

# How to make a pattern for a simple shirt with Valentina / Seamly2D

## 1 What this tutorial is about and thank you notes

In this tutorial you will learn how to use the pattern-making software Valentina / Seamly2D to create a pattern for a shirt. I focus on the usage of Valentina / Seamly2D; I assume that you already know how to make and alter patterns on paper and how to use the PC generally. Still this tutorial is no manual that says “this button does this” and “that button is used for that”; only the buttons we need to create our shirt are explained. A manual you can find here: [https://static.miraheze.org/valentinaprojectwiki/8/86/Valentina\\_EBOOK-8-24-17.pdf](https://static.miraheze.org/valentinaprojectwiki/8/86/Valentina_EBOOK-8-24-17.pdf)

The tutorial is made with software version 0.6 of Valentina / Seamly2D. There might be differences if you use a different version. Please be aware that this is the Valentina developing branch and there are issues sometimes; but it also has nice features. Please also be aware that you can upgrade and use your files, but if you downgrade the files maybe don't work because the older version of the program doesn't know the new features you used.

Please be also aware that this manual comes with absolutely no warranty and provided as is. The pattern is made by myself and not with focus on fitting very well, but easy to draw and in this tutorial we really want to concentrate on the use of the software, not on good construction of a shirt :)

You can create patterns in Valentina / Seamly2D with all kind of construction systems. Valentina / Seamly2D is like your ruler, circle, eraser, calculator and paper, just on your pc. For the tutorial I'd suggest you to stick with the construction I did just to learn how to deal with Valentina / Seamly2D; later on you can easily transfer it to your system. For the names of the measurements I took the ones Valentina / Seamly2D provides. If you alter measurements because you don't like the ones of Mme. Skirt, you might have to smooth the curves again.

## 2 Requirements

- Valentina / Seamly2D installed and working on your PC
- Knowledge of pattern making
- Knowledge of basic skills on using a PC
- Paper if you want to print the pattern

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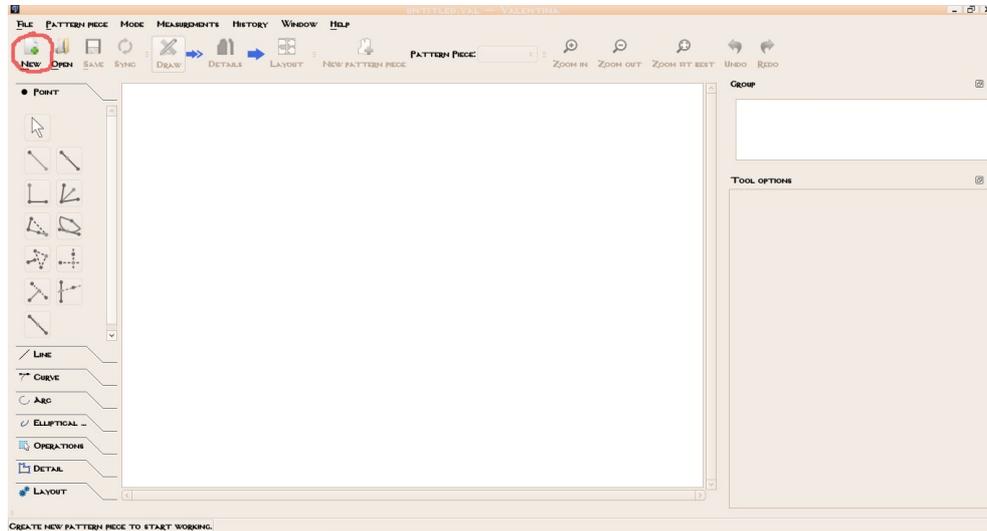
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# 3 The very first steps in Valentina / Seamly2D

## The start screen

When you open Valentina / Seamly2D, your screen will look like that:

