How to Make a Box Pleat: Standard and Inverted

Pleats are the origami of the sewing world. And although you don't usually need to fold one into the shape of a swan, there are a wide variety of pretty pleats that add distinct visual and textural embellishments for both home décor as well as garment sewing. Each type provides a different look based on how it's formed. You can make: knife pleats, knife pleats in two directions, box pleats, inverted box pleats, inverted box pleats with a separate underlay, accordion pleats, sunray pleats, and wave pleats. In this tutorial, we're focusing on a box pleat and its identical yet opposite cousin, the inverted box pleat.

A box pleat is one of the most common types of pleats. It's formed when two equal folds of fabric are folded away from each other in opposite directions on the front of a length of fabric. The folds traditionally meet evenly at the center back, but they don't have to meet at the center. You can create a single box pleat or a grouping of box pleats, depending on the overall visual design. In addition, you can topstitch or edge stitch a pleat to help maintain its form.

An inverted box pleat is formed by two equal folds of fabric folded toward one another so they meet at the center of the pleat on the front of the fabric. Or, more easily stated, an inverted box pleat is what a box pleat looks like from behind.

The key to sewing any pleat is precise marking of the fold lines and placement lines. You'll want to test your marking tools on your selected fabric to make sure they are appropriate. The big question is whether to mark your lines on the right side or wrong side of the fabric, or both! You'll determine this by the type of pleat, project, and/or fabric. Another important detail to remember: it's always recommended that you do any necessary hemming prior to pressing the pleats. Which reminds us! Pressing is certainly another important component in making pleats. We will explain all of these details below.

For starters, let's get a visual on what a box pleat looks like. Below is a single box pleat.
Here's a group of three small, closely spaced box pleats

And, here's a group of wider box pleats spaced farther apart

If we look at one of these examples from the back, we have an inverted box pleat.
As you can see, box pleats and inverted box pleats can take on very different looks depending on how many you use, their size, and their spacing.

**Where we see or use pleats**

You've probably owned a pleated garment or two over the years, most likely a skirt. In fact, this may be where you're most familiar seeing pleats. However, they're just as effective in other types of sewing. Box pleats look fantastic on a valance or drape, pillows, bags... in truth, they're a beautiful (and often very functional) accent just about anywhere.

Below are a few examples of projects we've done with box pleats.

There is a single box pleat at the bottom of each pocket on our Nine-Pocket Door Caddy. This is a good example of a box pleat folded evenly to the center back.

We used single box pleats at the bottom of the pockets in our popular Quick Trip Diaper Bag. The pleats are what allow the pocket to expand to hold more stuff. If the pockets were flat, you wouldn't be able to use them for much.
In our cute Mother's Day Travel Pouch we created single box pleats with edgestitching on either side. This shows how a box pleat can add dimension to an otherwise plain bag.

And, we incorporated inverted box pleats into our Storybook Bedroom Window Valance.

**Pleats and fabric types**

Pleats are created by folding the fabric at selected intervals (or measured widths). The folds are either pressed in place from top to bottom, or only formed at the fabric edge and left to hang as soft folds.

Depending on the fabric you use, you'll see a difference in the crispness of your pleats. Natural fabrics, such as wool or cotton, hold a crisp pressed edge much better than synthetic fabrics. This does not mean you can only use a natural fiber fabric for pleated projects. It simply means you'll have to take extra precautions when marking and pressing pleats in synthetics. As a rule of thumb, natural fabrics are traditionally better for full length pleats, and synthetic fabrics are best for soft folded pleats.

In addition to the type of fabric you select, the weight of your fabric will affect the pleat's overall appearance. It's best to use wider pleats on heavier fabrics to eliminate ending up with too much bulk at the fabric edge.

One more detail to consider is yardage. If you're not using a pattern that indicates the yardage needed, you'll have to calculate how much additional fabric you'll need. You have to add the widths of the folds and the distance between them to your overall cut measurement to make sure you have enough extra fabric to pleat.

**Marking pleats**

A box pleat or inverted box pleat consists of two fold lines and a placement line. These must be marked accurately on your selected fabric.

