John Speedy showed his Bench Grinder sharpening system aimed at wood turners. It is simple to make but it will repay the time invested in time saved on every trip to the grinder to resharpen. Sharpening is such an important part of turning, that it is worth investing time in a simple, repeatable system to get consistent results. All the details have been documented in John's article that follows below.

Bench Grinder Sharpening System

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Most woodturners use a dry high-speed bench grinder to sharpen their turning tools. Slow speed, wet grinders such as the Tormek, are not needed, as the quality of the edge obtainable with a high-speed grinder is sufficient for sharpening turning tools. (Cabinet makers and wood carvers will not find the edge quality straight off a high-speed grinder acceptable for fine work, but then they are not sharpening nearly as often.)

To get the correct sharpening angles, there are only a few sharpening systems that are available to the average local turner especially for the beginner. The main requirement is a quick reliable method of setting the platform for a repeatable bevel angle. The problem is how to set the platform (grinder tool rest height and angle) to get the recommended bevel angles when the platform needs to be tilted to the correct angle and tightened. The other inconvenience is as the angle gets less the chisel handle drops even lower down.

In the design given here, the chisel is always at 30 degrees to the horizontal. To change the bevel angle from 45 degrees, extra platforms are placed on the main platform. Actually, what is required is a platform system which can be rapidly and consistently set to the preferred angle for the chisels which are being used at the time. The proposed system given here will do just that. The angles may not be exactly those recommended but will be close enough.

What are the recommended bevel angles?

- Spindle Roughing Gouge: 40 to 45 deg.
- Spindle Gouge: 35 to 45 deg.
- Detail Spindle Gouge: 30 to 35 deg.
- Bowl Gouges: 45 deg.
- Skew Chisel: 25 deg.
- Parting Tool: 30 to 45 deg.- all seem to work use your own preference.

The system described here is for (6 inch) 150 mm and (8inch) 200mm bench grinders that will accommodate a 20 or 25mm wide wheel. The wheels normally fitted onto these grinders are normally 16mm wide or less and are too hard a grit which generates more heat when grinding. The recommended wheel is a white aluminium oxide wheel 20 or 25mm wide, 80 grit. When fitting a wider wheel, check that the spindle length is long enough to take the required wheel width. The wheel covers must also be capable of accommodating the wider wheels; they must not be removed for safety reasons.

The Turning tool sharpening station

The Sharpening system proposed here has two systems:

- one is a flat platform with angles adjustable for bevel grinding angles of 25 to 45 degrees,
- the other system is specifically for finger nail grind on spindle and bowl gauges and is designed around the Tormek SVB 260R jig.

The sharpening operation varies from that recommended by Tormek in that the Rod remains stationary and to get different bevel angles the protrusion of the gouge is varied. A stepped plate is used for quick distance setting. (This method was recommended by an English professional woodturner and has served me well.) The setting up instructions are set for a 45-degree bevel for a protrusion length of 50mm, each 5mm step gives approximately a five-degree change. What is important is that the system gives good repeatability when re-sharpening. Set the Tormek jig on angle 3.

Safety - When using the grinder wear eye protection at all times.

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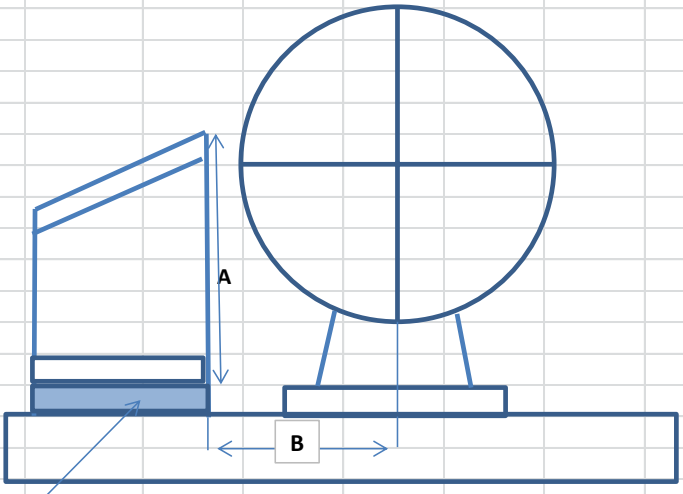
Grinding Platform



Dimension	150mm Grinder	200mm Grinder
"A "	100mm	125
" B "	80mm	105mm

Positioning the base

Remove the existing tool rest from the grinder. With reference to the figure measure the height from the grinders base to the centre of the wheel, this is done accuratly with the covers removed. If this is more than dimension "A " in the table then the jig base must be rasiedby the difference. If the dimension "A "is larger then the drinder must be raised by the difference.

