

Bra-Making

TUTORIAL AND PATTERN

Designed and Created by **Kaitlyn Heaton**



Janome Maker Kaitlyn Heaton, owner of All Bodies Custom Lingerie, makes custom-fitted bras for her clients and teaches in-person introduction to bra-making workshops.



Finished Size: The pattern included is drafted for a ribcage of 80cm; BCD of 8.5cm; and HH of 20cm. If your measurements differ from this, please refer to the Additional Resources section for a list of bra pattern-makers and self-drafting resources.

Skill Level: Intermediate

Parts of a Bra ...

In order to understand how to make your own bra, we need to begin with some vocabulary. Bras consist of three main parts, the cups, the band, and the straps. Please refer to Figure 1.

Cups

Cups are where the breast tissue sits. The seam where the cups connect to the band is known as the wireline, and is where an underwire is inserted if there is one in the bra. The cup will also have a neckline and underarm edge. These will be finished in different ways depending on the bra. If there are pieces within the cup, they are usually defined in relation to the apex (peak) of the cup. Inner cup pieces are on the centre front side of the apex, whereas outer cup pieces are on the underarm side of the



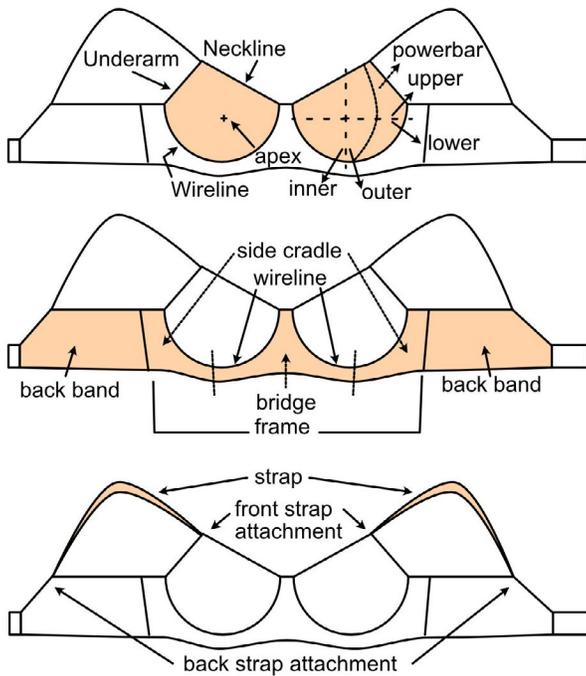
apex. Lower cup pieces are below the apex, and upper cup pieces are above the apex. Sometimes cups will have a piece that runs from the strap attachment down towards the wireline on the outside edge of the cup. It may or may not be seamed into the bra. This is a power bar.

Band

The band is the part of the bra that wraps around your ribcage. The frame or cradle is the piece on the front half of the bra that has a semi-circular seam where the cups fit into. Sometimes the frame is split into two or more parts, usually for fabric conservation reasons, but sometimes to support the design. The bridge is the part of the frame that is between the two cups. The side frame or side cradle is the part of the frame that is between the underarm edge of the cup and the back band. The back band is the part of the bra that wraps around the back of the body. This piece of the band is always stretchy, whereas the rest of the bra is typically made of low-stretch or medium-stretch fabrics.

Straps

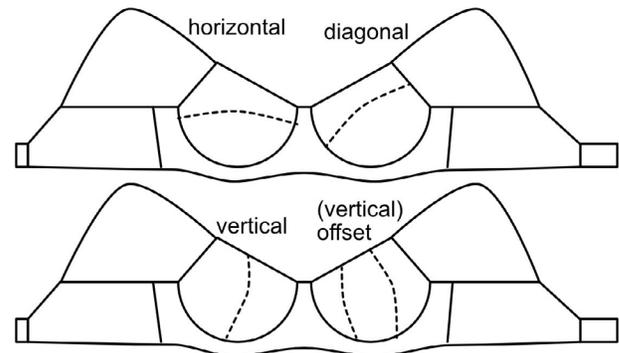
Straps connect the top of the cups (at the front strap attachment) to the top of the back band (at the back strap attachment). Sometimes these are partially fabric and partially elastic. Sometimes it is all elastic.



» Figure 1: Parts of the Bra

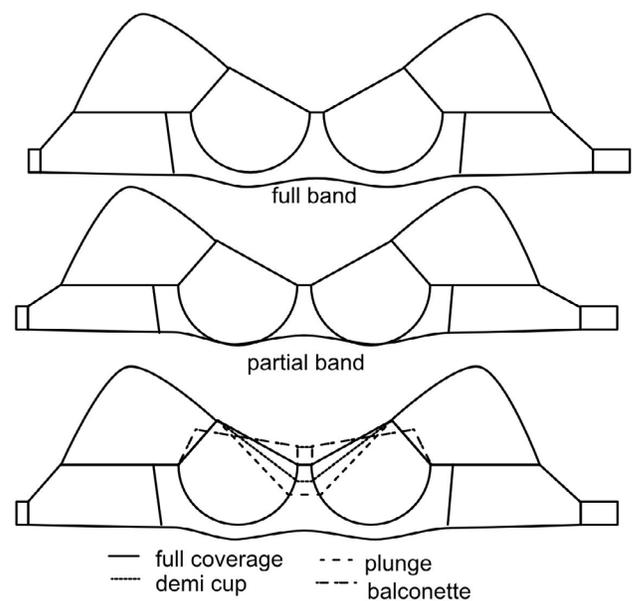
Bra Styles

There are a number of different styles of bras; you can classify the seam direction, the frame type, and the coverage or neckline shape. Styles are named by the dominant seam that crosses the apex [fig. 2]. **Horizontal cup** bras have a seam that crosses the apex horizontally from inner wireline to outer wireline. **Diagonal seam** bras have a seam that crosses the apex diagonally from inner wireline to underarm edge. **Vertical seam** bras have a seam across the apex that runs from lower wireline to neckline edge. If it is an **offset seam**, then the seam(s) do not directly cross the apex. Seamless bra cups are made using either very stretchy fabric or by using industrial molds that utilize heat and pressure to permanently form the fabric.



