

TOISHI: WATERSTONE

For many years man has mined natural stones with which to sharpen tools to get a cutting edge. To this day natural Arkansas Stone;

Welsh Slate Stone; Belgian Block Stone; and of course Japanese Awase Stone; are all mined. The latter is by far the rarer commodity, which are still mined from very narrow veins found deep underground in a specific area near Kyoto, the old capital. These are much prized possessions by Japanese Craftsmen who strive for many years before they are considered worthy to own such stones. On the other hand, rather than mining for natural stones, both European and Japanese stone manufacturers now make stones that are made from natural earth elements, bonded together to form the stone. The most common European stones have a very hard particle bonding, which make them really only useful for the softer steel used in European cutting tools. The Japanese have perfected the art of varying the bonding of these particles, with either a softer fired earth bonding or harder wearing, porous ceramic bonding.

All Japanese stones are used in conjunction with water. Water enables the particles of the stone to be continually exposed, offering a very quick and clean cutting rate, as well as easy cleansing of tools after sharpening. Japanese stones are unique in that although different earth elements are used for differing grades of stone, the result is always the same; a very simple, clean, fast and incredibly easy to use and maintain sharpening medium. Japanese Toishi (Waterstone) are graded in grit sizes. This is the number of particles to be found per linear inch if sifted through a screen mesh. In general, **Roughing stones**; namely **120 grit 180 grit** and **220 grit**, are made from silicon carbide particles bonded together with a porous binder made from fused silica-sand and coke. The next range of stones, **Preparatory Honing**, namely **600 grit 700 grit 800 grit, 1,000 grit** and **1,200 grit** have the aluminium oxide particles bonded together in a fired earth composite binder, or a high temperature baked mixed clay binder. In saying that, some of these grades are now available with the high temperature baked high-pressure porous ceramic binder made from mixed clays process. The finer grades of stones, **Medium Finishing** namely **3,000 grit, 4,000 grit** and **5,000 grit** are normally bonded within a porous synorogenic resin binder, formed at very low temperatures, or again a high temperature baked high-pressure porous ceramic binder made from mixed clays. The next option is the **Final Finishing**, which are stones of **6,000 grit, 8,000 grit** and **10,000 grit**. Again are normally bonded within a porous synorogenic resin binder, formed at very low temperatures, or again a high temperature baked high-pressure porous ceramic binder made from mixed clays. Your final choice of stone is a **Combination**, a stone made up of two differing grades that have been bonded together offering quick and easy swapping between grades. Also available are **Kodogu Toishi** (Shaped Sharpening Stones) in a range of different grits. These shaped sharpening stones are designed for sharpening carving gouges and affiliated tools.

All Japanese stones are soft in comparison to those normally found in the West. It is very easy to wear a stone to an uneven surface. This is very easily remedied: due to the cutting nature of these stones, two stones can be dressed face to face, provided copious amounts of water are used. Even simply rubbing your uneven stone on a flat surface, a piece of glass perhaps, that has some 220 grit wet and dry paper stuck to it will do the trick. You must always ensure that as well as using copious amounts of water when dressing stones you wash and flush the surfaces of the stones to avoid contamination from a dissimilar material.

Japanese stones, both natural and man made, will help you in the never ending quest for that perfect, surgically sharp cutting edge. After many years of practice, a Japanese Craftsman will use a whole armada of stones to achieve the ultimate finish. The following are not rules, just a witnessed operation.....

With a new cutting edge, all preparatory work is done with a 220 grit stone, followed by a little more work on a 700 grit stone. Now the fun starts; a quick move to a 1000grit, then a 1200 grit, the edge and

the tool are now prepared for final honing. The final honing takes place on a 4000 grit with a Nagura, followed by a little more honing on a 6000 grit with a Nagura, a final wipe hone and polish on an 8000 grit with a Nagura, one last wipe on a 8000 grit, then finished off on a natural Awase stone. Time taken - 1 hour, 9 minutes. The result: PERFECTION.

A Nagura is a small, either natural or man made stone that is used in conjunction with a Waterstone. When used with water and rubbed on the surface of a Waterstone, it breaks down to a chalky slurry on the surface of the stone which keeps the pores of the stone open offering a faster more efficient cutting rate. The use of Nagura is not essential, but they do increase the cutting rate. Waterstones are available in many grades: for simplicity a selection is shown below with the equivalent Oilstone indicated.

220 grit Medium India

700 grit Fine India

1000 grit Soft Arkansas

4000 grit Hard non-veined Arkansas

8000 grit No true comparison - only perhaps Lapping Compound

Also in this section we have included ancillary items, that although they are not stones, they are tool sharpening "add-on's". Namely these are the **Steel Flattening Plate** that is used in conjunction with **Silicon Carbide Grit** for chisel and plane iron initial preparation. In addition to this we have also included the **Ceramic Flattening Plate** that is used also in conjunction also with **Silicon Carbide Powder** to keep you Waterstone flat as well as **Waterstone Holders** and **Michi Shieru** (Honing Guide). Lastly and naturally **Camellia Oil** which is used to coat your tools to protect them from the atmosphere.