

Centring Work in the 4-Jaw

There can be no doubt that it is easier and faster to centre something in the 3-jaw self-centring chuck, but the 4-jaw independent is generally more accurate and secure, as well as being more versatile. The trouble is, many people find using it to be both tedious and time consuming.

Here is a method of using it that is easy, accurate, and quick.

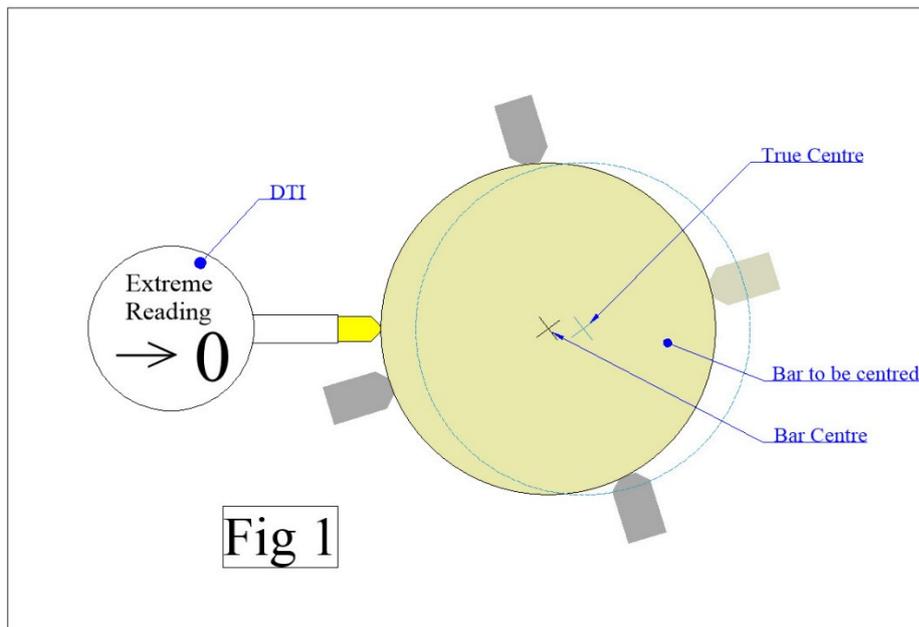
The simplest way of speeding up the process is to use two chuck keys, on opposing jaws. You don't actually *need* an extra key, but it's a great time saver. If you don't have a second key, then buy or make one. You won't believe the difference it makes.

The rest of this short article requires the use of a **DTI** (Dial Test Indicator). At first glance the procedure seems to be rather complicated, but it's really very simple, accurate and quick.

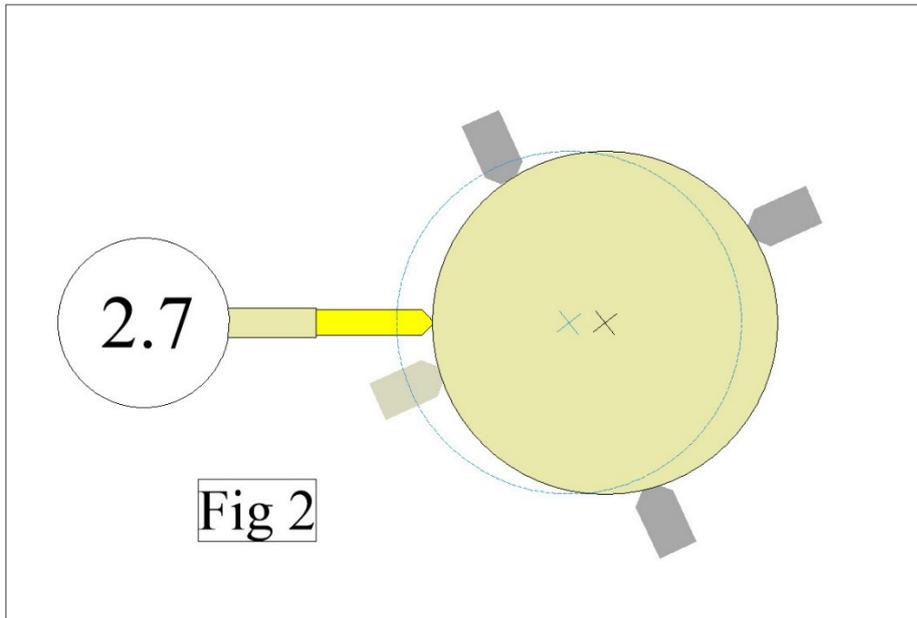
Step 1. Put the bar in the chuck and centre it by eye as best you can.

