



Since I started studying YSR, i have been looking for ways to reproduce the Fukuro Shinai that can be purchased from AOI-Budogu and Japan. Through some trial and error, I was able to create a shinai that was as close to the original as possible. The cost for the leather and bamboo was reasonable, though the creation time was quite long. Making one or two shinai was enough for my own purpose.

After I moved to Montreal and started a study group, I realized that creating dojo swords in a similar fashion wasn't ideal as it took too long to create a single unit. I had to revise my designs. My goal was to stick with a traditional design and look, with a focus on reducing the cost and time spent making the shinai, while using locally sourced materials.

In this document, I will describe the process I use to prepare the bamboo for the shinai core, then the process I use to create two different types of shinai covers.

The first one is closer to the original without being overly complicated (though it is time consuming), while the second is less traditional but quick and cost efficient - a good dojo sword solution. (Sorry in advance as I will switch between metric and imperial measurements).

If you have any questions or suggestions, I can be reached at oakvillekenjutsu@gmail.com



Where to get Bamboo

There aren't very good places in Canada to grow bamboo. As such, the supply and variety are very limited. Additionally, most bamboo available locally is kiln-dried meaning all moisture has been removed rapidly before being distributed for sale. This process makes the bamboo very brittle and prone to breaking when stressed. This is not ideal for a shinai, however unless you chose to order pre-prepared fukuro shinai cores, you have to make do with what's available.

Additionally, most stores don't stock bamboo except for seasonal use in a garden. I've listed a few places below where you may be able to look for bamboo.

Home Depot, Canadian Tire, Rona:

You're best bet is to go in the spring when they begin to sell gardening supplies. You may find, though, that most of the stock is very thin and meant to support small plants.

Chinatown:

Once upon a time, Chinatown was one of the only places you could get bamboo. Often stores that sell home supplies and 'stuff' have sticks from 4' to 8' long. However you may find that what they have has been sitting in the store for 20 years and are of bad quality. Still, sometimes a better selection than the big box renovation stores.

Dollarama:

My best finds have been in the spring at a larger Dollarama or other dollar store. At 2.50 for an 8 foot pole, you can easily get 1 long sword and 1 short sword out of it!

Selecting the Bamboo

Once you've found a place to buy sticks, I usually recommend looking for pieces with the following requirements:

1. A diameter of a little larger than 1"

I have found that the most comfortable shinai to hold is about 1" diameter. So, try and find a piece that has a bottom diameter a little larger than 1" (as we will probably trim it).

2. A straight piece that is at least 1+ meters in length.

This might seem self evident however it can be challenging finding a piece that isn't a zig-zag. Additionally, if you can find a piece with a minimal taper, that would be ideal.

3. Fewer chambers

By chamber, I mean hollow sections. Ideally, I look for a piece with a hollow section for the tsuka that is about 7 inches long. Failing that, I try to find something where the chambers are 4-5 inches. This will help make a shinai that has space for a proper grip.

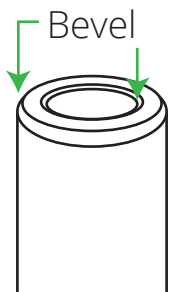




Preparing the Bamboo

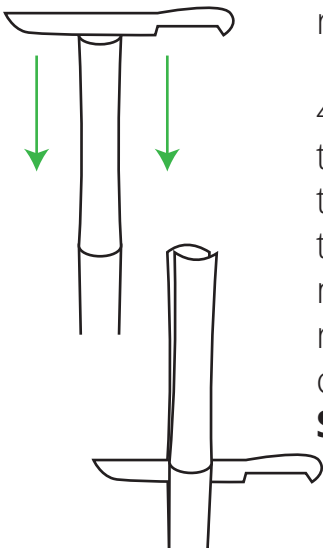
Now that you have your piece, let's start making the fukuro shinai core. You will need the **bamboo**, **duct tape**, a **knife**, and **strong cotton twine** (from a hardware store, not a grocery store).

1. Depending on the size of your piece, cut it down to 1 meter in length. Make sure that the widest end is cut so that the joint is close to the end. This will be the tsuka. The other end should be cut below a joint.



2. Using duct tape (or similar), reinforce the core at approximately the mid-point or slightly closer to the tsuka. I find reinforcing over a joint is ideal to stop too much splitting. No need to use too much tape - once or twice around is good.

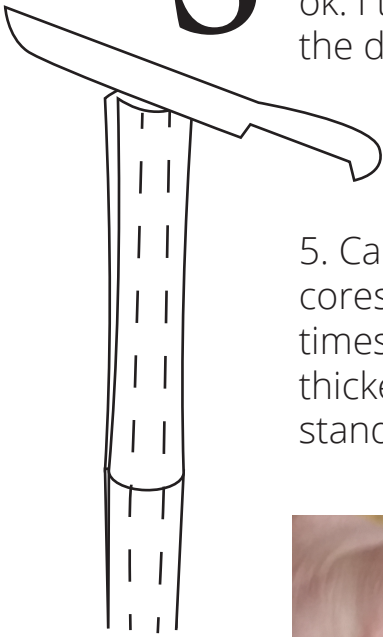
3. Using your knife (or a file), bevel the ends of the bamboo to reduce the amount of splinters (inside and outside).



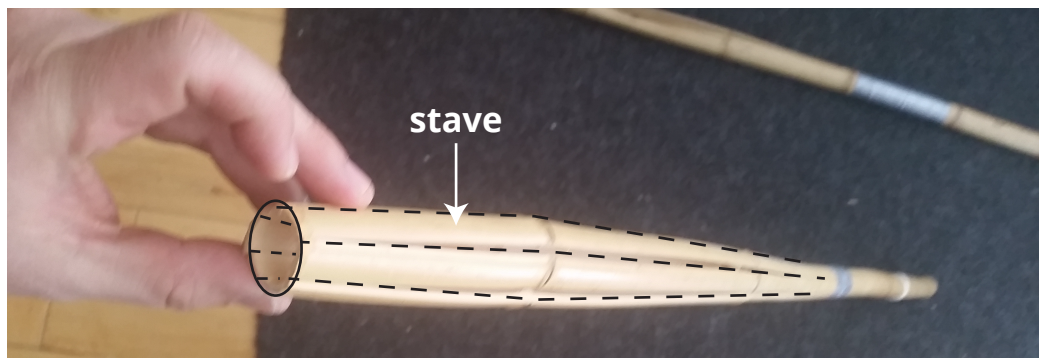
4. Using a long knife (I use an old kitchen knife), carefully split the bamboo by firmly pressing downwards with equal force on the ends of the knife. I find it's easiest to stand the bamboo on the tsuka end and push down on top. The bamboo will naturally split further than the position of the knife. When you reach a knot, you may want to use a mallet or similar to carefully tap the blade until it splits further. **BE CAREFUL OF SPLINTERS AND NOT TO CUT YOURSELF!**

Preparing the Bamboo

Stop splitting once the split nears the tape. You may notice 'paper' like pieces coming out from inside the bamboo. This is ok. I think it's the inner layer of cells that are shedding off from the drying process.



