

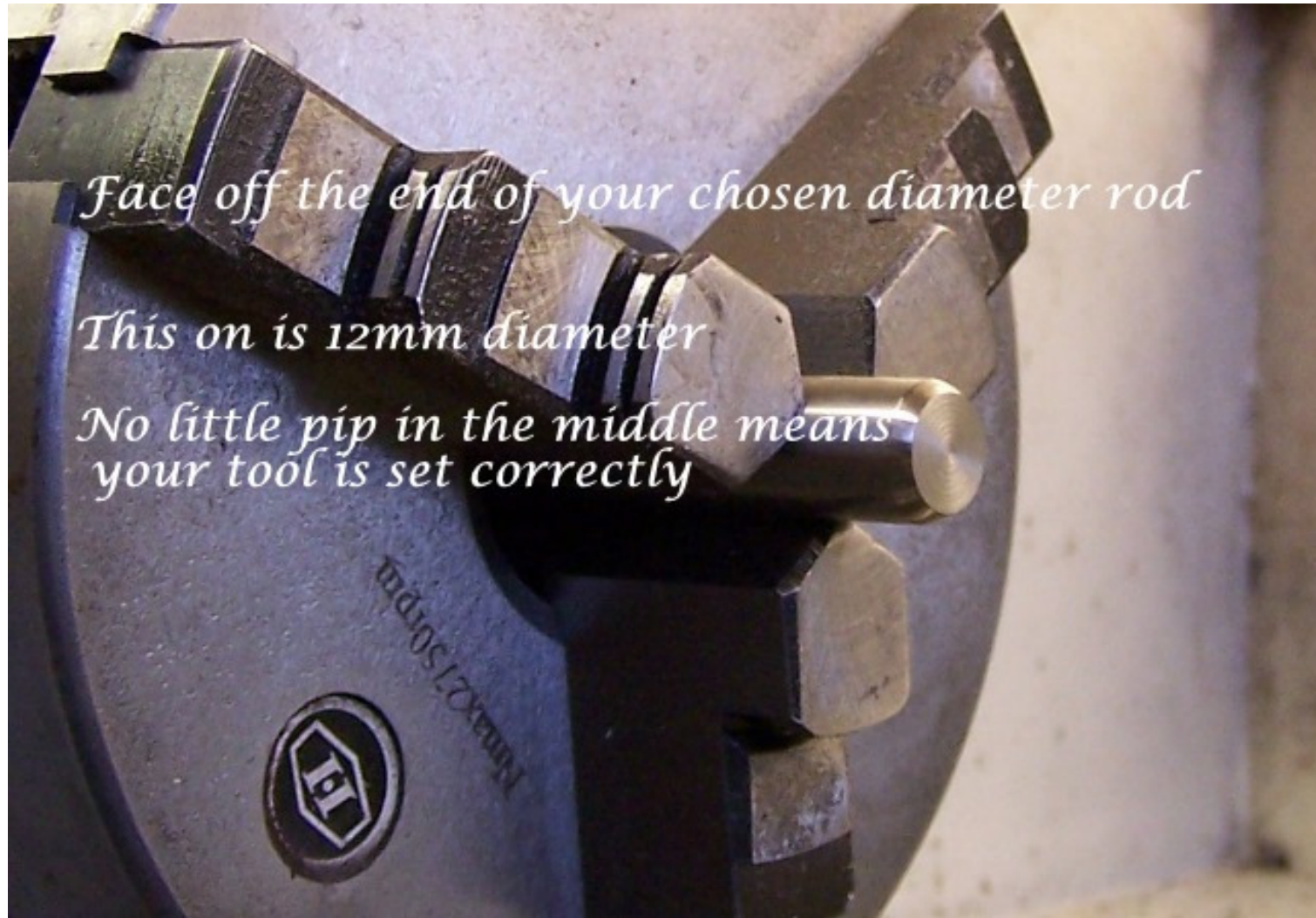
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Here is a simple 3 Start Threading method on your metal lathe with change gears.

This guide should get you going enough to make cap couplers and maybe even a basic tap that can be used in wood, plastic and soft metals. In this method the depth of the cuts is controlled by the Crossslide. The Topslide is set parallel to the bed and is used only to advance the cutter for the next thread.





Face off the end of your chosen diameter rod

This one is 12mm diameter

*No little pip in the middle means
your tool is set correctly*



Drill a guide hole with a centre drill



Decide on the pitch. I chose 3mm
 The number you use will need to be
 divisible by the number of starts

mm

Z1	Z2	H	50	H	50	H	45	H	45	H	45	H	45
Z4	Z3	L	80	H	75	H	75	H	60	H	60	H	60
A			0.14		0.20								
B			0.28		0.40								

mm

Z1	Z2	H	50	H	50	H	45	H	45	H	45	H	45
Z4	Z3	L	80	H	75	H	75	H	60	H	60	H	60
C			0.2		0.3		0.5		0.62		0.75		0.88
A			0.4		0.6		1.0		1.25		1.5		1.75
B			0.8		1.2		2.0		2.5		3.0		3.5

n/1"

Z1	Z2	H	45	H	45	H	45	H	60	H	45	H	30	H	45
Z4	Z3	L	60	H	60	H	60	H	85	H	85	H	85	H	70
B			8		9		9.5		10		11		12		14
A			16		18		19		20		22		24		28
C			32		36		38		40		44		48		56