» Figure 2: Seam direction

If the frame is continuous under the cups, it is a **full-band bra** [fig. 3]. If the frame stops on the underarm side and there is a little piece for the bridge, it is a **partial-band bra**. While full-band bras can be wired or wireless, partial band bras are always underwired. There are a few different style names depending on how the neckline is shaped: **full-coverage bras** fully contain the breast tissue and typically have the highest coverage at both the neckline and underarm edges; **demi-cups** have a slightly lower neckline edge; **plunge styles** have the lowest neckline edge; **balconette styles** have a fairly straight across neckline edge and typically a wide-set front-strap attachment point. You can see these neckline shapes [fig. 3].



» Figure 3: Frame type and coverage or neckline shape

Materials Needed for Bra-Making ...

The bra pattern you choose will always let you know exactly which of the following materials you need and in what amounts. If you aren't sure exactly what all you need, most bra-making supply shops sell kits that contain everything you need to sew a bra.

Low stretch fabrics

These fabrics are typically used in the cups and the frame. Most bra-making fabrics are knit fabrics. Duoplex [fig. 4-1] is an opaque polyester fabric with minimal mechanical give in one direction. Sheer cup lining [fig. 4-2] is a sheer nylon fabric with very little mechanical give in either direction. Bra tulle [fig. 4-3] is a sheer nylon fabric that is a little bit softer in feel than sheer cup lining. It has a small amount of stretch in one direction, none in the other and sometimes it is embroidered. Microduoplex [not pictured] is an opaque nylon fabric with no stretch. I haven't had the opportunity to work with microduoplex, but I've heard it is very strong and therefore works really great for large cup sizes, but can be tricky to sew (it's very particular about what type of needle you use). You can also use woven fabrics cut on the bias. Try to stick to very finely woven fabrics (like cotton lawn [not pictured]), as seam allowances in bras are very small and wovens will fray whereas knits don't. Rigid lace [fig. 4-4] can be used as a decorative fabric.

Medium Stretch Fabrics

These are fabrics that have more than 5% stretch. These can be used in the cups as the main support fabric (cut and sew foam [fig. 4-5] and spacer foam [not pictured]), they will be in the back band to provide breathing space (powernet [fig. 4-6]), and they can be used on top of foam or other low stretch fabric as a decorative layer (stretch lace [fig. 4-7], scuba [fig. 4-8], jersey [fig. 4-9], stretch satin [not pictured]).



» Figure 4: Low and Medium Stretch Fabrics

Elastics and Channeling

The edges of the bra are often finished with an elastic facing. Bottom band elastic [fig. 5-a] runs along the bottom of the frame and back band. It is typically 12mm to 19mm wide (1/2" to 3/4"). You can also use wider plush elastic for a very comfortable bottom band [fig. 5-a1]. Top band elastic [fig. 5-b] runs along the top edge of the band and across the underarm edge of the cup. This is typically 10mm (3/8") wide, sometimes wider. Sometimes the neckline or underarm edge of a cup needs to be stabilized. You can use narrow twill tape [not pictured], or clear elastic [fig. 5-c]. Sometimes the neckline or other edges of the bra will be finished with fold-over elastic (FOE) [fig. 5-d] in place of the picot elastic. We also use channeling [fig. 5-e], which is a tube that the underwire will fit inside. The plush side goes toward the body. Strap elastic [fig. 5-f] has a shiny side and a plush side. Smaller cup sizes can use 12mm strap elastic (1/2"), larger cup sizes often use 19mm strap elastic (3/4").

Hardware

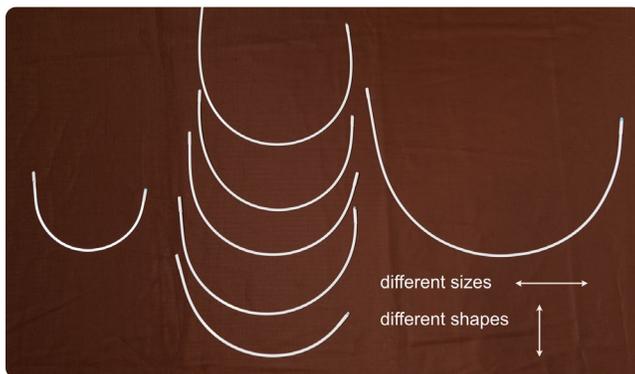
Bras also require some hardware. Rings (circles) and sliders (squashed figure 8 shape) [fig. 5-g] are used to create adjustable straps. Choose the rings and sliders in the same size as the strap elastic you are using. The hook and eyes [fig. 5-h] go at the back of the bra (typically), and provides some size adjustment. Eyes are sewn on the left side of the band and the hooks on the right. I like to use Guterman

Mara 120 thread [fig. 5-i], which is a strong, but fine thread; perfect for lingerie projects.



» Figure 5: Elastics, Channelling, and Hardware

If you are using one, the underwire [fig. 6], which is a pre-curved piece of nylon coated wire, is inserted into the channelling. Underwires come in many sizes and different curved shapes.



» Figure 6: Underwires: different sizes and shapes available.

Tools ...

Some tools that are nice to have for bra-making include pattern weights for weighing down your pieces; I use washers from the hardware store – I have a few different sizes [not pictured]. I like to use a 28mm rotary cutter to cut my pattern pieces as the blade is small enough to get around the curves nicely [fig. 7-1]. If you don't like to or

can't use a rotary cutter, I recommend tracing your pieces onto your fabric and then using scissors to cut just on the inside of your tracing. For marking your fabric [fig. 7-2], I recommend washable Crayola markers as they work really well, chacoliner also works ok, but is better for just marking notches.

Note: I do not recommend pinning for pattern cutting as it will distort the shape of your pieces, and only a few millimetres difference in the size of your piece can be the difference between a bra that fits and one that doesn't.

In terms of pins, glass-head silk pins [fig. 7-3] are great as they are fine enough to pierce the duoplex. I also suggest to my bra-making students to bring both 75 stretch and 80 microtex needles [not pictured] to class so we can create samples to discover which needle your machine prefers. A somewhat hemispherical pressing form will make pressing your cup seams easier. I used a tailor's ham [fig. 7-4] for several years before making a dedicated boob-ham [fig. 7-5]. Some sewing machine feet [fig. 7-6] that make your life a bit easier include a 1/4" foot, an adjustable edge-stitching foot, and/or a ditch quilting foot.



