Subject: Polishing flat Stainless Steel surfaces
Posted by InterSimi on Thu, 10 Mar 2011 15:05:06 GMT
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Hi everyone,

I am after a technique or indeed tools which will allow me to polish small flat surfaces to a mirror like finish.

I have previosuly used wet/dry 400 Grit and 1500 Grit by hand on a flat surface. The issue with that, is that it takes about 30 minutes per piece. I would like to cut this time down to the minimum.

The 1500 from 400 Grit isn't the issue, as that is quite quick, it is the getting it to a 400 Grit status, with the burs off. The surcase has to be completely flat.

I have tried a dremel, but this doesn't seem appropriate to get the flat surface.

Any idas or suggestions?

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by GlenG on Thu, 10 Mar 2011 15:46:35 GMT
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The absolute fastest cutting abrasives are diamond products.
These cost more than typical aluminum oxide based abrasives but they are not exorbitant and the time savings will more than offset the added expense.

For flat surfaces like your cufflink design a simple solution would be make yourself a lapping plate by gluing a piece of waterproof abrasive paper/film, to a dead flat surface, use a piece of plate glass or a chunk of marble tile for this. Make several, one for each grit you want to use. You then just carefully rub the face of your links against this surface. Add water as a lubricant and your abrasives will work faster and last longer. Personally, I think the jump from 400 to 1500 is a bit to wide for optimum results. Most finishing manual recommend a minimum of 600 grit before beginning a polishing phase. For initial coarse cut down I never jump grits by more than 200 grit. A lot of this depends on how hard your base material is. The SS print material is quite hard in fact.

Industrial suppliers world wide sell a vast array of diamond products in varying degrees of grit from coarse to microfine. These products can take the form of water proof films (like sand paper) also tools with metal substrates onto which diamond grains are sintered. Like hand files, also grinding wheels, and points for use in a dremel rotary tool. Diamond compounds are also

available in paste form which can be applied to a lapping plate or small felt polishing wheels.

In the USA a great source for these materials comes from the Gesswein Co. Otherwise just Google "diamond abrasives". I promise that if you try these materials you will never go back to standard abrasives.

-G

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by InterSimi on Fri, 11 Mar 2011 11:13:19 GMT
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Thanks for the great reply G.

The jump from 400 to 1500 wasn't so much of an issue. In fact, the 1500 portion was really quick. The longest part was using the 400 to get rid of the larger bumps and to make it smooth.

I noticed to mentioned starting off with 600 grit, but I feel that it would take even longer to get down to a smooth(ish) level before polishing with 1500 (and higher). I was toying with the idea of going lower than 400. What are your thoughts?

Also, what glue would you recommend? Ideally, something sticky, which sticks the paper to the glass (in spray form), then easily removable.

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by GlenG on Fri, 11 Mar 2011 14:40:42 GMT
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For metalwork anything above 220 grit is really considered finishing paper. To quickly remove the print lines and bumps you need an aggressive cut down procedure. I would start with nothing finer than 80-100 grit. This will rapidly give you a clean flat surface. Be careful here and use light pressure so you don't inadvertently go to far or round over any edges. Jump from there to 220, 400, 600. During this refining phase you should alter the direction of strokes by 90 degrees each time you jump a grit. This insures that you have removed all traces left from the previous grit. From 600 upward you are really into the polishing phase. You might want to use a circular motion now. These steps are somewhat subjective and a matter of personal experience. Whatever works best for you will become the rule.

I use low tack spray adhesive for attaching papers to lapping blocks. On finer grits of paper you

will find that often just a few drops of water on the block will hold the paper in place. Good luck and have fun.

-G

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by InterSimi on Fri, 11 Mar 2011 15:02:06 GMT
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Thanks a lot G. That is great advice and certainly something I will be looking at doing.

I will be ordering a dozen or so cufflinks and selling them for charity (for my work). I just didn't want to have to spend 30 minutes on each set only to have the charity earn Â£5!