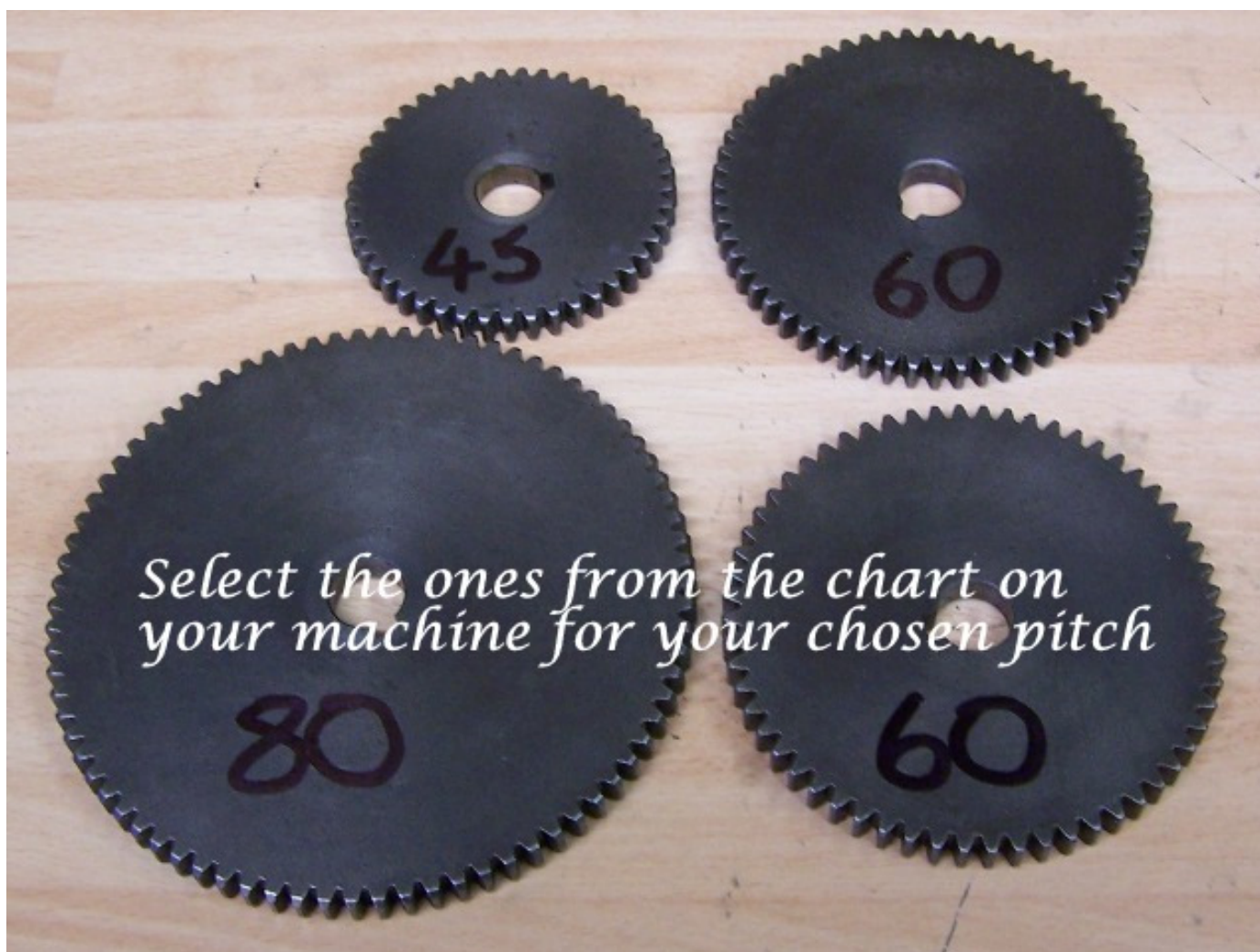
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SPINDLE SPEED READOU

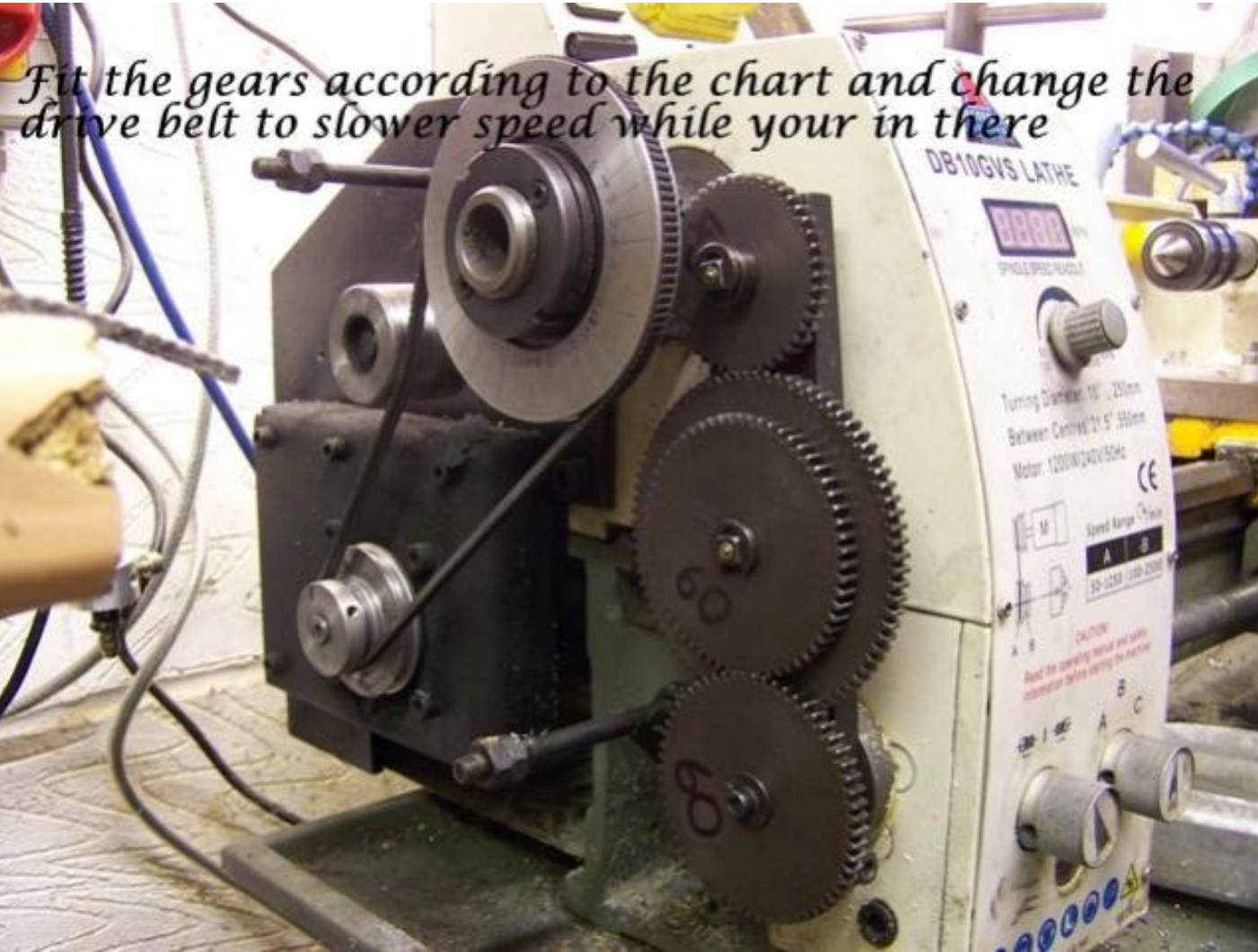
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*Remember all those sexy gears
you got with your lathe but
were to scared to use?*





