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 wickededge - 05 Oct 2012 15:03

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

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

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Re: Stropping Angle
Posted by wickededge - 05 Oct 2012 15:09

WayneNicklin wrote:

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

Agreed! It really moves around quite easily. I think we're all going to learn a lot from each other on this forum

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Re: Stropping Angle
Posted by cbwx34 - 05 Oct 2012 15:33

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wickededge wrote:

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.

I wanted to highlight this... I find this almost as interesting as the pictures themselves... had no idea it was this involved. That's dedication!

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Re: Stropping Angle
Posted by ApexGS - 05 Oct 2012 17:28

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wickededge wrote:

WayneNicklin wrote:

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

Agreed! It really moves around quite easily.

The first time I saw this sort of thing was a still shot from a high speed video on a gun blog, which

showed some metal bar stock being cut by a lathe and how it "bunched up" in front of the cutter as it turned. Here's the link to the article about it: Sliding Metals Show Fluid-Like Behavior

Metallurgy is some fascinating stuff! And keep up the good work Clay, from what we've seen so far it looks like that microscope is worth the work and the wait!

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Re: Stropping Angle
Posted by wickededge - 05 Oct 2012 17:40

Oh yeah, this is a great video! I saw it a while back and it sort of transformed the way I look at metal. Thanks for the feedback. It's really fun to do these studies and share them with you guys.

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Re: Stropping Angle
Posted by wickededge - 05 Oct 2012 17:46

Here is a shot of the same blade after I've restored it to basically super polished:

There are a few little marks that I haven't bothered to remove; enough of the surface is smooth that we can easily isolate whichever grit we're trying to study. The process to restore the edge was as follows:

Set the angle to 20 degrees> Sharpen with the 1200# ceramic stones until I almost reached the edge (verified by 60x handheld, lighted loupe), flattening out the bevel again> Sharpen with the 1600# ceramic stones until I do reach the edge> Strop with cow and diamond at 14um> 10um> 5um> 3.5um> 1.0um> 0.5um> I then used kangaroo leather and diamond at 1.0um> 0.5um> 0.25um and then 0.125um CBN on nano-cloth and then back to 0.25um diamond on kangaroo.

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Re: Stropping Angle
Posted by WayneNicklin - 05 Oct 2012 17:57

Do I dare ask how long did it take you to bring this all off restoring this incredible bevel?

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Re: Stropping Angle
Posted by wickededge - 05 Oct 2012 18:05

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WayneNicklin wrote:

Do I dare ask how long did it take you to bring this all off restoring this incredible bevel?

I'm guessing about 1/2 hour give or take. I was doing about 50 strokes per side with each grit but my cycle rate is very fast, usually 100+ per minute. Cleaning between grits and switching grits takes the longest.

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Re: Stropping Angle
Posted by WayneNicklin - 05 Oct 2012 18:46

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Your technique is getting down right scary. We can only hope to achieve a small bit of your knowledge oh Zen Master. Great work

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