

# Zero-waste pattern cutting process

**Created by Holly McQuillan - 2010**

*Note: Pattern cutting in this way without the assistance of an experience pattern cutter will be difficult if you do not have a basic understanding of pattern cutting yourself. Some of the terminology is specific to pattern cutting and some is borrowed from other disciplines as what seemed to be the best fit at the time. The first garment you make in this way will be the hardest. Designing garments/patterns in this way requires a bit of a shift in focus – from knowing what you want the end result to be and how you will achieve it, to being conscious and thoughtful as you design the pattern/garment in order to meet general goals of fit and aesthetics. In addition you need to be prepared to let these general goals go if something more exciting turns up in your process.*

**Block choice** (garment type - am I making a dress/trou/jacket etc.). I have a selection of blocks digitized for this purpose – but you could just used card blocks if you are doing it manually.

**Digital:** The advantage in using a program like illustrator is that you can easily copy blocks and dissect pieces when needed. You can also switch easily between working in full scale and half scale with out any issues. I scanned in my half scale patterns and traced over them I illustrator when I first started this, but I've since used Gerber/lectra to generate digital patterns. Export the pattern as a .dxf file. Download Inkscape for free if you don't have illustrator (<http://www.inkscape.org/>).

**Fabric choice** (determine final width of fabric used - measure it) although in many designs this has a degree of flexibility (you can move things around a bit and the general design remains pretty much the same)

**Template set up** (I use illustrator, but you can do this by hand - perhaps half scale if you have it might be useful when you start). You only need to mark two lines parallel to each other the width of the fabric you are using apart at this stage and give yourself enough space to extend it out as needed. Maybe start with the width of the fabric and 1.5meters to 2 meters

long. You can always make it shorter later.

**Digital:** In illustrator I use the Artboard as my “fabric” as it is easy to extend the length almost indefinitely.

**Decide on final design "fixed areas".** What parts of the final garment do you want to fit the body in a traditional standard manner? These form the 'foundation' of your design and could be as extensive or minimal as you like - bear in mind though that the more fixed areas you have the harder the process will be. You could start with the shoulder areas as the only fixed areas for an easier design process.

**Lay out these fixed area on the template** so that the 'negative space' forms pleasing shapes. Teardrops and curves work well, or straight sections that you can imagine easily incorporate into other garment parts/functions (pockets, facings etc)

I try to aim toward utilizing the whole of the fabric in a way that avoids decoration as a means of disposing of the waste. I prefer a ‘macro’ approach to zero-waste pattern cutting, but this depends on your overall design aesthetic – if you like decorative clothing then go for it.

The design can be symmetrical or not - sometimes parts set up as symmetrical and others not can help the overall layout.

Think about how the chosen fabric might behave when sewn up in the shapes you make.

Remember that any shape will sew into any void so long as the circumference is the same (Thanks to Julian Roberts)

Remember that fabric is soft and is effected by gravity – it will hang from points on the body (Thanks to Julian Roberts)

Remember to consider seams - particularly for areas such as sleeve crowns/armholes where fit is extremely important. In many areas seam

allowances are less important. Use your common sense to work out where it is important (usually where things will fit closely to the figure)

Remember that in zero-waste pattern design every line you 'design' on your pattern has two sides. You are designing both sides of the line and will cut both sides of the scissors when you sew it up.

Continue to move the blocks, slash and spread them, create new design/panel lines (extending the length of fabric where required) until you have utilized all the width of fabric and how ever long the length ends up being.

Using color to code the sections can help - Sleeves in yellow, body in red etc.

At this point I often print out the pattern on A4 paper, cut it out and stick it together with tape just to do an initial test of the overall design and to see if everything will fit and be used as I imagine. Make any alterations as needed.

Make a toile in half scale if you have a half scale mannequin – using the paper model as a guide. Remember that half scale toile's will not behave exactly as full scale but can be a good indication. Make alterations as needed.

**Digital:** If you have it you can export the illustrator file as a .dxf file, which can be opened and used by Gerber software so you can print your marker (which is your whole pattern) at full scale easily.

Sew up final using the half scale version as a guide.



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