Angle cube seems to vary quite a bit...

Posted by Scott Sherman - 02 Nov 2012 22:08

I know there is a +/- tolerance of .05 degrees using the angle cube, but I seem to get quite a bit more than that when measuring between stones.

What I mean by that is that I calibrate the cube to 0.00 and then attach it to a stone then set the angle to some amount (for example 16.00 degrees). Then repeat this with the other stone. After several strokes, I can recheck it and find that the stones are now off by about +/- .20 degrees. This also occurs when changing the stones from one set to the next.

Bottom line is that there is a tremendous inconsistency in the angles being used to apply the paddles to the blade. Now, to be clear we are mostly talking about pretty small changes in the angle but in a precision tool, it seems like it should be more consistent to me. Or am I making a mountain out of a mole hill?

I know many don't even use an angle cube and just set the paddles using the calibrated guide rod. Can you get the same result essentially when the angles vary by a quarter of a degree between stones or do you need to continuously re-adjust the stones every time you change them?

Sorry for rambling, but I was not quite sure how to articulate my observations simply. Have any of you noticed this with your angle cube?

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Re: Angle cube seems to vary quite a bit...

Posted by DAUG - 03 Nov 2012 04:29

Hi, Scott

Interesting you should bring this up, since I've noted the same change in offsets (+/- 0.20 degrees or greater) as well. And as I've gotten more practice with my WE System I've noticed the difference in actually 2 instances (who knows, some may experience even more and they can share that with us). 1) The change in angle after I've re-profiled or completed the initial abrasion process, and 2) when I transition from diamond plates to wet stones. Just as a reference I have the Gen II PPI system, and being that it has a little play in the arms I expected that it would be vary by quite a bit.

As I first started using my WE System I did not recheck every angle when I put a paddle grit through a progression, but now that I've gained more experience, I've learned to recheck my angles out of curiosity and it does drift a little.

As for the 1st) instance, I attribute the difference to the grinding/shaving affect of the steel in my re-profiling effort. I suppose I need to improve my technique at removing as little metal as possible as suggested by other more experienced members.

As for the 2nd) instance, I attribute the difference to the height variability (thickness) of my wet stones as compared to the low profile of my diamond plate paddles. It does change the angle reading and I'll usually readjust accordingly to get back onto the desired angle finish.

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Re: Angle cube seems to vary quite a bit...

Posted by cbwx34 - 03 Nov 2012 09:31

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I have a few thoughts on this…

First, when taking a measurement, make sure how you measure is consistent… that you're putting the angle gauge in the same spot on the stones, holding it against the same area on the knife, etc. Also, make sure that the angle gauge is straight up and down, if it's angled it will read different. (Not the angle you're trying to measure, but the angle in the other direction... along the blade.)

Second, what do your results look like? If you're not seeing issues, than I wouldn't worry about this. My view is, guided sharpeners like the WE provide a high level of consistency and repeatability, and that small variations in accuracy don't seem to matter… in use they seem to take care of themselves. (If that doesn't make sense, let me know and I'll expand on it.)

Daug mentioned a change between the diamond and wet stones. That's to be expected, and one of the reasons the angle gauge is needed. Like he also mentioned, the wear and thickness of the wet stones is different than the diamonds, and that's the reason.

My feeling is, there should be enough "give" in the system to account for some of the minor changes between stones. (Not a lot... just a little bit.) In use, this allows the stones and strops to "find" the bevel and properly sharpen it. If you're seeing noticeable differences in the bevel, than yes, there's a problem that needs to be addressed. But, if at the end, you have a nice bevel, and of course a sharp knife, then I wouldn't consider this an issue. Look no further than the numerous examples of edges that were made before the angle gauge was even

introduced.

Hope this makes sense… if not let me know!

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Re: Angle cube seems to vary quite a bit...

Posted by Scott Sherman - 03 Nov 2012 11:01

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Thanks for responding.

I use the angle cube on each and every stone and actually on both sides when I change. I think the stones are pretty close in thickness from one to the other, especially since mine are new. I am only referring to the diamond stones as I know the Whetstones are thicker which will effect the angle. I should put a caliper on them to see if this is a true statement. But assuming, they are about the same, there should be little (or no) change in the angle from one stone to the other. Again, allowing for a variance of about +/- .05 for human error in positioning the paddle, which seems unavoidable given all the variables in positioning the rods/paddles and the cube on the paddle.

I make every attempt to align the cube in the same position on each paddle to keep it as straight as possible and to align the paddle with the riser to use the same relative location with each measurement. Some times there is no change in angle between stone changes but there seems to be no consistency as other times there is change and sometimes a bit dramatic.

I suspect part of the problem is that the angle cube is SO accurate that it registers every minute change to over a hundredth of a degree, which is good, but a bit frustrating because of all the variations that come into play in positioning the paddle relative to the riser and the cube relative to the paddle.

