

# How square is your square?

**Michael T Collins** looks at making your squares just that little bit sharper in shape

As woodworkers, we rely heavily on our hand tools and expect them to perform as designed. We hone our plane irons and chisels to keep them sharp, we realign tablesaws and once in a while may resurface a bench. But then again, some of the tools we use we take for granted and expect them to always perform as they did when we bought them.

Take, for example, a combination

square. I don't know about you but that is my go-to square of choice – only one moving part – what could possibly go wrong with it?

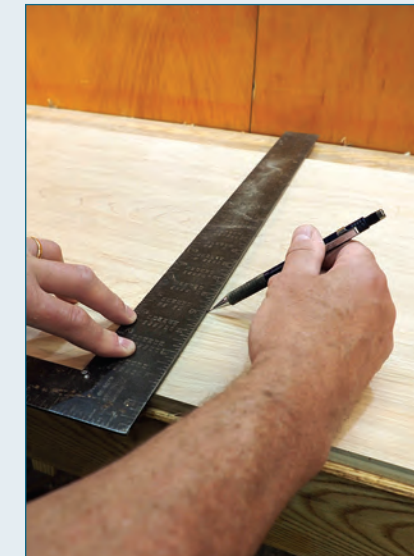
Recently, I have been cutting a lot of joints, tenons in particular. I was a little perplexed as to why the shoulders were ever so slightly out of square, not that noticeable across a 40mm shoulder, but on a 150mm shoulder it was visibly out and by the nature

of scribing, the shoulders errors were compounded as I worked around the stock. Certainly nothing to worry about on small stock, but it did make me think about all my squares and just how accurate they were. I have several squares, ranging from an antique try square and carpenter's square, to a new 300mm combination square. I had to test them all.

## HOW TO TEST?

Here is a very simple method to test your squares: get a piece of wood with a perfectly straight edge about 600 x 600mm and it must be at least as wide and long as the square you are testing. I started with the carpenter's square; a tool that I use all the time for layout and cabinet construction. Take the square and holding it firmly against the straight edge, using a fine pointed pencil, draw a line the length of the square on the outside edge.

Flip the square over and draw a second line about 1mm to the right of the first line. If the lines are parallel then the square is good, but converging or diverging lines are a sign of poor accuracy. Before you throw that square in the metal recycling box or bin, there are some things you can do to correct the issue.



Draw the first line



Draw the second line

## HOW TO FIX THE CARPENTER'S SQUARE

### What you will need:

Metal punch and hammer

### Diverging lines

To fix this, you will need a metal punch and hammer. Assuming you have drawn the two lines as indicated and the lines are diverging then the angle between the arms needs to be widened. Place the square on a firm flat surface, I personally used my bench which I find to be very solid. Whatever the surface, you want it to be a hard surface that is not going to deflect the square or absorb the impact.

Take a metal punch and place it about 6mm from the inside corner of the square and hit it firmly with

the hammer. No tapping allowed. Just a single sharp blow!

Now, draw two lines again using the exact same method as before and check the square again – if it is still diverging, turn the square over and you will see where the punch left its mark. Use the metal punch and hit it again just a couple of millimetres away from this mark and the inside corner. If they are still diverging, turn the square over and repeat, but move the punch a little closer to the corner. Continue this process of punching and line drawing until the two lines drawn are parallel. My square was about 1.5mm out of true over the full 600mm length.



Single sharp blow on the inside corner



Converging lines



Parallel lines

### Converging lines

If the square has converging lines the angle between the arms needs to be lessened. Take the punch and place it about 6mm from the outside corner and give it a firm whack!

### Parallel lines

Repeat the process of draw, check and whack. As the two lines approach parallel ease up on the force of each hammer blow. If you were correcting divergent lines and end up creating convergent lines, simply follow the procedure for convergent lines. At this point in the process the lines should be parallel. ➤



## CORRECT THE COMBINATION SQUARE

To correct the combination square you need one additional item, a very thin, fine file. Draw two lines on the board as you would have done before and determine if the lines are diverging or converging.

### Diverging lines

If the lines are diverging then you need to file down the little 'nub' in the slot at the 90° side of the square. Remove the ruler and file just a little and perform the test again. Repeat this until the lines are parallel. If the square is converging then file the other side of the groove. Whether diverging or converging go easy with filing as there is a limit to the amount of metal that can be removed. Test the square again.

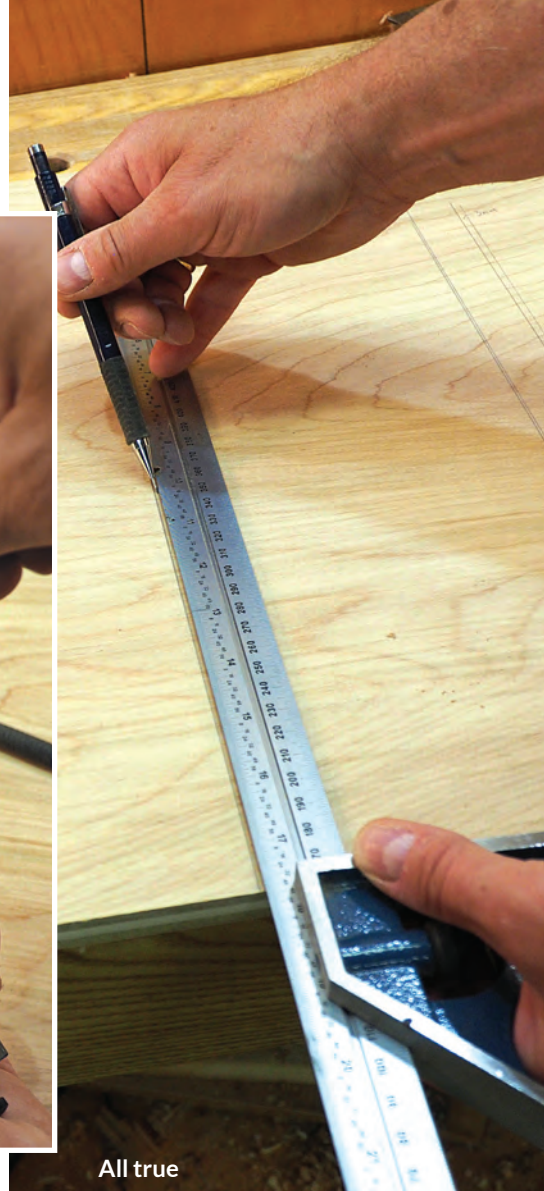
Fix a traditional try square that's done in much the same way as a carpenter's square. Place the metal punch about 6mm from the inside angle if diverging and 6mm from the outside edge if converging.

With judicious drawing, whacking and filing most squares can be brought back into true and give you many more years of serviceable life. ■

For more tips and tricks please visit:  
[www.sawdustandwoodchips.com](http://www.sawdustandwoodchips.com)



Gently file the nub in the groove



All true



Fixing a try square



Perfectly scribed shoulders