» Figure 7: Tools for bra-making

Measurements ...

Measurements for bra-making are a very important place to start. Please keep in mind a few things:

- 1) Measuring breast tissue is hard, so give yourself grace
- 2) Measurements are just data points; data points are not good or bad
- 3) Your measurements will change for a multitude of reasons, so re-measure before each project so that you are making your project for your body today, and
- 4) Your measurements just give you a suggestion of your best starting size; your actual best starting size might be one or two sizes above or below

Your specific bra pattern will provide some guidance on exactly which measurements you need to select a size in that pattern, but here are some you will want to be familiar with.

Circumference Measurements

Underbust or ribcage measurement [fig. 8-a] is taken horizontally directly under the breast tissue (where you would wear a heart monitor). I like to take this measurement after an exhale. Fullbust or full chest measurement [fig. 8-b] is taken horizontally over the greatest projection of the chest, while the breast tissue is in a supported position. If you have a well-fitting, non-padded, non-compressive bra, measure over that. If you don't, then take measurements directly on your skin while standing and bending over at 45 degrees, and take the average of the two.

The high bust or high chest measurement [fig. 8-c] is taken over the top of the breast tissue as high under the arms as you can get and as horizontal as you can make it.



» Figure 8: Circumference measurements

Measurements of the Breast Tissue Directly

The wireline of the cups should match up with the inframammary fold (IMF) of the body (also called breast root), which is where your breast tissue connects to the chest wall. The IMF is usually easiest to see on the centre front side as well as underneath the breast. To find your IMF on the underarm side, raise your arm on one side. Sometimes that is enough to see the IMF [fig. 9-1]. If not, you can wrap your other arm around your ribs as if you are giving yourself a bear hug. Press your fingers firmly into your ribs towards your back and then drag them forwards towards your breast tissue. Your fingers will feel the difference between ribs (and fluff) and your breast tissue.

I like to mark the IMF using washable markers. Once the IMF is marked, I use a mouldable, but firm strip to trace the shape (on your skin directly, not over a bra as pictured here) [fig. 9-2]. A gear tie from Canadian Tire is pictured, but some styles of flexible rulers also work. Mold the gear tie to the shape of your IMF and carefully pull it away from your body. Print out underwire charts from the supplier you choose and compare the shape and size of your trace to the wire chart [fig. 9-3] to know what size to order. Order one size up and down as well, as wires feel different once the bra puts tension on them. Once you've received your wires, try them on to see which wire will fit best [fig. 9-4], but do put them into a bra to check as well.



» Figure 9: How to determine underwire size and shape

Bottom Cup Depth (BCD) is the vertical measurement along the breast from the IMF directly up to the apex of the breast (usually the nipple, but not always) [fig. 10-a]. Vertical Hemisphere is the measurement from the IMF over the apex and up to where your breast tissue connects with your upper ribcage [fig. 10-b]. The Horizontal Hemisphere (HH), also sometimes called cross-cup, is the horizontal measurement from the inner IMF over the apex to the outer IMF [fig. 10 c].



» Figure 10: Measuring BCD and HH

Sewing the Bra ...

You can find the pattern pieces for the bra I will be sewing in this tutorial at the end of the document. The majority of all bras are constructed in the same way, but please reference the instructions if you are using a different pattern. The bra pattern included is drafted for the following measurements: ribcage 80cm; BCD 8.5cm; HH 20cm.



[Go to page 18 to print pattern and see materials list](#)

Cutting Pattern Pieces

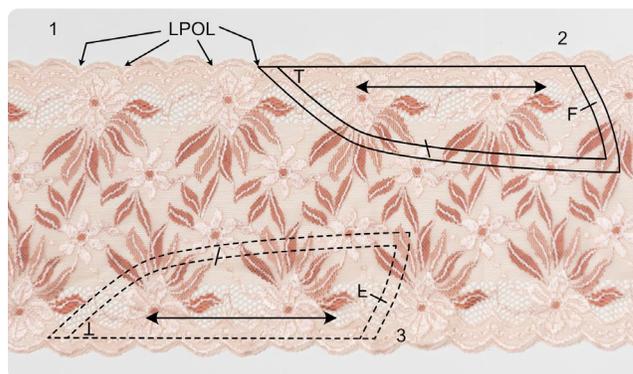
Most bra patterns are drafted with respect to the direction of greatest stretch (DOGS) rather than a grainline. Assess your chosen fabrics to determine the direction they stretch the most. Please note – with powernet we want to use the direction where the holes in the fabric get shorter and longer (more resilient stretch) rather than taller and more open (less resilient stretch [fig. 11]). Lay your pattern pieces on a single layer of the fabric. Use a rotary cutter to cut, or trace and use scissors to cut inside the lines. Make sure you flip your pieces over to cut both left and right sides. I like to lay my pieces out like a bra to make sure I have everything.



» Figure 11: Cutting out the pieces

Lace adds some extra complexity for cutting your pattern pieces. The Low Point of Lace (LPOL), are the valleys in between the scallops [fig. 12-1]. Your lace pattern piece must have a straight edge on one side to take advantage of the scallops. Align the edge of the straight edge with the line the LPOL make [fig. 12-2]. Try to align your centre front seam with a LPOL (valley), which will create the neatest finish at the centre front of a bra, while also considering the motifs of the lace.

If you have a mirrored lace, take that piece of lace that you cut and flip it over. Shift the lace around to find its mirror on the opposite side and use the first piece of lace to cut your second [fig. 12-3].



» Figure 12: Cutting lace

Test Stitch Settings and Needles

I like to use the offcut pieces of my fabrics to test my stitches (both needle choice and stitch settings). I recommend my students to try both 75 Stretch and 80 Microtex needles. For straight construction stitches, I use a stitch length of 2.4. For stitching the cups into the cradle, use a length of 3.0. For straight top-stitching, I use a stitch length of 3.0, and increase to 3.5 for topstitching the channelling. For Zig Zag stitches, I use a stitch length of 3.0 and a width of 2.0. For bartack stitches (if you don't have a setting on your machine), use a short straight stitch length of 1.5 and stitch forwards and backwards, then switch to a narrow zig zag (width 1.0, length 0.6) and stitch forwards and backwards. All seams are 6mm (1/4").

