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## The Art of Tsukamaki

written and illustrated by Thomas L. Buck, Ph.D.

Ever since seeing my first Japanese sword, I have been captivated by the elegance and complexity of TSUKA-MAKI (the art of wrapping the tsuka). Although I will share with you a few of the tools, materials and techniques needed for tsuka-maki, I have learned, through the guidance of Takahashi-sensi, that patience, persistence and excellence are the true requirements for the application of this art.

### COMMON TERMS

In order to make this more understandable for both the novice, as well as the experienced wrapper, I shall start by defining a few of the common terms used in tsuka-maki.

FUCHI/KASHIRA	pommel caps
HA	cutting edge side
HISHIGAMI	paper wedges
ITO	cloth braid
MAKI	to wrap
MENUKI	hilt ornaments
MEKUGI	peg that secures hilt
MEKUGI ANA	holes in the hilt
MUNE	the side opposite cutting edge
NAKAGO	tang of sword
OMOTE	the side that faces out
TSUKA	hilt or sword handle
TSUKAITO	cloth braid covering tsuka
SAME	shark or ray skin

### MATERIALS

Aside from the *tsuka* itself, the basic materials in tsukamaki are the *ito*, paper and glue.

The glue can either be purchased (such as Elmer's) or produced by boiling rice, working it into a past while still warm, and adding a small amount of water.

The paper can be of nearly anyweight, but ideally it should be relatively close to newsprint in weight and consistency.

During the wrapping, be sure to moisten the paper wedges before inserting them under the braid, this will allow the wedges to conform more readily to both the *tsukaito* and the *same*.

Although the *ito* is available in a wide range of colors, it is only manufactured using two different types of fibers (natural and synthetic). When trying to identify an unknown *ito*, a burn test is often helpful. The following chart gives tests for the principle natural fibers, and a few synthetics.

	<u>FIBER</u>	<u>FLAME</u>	<u>ODOR</u>	<u>RESIDUE</u>
Cotton		Luminous, rapid	Burning paper	Fine, gray
Silk		Slow oran/yellow	Burning hair	Brittle bead
Wool, hair		Slow, blue	Burning feathers	Brittle bead
Rayon		Sparks, orange	Burnt paper	Black ash
Acetate		Rapid, sparks	Vinegarish	Hard bead

URA

the side that faces in

Nylon Melts, no flame Like celery Hard bead

**TOOLS**

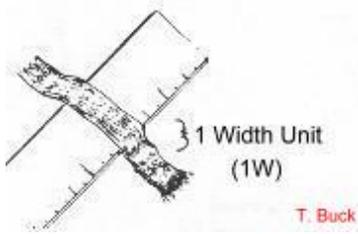
For holding the *tsuka*: a stand that will hold the *tsuka* firmly in place for both wrapping and tightening, and will allow work to be done easily on both the *omote* and *ura* side.

For inserting the paper wedges, and adjusting the *ito*: tweezers, a pick (any small pointed tool), and any small hand held tool with a blunt wedge shaped tip. You can most likely find all of these in used dental tools.

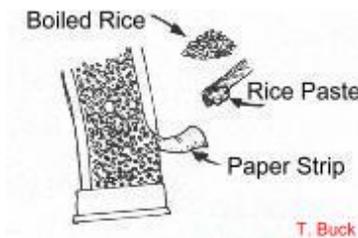
For holding the *ito* in place: a clamp that can be worked around freely, will not allow the *ito* to shift, and goes on and comes off readily.

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**PREPARING THE TSUKA**



In preparing the *tsuka*, start by stretching a sample of the desired *ito* tight and measuring its width (1W).



Using a small amount of rice paste glue, place thin paper strips along both the *ha* and *mune* sides of the *tsuka*. By Layering the paper you will decide the finished shape of the *tsuka*, and also guard the *ito* from snaring on the surface of the same. Continue layering the paper until the *fuchi/kashira* will be flush with the edges of the *tsuka* (after the *ito* is in place).

