

I'm sure I'm not the only woodworker who has boxes of blunt drill bits lying all over the workshop. So when I heard that Tormek had brought out a new drill sharpening jig, I was first in line to try it. Here's my report

Tormek DBS-22 drill sharpening attachment

The Tormek DBS-22 drill sharpening attachment can be fitted to both the Tormek T-3 and T-7 water-cooled sharpening systems. It will also fit older Tormek models so long as they have a horizontal mounting plate for the universal support.

The kit comes in three main parts – base plate, guide and drill holder. The drill holder is a particularly clever design which allows it to hold bits from 3 to 22mm in diameter. It also comes with a setting template, a magnifier and Tormek's typically comprehensive instruction booklet.

Standing apart

There are several drill sharpening jigs on the market. What makes the Tormek jig different from the others, apart from the fact the wheel is water-cooled and therefore won't overheat the bit, is that it grinds a four-facet point. This is similar to grinding chisels or plane irons, which have a primary bevel and then a finer secondary bevel forming the cutting edge.

There are several advantages to grinding a double bevel on a twist drill bit.

- The bit comes to a point rather than a chisel edge, which helps to prevent the bit from 'walking' as the hole is started.



- Less pressure is required as the bit cuts more easily, resulting in a straighter, cleaner hole.
- The drill bit runs cooler, which helps to give a longer bit life.

Variable geometry

The Tormek DBS-22 will accommodate various bit geometries; the point angle can be set from 90° to 150° and the clearance angle from 7° to 14°. Comprehensive advice on which angles to choose is given in the instructions, but for most woodworking applications the point angle would be set to 118° while the clearance angle will vary from 9° to 14°, depending on the bit diameter. To make life easier, there are several grooves machined into the edge of the guide so you can quickly check the point angle of your drill bit.



The drill holder has two clever pairs of interlocking fingers that grip the bit



Check the bit's point angle by holding it against a groove on the edge of the guide



This close-up shows a standard twist drill bit in need of sharpening



This image reveals the four-faceted point of a freshly-sharpened bit



A 'new' bit cut the holes on the left, and a sharpened one those on the right



This full set of re-sharpened twist drill bits has been given a new lease of life



TESTED BY KEITH SMITH

THE JIG IN ACTION

Before I started using the jig, I was concerned that it would wear or mark the stone appreciably. However, as the drill bit can be constantly moved from side to side during grinding, the wear on the stone is very even. I started my sharpening marathon with the largest bits first. With these I could clearly see the edge, and it was relatively easy to grind the secondary facet, leaving the primary facet intact. However, by the time I got to the smaller bits, I'd been sharpening for a couple of hours and was getting tired.

Two facets good

I thought that with the smaller bits there would be little advantage in grinding a secondary facet, so I ground just the primary facet on a 6mm bit. However, when I tested it on softwood I was really disappointed with the performance; it took a lot of pressure to drill

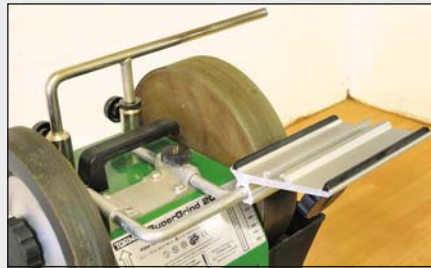
and left a typically ragged hole. I then ground the secondary facet on the same bit and it drilled superbly. I tried again, this time with a 3mm bit, and got exactly the same result. It's obvious that even with the smallest diameter drill bit the jig will sharpen, cutting a secondary facet dramatically improves the bit's performance.

Summing up

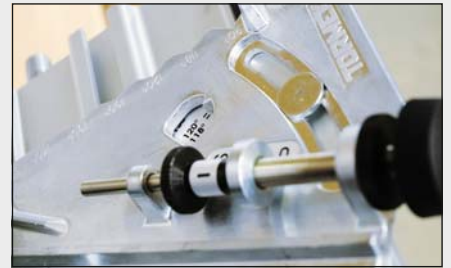
This attachment would be a long-term investment for most people, as you would need to sharpen a lot of bits before it paid for itself. However, it grinds such a sharp edge that the drill bit's performance is transformed, and the resulting holes produced are much cleaner and easier to drill. What's more, the four-facet point created by this jig allows the drill to cut more accurately sized holes, as the drill has no tendency to start oversize or oval holes. Last of all, you're no longer tempted to use blunt bits, as it's so easy to re-hone the edge once a bit has been properly sharpened on the jig.



Set the universal support 14mm from the wheel using the hole in the setting template



Slide the base plate onto the support, as far to the left as possible. Lock it in place temporarily



Set the point angle on the guide before sliding it onto the base plate



Mount the drill bit into the holder and set the length to the stop on the guide



Turn the drill bit to align its cutting edge with the lines on the holder; use the magnifier if needed



Tilt the base up and set it to the required clearance angle using the template



Place the drill holder on the guide and adjust the setting screw so the point of the bit just touches the stone. Then turn the setting screw inward to give the required cutting depth; one turn is 0.5mm. You can now cut the primary facet on both edges of the drill



To cut the secondary facet, tilt the base away from the stone and move the drill holder forward up to the second mark on the guide. Then tilt the base forward until the point of the drill touches the stone. Adjust the stop nut to give the required secondary facet



I found it best to give the nut 1½ turns, grind both sides and gradually adjust the stop nut to sneak up on the primary facet