Stropping pressure
Posted by cbwx34 - 14 Feb 2013 17:33

Ran across this video posted in another forum... thought it might spark a little conversation...

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What'd ya think???

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Re: Stropping pressure
Posted by PhilipPasteur - 18 Feb 2013 21:43

BluntCut wrote:

Fresh sharpened an edge with dmt benchstone all way to 3um, measured angle with caliper. Rubbed on diamond charged strop, measured angle with caliper (iffy read) and use sharpie marker + loupe edge-lead on dmt EE.

First, please do not take this as anything other than a discussion. Sometimes my writing style makes people think I am challenging them. This is not the case, I am truly trying to understand.

How do you measure an angle with calipers. In order to calculate angles for a triangle with any certainty, you really need to know the length of all three sides with precision. I wonder how you do it with your calipers. I would think that you would need to know the thickness of the bevel at a certain point, and be able to accurately measure each side of the bevel precisely from the point where you meaured the thickness. As you mentioned, this is a real iffy thing. I think it is beyond my skills to take such measurements, even with my micrometers, to an accuracy that would get me within tens of degrees, at least, when solving for the angle at the edge. Now some may be able to do this and get sort of "in the ballpark" solutions when the bevel is a couple of millimeters wide. I think it would be almost impossible with rounding that is likely in widths of fractions of a millimeter.

So what am I missing? If there is a technique to do this, it would be valuable for everyone to know it.

One other thing to clarify for us if you will, are these statements about angle changes when you are sharpening by hand... the way you were in (I think) the third video, or are these tests done on the EP.

I have heard it stated that the best hand sharpeners "may" be able to hold +/- 2 to 3 degrees. Though I can get a decent edge on a blade hand sharpening, I am not sure I do that well. I also have a hard time with repeatability between edge leading and edge trailing angles. I have to really concentrate... I could never get even close without looking at the blade....

If using the EP, I am sure things are tighter. But I never saw the kind of changes that you talk about when using the EP with HF1 or 525(both white compounds) on leather. Of course I never came close to putting 8 ounces, let alone 8 pounds of pressure on my strops.

I am not saying you are wrong, just trying to figure out why we are seeing such different results. Maybe if I understand your techniques better ...

I think that hand stropping expressly to remove metal is much different than finish stopping on the WEPS.

Sharp is sharp

Edges are around 90% durable compared to my edge-lead to 0.1um poly diamond stone.

Unfortunately, my idea of sharp, more than likely, does not match yours. In fact I have found very few people that can agree on, or even can agree on accessing, what it sharp. Worse, there are no real standards for sharp, nor edge holding/durability. So when you say that an edge is sharp...will push cut paper that is a very relative metric, as I can sharpen knives with what I see as seriously different levels of sharpness, but they all will push cut paper. When you say an edge is 90% as durable when sharpened on a balanced strop as your other edges. That is meaningless to me because I have no idea how durable your edges sharpened "normally" (edge leading) are.

Take a spyderco vg-10 or zdp-189 blade, strop with CrO 0.5um or 1um diamond at 0.5 lbs pressure. Oh do it for a few minute, I am sure you will get a wire-edge. To guarantee occurence, lower the angle to 20* inclusive. At this angle, I thinkg it's about 3x more difficult to get a clean edge without burr/wire/rounding.

I do this quite often. I have several knives from Spyderco in both of those steels as well as M390 and a few other 62+ Rc blades. I strop them in between sharpenings on the WEPS for maintenance, as I do

most of my knives. I have not yet detected a wire edge. I would see it if it was significant at 100X. I would sure know quickly if my edge went away after cutting the first piece of rope, cardboard, or tie wrap. This simply does not happen!

So, again, no right or wrong here, I just don't get it. Help me out.

Hey guys, I know that I have read that several of you use strops for maintenance. What kind of results are you getting?

One last question., Where does one find a *0.1 micron poly diamond stone*? I would love to get my hands on one of those! 0.49 is the grit advertised for the Shapton 30K, and that one is finer than frog hair....

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Re: Stropping pressure

Posted by BluntCut - 18 Feb 2013 23:43

PhilipPasteur wrote:

How do you measure an angle with calipers. ...

So what am I missing? If there is a technique to do this, it would be valuable for everyone to know it.

first, with heavy pressure and if rounding occurred, it either dull and or entry angle into cutting paper will be more obtuse.

Draw 3 lines using marker from spine to apex, with 5mm gap between line. triangle1: dialed caliper to 0.25, insert into blade next to line 1, slice across line to mark the triangle base, aid with loupe measure the triangle side. Repeat for other 2 lines, with 0.5mm and 1mm respectively. Stropped and measure to check angles before vs after.