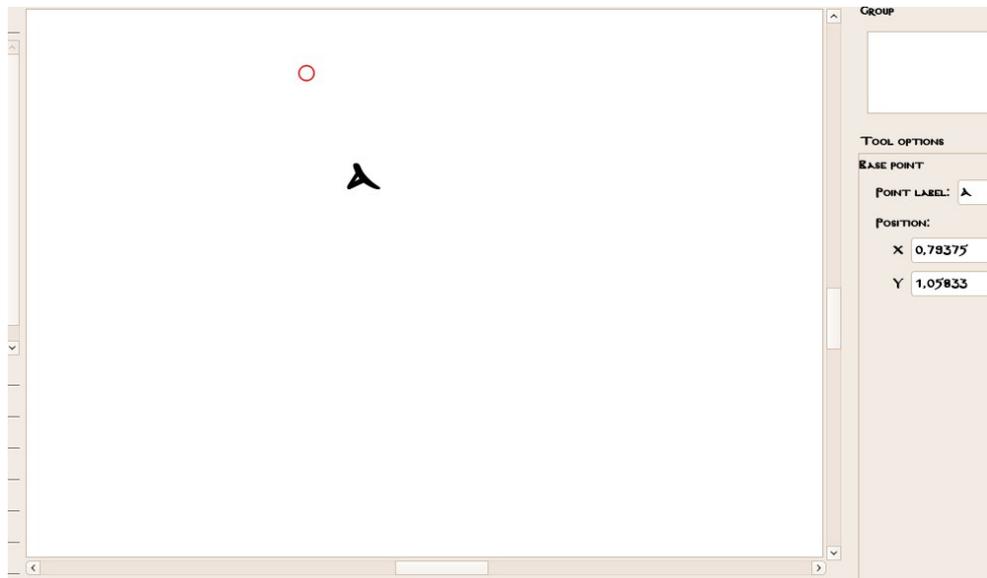


After you clicked on the “New” button (in the left upper edge, marked red), a popup will appear:



You can type in a name for your first pattern piece there. The first thing I usually do is a reference square, so I called the first pattern piece “Reference”.

After you have typed in the name and confirmed with ok, the screen will have changed a little bit:



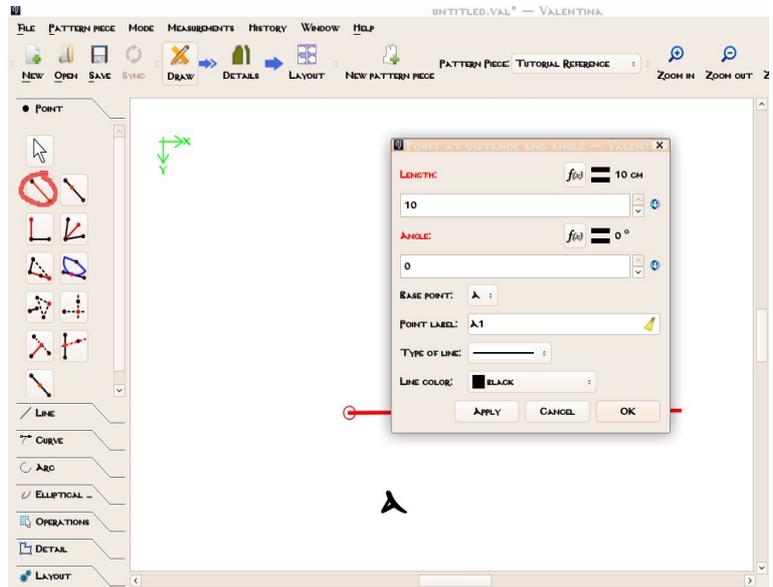
The red point is the first point of your drawing. Valentina / Seamly2D gives them a name (label); you can change the label if you need in the field “point label” on the right side besides the screen. You also can change the position of the point here; x goes right, y down.

# Drawing our first lines - the reference square

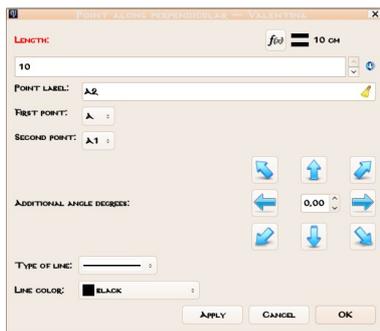
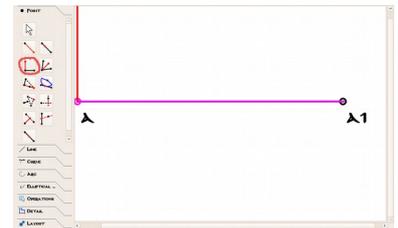
As printers and plotters sometimes do funny things, I put a reference square in every pattern I want to print. If you sell patterns or have someone else print them I think it is also a good habit to print out the reference square, just to make sure the pattern is printed right.