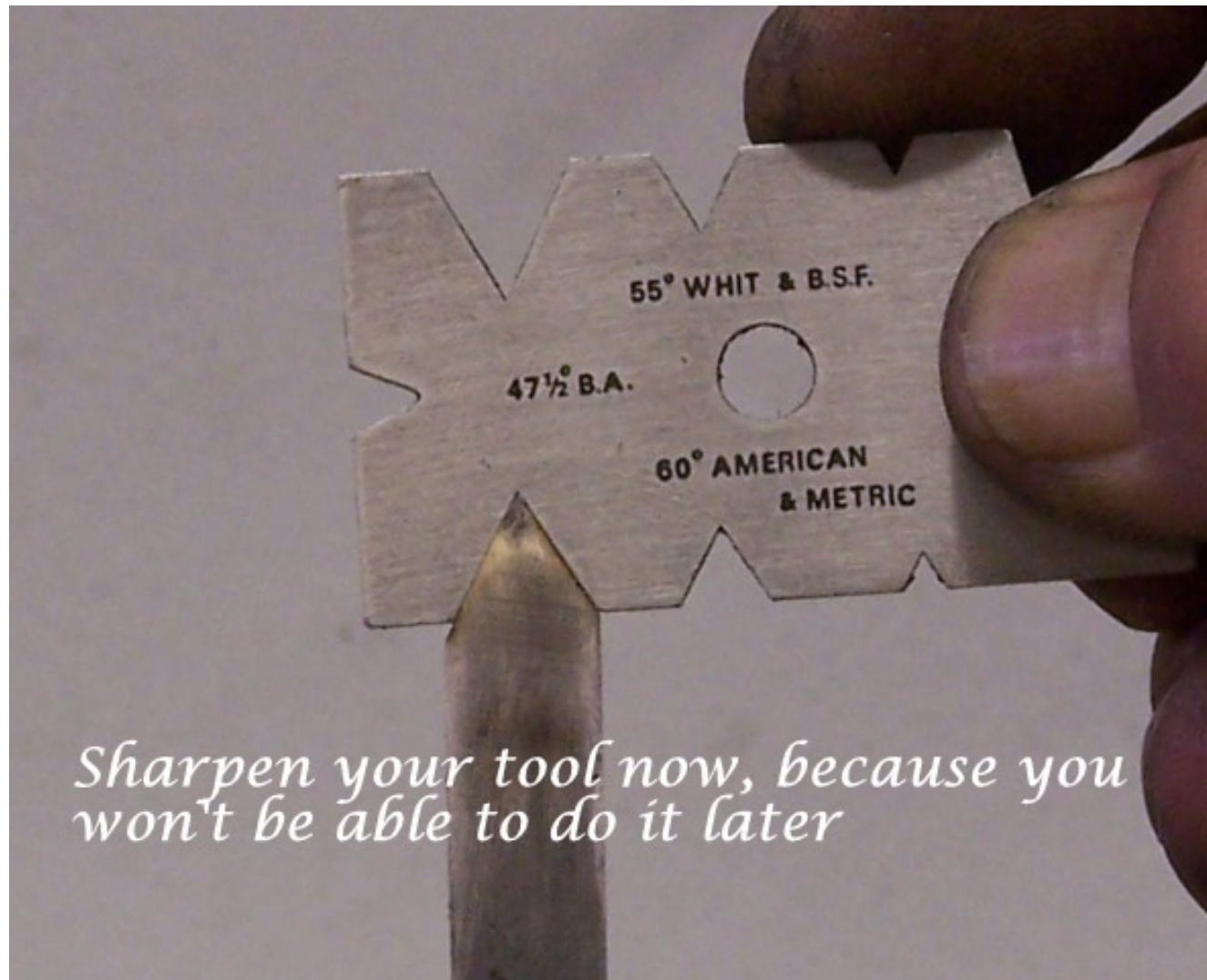
*Select the ones from the chart on
your machine for your chosen pitch*



Fit the gears according to the chart and change the drive belt to slower speed while your in there

