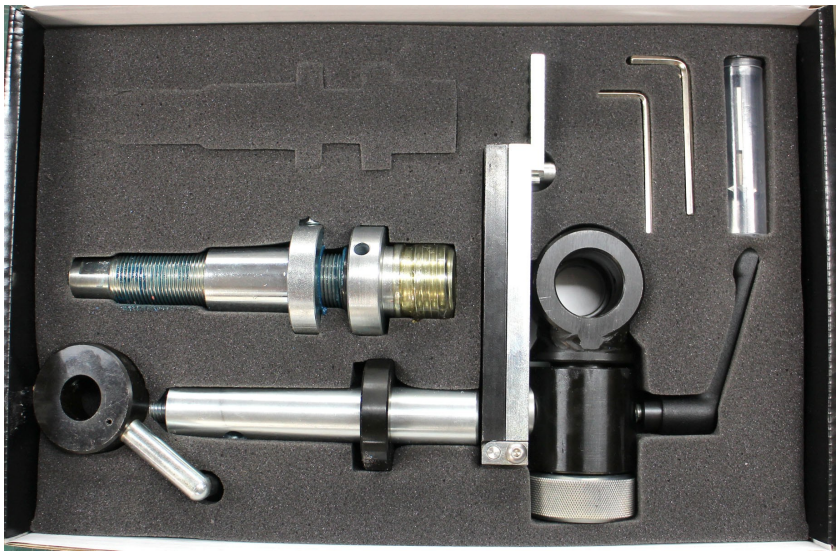
Thank you for buying the HOPE Easy-set threading jig.

Instructions.

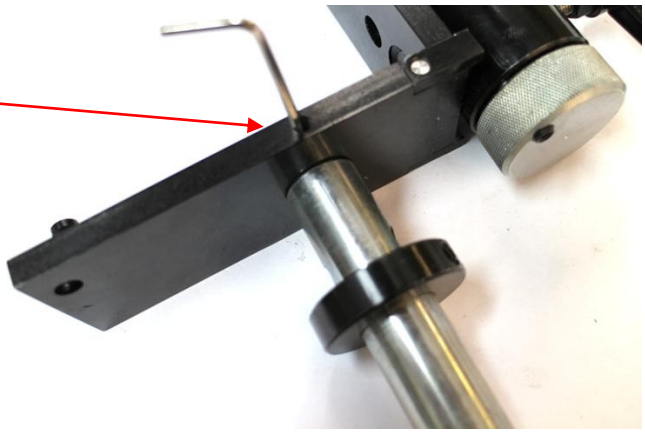


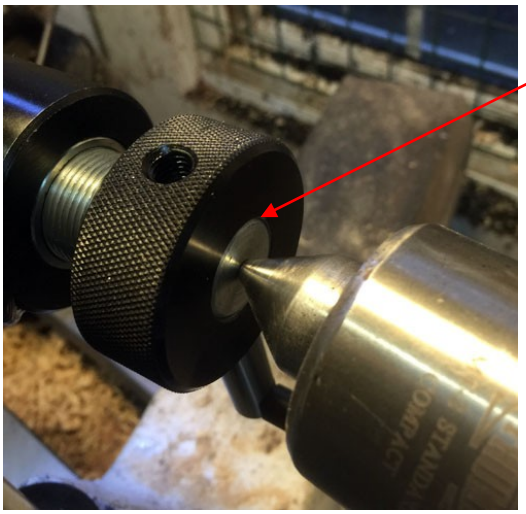
Parts list: (Boxed set)

Body inc hinge plate x1
M33 x 3.5 16 tpi + depth stop collar x1
1” stem + collar x1
HSS cutter x1
Bristol handle x1
Twist handle x1
4mm Allen key x1
3mm Allen key x 1
Instruction x1

Assembly

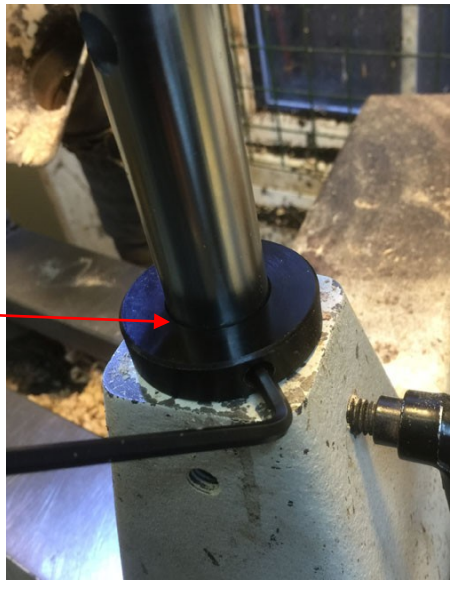
Insert stem and then fix/lock using the grub screw as in picture.