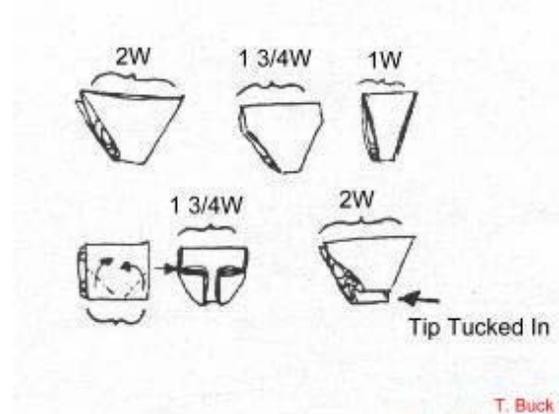
**SUGGESTED ITO LENGTHS**

Although I have encounter several different ways to derive the required length of *ito*, ranging from special formulas and ratios, to wrapping the *tsuka* from end to end and half way back, I tend to follow the simple guidelines given me by Takahashi-sensi.

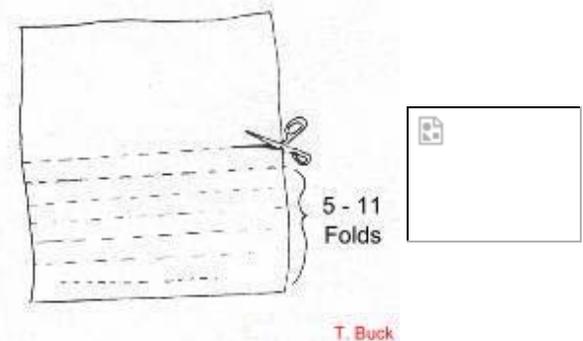
- TANTO (4" *tsuka*)      6 feet of *ito*
- WAKIZASHI (6" *tsuka*) 8 feet of *ito*
- KATANA (10" *tsuka*)    12 feet of *ito*

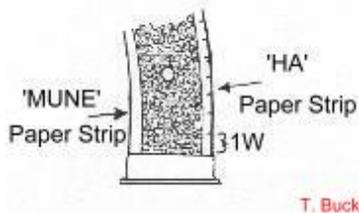
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**HISHI-GAMI (THE PAPER WEDGES)**



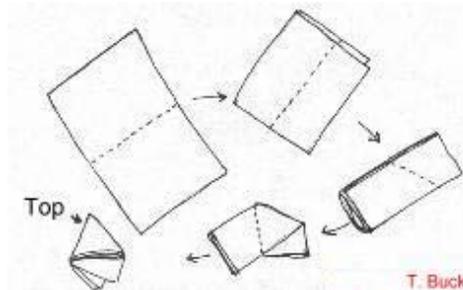
To give the *maki* a proper shape, the *tsukai*to is folded over various styles of *hishi-gami*, or small paper wedges. Here are a few of the many different styles used.



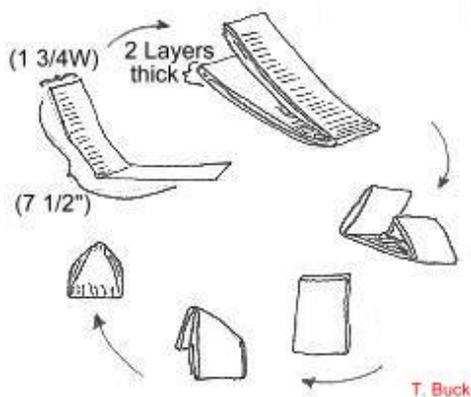


Measure and mark the *ha* and *mune* sides in *tsukaito* width segments (1W). The distance between the *fuchi* and *kashira* should measure an odd number of width units along both the *ha* and *mune*. If not, either the *tsuka* may have to be altered, or a different weight *ito* may have to be selected in order to fit within an odd number of spaces.

