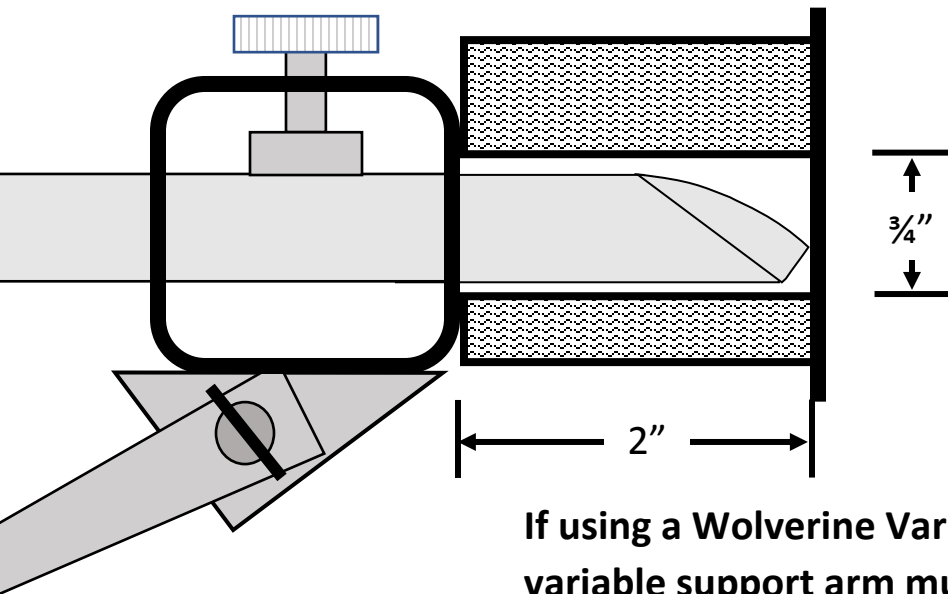


Geiger's Evolution Gouge Sharpening System- Quick-Start Installation Guide

NOTE: Installation requires a basic Wolverine system and either a Vari-Grind (1) or an Ellsworth jig.



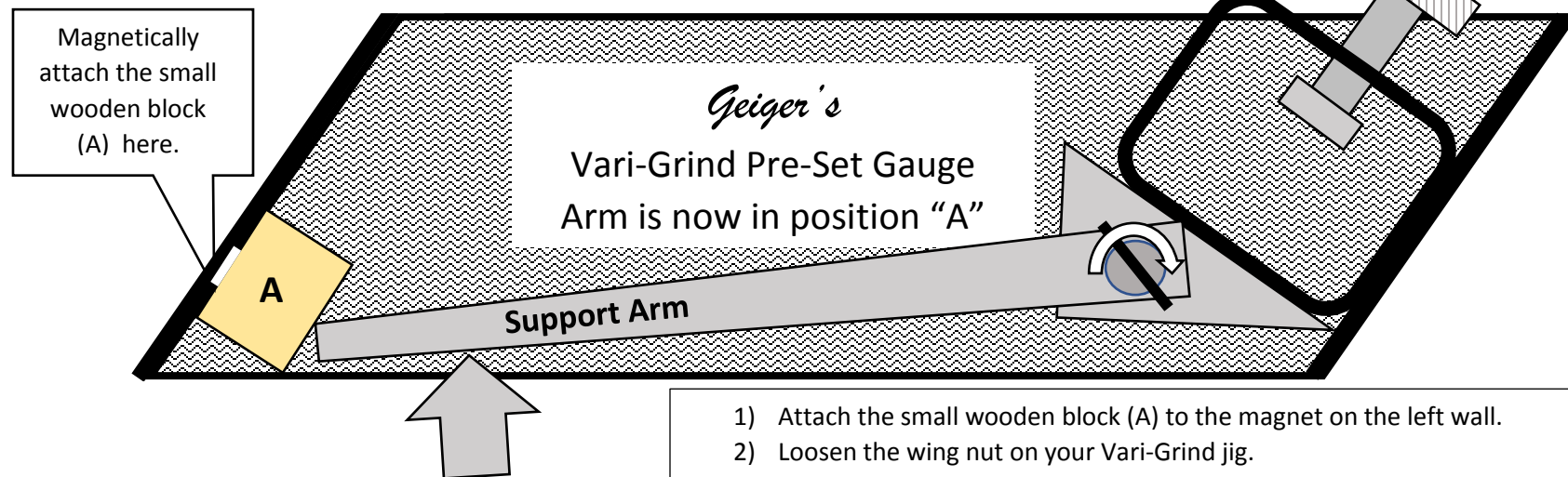
Jigs control the bevel angle at the tip and sides of a gouge.
You are in control of how much metal is removed.
Don't over-grind your tool!

