Stropping Angle
Posted by TPeters - 03 Oct 2012 22:44

When stropping what angle should be used?

If I sharpen a knife at 20 degrees should I strop at the same angle or should I strop at a lessor angle, say 19 degrees? The only strops I currently have are leather.

Or is this practice only used when you are trying to convex the bevel. Say you sharpen at 17 degrees, micro bevel at 20 degrees then should you strop at 19 degrees?

This knife sharpening sure can get involve but I am having a blast!

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Re: Stropping Angle
Posted by TPeters - 04 Oct 2012 21:28

Thanks for all the input! I keep reading about stiction. Could someone give me a working definition? Conceptually I understand the Wiki definition. When stropping a knife what level, quantity or quality (not sure how do ask) of stiction works best?

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Re: Stropping Angle
Posted by wickededge - 05 Oct 2012 14:37

This next little study was fun to do though also time consuming since prepping the samples takes a long time for the 2000x images. There is a long process of cleaning the samples and lens, then applying clean immersion oil for each iteration. In order for the 2000x lens to gather enough light and present a clean image, it needs a continuous bond of the oil between the end of the lens and the sample. Every time I take the sample out, I have to add more oil and re-form the bond. Still, all the work aside, it's a blast.
So without further ado, here are some images of an edge that started as nearly perfectly smooth and to which I applied a micro-bevel 30um wide with the 400# diamond plates:

The above image shows the smooth shoulder at the start of the micro-bevel where the diamonds started

digging in and cutting little troughs out to the edge.

The above image is showing the middle of the bevel.

Next I lowered the angle three degrees and completed 40 strokes with the 14um diamond and leather strops. I was surprised by some parts of the results. The first image shows the transition at the shoulder between the formerly smooth section and the micro-bevel:

The 14um strops clearly created their own very distinct scratch pattern and wiped out the smooth section. The also had an impressive affect on the scratches from the 400# diamond plates:

It's exciting to see the combination of burnishing and abrading going on with the strops.

As a footnote, these are the same 14/10 strops I've had for a long time and the paste hasn't been refreshed in months. I did apply some rubbing alcohol to increase the 'stiction'.

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Re: Stropping Angle
Posted by wickededge - 05 Oct 2012 14:41

In the first image of the post above we see the clear junction of the 400# micro-bevel where it cuts into a very polished primary bevel. In the third image I've lowered the angle by three degrees and completed 40 strokes with the 14um diamond and leather strops. The effect is dramatic and illustrates why it's so easy to create a convex edge with a couple of facets and the strops. The strops easily smooth over any peaks. In the next little study I'll try to image the vertex of a pair of facets and then smooth it over with the strops.

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Re: Stropping Angle
Posted by wickededge - 05 Oct 2012 14:54

Here is a nice view of two facets I created using the 1600# ceramic stones at 20° and at 25° so there is a 5° difference between the two facets:

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Re: Stropping Angle

Posted by wickededge - 05 Oct 2012 15:03

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I admit that I'm shocked by the image below. I changed the angle to 22° and completed 40 strokes with the 14um strops. There is almost no evidence of the junction between the facets - it's been almost entirely erased by the strops:

The only way I can even find where on the bevel to image is by the direction of the scratches. I'm now extremely thankful I used alternate directions with the 1600# stones when making the facets.

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Re: Stropping Angle

Posted by WayneNicklin - 05 Oct 2012 15:07

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It's amazing to see how "plastic" metal can be. This is an incredible learning tool

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