Place jig into tool rest and use the back of the jig/spindle to line up with your live centre. Then lock down the jig into your banjo.

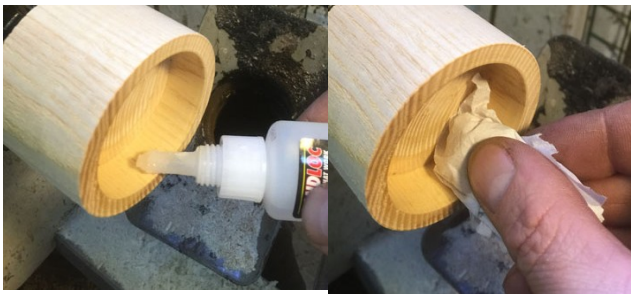
Lock collar on stem so each time the jig is placed into your banjo it is always centre height.

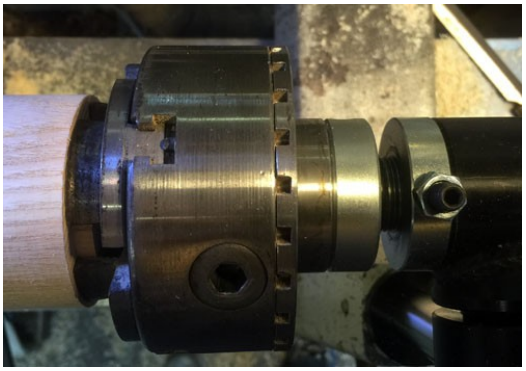


Cutting the threads

I turn my female threads first. I find this easier when it comes to matching up thread sizes later on. Ensure the side walls (inside) are parallel and have a good clean cut.

I personally run then wipe some thin Cryo glue on the timber before cutting the threads. This keeps the tips of the thread strong and less likely to break.





Keep the work in the chuck and unscrew the chuck from the lathe and thread onto the threading jig.

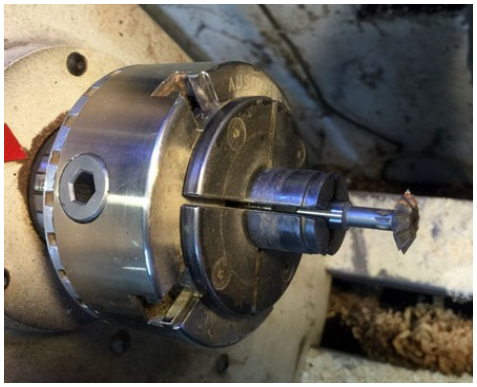
Don't take the work out until the thread is cut. This ensures the inside runs true

Mounting the thread cutter.

There are several ways of doing this. Personally I use the HOPE 2 MT cutter holder and draw bar, but below are some other ways of holding the cutter.

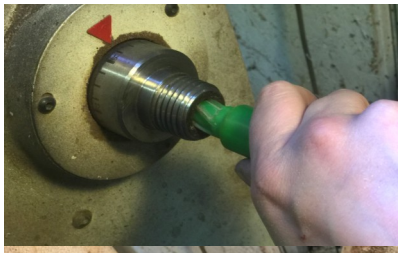
Engineering jaws on an axminster or similar chuck. Best method when holding the cutter as far out as safely possible allowing long threads to be cut when making wooden threaded rings.

Using a second chuck, use standard jaw sets to hold a Jacobs drill chuck. This is a safe way of holding a drill chuck on the head stock. You may find it harder to make it run 100% true but I have found a slight / minor wobble is Ok and you can still get results.



Using pin jaws on another chuck works fine.

