

Gauge it

Peter Sefton finds ten uses for a digital angle gauge

I recently wrote about my Swann Morton scalpel as being the tool I can't do without but one other tool came a very close second; my digital angle gauge. I often wonder how I did without it. Transferring angles from drawings onto machines and setting

up sliding bevels are now so much more straightforward and accurate.

For those of you who have never heard of a digital angle gauge, it's a mini angle finder that provides digital readings between $\pm 180^\circ$ with a resolution of 0.1° and mine has

magnets in the bottom. Its origins are from an inclinometer which is an instrument for measuring angles of slope or tilt.

It's got a myriad of uses and I have come up with 10 practical ways of using my digital angle gauge.

COURTESY OF ANTHONY BRIDGE

1. Table saw blade cant

The most common use for my digi-box is setting the cant on the table saw. Place the box on the saw bench top, perpendicular to the saw blade and set the box to zero. Cant the saw to the desired angle on the saw's protractor scale (if it has one) and then place the box onto the saw blade. It should remain on the blade if it is magnetised like mine.

To get an accurate reading, the box must be vertical and is best placed near the top of the saw blade. Keep it located down from the saw gullets and teeth on the main plate of the saw for the most accurate measurement. The box can be used at any angle whether you're setting it at 90° , 45° or a more unusual 18° or 72° for pentagons.



Digital angle gauge attached to canted table saw blade

2. Band saw table tilt

This is a slightly different technique, as this time the blade is the constant and the table moves instead. I start by placing the magnetised box on the bandsaw blade just back from the gullets so as not to damage the teeth and resetting the box to zero. Then, placing the bevel box on the table and tilting it, the new reading can be taken to give for example, an angle of 70° between the left hand side of the bed and blade. If the bandsaw fence were fitted on the right hand side of the blade, the angle between the blade and the fence would be 20° .



Digital angle gauge to canted bandsaw bed

3. Mitre gauge setting for bandsaws, table saws or disc sanders

For any accurate mitre or angle cuts I tend to use the panel saw but if you need to cut smaller sections on either the bandsaw or table saw, then this method may help you accurately set the mitre gauge. By setting the

bevel box to zero on the table saw and then sticking it to the sliding bar of the mitre gauge, the bar can be swivelled and locked off at the desired angle (of 60° or 30° in this example).



Bevel Box attached to sliding mitre bar

4. Spindle moulder setting



Digital angle gauge on spindle moulder bed

My spindle moulder can be tilted backwards to just over 45° but the spindle moulder's protractor doesn't give a precise measurement of what the cutter is doing so in this instance, the bevel box can be used. Once again the box needs to be zeroed off the table or this could be done off the fence if required. This would be determined by whether the face of the timber to be moulded would be sitting on the table bed or the fence.

I protect the disposable knives in my rebate block with a Post-it note to separate its cutting edge from the bevel box, thus keeping the blade edge in tip top condition.

Tip: I always try to use my cutter block underneath the timber when moulding as this means the timber is guarding the cutter block when in use.

5. Surfacer fence tilt on non-magnetic fence

Zero off the outfeed surfacer table as described before, but the main difference this time is that the fence is aluminium and therefore not magnetic. So, to help overcome this, I use a Japanese flat setsquare and hang it off the top edge of the aluminium fence to give a magnetic surface on which to attach the digital angle gauge. This square also helps it sit at 90° to the outfeed table and will stay there whilst you are setting the fence to the desired angle. I always check my fence for square or angles on the outfeed table, just past the cutter block, as this is where the planer needs to be at its most accurate.



Digital angle gauge attached to an aluminium surfacer fence

6. Sliding bevel setting

Setting a sliding bevel to match a drawing can be a rather hit and miss affair. I do own more sophisticated angle guides which I had before I bought a digital angle gauge, but if you don't already have a steel protractor, you may find that you'll get more life from your sliding bevel, if you

use a digital angle gauge. Plus I'm always keen to have one piece of kit that has multiple uses, rather than buying endless tools that only perform one task. I find this method an easy and accurate way to transfer angles that have been produced on the drawing board, onto timber that I am marking out.



Peter taking an angle reading on the sliding bevel blade

PROJECTS & TECHNIQUES

10 ways to use a digital angle gauge

7. Chair back rake

If you have a chair that you find comfortable and you want to replicate that, finding the rake of the chair seat or back can be a dark art and the digital angle gauge can make this much easier. I also use this method in my workshop when my students are making their Clisset ladder-back chairs to set up the chair back rake prior to drilling in the stretchers rails. These angles can be transferred to the pillar drill if required, using the bevel box.



Peter measuring the angle of a chair back rake

8. Sharpening angles for chisels and planes



Peter taking a reading on an angled block

Here I am using the bevel box to check the angle of my honing at 30°. I also use it to set up my cabinet scraper clamped horizontally in my woodworkers vice with its long edge running parallel to the jaws. I have

set this so that my burnisher can run along the cabinet scraper edge and the wooden vice jaws, to guide the burnisher at an even 15° producing a curled wire edge to the scraper, when being burnished.



9. Template checking

I was recently making a new shooting board for planing end grain timber at 45° and used my bevel box to check the accuracy of the backing block that I had just cut on the table saw. I use this block sat on top of a regular 90° shooting board. You can use this bevel box method to check any angle produced on the table saw.

Digital angle gauge on table saw bed

10. Site surveying

When visiting a client on site or surveying an older property for any built-in or fitted furniture, I find the bevel box great for checking how far out of plumb the walls or floor may be. I have super glued two metal washers to the top edge of my spirit level so my magnetic digital angle gauge can stick to it. After setting the spirit level plumb, or true on the floor, the surface can be checked and the digital angle gauge will give an accurate reading of how far out they are. This measurement can be used back on the drawing board or in SketchUp. It can give a better understanding of what lies ahead for the site fitting element of the project and when preparing the job to leave the correct amount of timber on, to allow for site scribing plus a little more for good luck. *F&C*

Peter measuring the angle of a vertical wall with a digital angle gauge



So, these are just 10 methods and uses that I have found, but I am sure that the more you use your digital angle gauge, the more uses you will find for it ...



Peter runs Peter Sefton Furniture School offering long and short courses from rural workshops in Worcestershire. www.peterseftonfurnitureschool.com