As much as we would like for them to be, jigs don't work like pencil sharpeners!

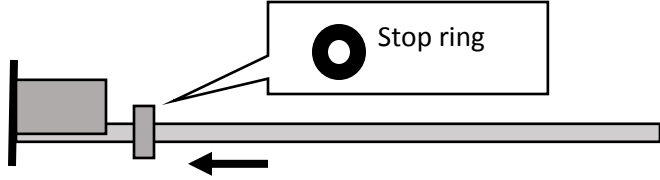
Make yourself a 2" Protrusion Gauge

Refer to document that was emailed to you:
1810 Geiger on "Making a Gouge Protrusion Gauge"

If using a Wolverine Vari-Grind jig, the position of the variable support arm must be pre-set as follows:



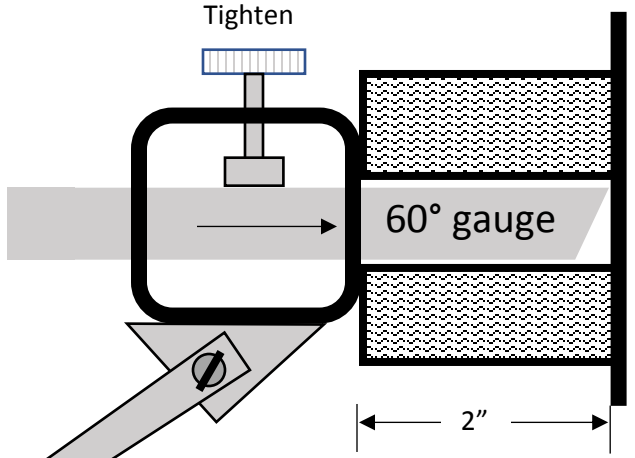
- 1) Attach the small wooden block (A) to the magnet on the left wall.
- 2) Loosen the wing nut on your Vari-Grind jig.
- 3) Position your Vari-Grind jig on the Pre-Set Gauge, as shown above.
- 4) Push the tip of the support arm against the block (A) on the left wall.
- 5) Tighten the wing nut securely.