In making the wedges, begin by folding a sheet of newsprint, or standard weight paper 5-11 times. Cut off excess paper, then cut the folded paper into two width (2W) segments. Use these to make any of the wedge styles previously illustrated in this article.



One alternative to the previously mentioned *hishi-gami*, is made from a piece of paper (1" X 1/2") folded as shown above.



Another, fatter alternative wedge, can be made from a piece of paper (7 1/2" X 1 3/4W) folded as shown above.

placed after the third set of folds from the *fuchi* on the *omote* side and three sets of folds from the knot on the *ura* side. In reference to *wakizashi* and *tanto*, the *menuki* are commonly placed after the second or third set of folds. In any event, the positioning of the may vary because of the *tsuka* size, *menuki* size, *ito* width, or placement of the *mekugi-ana*.

### THE WRAPPING OF THE HANDLE

To begin with, it should be stated that both Japanese tradition, and personal observation, suggest that *tsukamaki* should be started and completed on the *omote*, or the side of the *tsuka* that faces outward when being worn. This is almost always true regardless of the style of wrap.

- Measure half the length of the *tsukaito*.
- Place the first two paper wedges on the *ura* (side

opposite the *omote*), and align them with the marks on the paper strips.

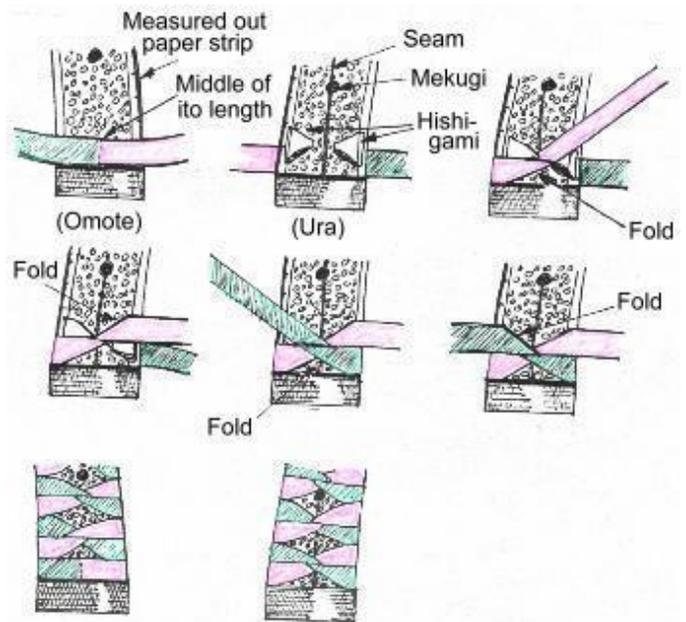
- Make the first two *tsukaito* folds overlap the paper wedges.
- Bring the other half of the braid around and make the next two folds.
- Repeat with other length of *ito*.
- Continue this procedure on the other side, alternating the direction of the folds.

During the wrapping, tightness should be a primary concern. Each fold should be drawn or stretched so that there is no slackness or looseness.

Throughout the process, continually monitor and adjust the symmetry of the folds and open areas, and try to maintain a smooth surface appearance along the *ha* and *mune* edges of the *tuska*. Ultimately, a quality *tsukamaki* maintains a consistent tightness and exactness.

