Micro Bevels

Posted by Geocyclist - 01 Jan 2013 19:40

How to you set a micro bevel?

I assume you completely finish the knife first, stropping etc.

1. In reference to the primary angle how do you set the micro bevel? I.e. 2 degrees greater than the primary angle.

2. What stone/progression/number of strokes to you use?

3. Do you strop the micro bevel?

4. How do you "touch" up an edge with a micro bevel after moderate use? Can you strop? Do you touch up at the micro bevel angle? Do you re apex at the primary angle and apply a micro bevel again?

5. Anything else I need to know about how to make a micro bevel?

6. When do you use a micro bevel and when not?

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Re: Micro Bevels

Posted by BrianM1 - 01 Jan 2013 21:39

I don't claim to know anything and I'd love to have this picked apart...

I was doing a couple knives for my brother-in-law today, one being his EDC. I've seen shark bait less mangled than this edge

The factory angle on it was 17~18 (no angle cube), and he uses this thing hard so what I did was finish the blade at the factory angle then up it 3 notches/degrees and just use the 800/1000 stones. It was easy to see the secondary bevel form and I even brought up a slight burr. I'm not counting strokes, but it wasn't that many (30 a side?) ~ and I don't own strops.

I'm hoping that this will maybe help the blade stand up to the punishment... if not, then I might be trying to track down a blade more suited to his use. Can't hurt anything and it's a nice starting experience.

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Re: Micro Bevels
Posted by KenBuzbee - 02 Jan 2013 10:23

1&4 I set my micro at 30° so I can quickly touch it up on a Sharpmaker.

2 Varies by need but generically, 1000 WEPS-> 2000 Naniway SS

3 Not generally

5 Just that it's a personal preference thing

6 Depends on the steel (how well it will stand a low angle) and how low I want that angle to be, but generally I micro bevel below 24° inclusive.

Ken

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Re: Micro Bevels
Posted by coryschnaufer - 02 Jan 2013 14:19

If your looking to convex your edge you should really check out clays video on you tube. I believe he does a chris reeves knife and it is extremely educational. I started with just one micro bevel and it helped but convexing makes a WORLD of difference. Seeing clay actually walk you through it step by step really makes a different also.

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Re: Micro Bevels
Posted by xuzme720 - 02 Jan 2013 20:52

Yes, it does! It's actually how I first learned to do my own Sebenza back to "factory" edge. I love the look that convex gives you!

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Re: Micro Bevels
Posted by KenSchwartz - 23 Jan 2013 06:33

A microbevel is just a tiny bevel less acute than the original bevel.

So you can make a microbevel from a single stroke of a high grit strop (and see it under a scope) or make a much larger one with a coarser stone too. The level of refinement, the number of degrees difference is up to you.

The purpose of a microbevel is to make the edge less acute. This gives you a more durable edge, trading acuteness for toughness. You typically use it if the existing angle is too acute FOR THE TASK you wish the knife to perform.

You can do a series of less and less acute microbevels and combine or blend them into a convex grind, or just use a softer substrate to generate a convex grind (with precision when using a Wicked Edge. For this task, I utilize neoprene mounted on a paddle with an abrasive substrate (nanocloth or Kangaroo usually) over it with abrasive applied (CBN or diamond usually). Harder substrates produce less convexity.

Ken

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Re: Micro Bevels
Posted by jendeindustries - 30 Jan 2013 03:55

Geocyclist wrote:

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Excellent questions!

A micro bevel has two general definitions, IMO.

The first is a raised (more obtuse) angle formed with minimal amounts of strokes after the majority, if not all, of the sharpening is finished. For example, if you sharpen a knife at 20 degrees per side through a progression of paddles and then take the final grit and raise the angle 1 or 2 degrees for 10-20 strokes, you will have a micro bevel.

The second is an actual secondary bevel, formed before the final grit, or is retraced at the higher angle after the full progression is completed at the lower angle. For example, if you sharpen (or thin) a knife at 18 degrees per side on the diamonds, then increase the angle to 20 degrees on the ceramics/Choseras for the final edge. OR, if you progress at 18 degrees per side throughout the full progression, then raise the angle and redo the entire progression (or majority of) again at 20 degrees. This creates two distinct bevels.

Technically, they equal the same thing, but the first micro bevel is used more to confirm that the edge of the edge has been abraded, or the burr has been fully removed . The second is for more durability, strength and ease of cutting.

The third, and less talked about micro bevel is when the arm or knife slips and you don't realize it! 😉

When touching up a micro bevel, it should be done at the micro bevel angle, since that is the one with the cutting power. If the edge is still intact (no chips) and is just dulled, then a few strokes of the final grit should suffice (there is no official number, but I'd start with 5 light alternating strokes, then increase in sets of 5 if necessary).

The micro bevel in both definitions will eventually become too obtuse and will need to be fully redone, but you should get several touch ups before that happens. If you have the time and inclination, you could also equally strop the lower angle as a maintenance step to try to keep the same ratio of thickness at the edge and behind it, but that kind of makes touching up like work, IMO.

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