Set the DTI up on centre height to point at the true centre of the lathe, and then rotate the chuck to get the extreme reading on the DTI, as shown in **Fig 1**. This is the point where the DTI indicates that the bar is closest to the DTI. Don't worry about the positions of the chuck jaws at this stage; you are only interested in getting the lowest reading on the DTI. At this point, set the DTI to zero.

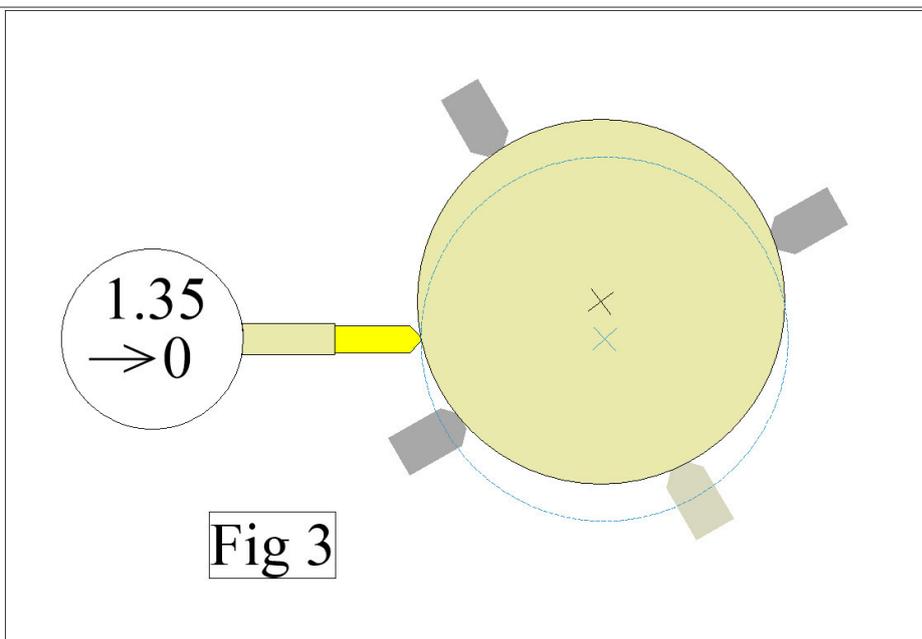
In the diagrams, the dotted circle represents where the bar will be when it has been centred. The light coloured jaw shows how the chuck has been rotated.