One other thing to clarify for us if you will, are these statements about angle changes when you are sharpening by hand... the way you were in (I think) the third video, or are these tests done on the EP. I also stropped using EP then checked using marker.

I have heard it stated that the best hand sharpeners "may" be able to hold +/- 2 to 3 degrees.

Though I can get a decent edge on a blade hand sharpening, I am not sure I do that well. I also have a hard time with repeatability between edge leading and edge trailing angles. I have to really concentrate... I could never get even close without looking at the blade....

If using the EP, I am sure things are tighter. But I never saw the kind of changes that you talk about when using the EP with HF1 or 525(both white compounds) on leather. Of course I never came close to putting 8 ounces, let alone 8 pounds of pressure on my strops.

Once the angle maxed-out on the + a few degrees. That is the baseline angle. Since strokes at lower angle most likely won't hit the apex anyway.

I am not saying you are wrong, just trying to figure out why we are seeing such different results. Maybe if I understand your techniques better ...

My main goal for those videos was to make stropping simple, anyone can do it. Simple baseline is to make it sharps and not going dull when repeat & heavy pressure.

Unfortunately, my idea of sharp, more than likely, does not match yours. In fact I have found very few people that can agree on, or even can agree on accessing, what it sharp. Worse, there are no real standards for sharp, nor edge holding/durability. So when you say that an edge is sharp...will push cut paper that is a very relative metric, as I can sharpen knives with what I see as seriously different levels of sharpness, but they all will push cut paper. When you say an edge is 90% as durable when sharpened on a balanced strop as your other edges. That is meaningless to me because I have no idea how durable your edges sharpened "normally" (edge leading) are.

Percentage is subjective to how I tiered sharpness level. Tests & cutting styles are subjective also. 90% sharpness is threshold the edge cut or rip slice newsprint at 45* angle.

I do this quite often. I have several knives from Spyderco in both of those steels as well as M390 and a few other 62+ Rc blades. I strop them in between sharpenings on the WEPS for maintenance, as I do most of my knives. I have not yet detected a wire edge. I would see it if it was significant at 100X. I would sure know quickly if my edge went away after cutting the first piece of rope, cardboard, or tie wrap. This simply does not happen!

I do expect that you don't have any problem, since you use techniques that known to worked for you. Whereas 99.999% people in the world do not. In order for you to experience difficulty/challenge, that why I suggested go 20* inclusive or lower angle. When I pushed my Spyderco Stretch zdp-189 to 14* inclusive, its wire-edge is hell-ish to clean.

One last question., Where does one find a *0.1 micron poly diamond stone*? I would love to get my hands on one of those! 0.49 is the grit advertised for the Shapton 30K, and that one is finer than frog hair....

I posted how-to-make this stone on BF before. Basically heavy stock photo-paper, wet-it & wait, spread 0.1 polydiamond suspension/paste on it, heavy-pressure-roll-over using steel/ceramic rod to embed the diamond, wait 24hrs. Voi'la a stone which support edge-lead stroke (with care of course). You certainly can strop with this stone. Cost per 3x8 paper stone is around 10-20 cents, depend on diamond density. Oh, I did stropped on plain heavy-photo-stock-paper for 5 minutes, the coated white clay was too soft to abrade steel.

edit: here is the video where I used these paper diamond stones

youtu.be/ixfdpgbApuk

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Re: Stropping pressure

Posted by cbwx34 - 21 Feb 2013 13:03

Wow... a lot going on in this thread!

I focused a bit on the point of whether or not a burr can be formed by stropping. While I'm sure it can... and I think I remember this being talked about more when sharpening razors for shaving... for the most part on knives, I think leather does a better job of cleaning up an edge vs. forming a burr.

I noted two of the steels mentioned, VG-10 and ZDP-189 can be difficult to debur in the first place. They can also fool you into thinking the burr is gone, until you use it. My own experience... I've had knives that I've sharpened... thought were burr free, stropped on leather, then used only to find a burr. I think it was there all along, I just didn't detect it. My belief is supported by repeating the same without stropping, and again detecting a burr in use. Whether or not this is the case in Bluntcut's example is hard to tell... but in the end, what works for you is probably right.

A couple of older threads are worth reviewing...

Stock stone/strop progression . Razoredgeknives does a good job in the first post in indexing some of the photos showing edges at various levels.

A theory of how the WE pastes work. . Another thread with a lot of discussion and pics.

There's some other threads in the Stropping section worth looking thru for additional info. (If you find

something good, link it here.)

As mentioned, a lot of knife users maintain their knives with a strop. Over time, a touchup is needed with a stone or other abrasive, but I'm not sure that's a matter of the strop "degrading" the edge, as it is the strop not being able to "keep up" with the normal wear and use? Especially if you use a finer abrasive.

You both have given me lots to think about!

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