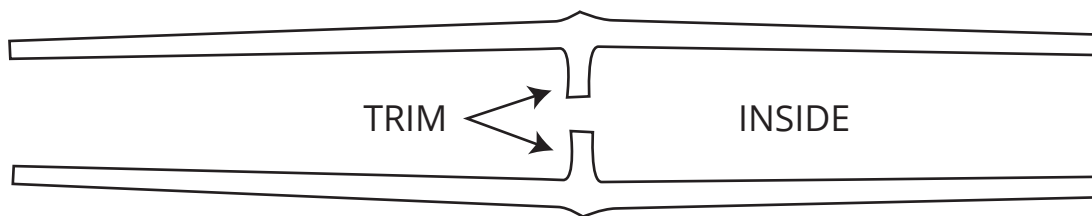
5. Carefully repeat again splitting across the two halves. The cores from the swords I bought from AOI budogu are split 8 times however the bamboo used in those swords are generally thicker and probably dried naturally. These brittle ones can't stand as much stress so I split it in to six sections.



6. In the end you should have split 6 equal staves from the main piece. Having been dried quickly, the staves of the bamboo will probably want warp, bow, or collapse inward. Gently try your best to separate them and keep them parallel.

Preparing the Bamboo

This is a good time to take off all the sharp bits that could hurt you or your partner.



7. Using your knife, trim down the inside parts of the bamboo where the joints were. I recommend holding the tsuka end and pushing the knife away from you with a chopping motion. This should cut the pieces off.

8. After all this is done I swing the core around until no more loose debris comes off. Additionally, I try and remove any loose fibers from the staves as that's where splinters start.

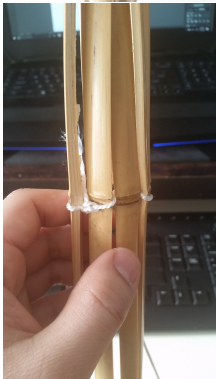
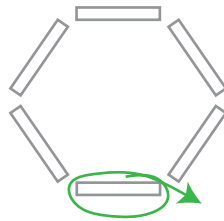
9. (Optional) At this point your core is pretty much complete, however if you notice that your staves continue to pull inward and refuse to align, then you may want to tie them in a way that will force them to align. I've illustrated how to do this on the next pages.

Tying Off (Optional)

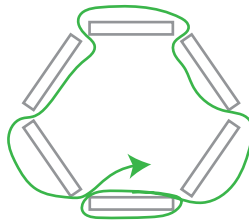
The kiln drying process can be hard on the bamboo, and often creates stress in the structure. If your staves are collapsing in towards the center, and refuse to align properly, you may benefit from tying them in a way that keeps their alignment. I've illustrated how I generally do this.



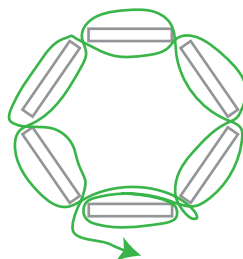
10. Using a thick cotton twine, tie an end to one of the staves.



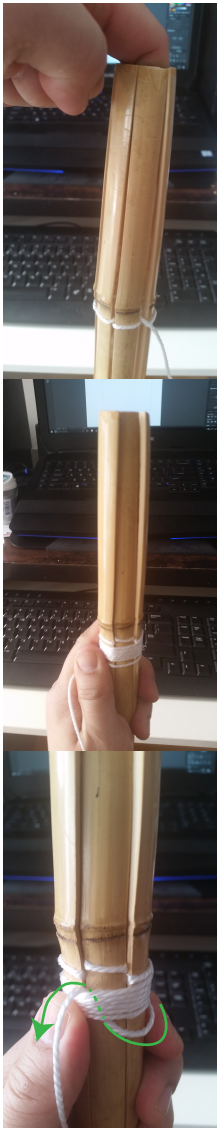
11. Pull the cord around the staves going above and under until you reach the beginning. This will make it so that every other stave will have string on the outside.



12. When you reach the start, alternate the side of the string to the empty side of the stave and continue through until you reach the beginning again. This way there will be string on both sides of the staves.

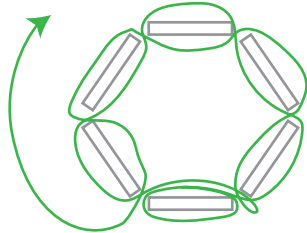


Tying Off (Optional)



13. Pull the string until the staves align. I insert my finger through the top as a guide. You want to allow the staves to move still so no need to pull it too tight.

14 Next I reverse the direction of the cord and begin to wind it around the outside of the threaded area.



15. I wrap it loosely for a few revolutions until I have about 1/3 of an inch of cord wrapping. I then loop the cord under the wrapping.

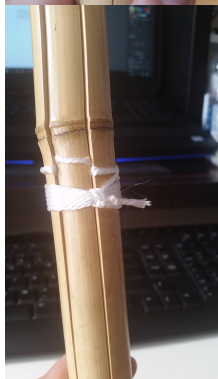
Tying Off (Optional)



16. Bring the string out and to the right and loop it again. Then thread the string through itself (look at the pic ... it's hard to describe).



14 Next pull the knot tight. The wrapping doesn't have to be too tight around staves.



15. Lastly tie a knot at the end of the wrapping so that the end of the string can't back out of itself. The final wrapping should be loose enough that the individual bamboo staves can move around a bit.



Leather Cover

Traditionally, leather is used for the cover. I am not an expert in leather so I can't really say what type of leather is use however from my experience a supple leather with a smooth surface (not suede) and about 1.5mm-2mm thickness seems to work best. There are a few ways to make a leather cover, however I found this to be the closest to the original. You'll need:

