
Subject: Printing stainless for inlays

Posted by [BigRockForge](#) on Mon, 18 Feb 2013 18:08:12 GMT

[View Forum Message](#) <> [Reply to Message](#)

I'm wondering if you can print an object in stainless with fine enough 'grooves' for inlaying wire. i.e. a groove of a certain width and depth to allow inlay of a wire of equivalent gauge. And if so.. what limits would there be on how small and fine I could go? Obviously I can print the object and then file in my own grooves.. but if it can be done in the print process.. why not?

Subject: Re: Printing stainless for inlays

Posted by [UniverseBecoming](#) on Mon, 18 Feb 2013 20:44:39 GMT

[View Forum Message](#) <> [Reply to Message](#)

Take a look at this downloadable model by Improbablecog. You can download this and take measurements of those slots. The designer, hand finished it so you can clearly see what slots printed and what slots merged together.

Take a look at this image.

And a cross section diagram I did on the model.

As you can see, the seventh slot merged together. Measuring the clearance of that seventh slot we get 0.235 mm. Yet, the sixth slot next to it did print and its clearance is 0.316 mm. So keep it above 0.316 mm to have it print, right? Well, yes if you're going to hand finish it, no if you're going to leave it as printed. Here's why. Take a look at this model from the same designer. You can also download this and take measurements.

As you can see in this image,

The central slots printed, but being unfinished beyond Shapeways' bulk finishing they are kind of rough and if we measure the clearance we see that it is nearly double.

Keep in mind also that there is some variability from print to print in stainless too, so I would add another two tenths of a mm for that. I have spent time on this reply cuz I am also interested in these things as I am learning about it too and I will come back to this thread for future reference.

James

Subject: Re: Printing stainless for inlays
Posted by [GlenG](#) on Thu, 18 Apr 2013 20:01:41 GMT
[View Forum Message](#) <> [Reply to Message](#)

In a lot of ways the printed media should be perfect for wire inlay work. Because of the relatively coarse grainy texture it should hold wire without any further prep work (like undercutting). The key is going to be in determining optimum groove size. As mentioned in this thread, if inscribed lines are too narrow they have a tendency to come out of the furnace in less than optimum condition. If you have to clean the lines up with a hand graver it would defeat the advantage. Carving/engraving this stuff is a real booger! Maybe print a simple test plate say 3" long with various width lines both straight and curved. I don't think you will be able to get consistent results with lines thinner than .040".

-G