So, let's start. The first line is drawn with the “**point at a distance**”-tool. You find it on the left side of the workspace.

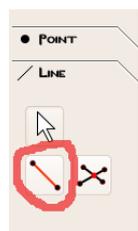
When you click the button, the mouse on the workspace will change to a black dart with the symbol of the tool at the side. You click into the first point, A, then go to the side where the line should go, just a little way. Then you click again and a pop-up-window will appear where you can fill in the length of the line and an angle. For the reference we want the line go straight to the right for 10 cm, so we fill in “10” for length and “0” for angle. If you press “shift” while moving the mouse the angle will stick to 0° if you move right (90° if you move up and so on).



For the second and third line of the square we will use the “**point along perpendicular**”-tool. After activating this tool with a click on the button on the left, you click on the where the perpendicular should start, here A, and then in a point along the line that builds the 90°-angle to the perpendicular.

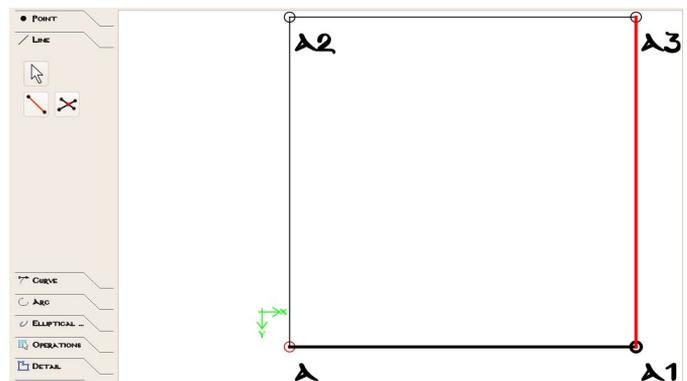


After confirming with enter we will get a pop-up-window again. As before, you just can type in the length. If the perpendicular goes to the wrong direction, you can click on one of the blue arrows, the one pointing left will in most cases be the right one here. You can test the settings with the button “apply” before you confirm with “ok”.



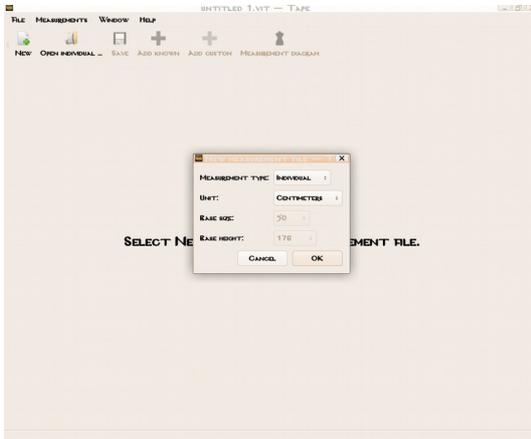
For the fourth line you can use the “**line between points**”-tool. You click on the two points between you would like to see a line, here A1 and A3:

Btw, now is a really good time to save for the first time. I called my file “Tutorial\_Shirt”.



# Measurements and Variables

Before you draw your actual pattern, it is a good idea to feed Valentina / Seamly2D with the measurements you need. Theoretically you could draw the lines and put the number in every time. As you use some of the measurements and other numbers over and over again, that wouldn't be a good idea, though. So we work with measurements and variables.



**Measurements** are the numbers you took while you measured your customer, like waist circumference or hip depth. Valentina / Seamly2D has a helping program called "Tape / SeamlyMe" where you will store all the measurements. You call it from inside Valentina / Seamly2D with