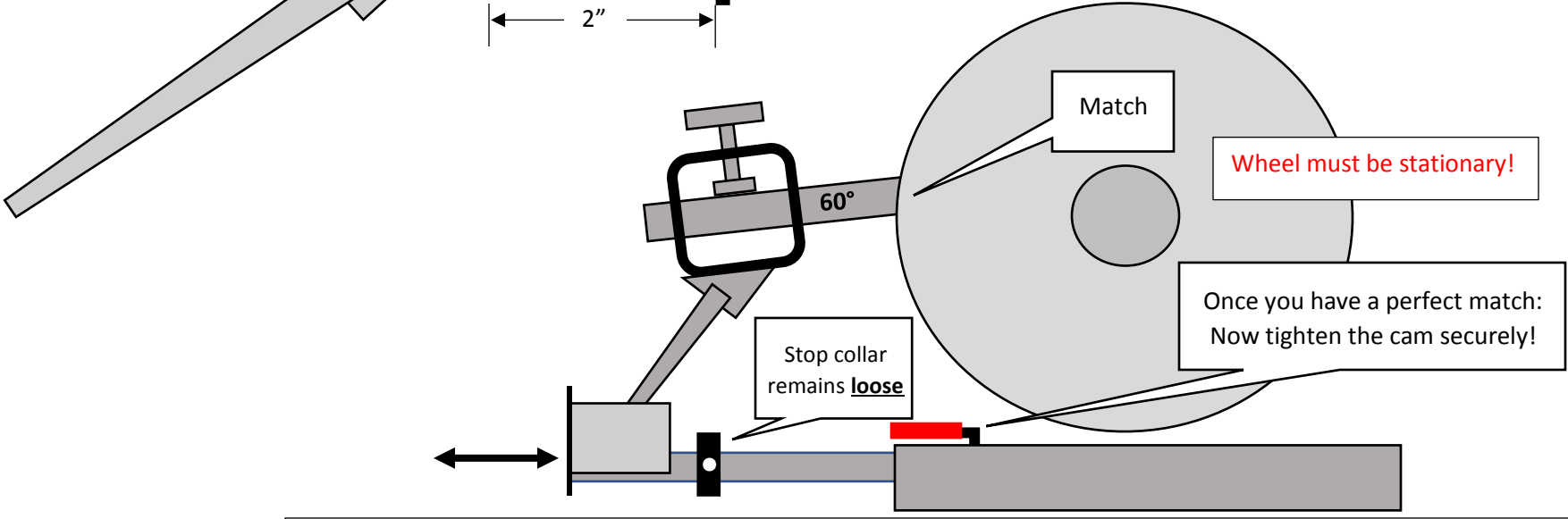
1) Slide the stop ring onto the Wolverine V-notch arm. Do not tighten the stop ring into position yet.



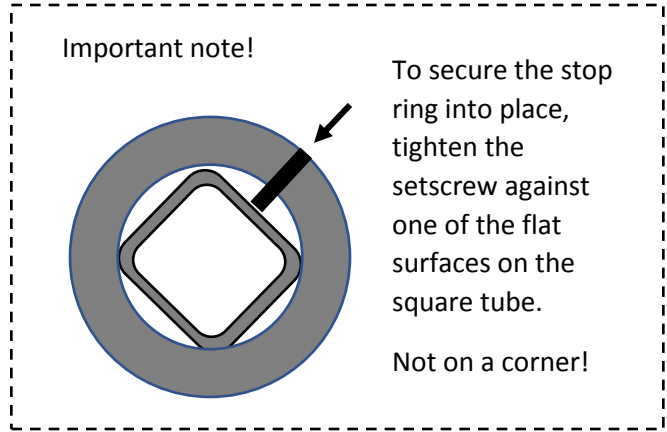
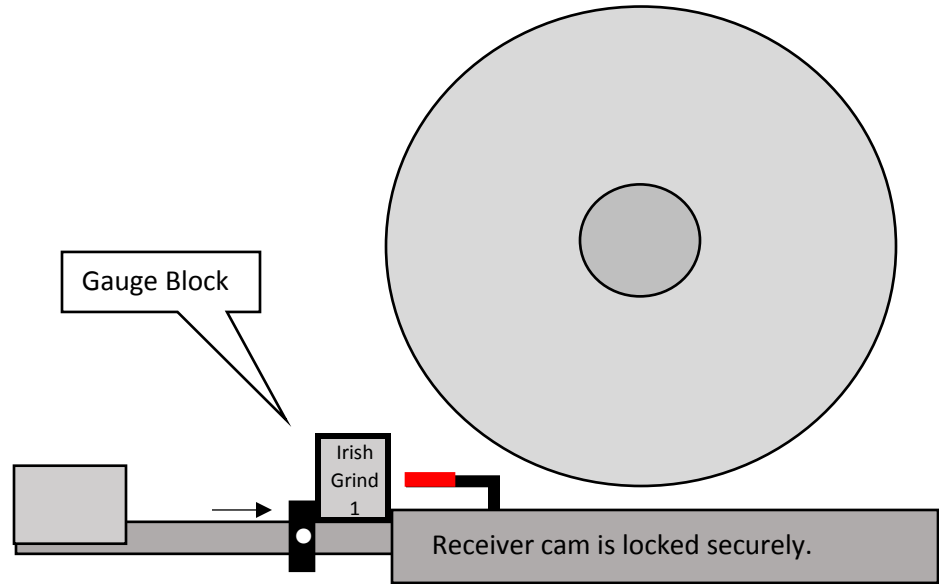
2) Slide the V-notch arm into the Wolverine receiver. Do not tighten the cam on the receiver yet.



