

## Grinding and sharpening

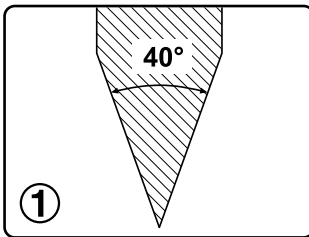
Edge tools need to be sharp to work efficiently. The bevels of a sharp edge tool end in a uniform tip. After a period of use the tip becomes rounded and the edge is no longer sharp.

You can sharpen tools with a bench stone or, in the case of knives, with a sharpening steel. This means that you work on the very tip of the bevel and the tool is sharp again. However, every time you hone the tool, you increase the edge angle.

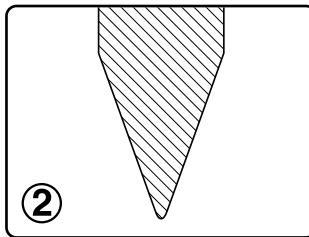
When **sharpening** with a steel or a bench stone, a very limited amount of steel is removed. After several sharpenings or honings, the edge angle becomes too wide and the tool must be **re-shaped**.

Sooner or later all edge tools need to be re-shaped and this is done by **grinding on a grindstone**. When only a limited amount of steel is removed this operation is also called **sharpening**.

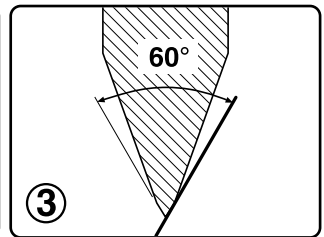
Here is shown, enlarged, the various stages of a **knife edge** (scale 10:1).  
In principle, this is the case for all edge tools.



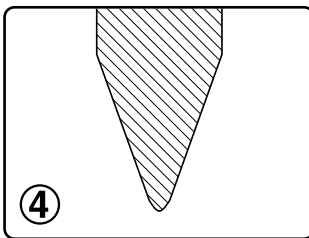
A sharp edge.



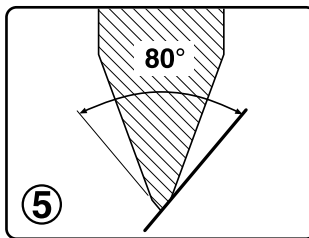
The edge is worn and blunt.



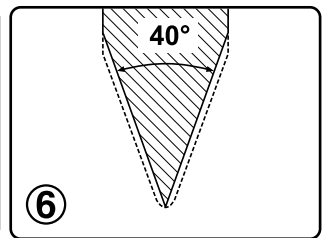
After honing on a bench stone the edge is sharp again, but with an increased edge angle.



After another period of use the edge is blunt again.



Another honing sharpens the edge to a still larger angle.



The edge is now re-ground to its original shape.

Grinding means that so much steel is removed from the tool that the edge is restored to the **original** angle or altered on purpose to a new angle. The **shape** of the tool can also be changed according to your requirements.