*"Measurements → Open Tape / SeamlyMe"*

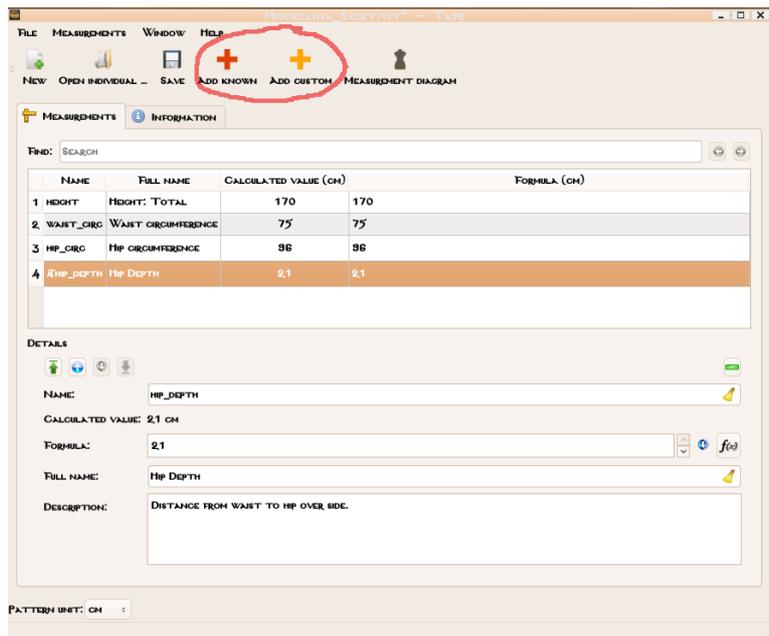
You will have to create a new file the first time you make a pattern, with the button "New" in the left upper edge of the popped-up Tape / SeamlyMe-window. A

second window will pop up, asking you for the measurement type and unit.

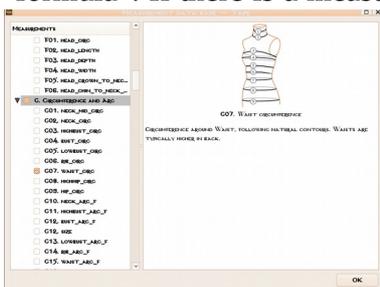
We just keep it as it is on individual and centimeters and confirm with "ok".

The Tape / SeamlyMe-window will change a little bit, so that you can add custom measurements with the orange or the red plus - sign "add custom" or "add known".

For every measurement you click one of the plus-signs, fill in the fields (just write, no "enter") and then add the next measurement. Valentina / Seamly2D has a lot of measurements already defined and explained, so that you only need to click on the red plus, choose your measurement in the pop-up window and confirm with enter and then enter the only number in the field



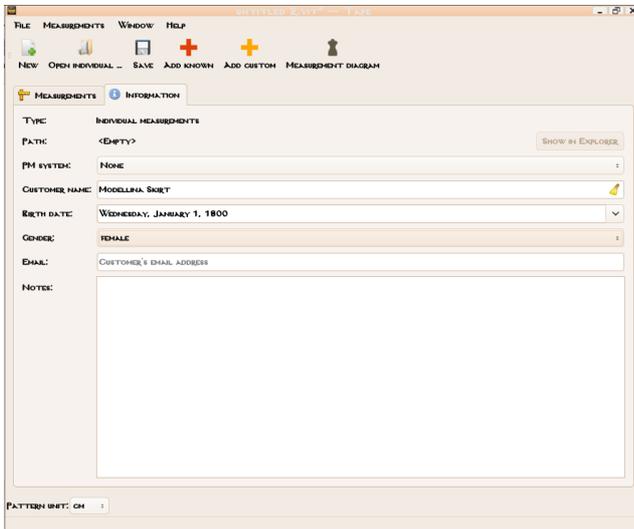
"formula". If there is a measurement that Valentina / Seamly2D doesn't have pre-filled yet, you use the orange plus and have also to fill the name and all other stuff in.



Here I have filled in four measurements: Body Height (actually not used for the shirt, but that is the look into future ;), waist and hip circumferences and hip depth. (Don't worry about waist, we won't need it in this pattern; our nice customer Modellina Skirt just wants other garments, too.)