### PLACING THE MENUKI

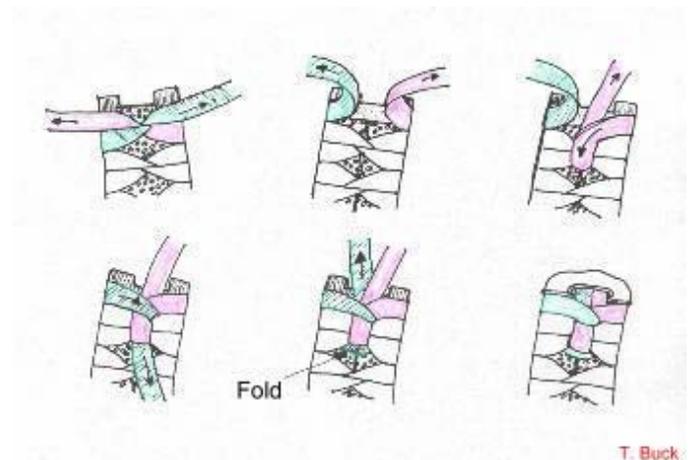
In both the *ito maki no katana*, as well as the *ito maki no tachi*, the *menuki* are usually



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(Ito Maki no Katana)

### TYING THE URA SIDE KNOT



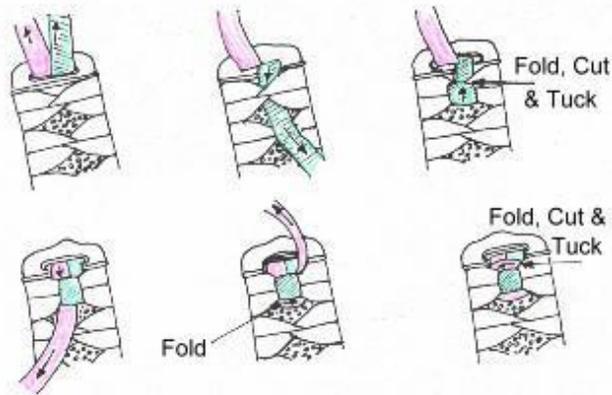
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(Tying the Ura Knot)

At the end of the *tuska*, on the *ura* side, pass the end of the *tsukaito*, coming from the *mune*, over and then under the preceding fold. Then, pass the end from the *ura* over the other end, and under the previous fold, making a loop. Bring it back again under the fold. Thread both ends through the *shitadome* (if present) and the *kashira* side-by-side.

### TYING THE OMOTE SIDE KNOT

To start the *omote* knot, pass the bottom end of the *tsukaito* under the top set of folds, pull the braid over the fold, cut off,

