

Building Wood Tissue Box Covers

by
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Even though many companies have made attempts to design their tissue boxes to be more attractive, they still have that “factory” made look. Custom made wooden tissue box covers are a great way to hide those paper tissue boxes. They are easy to make and will add charm to any room.

While there are three styles of tissue boxes, the most common styles are the:

Standard Long Box



Cube Box.



The crafting of tissue box covers follows the same principles of making any small box. As a woodworker you will need to determine:

- a. the wood used to make the box
- b. the joints that will be used for the sides, top, and bottom
- c. the aesthetics of the box
- d. how the box will be finished

Wood Selection

Almost any domestic or exotic wood can be used to make tissue box covers. Ideally the wood should have tight grain and be able to handle daily use, especially if it $\frac{1}{4}$ in to $\frac{1}{2}$ inch thick.

Certain hardwoods, such as balsa, and softwoods, such as Aromatic red cedar should be avoided as their hardness is not that great. Generally speaking, woods with a Janka hardness scale less than 900 lb_f should be avoided as they can be easily scratched or dented.

Joinery

When making boxes, woodworkers have a variety of joints that can be used in constructing them. The “wall” thickness of the wood used in making boxes however limits the choice of joints used in making tissue box covers.

The relatively thin sides of tissue boxes, tends to limit the choices to four common joints that can be considered in making them.

1. Butt joints
2. Rabbit joints
3. Miter joints
4. Box joints

This is not to say that other joints, such as:

1. Dovetail Joints,
2. Mortise & Tenon Joints,
3. Dowell Joints,
4. Biscuit joints, or
5. Variations of these joints

cannot be used. There are two driving factors in selecting which joint(s) to use when making these covers:

- The wood’s thickness and its ability to be milled.
- The decorative aspect of the box that you intend to make

Many wood tissue box covers that come from Pacific Rim countries are made using butt joints. The wood’s thickness is approximately one-half inch or one centimeter. Since most of these boxes are factory made, butt joints, glue, and pin nails are often used in their construction. Typically these covers are painted in order to conceal the relatively unattractive butt joints.



While butt joints are unattractive, on the other end of the joinery continuum are dovetail joints. There are some beautiful covers that have very attractive dovetails. However the sides of these covers are at least 3/8" thick.

For covers having thinner walls, dovetail joints are not very practical as the wood is too thin for attractive dovetails.

The most common joints used in making the sides of handcrafted box covers are:

- Miter joints
- Box joints

The rabbit joint is often used to attach the top of the cover to the sides.

- Rabbit joints



Miter joints with rabbit top

Box joints with rabbit top



Aesthetics

According to one definition, aesthetics in woodworking “refers to a surface of the wood that is carefully worked. . .” (study.com) The term describes the characteristics of the appearance of a design. In the case of tissue box covers there are three elements of design: **1.** joinery (discussed above), **2.** tissue opening, and **3.** finishing (discussed in the next section)..

While most tissue boxes that we buy today have oval or rectangular openings, usually on top of the box, this does not mean that woodworkers have to follow this precedent. There are only two requirements for the box cover openings. First they have to be large enough so that the tissues can be easily removed, and second, they should not tear the tissues when they are pulled out of the tissue box.

Traditional and Vintage tops



Contemporary, Alternative tops







Also consider that the openings do not have to be on the top of the box covers. In fact tissue boxes are often placed on their side or hung from a wall. When developing covers to meet alternative placements, you must consider how tissue boxes will be “loaded” into the covers.





Finishing

The type of finish that is applied to a tissue box cover is as equally important as the wood and joints used to make the cover and the aesthetics of the cover's design.

Tissue box covers can be used in a variety of places. For example they can be placed in a living room or a reception area. Alternatively they can be placed in bathrooms, kitchens, or a doctor's examination room. When given the number of options where your covers may be used, it is best to use a finish that meets as many of these options as possible.

There are two main reasons for finishing tissue box covers. The first reason applies to most all woodworking projects, which is to protect the wood. The second reason is more specific to tissue box covers, which is to protect the people drawing tissues from the box covers.

