

# The Multi Ease Catsuit Block Set

## Introduction

What is this block set all about? Well that's a long story ... but it starts with the desire to turn a very custom fitted non-stretch catsuit made of neoprene into something in ready to wear stretch. No small ask by any means.

The need came mainly from Latex makers, yet I also wanted it to be compatible with other fabrics so the audience would be wider.

I wanted it to be as adjustable as possible due to the highly fitted nature of the block set ... such things as variable cup size, pelvic tilt, negative ease and narrow size intervals were all on the check list before we started. And if I was going to such an effort to produce such a catsuit block then why not add in a few options like different leggings styles and sleeve styles ... while still leaving room for add ons in the future like underwired bodices or maybe even a raglan sleeve.



And if all that wasn't enough to ask, the block set needed to extend at least midway into my curvy sizes range ... which mean some serious testing time.

So let's look a little deeper. If we consider latex of multiple thicknesses alongside differing warp knit textiles (ie; differing spandex blends) we immediately have issues along the bias (not that either have a bias). Latex has an even stretch and rebound in every direction of the compass while the rebound in warp knits collapses on the bias ... and most standard stretch patterns use this loss of rebound to pull into tightly shaped areas, like the crotch, to minimise ripples. Latex just isn't that forgiving so our pattern design has to work within the limits of latex first.

Differing thicknesses of latex also require different amounts of negative ease to create a similar tension ... and indeed some makers may want the same dimension garment to be much more restrictive depending on the wearer and/or activity. Similar needs might be asked of low stretch vinyls.

So I selected everything from 0% negative ease to 24% negative ease ... I doubt very much that anyone will ever work with anything outside 4% to 16% but it's possible so I've done them for most of the block set (except the thong back, but more on that later). This means it's possible to use the block set to create garments out of much softer, low rebound knits as well.

I've selected all cups up to a difference of 23cm between bust and under bust measurements (about an F cup depending on which system you use to calculate). As always I base my sizing system on the under bust measurement instead of bust for this very reason ... the same body can have different cup sizes resulting in a different bust measurement.

I have included six different options of pelvic tilt from 10 degrees posterior to 15 degrees anterior where neutral is considered 22 degrees anterior of vertical (average adult female pelvic tilt).

And of course all this is available in multiple ready to wear sizes from an under bust of 66cm to 100cm, in increments of a mere 2cm ... so by contouring between them you can very easily find any custom sizing you want.

The point is I wanted to create something that was highly customisable, had a variety of options and came in a variety of negative eases so that it could be used as a predictable base for just about anything stretchy. And that's what I really want to emphasise here ... this is not a pattern, it's a block set ... the mother of all block sets .... it represents a starting point from which to create custom patterns for stretch textiles. Due to the nature of the project you will **NOT** get a perfect fit first time unless you are really lucky. This block set is designed to get you close enough such that you can conduct a fitting session. There is little tolerance for error in latex and enough variation in shape exists even with a big list of measurements. You will need a fitting, and likely a second fitting if you design a very close style with strong rebound ... the tighter and closer you want it to be, the more fittings and tweaking you will require ... but that's your job ... mine is only to get you close enough that you can start that process.

## Size Chart

The following measurements have been used to create the blocks in this package. In other words, these measurements decided the resulting *shape* of the catsuit pieces ... it's unlikely everyone will fit within a specific column. Instead they'll likely span a series of columns. If this was a ready to wear pattern and not a block set you'd select the column that best represented your measurements, but in this case you'd select the individual sections of the block closest to each of your measurements, adjust them and true the seam lines. For example, if your hips sit between two columns, select both blocks and draft a line between them to create a size in the interval. You might want to choose a different size upper bodice to lower bodice and blend at the waist. You might want to lengthen or shorten a sleeve or leg. Anything is possible with blocks.