Cup Assembly

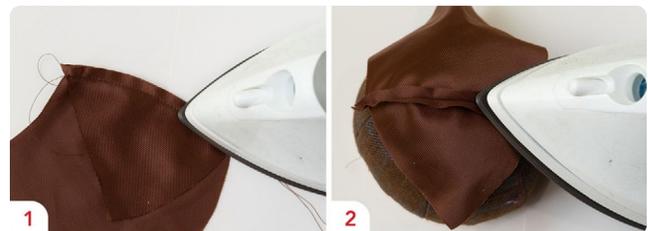
Lay the outer cup right-side up. Lay the inner cup right sides together with the outer cup, aligning the A notch. Pin [fig. 13-1]. I like to pin-baste; that is to align my pins along the stitching line. I find it much easier to pin curved pieces as the curved seamlines are the same length, but the cut edges will not be. Pay attention to align the seamline of the pieces at the cut edge of cross-seams not the cut edges [fig. 13-2]. I put my 1/4" foot on my machine. Stitch (length 2.4); I like to hold the threads as I start stitching to help prevent the fabric being sucked into the machine [fig. 13-3,4].



» Figure 13: Cup Assembly - Sewing lower cup seam

TIP: If holding your thread tails is not enough, you can try a piece of leader fabric to start your seam, a chunk of tissue paper between your bra pieces and the feed dogs, or change to a straight stitch plate.

Press flat [fig. 14- 1], then press open over a curved pressing form [fig. 14- 2].



» Figure 14: Cup Assembly - Pressing lower cup seam

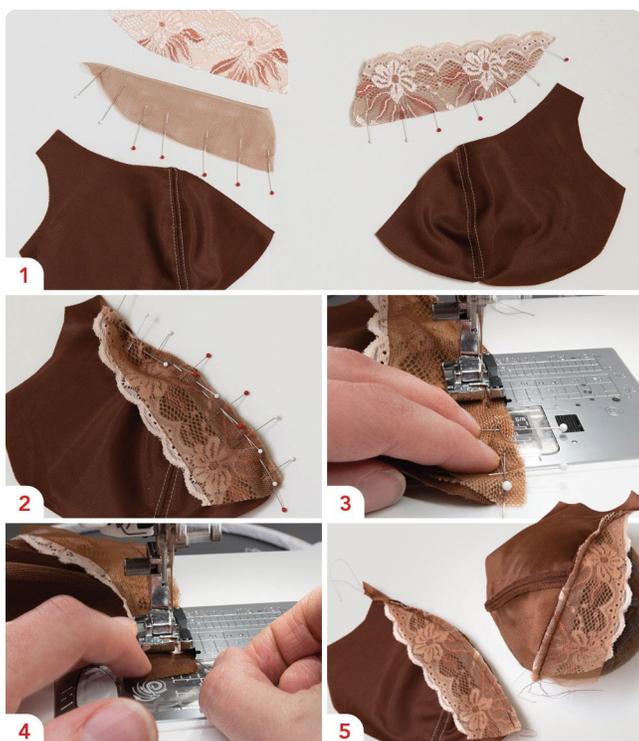
I put my adjustable edge stitching guide foot on my machine, and adjust it to 3mm (1/8"). You can also use a ditch quilting foot and shift your needle over. Align the centre of the seam with the guide. Use your thumbs underneath the cup to keep the seam allowances open [fig. 15-a]. Use your fingers on top of the cup to pull the fabric taut as you stitch [fig. 15-b]. Topstitch (length 3.0) both sides of the seam. You can pivot at the bottom if you would like rather than breaking your stitching, just ensure that you pivot within the 6mm (1/4") seam allowance [fig. 15-c]. I've used contrast thread for topstitching to match with the lace.



» Figure 15: Cup Assembly - Topstitching lower cup

Fold the bra tulle underlay of the upper cup in half. Pin to hold in place. Align the lace upper cup over the bra

tulle upper cup. Pin [fig. 16-1]. You can choose to baste it together at this point if you wish. Align the fatter side of the upper cup with the inner lower cup and the tapered end of the upper cup with the T notch on the outer cup. Pin [fig. 16-2]. Stitch with 2.4 length, seam allowance 6mm (1/4") [fig. 16-3]. Continue stitching up to edge of strap attachment [fig. 16-4]. Press flat, then press the seam allowances towards the lower cup [fig. 16-5].



» Figure 16: Cup Assembly - Upper cup seam

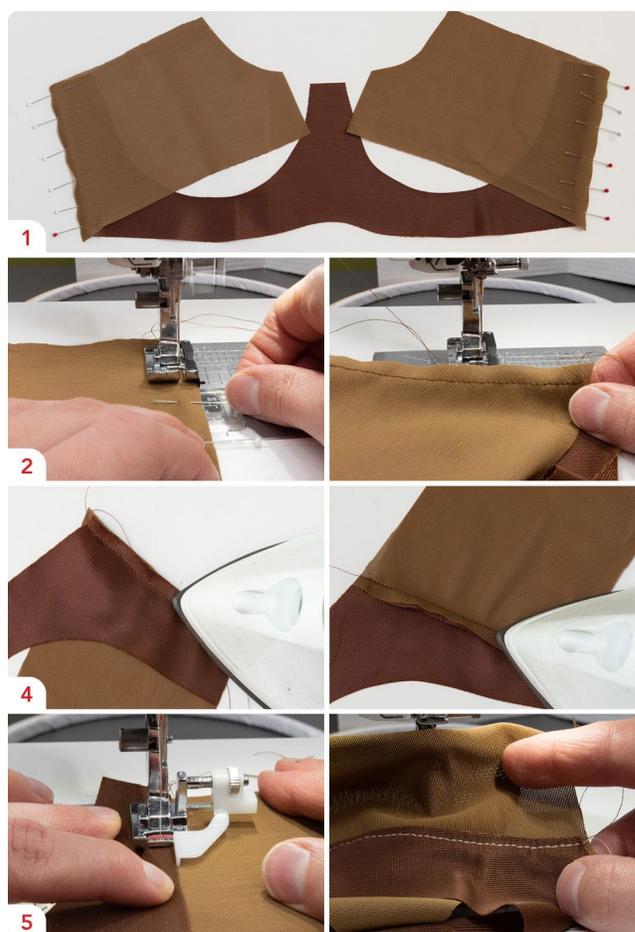
Replace the 1/4" foot with the adjustable edge stitching foot. Align the guide with the seam of the upper cup, ensuring that all seam allowances are pushed towards the lower cup [fig. 17-a]. Topstitch with length 3.0 the length of the seam, catching the allowances of the strap attachment [fig. 17-b]. Now, set aside the cups while we work on the frame.