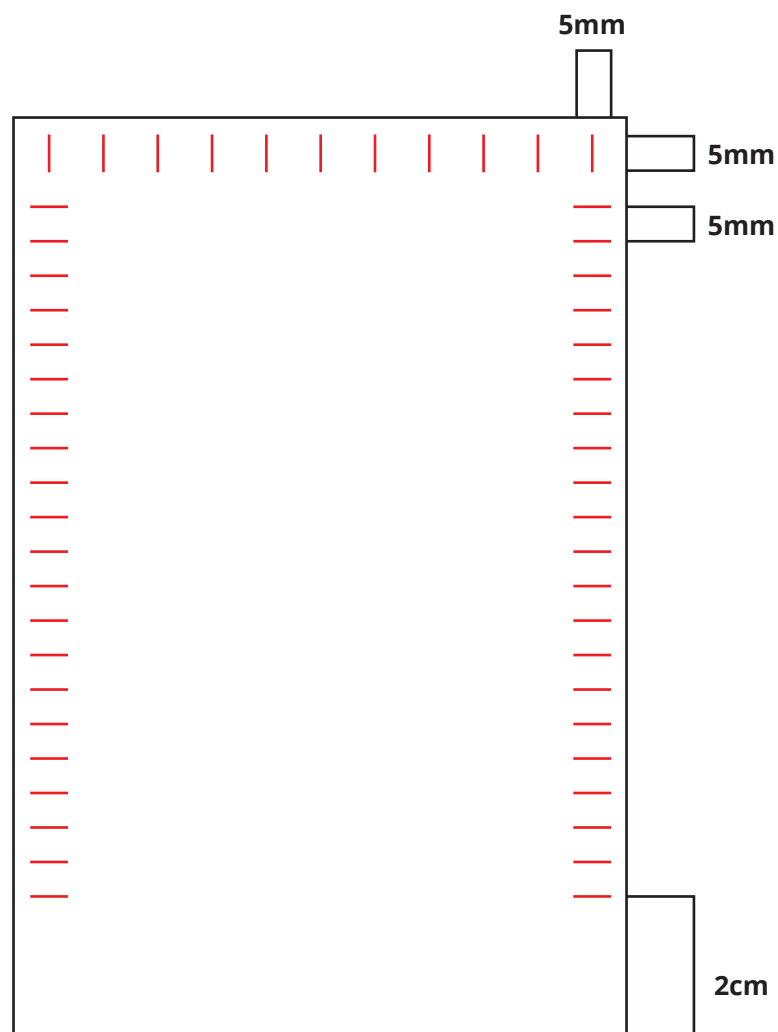
- A sheet of leather approximately 11.5 cm width and approximately 78+cm in length*
- A leather thong about 5mm in width and about 1 meter in length*
- A leather thong about 10mm in width and 1 meter in length*
- A tool to cut holes in leather such as a 5mm and 10mm width chisel and mallet
- Bent nose jewellers pliers

*these items can all come from 1 sheet of leather however because of the variable size and circumference of the bamboo, test it first to make sure the leather wraps around the bamboo with at least a 7-10mm overlap.



Leather Cover

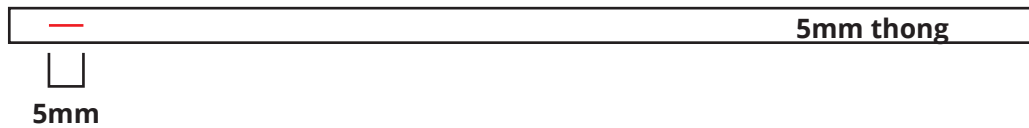
To start, lay the leather sheet flat. Mark off 11 5mm length lines across the top of the leather of equal distance (where the sword tip will be), then 5mm lines down both of the long sides about 5mm apart with approximately 3mm distance from the edges. Leave approximately 2 cm at the bottom of the leather sheet.



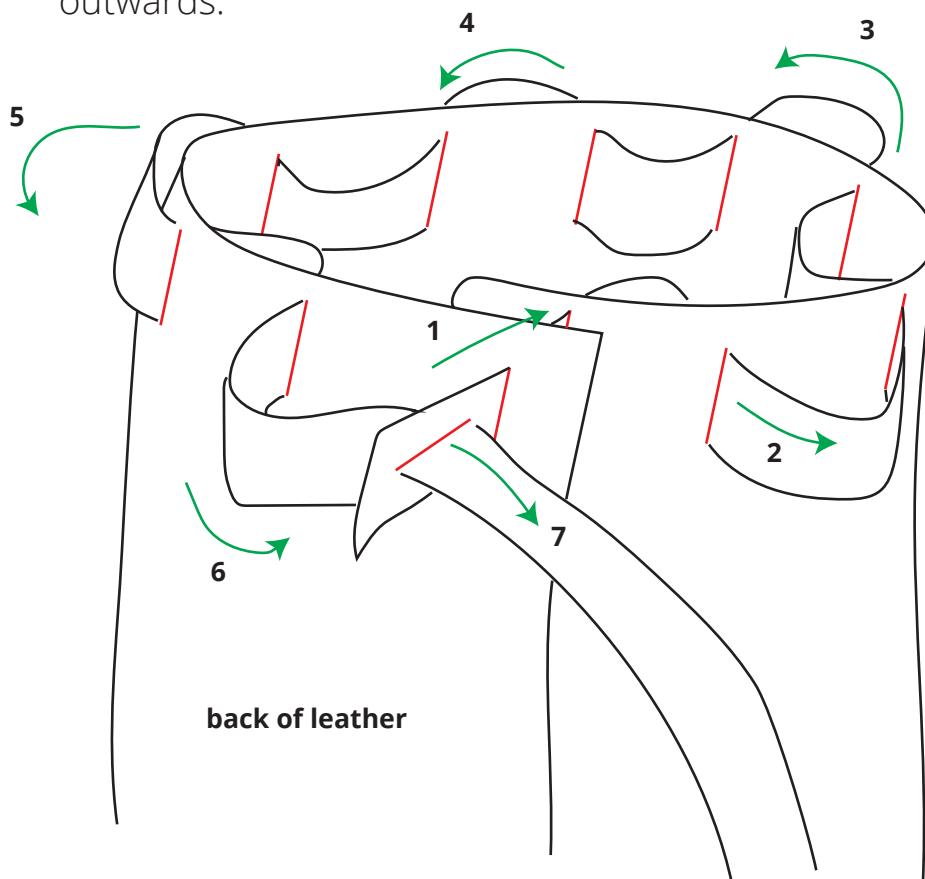
Once it's all marked off, carefully use the chisel and mallet to punch holes where the marks are. Try and make sure the holes down the length of the leather line up.

Leather Cover

Next, prepare the 5mm thong by making a 5mm cut at one end of the thong, long side following the direction of the length.