Under Bust	66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100
Waist	60	62	64	66	68	70	72	74	76	78	80	82	84	86	90	92	94	96
Hips	85	87	89	91	93	95	97	99	101	103	105	107	109	111	113	115	117	119
Nape to Waist	37.4	37.6	37.9	38.1	38.3	38.5	38.8	39	39.2	39.1	39.5	39.7	39.9	40.1	40.3	40.4	40.6	40.8
Waist to Hips	24	24.3	24.6	24.9	25.2	25.5	25.8	26.1	26.4	26.6	26.9	27.1	27.4	27.6	27.8	28.1	28.4	28.6
Waist to Knee	58	58.2	58.5	58.7	58.9	59.2	59.4	59.6	59.9	60.1	60.4	60.6	60.8	61.1	61.3	61.5	61.8	62
Waist to Floor	102	102.5	102.9	103.4	103.9	104.4	104.8	105.3	105.8	106.2	106.7	107.2	107.6	108.1	108.6	109.1	109.5	110
Upper Thigh	45.5	46.5	47.5	48.5	49.5	50.5	51.5	52.5	53.5	54.5	56.5	57.5	58.5	59.5	60.5	61.5	62.5	63.5
Knee	31.2	31.7	32.3	32.8	33.3	33.9	34.4	35	35.5	36	36.6	37.1	37.6	38.2	38.7	39.2	39.8	40.3
Ankle	19	19.3	19.5	19.8	20.1	20.3	20.6	20.9	21.1	21.4	21.6	21.9	22.2	22.4	22.7	23	23.2	23.5
Sleeve Length	59	59.2	59.5	59.7	59.9	60.2	60.4	60.6	60.9	61.1	61.4	61.6	61.8	62.1	62.3	62.5	62.7	63
Bicep	26	26.5	27	27.5	28	28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5
Wrist	15	15.2	15.5	15.7	15.9	16.2	16.4	16.6	16.9	17.7	17.4	17.6	17.8	18.1	18.3	18.5	18.8	19

What you may notice is that these measurements are in a perfect linear relationship while normal bodies get wider much faster with increasing size. That simply means that I've drafted across the range and inserted equal increments in the gaps ... I'm not drafting to

suit an arbitrary term like small, medium or large. So technically, one can create any linear relationship without changing shape ... each individual needs to find where they sit on each block and select accordingly ... with narrow 2cm under bust increments between sizes that should be an easy task.

## Reading The Files

This block set is huge ... as a single file PDF it's 90 pages long ... with enough objects on each page to crash your average PDF reader. In CAD format it took my dedicated graphics computer over 20 seconds to load in Corel Draw and crashed Illustrator every time. So it has to be broken up into smaller chunks ... I've done that as follows ...

It comes as a zip file which contains three folders:

- Acrobat (PDF): a single PDF file of all sizes, one file of under bust 66cm to 82cm, and one file of under bust 84cm to 100cm.
- Illustrator (AI): 18 files, of 5 pages each ... one for each size of under bust.
- Corel Draw (CDR): a single CDR file of all sizes, one file of under bust 66cm to 82cm, and one file of under bust 84cm to 100cm.

Because there is so much content in just one file, it's all fully layered and each line is identified with its own clear description ... there's literally thousands of them. This means you'll really need to be a CAD user to be able to take full advantage of all details. Let me say that again ... to really be able to open, edit and manipulate this package you need to do so in CAD ... yes you could do it on paper but it would be frustratingly cumbersome. This is an extremely powerful pattern making tool that has unlimited potential to stretch pattern makers ... not using CAD would be a waste of such a valuable resource.

By default, only a few layers are turned on or you'd be overwhelmed with all the information. Make yourself familiar with the layers on each page ... turn on the layers you want to view and turn off those which don't apply to you.

So what are each of the block sections ... let's start with the first page of each size, the one piece bodice block.

## The One Piece Bodice Block

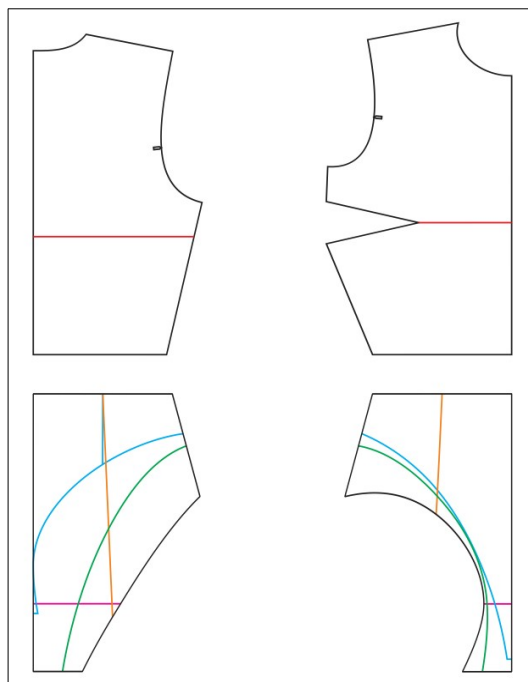
The one piece bodice block consists of four pieces; an upper back, an upper front, a lower back and a lower front panel. It's a basic darted bodice that's compatible with almost all the pattern tutorials on the website ...