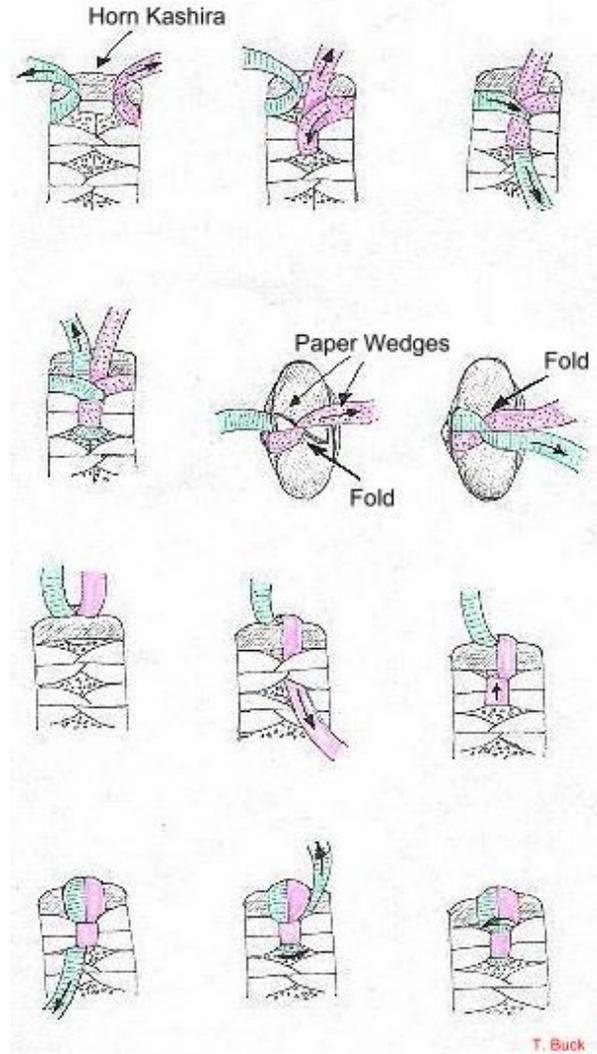


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**(Tying the Omote Knot)**

apply rice paste glue, and tuck under. Take the top end of the tsukaito under the top set of ffold, repeating the first part of the previous step. Then, make a loop by bringing it back again under the folds. At this point, insert a small wad of paper and fold the tsukaito over and tighten. Bring the top length around to the left and down again cut off, apply and paste glue and tuck under.

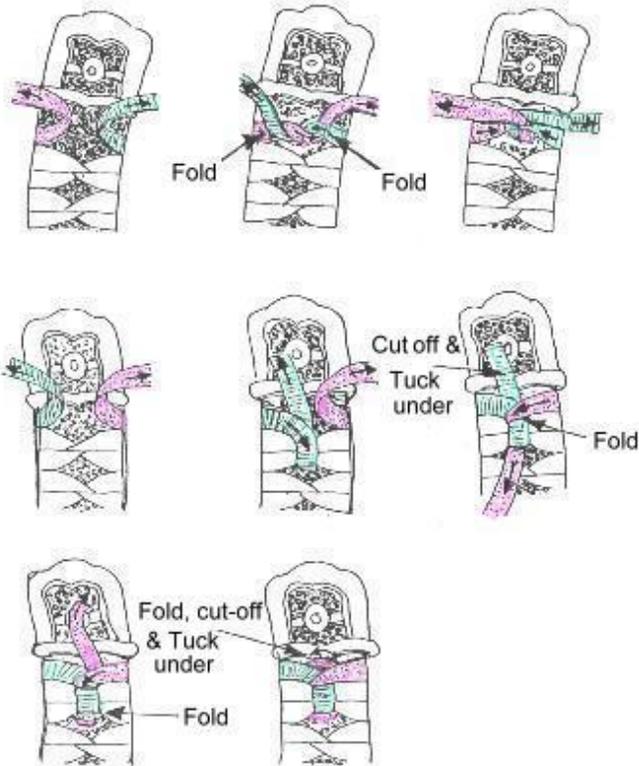
**ALTERNATIVE KNOTS**



**(MAKIKAKE NO KASHIRA)**

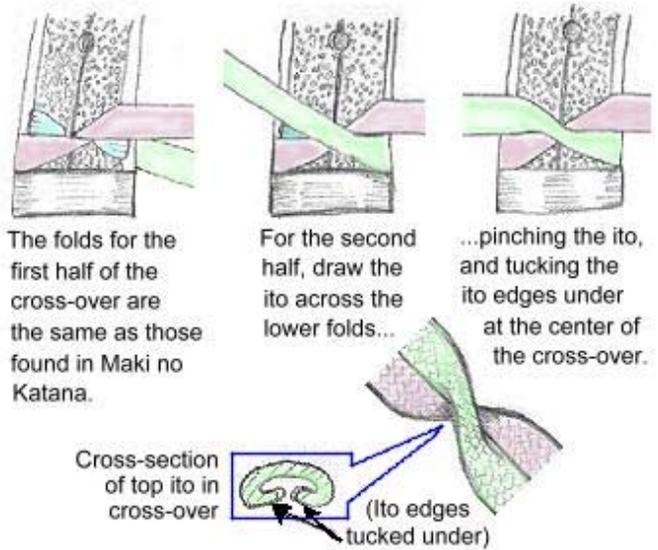
**ALTERNATIVE TSUKAMAKI STYLES**

Of the more than forty styles of *tsuka-maki* that I am familiar with, here are five of the most common.