The finish process consists of three major steps.

1. Wood preparation
2. Staining
3. Topcoat

Wood preparation

If you search “wood preparation” on the Internet or talk to fellow woodworkers about it, almost every discussion revolves around what you do to the wood AFTER you have completed a project but before you apply any kind of finish.

However wood preparation really starts before you start making the components of the project or even your first wood cut. It starts with a visualization of what your project will look like before you even select the wood that will be used in crafting it.

You will first consider the species of wood and its characteristics as they relate to the project. This is where wood preparation starts. Other considerations such as moisture content, grain pattern, porosity, and surface quality will come into play. In essence, before you even make your first cut, the finishing process is taking place.

Your first steps in physically preparing for the final finish will be sanding (start with 80 grit and proceed to 180 grit) and correcting imperfections. As your project proceeds, you may actually do some final finishing. For example if you are making a tissue box cover, once the sides and top have been cut and dry fitted, you may want to:

- Do a final sanding of the cover’s inside surfaces (220 grit minimum)
- Tape off the joint areas
- Apply stain or dye
- Apply several layers of topcoat

Once the inside surfaces have been finished off and their topcoats have dried, you can then glue the joints and assemble your tissue box cover. Clamp your box cover for at least 24 hours in order for the glue to dry. Depending on the type of glue you use, and the temperature and humidity, remove any glue squeeze out 20 to 45 minutes after assembly. Do not remove the clamps.

After the glue has dried, remove the clamps and sand all outside surfaces starting with 180 grit sandpaper and progress accordingly. Once you have finished the 180 grit sanding, your progressive levels of sanding depends on:

- the type of wood you used
- whether or not you use a wood conditioner
- whether or not the wood will be stained or dyed
- the type of stain or dye (water, alcohol or oil based)
- whether or not you plan on popping the wood’s grain
- the type of topcoat you use
- the type of topcoat (water, or oil based)

Be sure that you do not over sand so that the wood will not take a stain. If you cover has end grain showing be sure to sand the end grain to a higher level. For example if I sand the sides of the box to 320, I may sand the end grain to 400 or 600 grit, again depending on whether I will be using stain or a dye.

If you are unsure of the interactions of sealers, stains/dyes, and top coats with various sanding grits and woods, create a reference board so that you can make a wise choice. For example if you plan on making a cover out of hard maple:

1. Cut 4 pieces of 6" x 16" min. piece of maple. Sand each board accordingly
 - a. 80 grit only
 - b. 80 and 100 or 120
 - c. 80, 100, 220
 - d. 80, 100, 220, 320 or 400

For each board then:

1. Length-wise cover one half of each board with wood conditioner (use masking tape to delineate the centerline of each board)
2. Using 1/4" or 1/2" masking tape, tape off 3" wide segments of the board (min 4 segments)
 - a. Apply stain or dye accordingly:
 - b. Segment 1 – no stain or dye
 - c. Segment 2 – water based stain or dye
 - d. Segment 3 – alcohol based stain or dye
 - e. Segment 4 – oil based stain or dye
3. Length-wise divide the two sections you made in #2 in half using masking tape and apply the top coats accordingly:
 - a. Top row – water based topcoat
 - b. Row #2 – oil based topcoat
 - c. Row #3 - water based topcoat
 - d. Row #4 – oil based topcoat

Once you have completed steps 1-3 above for each board, you will have a good set of reference boards for the wood, stain/dye, and topcoats interactions. Create the reference sets for each type of wood you use and for each stain/dye you use. Because different manufacturers use different formulations for their stains, dyes and top coats, you may want to consider making references for each manufacturer as well.

Staining

Staining or dyeing wood is often a personal choice. However there are times when it is prudent to stain or dye your wood.

Since some woods are UV sensitive, you may want to apply a stain or dye to help "stabilize" the wood's natural color. When working with Purpleheart, I use a Merlot stain. With cherry I will use a variety of cherry stains as well.

Some woods also have different colors depending on how they are dried. Walnut is one of these. Kiln dried walnut is different from air-dried walnut. Again I use walnut and mahogany stains to normalize the color and to meet client desires (more brown or more red).