3) Insert the 60° gauge into your jig and use your 2" extension gauge to set the amount the gauge extends from the face of your jig.
4) Using the knob on your jig, tighten the 60° gauge into position.



5) Adjust the position of the V-notch forward or back until the tip of the 60° gauge matches the surface of your wheel.
6) Using the red cam handle on your Wolverine receiver, lock the position of the V-notch arm securely.



- 7) Position the Aluminum gauge block in the “Irish Grind 1” position (as shown above) against the Wolverine receiver and slide the stop ring against the opposite side of the Aluminum Gauge block.
- 8) With the gauge block pinched between the receiver and the stop ring, tighten the setscrew against one of the flat surfaces of the 3/4” square tube. Tighten the setscrew securely. The location of the stop ring will remain in the same position *indefinitely.

Installation is complete!

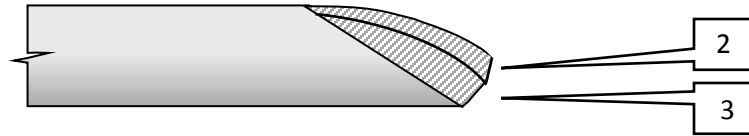
Now let’s set-up to sharpen an Irish/Ellsworth style grind on a bowl gouge.



- 1) Install your gouge into the same jig (Vari-Grind or Ellsworth) that was used for the initial set-up. If you are using a Vari-Grind, the support arm needs to be in the “A” position (see page 1) as was used during the initial set-up of the system.
 - 2) Use your 2” extension gauge to set the amount the gouge extends from the jig. Secure the gouge in this position.
 - 3) Using the red-handled cam lever, loosen the cam on the Wolverine receiver.
 - 4) Slide the V-notch assembly forward, pinching the gauge block in the “Irish Grind 1” position (shown above) between the stop ring and Wolverine receiver.
 - 5) Using the red handle on the receiver, tighten the cam securely.
- You are now ready to grind a 60° bevel on your gouge. Refer to the laminated diagram supplied with the Evolution II as a guide for the shape of the grind. We recommend taping the laminated diagram to your grinder for convenient reference.

*True if using CBN wheels. However, re-calibration will be necessary occasionally if using aggregate (stone) wheels.

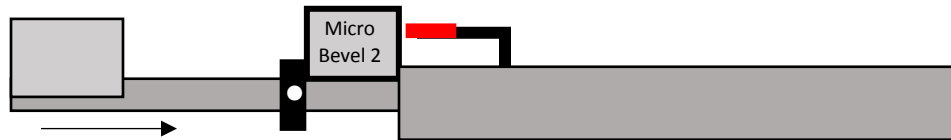
Benefits of a "Micro-Bevel" gouge



A Micro-Bevel grind (shown above) on a deep-fluted bowl gouge has a primary bevel (2) ground to approximately 70° and a secondary "Relief" bevel (3) ground to approximately 50°. Note: The width of each of bevels 1 & 2 can be adjusted to your preference. I suggest dedicating a gouge to this grind and use it for the final finishing cuts on the inside surface of open bowls. The advantages are numerous: The steeper primary bevel enables one's ability to maintain bevel contact inside a bowl all the way to center and positions the gouge more perpendicularly to the surface of the wood. This prevents the handle of the gouge from hitting the rim of the bowl and shortens the fulcrum from the tool rest to the tip of the gouge, thus reducing vibration. The angle created, where the two bevels meet, is very obtuse, which minimizes damage to the wood fibers, resulting in a smoother finish.

