The Japanese 4-Hole Binding will need a length of thread approximately three times the height of the book block. The others require considerably more thread. For instance, the Tortoise-Shell Binding with a 6" tall book block needs 36" of thread to sew.

Covers: Construct the two covers, and assemble the single sheets or folios-as-sheets. Various covers, other than the traditional, which might be utilized with stab bindings will be described in the following section. Place the covers on each end. Jog the unbound book on its tail, then on the backbone to align. You will be ready to pre-pierce the stations. Position and number of stations vary with each of the stab bindings.

How to Pierce Stab Bindings: Piercing through a book block is more a challenge than piercing individual sections. A motorized paper drill is ideal, but most binders do not have access.

To pierce with a bradawl, place blotters on each side of the covers, and a piece of 3/4" plywood on each side. Plywood and blotters should be near, but not extend over the sewing stations. Clamp with C-clamps. Lay another sheet of plywood under the exposed part of the side-cover for support. Leave 1/4" crack between for path of needle along the line of the stations.

JAPANESE 4-HOLE BINDING
Yotsume Toji

SEWING STATIONS
The four sewing stations are 3/8" in from the spine-edge. Station 1 is 1/2" up from the tail. Station 4 is 1/2" down from the head. Stations 2 and 3 are equally spaced between. Pierce the stations.

Each station will eventually be sewn three times. Each time a station is sewn for the first time, the thread will be wrapped around the spine to form the small horizontal stitches from cover to cover.

The reason the stab sewings are never started at the end stations is to insure the knot does not hang out of the head or tail.

ELABORATED SEWING PROCEDURE
1. Pick up front cover and about half of the book block. Start the needle on the inside of book block at station 2, proceeding up through, coming out the front cover. Pull all but 4" of thread to outside. Lay this back in position on top of the remainder of the book block. Make sure the loose thread inside the book extends towards the foredge. If it is near the backbone, it will become entangled in the sewing. It will need to be free in order to tie off at the end of the sewing cycle.
2. Proceed around the spine, take the needle through station 2 of the back cover, coming out through the front cover.
3. Proceed on the front cover to station 3. Go through to back cover. Wrap around the spine to front cover. Go through station 3 to back cover. Tighten stitches as you go. Form the spine wrap, so it is at right angle to the spine-edge.
4. Proceed on the back cover to station 4. Go through station 4 on the back cover, through to the front cover. Wrap around the spine to back cover. Go through station 4 on the back cover to the front cover.
5. Keep proceeding in the same direction. Since there are no more stations, the manner in which the sewing direction is changed is to wrap around the head to the back cover. Then proceed towards the tail to the next station, which is number 4.
Take the needle through station 4 to front cover. Since the spine has already been wrapped, proceed on the cover to station 3.

6. Go through station 3 to back cover. Since the spine has already been wrapped, proceed on the back cover to station 2. Take the needle through 2 to front cover. Since the spine has already been wrapped, proceed on the front cover to station 1.

7. Take the needle through station 1 to back cover. Wrap around the spine to front cover. Take the needle through station 1 on the front cover coming out on the back.

8. Proceed on the back cover to the tail. Wrap around the tail to front cover. Proceed to station 1 on front cover. Go through station 1 to back. Proceed on back cover to station 2.

9. Open book to the middle page to the loose thread. Take the needle into station 2 on back cover and proceed to the middle page, bringing the needle out beside the loose thread. Tie a knot, pulling the knot into the gutter. Trim loose ends so they do not hang out of the book block.
**REVIEW or CONDENSED SEWING PROCEDURE**

1. Pick up front cover with half of book block. Start inside at station 2, proceeding up through that part of the book block, coming out the front cover. Pull all but 4" of thread to outside. Lay this half in position on top of the remainder of book block, with loose thread extending towards the foredge.

2. Wrap around spine. Proceed to station 2. Go through to front.

3. Proceed to station 3. Go through to back. Wrap around the spine to front. Go through station 3 to back cover.

4. Proceed to station 4. Go through to the front. Wrap around spine to back cover. Go through station 4 to the front cover.

5. Wrap around the head to back cover. Proceed to station 4. Go through station 4 to the front cover. Proceed to station 3.

6. Go through station 3 to back cover. Proceed to station 2. Go through to front cover. Proceed to station 1.

7. Go through to back cover. Wrap around spine to front. Go through station 1 to the back.

8. Proceed to the tail. Wrap around the tail to front cover. Proceed to station 1. Go through to back. Proceed to station 2.

9. Open book to the middle page to the loose thread. Go through station 2 on back cover and proceed to the middle page, coming out beside the loose thread. Tie a knot.

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**TORTOISE-SHELL**

*Kikko Toji*

**Sewing Stations:** Each of the traditional four sewing stations has been compounded to triple units. These are denoted as stations A, B, and C. Station 1B is 1/2" up from the tail. Station 4C is 1/2" down from the head.

