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*You now have a great sharpening system  
to put a great edge on almost any tool  
that can be held up to the wheels!*

**IF YOU HAVE ANY PROBLEMS OR QUESTIONS ABOUT THIS  
PRODUCT, PLEASE CONTACT THE MANUFACTURER**  
**TOLL FREE: 1-866-419-4879, Fax: 1-707-459-1541**  
**E-MAIL: [support@sharpeningwheels.com](mailto:support@sharpeningwheels.com)**

Please **read the instructions** and feel free to call Razor Sharp Edgemaking System at 1-866-419-4879 to discuss any questions or concerns you may have. We can also furnish this sharpening system in various wheel diameters, thicknesses & arbor hole sizes.

**Manufactured in the USA and fully warranted by:**  
**Razor Sharp Edgemaking System, LLC**  
26195 Otter DR  
Willits, CA 95490-8046, USA  
Web: [www.sharpeningwheels.com](http://www.sharpeningwheels.com)

This system will put a polished razor sharp edge on your knives and tools in just seconds. It is made to be used on any ordinary six inch buffer or bench grinder that turns at least 3000 RPMs. **THE WHEELS IN THIS KIT ARE EIGHT INCH BY THREE QUARTER INCH WITH A FIVE EIGHTHS INCH ARBOR HOLE.** *The installed bushing converts them to a one half inch arbor hole. Simply remove the bushing for use on a five eighths inch arbor. The easiest way to remove the bushing is to place the wheel over a hole or between two boards with space between them. Use a socket with 5/8" outside diameter & gently tap the bushing out. A rubber mallet works well.*

**THE WARRANTY ON THIS PRODUCT IS COMPLETELY  
UNCONDITIONAL AND FREE OF "RED TAPE"!**  
Should you find a manufacturing defect in one of our wheels we will replace it free of charge or refund your purchase price, including shipping.

**PLEASE READ THE INSTRUCTIONS!**

**Including the safety instructions on page five.**

**RECOMMENDED SPEED 3000 - 3600 RPMs**

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Page One

INSTRUCTIONS

If using a bench grinder, you will need to remove the guards. The purpose of the guards with stone wheels is to protect from flying pieces of stone. Over-heated stones have even been known to explode. This does not happen with paper wheels.

You will sharpen as many as 200 to 300 knives before needing to re-surface the grit wheel. The slotted wheel needs to be “dressed” occasionally with 60 grit sandpaper.

**TO INSTALL WHEELS:** Normal installation for right-handed folks is to install the gritted wheel on the right and the slotted wheel on the left. Turn the wheels by hand to see if there are any bumps or nodules on the gritted wheel. If there are, wrap some 60 grit sandpaper around something hard, like a crescent wrench handle or flat file and, with the motor running, touch the wheel to remove any bumps. Next, take the conditioning wax (yellow stuff) out of the cup and rub it sparingly on the black grit wheel as you turn it by hand until you can see that there is some wax on the grit. You want to see streaks of wax on the grit. Then each time you start to sharpen, just hold the wax against the grit wheel a little with the motor running. **Be careful not to use too much wax**, doing so will destroy the effectiveness of the grit. The slotted wheel needs no pre-conditioning just apply some rouge to the running wheel before applying your tool. **Do not over-tighten the nuts, snug is enough**. Spin the wheels by hand. If a wheel wobbles excessively from side to side, you probably have a bent washer. Washers get bent when a stone wheel is put on and the nut is over tightened. To get rid of the wobble, loosen the nut and turn the washer, or washers, just a little. Turn one washer one way and the other washer the other way. Snug the nut and spin the wheel. You might have to repeat this a time or two to minimize the wobble. A little side to side deviation won't hurt anything. Sometimes if a wheel is exposed to heat or dampness it will warp a little. Place the wheel between two boards, clamp them tightly & keep in a cool dry place for a few hours.

**A WORD ON MOTOR SPEED:** Though we recommend the more efficient minimum speed of 3000 RPMs, some folks are not comfortable with a high speed & prefer a dual or variable speed motor where they can reduce the speed as far down as 1750 RPMs. Though still faster & more accurate than other sharpening systems, the slower speed will take a bit longer, so if you're more comfortable with the lower speed, by all means, use it.

**RECONDITIONING the GRIT WHEEL:**

**Do not remove the wheel from the motor.** If you do you will have to eliminate the wobble again when you put it back on.

When the gritted wheel stops sharpening, use coarse sand paper (like 36 grit) to clean off all the grit, glue & wax down to bare paper. Just wrap it around something hard & flat, like a crescent wrench handle or flat file. After all the old grit, wax & glue is removed, use 60 grit sandpaper to smooth and true the wheel (as it might be a little out of round). Next put some paper under the wheel to catch excess grit, & put an *even* coat of Elmer's ("Ross" in Canada) "Glue-All" multi-purpose white glue on the face of the wheel. The layer of glue should not be too thin, but not so thick as to be running off. You should be able to see the laminate lines through the glue. Then slowly hand turn the wheel while you sprinkle the black silicon carbide grit over the glue. Sprinkle the grit on the wheel until it is sloughing off and no more will stick, then turn the wheel a couple of times while lightly tapping it on the side to remove excess grit. When you are happy with your coating job, pour the excess grit back into the container and replace the lid. **Do not touch the wheel until the glue dries completely**, preferably for about 24 hours. Then it is ready to go again. If there is a small nodule on the wheel, wait until the glue is dry, then turn on your motor & touch the running wheel slightly with the 60 grit sandpaper. Some folks have successfully used Tite Bond Original (red label) glue as well.

