Kristina Shin : Basic Underwired Bra Pattern In Seamly2D V6

You need to be somewhat familiar with Seamly2D for this tutorial. All measurements are in cm. I have only used curved path and simple curve since I have not yet looked into creating curves with control handles.

This is a tutorial for a 75B. Your draft will vary depending on the wire you used.

1. Measurements

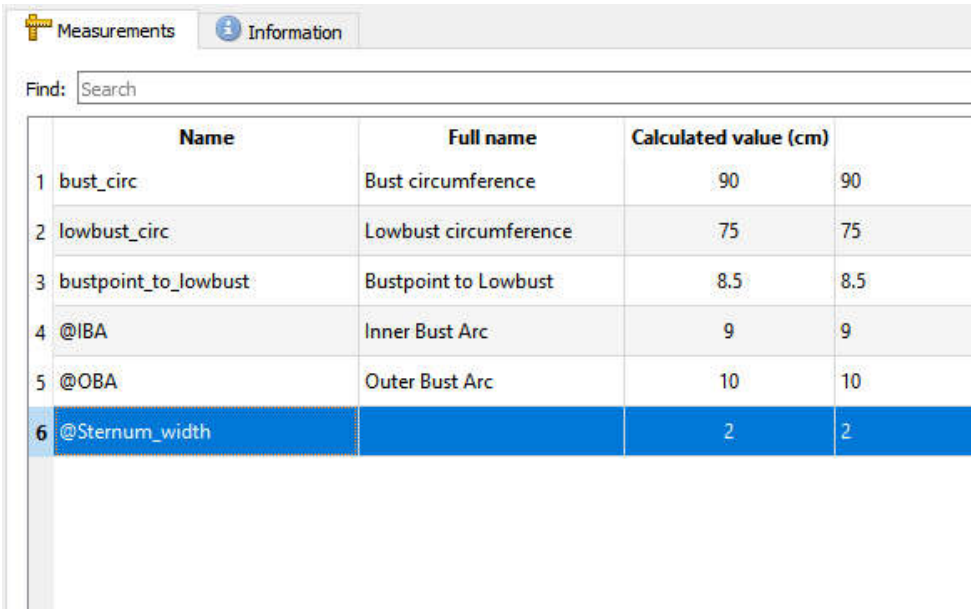
Open SeamlyMe

Select New →individual, cm →ok

Add known : bust_circ, lowbust_circ, bustpoint_to_lowbust (bust height in book)

Add custom : IBA, OBA, Sternum_width

Add your values, see picture below, and save



	Name	Full name	Calculated value (cm)	
1	bust_circ	Bust circumference	90	90
2	lowbust_circ	Lowbust circumference	75	75
3	bustpoint_to_lowbust	Bustpoint to Lowbust	8.5	8.5
4	@IBA	Inner Bust Arc	9	9
5	@OBA	Outer Bust Arc	10	10
6	@Sternum_width		2	2