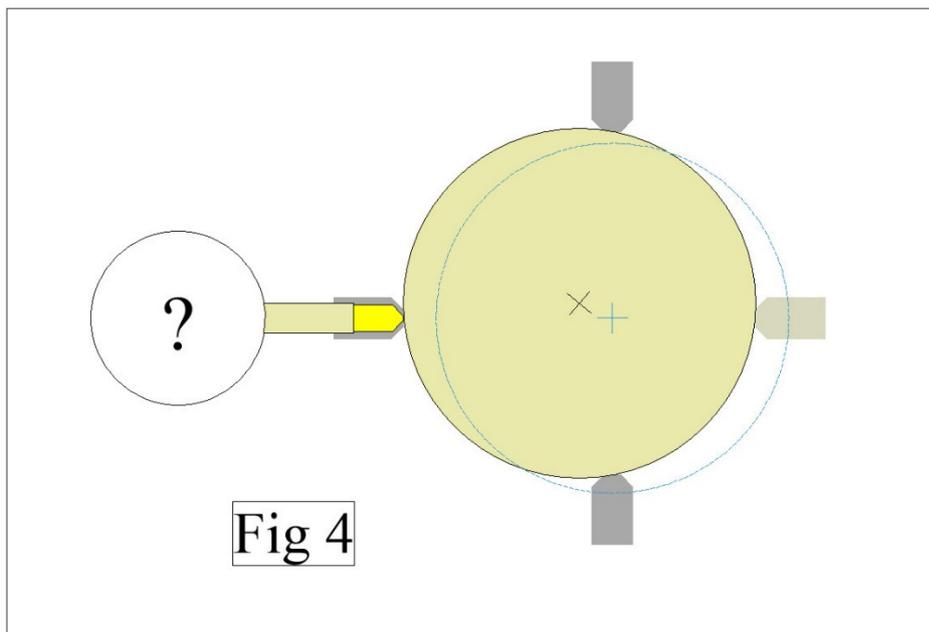
Step 2. Rotate the chuck to get the maximum reading on the DTI. In **Fig 2** this is shown as 2.7, but that is just an example to illustrate the process. Divide that value by 2 (to get 1.35 in this example), and remember that value.



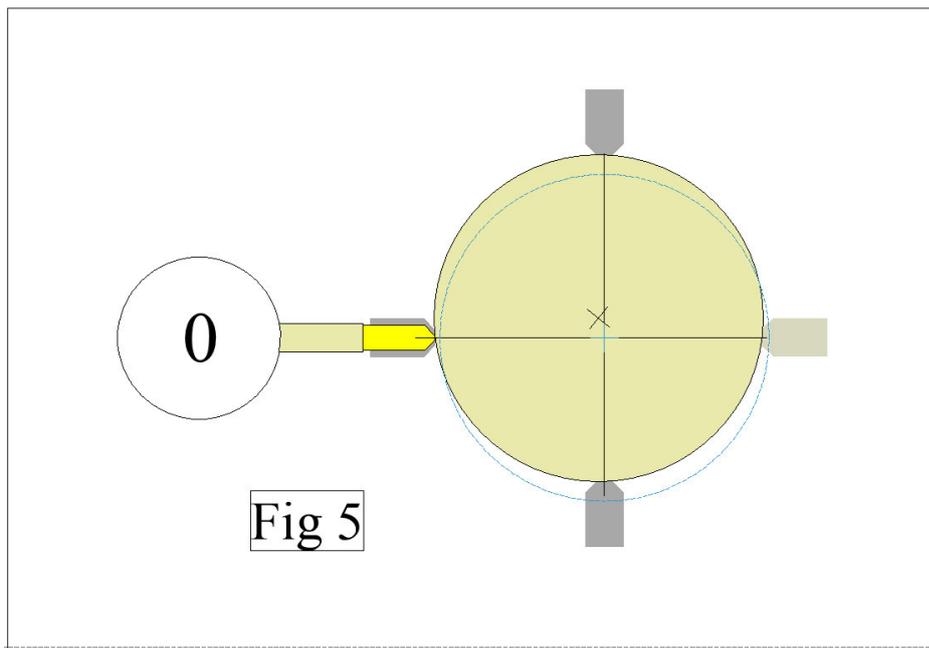
Step 3. Continue to rotate the chuck until the DTI shows the remembered value – 1.35 in the example shown in **Fig 3**. Then set the DTI to zero.



Step 4. Continue to rotate the chuck until the next jaw is aligned with the DTI (**Fig 4**).