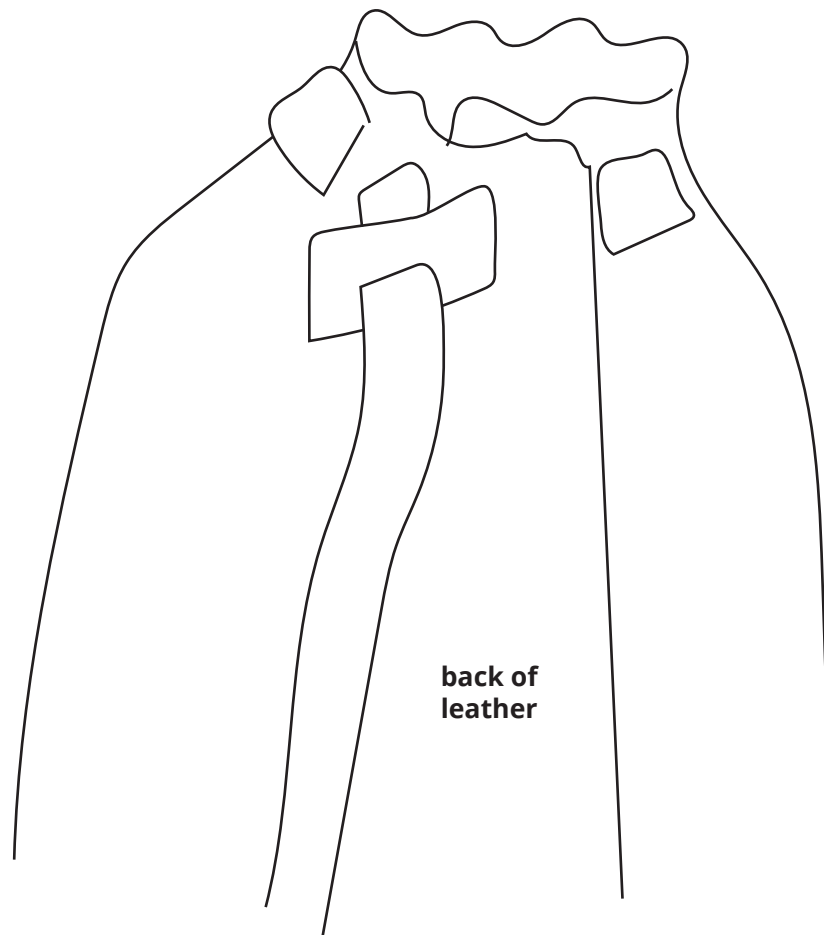
Roll the sheet of leather in to a tube and align the top holes on the far left and right align, keeping the back of the leather outwards.



Use the thong to stitch the leather through holes as shown in the diagram (the pliers help) starting with position #1 (the end with the hole cut in the thong). NOTE: the first stitch goes through two holes. When you go through the last hole, put the thong through itself.

Leather Cover

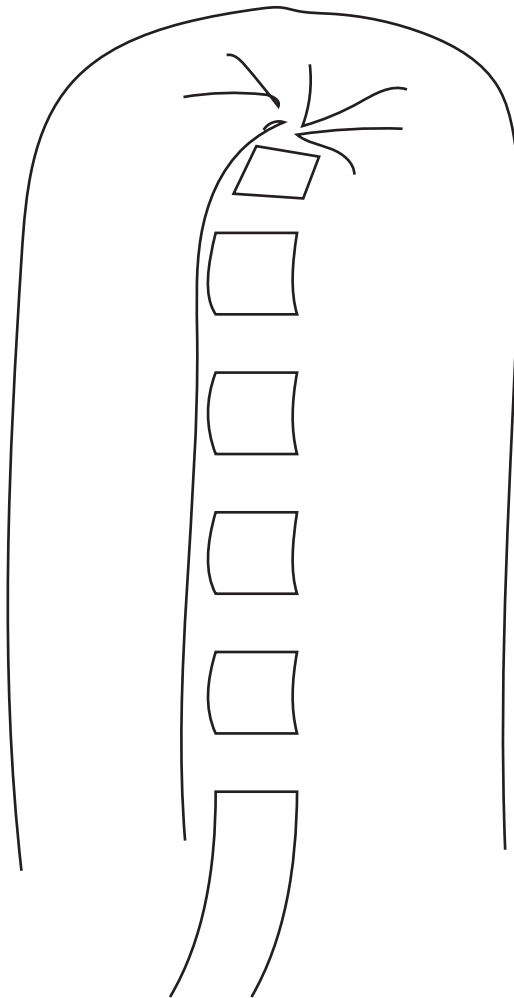
Pull the thong tight to close the top of the bag. The tighter you can make it, the more secure the tip will be.



When you are satisfied that the end of the bag is as closed as you can make it, invert the entire tube so that the front side is now on the outside.

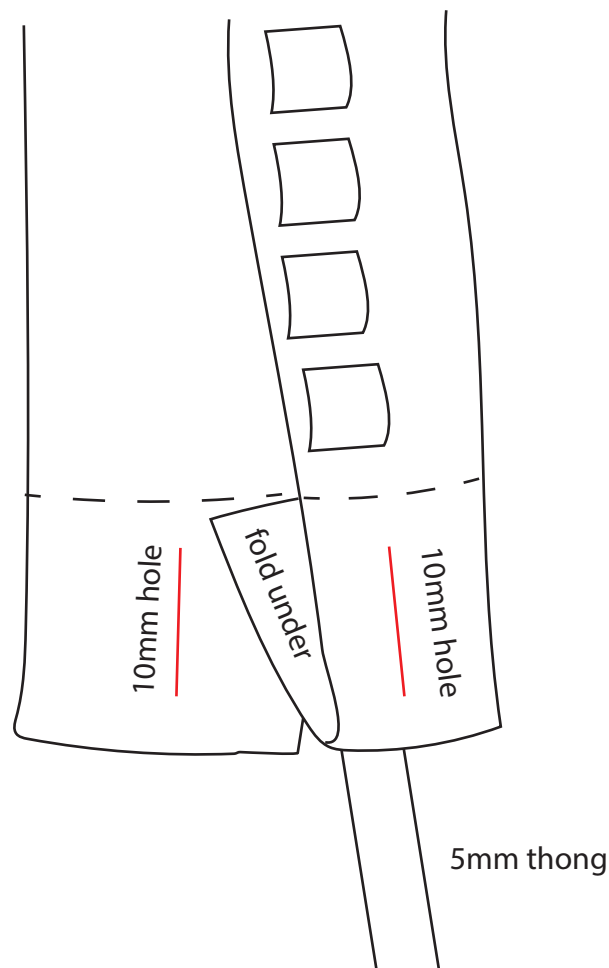
Leather Cover

Now starts the long task of stitching the length of the bag all the way down to the bottom. Put on some good music try not to go crazy.



Leather Cover

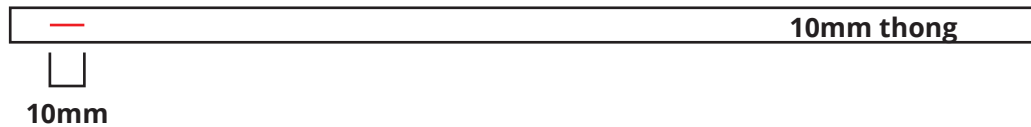
Once you reach the bottom, pull the excess thong down the inside of the bag and out the bottom. Fold up the last 2 cm of the bag so that it is halved.