<https://www.patternschool.online/pattern-lessons>

The upper back panel is the simplest of all the block sections. It basically doesn't have any adjustment beyond choosing which negative ease you wish to use. The back panel side seam (of the negative ease you choose) will perfectly match the corresponding side seam on the front panel for every cup size.

Should you wish to use a smaller or larger size back panel than the size you have chosen to match your front panel then you'll need to match the side seam of the back panel to the front, not the front to the back. You will need to do the same for the shoulder and waist. Unless there is a good reason for doing so then stick with matching sizes in the upper front and back.

The horizontal line (red) across the back panel is the corresponding position of the bust line. The arrow represents notch for matching the sleeve to the armhole.



The upper front panel comes in 5 choices of cup size, which is calculated by a difference between bust and under bust (subtract your under bust measurement from your bust measurement). Don't be tempted to just choose a cup size based on your bra (I haven't called them B, C or D for a reason) ... do the measuring! And select the size based on the difference and the ease you are using ... then turn off all other cup size layers

The lower bodice blocks have three leg lines: a one piece leg line (the black border), a gymnast style leg line (green) and a thong back leg line (blue). The pink line represents full hips and crotch height respectively. The orange line represents the quarter line as a guide for princess panels. The little blue line behind the back quarter line is the quarter line for the thong back ... they're not the same because of fitting.

The gymnast style leg line (green) only works when used with the gymnast style leggings ... it's a hybrid line that provides a closer and flatter crotch fit than the center seam leggings, but it doesn't have much fit between the cheeks ... it goes over the top. It's simply a catsuit leg line which can be made without a center seam, yet still has a semi traditional leg line curve that some find aesthetically pleasing.

The thong back leg line (blue) is designed to be used with the thong back leggings or as a thong back for the one piece block. It meets the center back line so you have a choice whether or not to use a center back seam line ... it's also a convenient place to start or end a zip, should you wish to.

All the lower panels are available in six choices of pelvic tilt to match the pelvic tilt in the leggings. You must choose the same tilt in each or the seams in the leggings will not line up.

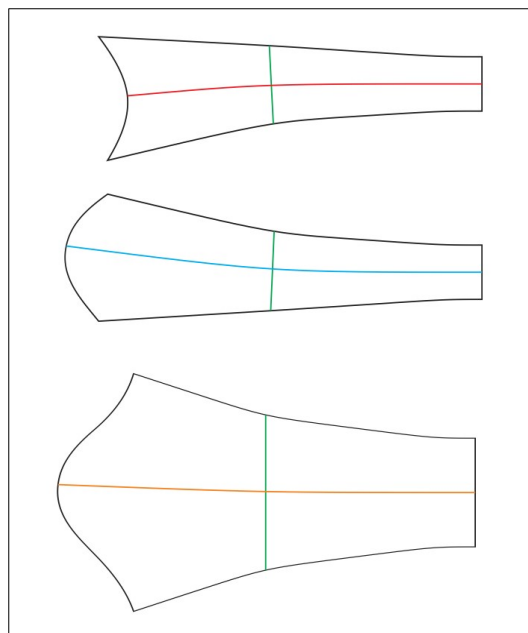
Take note of the point where the gymnast leg line meets the side seam of the bodice ... the width between these points left to right is wider than the waist, but not too much ... this will be the limit of how much adjustment you'll have for your waist measurement.

## The Sleeve Block

The sleeve block is really two blocks in one, but they're essentially the same with a little tweak. The first is the single piece sleeve block (orange mid line) ... it's a very simple traditional sleeve with a 60 degree sleeve head, contoured a little deeper on the front and flatter on the back. It has been designed for use mainly in an arms down position. If you need a sleeve for use with arms mainly in the arms up or out position then you'll need to either redraft the sleeve head or add an underarm gusset (there will be instructions for drafting sleeve gussets on the website soon).