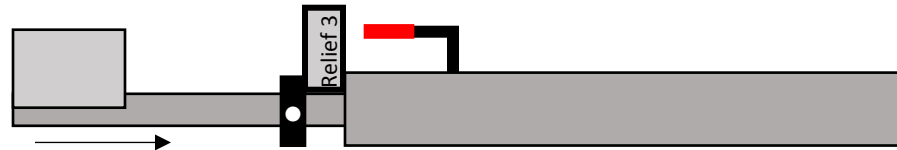
To create and maintain a Micro-Bevel grind on a gouge with the Evolution II Sharpening system:

Step 1:

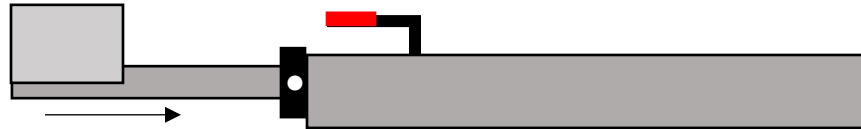


- 1) If using a Vari-Grind, the variable support arm needs to be in the "A" position (see page 1)
- 2) Using the red handle on the Wolverine receiver, loosen the cam. Slide the V-notch assembly back slightly and re-position the gauge block to the "**Micro-Bevel 2**" dimension. Pinch the gauge block between the stop ring and Wolverine receiver as shown above.
- 3) Using the red handle on the Wolverine receiver, tighten the cam to secure this position.
- 4) Insert your gouge into your jig (Vari-Grind or Ellsworth) and set a 2" extension.
- 5) Grind a narrow primary bevel (2) as shown in the drawing at the top of this page.

Step 2:



- 1) Re-position the gauge block to the "Relief 3" dimension and pinch it between the stop ring and the receiver.
- 2) Using the red handle on the Wolverine receiver, secure this position.
- 3) Grind the secondary "Relief" (3) bevel as shown in the drawing at the top of this page and on the laminated reference drawing provided with the system.

Spindle Gouges:

- 1) If using a Vari-Grind, the support arm needs to be in the "A" position (see page 1).
- 2) To obtain approximately a 40° bevel on a spindle gouge, remove the gauge block and slide the V-notch arm all the way forward until the stop ring is against the receiver.
- 3) Using the red handle on the Wolverine receiver, secure this position.

NOTE: The above is the set-up for spindle gouges only- not bowl gouges!

Now for a 40° Bowl Gouge Grind

Numerous people have expressed interest in jig sharpening a 40° grind on a bowl gouge. The interest in this grind (a popular version is commonly referred as the 40/40) was generated, in a large part, by some professional turners who use it. I discovered these professional turners were routinely using hand sharpening methods. Many turners who wanted to learn how to use this tool, struggled with sharpening the grind by hand. Having assisted many people with their turning and sharpening skills over the past 20-years, I found this to be no surprise. Being a designer of sharpening systems, I viewed this as a challenge.

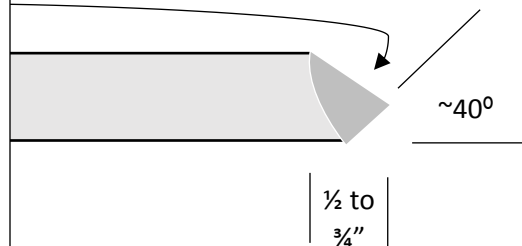
In pursuit of addressing this interest, I obtained a gouge that was hand-sharpened by one of the well-known experts and, using it as an unmodified example, I researched what I had to do to mimic the result as closely as possible using the Evolution system and a jig. The solution was amazingly simple. Follow

The gouge: I obtained satisfactory results with a Robust Turner's Edge, ½" diameter gouge with a parabolic flute. Other makes and sizes work just fine.

Note: I suggest dedicating a gouge to this grind, as I do for each grind the Evolution is designed for.