» Figure 17: Cup Assembly - Topstitching upper cup

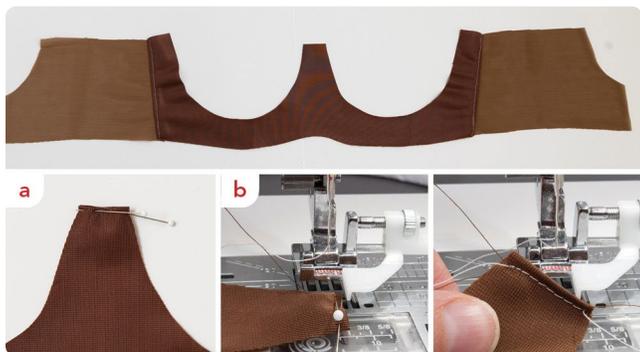
Band Assembly

Lay the frame piece right side up. Align the band pieces right side down on top of the frame. Pin [fig. 18-1]. Sew a 6mm (1/4") seam with a straight stitch (length 2.4), ensuring the powernet is on top and duoplex is down towards the feed dogs to prevent your feed dogs from stretching the powernet out [fig. 18-2]. Press the seam flat [fig. 18-3], then press the seam allowances towards the frame [fig. 18-4]. Topstitch the seam allowance to the frame (length 3.0) [fig. 18-5].



» Figure 18: Band Assembly part 1

Fold 6mm (1/4" of the top of the bridge to the wrong side. Pin [fig. 19-a]. Edge stitch the top of the bridge at 3mm (1/8") (stitch length 3.0) [fig. 19-b].



» Figure 19: Band Assembly part 2

Bra Assembly

Lay the cups out with the frame to mimic the shape of a completed bra [fig. 20-1]. I find this helps me get the correct cup stitched into the correct side of the frame.

Lift the frame over the cup to place it right sides together [fig. 20-2]. I work with one cup at a time. With the cup on the bottom and frame on the top, pin-baste the pieces together [fig. 20-3], securing the bridge and underarm edges first and then working towards the bottom of the cup. You may have to work back and forth a few times to ease the cup in appropriately. Use lots of pins - probably more than you think you need.



» Figure 20: Pinning the cups into the frame

Stitch the first cup into the frame with a 6mm (1/4") seam and a stitch length of 3.0 [fig. 21-1, 2].

Repeat the previous two steps for the other cup. Now you have a bra-like object! [fig. 21-3]



» Figure 21: Sewing the cups into the frame

Finishing: Elastics and Channeling



» Figure 22: Assembled bra cups and frame with elastics, channelling, and hardware laid out

Place your bra right side up with the bottom of the band on the right and the cups to the left. Take the 12mm (1/2") picot elastic. With plush side up and picots facing in [fig. 23-1], align the non-picot elastic edge with the bottom edge of the bra (perfectly fine to align as you stitch [fig. 23-2]). Zig zag the bottom band elastic to the bottom edge of the bra. Align your zig zag stitches just along the elastic side of the picots. Do not pull on the

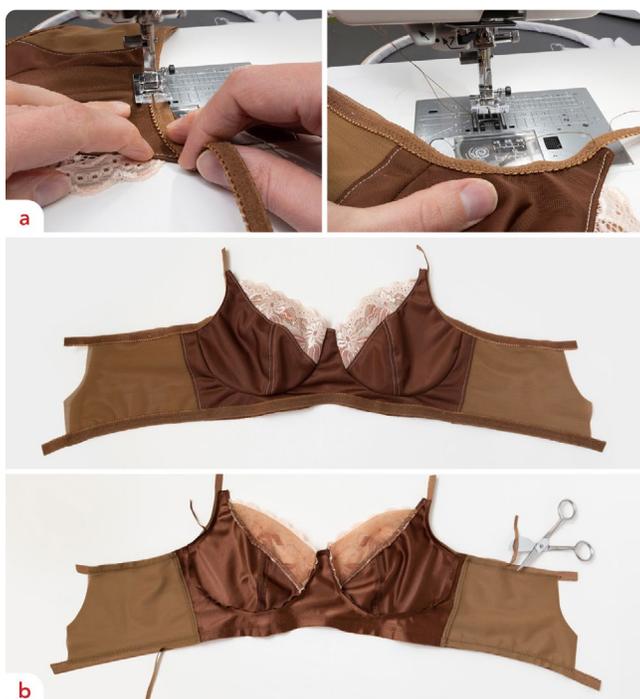
elastic, just use your hands to guide it into place. Leave a tail of 2.5cm (1") at both ends [fig. 23-3,4].



» Figure 23: First pass bottom band elastic

Take the 10mm (3/8") picot elastic. Attach this elastic to one side of the top of the band and underarm edge of the cup using the same technique as the previous step [fig. 24-a]. Repeat for the other side of the top band.

Use your applique scissors (if you have them, regular scissors if you don't), trim away the excess fabric on the outside edge of the elastics [fig. 24-b].

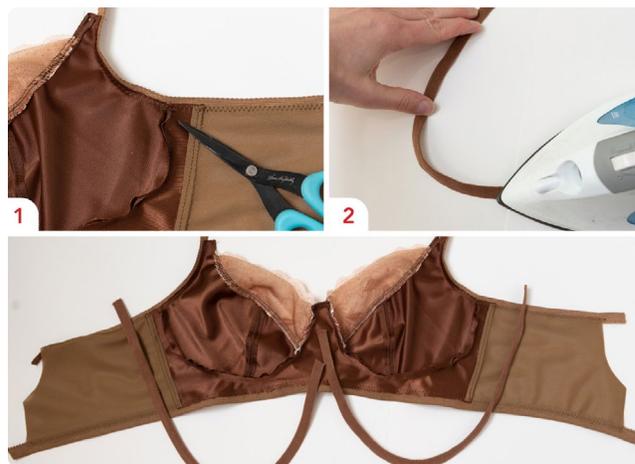


» Figure 24: First pass top band elastic and trimming excess

Clip the seam allowance between the cup and frame to release it from the elastic [fig. 25-1].