It seems logically that the angle would be pretty important, but as Curtis said, people were getting good results before there was an angle cube.

So, in conclusion, my question then is, should I measure once and put the angle cube away until I move from the diamond stones to the ceramics (or whetstones for those who use them), then measure the new medium and put the cube away, or try to keep the paddles as close to the exact angle I used from the beginning?

I want to get the best results I can and was hoping that others have already experimented in using the cube to meticulously measure and adjust vs measure and grind and just assume your paddles are set correctly. Are those of you who just use the (new ball joint) guide rods with the calibrated slide rod and no angle cube happy with your results? Especially if you were doing this and then started to use an angle cube. I may have to try this because I find the use of the angle cube to be a bit frustrating but was hoping to know what my expectations should be.

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Re: Angle cube seems to vary quite a bit...

Posted by DAUG - 03 Nov 2012 11:26

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For me it would be the former, since transitioning from one abrasive type to another I would want to know how far off I was. When I first started using the wet stones it becomes apparent upon transition that if I did not check the angle, then only the lower portion of the blade's edge would polish up leaving the edge itself with fine scratches. That was the first time I noticed the angle change.

Besides, I'm a set it and forget it kind of guy, and if I'm doing a lot of knives, I will not be taking the time to set angles at every paddle change...not practical. And as Curtis mentioned there's enough "give" in the system for you to get your desired results.

But to each his own madness, I always say.....

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Re: Angle cube seems to vary quite a bit...

Posted by PhilipPasteur - 03 Nov 2012 12:07

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I think that if you are within 0.5 degrees of variance you are just fine.

I typically set angles for the diamonds and go through that progression without using the angle cube at all..

Unless I notice that something hase come loose.

I then set the angles for the Choseras and go through that progression. Then, reset for stropping and I am good! (I think ;0)

I do notice, as Curtis said, if the stones/strops do not rest against the blade in the same spot, I mean exactly the same spot, there can be more than a 0.20 difference in the readings. 0.2 degrees is pretty minor in this application...I think!

Phil

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Re: Angle cube seems to vary quite a bit...
Posted by Geocyclist - 03 Nov 2012 12:47

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Yea, I don't think 0.20 is a big deal. I had read before the cube is only good to +/- 0.10 so 0.2 within the natural capability of the cube.

I would suggest this experiment:

1. Place cube on WE base and calibrate

2. Remove, place back and measure

3. Measure paddles both sides

4. Measure an angle of something that doesn't move and is not 0 degrees, like a wall etc. to use as a control. Since the WE base will be calibrated to 0 we want to measure something else constant that is not 0 degrees.

Sharpen a bit

Repeat steps 1-4, but don't calibrate. If you get the same the reading on the WE base + control surface the cube is good. If the readings for the paddles are off then something other than the cube changed.

Another suggestion is practice measuring the paddles, measure, remove the cube, remove the paddle from the blade, measure again, see if you can be repeatable by taking the stone away, putting it back and getting the same measurement.

Finally, 0.1 degrees is so small any trash on the blade or stone could throw the reading off. How much does adding a sheet of paper between the stone and edge make?

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Re: Angle cube seems to vary quite a bit...
Posted by Scott Sherman - 03 Nov 2012 12:48

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I tend to agree with you Phil, I am going to just relax a little on the minutia and focus on the bigger picture. I guess I have just for most of my life learned measure twice, cut once when it comes to carpentry and other things in life. So here I measure and then verify and find that while nothing has moved, the measurement has changed. I guess this activated the OCD in me. Thanks for the feedback, it is interesting and helpful to me and I hope at least someone else who may read this.

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Re: Angle cube seems to vary quite a bit...

Posted by Geocyclist - 03 Nov 2012 13:06

I would agree with there, if the results are good that's the point.

If you form a bur with each stone, at least you know the angle is not becoming shallower, it could be getting more obtuse, but I think you would see it in the edge if it was too much.

An old geocaching saying is (not that geocaching is that old) "A man with one GPS always knows exactly where is he, a man with 2 is never quite sure". A GPS is very accurate, but 2 will never have the same reading exactly.

So don't buy a 2nd angle cube or you will go crazy.

BTW, I have two handheld GPS's, but I try not to use both at once.

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Re: Angle cube seems to vary quite a bit...

Posted by PhilipPasteur - 03 Nov 2012 13:41

I think most folks would agree that it is really not a good idea to form a burr with each grit.

Just a heads up. With the several hunderd knives that I have done on the WEPS, I have never even tried to form a burr with each grit. Just my take.

If you profile with your diamonds, whatever the grit, pull a burr on each side once. Just sharpen with equal strokes per side after that. Trust the system. When I have done the setup correctly, it doesn't let me down. You really spend too much time and remove too much metal in trying to pull a burr at each grit.. at the finer grit levels, it becomes an excersize in frustration.

Check the forum. This has been discussed several times.

Phil

Geocyclist wrote:

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