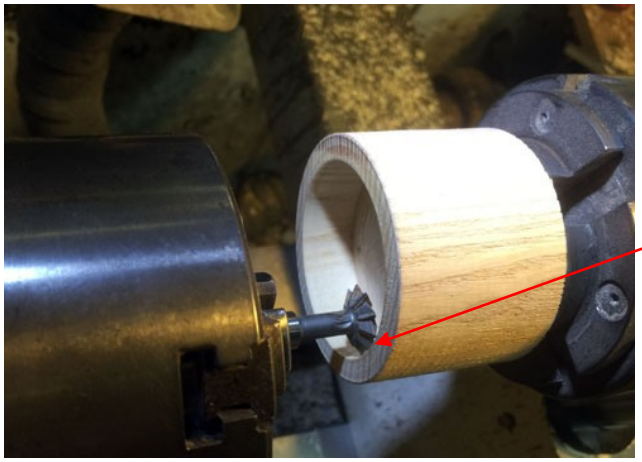
Using a chuck with no jaws and just using the carriers works well also!



It is possible to just use a drill chuck placed into the headstock Morse taper. HOWEVER, unless the 2 MT is clean (I use a Morse taper cleaner) and the chuck is not tapped fully tight and home with a wooden block or mallet It can be dangerous. A MT drill chuck NOT fully pressed into the female head stock can result in it vibrating loose and damaging the work. Use a draw bar if you drill chuck has one.

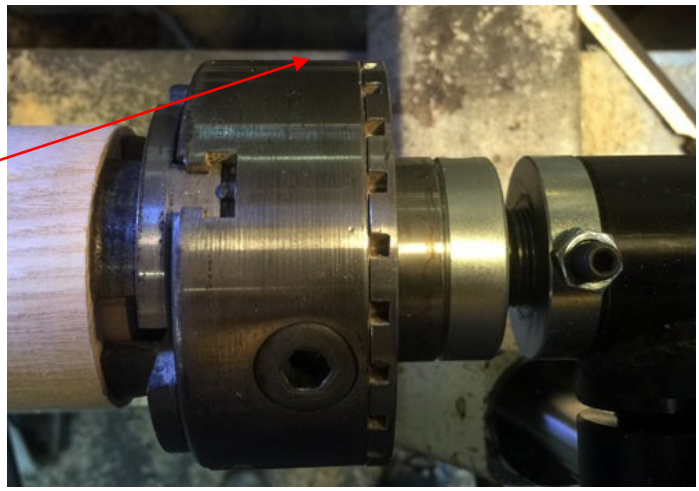
HOPE 2 MT cutter holder and draw bar.

Lining up ready to take your first cut.



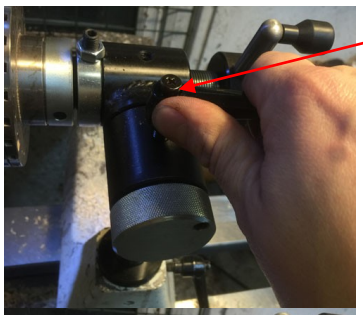
MAKE SURE: the chuck is tight on the threading jig. The jig is 90 deg to the banjo (makes it easier to line up parallel) Ensure the stem of the threading jig is fully locked down.

With the banjo loose, slide the work so it is just touching the cutter on the inside of the lid.

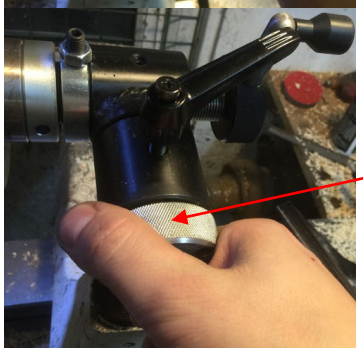


Then with the cutter touching the wood, pivot the work until you can see the chuck is parallel to the bed bars of your lathe. If the cutter digs into the work a little, don't worry as this will be cut away once cutting the thread commences.

