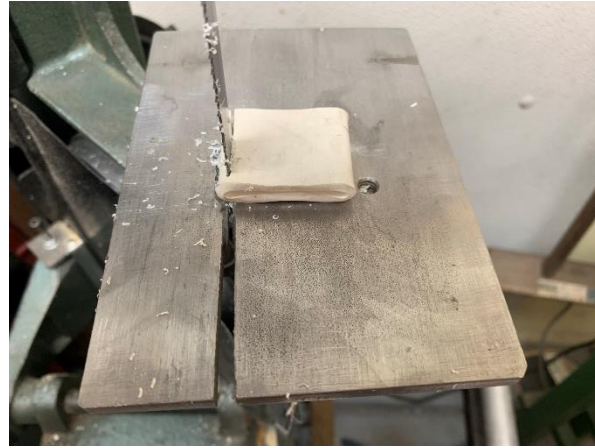
I line my vise jaws with aluminum angle and set the gap to easily pass the diameter of the pipe.



Then I heat the plastic for about 15 seconds, constantly turning it. When correctly heated, you will notice a slight slump in the pipe.



I then place the pipe into my vise and tighten it down to approximately the thickness of the straps. Once cool, the plastic will return to being hard. I speed this process along with a spray of water.



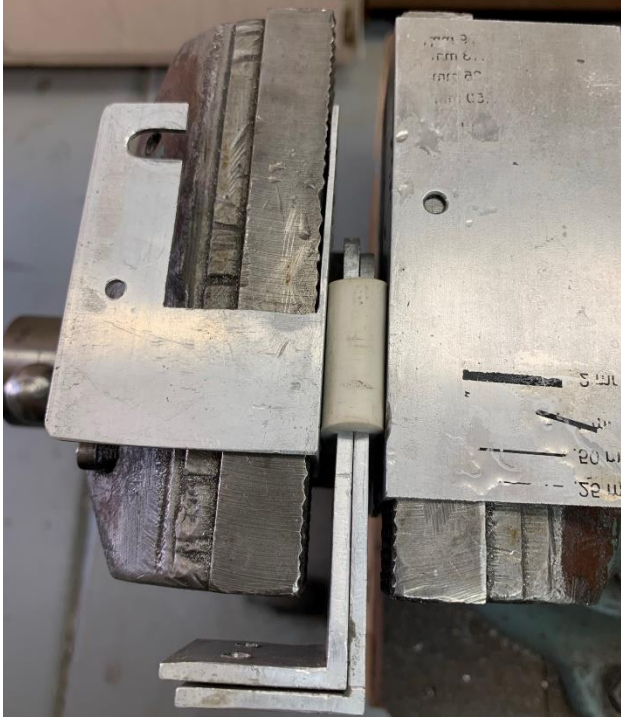
Using my bandsaw, I cut the end off of the flattened loop. The top and bottom faces of the clip are naturally aligned.



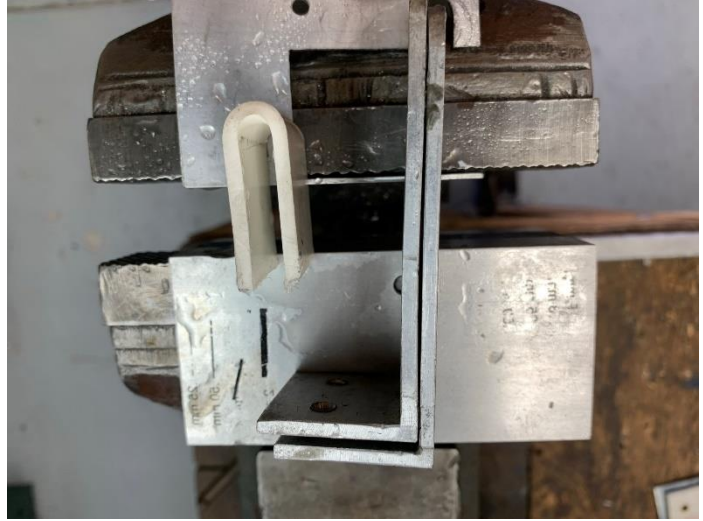
Next, I select enough scrap aluminum to approximately match the total thickness of the strap to be clamped.



This time, I only heat the bend.



I stuff the aluminum into the clip and squeeze the assembly in my vise. A few sprays of water, and it is set.



All that is left is to smooth all edges. I do this on my 1-inch belt sander.



The red printing comes off with a swipe of acetone. This is best done outside.



I was able to improve the clip's holding power by sawing into the end. In this example, I did not have a form inside the pipe as I reformed it. The result is a narrowing around the center. This makes installation a little more difficult but also improves the holding power.



With the end cut as shown, the clip wraps around the strap so it can't slide off laterally.

I welcome your comments and questions.

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