Why water stones?

Posted by Scott Sherman - 20 Oct 2012 08:42

I just recently became a devotee of self sharpening a couple of months ago. Before that, I thought only experts could sharpen my knives because there was such a dizzying array of methods and materials by which it could be done and until somewhat recently, it was all done freehand by craftsmen who probably learned at the hand of other experienced craftsmen.

Enter guided systems like WE (and others) which made expert results obtainable by inexperienced, unskilled knife collectors or someone with a collection of dull kitchen knives which is what got me started. So now I have bought into this WE system and decided to get a PP2. The PP2 was put together at a time when the 1200-1600 ceramic stone was not available due to some production problems (which now seem to have been resolved). This left a gap in the progression of abrasives between the 1000 grit diamond stone and the next available micro fine ceramic stone which shipped as part of the PP2.

Because of that gap, I began to consider the available options including the Chosera water stones made for the Wicked Edge guided rod system. The 2000-3000 and 5000 -10000 sets would very capably fill that gap but going from the proprietary (easy to use) WE stones to the Japanese water stones was messy and the stones have different dimensions making it more complicated to set the bevel etc.

However, having said all that, I have noticed among some here in this forum, there is a preference for using the water stones and I could not help but wonder why. So I would love to hear from those who prefer and use the water stones or who are considering buying them or perhaps you bought them to fill the gap and no longer use them because the 1200-1600 ceramic stone is now available. I would appreciate it if you could share your thoughts and experiences. What do you like about them? Do you regret getting them or if you did would you never consider using the diamond and ceramics. Perhaps you only use water stones, would you also get some of the diamond or ceramics now to supplement your water stones?

I know there is a different feedback and user experience with water stones , but to my untrained eye, you seem to be able to obtain about the same results with the dry, easier to use diamond and ceramic stones, or am I missing something? I am guessing that some here only used water stones freehand before the guided rods were introduced and liked being able to use them with the new rod system and just stuck with the water stones. If so, what is your feelings about diamond and ceramic stones vs water stones?

Thanks for your feedback and insight I am hoping others here are also curious and may learn something here.

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Re: Why water stones?
Posted by PhilipPasteur - 20 Oct 2012 18:57

You can get the shapton stones directly from Ken Schwartz. They are quite expensive, even significantly more money than the Choseras, which are not cheap in their own right.

I would be that what you saw on Tom't site is the 30 K Shapton bench stone.

First someone has to buy the bench stone, then cut it, then mount it on paddles. You can easily see where it gets real pricey.

As I said, I don't have the ceramics yet. I can't say exactly. but I think you will get more polish out of the 10K chosera stone, even though at 1.76 micron its grit is larger than the finest ceramic. The only way to know for sure is pick up a set and give it a try

Phil

Scott Sherman wrote:

Also as a side question a bit off topic. I noticed in an old thread on this forum, WE used to sell Shapton stones about 8 months or so ago, but today they appear nowhere on the site and even discussions of them are mostly found in older threads. I went to the Jende site and found that they have the 30k stone not mounted on a WEPS paddle for $400, so a wild guess would be that they were not selling because of the cost. Or is it that you can do the same thing with Chosera for a good deal less cash lay out?

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Re: Why water stones?
Posted by DAUG - 21 Oct 2012 07:40

Geocyclist wrote:

DAUG wrote:

As for the progression, and this is a work in progress;

1. Diamond plate 100 (as necessary) - 400 burr development

2. Diamond plate 600 - 1K sharpmening

3. Naniwa Super Stones 2K - progression

4. Balsa Strope - 3.5 uM (green) Polishing

5. Naniwa SStone 5K - Polishing

6. Shapton 8K - 12K Polishing (optional)

Why do you strop between stones?

Geocyclist,

Based on the WE Grit Comparison Chart;

www.wickededgeusa.com/index.php?option=c...eneral&Itemid=46

I strope between the Naniwa stones because of the 3.5uM (Green) size falls in between the 2K and 5K micron size. At 5K - 12K grit size you are already polishing, so stropping becomes unnecessary, although you can always choose to do so to get the desired affect. Also note that I'm limited in my uM sizing (strope wise), since I don't have anything smaller than 3.5uM. Although I've been considering some diamond sprays, the kangaroo paddles, and the PP2 upgrade, etc. for the next purchase. What stops me from doing it right now is my desire to balance my want of a mirror finish with the economic need for good enough, and good enough is winning at the moment.