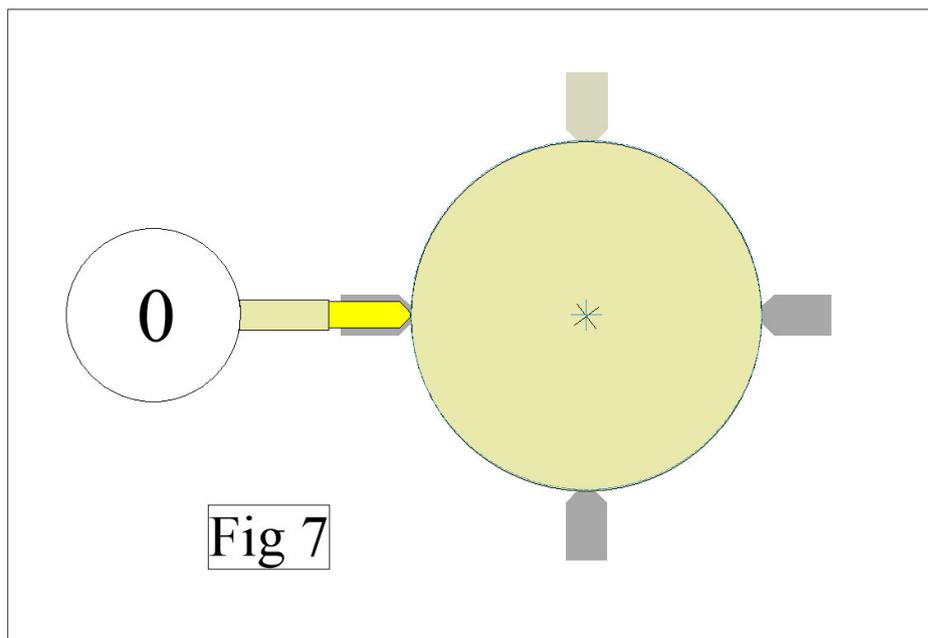
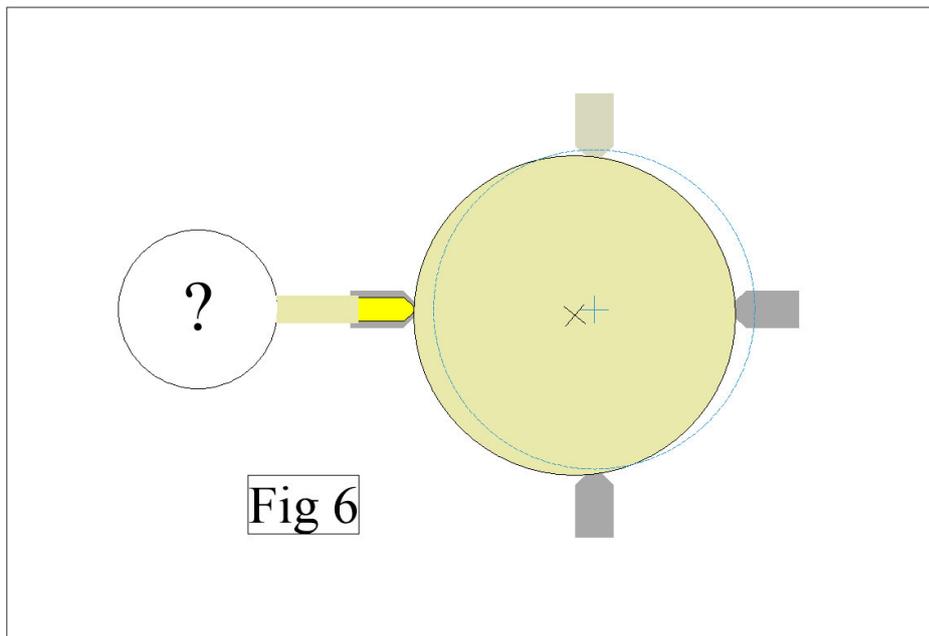


Now adjust the two horizontal jaws to zero the DTI as shown in **Fig 5**.



Step 6. Continue to rotate the chuck to align the next two jaws to the DTI (**Fig 6**),

and adjust them to zero the DTI, as shown in **Step7**.



At this point the bar is just about centred, which can be confirmed by one more revolution of the chuck.

It's far quicker to do it than to read how to do it. Give it a try, you'll be surprised. If you think about it, setting the DTI to zero in Step 3 sets it to the true centred position of the bar.