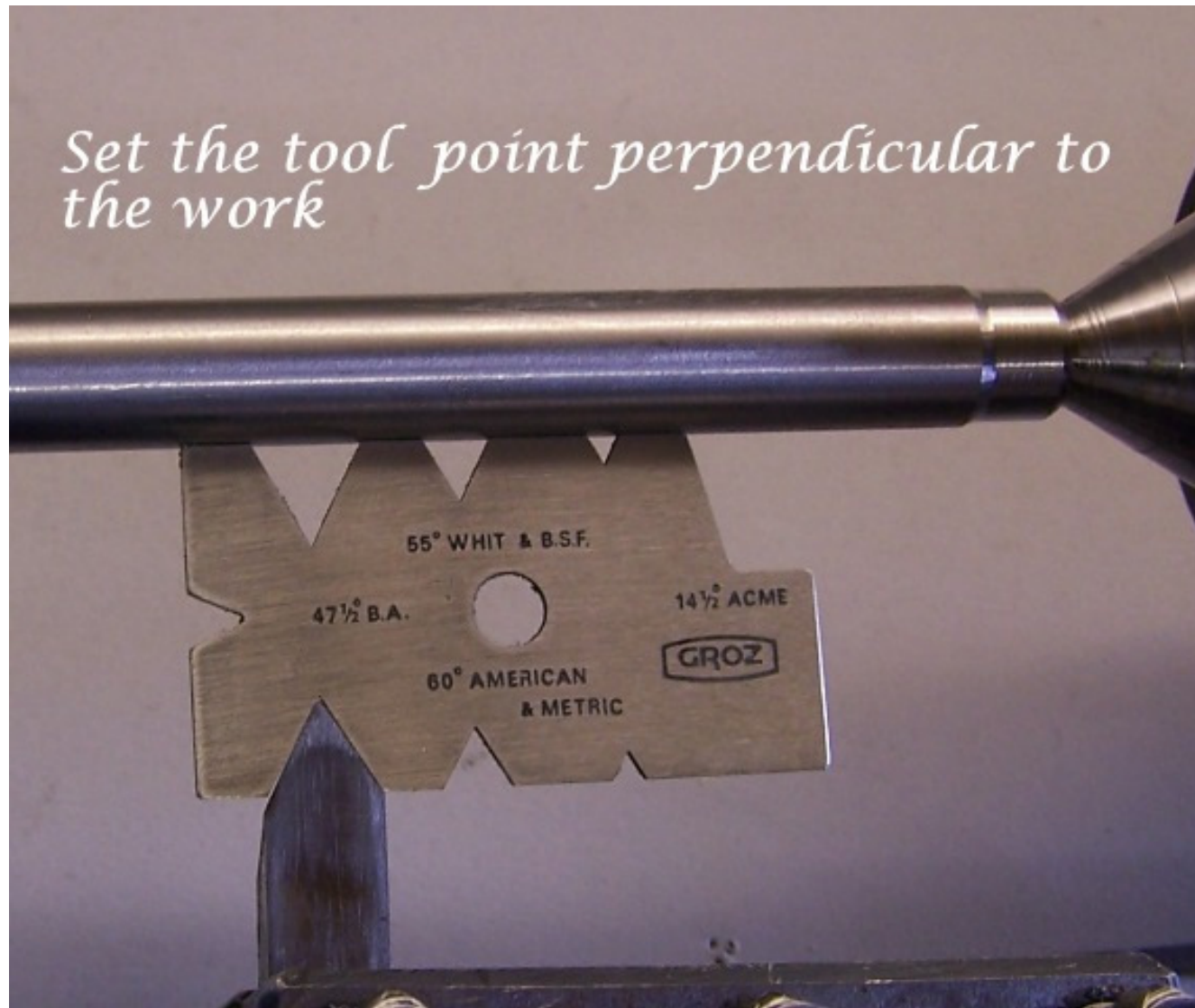


Turn this ratio knob to the letter on the chart



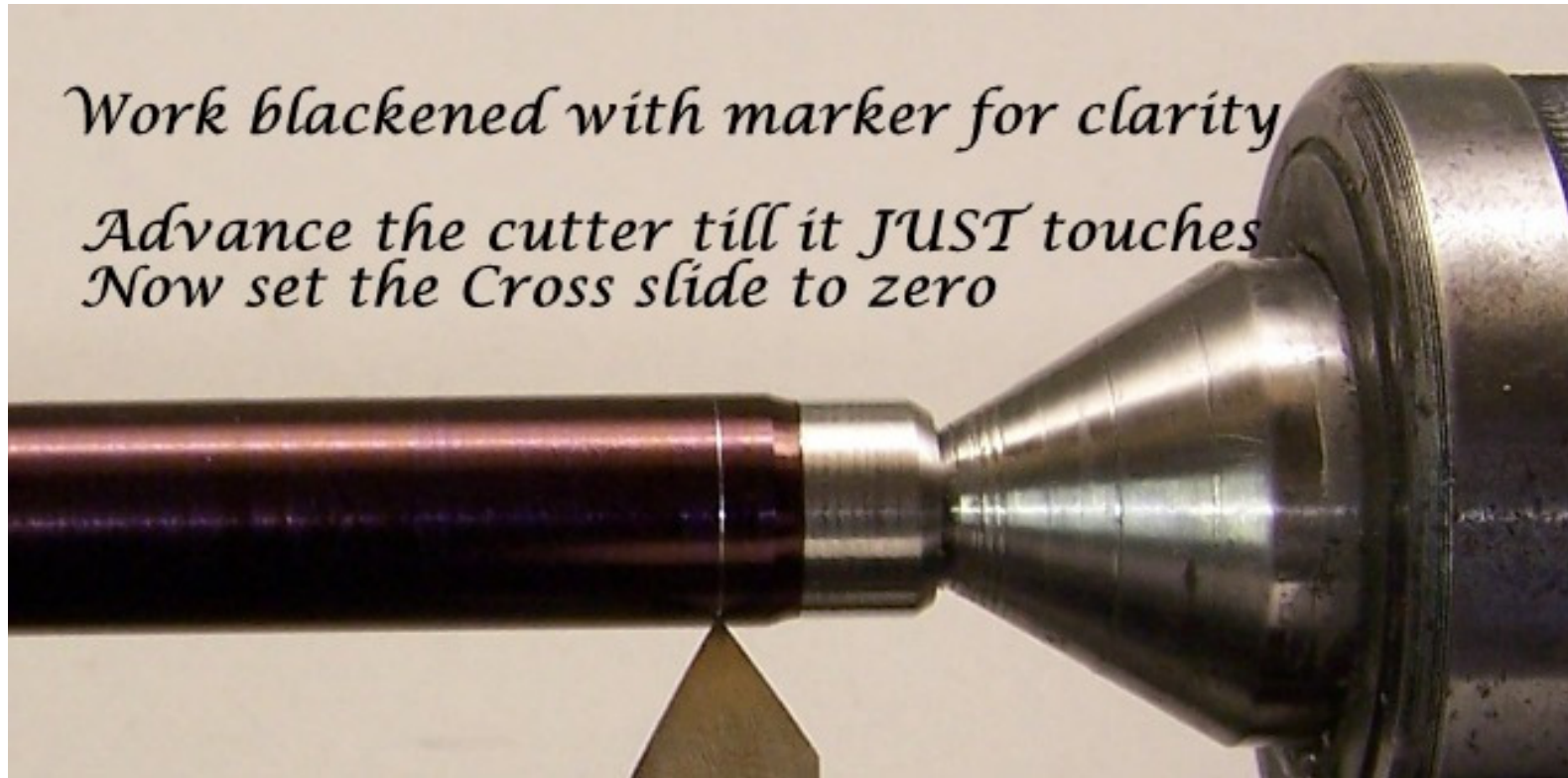
*Sharpen your tool now, because you
won't be able to do it later*