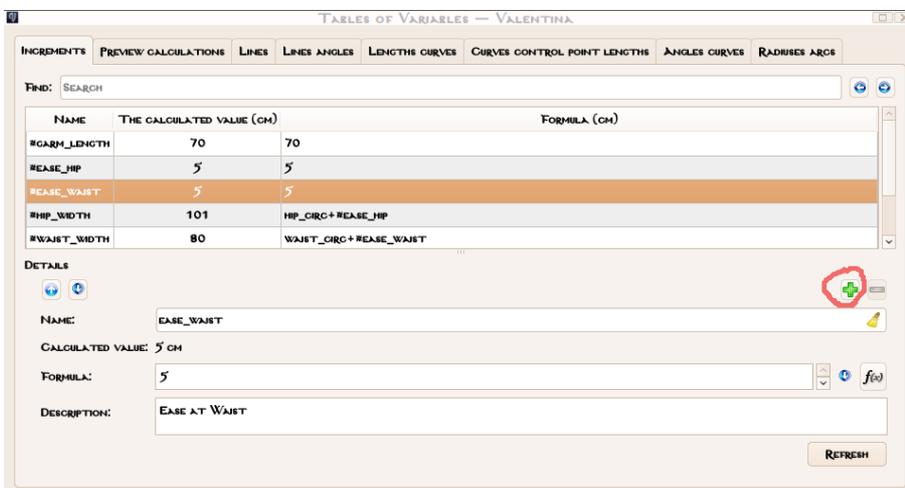
*Name* is a short name to work with in formulas, *formula* in this case is the actual measurement, *full name* is a human-understandable name, so that you don't get lost in cryptic letters and in *description* you can give further explanations, like “Distance waist to hip” or “front length, measured from 7. vertebra”.

On the second tab, “Information”, you may add infos like customer name, that can come in handy for handling the measurements and patterns:



After you filled in all the measurements, you must save the Tape / SeamlyMe file. If you change something in the Tape / SeamlyMe file later on while working on a pattern, Valentina / Seamly2D will take the new measurements (you will be asked whether you'd like to synchronize, say “yes” then), but only if you save the file. I called my file “Modellina\_Skirt.vit”<sup>1</sup>

**Variables, or increments**, are placeholders for numbers and formulas that you need. Some of those things you need more than once, in different places, for example added ease to hip circumference – the measured hip circumference plus ease makes hip width. It is a good habit not to type the number or formula in every time you need it but to define variables. That way, if you change a number, for example the ease, you only have to do it at one place. Valentina / Seamly2D will take care of all changes throughout the pattern. This way you won't miss places where the figure needs to be changed.

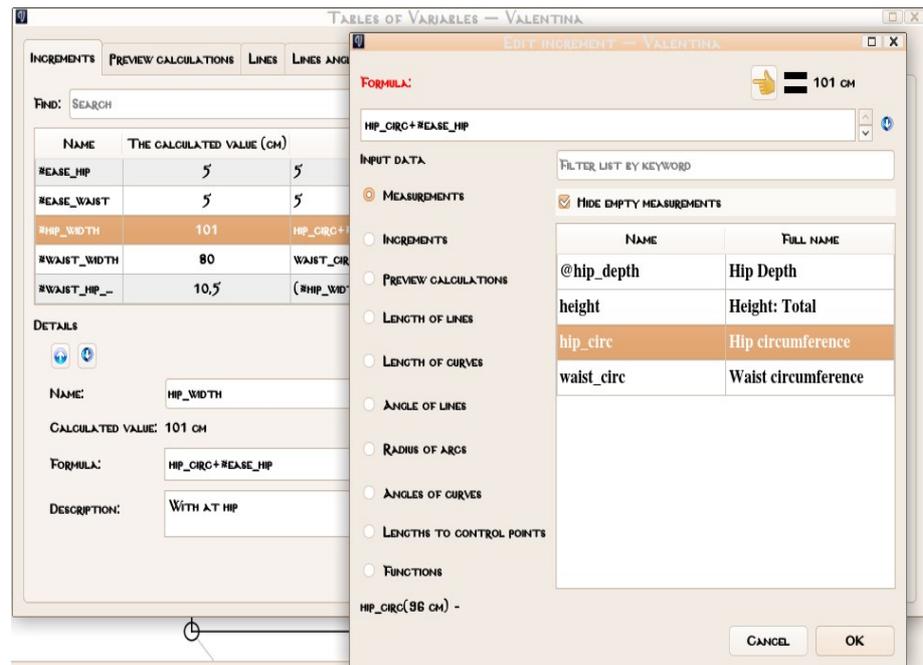


To do this Valentina / Seamly2D has the “Measurements → **Variables Table**”. In the example to the left I filled in the model length, ease at the hip and ease at the waist; on this variables no formula is included. A new variable can be added with the green plus; just click it

1 Tape / SeamlyMe and Valentina / Seamly2D take care of the suffix, you don't need to type them. Measurements are “vit” and pattern is “val”

and then fill in the fields. The description is not needed; this field is only for you that you can more easily remember the variables while having short names for the variable itself.