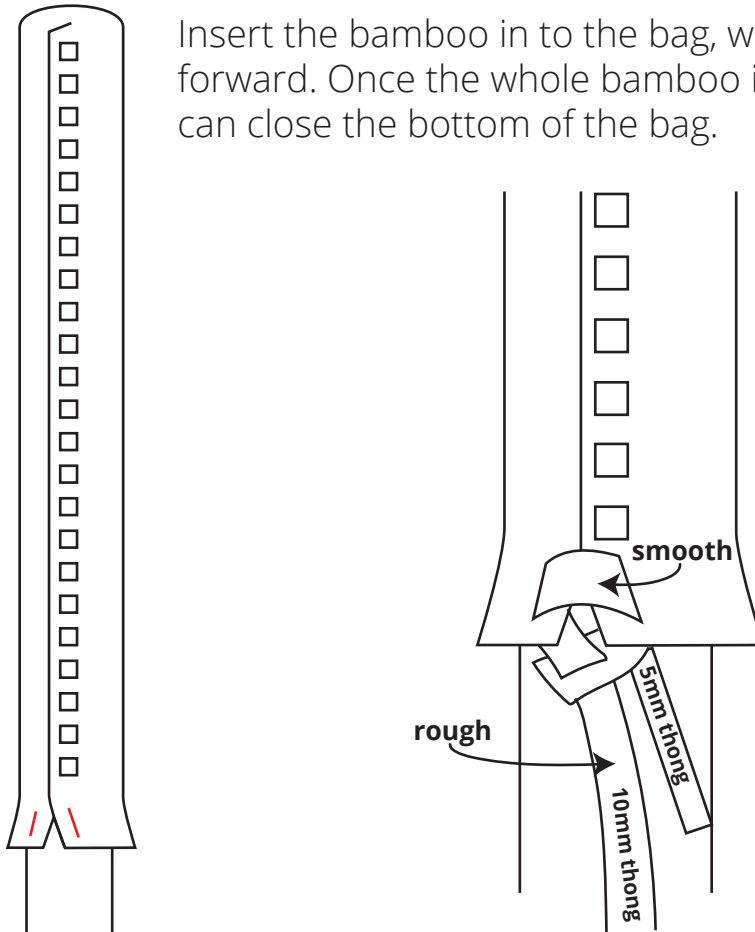
Using the 10mm chisel, punch 2 holes through the folded area at the bottom of the leather, making sure to go through both layers. Additionally the holes should run parallel with the length of the bag.

Leather Cover

Prepare the 10mm thong by cutting a 10mm hole at the end of the thong.



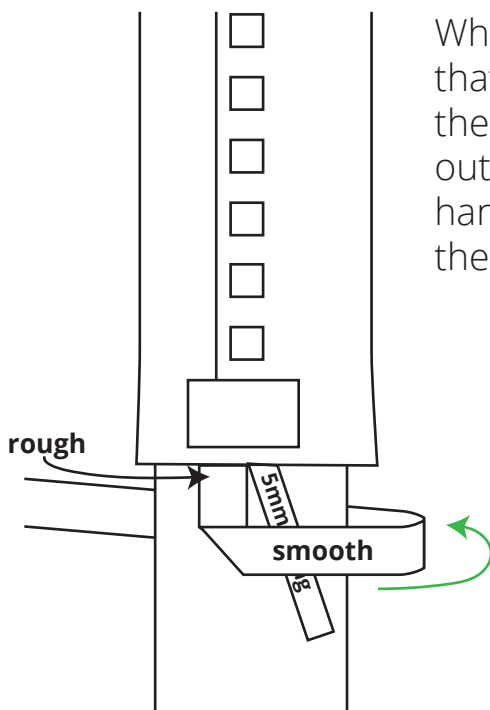
Insert the bamboo in to the bag, with the split end forward. Once the whole bamboo is inside the bag, we can close the bottom of the bag.



Put the 10mm thong through the right two holes from the bottom, bring it across to the left, then through the two holes on the left. Once through, thread it through itself. Ensure that the smooth side faces outward. Pull it tight to close.

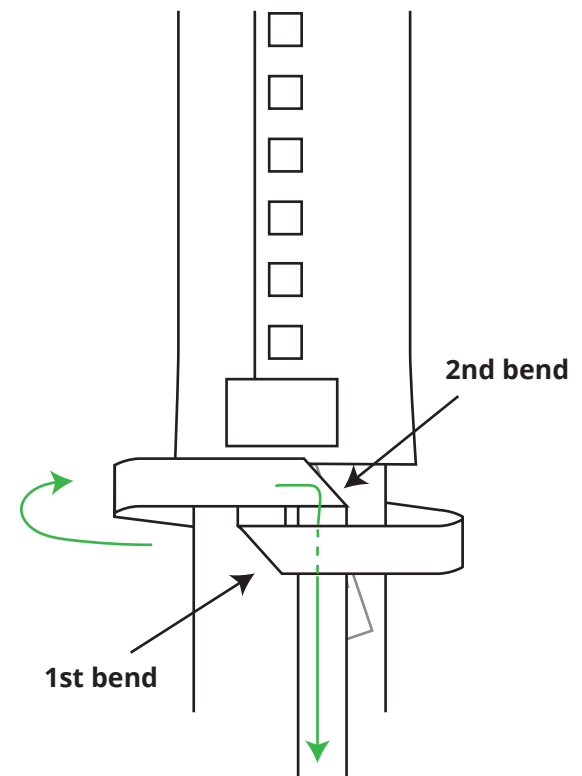
Leather Cover

The extra lengths of the thongs all seem to be held together by tension and friction. So when tying off the bottom, make sure you spend some time making things tight.



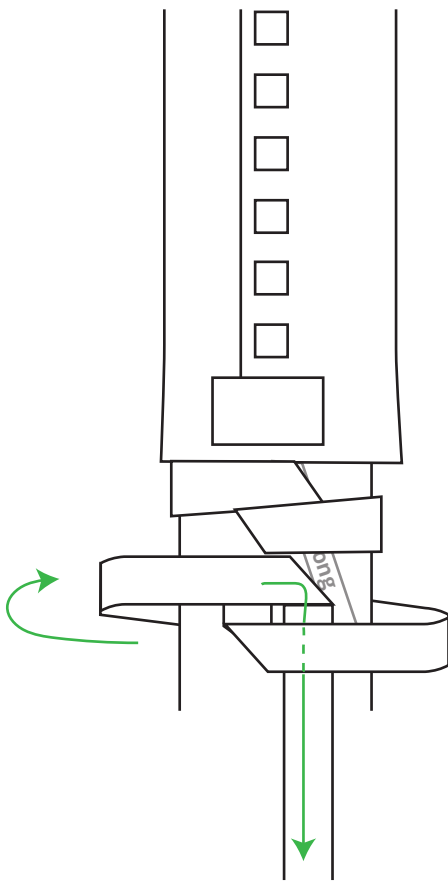
When you start, the rough side of the 10mm thong that is hanging down should be facing outward. Fold the thong to the right so that the smooth side faces outward. Wrap it around the bamboo, covering the hanging 5mm thong. Bring the 10mm thong around the tsuka and slightly upwards.

