

BE SAFE - Safety Tips of the Month (Gary Guenther)

Thoughts on the Oneway Wolverine Vari-Grind Jig

Does your chewing gum lose it's flavor on the bedpost overnight? No? Just thought I'd ask.

Is your Vari-Grind sharpening jig totally safe? Another silly question? Actually, no, and no.

The Vari-Grind jig holds the gouge shaft and is supported by the Wolverine V-arm. It is used to help grind bowl gouges or spindle gouges reliably with fingernail shapes, side grinds, etc. It is not foolproof – you can still get ugly shapes if you are not careful and constantly monitor your profile. The important aspect is that the turner can precisely repeat the shape each time the tool is ground, and very little material need be removed to achieve a fine cutting edge.



So what about safety? The fact of the matter is that there is potential for the gouge to jam into the wheel with disastrous results, and people have reported being injured* using the jig improperly. Don't let anyone tell you otherwise. "How does that happen?", you ask. Well, it happens when the gouge tip gets too close to the center line of the grinder wheel – then WHAM! Your tool is bouncing around on the floor, your hand is bleeding, and your grinder is shaking because the expensive wheel has a big chunk missing. This can happen through lack of knowledge, bad planning, inattention, carelessness, if the gouge slips in the jig, or if the arm of the jig slips its angle. We'll try to take care of the first item here, and, hopefully, as a result, you'll take care to avoid the others.

The *rule* is that you have to keep the tip of the tool (where it meets the stone) *safely above the centerline* of the wheel, or bad things will happen. This is not a suggestion, it is an absolute safety requirement. It is dangerous if you either start too low on the wheel on purpose, through inattention, or if something slips loose in the jig. It's pretty easy to avoid the latter by taking the time to pay attention and test it every time before turning on the grinder. Add this to your safety checklist! This is sort of like the grinder equivalent of rotating the work piece one full revolution on the lathe before applying power. From my experience, in my jig, the shaft is very tightly held, and the more probable slippage event is that the leg angle could shift if the wing nut is only hand tight (as it often probably is).

What conditions would lead you to starting too low on the wheel on purpose? If you play around with it a bit, you'll find that, in general, the gouge tip is lower on the wheel when, in order of importance, a) the nose angle of the gouge is blunt, and b) the angle of the leg of the Vari-Grind is smaller, i.e., closer to parallel to the tool shaft. It is noteworthy that the effect of the extension length of the tip of the tool out of the jig (for say, 1.75-in. vs. 2-in.) is too small to measure, at least on my 8-inch wheel, and may, indeed, be zero – I don't know the theory. Basically, you have to start worrying if you find yourself pulling the V-pocket arm (of the Wolverine base) too far out.

Lest you discount this as a meaningless philosophical discussion, I will point out that this is not some kind of rare or unusual case -- I've been flirting with danger with one of my own bowl gouges. The problem comes when you are sharpening a gouge with a very blunt end – the kind

of steep angle you want on a gouge used for going across the relatively flat area in the bottom of a bowl. I have a 5/8" Crown M2 that I use for that purpose, and it's cut to a nose angle of 78 degrees. I like it that way and want to keep using it. When I got my sharpening system from C.A. Savoy (to this day, the single most important turning-related purchase I have ever made), he recommended a Vari-Grind leg angle of what turns out to be 35 degrees. With that setup, I am safely above the centerline, but not by much, and I take great care to use a very light touch (as we should anyway, of course). When resharpening, the angle will always change by a small amount. I intend to be aware to make sure this wanders in the safe direction of a slightly less-blunt angle, say 75 degrees.

Many professional turners sharpen by hand, without a jig, because it is faster, but also because they do not like the fact that the wings of a gouge ground using the Vari-Grind have a smaller (sharper, catchier) angle, and using such a tool requires a more complex hand/wrist motion (as was demonstrated to us by Stuart Batty). They want a shape in which the wing angles are (nearly) equal to the nose angle. There is a lot of recent information in print about the Vari-Grind – far too much to go into here (it would make a good future YMMV). Let it just be said that the word is out that, in order to achieve nearly equal angles for the entire cutting edge, the Vari-Grind leg angle should be set to 23 degrees. [FWIW, if you own Doug Thompson gouges, the angle he recommends via a diagram is 40 degrees. This leads to very sharp wings. You may want to experiment with a smaller leg angle.]

Recalling the above discussion, you will not be surprised to hear that if I were to change to a 23-degree leg angle on my 5/8" Crown BG, I would find myself right on the centerline and having an unfortunate event. It would be easy for someone to do this if they were unaware of the information on this page.

To recap: 1) the Vari-Grind is not inherently safe; 2) if you use it incorrectly, you can have an accident; 3) using it safely means, among other things, ensuring that the gouge tip touches the grinder wheel above the centerline of the wheel by a reasonable distance; and 4) if your setup puts you too low on the wheel, you are going to have to reduce your gouge nose angle (make it sharper) or increase the angle of the jig arm to a safer value. Finally, I recommend that you draw a heavy, black horizontal line on the side of your grinder skirt at the axis of rotation. Mine now has one. This will help make you aware of the location of the centerline, and your proximity to it, as you set up to sharpen.

The person reporting the injury noted that he felt uncomfortable because the gouge was too close to the centerline of the wheel, but he went ahead anyway, and WHAM. As we always say, "If it doesn't look right or doesn't feel right, STOP!" Take another look. Rethink. Do something differently. Call a fellow MCW Member and ask a question. Above all, BE SAFE.

And remember, for safety, you can't roller skate in a buffalo herd. You herd it here.

*www.woodcentral.com/cgi-bin/turning3.pl?noframes;read=186254