Note: When looking at the side profile, the top edge is straighter than an Ellsworth-style grind. Be careful not to over-grind the sides or you could produce a concave edge!

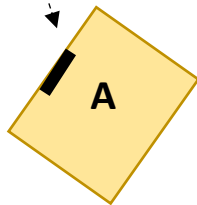
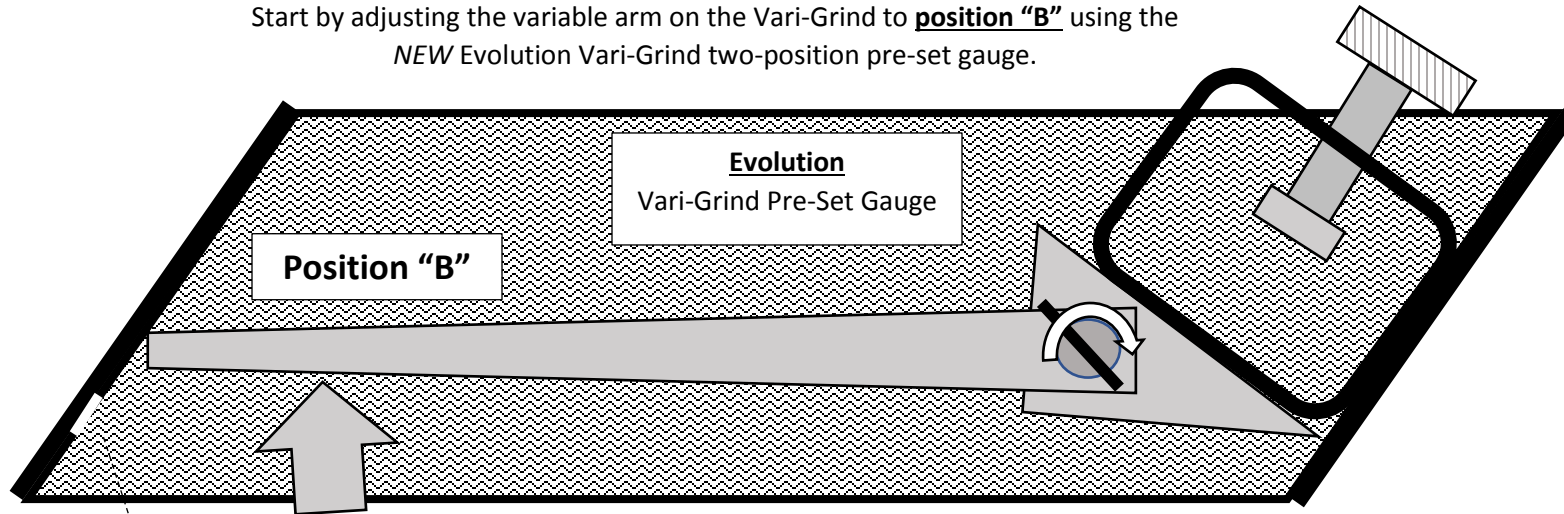
The side-grind should extend only about ½ to ¾" behind the tip.



Note:
I am unaware of any way to produce this grind using an Ellsworth jig.

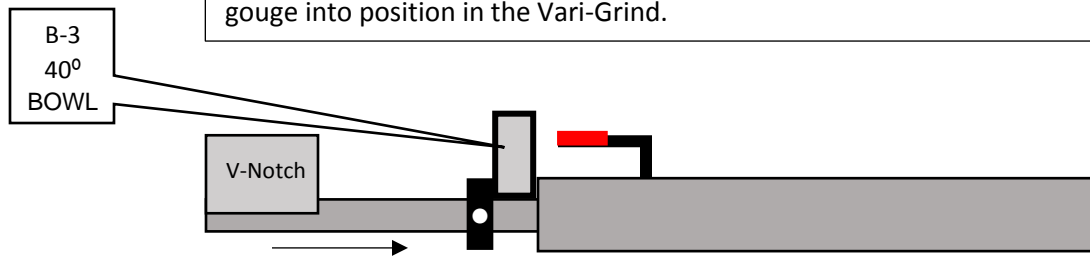
Sharpening a bowl gouge at ~40°:

Start by adjusting the variable arm on the Vari-Grind to **position "B"** using the *NEW* Evolution Vari-Grind two-position pre-set gauge.