(There is enough grit in the kit to recoat the wheel 15 to 20 times. If you run out of grit, rouge, or wax, order more from your supplier.)

**HERE ARE A COUPLE MORE IDEAS:**

- It is easier to repair *bad* nicks in a blade or repair broken tips (reshape the end) using a belt sander. This keeps from wearing the grit off the gritted wheel sooner. Be sure to keep water handy, as a belt sander will heat a blade very rapidly!
- If, for any reason (maybe arbor size), you need to enlarge the hole, use a drill press. Put the wheel on the press with a board under it. Center the wheel by lowering the drill bit which is the same size as the existing hole, through the hole. With the bit in the hole, clamp the wheel and the board securely, change to the desired bit size, put another board on top of the wheel, clamp it in place, and slowly and carefully run your bit thru the board and the wheel. Use lots of caution so as not to get your hole off center.

**NOTE:** We can make wheels with any size hole you might desire, up to 3/4".

## RAZOR SHARP EDGEMAKING SYSTEM

**YOU CAN SHARPEN KNIVES WITH SERRATED EDGES:** On most serrated knives, one side of the blade is flat. Using the corner of the grit wheel, hold the serrated side at the appropriate angle and draw it from one end to the other. Hardly any pressure is needed. Your knife will develop a burr on the flat side. Now go to the slotted wheel, and holding the blade as flat as possible against the face of the wheel, draw the knife lightly across. This will push the burr into the serrations. Now run the serrations lightly across the corner of the slotted wheel & the burr goes back to the flat side. Repeat this process on the slotted wheel until the burr is gone and the serrations are sharp. As with any single bevel knife or tool, never put the flat side to the gritted wheel, as it will cut steel & form a bevel where you do not want one.

**WOOD or LEATHER CARVING TOOLS:** Works best with the wheels turning towards you. Hold the tool with the handle straight up from the wheel, adjust the bevel to the desired angle and rotate the cutting edge on the face of the gritted wheel, keeping it flat, as you do not want a convex surface on the tool. The flatter the surface the better it will cut the wood. The burr is now inside, on the flat, or non-bevel edge. Now go to the slotted wheel, hold the tool vertical and remove the burr by rotating it on the corner of the slotted wheel. Do not apply the inside of the tool to the gritted wheel, as this will cut the steel & produce a bevel where you do not want one.

Once the burr is removed from your tool it will be sharp.

There are many different shapes of cutting edges on carving tools, it is not practical to try to describe here how to hold each one. Gouges need to be rotated. Chisels and V tools will require going side-to-side on the wheels, but be careful not to “wipe” the edge off the side of the wheel. As soon as you acquire a burr, go to the slotted wheel and polish it off. You may want to polish the non-beveled side as well. A mirror finish is nice & it will stay sharp longer.

**LEATHER PUNCHES:** As with carving tools, hold the punch straight up from the wheel and adjust your angle with the point downward. Follow the edge on the gritted wheel until you acquire a burr. You may need to remove the burr using a piece of leather. In the case of a round punch your burr is on the inside, so take a leather shoe string and rotate it around, pulling it out at the same time. This will bring the burr out so you can polish it off on the slotted wheel.

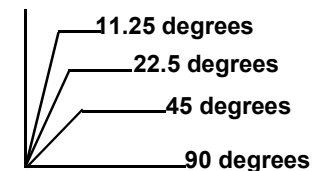
## RAZOR SHARP EDGEMAKING SYSTEM

**TRUING OF WHEELS:** When you have the wheels running “true” don’t remove them unnecessarily, because when you put them back they will be in a different position and you may have to adjust them again. Sometimes the wheels may be a little “out of round”. The grit wheel can be fixed at time of re-surfacing. If the “slotted” wheel seems out of round, it can be trued at any time. Correcting “out of roundness” is easy. Take a piece of 60 grit sandpaper and wrap it around a flat piece of metal (a flat file works fine) & hold it lightly against the face of the wheel. You will feel the “high” spot. Keep holding it lightly against the wheel until it feels smooth. Now the “high” spot is gone & the wheel is clean & flat across the face. Also you may “round” the corners of the slotted wheel if you sharpen a lot of serrated blades. Simply use some 60 grit sandpaper to sharpen up the corners.

**OKAY, YOU ARE READY TO START SHARPENING:** Time to think about the angle you want on your knife or tool. Most of the time you will want to maintain the bevel angle already on your blade or tool. You can of course change it. Proper angle depends on what you are going to use the edge for. Generally, if you are going to chop, dig or scrape with a blade, a 35-40 degree angle works best. For razors or a little rotary cutting wheel, a “flat” angle is best, 10-15 degrees. Most knives are 20-25 degrees. You will learn with practice just what angle works best for you. At the top of page 4, you will see an easy way to find the various angles.

