

## Safety First – Do you take your bench grinder for granted? (Gary Guenther)

So the bench grinders used for sharpening turning tools are inherently safe, right? It's OK to just walk up to one and hit the "on" switch and jam a tool in, right?

Not!

I'm pretty careful (surprise!) but I carelessly took a little skin off a finger last month on my grinder. It was minor, but could have been worse, and it got me to thinking about all the things that can go wrong. A bench grinder is a "power tool", and power tools are dangerous, by definition. Any power tool taken for granted can and will be dangerous.

Here are some thoughts about proper use and specific dangers.

- Is your grinder in a good state of repair? Are the wheels balanced and running true? If you have had an "event", the wheels should be dismantled and very carefully checked for cracks before being spun up again. Is it mounted securely and at a good height so you can use it comfortably? Is it well lit so you can see what you're doing? Do you know what you're doing? If not, you really shouldn't be using it. Get instruction first.



- Many of you, who use a bench grinder for shaping and sharpening lathe tools, may have a Oneway Wolverine Grinding Jig set up on their grinder platform. It's a very effective system, and it just makes sense. The VariGrind jig that matches up with it is, for me, and just about every turner I've ever met, the most accurate and efficient tool to use for sharpening gouges. Like any other tool, the original VariGrind can be used safely if all the proper precautions are observed. One must always remember, however, that you're poking an adjustable metal point into a pocket, where it all needs to stay, securely and firmly, and then sticking the attached sharp metal shaft onto a narrow, rapidly spinning, brittle stone wheel, from which the gouge tip can easily fall off the side. It has to be used with due attention and care, every time, even if you're tired or distracted. If you're concerned about the the safety of this version, the VariGrind2 is more constrained, but I have read that it can be difficult to set up and wears out the center of the wheel more quickly.

- Is the area around and under the grinder clean? In particular, is it free of wood curls and dust that could catch a stray spark? Similarly, there should not be any steel wool or oily rags nearby. Wood dust and steel wool and oily rags can ignite and burst into flame, sometimes long after you have stopped sharpening. Google search on "steel wool and sparks" if you haven't seen that one.

- Before you even approach the grinder, or the lathe, you should consider what you are wearing. Remove all jewelry. If you have long hair, tie it up securely. This one cost a Yale student her life a couple years ago at a lathe. Make sure you have no loose sleeves, shirt tails, or any other clothing that can become entangled when you approach the grinder or the lathe.
- Use the S.A.F.E.R. protocol, modified slightly for grinders (below), *every time before* your turn 'on' the power switch.

**S=Setup:** Some of the worst accidents with a grinder happen when a tool is being sharpened with the shaft too close to horizontal, and the tip gets pulled through from the upper side of the wheel to the lower very quickly and destructively. This can happen with the VariGrind jig. You really don't want that to happen. The tool and jig can go flying uncontrollably, and can break the wheel. You certainly don't want to be standing in front of a disintegrating stone spinning at 1800 rpm! The solution is to mark a horizontal line on the wheel cover, at the center of the wheel, with a wide, black marker. During 'Setup' of the jig for sharpening each tool, make sure that the contact point of your tool tip does not approach too far down, close to the level of that line. I stay at least an inch away, and that's getting unsafe. The closer you get, the lighter your touch should be.

**A=Aside:** Stand Aside. As at the lathe, do not stand in the line of fire (of either spinning wheel) when you turn the grinder on (or even thereafter). Life is not fair, and bad things do happen. It may be rare, but stones do crack and fly apart. Do you want to take even a small risk when it's so easy not to? It should be second nature to stand aside at the grinder just like you do it at the lathe.

**F=Fasten:** Make sure everything is tight and where it is supposed to be. If you're using a platform, make sure the angle screw is tight. You don't want that flopping down onto the spinning stone! If you're using a jig, make sure the v-basket adjustment is tight, the tool is firmly held in the jig, and the adjustable jig leg is very tightly secured. You don't want to be there when a VariGrind leg slips on you. Additionally, if you're only going to use one wheel for a while, remove the platform from the other side so you don't have to worry about where it is or what it's doing.

**E=Eye Protection:** Simply put, Wear Your Face Shield! You're standing in front of a rapidly-spinning, brittle hunk of stone with a sharp piece of metal! Like, duh!

**R=Rotate:** As with the lathe, rotate the wheel manually to make sure everything is clear, on both sides! It's often the wheel you're not paying any attention to that can get you into trouble. If you have moved a platform up against a wheel for "compact storage", it's not a good way to start the wheels.

OK, that's a good beginning, but we haven't even turned the grinder on yet!

- A bench grinder will remove quite a bit of skin very quickly, so pay attention not only to where the tool tip is, but where your fingers are too. A grinder doesn't make a nice clean cut that can be sewn up or glued back together. It removes bulk material. That makes a nasty wound.
- If you're working freehand and swinging the handle close to the grinder, try to use the wheel that keeps the handle away from the other wheel because you're bound to lose track of where the handle is while concentrating on your sharpening stone.
- Grinding freehand is very different than working on a platform or with a jig. It is much less controlled and hence less safe unless you know what you're doing and do it carefully, every time. There's the matter of support. Keep the platform close to the wheel, just as you keep the tool rest of the lathe close to the work piece. Jamming the end of a sharp piece of metal into the approaching face of a rapidly-spinning, brittle, abrasive stone is not an inherently safe act. Just the opposite – it's an accident looking for a place to happen.
- Use a light touch. There's a big difference between sharpening and grinding, and we're usually doing sharpening, unless we're purposely changing the entire profile of a tool. Sharpening should be as gentle as a butterfly wing. It's a lot safer, and your tools will last a lot longer.
- Approach the wheel slowly and carefully each and every time. This is particularly important if you're doing some repetitious reshaping/grinding (as opposed to sharpening) because it may take a large number of cuts, and you have to maintain concentration and do it right every time without getting sloppy or careless.
- You're not safe when you turn the power switch off. The stones have a lot of inertia and will continue to rotate for quite a long time. They can do nearly as much damage when unpowered but at speed.
- Simply put, respect your grinder as the potentially dangerous power tool that it is.