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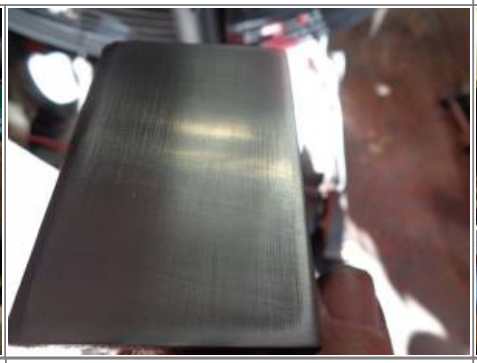
Trying to Get a Mirror Finish on Stainless Steel

This is an attempt to get a mirror finish on stainless and without any scratches.
Hand sanding only was used in the pics below on a scrap piece of angle.
This shows a progression starting from raw filed material as in a newly fabricated part.

<table>
<tr><td colspan="3">Starting as shaped with a file.</td></tr>
<tr><td colspan="2">   </td><td></td></tr>
<tr><td colspan="2">A course sanding block smoothed it out some but it's too flexible and began rounding the corners.</td><td>Finish still scratched but beginning.</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>3M polishing compound applied with the sanding
block.</td><td>That brought out more shine.</td><td>However, it did nothing for the scratches.</td></tr>
</table>



3m applied with a Dremil tool and a felt disc leaves a better shine.


Then, white polishing compound was used from a Harbor Freight kit. Held in a vise for easy access.

But the scratches are still too deep.



This is sold as “3M Safety Walk” (applied on steps to keep your feet from slipping).
It makes for a good rough sandpaper and looks to rival the 60 grit paper in front.


The surface was wet sanded with cutting oil and the 3M paper wrapped around a file for rigidity.
Followed by 60 and then 220 grit paper.

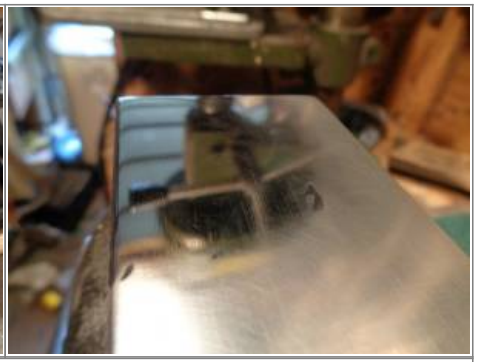

Then polished with Mothers polish and a dish sponge.
It made a decent satin finish but that is not the goal.


Surface was then wet sanded with cutting oil and a Scotchbrite scouring pad.
Best shine yet but scratches are still too deep.

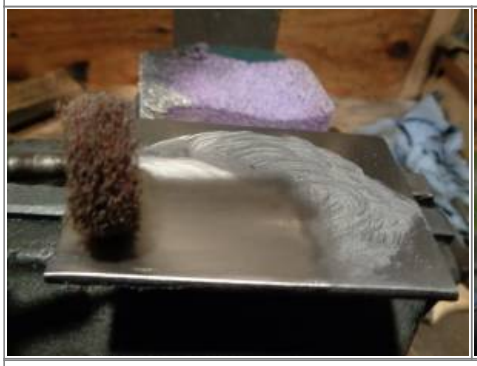


More white compound revealed some pitting but the shine is getting better.





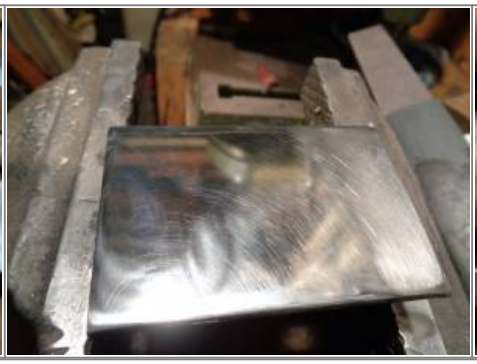
The aluminum oxide disc was a bad idea. It knocked down some of the valleys but dimpled the surface



