How to use the Derry Tools Burnisher

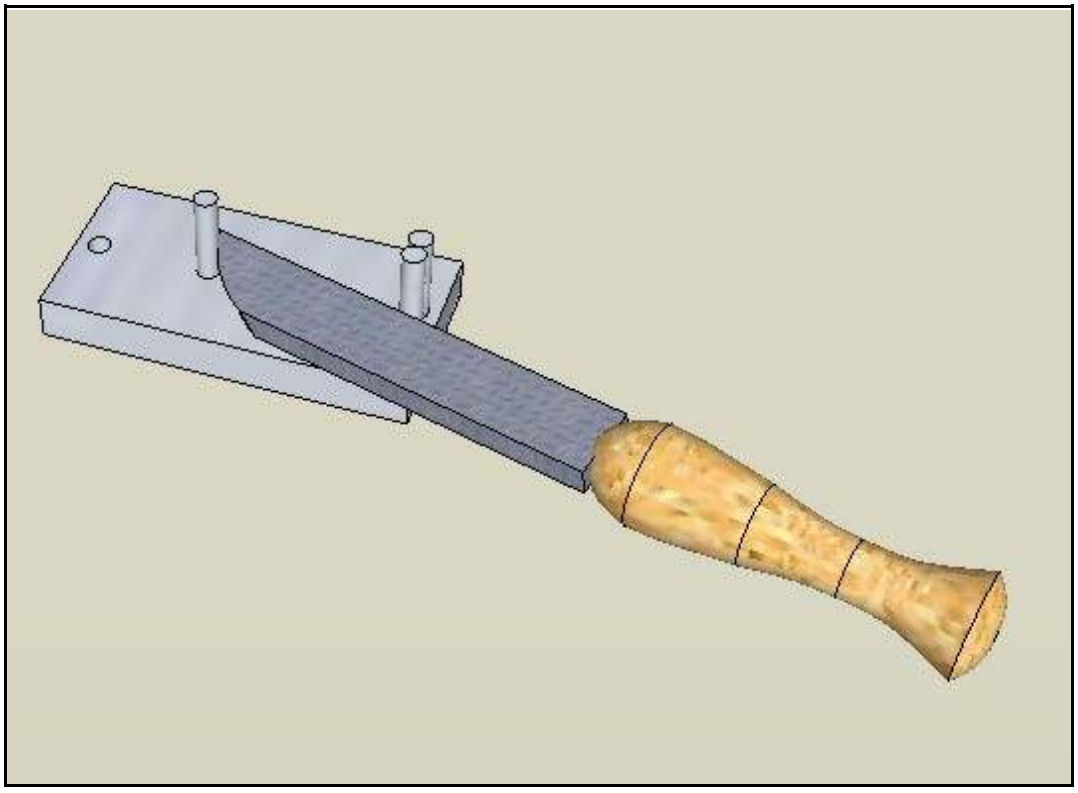
Thank you for your interest in the Derry Tools Burnisher. Burnishing a shear scrapers edge is a simple process by which pressure is applied to an already sharpened tool edge in order to roll that edge up and out from the tool. The hook that is formed feels to the thumb much like the burr left on an edge after it is sharpened on a grinder. However, the burnished edge is far superior in strength due to the fact it is now a homogenous, work hardened hook rather than a dissociated nest of micro metal shavings left by the grinder. The edge will be so good it will last 5 times longer than the best grinder burr you have ever had. You will actually be turning the edge of you scraper into one half of the flute like that found on a gouge.

Burnishing a Shear Scraper

1. First we must prepare the scraper to be burnished. This is a simple process that you have done many times if you use scrapers in your work routine. All you do is sharpen it the same way you do if you were going to use it with a grinder burr. Then you will need to strop off all of the grinder burr. This is accomplished by wet stoning the top of the scraper until the burr is gone. A small diamond hone works very well for this also.

2. Bolt the Burnisher to a tool post that will fit in the banjo in your lathe. (tool post sold separately) You may also firmly attach the Burnisher to a work bench with a screw or clamp it in a vice.

3. Now place the scraper with the Burnisher as in ***(Fig 1)*** You will lever the side of the scraper against one of the pins of the Burnisher using it as a fulcrum. The edge of the scraper will then be forced against one of the other pins.