Another approach to using dyes or stains is to “paint” the wood. Re-staining wood several times will eventually hide the wood’s grain. Applying multiple layers of dye however allows the wood’s grain to show through.

While on the subject of “painting,” tissue box covers from overseas are often painted, in part to hide the ugly butt joints that are used to make these cheap boxes.

Topcoat

There are basically five types of topcoat finishes that can be applied to an item. They are arranged from the softest to the hardest in the list below:

1. Oil/wax
2. Shellac
3. Lacquer
4. Varnish
5. Polyurethane

Topcoat finishes are used primarily to:

- a. reduce the rate of moisture permeation to the underlying coats
- b. protect the wood from scratches and staining.

Unlike other furniture or décor items, tissue box covers have a unique requirement for a topcoat. Even if the cover is painted a topcoat is needed. The need for this requirement is derived from the purpose of facial tissues commonly referred to as “Kleenex.” Tissues are often used for blowing noses, wiping away mucus, removing makeup, etc. The tissues are often stored in a paper box and placed in bathrooms, kitchens, make-up tables, office setting. In other words in areas where germs, dirt, cross contamination and other health issues are of concern.

To hide the ugly tissue boxes, tissue box covers are often placed over them. Because of health concerns, these covers are cleaned often and if placed in medical facilities, they may be sterilized as well. The requirement for cleaning and sterilization dictates the need for a topcoat that can stand up to a lot of handling, cleaning, and which is not susceptible to the ingredients used in sanitizers.

The most used ingredient in sanitizers is alcohol. Alcohol can easily remove oil, wax and shellac finishes. It can also remove lacquer and varnish if the alcohol may contain methyl isobutyl ketone, an ingredient found in many sanitizers.

In general, polyurethane is not affected by the ingredients found in most commercially made sanitizers. This polyurethane property, along with its ability to resist scratches and a lot of handling, makes it an ideal topcoat for bare, stained, or painted tissue box covers.

The following information below applies directly to the two styles of tissue box covers described at the beginning of this article. Use the information that is best suited to the type of tissue boxes you buy. Be sure to adjust the measurements accordingly if you do not use 3/8” thick wood or if your tissue boxes are larger or smaller than normal. If your wood is thicker than 3/8” then you will have to increase the measurements. If it is thinner, then you will decrease the measurements accordingly.

Standard Long Box

The measurements for the standard tissue box made by Kleenex are:

9" long x 4-3/4" wide x 3-1/2" high

Assuming a 1/16" space around the box, the inside measurements for the box cover are:

9-1/8" long x 4-7/8" wide x 3-9/16" high

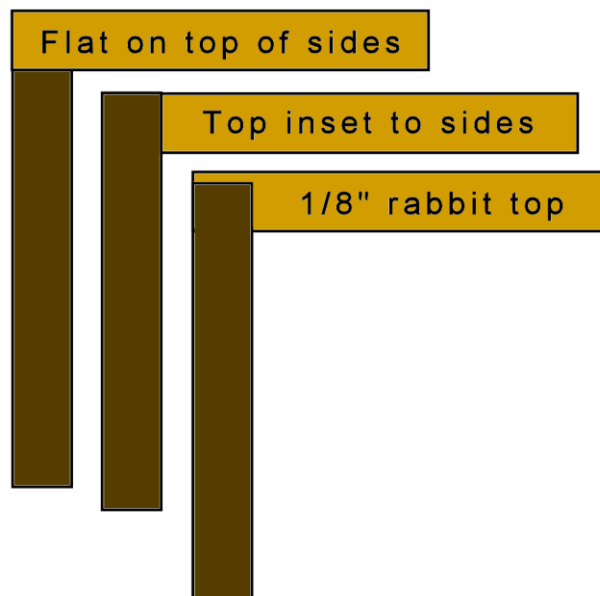
Assuming that the box cover will be 3/8" thick, the outside measurements for the box cover are:

9-1/2" long x 5-1/4" wide x 3-15/16" high (see note below)

The height of the box cover is determined by a several factors.