All the A stations are 1/2" in from the spine-edge. All the B and C stations are 1/4" in from the spine. Measure and draw the stations on a scrap of paper which is the height of the cover. Place the paper as a guide on the front cover. Pierce the covers and book block stations.

**ELABORATED SEWING PROCEDURE**

The stations will be sewn in the following order: Station 2, 3, 4, 1, and back to 2.

**Starting at an Even Numbered Unit:**

1. Pick up front cover and about half of the book block. Start the needle on the inside at station 2A, proceeding up through that part of the book block, coming out the front cover. Pull all but 4" of thread to outside. Lay this half back in position on top of the remainder of the book block. Make sure the loose thread inside the book extends towards the foredge. If it is near the backbone, it will become entangled in the sewing. It will need to be free in order to tie off at the end of the sewing cycle.

Steps 2 through 5 describe the remainder of the sewing for stations 2A, 2B, and 2C:

**Sewing an Even Numbered Unit:**

2. Proceed around the spine to the back cover. Take the needle through station A, coming out through the front cover.

3. Proceed on the front cover to station B. Go through to back cover. Wrap around the spine to front cover. Go through station B to back cover. Tighten stitches as you go to form the spine wrap.

4. Proceed on the back cover to station A. Go through station A to the front cover. Proceed to station C.

5. Take the needle through C on the front to back cover. Wrap around the spine to front cover. Go through C to the back cover.
Part 2  Descriptions of Bindings

Proceed to station A on the back cover. Go through to front cover.

**Sewing an Odd Numbered Unit:**

6. Proceed on the front cover to station A of next odd numbered unit to be sewn. Take the needle through to the back cover. Proceed around the spine to the front cover. Take the needle through station A of the front, coming out through the back cover.

7. Proceed on the back cover to station B. Go through to front cover. Wrap around the spine to back cover. Go through station B to front cover.

8. Proceed on the front cover to station A. Go through station A of the front, to the back cover. Proceed to station C.

9. Take the needle through C on the back to front cover. Wrap around the spine to back cover. Go through station C on the back to the front.

10. Proceed to station A on the front cover. Go through to back cover.

**Sewing Remainder of Units:** Proceed on back cover to station 4A. Go through station to front cover. Sew station 4A, B, and C following the even numbered sewing procedure.

After completing unit 4, proceed around the head to the back cover. Take the needle through the A station to the front cover. Proceed to station 3A. Go through to back cover. Proceed to 2A. Go through to front cover. Proceed to station 1A. Follow steps 6 through 10 to sew the first unit.

After completing unit 1, proceed across the back cover to tail. Wrap around tail to the front. Proceed to station 1A. Go through to back cover. Proceed across back cover to station 3A. Open the book to the middle page to the loose thread. Take the needle through back cover at 2A, up through half the book block, coming out the middle page at the loose thread. Tie a knot and clip the thread to 3/4".

**CONDENSED SEWING PROCEDURE**

*Starting at an Even Numbered Unit:*

1. Pick up front cover with half of book block. Start inside at station 2A, proceeding up through that part of the book block, coming out the front cover. Pull all but 4" of thread to outside. Lay this half in position on top of the remainder of book block, with loose thread extending towards the foredge.

*Starting an Even Numbered Unit:*

2. Proceed around spine to the back cover. Go through station A, to front cover.

3. Proceed to station B. Go through to back. Wrap around spine to front. Go through B to back cover.

4. Proceed to station A. Go through A to front. Proceed to C.
5. Go through C to back cover. Wrap around spine to front. Go through C to the back. Proceed to A. Go through to front cover.

**SEWING an ODD NUMBERED UNIT**

**Sewing an Odd Numbered Unit:**

6. Proceed on the front to station A of next odd numbered unit. Go through to the back. Wrap around spine to front. Go through A to the back cover.

7. Proceed to B. Go through to front. Wrap around spine to back cover. Go through B to front.

8. Proceed to station A. Go through to the back cover. Proceed to C.

9. Go through C to front. Wrap around spine to back. Go through C on the back to the front.

10. Proceed to A. Go through to back cover.

**Sewing Remainder of Units:** Proceed on back to 4A. Go through to front. Sew station 4A, B, and C following steps 2–5.

After completing unit 4, wrap around the head to the back. Go through A to the front. Proceed to station 3A. Go through to back cover. Proceed to 2A. Go through to front. Proceed to 1A. Follow steps 6–10 to sew the first unit.

After completing unit 1, proceed across the back cover to tail. Wrap around tail to the front. Proceed to 1A. Go through to back. Proceed to 2A.

Open book to the middle page to the loose thread. Go through back cover at 2A, up through to the middle page at the loose thread. Tie a knot and clip the thread to 3/4″.