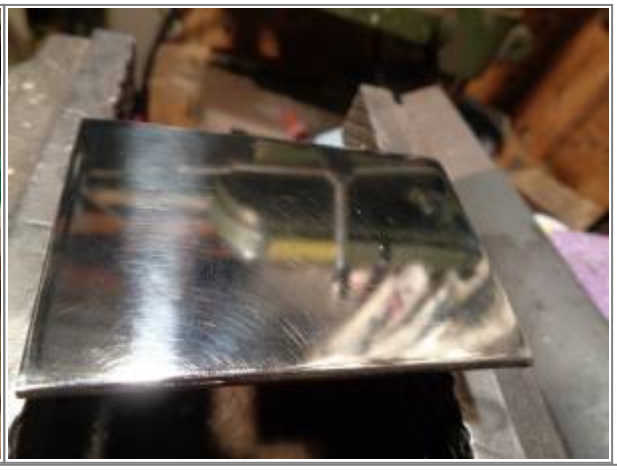
The surface was then wet sanded with 320 grit and polished with white compound.
The surface feels like glass but the lines are still in it.



After using 400 grit, the lines are fading out but too much pressure was applied while sanding and light scratches appeared.
They still won't polish out with white compound.


A cloth wheel on a drill was useless and added more scratches.

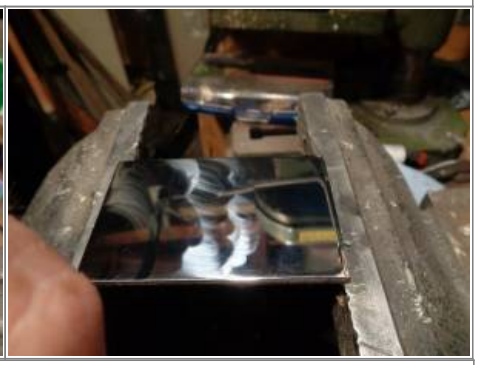
This is a 3 pack polishing compound from Home Depot for hard metal. The yellow is for stainless.

It's bringing out the shine but not cutting well enough.



The black was better but left hot spots in the finish and it wouldn't polish away.
It came off with 3M liquid polish.





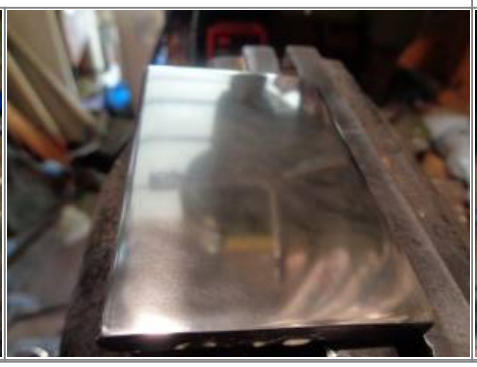
Aside from the hotspots, it's starting to rival the pipes.

3 more passes with black, 2 with yellow and 1 with HF red. Needs more sanding.



Sanded back down by hand only with wet 400, dry 600 and 1200 grit.
Then wet sanded with steel wool and polished with the black stick.

The black stick when rubbed across the metal
will scratch it.

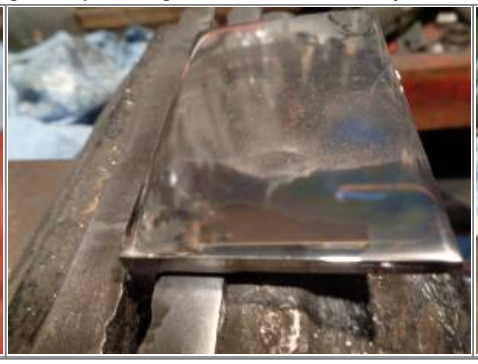




Neither a slow or fast motion with the Dremil made better or worse swirls.


However, the excess polish buildup was caused by loading too much polish on the wheel.
A wheel rake was used to remove the excess polish which made it more manageable on the next run.


Starting with the corners.

A clean dry pad found some un-noticed glazing after polishing and removed it slowly.


Finish is now more smooth with less scratches and marring.


Surface re-sanded with 600 grit paper and repolished. [1)]

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1)

photos by Hippysmack