You can use formulas as well, like for example for the already mentioned hip with, or the bust width. Here I clicked at the little button with the “f(x)” on right side of the field for formula; as you can see in the pop-up-window there is the choice between measurements, increments (which basically means input or formula) and some other things. You can choose a measurement or increment by double-clicking on the name; make sure the cursor is in the input field before so that the variable will be put into the input-data-field :)



For the shirt we will need to fill in the following measurements and variables:

Measurements		
Name	Full name	Formula
hip_circ	hip circumference	96
shoulder_length	length of shoulder from neck	11,8
bust_circ	bust circumference	90
neck_circ	neck circumference	35,8
neck_back_to_highbust_b (in back)		20

Variables		
Name	Description	Formula
garm_length	Length of garment from 7. vertebra to seam	70
ease_hip	Ease at hip	5
ease_bust	Ease at bust	7
hip_width	Hip circumference plus ease	hip_circ+#ease_hip
bust_width	Bust circumference plus ease	bust_circ+#ease_bust
neck_width	width of neck (radius)	neck_circ/(2*pi)+1,5

Be aware that Valentina / Seamly2D measures in **centimeters** (cm) by default, so if there is a pattern with measurements in millimeter (mm), you need to divide those by 10.

After we have filled in all the measurements and variables it is a really good time to save your pattern again.

Now we can go to the next step – the frame. For this we make a new pattern piece.

## 4 The first real pattern piece - the shirt back

There is some confusion about the names in Valentina / Seamly2D at the moment. What I would call “pattern piece” is there called “detail”. It consists of the pattern piece including all the details you don't add at drawing, like seamlines, labels, passmarks and so on. In one “pattern piece” can be two “details”, like back and front of a shirt.

### Building the frame and our first curves

The frame starts out pretty much as you did with the reference square. There are more than one ways to accomplish this task, so don't worry if your's is different from mine. My way in the tutorial was:

1. Putting B into a convenient place:  $x = 60, y = 2$  as we work from right to left
2. Point at a distance from B down, length #garm\_length => B1
3. Mark bust line with point at a distance along line, length neck\_back\_to\_highbust\_b => B2
4. Point along perpendicular at B1 to the left, length hip\_width/2 => B3
5. Point along perpendicular at B2 to the left, length bust\_width/5,5 => B4



**Point at a distance along line** is on the left side of the working place. You walk along a line, here B to B1 and fill in the desired length. You can choose it with the little “f(x)”-button just like you did in the table of variables if you use a variable, like we do here.

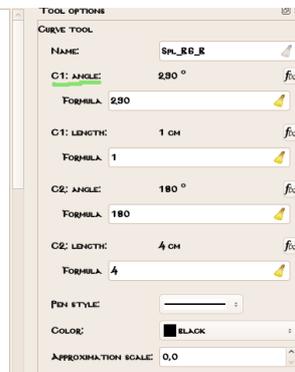
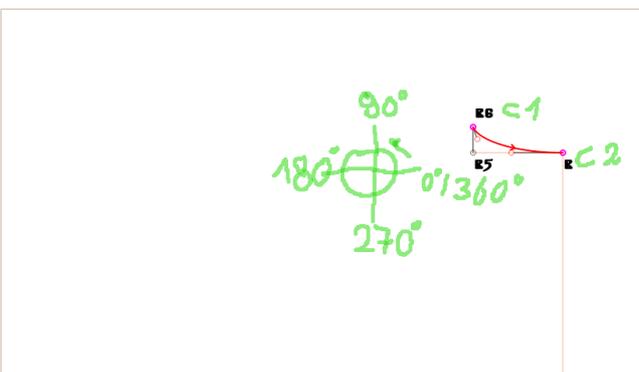
Right now our pattern looks like this:



We go on making some more lines to help us:

6. Point along perpendicular at B to the left, length neck\_circ/6+1 => B5
7. Point along perpendicular at B5 up, length 2 => B6
8. Simple curve between B6 and B

For the curve we find a button to the left. We have to connect B5 and B like we did for the line. As we want to have a nice curve on the t-shirt, the angle at B needs to be 90° to the middle of the back (our line B to B1), so at “C2” for the angle we fill in 180°. Length here is 1.



