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Amateur

# Knife making tutorial [part 2, the sheath]

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- Skills and guides - DIY, Making things. -



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## **Description :**

Explains in detail how to make a sheath.

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In the First Part, [Knife making tutorial \[part 1, the knife handle\]](#), of this series of articles, I explained how to make a simple but efficient knife, let's now make a sheath for it:

### Materials

- Leather, here I use some 2mm leather, but I really prefer the German half tanned 3mm leather
- Stitches spacing roulette (wheel)
- Neoprene glue (not mandatory)
- Leather dye
- Wax
- Thread, I use synthetic waxed sinew thread, virtually indestructible.
- Wood chisels and gouges
- Dremmel

### Tools

- Blunt leather needles
- Leather punch
- or a stitching device, but the normal leather "saddle" stitching point is better than the machine point these little devices make. They are however convenient, though in my mind more difficult to use than the two needles stitching point.
- Pieces of wood
- A pair of thin pliers, as they will help pull the needles.

There are a lot of ways to make a sheath. I want a sheath that will be durable, light, and strong, and that can stand up to a razor sharp Scandinavian beveled knife. These knives cut leather like butter, so we must plan a sturdy sheath for it. The need for an insert is an obvious solution, industrial makers use plastic, I want something natural, so I will use wood.

### Making the insert

You will better understand this section if you have read [Knife making tutorial \[part 1, the knife handle\]](#) before proceeding, as some of the technics and tools used and needed are similar.



**Preparing the wooden insert** We first need to mark the print of the blade.

**Make space for the blade** Grooving the two parts. Here I use a dremmel and gouges.

Making the insert is not difficult. I will use an easy to shape, yet strong wood : Mahogany from flooring plinths, extremely convenient for this use, as it is just the right size. We first Draw the blade outline adding 1/2 mm in all directions. Then the mortise work to make the parts hollow using sculptor gouges, chisels, and a dremmel. I check

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often with the blade on top of the hole, trying to fit it inside the joined blocks. I want the wood not to touch the blade in normal conditions, yet the insert to be as small as possible.

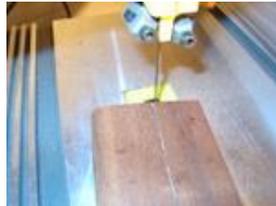


**Gluing the pieces** I use epoxy, and take extra care.



**Glued block** The block is now glued.

It is the time to glue the parts. Make sure the flats are flat, add a minimum amount of epoxy, join the pieces and clamp them checking the alignment by inserting the blade a few seconds. Do not forget to clean the blade in acetone, use a thin wire or file to clean the inside of the block of excess glue before it sets fully (and clean tools that touched the glue in acetone).



**Cut to dimensions** Let's cut it to the final dimensions.



**The block is cut** Now we need to shape it.

Shape the insert. First cut is to "final dimensions" using the blade and a square to mark the outline. Then the work is the same as grinding the handle. Check thicknesses and symmetry often.



**The shaped block** I have shaped the wooden block to fit the blade.



**The insert** This is what the insert looks like.

Here is the result of the grinding, A nice insert. A good idea would be to enlarge and round the first few mm of the mouth for easy sheathing.

We are now ready for the leather work !.

### Leather work



**Drawing the sheath** We now need to draw the piece of leather we will use.

**Cut leather to dimensions** And cut it, here departing from tradition, I use big powerful scissors.

Let's now draw our future sheath on the reverse side of the leather, and cut it to dimensions. I use big shears to cut the leather, as I find them faster and cleaner.



**Leather tools** Here are the tools and materials, thread, leather, punches, roulettes, the top most punch is a sewing punch.