Set the tool point perpendicular to the work

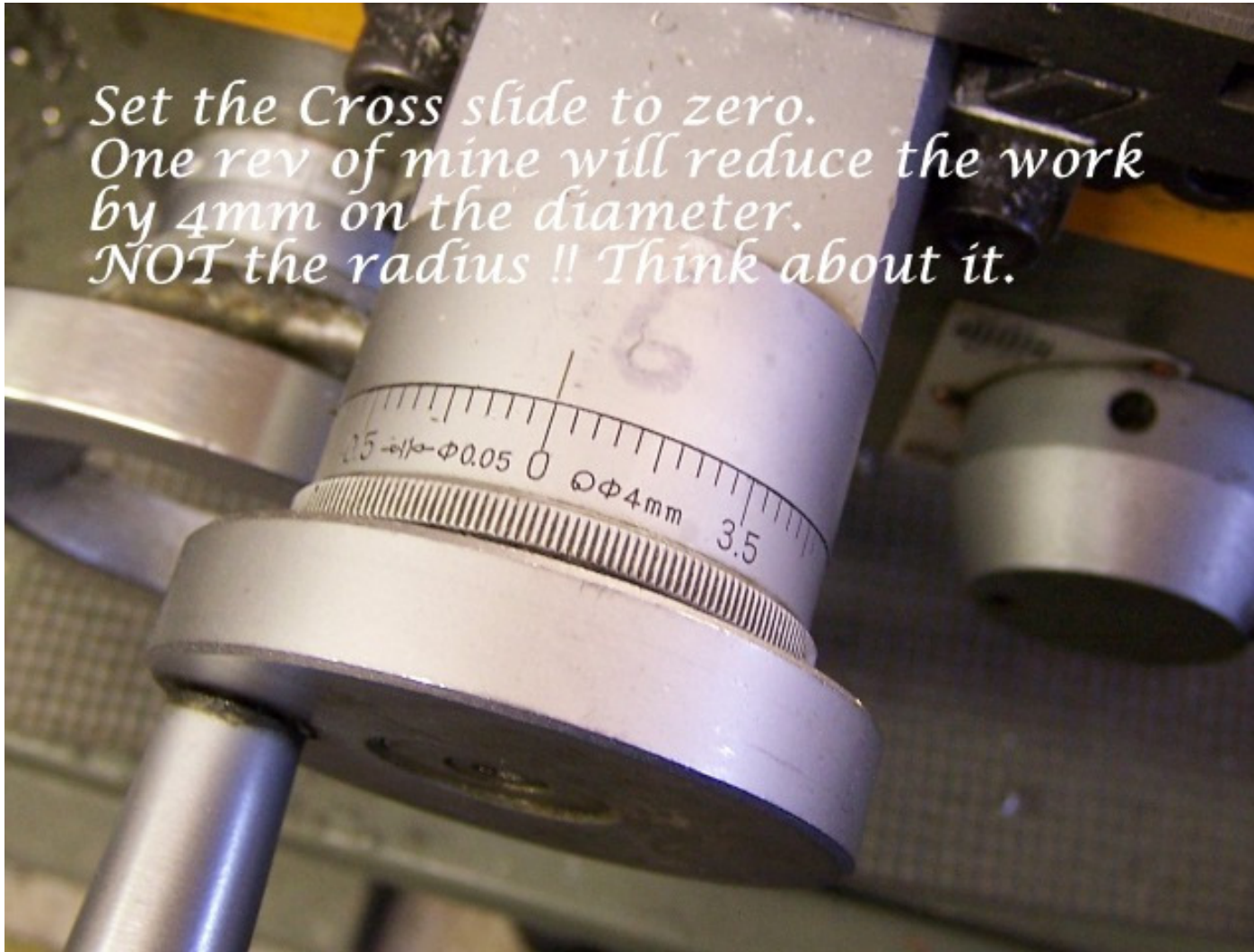


Work blackened with marker for clarity

*Advance the cutter till it JUST touches
Now set the Cross slide to zero*



*Set the Cross slide to zero.
One rev of mine will reduce the work
by 4mm on the diameter.
NOT the radius !! Think about it.*