B6 makes “C1”, the starting point of the curve. It gets a degree of 290° and a length of 4. (Hint: there is a more elegant

way to form the curve if you want to grade pattern. It includes some math, so we might perhaps do it in a later tutorial or if you are too curious now, you just may take a look at Keith's tutorial about

the Kolson-Method in Valentinas wiki: [https://wiki.valentinaproject.org/wiki/Creating\\_Smooth\\_Curves:\\_The\\_Kolson\\_Method](https://wiki.valentinaproject.org/wiki/Creating_Smooth_Curves:_The_Kolson_Method). For now the plain numbers are sufficient).

There are also some little handles, in the beginning hidden in the purple circles. You see them as little red circles in the picture. You could grab and move them with the mouse, but sometimes they seem to have just their own life and do funny things. It is easier to fill in the angle and length in the fields at the right.

This curve is our first line for our basic shirt, so I left it black. It will become the neck.

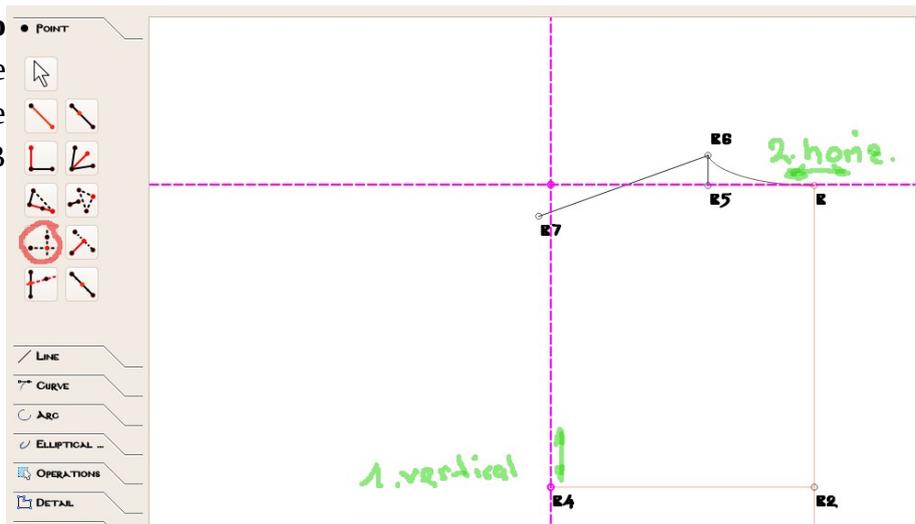
The second line will be

9. Point at distance and angle from B6, length `shoulder_length`, angle  $200^\circ \Rightarrow B7$

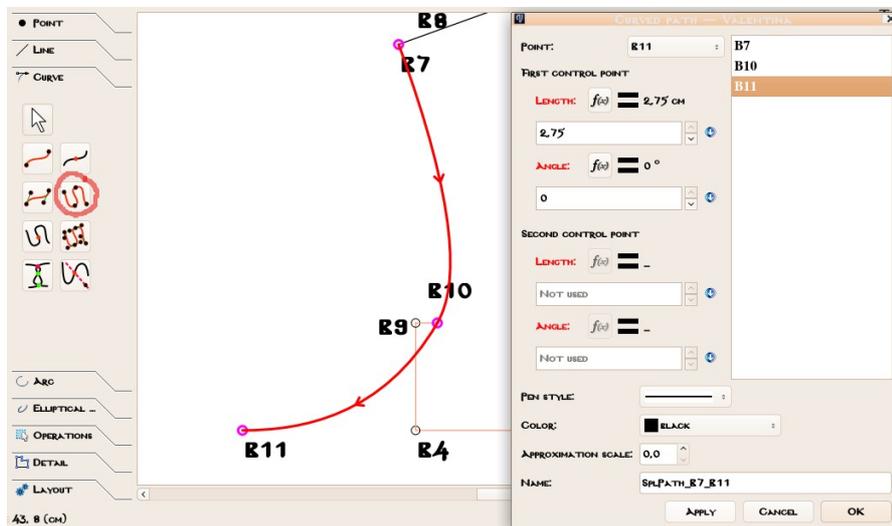
This is our shoulder. For the armhole we need a bit more framing:

10. Point of x and y of two other points with B4, B,  $\Rightarrow B8$
11. Point at a Distance along line B4, B8, length  $\text{CurrentLength}/4 \Rightarrow B9$
12. Point along perpendicular in B9 to the right, 1 cm  $\Rightarrow B10$
13. Point of x and y of two other points with B3, B2  $\Rightarrow B11$

For **point of x and y of two other points** you choose the tool, click on B4 for the vertical axis and then on B for the horizontal axis.