On commercial patterns, you will most likely see the fold lines indicated by a dotted line and the placement line for these folds indicated by a solid line. If you are incorporating pleats into a non-patterned project, it's best to use this same dotted and solid line method.

Usually, when folding your fabric to create the individual pleats, you work from the right side of fabric. Therefore, the fold and placement lines are marked on the right side. If you choose this method, it means you need to make sure your marking pen or pencil is one that can be easily wiped away or that will vanish with exposure to the air or the heat on an iron.

As we often recommend when you are just learning, it makes sense to first try your technique on scraps before getting started on your actual project.

The most common method of marking (and the way most professionals suggest) is to mark the lines on the wrong side of the fabric, then thread baste the lines so you can see them on the right side. Once you fold the pleat, press it, and sew it in place, you simply remove the basting stitches.

The method you choose really depends on the fabric type and/or project and/or your "pleating comfort level." Regardless of the method you select to mark your fabric, it can help to use two colors: one for the fold lines and a second for the placement line. If you have a number of pleats on something, it's easy to forget which line is which.

Below, we demonstrate how to mark using both basting and pen-only methods. The most important thing to remember is to be accurate. It's usually best to pleat the fabric before you cut it to its final size. However, if you're using a commercial pattern, the pleating has already been figured into the pattern drafting, so you can cut the pieces out then create your pleats. Here at Sew4Home, if we are design a project with pleats, we will also give you the appropriate cut size prior to pleating.

**Thread basting to mark pleats**

1. Place your fabric WRONG side up on a flat surface large enough for your entire fabric piece.
2. Working on the wrong side and using a fabric marking pen, pencil, or chalk along with a clear ruler, mark the fold lines with dotted lines and the placement line (where the folds meet) with a solid line. Here again, you can use two different color pencils to help differentiate between the two.
NOTE: If you’re using a commercial pattern, you’ll need to take added steps to mark your fabric because that tissue pattern is between you and the fabric. There are a variety of methods that can be used, including a tracing wheel and transfer paper, pin markings, and/or clipping at the fabric edge. The key is not to move the pattern piece too much so as not to skew the placement of the pleats. You can refer to our tutorial on How To Make A Dart. The marking process is similar.

3. Using a hand needle and thread, run a long basting stitch through the marked lines. Again, you can use two different thread colors. We find this to be very helpful.

4. Turn the fabric over to the RIGHT side and begin to fold the fabric at the fold lines. Match the dotted fold line (or blue thread in our sample) to the solid placement line (or pink thread in our sample). You are pinching the fabric up in order to match these lines.
5. Then, you are folding it over on itself away from the placement line. Pin, pin, pin to hold in place.

6. Continue working across the fabric in this same method pinning the folds in place.

7. Move to your ironing board for pressing.

**Fabric pen or pencil to mark pleats**

NOTE: For this example, we will demonstrate how to make an inverted box pleat. The marking technique is the same for either type of box pleat.
1. Place your fabric RIGHT side up on a flat surface large enough for your entire fabric piece.
2. Working on the right side and using a fabric marking pen, pencil, or chalk along with a clear ruler, mark the fold lines with dotted lines and the placement line (where the folds meet) with a solid line. Again, we recommend using two different colors.
3. Pinch and fold the fabric right along the dotted fold line.
4. Then, bring your fold over to the placement line. Repeat for the dotted line to the opposite side of the placement line so you have two folds that meet along the placement line.
5. Move to your ironing board for pressing.

**Pressing pleats**

Depending on the size of your pleated fabric piece, you may need to take extra care when transferring the fabric from your work table to your ironing board. This is why we recommend using lots of pins. Of course, you do not want to press the folds with the pins in place - you'll leave pin marks in the pleats. Remove the pins, keeping just one on each end of the pleat to hold it in place.

If you're using a slippery or heavy weight fabric, you may have trouble keeping the fabric in place on your ironing board. Use the excess pins to pin the fabric to your ironing board to hold it in place while you press the folded edges.

Again depending on the type of fabric you're using, it's possible the pressed folds could leave an indentation in the fabric. To prevent this from happening, use a pressing cloth or brown paper under the folds as you press each one.
NOTE: Remember to remove your basting stitches.