Take the channelling and roughly measure the length of the cup-frame seam. Allow approximately 2.5cm (1") of excess at each side for easier stitching. Take your iron and pre-curve the channelling [fig. 25-2]. Place the iron on one end of the channelling and then pull the channelling into a curve as you slide the iron along. You may have to repeat this a few times to get a satisfactory curve.

Smaller cup sizes need a tighter curve shape than larger cup sizes. It does not have to be a perfect match for the shape of the underwire, we are just trying to help the channelling be more curvy than straight.



» Figure 25: Preparing the channelling

TIP: Another option is to insert your chosen underwire into the channelling and then press with the iron to curve the channelling. Leave the wire and channelling in place until cool.

Once the channelling has cooled into the curved shape, take your bra and the channeling back to the machine. With the wrong side of the bra facing upwards, fold the frame underneath the cups so that the seamline between cups and frame is exposed [fig. 26-1]. We will be attaching the channeling along this seam, using a stitch length of 3.0.

Hold your channeling with the curve you created matching the curve of the cup. Lay it over the seam allowance. We will be stitching along the left side of the channeling and

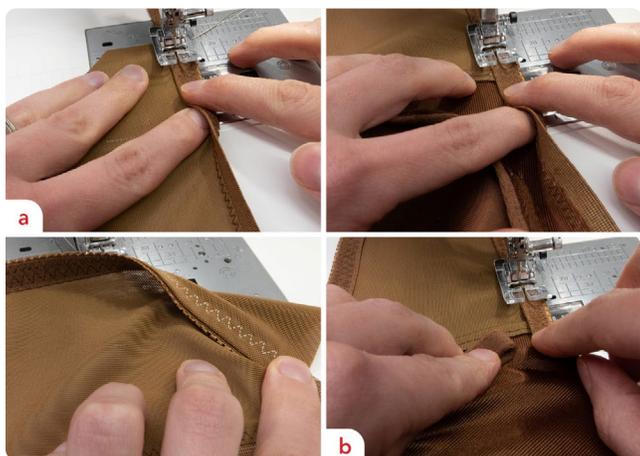
trying to stitch along the cup-frame seam (or just a teensy bit on the seam allowance side) as we don't want to make the cups any smaller [fig. 26-2]. Leave a stitching gap of approximately 2cm from the underarm elastics to allow for turn under [fig. 26-3]. I usually stop my stitching about 1cm away from the bridge edge. Repeat for the other cup. [fig. 26-4]



» Figure 26: Attaching the channelling

Returning to the elastics, we will be doing a second pass on the top and bottom band elastics. Place your bra wrong side up. Roll the elastic to the wrong side. You will zigzag stitch on the left side of the elastic to secure it (I've used a triple-step zigzag here).

Make sure you push the elastic tight to the outside as you stitch [fig. 27-a]. You will need to hold the channelling out of the way on the underarm sides [fig. 27-b].



» Figure 27: Second pass top and bottom band elastics

Secure both top and bottom band elastics, then trim the excess elastic tails [fig. 28].



» Figure 28: Excess elastic tails trimmed after second pass of top and bottom band elastics

Securing the channelling is the step that requires the greatest precision and concentration. Feel free to go slow! From the right side of the bra, we will secure the cup edge of the channelling. You will be topstitching (length 3.5) on the frame, but very close to the seam with the cup: 1 to 2 mm away from the seamline (less than 1/8") [fig. 29-1]. You should be catching the channeling all the way along, so use the extra tails of channeling to hold it in position where we were not able to secure it previously [fig. 29-2a and 2b]. Some people like to use a ditch quilting foot for this step, but I find the foot gets in the way more than it helps. Secure the channelling on one cup, then the other cup.



» Figure 29: First pass of topstitching the channelling

Flip the bra to the wrong side. We will be securing the frame edge of the channelling from the wrong side. Stitch along the outside edge [fig. 30-a]. If your channelling overlaps at the bridge, stitch until you hear the sound change (which indicates you are stitching through two layers of channelling), then pivot to continue stitching along the other cup channelling [fig. 30-b1, b2]. If your channelling does not overlap, you can complete your stitching on the first side and then start again for the second cup.



» Figure 30: Second pass of topstitching the channelling

Bartack the to the bridge of the bra near the top [fig. 31-1]. We do need to trim the channelling, so leave enough space between the bartack and top of bridge to cut the channelling [fig. 31-2]. Trim the excess channelling.

Insert the underwire into the channelling [fig. 31-3]. The channelling is a tube, and you want the underwire to go inside the tube, not between the channelling and the bra. The coloured tip is designed to go to the centre front.



» Figure 31: Bartacking the centre front and inserting the underwire

Bartack the underarm edge of the channelling [fig. 32], again, leaving a bit of space below the edge of the bra, and trim the channelling down. (Note, if this is your first bra and you haven't confirmed underwire size, leave the underarm open for now to allow you to try out different underwires. Bartack when you are happy with your wire choice.)

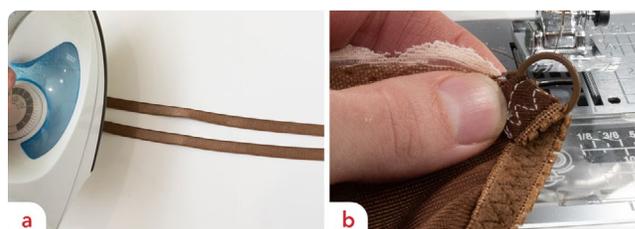


» Figure 32: Bartacking the underarm to secure the underwire

Straps and Hook and Eyes

Turn your iron up to the steam setting. Cut four pieces of strap elastic to 28cm. Pin the strap elastic to the ironing board and steam the elastics [fig. 33-a]. I like to steam it a few times and then allow to cool. This step minimizes the natural twist that these elastics have from being stored on spools after manufacturing.

Wrap the front strap attachment around a ring [fig. 33-b].



» Figure 33: Steaming straps and wrapping front strap attachment rings.