For working omfort the grinder shoud be at the same height as lathe spindle.

I.E. at elbow height.

Setting up the Jig and compensation for wheel wear

Set the distance between the front of the Jig to the wheel at 10mm

As the wheel wears, it is necessary to reset the the distance between the jig and the wheel.

N.B. Don’t forget to put a good finish on the jig

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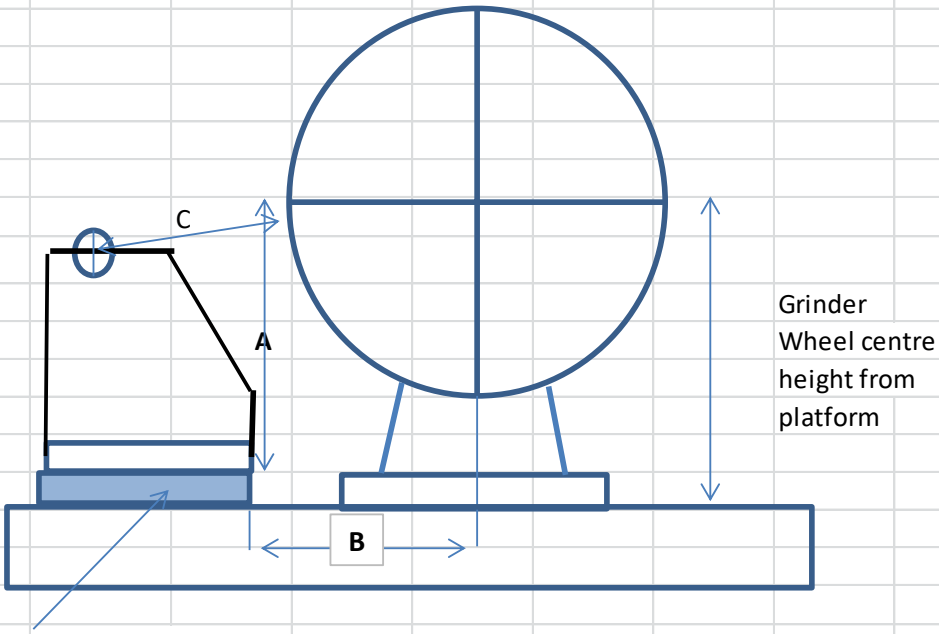
The Tormek Jig Set Up



Dimension	150mm	200mm
	Grinder	Grinder
"A "	100mm	100mm
" B "	86mm	105mm
"C "	53mm	47mm

Positioning the base

Remove the existing tool rest from the grinder. With reference to the figure measure the height from the grinders base to the centre of the wheel, this is done accuratly with the covers removed. If this is more than dimension "A " in the table then the jig base must be rasiedby the difference. If the dimension "A "is larger then the drinder must be raised by the difference.

For working omfort the grinder shoud be at the same height as lathe spindle.

I.E. at elbow height.

It is best for the for the Jig to be placed on the left side wheel, with the centre of the rod (the distance from the mounting to the end of the rod) in line with the left-hand edge of the wheel, or displaced 10mm to the left of the wheel centre line.

If used on the right-hand wheel the rod can be positioned to the right of the mounting and the centre of the rod is still placed 10mm to the left of the wheel centre line.