2. Pattern

Open Seamly2D

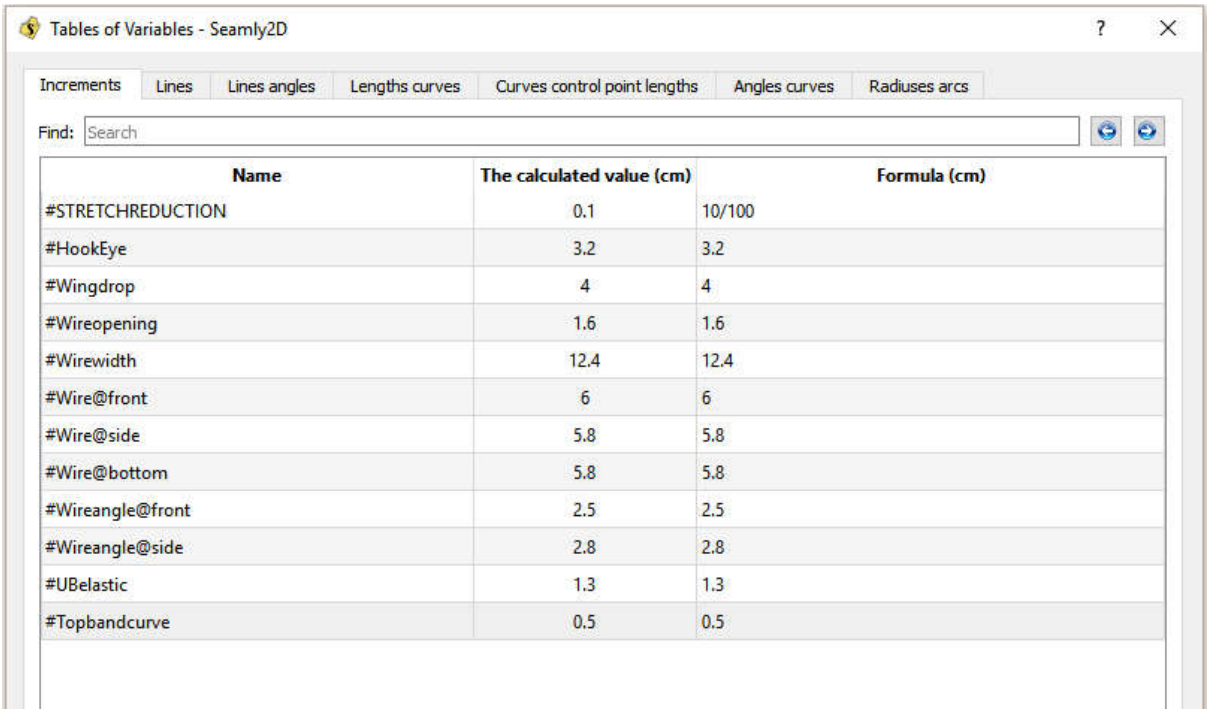
New → Lower Cup, cm

Measurements → Load individual, select your file and open

Measurements → variables table → increments

Add these increments :

STRETCHREDUCTION : this depends on fabric used for the band
HookEye : this is the height of your closure
Wingdrop : value should be between 3.2 to 4.5cm, depends on wire
Wireopening : depends on wire, this is how much you can open it
Wirewidth : width of wire
Wire@front: this height is measured on the opened and tilted wire (on paper), on the side closest to CF
Wire@side : this height is measured on the opened and tilted wire, here at the side
Wire@bottom : measured horizontally from 1/2sternum at lowest point of wire
Wireangle@front : measured at 45°from B3, check drawing
Wireangle@side : measured at 135° from B9, check drawing
UBelastic : width of elastic
Topbandcurve : depends on style of bra band



Name	The calculated value (cm)	Formula (cm)
#STRETCHREDUCTION	0.1	10/100
#HookEye	3.2	3.2
#Wingdrop	4	4
#Wireopening	1.6	1.6
#Wirewidth	12.4	12.4
#Wire@front	6	6
#Wire@side	5.8	5.8
#Wire@bottom	5.8	5.8
#Wireangle@front	2.5	2.5
#Wireangle@side	2.8	2.8
#UBelastic	1.3	1.3
#Topbandcurve	0.5	0.5

Adjust the values in this table to your fabric, wire, elastic, closure and style.

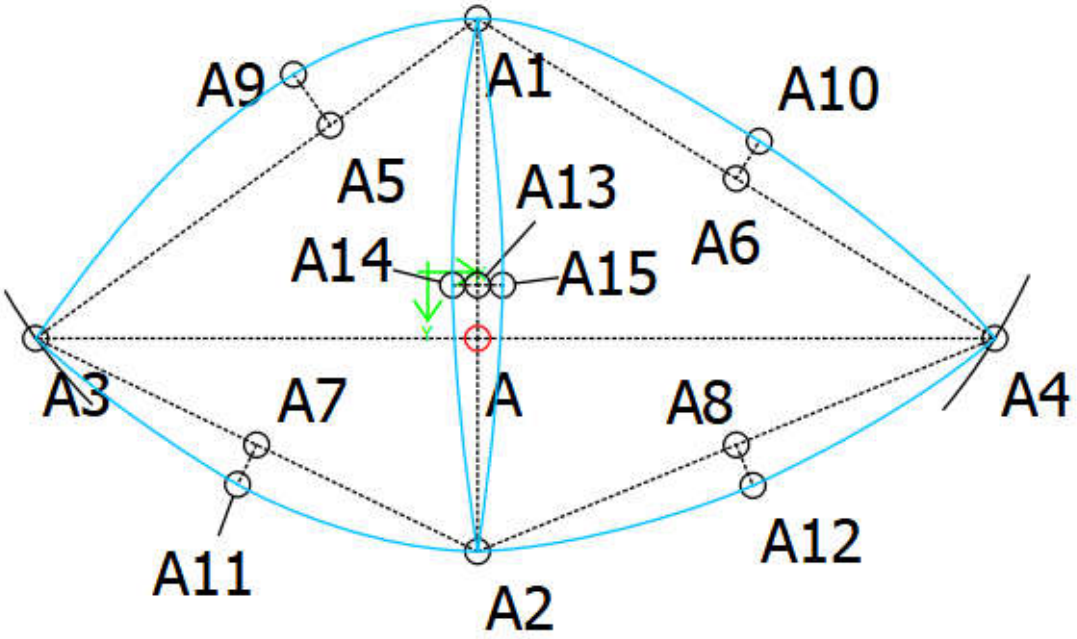
In this tutorial, I only note the degrees if it is different than the obvious 0, 90,180 and 270. If the point does not exist yet in the action column (for example when I use Point at Distance and Angle), it means to just place the point in the general direction where it is supposed to be, and adjust the degrees afterwards. I use commas to separate my entry fields.