Bring the 10mm thong back around towards the right above the 1st bend. When you reach the center, bend it again and insert it under the 1st bend. Pull the thong downward and pull it tight. You should be left with a wrap that has the smooth side outward, with the hanging thong showing the rough side.

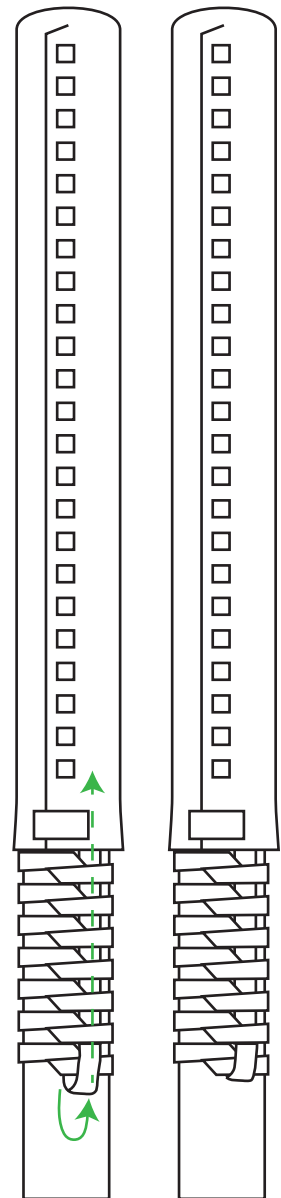


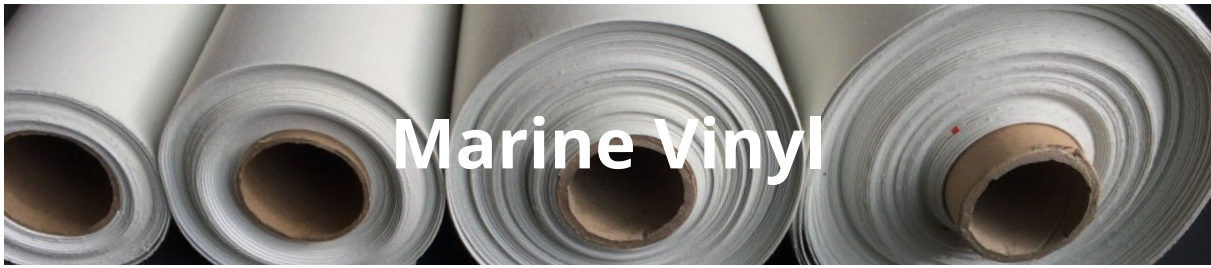
Leather Cover

Continue to wrap the handle. My shinai from AOI-Budogu has 7 rotations and is about 4" in length. I'm not too sure if the number is important or the length of the wrap is important so I'll leave that up to you.



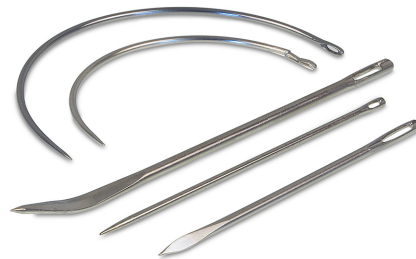
To finish off the wrap, bring the hanging portion of the 10mm thong upward over the last wrap, slightly to the right of center. Pass it under all the wrappings as you bring the tail of the thong upwards and into the leather bag itself. Pull it snug and that should be it. Ideally things should be nice and tight and ready for keiko.





Marine Vinyl

If you're working on a budget and/or just don't have 6 hours to carefully thread and tie a leather fukuro shinaï, then marine vinyl is for you. This can be purchased at most fabric stores and is used for outdoor upholstery. For this you will need **Marine Vinyl, Sturdy cotton twine, a Vinyl Needle**

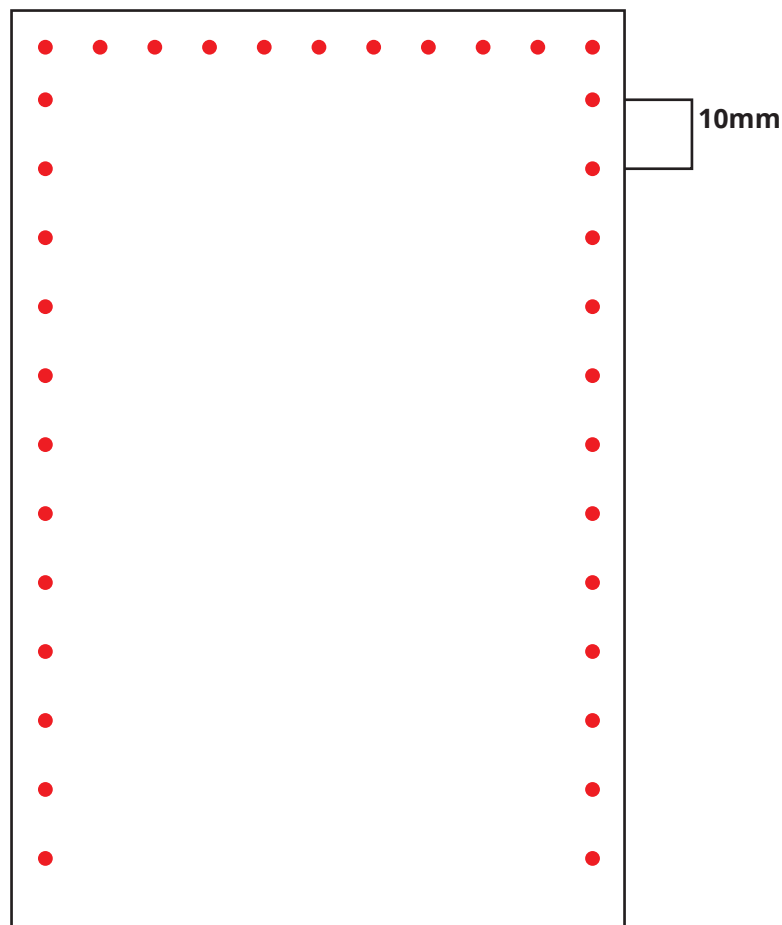




Marine Vinyl

Prepare a vinyl sheet that is about 11.5 cm in width and 75cm in length. As with the leather, wrap it around your bamboo to make sure you have enough to cover the bamboo and overlap the vinyl by about 7-10mm. This can be trimmed as needed.

Mark off 11 dots across the top, equal distance to each other, and then dots along the length about 10mm apart. Make sure the dots along the length align on each side.