Then make sure the banjo is fully locked down

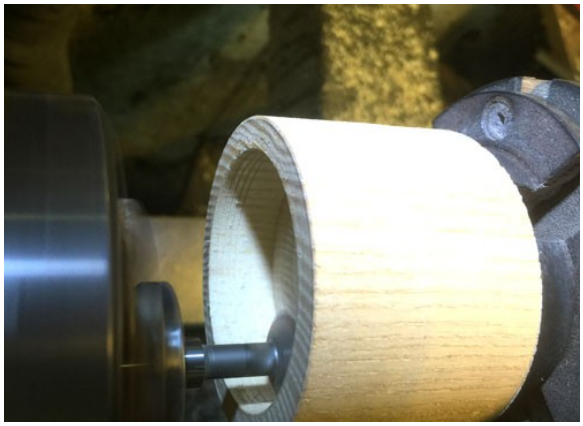


Release top lever



Click the front silver knurled dial anti clockwise about 3-4 clicks so the cutter is free from the wood. Turn the cutter by hand first to ensure its not touching the work. Then turn on the lathe and run the cutter at approx 3000 RPM

Now with the top lever loose, click the work into the cutter by rotating the silver front dial clockwise one click. Then tighten top lever. Listen to hear if the cutter is touching the wood. If not release top lever , dial clockwise one click and re tighten the top lever. Keep doing this until the cutter just touches the wood. You can hear this. This is now zero.



Start cutting!

You will soon learn the rhythm of cutting.

1, release top lever.

2, click one click clockwise.

3,lock top lever.

4, wind the back lever to cut the wood to depth. Once depth has been reached, unwind until cutter is out.

5, repeat 1 to 4 until thread depth has been reached.

(TIP: I first cut most clicks first then one more for the finishing click.)

9-10 x clicks for 12 tpi to reach thread depth

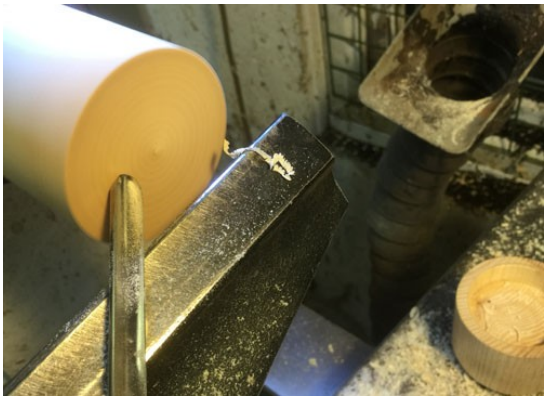
7 x clicks for 14 tpi to reach thread depth

5 x clicks for 16 tpi to reach thread depth.

3 x clicks for 20 tpi to reach thread depth.

Now that the female thread has been cut, its time for the male thread. This is how I do it!

Use a set of vernier to measure the tips of the female threads. Wobble the verniers slightly when touching the threads to ensure you have maximum diameter but not so much pressure that you damage the threads. On the sample it is 52.8mm



Mount the bottom of the box and clean the front using a gouge, so there are no tears in the end grain.

TOP TIP: WHEN USING DIGITAL VERNIERS, TAKE YOUR FIRST MEASURMENT, ZERO THE VERNIER THEN AD ON THE 1.2MM FOR EXAMPLE. NO NEED TO WORK OUT THE DIFFERENCE!

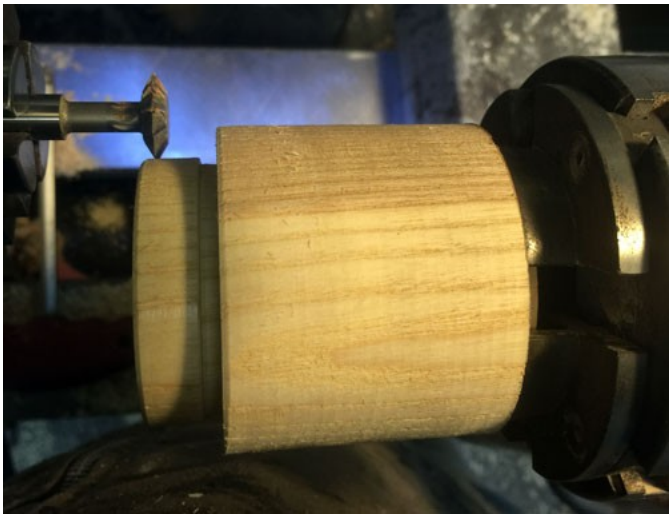
Adjust the vernier so they are :

2.2mm bigger for 12 TPI
1.7mm bigger for 14 TPI
1.2mm bigger for 16 TPI
0.7mm bigger for 20 TPI

Then with the lathe spinning carefully mark the wood with the left point of the vernier until it meets up with the right hand side/mark.
This method is quick and accurate but can be dangerous. Always ensure both points don't touch the wood and the same time.
Always stand to one side and wear eye protection.