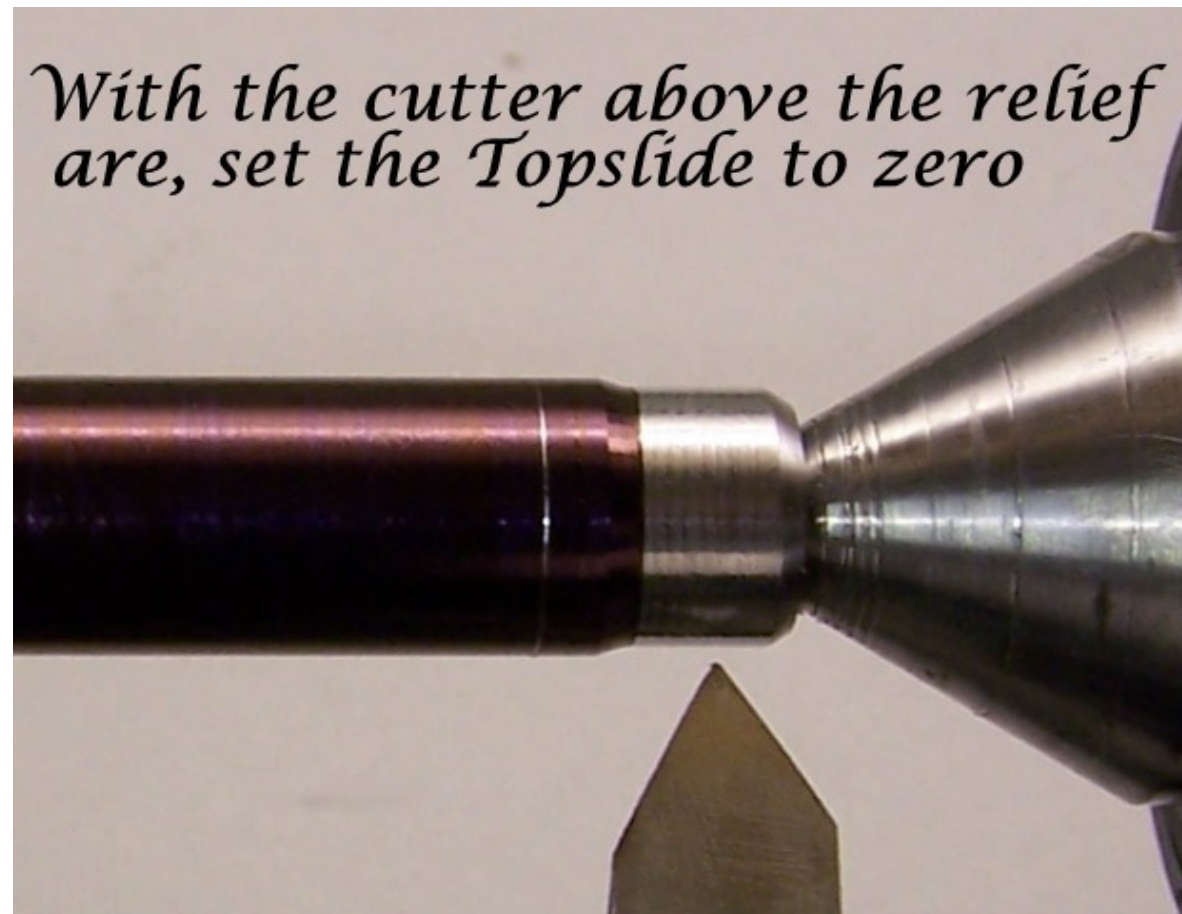


May needs some text here...

When you have done the first '*scratch*' cut, back off the cross slide, then reverse the carriage till the cutter is back above the relief area near the tailstock. Now set the Top Slide to zero. Now put the Cross slide back to the zero that you have already set.

I did each thread with two passes, first at 0.5mm then at 1.0mm. Remember to back off the Cross slide before reversing the machine back to the beginning.

Also remember to switch the machine from reverse to forward!!! Or you will crash and burn!!!



*Set the Topslide to zero.
One rev of the crank will move mine
1mm.*



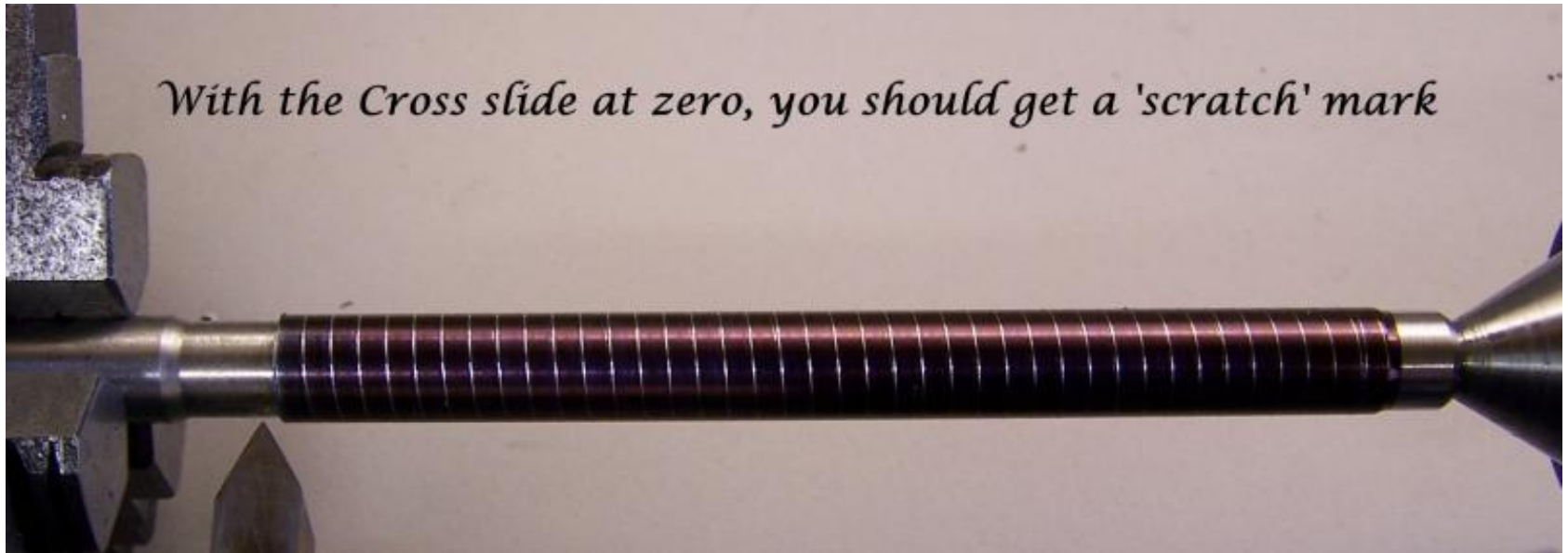


Lock the 'Half-nuts'. You must NOT touch this again till the job is complete

*Select the direction.
We want Right hand threads*



With the Cross slide at zero, you should get a 'scratch' mark





Cool!!! It did what we expected

When the first thread is complete, and you have reversed the machine back to the beginning, simply advance the Top Slide by 1mm. To make the second thread just repeat the steps you did for the first thread.

When the second thread is complete, and you have reversed the machine back to the beginning, advance again the Top Slide by 1mm. To make the third thread just repeat the steps you did for the first and second threads.