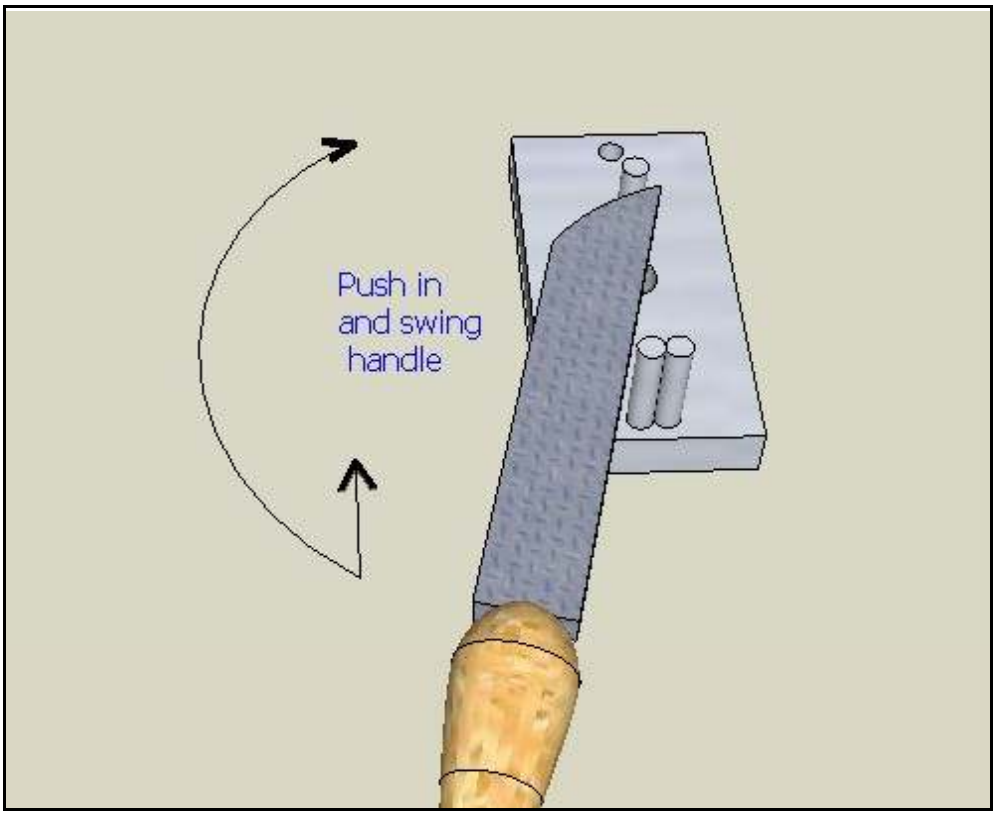


(Fig 1)

(TIP) Don't let the two stationary pins give you pause. The double pins or the single removable pin can both be used as the fulcrum. (Most of the time I use the double pins as the fulcrum and the removable pin as the burnish point.)

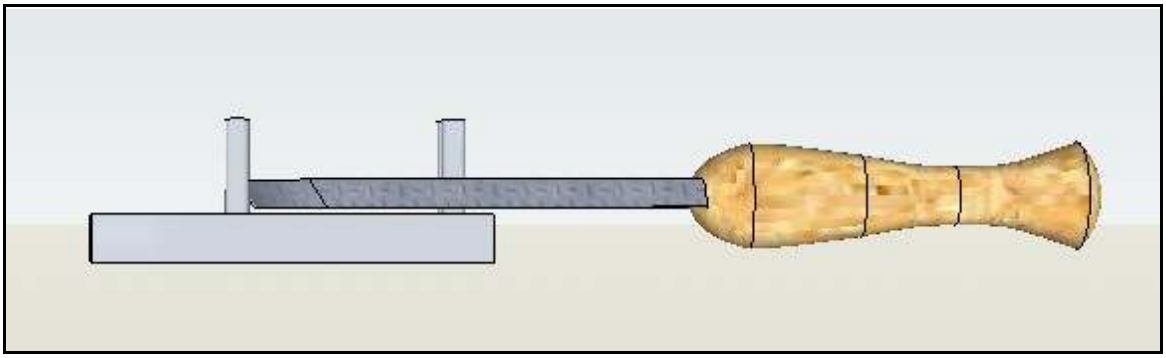
4. You will now ***slowly*** and carefully push the edge against the burnishing pin while you lever against the fulcrum. If you get the process it in the light just right you will be able to see the micro sized hook while it rolls up just ahead of the pin you are burnishing against. Swing the handle as you push and the edge will roll up into a hook along the entire length of the scraper edge. ***(Fig 2)*** Use a firm intimate grip on the tool so you don't slip off the pins and bang you knuckles. The amount pressure you used while rolling the edge will determine how aggressive the shear scraper will cut.