- The thickness of the cover's top
- How the top will be attached to the base of the cover
- How much of the top will fit into the closed space of the cover

Let's look at three examples of how the top can be affixed to the sides. .



In the first drawing above you do not have to adjust the height of the sides is when the top is attached directly to the top edges of the sides. In the other two drawings you will have to increase the height of the sides by the amount of wood that will be on the inside of the box cover.

For example, if the top is 3/8" thick and it will be an inset (middle drawing), you will need to increase the height of the sides by 3/8". Of course you do not have to do a full inset, in which case you increase the height by the amount of wood used in the inset.

On the other hand, if you decide to make a 1/4" rabbit all the way around the bottom of the top (3rd drawing), you will need to increase the height of the sides by 1/4".

The Cube

The measurements for the standard tissue box made by Kleenex are:

4-1/2" long x 4-1/2" wide x 5-1/16" high

Assuming a 1/16" space around the box, the inside measurements for the box cover are:

4-5/8" long x 4-5/8" wide x 5-1/8" high

Assuming that the box cover will be 3/8" thick, the outside measurements for the box cover are:

5" long x 5" wide x 5-3/16" high (see note below)

The height of the box cover is determined by a several factors.

- The thickness of the cover's top
- How the top will be attached to the base of the cover
- How much of the top will fit into the closed space of the cover

Use the examples in the various ways to attach the top described in the previous section.

Technical Information for Making Tissue Box Covers

A. Materials List: (based on 3/8" thick wood & 1/4" rabbited top)

QUANTITY	NAME	THICKNESS	LONG BOX (L x W x H)	CUBE (L x W x H)
2	Sides	3/8"	9-1/2" x 4-3/16"	5" x 5"
2	Sides	3/8"	5-1/4" x 4 3/16"	5" x 5"
1	Top	3/8"	9-1/2" x 5-1/4"	5" x 5"
Total Length Needed			39"+1=40"	30"+1=31"

B. Cutting Procedures:

1. Joint one edge of your board(s).
2. Plane the board to 3/8" thick.
3. Cut the board to the lengths needed and then cut to the width plus 1/16"
4. Joint or sand the cut edge of each board until smooth.
5. Cut top to the exact size required.
6. Find the center of the top and draw a line across the top, parallel to the edges.
7. Layout the opening for the top.
8. Drill two 3/4" diameter holes in the top, inside the prescribed opening.
9. Use a scroll saw to cut the remainder of the prescribed opening.
10. Use a spindle sander to sand the inside edges of the opening.
11. Use a 1/4" router bit and route a 1/4" x 1/4" rabbit around the bottom edges of the top.

C. Tissue Box Sanding Procedures:

1. Rough sand all parts using a sanding block and 80 grit sandpaper.
2. Intermediate sand all parts using a sanding block and 120 grit sandpaper.
3. NOTE: Rough and intermediate sanding should be completed before the assembly procedure.
4. Finish sand all parts with an orbital sander and 220 grit sandpaper **after the assembly procedure**.
5. Hand sand all edges and details, with 220 grit sandpaper just **prior to the finish procedure**.

D. Tissue Box Assembly Procedures:

1. Place a bead of glue on the mitered edges of sides (A). Insert the splines (C) in the slots. Also place glue on the splines and spread evenly.
2. Use two small band clamps to clamp the sides together. Remove all excess glue immediately with a damp cloth.
3. Use a try square to make sure the side assembly is perfectly square.
4. When the glue has dried, remove the band clamps and glue the top (B) onto the side assembly. Secure the top using a nail gun and 3/4" nails.
5. Secure the tissue box in a bench clamp and using a hand router and a 3/8" round over bit, rout the edges of the top and sides. Also rout the inside of the slot.