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Re: Why water stones?
Posted by Geocyclist - 21 Oct 2012 11:35

Daug, that was my first guess is you were going by grit size. I have looked at the grit comparison chart and see that stopping does more polishing than anything. I was wondering if you "undo" the polish you get after the first stropping with stones but if the next stone is fine enough then I guess not. I had always thought you "finish" with strops and don't go back to stones.

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Re: Why water stones?
Posted by KenBuzbee - 21 Oct 2012 11:52

WayneNicklin wrote:

You have to have an angle cube.

Just got my angle cube. How close does the angle need to be? Spot on? +/- .1? It seems to shift a bit. Hard to nail "spot on"

Ken

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Re: Why water stones?
Posted by DAUG - 21 Oct 2012 12:04

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I experimented by doing both a stropping in between the 2K - 5K progression and after the 8K - 12K progression and found no difference in reflectivity and shine. Granted I did not continue stropping past 40 strokes just to see the final results of each.....end result, no difference. Though I would suspect that if I spent more time on the final stropping process that it would shine up nicely with either progression.

Conclusion, it's shiny enough for my needs and the edges are wickedly sharp at this point that progressing to smaller uM I've reserve for those very special knives. For functional knives, like my everyday kitchen knives, no further progression past the 3.5uM stropping is necessary.

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Re: Why water stones?
Posted by PhilipPasteur - 21 Oct 2012 12:13

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I agree that it is typical to strop when you are done with your stone progression. Stropping does different things to the blade independent of the grit size in use. We have seen the the photos, but even more it is intuitive that there will be a bit of convexing of the bevel(not rounding the edge) happening when stropping due to the give in the media. When you go back to the stones you basically remove that,to get back to a flat bevel all of the way to the edge.

It seems a bit couterproductive, doesn't it? I often go out to the 12K SS which is at about a micron then back to 6 and 3 micron strops (DMT diamond paste) because I like the edge that I get better for many daily use tasks. This probably adds a little micro scratching, but at a macro level the edge is still very mirror like.

Having said that, there is no wrong way to sharpen as long as you are ending up where you want to be.

There can be qautified, by number of strokes required, the more efficient way to get to the same point.

Having to create and then remove a convex micro bevel, likely is not the most efficient way to go.

Also remember, grit size is only one component of what happens when you use abrasives on steel. Often , at least whe using grits sized fairly close together, it is not the most important factor to your results.

Daug try going through your stone progression sometime then going "back' to your strops. See what you think, and please let us know how it goes.

Phil

Geocyclist wrote:

Daug, that was my first guess is you were going by grit size. I have looked at the grit comparison chart and see that stopping does more polishing than anything. I was wondering if you "undo" the polish you get after the first stropping with stones but if the next stone is fine enough then I guess not. I had always thought you "finish" with strops and don't go back to stones.

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Re: Why water stones?
Posted by DAUG - 21 Oct 2012 12:32

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Philip,

I will do just that shortly with some practice knives today and I'll report back when I've completed it....and thanks for the suggestion!

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Re: Why water stones?
Posted by wickededge - 21 Oct 2012 12:37

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Phil makes some nice points. There is also a fair argument to be made for using different tools and techniques to shorten the path to removing scratches, and sometimes shaping the bevel at very slightly differing angles can help. The scratches you're trying to remove have a specific depth and the goal is to eventually get to the bottom of the deepest ones, hopefully by abrading away the ridges until you get to

the "valley floor." Using a crosshatch pattern works well because you can attack the ridges from their cross sections, which is good because you have less metal to push and the apex of the ridges is more fragile. A similar affect can be achieved along the length of the ridge if you create some faceting or even a slight curvature, which the strops will do. It's like sawing a log; after the first bit of progress through the cut, the blade has to cut through ever more material and it's helpful to change the angle of attack slightly, lessening the contact area and creating a new vertex within the length of the cut. Changing the angle again makes it easy to focus all the force of the teeth on the new vertex and you quickly reduce it while also creating two new vertices, which are then easier to attack. I found using this technique is often helpful in getting to the "valley floor" more quickly. Incidentally, I found that taking advantage of the slight play in the old arms was helpful in the same way because I could easily change the angle of attack by adjusting where on the stones I was putting pressure. Once I'd gotten to the proper depth, I'd just change my stone holding technique back to applying pressure consistently and I'd have a nicely polished, flat bevel.

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Re: Why water stones?

Posted by DAUG - 29 Oct 2012 01:53

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DAUG wrote:

Philip,

I will do just that shortly with some practice knives today and I'll report back when I've completed it....and thanks for the suggestion!

PhilipPasteur wrote:

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Daug try going through your stone progression sometime then going "back' to your strops. See what you think, and please let us know how it goes.