Turn the male spigot to exactly the correct size. This will ensure that the thread will fit first time. Make a shoulder relief cut about 3mm wide and deep so the thread cuts into this space.

Run some thin Cryo glue on the part to be threaded. Wipe / spread with tissue then activate the glue.

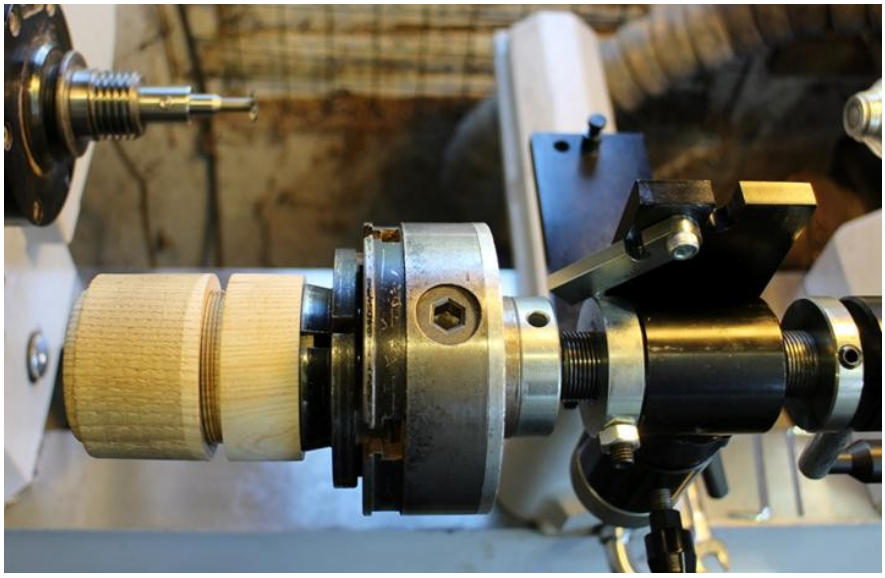


Position the edge of the spigot onto the cutter. With the banjo loose, pivot the piece until it is parallel using the same eyeing of chuck to bed bars method.

Now move the jig one click at a time with the cutter spinning in the lathe until you have the cutter just starts touching the wood. You can hear when this happens. This is now zero.

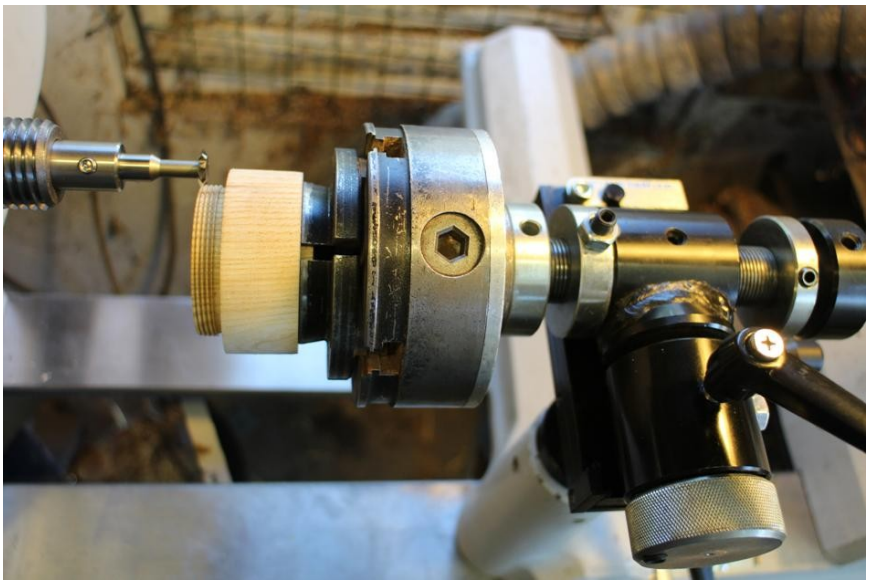
With the cutter clear, now click in in the correct amount. I click one less amount than the total so for 16 TPI (total 5 clicks) I first click in 4. Then turn the handle to make your cuts to the end of the spigot.