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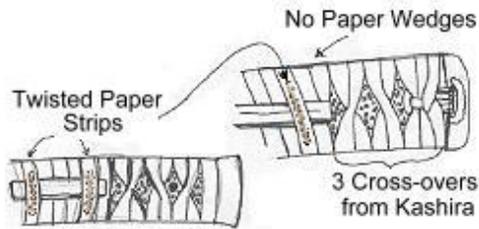
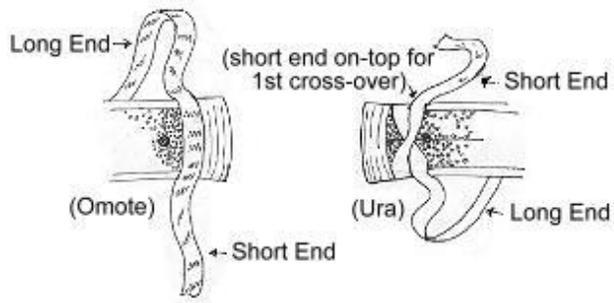
**(COMMON GUNTO KNOT)**



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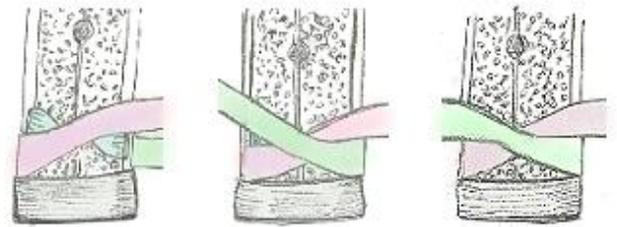
**(Tsumami maki)**





**(Katate maki)**

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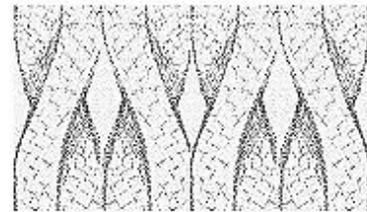


To begin the first cross-over, draw the first side of the ito loosely over the hishi-gami

For the second half, draw the ito flat across the lower strip...

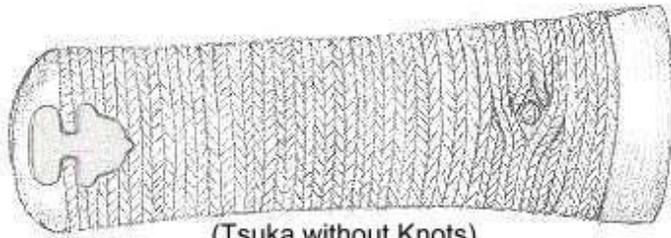
...then, pull the ito tight, making sure the hishi-gami remain centered and completely covered.

Ito strips remain flat, with a nice even flow...

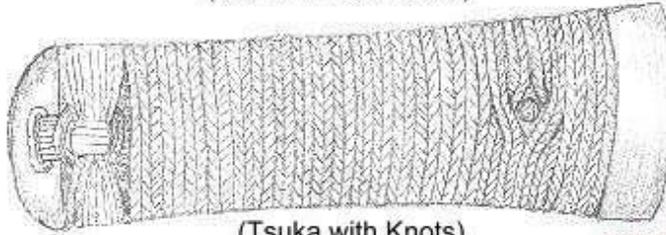


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**(Tachi Tsukagashira Kake maki)**