After selecting a Function/Tool, use your formula wizard f(x) to input your formula, use the hand to get your measurements into the top bar.

Lower cup

Point	Function/Tool	Action	Formula
A1	Point at Distance and Angle	A to A1	3/5*bustpoint_to_lowbust
A2	Point at Distance and Angle	A to A2	2/5*bustpoint_to_lowbust
	Arc	A1	@IBA-0.3, 210, 225
	Arc	A1	@OBA-0.3, 320, 335
A3	Point Intersect Arc and Axis	Arc, A	180
A4	Point Intersect Arc and Axis	Arc, A	0
	Line Between Points	A1 to A4	
	Line Between Points	A4 to A2	
	Line Between Points	A2 to A3	
	Line Between Points	A3 to A1	
A5	Point at Distance Along Line	A1 to A3	CurrentLength/3
A6	Point at Distance Along Line	A1 to A4	CurrentLength/2
A7	Point at Distance Along Line	A3 to A2	CurrentLength/2
A8	Point at Distance Along Line	A2 to A4	CurrentLength/2
A9	Point at Distance and Angle	A5 to A9	1, AngleLine_A3_A1+90
A10	Point at Distance and Angle	A6 to A10	0.7, AngleLine_A1_A4+90
A11	Point at Distance and Angle	A7 to A11	0.7, AngleLine_A2_A3+90
A12	Point at Distance and Angle	A8 to A12	0.7, AngleLine_A4_A2+90
	Curved Path	A1 to A10 to A4	
	Curved Path	A4 to A12 to A2	
	Curved Path	A2 to A11 to A3	
	Curved Path	A3 to A9 to A1	
			Adjust your curves with the handles.
			Check measurements of curves in Measurements →variables table → lengths curves
			A3 to A1 should be 9cm A1 to A4 should be 10cm

A13	Point at Distance Along Line	A1 to A2	CurrentLength/2
A14	Point at Distance and Angle	A13 to A14	0.4
A15	Point at Distance and Angle	A13 to A15	0.4
	Curved Path	A1 to A15 to A2	
	Curved Path	A2 to A14 to A1	



