

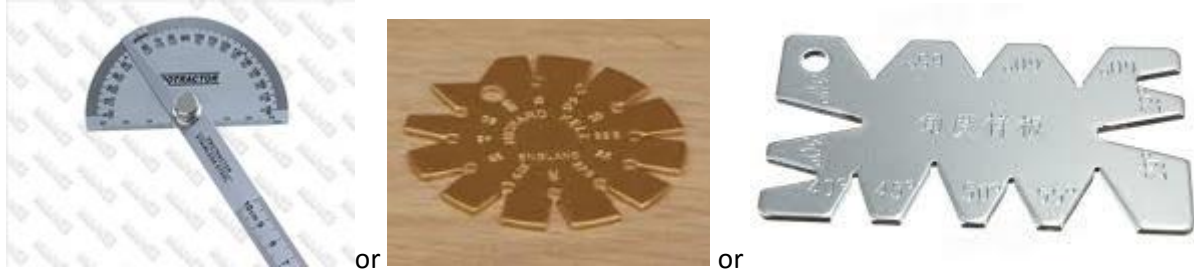
## Profiling and Sharpening: Scrapers and Bowl Gouges (Ellsworth Grind)

- Bill Juhl
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Requirements: One Way Wolverine sharpening jig, and a Wolverine Vari-Grind Attachment.

Plus a grinder -- preferably 8" wheels, slow (1725rpm) speed.

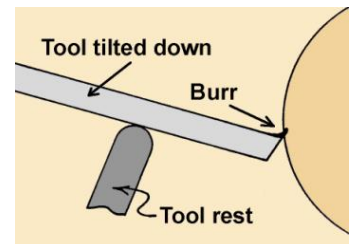
Additional tools needed -- An angle gauge or protractor such as:



**Profiling** is getting the desired shape to start with. Very few of the tools you will purchase will have the profile desired or recommended. Sometimes getting a desired profile initially requires substantial removal of metal.

**Sharpening.** After a tool has been profiled, sharpening is the process of presenting the tool to the grinder, in exactly the same way as was done to profile the tool and then removing only the tiniest amount of steel, producing the sharp edge or burr as desired.

**Scrapers.** For a normal/conventional scraper, the precise angle isn't critical. An angle of 60 to 70 degrees is common and Practical. Scrapers don't slice wood, instead they use a Hooked Burr on the edge to remove the wood.



I copied Richard Raffan and all my scrapers are approximately 70 degrees

Experiment to get the right angle.

- Use an angle gauge to adjust the flat platform of the Wolverine Jig to find the right adjustment.
- By marking the edge of the scraper with a black magic marker and then touching it lightly to the grinder, then checking to see which edge needs more removed (top or bottom) you can work your way to getting the scraper ground to your desired angle.
- To reset the flat platform to that same angle in the future, again use black marker to fiddle until you get an equal grind across the full length of the face.
- Grind all of your scrapers to that same angle, then if you set the platform to the desired angle, it is easy to quickly touch up the burr while removing a miniscule amount of steel.



## Bowl Gouge.

There are many approaches and desired end results in profiling and sharpening bowl gouges.

This is how to profile and sharpen a bowl gouge to the shape sometimes referred to as the **Ellsworth Grind** or an Irish Grind. In this country it was pioneered and promoted by David Ellsworth and is a practical grind in that it provides multiple ways to use the tool.

Start by Setting up your Vari-Grind jig such that the leg angle essentially matches the photo below.



Then insert your bowl gouge so that the tip extends exactly 2" from end of the jig.





The goal for an Ellsworth Grind is to get the tip of the tool ground to an approximate angle of 60 degrees.

Measure your tools angle now, and determine if you need to take steel off the top or the bottom of the front bevel to get to the desired 60 deg angle.

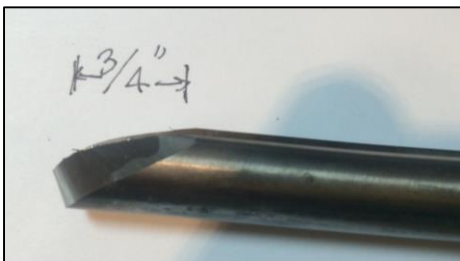
Now insert the tool and the Vari-Grind into the V-guide of the Wolverine Setup.

Remove metal from either the top of the bevel or the bottom of the bevel as required to get to the desired 60 degree nose angle. Move the slide of the V-guide in or out to change the angle until you get it correct.

To profile the tool follow the same procedure as you did with the scraper, use a black marker, and by approximation work your way to the desired angle on the tip.



Once the tip is ground to 60 degrees, reset the tool in the Vari-Grind to again return to 2" exactly sticking out. If needed adjust the V-guide again to get back to the 60 deg grind.



Once the tip is ground to the 60 deg angle, then begin the process of sweeping back the sides to create a gentle arc or "wing" extending back about  $\frac{3}{4}$ " for a  $\frac{5}{8}$ " bar diameter gouge ( $\frac{1}{2}$ " gouge by the European convention) or about  $\frac{1}{2}$ " back for a  $\frac{3}{8}$ " gouge. The wing should be slightly curved convex, not flat, not concave.

Once you've done this, in the future in order to exactly repeat it you need only to do three things

1. Make sure the leg of the Vari-Grind is in the same position used
2. Insert the gouge so it protrudes by 2"
3. Adjust the extension of the V-Guide so it is the same as before. A jig may be useful.

**Why do it this way?** The advantage of using these methods is that once you have it setup to your liking, it is very quick to resharpen your tool, and also as the tool is coming back to the grinder in exactly the same was as it was previously sharpened, you can get a sharp edge while removing very very little steel. Consequently your tool lasts longer.