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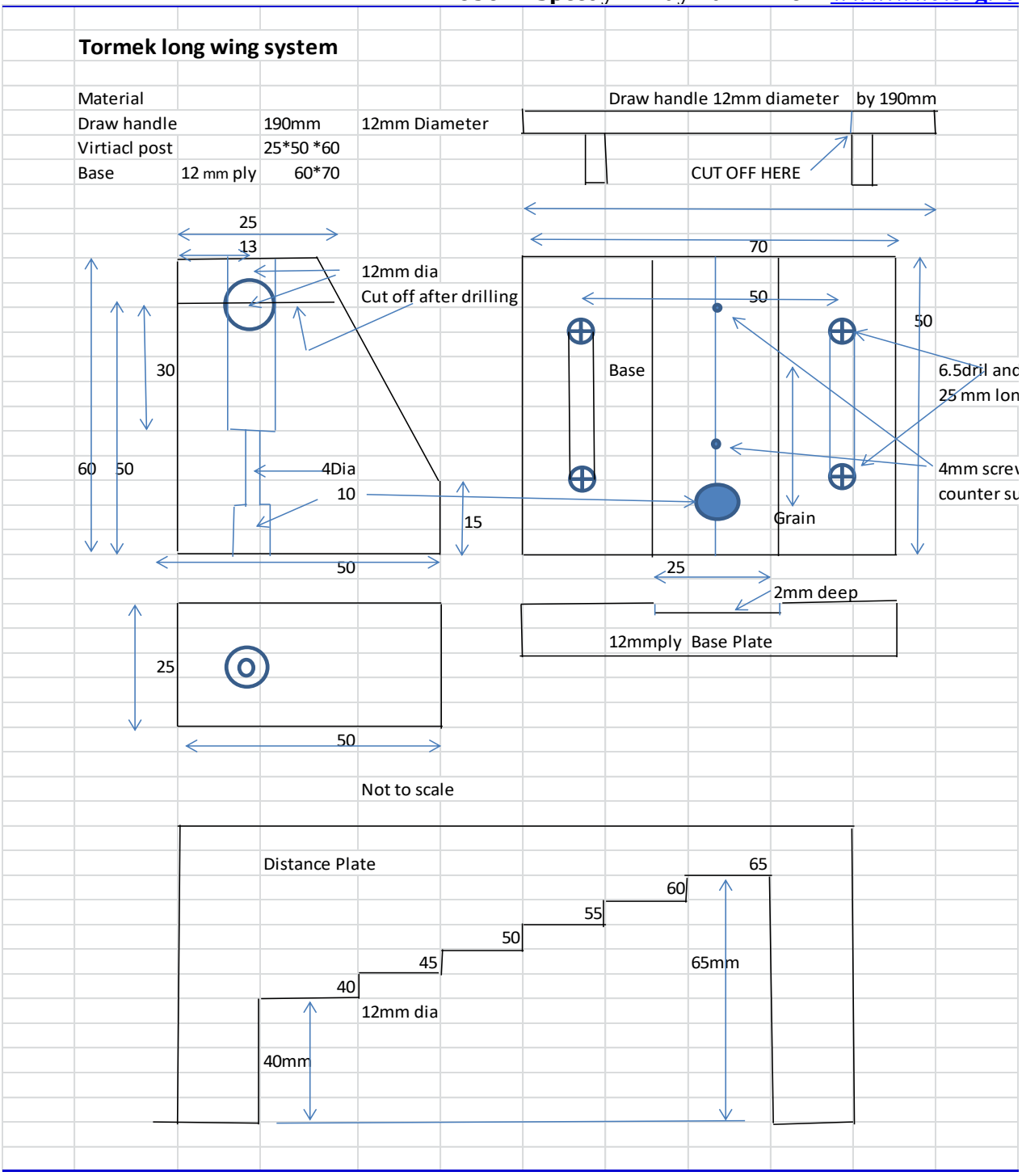

The Rod should be to the left of the mounting. When you are all done, I suggest that the base is glued and screwed using drywall screws

