

Using Japanese Waterstones

CARE OF WATER STONES

Before use cover stones with water in a pan or bucket and soak until bubbling stops, usually 5 to 10 minutes. Take a stone out of the water to use, and then place it back in the water while using another grade of stone so they stay thoroughly wet.

It is best to store natural stones and fine ceramic stones dry. Medium and coarse grit ceramic stones that are used frequently may be stored indefinitely in water and taken out for immediate use. Protect water stones from very cold temperatures as they may crack if frozen. Any stone mounted on a wooden base should not be soaked or stored in water. Instead pour water on it just before use.

At least one side of each stone must be kept very flat. Before each use, and after 10 minutes or so of sharpening, re-flatten the stones. The best way to accomplish this is to rub two stones together. After soaking for several minutes, rub the flat sides together until all signs of dishing or metal stain are removed. It is a good idea to rub the stones of closest grit together, e.g. coarse against medium, medium against fine. This minimizes the possibility of a coarse stone particle becoming embedded in a fine stone and scratching the tool face. Stone flattening can also be accomplished by rubbing the stone against wet carborundum paper placed on a very flat surface. A piece of plate glass one half inch thick or thicker, with smoothed edges, makes an excellent backing for carborundum paper.

If stones are to be stored dry, first allow them to air dry thoroughly. Wrap each one in a soft cloth to protect it from damage.

CHOOSING STONES

Stones of three different abrasive properties are recommended. A coarse stone (500 to 800 grit) is used to quickly flatten the back, rough out the angle of the bevel (the sloped side of the blade) and eliminate any large irregularities. A medium stone (800 to 1200 grit) is used to give a smooth, regular surface to the back and bevel, and an almost perfect cutting edge. A

fine grit or finishing stone (1200 to 8000 grit) is used last. The finishing stone polishes and hones the bevel edge producing a superbly keen tool ready for whatever cutting job you may have. Most sharpening is done with the medium and fine stones. The coarse stone is used only when chips need to be removed or the bevel angle needs to be changed or reestablished.

Choose a set of stones that are large enough to sharpen your widest tool and long enough that you can take a stroke of at least 3" to 4".

Traditionally, the Japanese use a soft natural mudstone as the finishing stone. Manmade ceramic stones imitating natural mudstones have been perfected, allowing for exact grits and molded shapes. These stones perform as well as the natural stones, and are used by everyone from professional artists to beginning students.

Nagura stones are very fine-grained soft natural chalk stones that improve the sharpening effect of water stones. Their use is highly recommended with all stones.

Molded ceramic whetstones have grooves and ridges to facilitate the sharpening of u-gouges and v-gouges. The only drawback to the molded stones is that the grooves and ridges may not be the exact size of your tools. However you can create grooves that match your tools exactly (see p. 4, U-Gouges, for instructions on how to do this). Create these grooves only on one side of your water stones or on separate stones as you will need one completely flat surface for flat bevel tools (knives and flat chisels).

SLIPSTONES

A slipstone is used on the un-beveled side of u- and v-gouges to remove burrs that form as the beveled side of the tool is sharpened. Like whetstones, slipstones are manufactured of ceramic material and come in a variety of sizes and shapes to fit the various tools. They can be custom shaped to fit your specific needs by grinding them on another stone. Since slipstones are fragile, it is often a good idea to

break them in half first: half a slipstone like half a piece of chalk will not shatter as easily. A small broken chip from your regular whetstone or even folded sandpaper can be used in place of a slipstone.

LEATHER STROPS

A leather strop or a piece of leather mounted on a wooden block is very useful for putting the final touch on the re-sharpened tool or maintaining an edge. Honing on leather will not change the bevel of the tool, so you do not have to be quite so careful with your technique. Many people find they very rarely need to use their sharpening stones if they hone their tools on leather conscientiously.

Place the tool on the piece of leather, find the bevel, and draw the tool toward you. Lift the tool up and repeat. With practice, a rhythm will develop so you can do this quickly. Pushing the tool away from you will nick the leather, so only use a pulling motion.

Honing compound may be used if desired. It helps speed up the process and puts a very fine polished edge on the tool.

SHARPENING TECHNIQUE

Sharpening may begin with the medium or fine stone depending on how dull the knife has become. Coarse stones are reserved for taking out chips or creating a new bevel on the tool. If you badly damage or chip a tool, McClain's can send the knife back to the manufacturer. For a nominal sharpening fee plus postage, the knife can be made as good as new.

It is very important to maintain the original bevel on the tool as you sharpen it. Finding the bevel on very tiny tools requires practice and patience, so sharpen your larger flat tools first. Practice until you feel a natural rhythm developing. When you gain confidence, switch to smaller knives and chisels, then gouges.

Some people paint the area of the tool to be sharpened with a black felt-tip pen so they can easily see which areas have been in contact with the stone and which have not.

When you are sharpening flat tools (chisels, v-gouges and knives) it is very important that the

sharpening stones themselves be completely flat. If the stones are dished, you can not get a flat back or bevel on the tool. (See page 1 for instructions on flattening stones.)

When the stone becomes black from sharpening, it is a good idea to flatten it again to remove this embedded metal and expose fresh grains of abrasive compound.

GETTING READY

A piece of rubber or a wet paper towel under the stone will keep it from moving as it is being used. A bench hook covered with plastic or made out of plastic laminate can also be used to hold the stone in place.