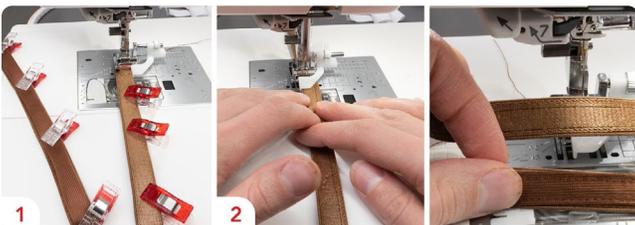
Stitch back and forth a few times to secure [fig. 34].



» Figure 34: Securing front strap attachment rings.

We are going to stabilize the front straps. Take two pieces of strap elastic. Cut a strip of duoplex 3mm narrower than twice the width of your strap elastic (21mm or 7/8" in my case), and turn the long edges in to the centre. Pin or clip the folded duoplex strip to the back of the strap elastic such that the raw edges are concealed [fig. 35-1].

Topstitch the duoplex to the strap elastic; I like to stitch both sides of the straps in the same orientation to minimize twisting (that is, move the guide or needle over rather than turn the strap around) [fig. 35-2].

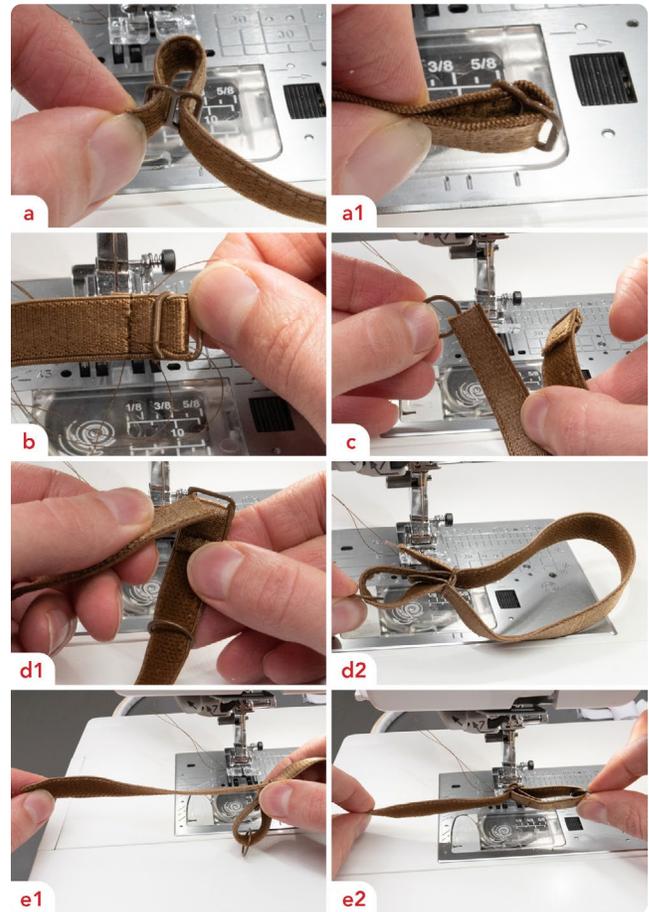


» Figure 30: Stabilizing front strap

The back straps are adjustable. Take a slider. Run a piece of strap elastic up and over the centre bar and then down on the other side so that the plush side is facing itself and the shiny side is out [fig. 36-a1, a2]. Go to the machine

and secure this tab. Stitch back and forth a few times [fig. 36-b]. Pass the free end through a ring [fig. 36-c] and then back up [fig. 36-d1] and down through the slider [fig. 36-d2], again with the plush side towards the centre bar and the shiny side out.

Pull the slider so it's fairly tight to the ring and out of the way for the rest of the stitching [fig. 36-e1, e2].

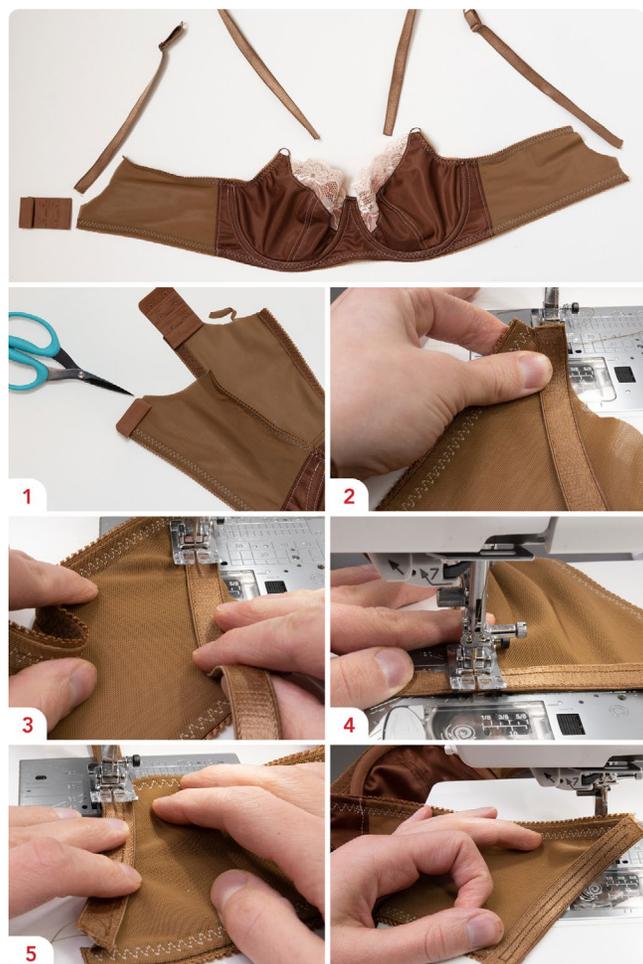


» Figure 36: Adjustable straps

Take your hook and eyes and confirm that the hook and eye attachment edge is the correct height. Trim if needed [fig. 37-1].

