

Precision benchstones, diamond ground

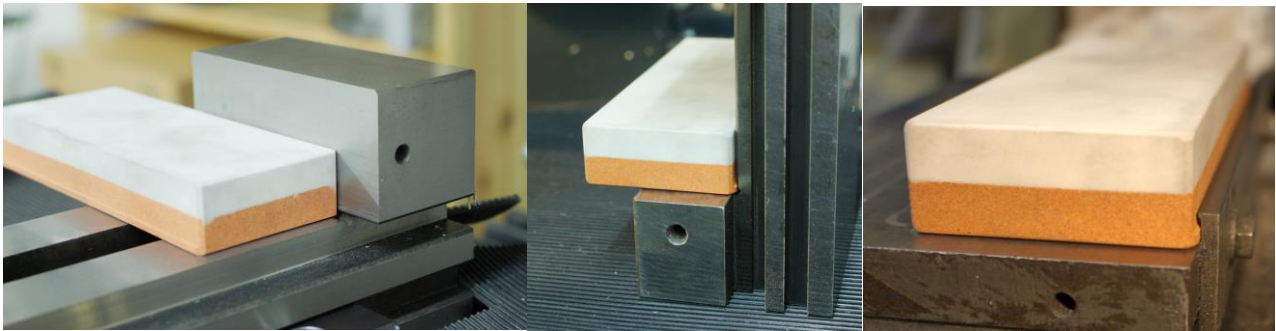
Description:

These are aluminum oxide stones in various shapes that are ground to a high degree of flatness. They are sold as a pair (See application notes). Their main use is to check and repair precision surfaces – The flatness of the stones does not allow the stones to cut into a flat surface, the surface pressure is too low, but if there is raised material like a burr, the reduced area of contact will make the stone cut and remove the material that's raised above the surrounding surface.

This process will not alter milled, ground and lapped surface finishes if done with care.

Main applications are magnetic chucks, v-blocks, vices, parallels, precision parts during assembly, external spindle tapers (Hardinge tapernose, DIN shorttaper or the tapernose of a surface grinder).

Especially useful for deburring a freshly scraped surface.



They are supplied in different shapes:

- *Rectangular*
General use
- *Rectangular with one lip*
General use, the lip allows to stone into the reliefcut on a vicejaw or the fence of a magnetic chuck
- *Rectangular with 45° Bevel*
General use, the bevel allows to work into dovetails that have an angle larger than 45°
- *Knifeedge*
10° tapered stone with two ground surfaces, used to get into very narrow areas. Also for dovetails.

Application notes:

- Always use the stones dry.
- Never use any kind of liquid media like petroleum when stoning precision surfaces. The liquid will create an abrasive slurry and definitely scratch and cut into the surface you are stoning. Also make sure the surface you are planning to stone is clean and free of oil and grease.
- Before each use, rub the stones against each other until they slide perfectly smooth against each other. This ensures that any loose grit or embedded metal particle gets removed or sheared flush with the surface of the stone. This should be repeated each time the stone gets placed on a new surface that needs to be stoned. This ensures that precision surfaces are not scratched or altered in any way by the stone.
- When stoning a surface, pay close attention how the stone behaves. If there is a burr or raised material, the stone will start to cut. This can be noticed by an increase of force needed to move the stone. Stone the affected area until the stone slides free without any drag on the surface. When you look at the surface you will see the shiny bright area where the raised material has been removed.
- When stoning high value items, absolute care has to be taken, cleanliness is a must, otherwise the surface can very easily be damaged by loose particles.
- Round parts can be stoned while rotating under power (Good example: Cleaning up a tapershanked toolholder held in a lathe). Care has to be taken not to apply the stone too long and with even pressure. Due to the reduced contact area the stone will cut slightly more aggressively than on a flat surface.
- The stones do not have to be cleaned on a regular base, as they are only used on clean parts and surfaces. If they are very dirty or contaminated with oil/grease, they can be rinsed and whipped off with denatured alcohol or washed with a bristle brush, dish soap and water. If very large metal particles get embedded in the surface they can be picked out with a needle.
- The stones are not supposed to be used to sharpen tools or deburr parts. The small contact area on these operations will wear the stone and compromise the flatness.