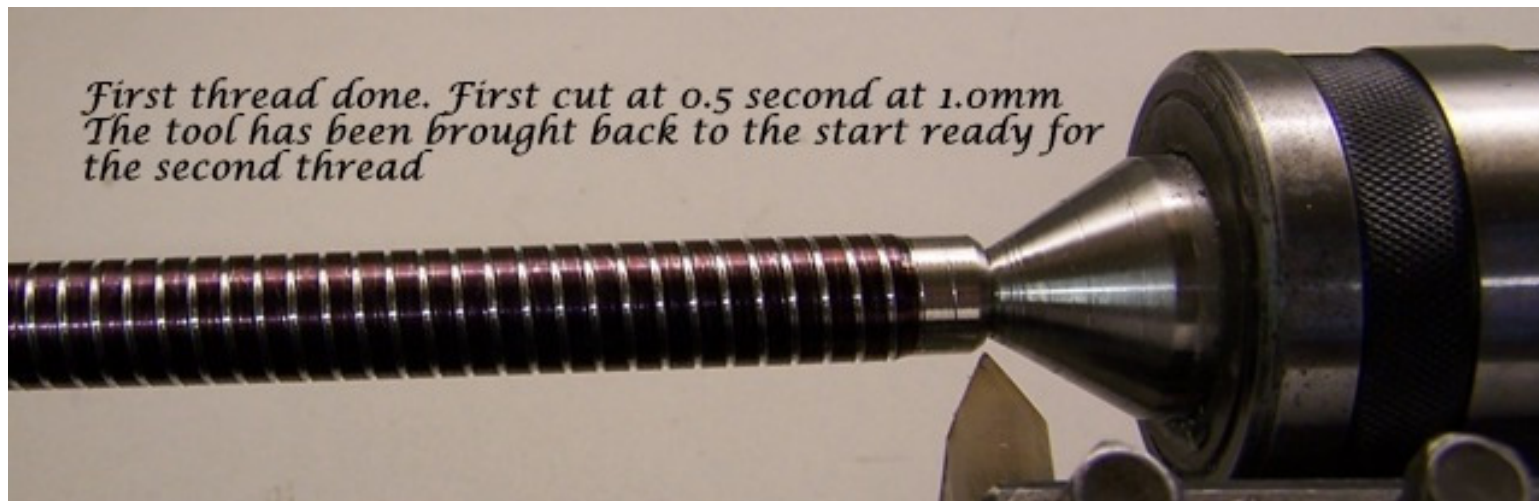
When the third thread is complete, and you have reversed the machine back to the beginning.....You're Done!

Things to remember are:

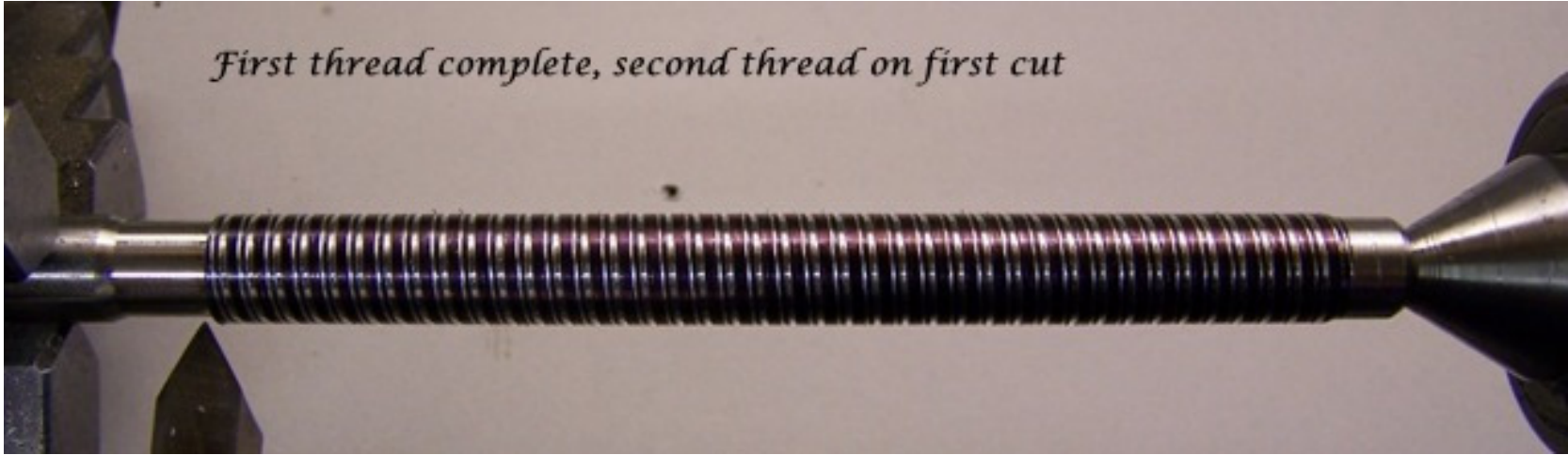
- Don't forget to back off the cross slide before reversing.
- Don't forget to switch back to forward before cutting.
- Don't lose your zero points.
- NEVER** disengage the Half -Nuts till the job is complete.

These instructions are for a manual change gearbox and a metric lathe doing metric cuts but the principle should work on any lathe.

My next little pictorial will show how to use this threaded rod to make pen parts and to make a tap for the cap threads.



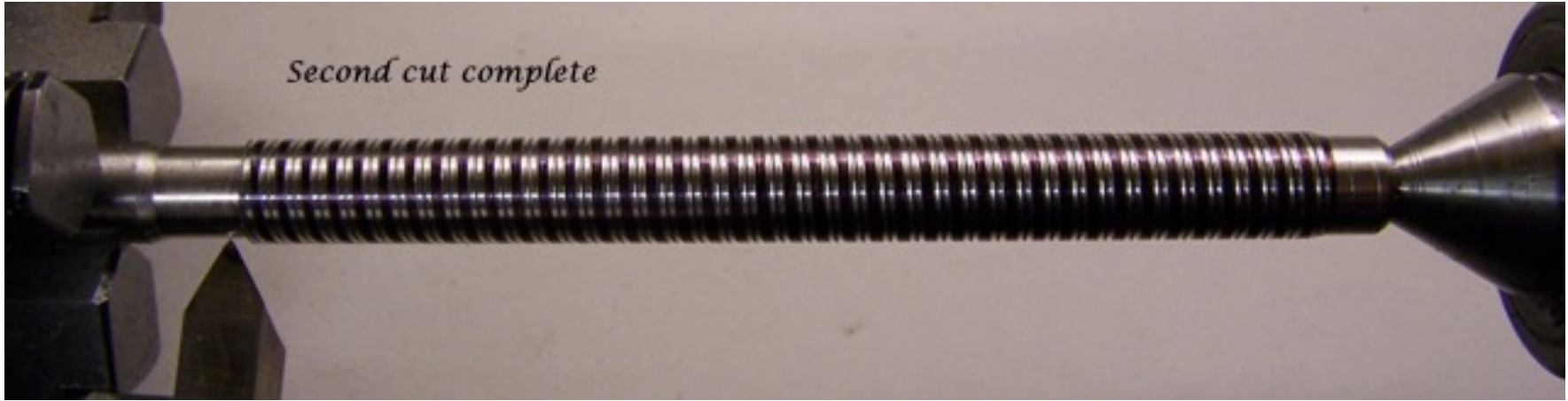
First thread complete, second thread on first cut



