

# REAR CLOSING HOBBY KNIFE

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Many people have a Craft or Hobby knife, such as the Xacto, which uses a collet to hold a replaceable blade. Most of these are tightened at the blade end of the knife, but some prefer the style of knife that is tightened by using a knob at the other end of the handle. Making a wood handle for the former has been covered in other articles, but I have not found any information on making a wood handle for the latter, so I worked out a method to do this. It is quite simple to do, and is a good project for the beginning turner.

The rear tightening knives are made by the same companies which make the front tightening knives, such as Xacto, Excel and Proedge. I have used knives from all three of these companies, and the dimensions for all three are exactly the same. Be aware that I have not used knives from other brands and they may differ in length or diameter.

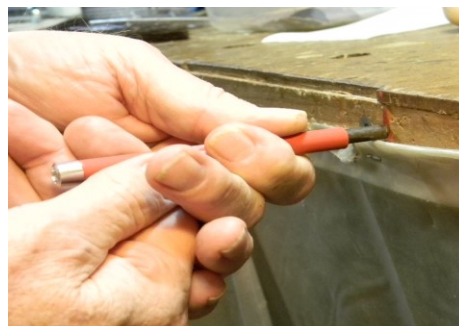
I prefer to use the Excel brand, because when it is done the blade guard which comes with it can be used with the new handle. This is not possible with the Xacto, so a blade guard would need to be turned for it if one is desired.



The photo above shows the Excel knife at the top as it comes from the factory. Below that is the knife disassembled for use. The parts consist of the blade guard, plastic tube handle (which is what we are replacing), collet, collet sleeve, tightening knob, and #11 blade. Also shown is the 1/4" steel rod that I use to push the collet sleeve out of the plastic tube handle and the wood blank, cut to 3 3/4" long, which is used to make the new handle. You will also need 17/64" and letter "M" drill bits.

The construction procedure is as follows:

1. Disassemble the knife by unscrewing the tightening knob and pulling it and the collet out of the plastic handle, then push out the collet sleeve from the plastic handle. To push it out, I use a 1/4" steel rod to push against the edge of my worktable to force out the sleeve.



Pushing the collet sleeve out of the plastic handle.

2. Cut the blank to length, then drill the holes. I use pen jaws on the lathe, and drill from both ends, since I don't have a  $17/64$ " bit which will go completely through the blank. I mark one corner of the blank, and keep that corner in the same jaw when drilling. This will help keep the blank aligned with that jaw no matter which end is being drilled.



Blank ready to drill. Note the dimple in the end of the blank and the alignment marks on the blank and the pen jaw.

First drill from one end as far as the  $17/64$ " bit will go. Then reverse the blank and drill back through with the same bit to complete the through drilling. Then use the "M" bit drill about  $3/4$ " into one end of the blank. (I mark an "x" on this end of the blank to help me keep track) Press the collet sleeve from the knife into the "M" hole and check for the fit of the joint. If it isn't a good fit, make it so at this time. The collet sleeve can be pressed out of the wood blank the same way as was done for the plastic handle.



Collet pressed into the blank

Also check the ability of the handle to hold a blade by reassembling the parts into the blank. If there are no problems with the fit, remove the knife parts from the handle, except for the collet sleeve. I then put thin CA on the end of the knife opposite the collet sleeve to strengthen the fibers where they will be compressed when the collet is tightened.



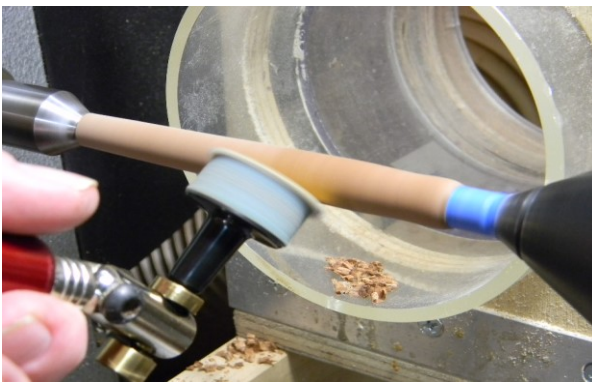
Roughing the handle to round between centers.

3. All of the prep work is now done and the handle can be turned to its final profile. I do this between centers, using a dead center in the headstock and a cone live center in the tail stock. Be careful to not use too much pressure, as this could cause the collet sleeve to "mushroom". Leaving the collet sleeve in the handle while turning will allow the collet sleeve to act as a sizing bushing. Also, reduce pressure after the corners are rounded to reduce the chance of splitting the blank.



Handle ready to sand. Note the masking tape protecting the collet sleeve.

4. To sand the handle, wrap the exposed collet sleeve with masking tape to protect it. Then sand as you would your pens; for this type of project I usually stop at 320 grit. I don't believe tools need to have the glossy look of pens. I use a wax finish, as this seems to me to feel exceptionally good.



Sanding through the grits.



Sanded and wax finish applied.  
The masking tape has been removed.

5. Remove the handle from the lathe, remove the masking tape, assemble the knife and insert a blade.



The knife is ready to be used.

If you have any questions, please contact me and I will try to answer them for you. If you make one of these, please send me a picture or, better yet, post it in the forums for everyone to see.

Tom Wilson