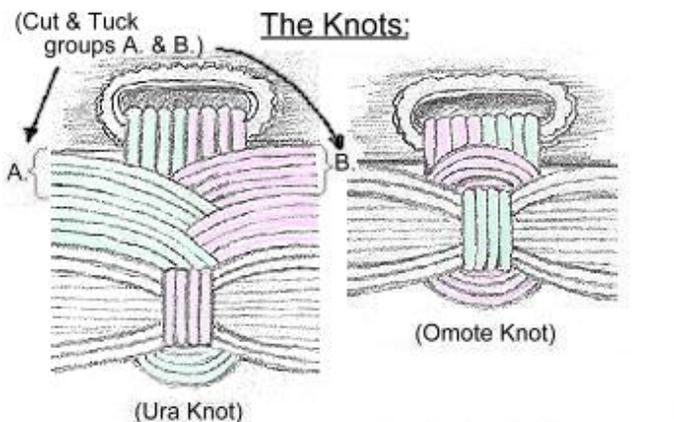
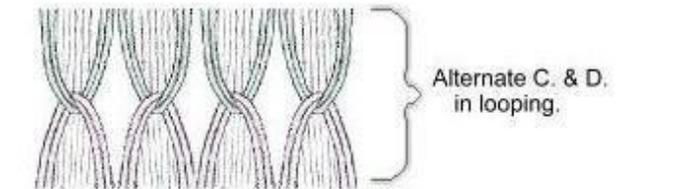
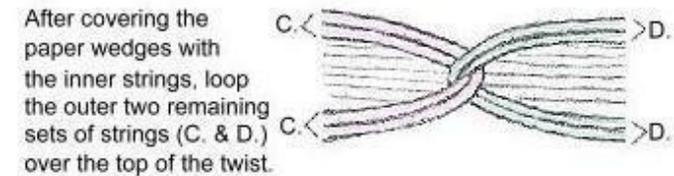
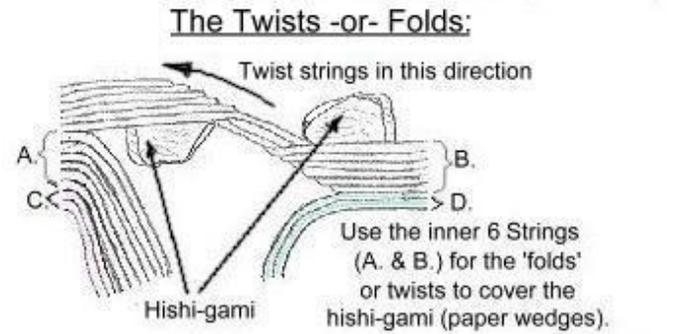
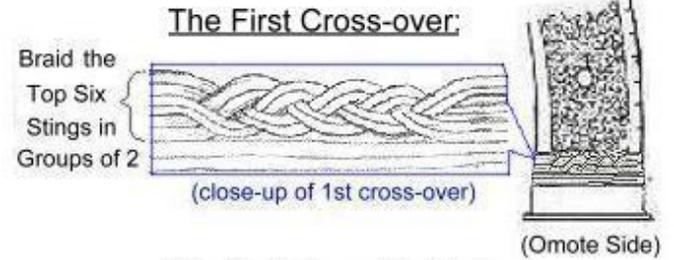
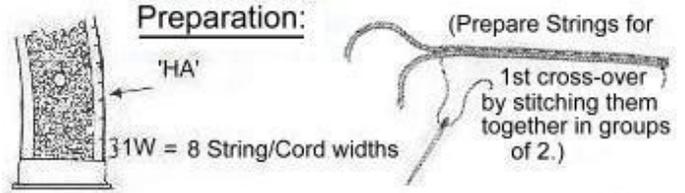
(Tsuka without Knots)



(Tsuka with Knots)

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**(Two Variations of Kami Hira Maki zuka)**