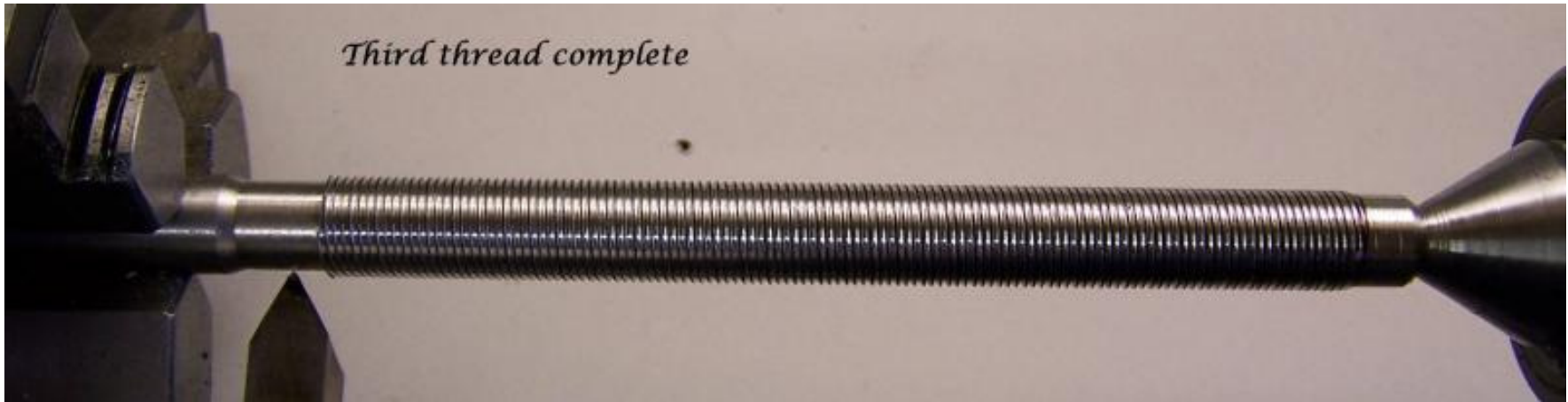
*First thread complete,
second thread on first cut*



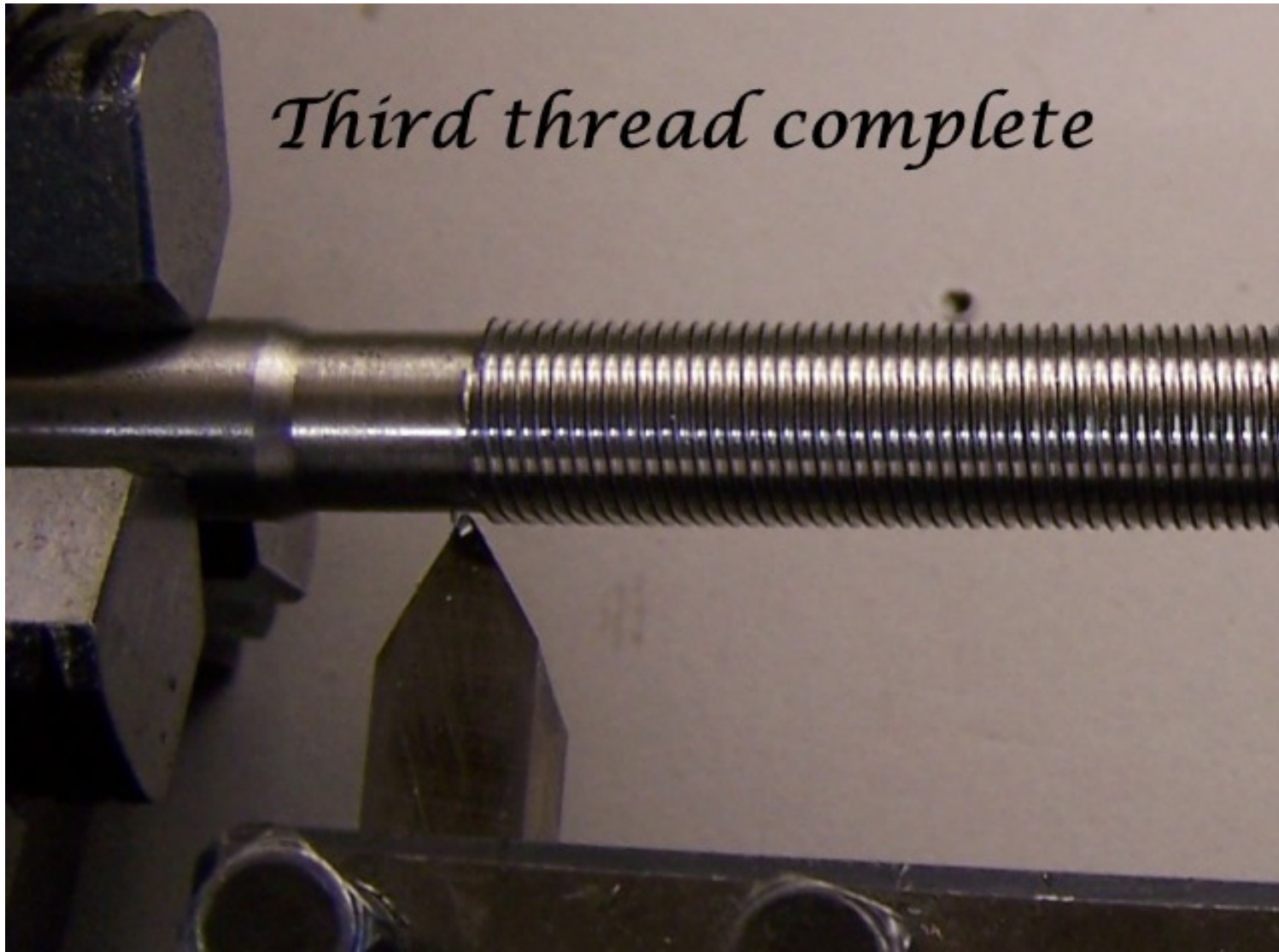
Second cut complete



Third thread complete



Third thread complete



One snazzy three start threaded rod



Here are some pictures of how I used the threaded rod to make some cap couplers for a few pens. I also made a tap from a piece of the same rod so that I could thread the inside of the caps