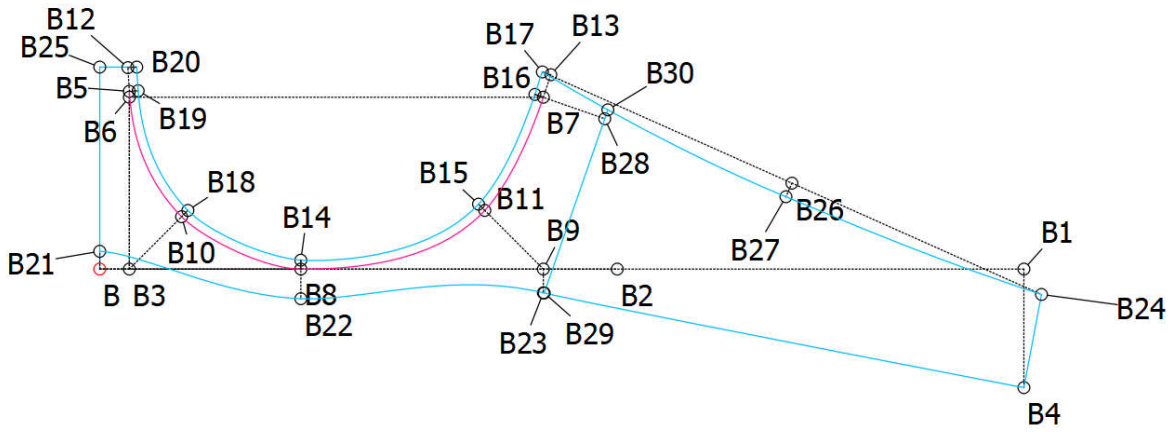
Band And Cradle

New Pattern Piece : Band and Cradle

Point	Function/Tool	Action	Formula
B1	Point at Distance and Angle	B to B1	1/2* (lowbust_circ-(5+#STRETCHREDUCTION*lowbust_circ))
B2	Point at Distance and Angle	B to B2	1/2*@Sternum_width+#Wirewidth+#Wireopening+2.5
B3	Point at Distance and Angle	B to B3	1/2*@Sternum_width
B4	Point at Distance and Angle	B1 to B4	#Wingdrop
			Now I need to draw the wire. I am drawing the already opened and tilted wire

B5	Point at Distance and Angle	B3 to B5	#Wire@front
B6	Point at Distance and Angle	B3 to B6	#Wire@side
B7	Point at Distance and Angle	B6 to B7	#Wirewidth+#Wireopening
B8	Point at Distance and Angle	B3 to B8	#Wire@bottom
B9	Point from X and Y of 2 other points	B7 to B3	
B10	Point at Distance and Angle	B3 to B10	#Wireangle@front
B11	Point at Distance and Angle	B9 to B11	#Wireangle@side
	Curved path	B7 to B11 to B8 to B10 to B5	
B12	Point at Distance and Angle	B5 to B12	0.8, Angle2SplPath_B7_B5_Seg_4+180
B13	Point at Distance and Angle	B7 to B13	0.8, Angle1SplPath_B7_B5_Seg_1+180
B14	Point at Distance and Angle	B8 to B14	0.3, 90
B15	Point at Distance and Angle	B11 to B15	0.3,135
B16	Point at Distance and Angle	B7 to B16	0.3, AngleLine_B7_B13+90
B17	Point at Distance and Angle	B13 to B17	0.3, AngleLine_B7_B13+90
B18	Point at Distance and Angle	B10 to B18	0.3, 45
B19	Point at Distance and Angle	B5 to B19	0.3, AngleLine_B5_B12-90
B20	Point at Distance and Angle	B12 to B20	0.3, AngleLine_B5_B12-90
	Curved Path	B14 to B18 to B19 to B20	Try to get it as parallel as your wire line
	Curved Path	B14 to B15 to B16 to B17	
B21	Point at Distance and Angle	B to B21	0.6
B22	Point at Distance and Angle	B14 to B22	#UBelastic
B23	Point at Distance and Angle	B9 to B23	0.8, this is just to help me draw my curve
	Curved Path	B4 to B23 to B22 to B21	

B24	Point at Distance and Angle	B4 to B24	#HookEye, Angle1SplPath_B4_B21_Seg_1-90
B25	Point from X and Y of 2 other points	B to B20	KS makes this angled, it depends on your preference
	Line between points	B to B25	
	Line between points	B25 to B20	
	Line between points	B17 to B24	
B26	Point at distance along line	B17 to B24	CurrentLength/2
B27	Point at Distance and Angle	B26 to B27	#Topbandcurve , AngleLine_B17_B24-90
	Curved Path	B17 to B27 to B24	
B28	Point at Distance and Angle	B16 to B28	2.5, Angle1SplPath_B14_B17_Seg_3-90
B29	Point intersect curve and axis	Bottom curve, B28	Angle1SplPath_B14_B17_Seg_3
			I chose to make this parallel to the top of the wire
B30	Point intersect curve and axis	Top curve, B28	Angle1SplPath_B14_B17_Seg_3