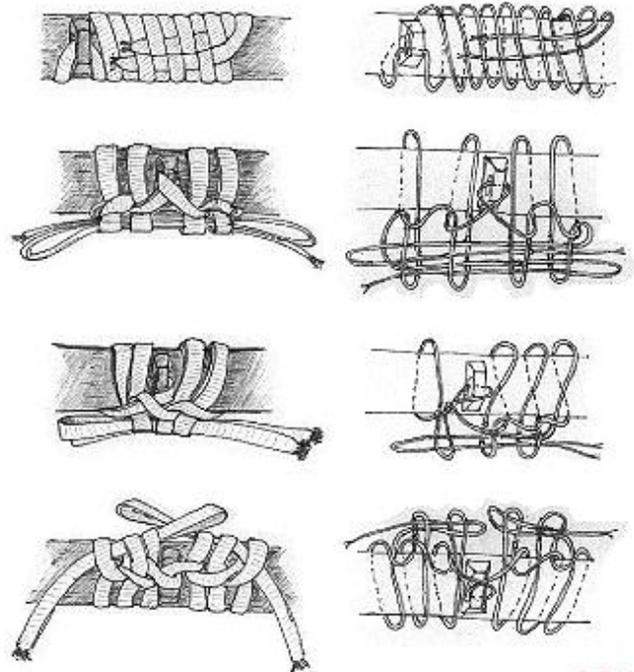
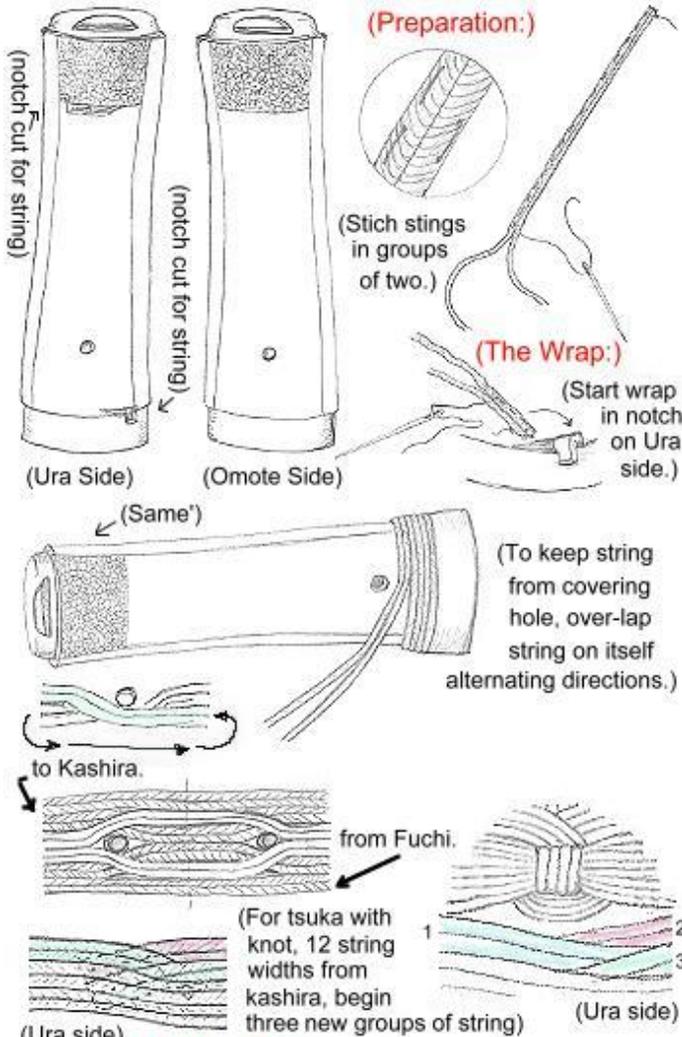
Follow the same basic steps as for Ito Maki no Katana

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**(Hoso Jabaraito Kumiage zuka)**



**VARIOUS SAGEO KNOTS**

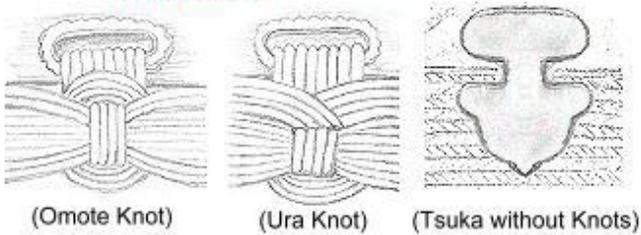


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**(Sageo Knots)**



**(The Knots:)**



Follow the basic steps as for Ito Maki no Katana.

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**(Kami Hira Maki zuka)**