Sleeves at the rest position often benefit from a slight natural bend at the elbow (green lines) ... to achieve this we take the single piece sleeve and manipulate it into two pieces: an underarm section (red mid line) and an upper arm section (blue mid line), then bend both 5 degrees at the elbow ...

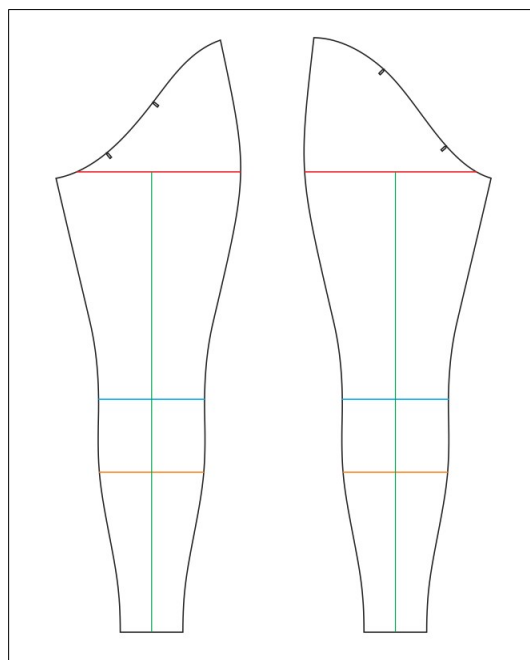
this is called a fitted sleeve. The seams on our fitted sleeves are positioned at the arm scye notch so they flow better into a princess line. You can still change the seam position by taking slices off one side and adding them to the other, but the mid lines must remain in the same position as they represent the bend position. You can increase the elbow bend angle up to around 12 degrees successfully if you so desire ... after that we have found it's uncomfortable in virtually all thicknesses of latex ... 5 degrees seems to be the best average.



## The Gymnast Leggings Block

The gymnast leggings block consists of a back leg and front leg panel. The notches line up with the hip/crotch line and quarter lines on the bodice block. The blue line represents the knee and the orange line represents the widest point of the calf. These are quite fitted shapes, but you may wish to contour your pattern even more in lower rebound textiles or thinner sheets of latex (remember, this is just your start point).

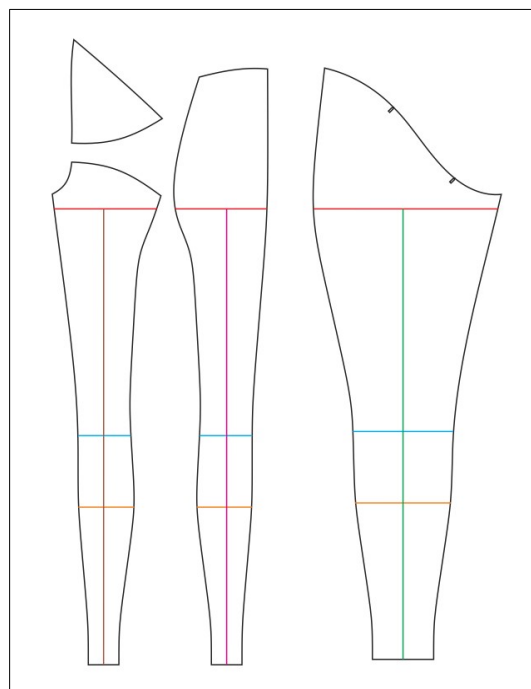
The Gymnast Leggings, like all the leggings to follow, come in a variety of pelvic tilts to match the respective tilt in the one piece block ... make sure you select the correct corresponding tilt or the seam lengths will be different!



The one thing you might notice when choosing the percentage of negative ease is that the top of the inside leg doesn't move inwards as much as you might expect as we apply more negative ease ... this is because of two things: firstly, the crotch width is the same irrelevant of negative ease ... and secondly, the center line of the legs changes only slightly relative to the center line of the body. This means that if you narrow or widen the crotch width don't forget to move this point on the leggings as well and then re-true the seam length!