Take the appropriate stone out of the water and place it on a flat surface. Add enough water to the surface of the stone as the sharpening progresses so that liquid water is always visible on the stone. A plastic bottle with a narrow tip, like those used to pour ketchup in restaurants, is useful for adding water to the stone; or just use your hand. The water floats away small metal particles produced by the sharpening action and keeps the stone working efficiently.

Flat tools: chisels and knives

Start with the Back It cannot be emphasized enough that *any single bevel tool* (knife or flat chisel) *cannot be sharpened until the back (the flat, un-beveled side) is perfectly flat up to the cutting edge of the tool.* The entire back of a large tool like a chisel doesn't have to be flat, but from the cutting edge back about one half inch or so needs to be worked on the stones until this area is evenly smooth and shiny all the way across. To do this, lay about one half inch of the back of the tool perfectly flat on the long side of the stone, holding it with the handle perpendicular to the stone. Press the edge of the blade down with the fingers of your free hand. Rub the blade back and forth, being very careful to keep it completely flat against the stone at all times. (You may find it easier to stroke in one direction instead of moving the blade back and forth. Do what feels easiest to you.) Add water as needed to keep the stone wet so the tool

moves easily. A magnifying glass is helpful to determine when the back has become flat. The metal will look the same all the way across the edge. If you finish with a 3000 or finer grit finishing stone, the back will look like a tiny mirror.

A mud or paste of grit will form as you sharpen which increases the cutting action. A nagura stone can be used to create this paste quickly. Just rub the nagura across your sharpening stone a few times. Repeat as necessary to keep a film of paste and water on the stone's surface.

If you carefully feel the edge on the bevel side, you will notice a slight burr has formed from flattening the back. This will disappear when the beveled side is sharpened. So now turn the tool over and begin working on the bevel.

Sharpen the Bevel Holding the bevel down on the stone, gently rock the tool until you have found the angle where the bevel is flat against the stone. Press down on the end of the tool with the fingers of your free hand to keep the bevel flat against the stone. Keep this angle as constant as you possibly can during sharpening process by holding your wrist and arm at a steady angle. The idea is to produce two smooth, flat planes (the back and the bevel) meeting at the cutting edge. *Rocking or lifting the tool while moving the tool against the stone will produce a rounded bevel resulting in a dull cutting edge.* If you are just beginning, try pushing the cutting edge away from you over the stone, keeping the angle constant, with a slow constant speed. At the end of each stroke keep your fingers on the edge, lift the tool up and bring it back to the end of the stone nearest you and repeat. Until you can keep the bevel angle constant, stick to the single direction method for best results. After you have sharpened for a number of hours, you may develop the confidence and skill to move the tool on the stone in both directions.

After 10 to 20 strokes on the beveled side, turn the tool over and take a few strokes on the back (3 to 5) to remove the burr that has formed from sharpening the bevel. Then go back to the

beveled side and repeat this alternating process until the bevel is smooth and uniform clear up to the cutting edge. Check with a magnifying glass again. After both the back and bevel are smoothed to the same degree, move to the next finer grit stone and repeat, again starting with the back of the tool. Continue until you have a mirror-like surface all the way across.

V-gouges

Start with the bevel. Holding one bevel carefully against the stone, and putting slightly more pressure on the top of the V with the fingers of your free hand, slide the gouge forward with an even long stroke. Repeat several times. It is very easy to over sharpen the bottom of the V and change the angle of the tool, so be sure that the bevel is being worked evenly across its length. Turn the tool over and do the second bevel. Remove the burr that has been created on the inside of the V with a slipstone.

U-gouges

Start with the bevel. If you are using a flat stone, start with an upper edge of the U against the stone. As you slide the tool forward, keep the top edge of the tool's bevel against the stone and rotate the tool so you reach the other side of the U at the end of the forward stroke. This is not an easy technique but with practice it will become natural. Remove the burr that has been created on the inside of the U with a round slipstone.

A molded stone with grooves already in it makes sharpening u-gouges an easier job. If your molded stone doesn't have the exact U-shape needed, you can widen a groove that is slightly narrower with repeated sharpening strokes.

You can also create U-shaped grooves on one side of your water stones. Rub an object such as a nail head that is close to the proper size and shape back and forth on the stone to create a rough groove. Or place a coarser grit stone on edge on the stone, and rub back and forth to make a groove. Once the basic shape is there, as you sharpen the tool, the groove will gradually assume the correct profile. Push the

tool forward in the groove just as you would on a flat stone, maintaining the bevel angle. If the tool fits in the groove exactly, you should not need to rotate it as you push, but watch carefully to be sure that the center does not begin to dish.

Stop and check the edge of the u-gouge periodically to be sure you have an evenly sharpened edge. Make sure you are not creating a secondary bevel or rounding the bevel. If these problems arise, you are not holding the tool consistently on the stone at the original bevel. When all of the metal around the edge of the blade looks the same, you are ready to move on to the next stone.

Use a round slipstone to clean up the burr on the un-beveled side.

After you have sharpened a few tools, you will find that this whole process takes only a few minutes per tool if you have not waited too long between sharpening sessions. It is a common practice for experienced carvers to keep a fine stone or leather honing block on hand and give the tool a few strokes after every 3 to 5 minutes of use. If you develop this habit, you will never need to spend long hours sharpening every tool in your kit.

A final tip: when you have finished sharpening your tools, carefully and thoroughly dry them. Then, since the blades are a combination of steel and wrought iron, your last step should be to wipe the blade with a little oil to prevent any possibility of rust forming.



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