E. Tissue Box Finish Procedures:

1. Use plastic wood dough to fill all holes, cracks and imperfections.
2. Hand sand with 220 grit sandpaper.
3. If stain is desired, apply with a brush and allow to dry penetrate for 5-10 minutes, then remove with a clean rag.
4. Allow stain to dry 6 hours and then repeat with a second coat.
5. Apply a clear finish coat such as polyurethane using a pure-bristle brush. Allow to dry 12 hours.
6. Lightly hand sand finish with 220 grit sandpaper.
7. Apply second coat of clear finish.
8. If third or fourth coats are desired, be sure to allow the finish to dry properly, then lightly hand sand with 220 grit sandpaper between coats. **Note:** Be sure to use a tack rag to remove dust after each sanding procedure.
9. Allow final coat to dry 24 hours before using tissue box.

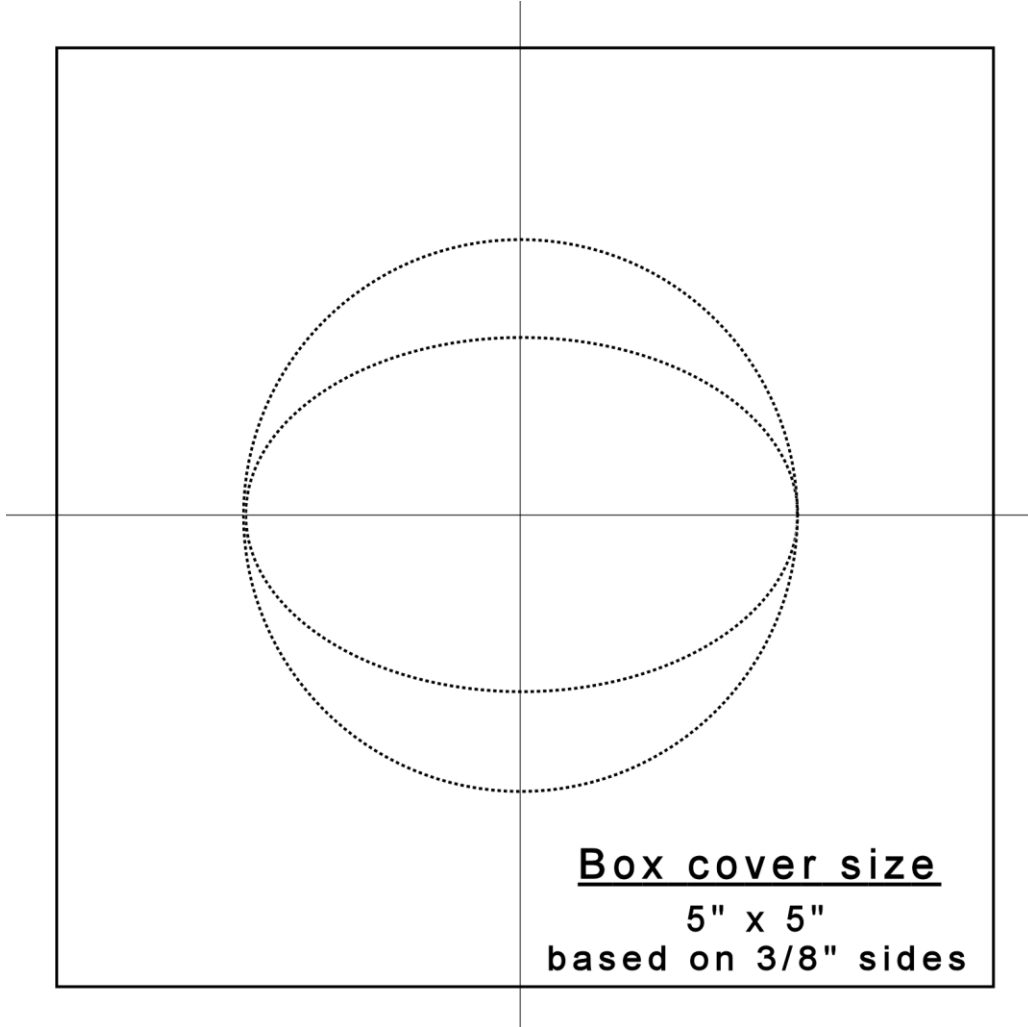
Thinking Creatively Outside the Box

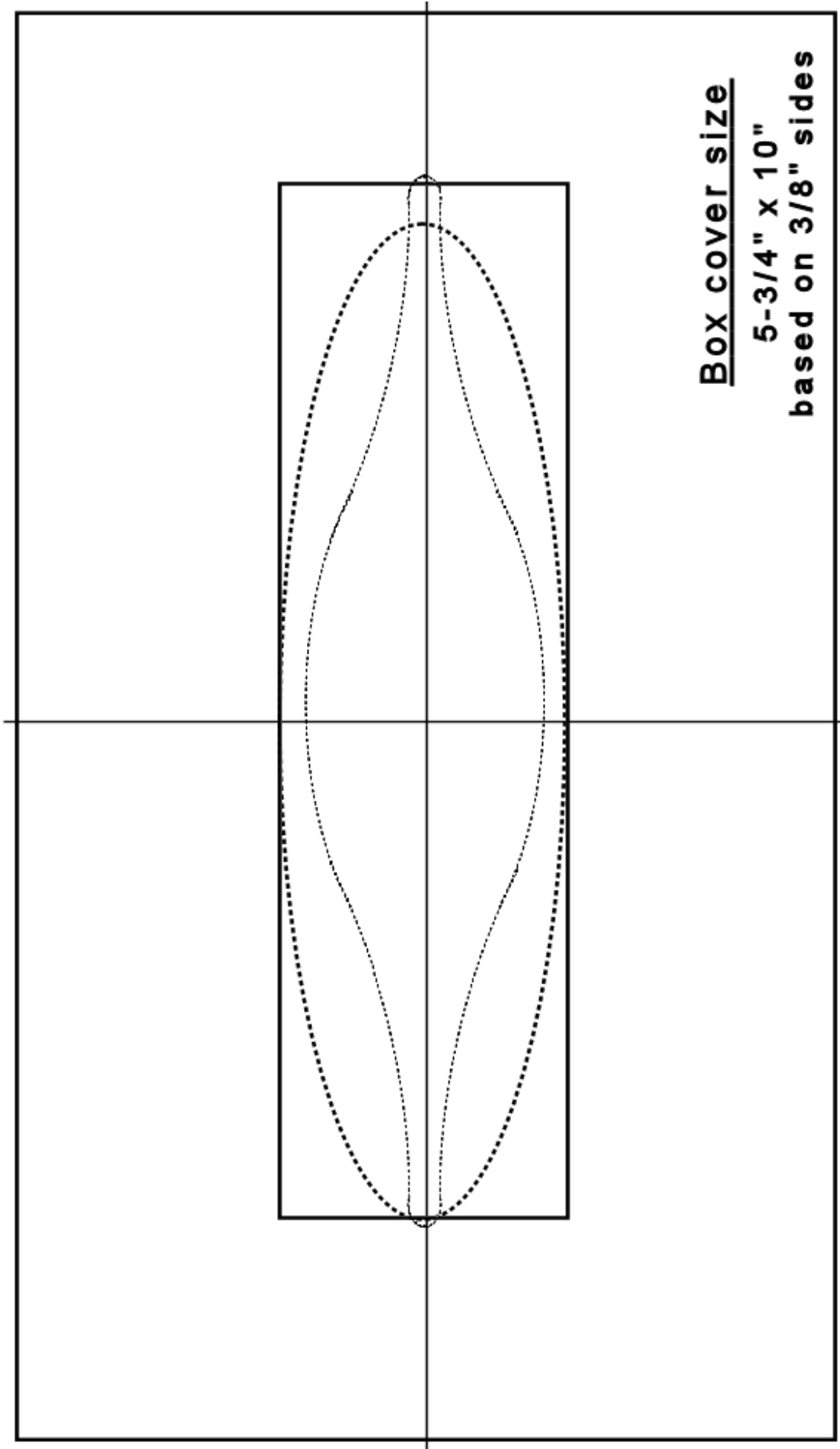
Following are some examples of creatively designing tissue box covers.



Templates

Tissue Box Cover – Cube





Box cover size
5-3/4" x 10"
based on 3/8" sides