Phil

Ok, just completed several practice knives (Butcher knife and Machete) this weekend to see if I can answer some of the question posed by Phil. First off my goal was not only to functionally sharpen these knives, but to see if I could get them to a polished finished without stropping, and then to try it with a final stropping step. Here's the summation of the progression for the knives that where sharpened:

The 1st progression would be going from, 1) --> 2)

The 2nd progression would go from, 1) --> 3)

The 3rd progression would go from, 1) --> 2) --> 4)

The 4th progression would go from, 1) --> 3) --> 4)

1) Diamond Plate;

100 - general profiling, burr development

200 - burr development

400 - progression

600 - progression

800 - progression

1K - final progression, dull scratched finish, but otherwise very sharp at this point

2) Wet Stone I; custom platen

2K - Naniwa Super Stone, polishing

5K - Naniwa Super Stone, polishing

3) Wet Stone II; custom platen

8000 - Shaptons, polishing

12000 - Shaptons, polishing

4) Strop; Balsa wood paddle

5um - Diamond paste, final polishing

3.5 - Diamond paste, final polishing

I did not take pictures during this process, and I'm sure it would have been helpful when describing these finishes, but hey....I don't even know how to attached them to this thread yet. So will have to do it next time once I've learned how.

Progression through the diamond plates were routine from re-profiling, then cutting, and final sharpening took no time at all. Progression through the diamond plates took no more than 45 min. at most to complete. My diamond plates, I can say, are well broken in by now with the resultant edges as wickedly sharp and toothy at this point.

The progressions through the Naniwa wet stones [2] was done wet, and more importantly the development of a black slurry was imperative for the polishing process. Amazingly enough, I think at this point the Naniwa stones finally did break in after 10 min. of wetting and slurry making, and I was able to polish the first knife's edge (Butcher knife) to a beautiful smooth shine at the 2K grit. There were areas that were cloudy at first, but adjusting the angles made quick work of those dull areas when I first wiped off the slurry, but with each passing stoke it was getting brighter and shiner than I've ever gotten them before. Mind you this is even without the stropping process. The 5K wet stone was done the same way; wet it down, develop a slurry, and polish lightly or with pressure (as you see fit) to finally get at the deeper scratches. Shine was all there, and no stropping required.

The progression through the Shapton wet stone [3] was done the same way as [2]; wet the stone, develop a slurry, and polish away. It took 2-3x longer to get a polish shine on the Machete blade and I attribute this more to the jump required to go from the 1K diamond plate then to the 8K wet stones ability to remove the deep scratched that the 1K plates left behind. When it finally shined, the shine was pretty bright with the Shaptons and it was a lot smoother in final finish with less scratches than the Naniwa's, but overall the Naniwa's cut very quickly and effectively throughout this experiment.

I was very pleased with both stones in terms of the end state of the blades being polished. The Naniwa's are quicker in terms of cutting power for sure, but the shine of the Shapton's are definitely less scratchy (as I would expect).

Then finally went to the stropping stage [4] for both blades, and I've got to say that it definitely is not required at this point, since both blades were extremely sharp, and both very polished.....but for the sake of this experiment I continued. Stropping with the 5 um balsa paddle did scratch up the finished shines of both blades. Progressing to the 3.5um diamond paste made both blades scary sharp, but it took quite a bit of time to smooth out the scratches. When it was finally done, it was shiny again and now much more scary sharp than before.

Conclusion: Bottom line the wet stones themselves will work to get me the sharpest edge and polish that I want. Stropping at some of these grit level does not seem necessary, but it does look to me like I don't have enough stropping range to make a conclusive argument to strop or not to strop further. The same can be said of each stone brand in my kit. I don't have enough of either the Naniwa or Shaptons to say conclusively which is best, but each provides enough range to progress with polishing and sharpening to my desired affect.

So am I done, no not really.....I would love to get more range of Naniwa stones for sure after this rest. but the Shapton's make me curious what it would be like to have the lower grits to progress through. Then ultimately, I would like to experiment with stropping with the Kangaroo leather with smaller grit sizes to see the final affect. But for now at least I know I have the materials to get that polished look that I'm looking for.

This experiment was fun, but it took a long time to get here....but more importantly I learned a lot of things about the capability of the WEPS PP1 system and it made me proud to own one.

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Re: Why water stones?

Posted by cbwx34 - 29 Oct 2012 05:57

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Nice writeup... I like the way you documented it.

I'm curious why you didn't consider doing a progression thru the Naniwas and Shaptons... a 1-> 2-> 3 before (or without) stropping? Seems that with the grit levels you have in each, this would be a natural progression.

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