Lay the bra right side up. Place the adjustable strap right side up (plush side down) with the slider and ring up towards the top of the bra and out of the way. Align the strap edge with the edge of the scoop on the band, and lay it far enough that there is a triangle of strap extending off the end of the band [fig. 37-2]. This is to ensure the entire width of the strap elastic is secured under the hook

and eyes. Using a lightning bolt stitch (if your machine has it, otherwise a regular zig zag works fine), stitch fairly close to the edge of the elastic along the bra side of the strap elastic until you nearly reach the top of the band [fig. 37-3]. You will hold your strap elastic fairly straight and pull the powernet band into place beneath the strap elastic as you stitch so that the edge of the strap elastic runs along the edge of the band. Pivot and stitch for a few stitches along the top band elastic until you are about half or two thirds of the way to the edge [fig. 37-4], then pivot again and stitch back towards the hook and eye, running parallel to your original stitching [fig. 37-5].



» Figure 37: Attaching strap elastic to back strap scoop

Trim the triangular tails from the strap elastic when finished [fig. 38].



» Figure 38: Trimming strap elastic tails

Run the front straps through the rings on the back straps. Ensure that the strap parts are right sides together. Fold the front strap onto itself and secure [fig. 39-a].

Run the front strap through the ring on the front strap attachment of the cups. Ensure the straps are not twisted when worn! Fold the strap onto itself and stitch to secure [fig. 39-b].



» Figure 39: Securing front and back straps

The hook and eyes are often cut with a hot knife (which heat seals the edges). Pull the flaps apart of the eye side so that we can secure it to the left side of the band (as you are looking at the back of the bra) [fig. 40-1].

Straight stitch the bottom flap of the eye side [fig. 40-2], then fold the top flap over and straight stitch again [fig. 40-3].



» Figure 40: Attaching the hook and eyes

I like to leave my hooks attached to my eyes as I bring the right side of the bra around, to ensure I get the eyes attached in the correct orientation, unhooking them once I know I have it correct. You will need to move your needle to the right to be able to secure the hooks.

NOTE: Always stitch with the hooks facing up and away from the feed dogs.

The hook side is much more finicky than the eye side, and sometimes I find it easier to attach it with only one line of stitching. Pull the flaps apart and get it aligned on the bra band. Stitch in place [\[fig. 41-1\]](#).

I like to satin stitch the edges of the hook and eyes to cover the rough edges of the heal sealing, and this further secures the hook and eyes to the bra [\[fig. 41-2a, b\]](#).



Try on your new bra and do a dance because you sewed a bra!



» *Figure 41: Attaching the hook and eyes*



A Note on Fitting ...

Sewing a bra is the easiest part of this process. Fitting the bra to your body is a whole other kettle of fish, and not a kettle I was able to get into in this document. Please know that bra-making is an iterative process. I recommend taking the time to find your best starting size in a given pattern – that is the size that will require the fewest alterations, and it may be one or two sizes larger or smaller than what the pattern designer suggests based on your measurements. I like to construct my fitting mock ups using the same fabrics and elastics and notions that I would use in a “real” bra, so that I get the best indication of final fit. I also like to construct them in a modular way so that the cups and band are sewn and finished independently, which allows me to easily swap one or the other out as I go through the fitting process.

It’s a good idea too to retake your measurements as you iterate because as you approach better fit, you will have more accurate measurements. The only change to the construction detailed above, is to run a line of basting stitches 6mm (1/4”) from the wireline on the frame of your mock-up and attach the channeling flat just outside of that line with no bartack stitching. This leaves the seam allowance free for attaching cups into and the channelling free to play with different wire sizes and shapes. I also use dissolvable thread so that I can easily harvest reusable pieces, and I don’t trim down any of my elastics or channelling (just in case my next iteration will need to be larger).



A bra mockup with cups and frame sewn and finished separately; excess elastics not trimmed; stitched with dissolvable thread for easy disassembly

Good luck! Kaitlyn Heaton, JANOME MAKER

Additional Resources ...

This project is just an introduction to the bra-making process. Here are some additional resources for you to explore the world of bra-making.

Selection of Bra Pattern Companies

If you prefer to work from a pattern, here is a small selection of bra pattern makers that work for a multitude of bodies (first three are Canadian). There are many, many more companies and bra patterns available than I can list here!

- Pin Up Girls Patterns by Beverly Johnson (Classic, Ruby, Freja, etc.)
- Black Beauty Bra by Emerald Erin
- Saharra Bra by Rubies Bras
- LilyPad Designs by Lily Fong (Lusamine, Labellum, Lanai, etc.)
- Willowdale by Cashmerette
- Bravo Bra #2 by Bravo Bella Bras
- BWear patterns (Angie, Jessica, Margareta, etc.)

Drafting Resources

If you like to draft your own patterns, here are a few bra drafting books:

- Bra Design and Draft by Beverly Johnson (This is the book I used to draft the included pattern)
- Bare Essentials: Bra Construction and Pattern Drafting by Jennifer Fairbanks
- Patternmaking for Underwear Design by Kristina Shin

Bra Supplies

There are a several places you can purchase supplies from, here is a small selection:

- Bra Makers Supply – a Canadian supplier based in Burlington, ON. The lace and bra drafting book used in this tutorial are from here. The Bra Makers Manual Volume 1 and 2 are from here as well, and these two textbooks are fabulous references. They carry the Pin Up Girls patterns.
- Emerald Erin – a Canadian supplier based in Trenton, Ontario. The bra making fabrics, elastics, and hardware used in this tutorial are from here. Emerald Erin also has some patterns.
- Bra Builders – an American supplier based in Atlanta. Their specialty is dye-to-order supplies.
- B Wear – based in Sweden, sells supplies and patterns.
- Nellie Joans – based in New Zealand, sells supplies.

Online Resources

Here are some places you can find more resources online, including resources and help with fitting:

- [International Bra Sewing Bee](#)
- [Beverly Johnson's classes on Craftsy](#), three of which are for bra-making
- A variety of private bra-making groups exist on Facebook, both specific to several of the pattern designers as well as more general bra-making groups



Materials for this Bra...

- 25cm powernet
- 50cm duoplex
- 20cm bra tulle
- 20 to 50 cm stretch lace (approx; at least 9cm wide)
- 120cm 12mm strap elastic
- 80cm 12mm picot elastic
- 50cm 10mm picot elastic
- 70cm bra channelling
- 4 rings, 12mm
- 2 sliders, 12mm
- 1 set of 2x3 hook and eyes
- 1 pair underwires Round, size 38

Printing Instructions:

Print these three pages at 100% scale or actual size. Do not scale the pages. Use a ruler to check the scale below to verify that your printer is accurate.