## The Thong Back Leggings Block

OK so let's be honest ... if you're into latex then you aren't looking at this block set for the gymnast leg line ... you want the thong back with cupped cheeks! Now before we start I'm going to state, yet again, categorically, that even though I designed and calculated this block set principally for latex, this is a block set based on the measurements in the chart at the beginning ... meaning they are averages, with lots and lots of people varying by at least one or more measurements (and even people with the same measurements can be completely different shapes). The thong back catsuit is really something that needs to be customised for every individual, and while I label this as ready to wear because it's made from those measurements, it's really just a start point to get you close enough to start the fitting and altering process ... something that may take a few attempts to get right ... and something that is expensive in latex. There's just no other way I can offer this design ... don't say I didn't warn you!



The Thong back leggings consist of four sections. The front panel is just like all other leggings with an inside seam and a side seam. The back section consists of three smaller sections: a side back panel, a lower inside panel and an upper inside panel. The seam between the side back panel and the two inside panels is the back leg mid line and is contoured to also lift the cheeks and pull tighter at back thigh. You can contour this further or soften it to a limited extent at the concave area under the cheek. The two inside panels come together at a seam which creates the cupping between the cheeks ... don't mess with this line unless you've at least first tried the original design and have a feel for how it works ... after that you can create more cheek spread by flattening the line in the center combined with more lift under the cheeks ... it's quite effective.

The thong back catsuit is a very contoured fitting garment that will work best with medium to heavy weight textiles of high rebound tension. If you use lower rebound textiles then you'll need to stiffen the narrowest part of the thong or it will collapse .... although I don't recommend this leggings style for spandex based textiles

I have only provided the thong back leggings in negative ease values between 0% and 12% ... over this we had terrible failure in testing. It's mostly due to the high rebound in latex having little tolerance for shear at 45 degrees (think bias even though there isn't one) ... it was expected this would happen, but we were hoping to get to 16% ... sorry but not possible at this point.

It is possible to fit stretchier leggings to a less stretchy torso using the different ease patterns included, but you'll need to stretch the torso slightly when applying the leggings to get the seams to match ... they'll look odd at rest but should even out on the body ... not recommended unless you really know what you're doing and can afford to waste textiles in the testing process!

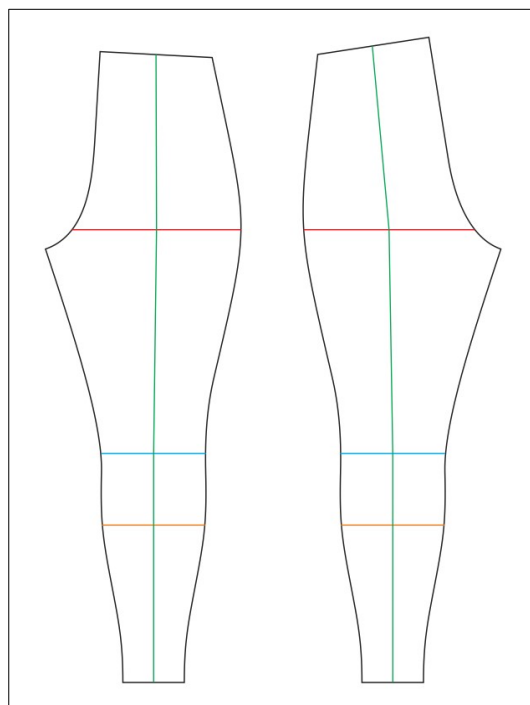
Again, the thong back leggings are designed with varying pelvic tilt options to match the tilt in the one piece blocks.

## The Center Seam Leggings Block

This leggings block is here more for completeness than anything else ... you don't need my block set to create this pattern as everyone has one! Center seam leggings are the basis of most catsuit patterns you see in the market ... they offer a really easy construction (especially when it comes to pass-under zippers) and some amount of contour between the cheeks. But what they fail to do is provide a nice flat fit over the crotch.

Center seam leggings are much like your jeans seam ... if the join at the crotch is too low you get serious rippling when you walk and if it's too high then you can get uncomfortably cut in half. It also lacks the option of contouring around the crotch in all but the lowest rebound fabrics.

This leggings set matches the one piece block at the waist line to create a full catsuit.



The version I've provided includes all the pelvic tilt options and negative ease options. You can play around further with the crotch seam curve to bring it in or out of the cheeks a little more.