### HERE ARE SOME IDEAS ABOUT ANGLES:

Hold your blade or tool horizontal with the wheel, the cutting edge facing the wheel. Now You are 90 degrees in relation to the axis of the motor.



Okay—Half of 90 degrees is 45 degrees. These are blades with a steep bevel, such as an axe, machete, or shovel.

Half of 45 degrees is 22.5 degrees. Most knives are 20 to 25 degrees.

Half of 22.5 degrees is 11.25 degrees, such as broadheads, razor blades, rotary cutting wheels, etc.

Just remember, half, half, and half, and you have your three basic angles.

The above is intended as a guide to help you get started! With practice you will learn what angles work best for the type of blades that you are sharpening.

### NOW YOU HAVE AN IDEA ABOUT THE ANGLE THAT YOU WANT:

Turn on the motor. You previously applied **WAX** to the face of the grit wheel. Touch the wax to the wheel every two or three blades. Carefully hold your knife up there and pick the angle, (45, 22.5, 11.25). (We recommend practicing with “junk” knives.) **BE SURE YOU ARE NOT TURNING THE CUTTING EDGE INTO THE DIRECTION OF THE TURN OF THE WHEEL!** (Diagram on page 5.) Make a few passes on each side of the blade, alternating sides with each pass. Do not “seesaw” back & forth or make multiple passes on the same side of the blade. Doing so can move the cutting edge off-center. The aim is to raise a “burr” or “wire edge” along the cutting edge, which means that both sides, or “tapers”, of the cutting edge have come together. You need the “burr” along the entire cutting edge. Just a little “burr” is all you need. A couple of other things: When making the passes across the grit wheel, start at the hilt and go to the tip without stopping. Also, **pull the tip away from the wheel when it is in the middle of the wheel.** If you slide the tip off the edge, you may round the tip of the blade, or the knife tip may catch on the edge of the wheel. This will jerk the blade out of your hand and possibly cause injury. It is good to keep a piece of paper towel handy to wipe off the wax that is now on the blade. This makes it easier to feel the “burr” & keeps the wax off the slotted wheel. The burr tells you that enough metal has been removed. (Sharpening the old way, on a stone like our grandfathers did, you never knew when you had taken off enough metal, you just kept rubbing the knife on the stone until you thought it was sharp enough.) Occasionally a knife will not develop a “burr”, instead there is a “hair”, on the edge that you can see. We call this “Angel Hair” or a “Feather Edge”. It is nice to have a good light handy.

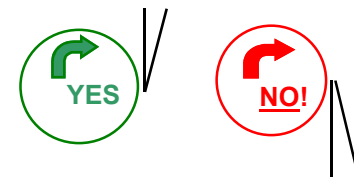
**NOW THAT YOU HAVE ACQUIRED A “BURR” OR “FEATHER EDGE” IT IS TIME TO SWITCH TO THE SLOTTED WHEEL:** Take the white chunk of “Jeweler’s Rouge” and, with the motor running, touch it lightly on the face of the slotted or plain wheel. (This is for heat control as well as for honing & polishing the cutting edge.) Remembering your angle, start on the side the “burr” is on, make a pass on that side (you do not need much pressure), then a pass on the other side. Repeat this (alternating sides) for three or four passes. Now, wipe off your edge and look at it. It should be getting pretty sharp. When you become adept at this, an ordinary knife blade may take 10—15 seconds from dull to *Razor Sharp!* **Do not be discouraged if your first try does not seem to work. It does take a little practice, but the results are worth it!** (The **Gritted Wheel** is going to seem very aggressive for the first 4 or 5 knives. Be careful. Do not put on too much **WAX**. If you do the **Grit** can’t do it’s job! You will not have a heat build-up as long as you keep the edge moving and keep a little wax & rouge on the appropriate wheels. If your dull knife has nicks or other bad spots, you can fix these on the grit wheel, even to putting on a new tip if the old one is broken.

**RECOMMENDED SPEED 3000 - 3600 RPMs**

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### **WARNING!**

**AGAIN THE CAUTION: ALWAYS USE ANSI COMPLIANT EYE PROTECTION and NEVER! —TURN THE CUTTING EDGE INTO EITHER WHEEL**



**YOU CAN SHARPEN SCISSORS:** The grit wheel is the only wheel needed to sharpen scissors. Open the scissors all the way & place the cutting edge (bevel) of one blade against the wheel. Try to hold the blade at the existing angle, starting as close to the hinge as you can get and then working toward the tip. It usually only takes a couple of passes to acquire a “burr”. Do the same thing with the other blade. Now that you have a burr on both edges, hold the blade tips slightly apart as you close them, then open and close them a few times (do not use the slotted wheel for scissors). Voila! the burr is gone and the scissors are sharp! Wipe the wax off with a paper towel. In case there are nicks or bad spots, you will have to take off enough metal in the sharpening process to fix them. Some model scissors have one serrated blade. Do nothing with the serrated blade, just work on the smooth blade.

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