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by bluelinegecko on Tue, 29 Mar 2011 16:47:57 GMT
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You might also want to try some whetstones if you have any lying around. I have a few from a knife sharpening set I purchased a long time ago. I tried one the other day on an item I ordered and it produced a beautiful mirror smooth finish. I didn't go all the way through the grits. I had all ready filed the surface flat and smoothed it with a dremel equipped with a buffing wheel and compound. But out of curiosity I hit the surface with the finest whetstone I had and I swear it looks even better than the dremel treatment did. If the stone is new it also has the benefit of maintaining a perfectly flat surface too. I don't know exactly what grit the stone was (I have to dig up the rest of the kit) and unfortunately my current digital camera is absolutely horrible at macro shots, but just thought i'd throw the idea out there if anyone wanted to give it a try.

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by InterSimi on Tue, 29 Mar 2011 17:19:24 GMT
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I do have a selection of stones from my Japanese sword polishing days I will give it a try

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Subject: Re: Polishing flat Stainless Steel surfaces
Posted by GlenG on Tue, 29 Mar 2011 21:13:18 GMT
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Just go easy when using Japanese water stones. They are relatively soft and easy to chew up. It's a real booger to get out the grooves that might occur. A hard oil stone might be a better choice.

-G

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by InterSimi on Tue, 29 Mar 2011 21:41:33 GMT
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Thanks Glen.

I did 20 individual cufflinks the other day. I started off with 120 Grit wet and dry and worked up to 2500. It takes ages and doesn't half go through the sheets!

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by LincolnK on Tue, 10 May 2011 20:06:59 GMT
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You may want to consider getting a motorized horizontal polishing wheel. I am sorry I don't know the official name for it.

But a jeweler I have done work for has one, and it is a about 12 inches wide, has a steady stream of water falling on it, and you can control how fast the wheel spins. It could turn your half hour into a few minutes. Check jewelry supply stores for something that matches my description. I have no idea how much it will cost, but it could be worth it if it saves you a lot of time.

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by InterSimi on Sat, 04 Jun 2011 10:36:12 GMT
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Genius, thanks Novaking

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by SIXTHSCALE on Mon, 06 Jun 2011 18:25:13 GMT
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i've been making miniature knives and swords from steel the hard way for years before i discovered shapeways... and the best polishing method i found to get a really nice shine on blades is to get some 7 way fingernail buffers and work through the different grits from coarsest to finest...

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by InterSimi on Sun, 02 Sep 2012 02:06:11 GMT
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LincolnK wrote on Tue, 10 May 2011 20:06You may want to consider getting a motorized horizontal polishing wheel. I am sorry I don't know the official name for it.

But a jeweler I have done work for has one, and it is a about 12 inches wide, has a steady stream of water falling on it, and you can control how fast the wheel spins. It could turn your half hour into a few minutes. Check jewelry supply stores for something that matches my description. I have no idea how much it will cost, but it could be worth it if it saves you a lot of time.

Does anyone know of the name of such a device? I have been searching for a table top version of a lapping machine or similar and they seem quite hard to find. In the US there is something called JoolTool, which looks like it would be perfect, but they only sell them in the US. I would prefer to purchase something here in the UK.

Does anybody know the name of these machines and where one might purchase one?

Subject: Re: Polishing flat Stainless Steel surfaces
Posted by BillBedford on Sun, 02 Sep 2012 10:25:18 GMT
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Try looking for a 'linisher'.
These are three UK jewellery tool suppliers
HS Walsh
Shesto
Suttons

Subject: Re: Polishing flat Stainless Steel surfaces

Posted by bvr on Sun, 14 Oct 2012 19:00:10 GMT
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[quote title=InterSimi wrote on Sun, 02 September 2012 02:06]LincolnK wrote on Tue, 10 May 2011 20:06You may want to consider getting a motorized horizontal polishing wheel. I am sorry I don't know the official name for it.
.....

Does anybody know the name of these machines and where one might purchase one?

What you are looking for is a lapidary grinder/cabber
http://www.diamondpacific.net/cabber.html

Personally, I have a buffing jack.
similar to this
http://www.grainger.com/Grainger/DAYTON-Bench-Top-Buffer-1FY V4?Pid=search

I prefer the buffing jack for versatility, but getting a flat face requires some experience with the process.

bvr