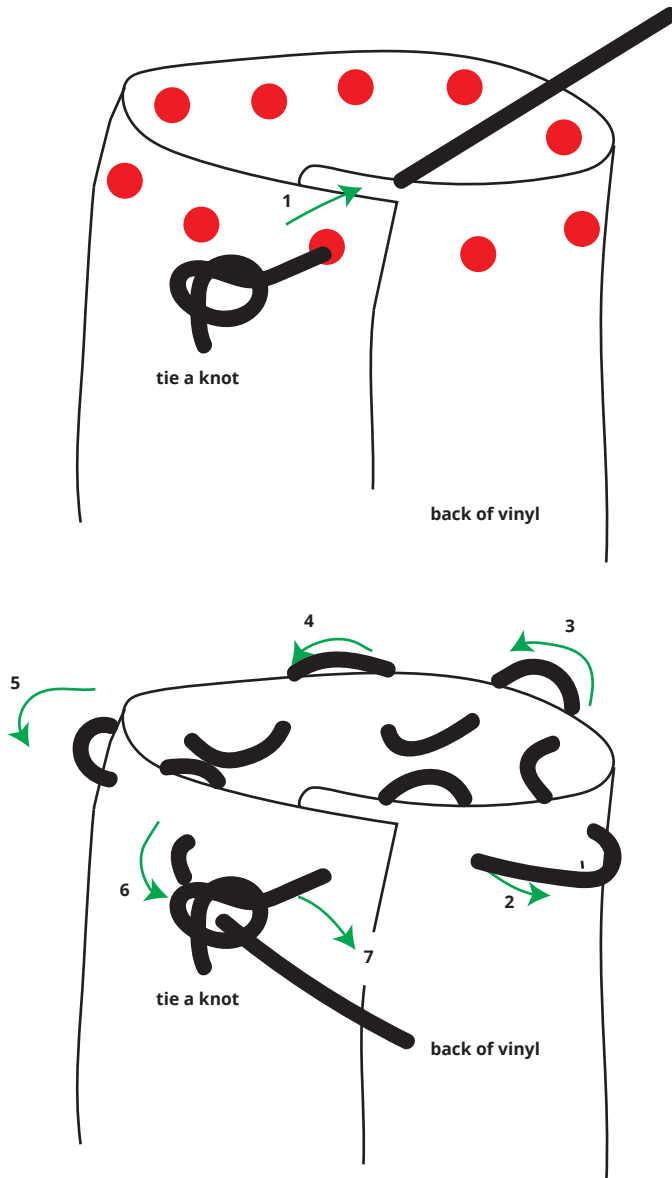


Keep in mind this illustration is not to scale. There will be lots of dots running down the length of the vinyl.



Marine Vinyl

Similar to the leather preparation, roll the sheet of leather in to a tube and align the top dots on the far left and right align, keeping the back of the vinyl outwards.



Using a vinyl needle thread a long length of twine through the eye (it will need to be at least. Tie a knot on the end of the twine and begin stitching by piercing the vinyl through the two end dots on the left and right sides.

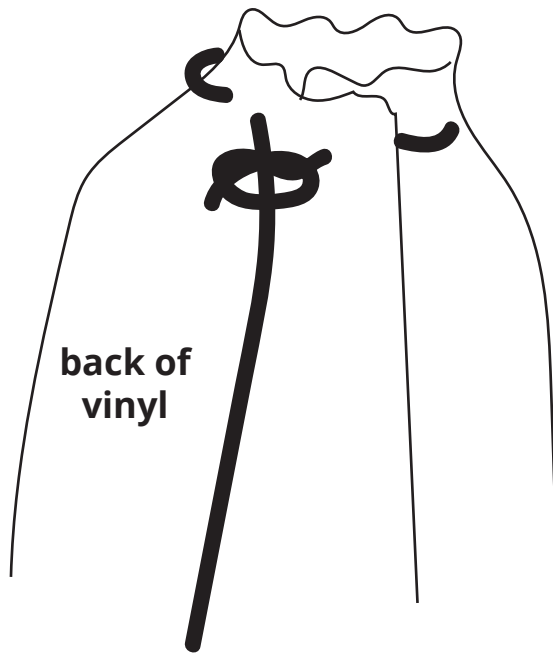
****** A note about Vinyl - the material is tough as long as it isn't ripped. A hole punched through a piece can still withstand stress however a cut will just continue to tear so be careful how you work with the material. ******

Continue to stitch through all the dots until you reach the last one. Bring the needle through the knot you tied at the end of the twine.

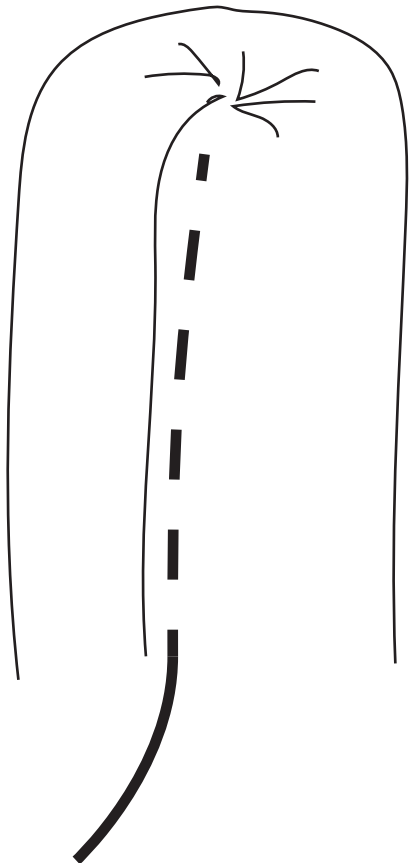


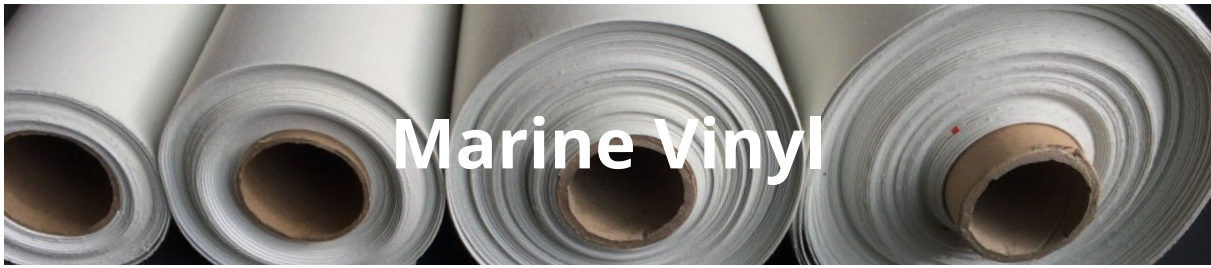
Marine Vinyl

Pull the twine tight to pinch closed the end of the bag. Be careful as you pull so that you don't tear the vinyl or break the twine.