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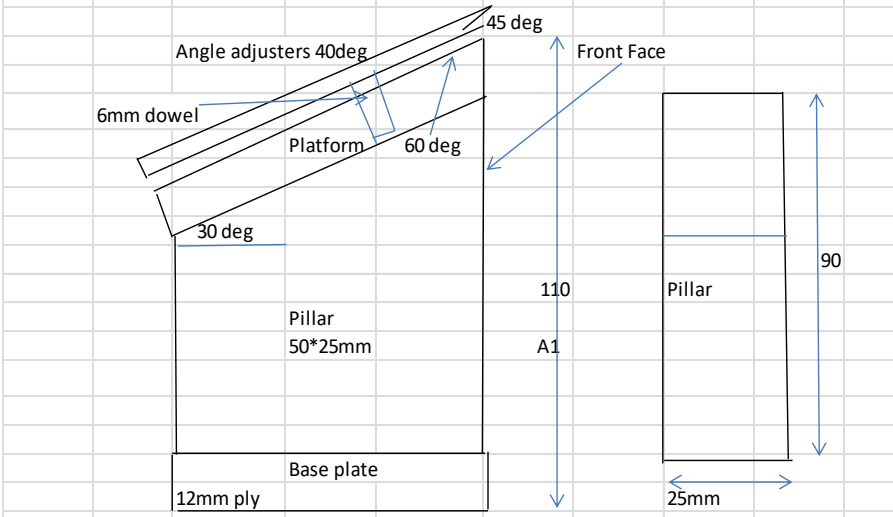
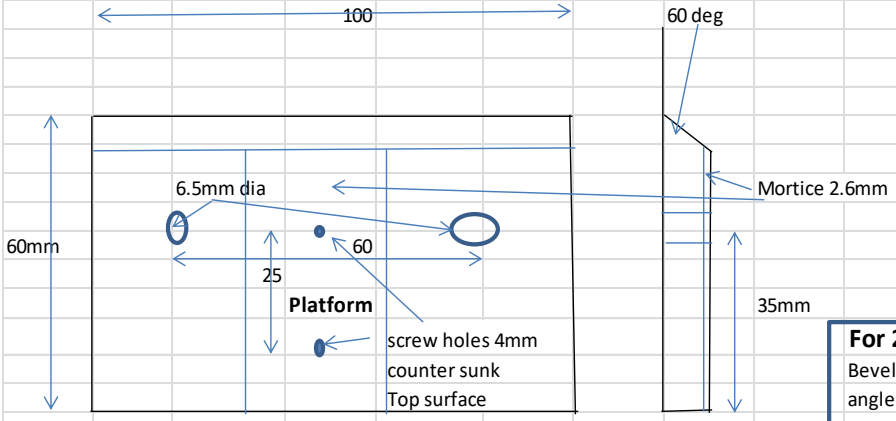
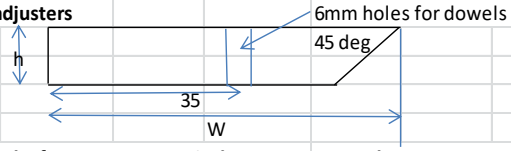
Plat Form for a 156mm (6 inch grinder)





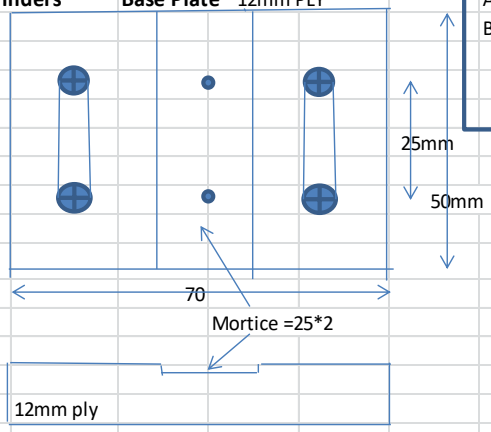
Degree adjusters



Degree adjusters platforms 150mm grinders

Bevel ang degrees	Thicknes h	Width W
40	4.5	64
35	8.5	68
30	12.1	72
20	15.1	75

Base Plate 12mm PLY



Base Plate
as for the Tormek Jig

For 200mm grinders

Bevel angle	Plate thicknes	Width W
40	6	66
35	11.3	71
30	16.1	76
25	20.1	80

Assembly height = 140mm
A=125
B=105

Tip
The platform, Drill the dowel holes 6mm and then use it as a jig to drill the holes
in the Degree platforms also 6 mm diameter.
Then enlarge the platform holes to 6.5mm

Assembly
When assembling the Jig keep the front face in line.
Use 25mm dry wall to assemle the Jig .
Any dimensional design changes are done to the back of the jig

The angle platforms

I found that by gluing two thinner plywood sheets together with layers of thin cardboard (cereal box; tea; etc. but not thin corrugated cardboard) between them, I could get the required thickness.

Wheel Dressing

The recommended dresser for the wheels is a diamond dresser either a single point diamond or the T-bar diamond dresser (shown below). A star wheel dresser is not recommended. The T-bar dresser is the most practical and endorsed by Bill Jones in an early Woodturning magazine and again in a recent issue.
The T-bar diamond dresser is available from Hardware Centre in Strydom Park.
The single point diamond dresser is only recommended if you have a way of accurately feeding the point across the width of the wheel to get a smooth surface.