**Basting pleats in place**

Once you've completed pressing each fold, you again have to transfer your pleated fabric, this time from the ironing board to your machine.

If your pressing was done well, it should hold the pleats in place, however, you should still keep a few pins along the raw edges.

At your machine, use a long straight stitch or basting stitch to hold the pleats in place.

Your stitching should be within the seam allowance of your project. When you sew across the pleats in the final sewing process, they will be secured in place.
NOTE: As we mentioned above, if your project is a garment, such as a pleated skirt, you would have hemmed your fabric prior to creating the pleats.

In some projects, like our inverted box pleat pillow examples below, you may need to sew across both ends of the pleat to hold it in place.

The option to topstitch or edgestitch

Once your pleats are formed and pressed in place, you can sew the folds of the pleats with a topstitch or an edgestitch.

You will often see topstitching used on garments. For example, pleated skirts are normally topstitched from the waist to the hip. Topstitching is also typical when pleating heavier fabrics, like wool.

If you’re using a synthetic fabric, an edgestitch along the fold of the pleat will help to hold keep the crease sharp. It also adds a very interesting detail. And, don’t underestimate the appeal of using a contrasting thread!

NOTE: You can topstitch if you’ve already basted across the pleats, but for an edgestitch (as shown below), you have to do this step before basting.

Edgestitching

1. After your pleats are formed, pinned in place, and pressed, transfer your pleated fabric to the sewing machine.
2. Using an average length straight stitch, place one fold of a pleat under the foot beginning at one raw edge. In order to sew just the fold of the fabric, keep the fabric folded onto itself.
3. Sew along the fold to the opposite raw edge.
4. Repeat for the remaining folds.

**Topstitching**

1. After your pleats are formed, pinned in place, and pressed; transfer your pleated fabric to the sewing machine.
2. Using an average length straight stitch, place one fold of a pleat under the foot beginning at one raw edge. Keep the fabric flat and sew through all the layers.
3. Sew along the fold to the opposite raw edge.
4. Repeat for the remaining folds.

**Inverted box pleats with an underlay**

Now that you understand how to make a box pleat and an inverted box pleat, you can try this fun option. It's one of our favorites because the underlay fabric creates a love kick of color inside the pleat.
We used this technique on our Organic Box Pleat Pillows as well as their Re-imagine & Renovate Version, and it makes an appearance on our Citron-Gray Nursery Crib Skirt and our Tiger Eye Silk Color Block Pillow.

In order to create an inverted box pleat with an underlay, you have to sew a strip of fabric in between where the folds will meet. As with the other pleats we’ve already discussed, accuracy is key.

If you’re using a pattern or following a tutorial (hopefully ours!), you will be provided with the correct size to cut your fabric strips. If not, you will need to take a few moments to think about the width of your pleats and the size underlay you would need in the middle.

In the examples we’ve been showing you, most of our pleats are ½”, which means there’s 1” in the middle under where the folds meet. You have to account for the width of the pleat plus the seam allowance on both sides of the strip. Using our pleat example, and assuming a ½” seam allowance, we need 1” under the folds plus ½” on each side for our seam allowances or a total of 2” in width for our underlay strip. The length should simply match the length of your main fabric piece.

Do this same math for each pleat, and then remember to include the spacing between pleats if you have more than one. We recommend drawing it out on paper for the best results, and even making a little prototype out of scrap fabrics to test your math.

1. Using a straight stitch and ½” seam allowance, sew the underlay in between two pieces of your main fabric (the fabric that will carry the pleat).
2. Using the seam line as your guide, pinch and fold ½” of fabric and bring the fold over to the middle of the underlay strip. Pin in place.
3. Fold in the opposite side to match and pin in place
4. Transfer to your ironing board to press in place. Then, transfer to your sewing machine to baste the raw edges.

NOTE: Again as we've mentioned, had this been an actual project rather than just a how-to sample, we would have hemmed first and then pleated.

For more about pleating, take a look at our Knife Pleats tutorial as well as our instructions for Wave Tucks.

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Sewing Tips & Tricks

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