ABOUT TUBES

Tubes were first used on books in the second half of the 19th century. They are called “tubed spines” and function to keep the spine of the cover from sucking up into the spine of the text when the book is opened, thus saving the spine of the cover from unnecessary wear and tear. A similar structure is the “loose hollow” where the spine of the cover is not attached to the back of the text, but there is no tube present.

ABOUT LININGS

Linings are single or multiple layers of paper, cloth, leather or vellum attached to the back of the text pages by means of adhesive. Linings serve to protect and support the sewing and to help stabilize the text overall. If there is a tube, it adheres over the linings.

COMMENTS

Tubes and under-linings on an old book are often brittle and cannot properly support the pages when the book is opened. As a result, the sewing, which holds the pages together, is vulnerable to damage. If you can see the linings are failing, don’t open the book very far or you could break the sewing.
CONSTRUCTING A TUBE OF ONE’S OWN

Things to know before starting:

- If the book needs endbands and/or a ribbon, they go on before the linings (which precede the tube).
- Remember: the lining goes on with wheat paste for reversibility. If you decide you need additional linings, they can be adhered with either paste or a mix of PVA and paste.
- The tube has the same number of faces and folds as does a tri-part brochure.
- The grain of the tube material runs parallel with the spine of the book, head-to-tail.

Needed:

- Tube paper of a width slightly more than 3 times the thickness of the book and 1” longer than the book (Suitable papers are ones such as Hahnemuhle Ingres or paper of weight around 100 gsm.)
- PVA
- Stainless steel rulers (a 12” and an 18”)
- Pointed bone folder

Steps:

1. Put on endbands/ribbon, if needed. Apply lining(s), with the first lining using paste alone. Seikishu, kita kata, and moriki are all suitable lining tissues. Adhere hinging material on top of linings using paste and PVA; stitch hinge if applicable.
2. Put text into laying press with spine sitting about ½” above the jaws of the press. [Note: You can use bricks and clamps in place of a laying press.]
3. Measure across the spine of the book and mark that distance on a strip of paper (see Fig. 1).
4. Make sure the length of the tube paper is at least 1” longer than the height of the book and the width at least 3 times the width of the measurement taken across the back of the book (see Fig. 2).
5. Using a cutter or a scalpel and straight-edge, square up a corner of the tube paper and mark that corner (see Fig. 2).
6. Transfer the measurement taken in step 3 to the tube paper. Mark several times along the length of the tube material (see Fig. 2).
7. Place a ruler on the pencil marks and fold using the point of the bone folder to score a line connecting the pencil marks (see fig. 3). Fold the flap against the ruler, removing the ruler to complete the fold.

8. Fold the tube paper lengthwise again (see Figs. 4 & 5), creating a tri-flap construction—like a brochure. Trim off excess width (see Fig. 6). Apply PVA to the flap of the tube and close to make the hollow. The final width should equal the width of the spine of the text block. Check the width of the tube against the original measurement you took and marked on the strip of paper.
9. Cut tube to height of text block plus endbands (if present). The tube is all that supports the endbands, but if there are no endbands, bring the tube up to 1/16” from the head and tail ends of the text spine.

10. Apply a thin layer of wheat paste to hinge fabric that is already fastened to the spine of text block.

11. Apply a layer of PVA to the single-layer side of the tube, and lay it into place on the back of the text block. Work thoroughly with a bone folder to marry the tube to the text spine. Pay attention to the edges and to the head and tail. It may be necessary to support the endbands with the rounded end of the bone folder so you can press the tube firmly into the endbands.

12. Take book from the laying press and place it over the edge of the counter. Put waxed paper under the book at the spine and wrap the waxed paper around the spine, pulling it tightly around the spine and putting a weight on the book to hold the waxed paper securely. This keeps pressure on the tube while it dries. Check after a few minutes to make sure the tube has not slipped or otherwise needs attention. Readjust tube as needed and rub down a bit more before returning to the waxed paper.

13. If possible, dry for an hour at least before moving on. Refrain from opening the book extensively for 24 hours.

The Finer Points of “The Tube”

There are two main ways that our shop uses the tube construction and the following description from Bookbinding and the Conservation of Books (Library of Congress, 1984) succinctly describes the nuances of each and can serve as a guideline for deciding how to apply the tube in a particular situation.

“One on and two off” A method of constructing a tube for a hollow, in which a strip of paper three times the width of the spine of the book is cut and the middle panel is glued to the spine and the two end widths that are glued to one another attach to the inside of the cover of the book. This method is superior to a seldom-used version called “one on and one off”, and although it does not offer adequate support to the spine of a large book, it is suitable for small to medium-sized books.”

“Two on and one off” A form of the tube in which the overlapping segments of the tube are glued down directly to the back of the spine of the text block with the single layer of the tube being left to attach to the inside of the cover. This is suitable for large books. Variations of this form may be achieved by increasing the width of the tube paper to give “two on and two off” or “three on and two off” for use in situations where the text block needs added support due to a tendency.”