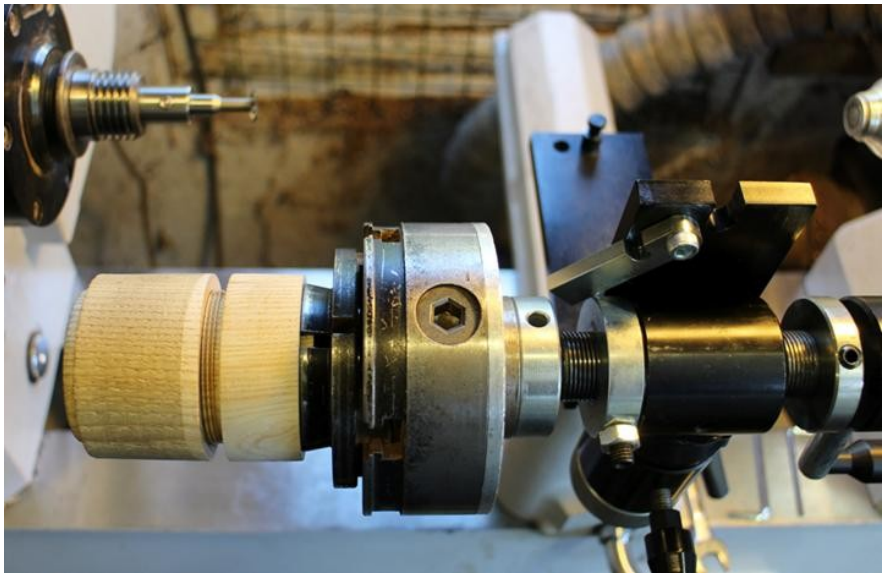
When you reverse back, place a small amount of back pressure with you hand so the work comes away from the cutter.



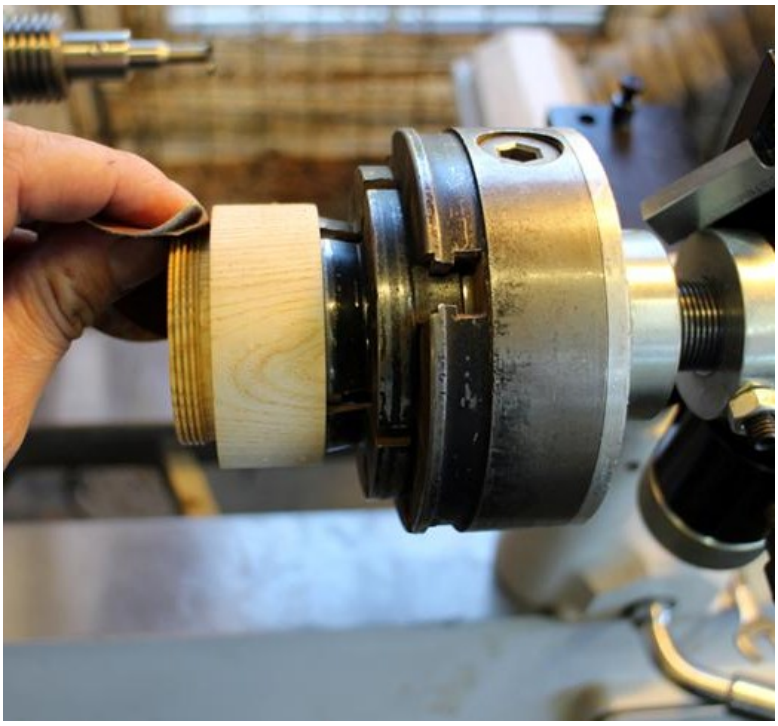
Now you can use the hinge plate to check. Ensure the cutter is clear, undo the front lever and lift the jig and chuck towards you. This will allow you to check the fit. It should still be tight but sometimes the box may fit at this stage. Its good to check.

If you need to continue, add some more cyro glue onto the threads, wipe with tissue and then activate before making your final finishing cut.