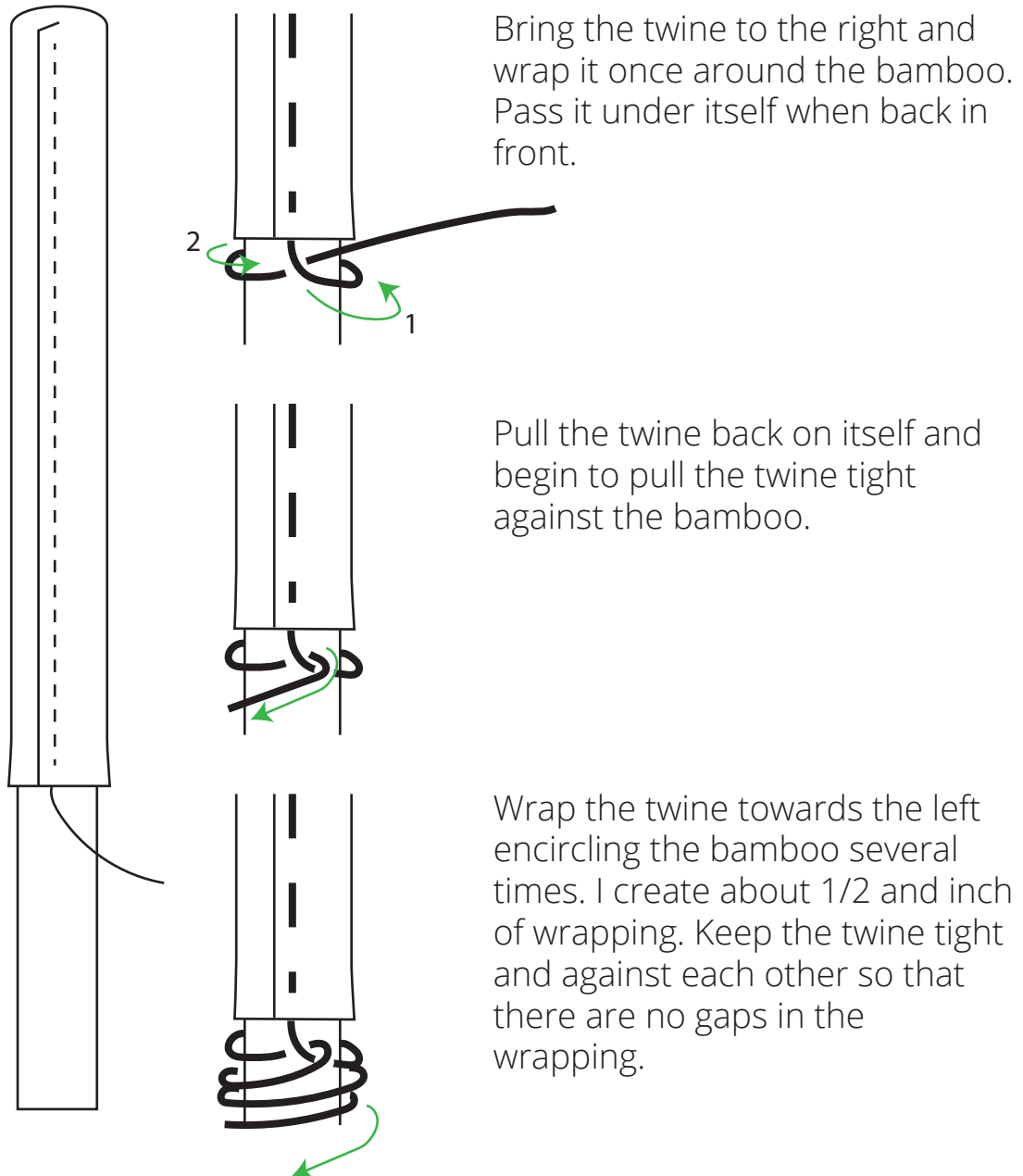
Carefully invert the top of the bag so that the front of the vinyl is on the outside. Continue to stitch down the length of the vinyl until the entire bag is stitched.





Marine Vinyl

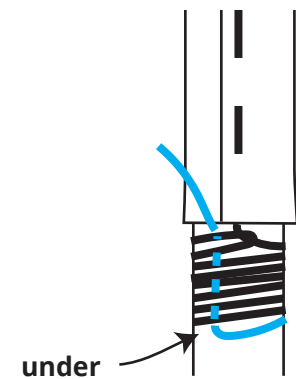
Once the bag is fully stitched, insert the bamboo with the split end forward. Leave the twine on the needle for this part.



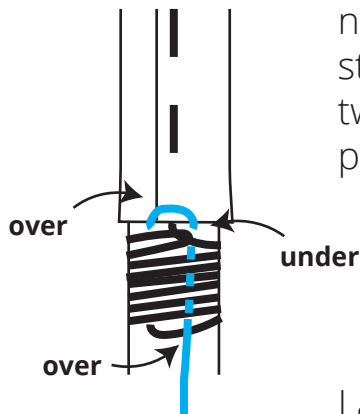


Marine Vinyl

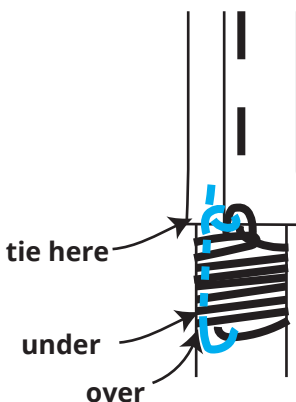
Once you have wrapped the tsuka a bit, you can finish tying off the twine.



Using the needle, bring the end of the twine under the wrapped section (shown as a dotted line) and out the top of the wrapping.

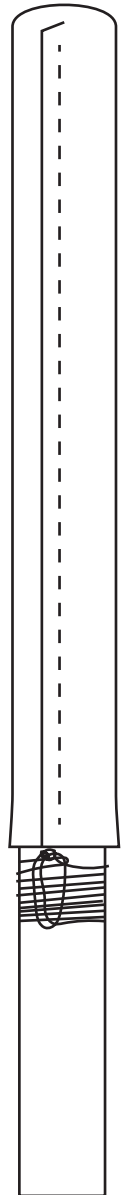


next bring it over the twine where the stitching ends, then pass it under all the twine again. As it emerges out the bottom, pass on top of the last part wrapped.



Lastly bring the end to the left and pass over top the 2nd last wrapping. Using the needle pass it below all the wrapping above the 2nd last and out the top. Pull it all tight. Tie it off to the twine that goes over the where the stitching of the bag ends.

If the wrapping is tight and the knots tied well, this is enough to held the bag on the bamboo with friction.



That's it! Ugly but functional dojo sword!