

DTU   **KENDAT**

Animal Cart Programme

TECHNICAL
35
RELEASE

Making a flatbit for drilling holes in wood

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Making a Flatbit.

This type of drill bit can be made in a few minutes and will drill holes well in wood and soft metal such as copper and aluminium. If it is hardened it will work in steel as well.

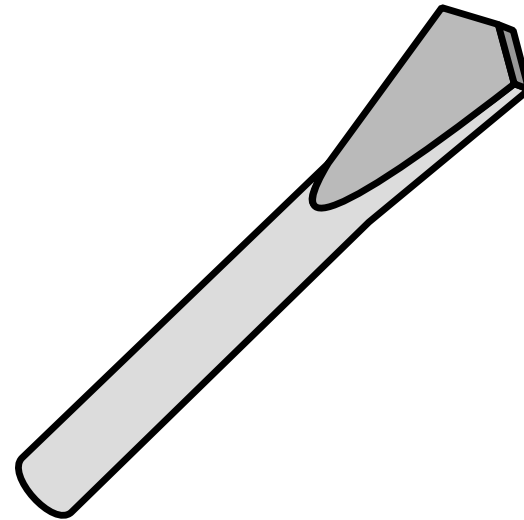


Figure 1: flat bit for drilling holes in wood.

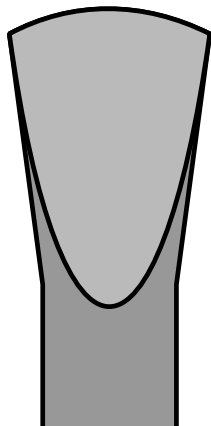


Figure 2: flatten end of rod by hammering.

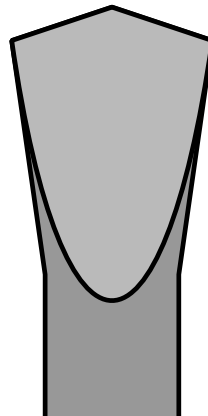
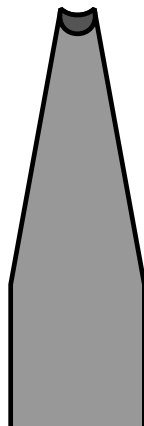


Figure 3: file sharp edges and point.

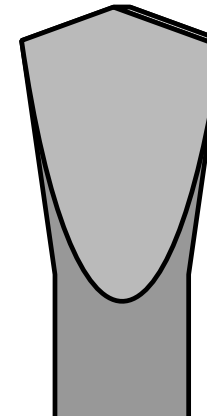
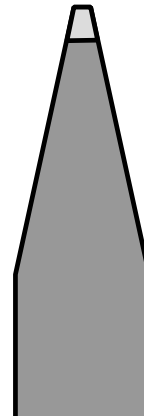
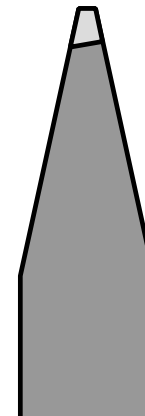


Figure 3: file cutting edges and relief angle.



Making a flatbit

Flatbits for drilling wood are easy to make and quite useful because you can make them very long and drill holes in quite awkward places. Of course you do need something to turn the bit - like a wheelbrace or a 'drill'. You can use a bent piece of steel like that shown in Figure 2 and weld the flatbit to the end of the rod. To make it comfortable to push you could make a handle from a piece of pipe with an end on it or by cutting it and bending a bit of the pipe over. Another way is by winding a spring of say 6mm round bar around the rod and then bending the end of the wire over as we have shown.

If you can harden the cutting edges of a flatbit you can use it to drill holes in metal too as long as you do not want to drill deep



Figure 2: using bent steel rod to rotate drill.

holes - it tends to wander if the depth is more than the diameter.

To get hard cutting edges you will need to use 'silver steel' or spring steel, which you will have to harden and temper if you can. To get it very hard, heat until bright red/ orange hot and plunge into water. It will then be very hard and brittle so if you can you need to reheat slowly at a point two inches from the tip. You will see the steel take on a range of colours and just when the cutting edges look yellow or straw coloured, re-plunge into water. This is a fairly skilled operation but it does give a good result if you get it right.

Another way to get a harder cutting edge is to use a hardfacing welding electrode. This will not be as good as the heat treated steel above but it will be better than mild steel.

Lastly some concrete reinforcing bar called 'high yield' may be a bit harder.

- 1) To make the bit, get some steel bar of the same size as the hole you want to make, or a little bit smaller. Then hammer the end to flatten it a little (a bit like a screwdriver). The drawing shows what we mean.
- 2) Then file the end pointed and finally sharpen the cutting edges.
- 3) That's it!

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