- 1) Remove the wooden shim "A" from the pre-set gauge.
- 2) Loosen the wing nut on the Vari-Grind.
- 3) Re-position the variable arm by pushing it against the left wall.
- 4) Tighten the wing nut securely.

Once the Vari-Grind arm has been set to position "B":
Place your gouge into the Vari-Grind, set a 2" protrusion and secure the gouge into position in the Vari-Grind.



- 1) Position the Aluminum gauge block in the "B-3 40° BOWL" position as shown above.
- 2) Slide the V-notch arm and stop collar forward against the Aluminum gauge block.
- 3) With the gauge block pinched between the Stop Collar and Wolverine receiver, tighten the cam
- 4) Proceed with sharpening the gouge.

NOTE: It is important not to over-grind the sides!

If you are using aggregate (stone) wheels:

As the wheel is reduced in diameter, the bevel angles will change slightly. Once the wheel diameter is reduced $\frac{1}{4}$ " you should recalibrate the system as described in steps 3 through 8, on pages 2 and 3. This will only take a few minutes. Once the diameter of your wheels is reduced by 1", we recommend replacing them. Carefully marking the side of a new wheel at $\frac{1}{2}$ " from the edge will help you keep track of how much the wheel has worn.

Wheels: We recommend Norton 3X (blue) wheels (30 or 60% Ceramic) with a "K" hardness. Note: The hardness is very important! We recommend using an 80 grit on one side and a 46 grit on the other. Norton wheels are provided with plastic bushings, which can be replaced with a precision-machined steel bushing, which centers the wheel more accurately on the axle. The wheels should be properly trued (concentrically) and dressed. Visit our website to learn about our Tru N Dress wheel truing and dressing device. We also offer precision steel bushings in three sizes.

Since the diameter of **CBN wheels** remains the same throughout their expected life, initial calibration of the Evolution is all that is required.

A question we have received from customers:

Q: "Can I use an extension length of 1-3/4" instead of the prescribed 2"?"

Ans.: The Evolution is designed to provide predictable and satisfactory results, but only if you follow the instructions. So, the answer is "No."

We offer:

**Robust "Turner's Edge" Parabolic Bowl gouges (3/8", 1/2" & 5/8" dia.) and a 3/8" Detail Spindle Gouge
Made in the U.S.A.!!**

Upon introduction, Robust gouges quickly became very popular because:

- **Robust gouges are treated with Nitride- which reduces friction increases hardness to improve wear resistance. This results in a superior release of shavings, longer lasting edges, less frequent sharpening and a longer tool life- increasing your satisfaction and saving you time and money.**
- **The bowl gouges have a very popular parabolic flute (No dip at the tip!).**
- **The detail spindle gouge has a shallow, radiused, flute.**
- **The flutes are highly polished. The resulting surface provides the easy release of wood shavings.**
- **The shank is milled flat all the way to the very end so you can get every last bit of use out of the tool.**

**Robust Gouges, Tool Rests, Tool Rest Dog-Leg Off-Set, Live Center & Cones
Are all available on our web site at factory prices and *Free Shipping* within the U.S.A.!**

Additional products to consider:

- Geiger's Tru-N-Dress grinding wheel truing and dressing systems (two models to choose from)- Significantly reduce grinder vibration, eliminate tool bounce, get smoother bevels and edges on tools.
- Geiger's Re-Centering Solution- Provides perfect re-centering of wood turned pieces for the purpose of jam or vacuum chucking.
- Geiger's Laser Depth Finder- Used to accurately determine the overall interior depth of woodturnings- knowledge that is critical to success.

Each of the products above are offered with *Free Shipping* in the U.S.A.

All are made in the U.S.A!!!

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www.geigersolutions.com