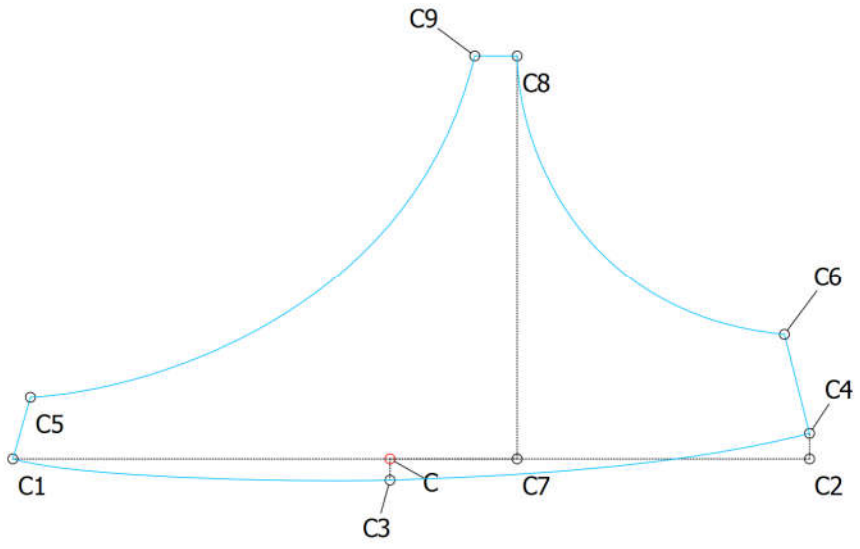


Upper Cup

New pattern piece : Upper Cup

Point	Function/Tool	Action	Formula
C1	Point at Distance and Angle	C to C1	@IBA-0.1
C2	Point at Distance and Angle	C to C2	@OBA-0.1

C3	Point at Distance and Angle	C to C3	0.5
C4	Point at Distance and Angle	C2 to C4	0.6
	Curved Path	C4 to C3 to C1	
			Check measurements
			Next we are going to walk the bottom cup with the cradle.
	Select pattern piece band and cradle		
B31	Segment a curved path	Select curve B14_B20	SplPath_A2_A3
B32	Segment a curved path	Select curve B14_B17	SplPath_A4_A2
	Select pattern piece upper cup		
C5	Point at Distance and Angle	C1 to C5	SplPath_B14_B20-SplPath_A2_A3, Angle2SplPath_C4_C1+90
C6	Point at Distance and Angle	C4 to C6	SplPath_B14_B17-SplPath_A4_A2, Angle1SplPath_C4_C1-90
			Note that KS's upper cup comes up higher, because the wire I used is shorter/different
C7	Point at Distance and Angle	C to C7	3
C8	Point at Distance and Angle	C7 to C8	9.5
C9	Point at Distance and Angle	C8 to C9	1
	Simple Curve	C5 to C9	
	Simple Curve	C8 to C6	



Create details

	Workpiece tool		C8, curve, C6, C4, curve, C3, curve, C1 C5, curve,C9 enter, ok
	Pattern piece : lower cup		
	Workpiece tool		A1, curve, A4, curve, A2, curve, A14, curve, enter, ok
	Workpiece tool		A1, curve, A15, curve, A2, curve, A3, curve, enter, ok
	Pattern piece : band and cradle		
	Workpiece tool		B29, B30, curve, B27, curve, B24, B4, curve, enter, ok
	Workpiece tool		B14, curve, B32, curve, B17, curve, B30, B29, curve, B22, enter, ok
	Workpiece tool		B14, B22, curve, B21, B25, B20, shift curve, B31, shift curve, enter, ok
	Go to details mode		You can move your pieces apart for clarity

These were the issues I had:

- Currently bra sizing is not included, so if I wanted to make this in a multisize, I would have to assign my band and cup values to the existing size and height selection.

- I cannot import a background image to trace, so I had to use reference points to draw my wire

- At some point KS draws a parallel curve to the wire line, as if you were to draw a seam. Trying to move this curve will not get the same result as some parts need to be moved left and others up, going inward, making the curve smaller. So I made a second curve to get the result I needed.

- To draft the upper cup, you need measurements from both bottom cup and cradle, so I did not follow the same order as in the book. I started with the bottom cup, then the band and cradle, and finally the upper cup.