(TIP) If you catch the process it in the light just right you will be able to see the micro sized hook while it rolls up just ahead of the pin you are burnishing against.

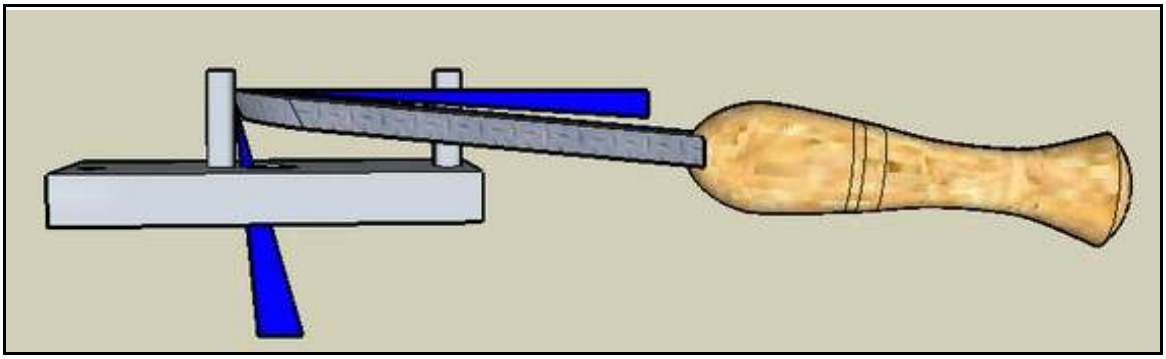


(FIG2)

(TIP) The scraper should ***not be*** laid flat on the Burnisher ***(FIG 3***). The handle will need to be pitched down in order for the burnished hook to protrude up and out away from the scraper when it is burnished. If you lay it flat the hook will be made to be 90 degrees to the scraper and it will not work efficiently. ***(FIG 4)*** shows the proper angle for the scraper to be pitched in order for the hook to be formed.



(Fig 3)



(Fig 4)

(TIP) Drop the angle of the scraper handle so the difference between the top of the scraper and the relief angle is split in half. The blue triangles in ***(FIG 4)*** should be about the same.

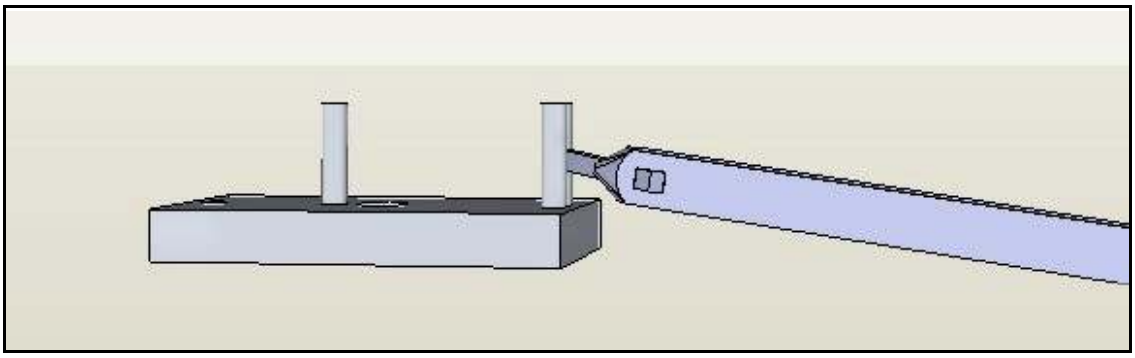
Now present the freshly burnished shear scraper to your turning just like you did when it had a grinder burr edge. It will make wispy angle hair shavings for up to five time longer than the best burr you ever had. When the edge eventually wears down you will need take off the warn edge with the grinder, strop off the burr and burnish the edge again.

Burnishing Hollowing Tool Bits

The Derry Tools Burnisher will also Burnish the edge of 3/16 and 1/4 inch tool bits used on most hollowing system boring bars. Replacing the grinder burr with a burnished edge will give you the same benefits as of longevity and cutting quality you get when applied to a shear scraper.

1. Sharpen your tool bit just as you did when you planed to use a grinder burr edge. Strop off the wire edge using a honing stone just like you do for a shear scraper.