Everything is ready, it is time now to get the leather tools. Wash your hands, prepare a clean place and use clean cloths. I use a quality German half-tanned leather in 2.5 mm thickness, and a waxed synthetic sinew thread. For the tools, I am happy with one roulette, and a bladed punch. The needles may be blunt wool needles. Some use a groover tool to make a groove under the stiches, but the synthetic sinew and my style make it unnecessary. Others also use a stitching punch, but the stiches it makes are more fragile than the classical saddler stiches using two needles. More on the saddle stich can be found [here](#)

### The loop

There are many ways to make a belt loop. Here I use a folding flap, the traditional Scandinavian mode is to use bands of leather that are looped into slits of the main sheath.



**Glue the belt loop** It will be easier to stitch.

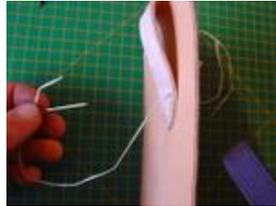


**Use the roulette** Mark the future stiches.



**Make the holes and prepare to stitch** Here I used a demmel for the holes, but a bladed leather punch does better.

Prepare the loop and make the holes. It is easier to first glue the piece using neoprene glue, but not mandatory.



**Stitching the loop.** Using a saddle point.



**Double round** Double round of stitching for strength.



**Glue a patch** Glue a patch to protect the stitches on the inside.

The loop is now stitched to the sheath. Double a few stitches to finish and cut the thread. I doubled all stitches, this will hold! I then make a small patch of leather that I grind thin and glue over the stitches inside the sheath.

### The sheath



**Prepare the shape** Wet leather, and prepare to draw the outline for stitches.

It is now time to do the main stitching job. We will wet the leather for a while in a bucket of water, in order to stitch close to the shape. Prepare the knife, wax and oil it, and wrap it in plastic film (cling wrap) to protect it from the moisture. Then draw the outline as close as possible for the sheath, using clamps to keep it in position. The leather being wet will adjust to small errors.



**Punch the holes** And we use the punch to make the holes.

I used the stitching spacing roulette to follow my planned shape, and I punch the holes. If you use a bladed punch,

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take care to keep the blade at 45 degrees from the tangent of the stitching direction, trying to maintain the same angle all along the line, the stitches will be much better aligned and positioned. a good explanation on this can be found at [BritishBlades.com](http://BritishBlades.com), [here](#)



**And we stich.** Here is the stitching in progress.

And we go. Start one hole from the last, go back, and then forward, this will make a sturdy tip. As you go forward, take care to maintain the tension properly. Pull the needles using the pliers if needed, but never use them on the thread. Adjust tension always pulling equally on both threads after each stitch as you progress.



**More stitching** the leather is wet, it is important to maintain the tension. At that point, the insert will not come out anymore.

Wet the leather again if needed, and continue. At the end you will need to come back some 5 or 7 stitches before cutting the threads.



**Cut the borders** Cut the borders, and use the sander to make them even.

Once the sheath is stitched, you can cut the extra leather with a sharp knife, and finish the borders using sand paper.



**Now dry it a bit** We now need to let the leather dry on shape, if not totally, at least partially.

**A closer look** Closer look to the sheath.



**Give shape** When drying, geve shape to the belt loop.

Let it dry a little, but not totally. While you do this, you can shape different things like the loop and flatten the borders.



**Dye the sheath** And now use dye to give the proper color.

I have dyed the sheath while wet. I wanted a rustic appearance, so this is fine. A better effect is possible when the dye is applied once the leather is fully dry.



**Decorations** Imprint decorations while the leather is not fully dry.



**Decorated** The sheath is decorated, let it dry.

It is time to makes any prints and decorations you want. You then need to let the sheath dry in a normal heated place. Trying to speed up the drying will only cause problems. Before you do so, spend some time to re-oil/wax the blade, and re wrap the knife in plastic wrap.

**Finished**



**Finished and dry** Looks good!

We now have a nice, sturdy and light sheath.



### Conclusion

That is all for the part two. There are many other ways to make a sheath. This was my second sheath, and I think it is easy enough, het shall resist elements for a long long time.

In part 3, I will explain how to make a simple forge and produce your first personal blades.

*Post-scriptum :V 1.0 Initial publication*