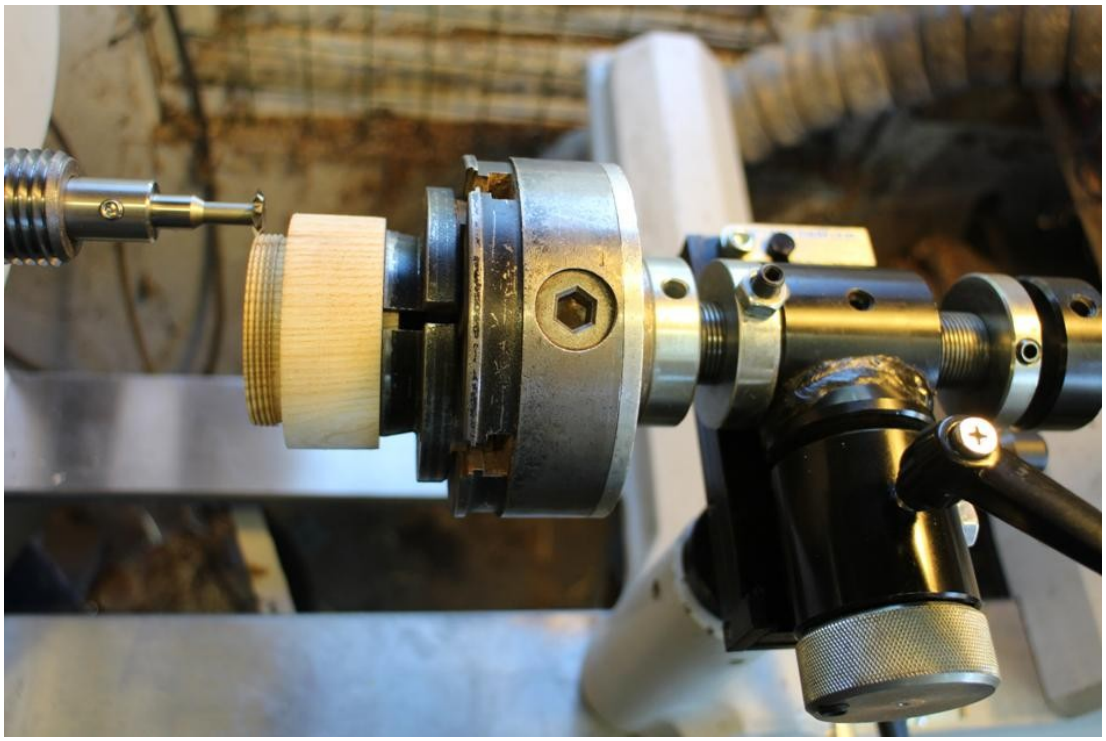


Now lift back again using the hinge plate to check your thread. If you have made the spigot 100% the correct size the threads should work. But don't worry if the threads are still tight. If they are follow the next steps on page 8



For over tight threads:

First lift the jig towards you with the hinge plate. Then hold some abrasive (180G) on top of the thread and wind the handle around to make the tips of the threads smaller. Then, re-glue the thread, wipe with tissue and activate the glue.



Next swing the jig back into the cutting position making sure the jig is wound back so it clears the cutter. Add an extra click, then re-cut. Repeat until you have taken enough down to make your perfect thread.

You have now created a the perfect thread!

Tips:

-Use some soft paste wax on threads when testing and on finished threads.

-On softer woods, it is beneficial to run some thin cyro glue onto the threads before each cut.

-The click system does work and has been tested. But if you make the kiss test deeper than normal , you may find that you need to reduce the cut depth by one click. Always look at the threads and aim to have a small flat left on the tips.

- After some use, you may find the front grub screw on the thread collar needs tightening down very slightly. If you can feel any movement in the threads, undo the nut and tighten the grub screw clockwise. This only needs to be a very slight tighten. Relock the nut.

Any problems, please feel free to ask for any information on your threading jig by contacting Simon on email address: hopewoodturning@gmail.com.

Amount of clicks for size of TPI:

10-11 x clicks for 10 tpi to reach thread depth.

9-10 x clicks for 12 tpi to reach thread depth

7 x clicks for 14 tpi to reach thread depth

5 x clicks for 16 tpi to reach thread depth.

3 x clicks for 20 tpi to reach thread depth.

Off-set needed to make male thread:

2.4mm bigger for 10 TPI

2.2mm bigger for 12 TPI

1.7mm bigger for 14 TPI

1.2mm bigger for 16 TPI

0.7mm bigger for 20 TPI

For a full video on how to use this threading jig, please go to:

www.hopewoodturning.co.uk

www.drechselbedarf-schulte.de