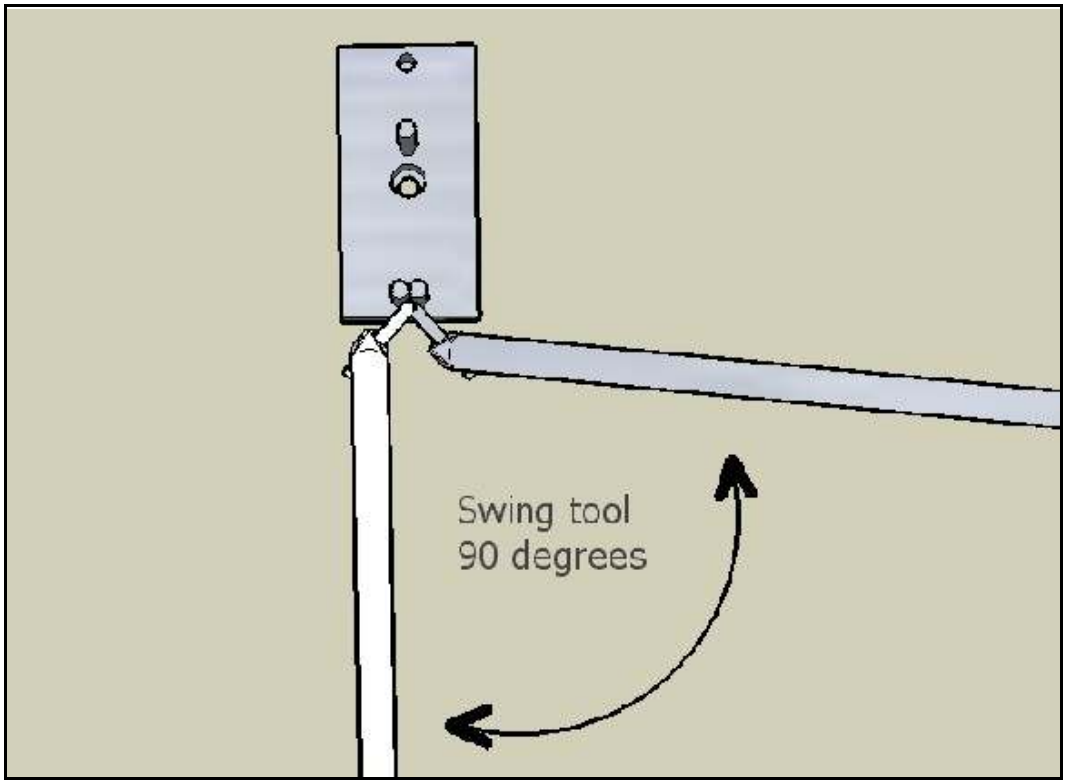
2. Present the boring bar so the tool bit is resting in the channel formed by the two stationary pins. ***(FIG 5)***



(FIG 5)

(TIP) Use the channel on the back side of the duel pins away from the single pin. It will give you a bit more room to maneuver.

3.Point the tool bit so it is pointing directly at one of the pins. ***(FIG 6)*** You will also need to angle the bar down so the relief angle is split making the hook, form up and out when it is burnished. ***(TIP)*** This is the same concept as for the shear scraper. ***(FIG 4).***



(FIG 6)

4. Now, slowly swing the tool 90 degrees so the tool bit will point at the other pin. An intimate grip and **good steady pressure** will work best. When you do this, one of the pins forms the hook on one side of the tool bit and the other pin forms the hook on the opposite side. ***(Tip)*** The hook may not feel very big but it will be far more free cutting and will last 5 times longer than any grinder burr.

Things to remember.

1. Burnishing is not sharpening. You will need to sharpen and strop every time before you burnish.

2. Use firm pressure and move the slowly while forming the hook. The more pressure you use the more pronounced and aggressive the hook will be.

3. Use an intimate grip. This means, hold or brace one hand against the burnisher so you don't slip off and bang you knuckles. An under hand grip like the one used to role a small beads with a skew chisel or detail gouge works quite well.

4. Spear point scrapers, strait across the front, even round nose shapes can be burnished. With a bit of thought you will be able to roll a hook on any shaped scraper.

5. The scraper is never laid flat on the burnisher. If you do, your hook will be rolled over to far and will not cut well if at all.

6 The scrapers relief angle is the angle under the cutting edge some people call it the sharpening angle. It can be as steep as 90 degrees and as flat as 45 degrees. The more pointed the edge is the less pressure will be needed to roll the hook. This is simply because the edge is a sharper angle and therefore has less metal to move. I a relief angle around 30 degrees.

7. The scrapers and tool bits need to be made of a malleable tool steel like M2 or M4 which are what most scrapers are made of. Particle tool steel and cobalt tool steel and carbide are all to brittle and will chip if you attempt to burnish them.

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