Now we have our points together for the armhole. This is made with the “curved path”-tool. Our nodes, or control points as



Valentina / Seamly2D says (build Nov. 17, 2017) are B7, B10 and B11 – click them, when you are done press “enter”. With the November-build the GUI has changed a little bit; instead of the fields in the toolbox on the right you have to right-click on the curve now and select “options”. There you can fill

in the angles and lengths, select each point and put the numbers in the field appearing on the left. It is

B7: length 8, angle 290 for the second control point

B10: length 2, angle 60 for first, length 5, angle 240 for the second controlpoint

B11: length 2,75, angle 240 for the first control point.

It might be necessary to smooth the curves again if you use different measurements. Play with the lengths and angles, typed in or grab the handles on the nodes. Or you read and apply the Kolson-Method ;) I just wanted to keep it simple in the beginning.

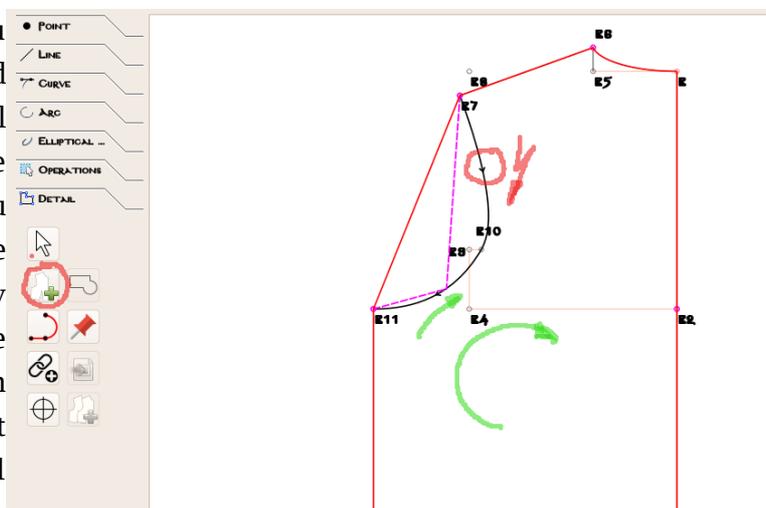
If you connect the outline with black lines where missing, the piece should look like this:



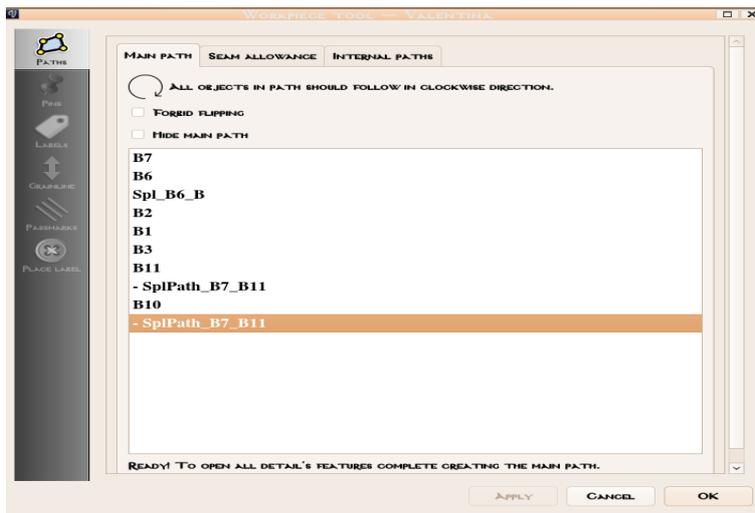
Did I already mention that it is always a good idea to save your word frequently? ;)

## The first details - reference and back

It is time to make the first details. You select the “detail”-tool (also called “seam-allowance-tool”) and click all the points and curves you want to have in your pattern piece – ehem, detail. You *musst* do that counterclockwise, else Valentina / Seamly2D will be unhappy and the detail won't work. Also, if a curve has the arrows converse to the direction you are choosing the nodes it won't work. Press “shift” in that case, that will reverse the curve. After you have



selected all points and curves, press “enter”. Don't press the first point you choose a second time, stop on the curve or point previous to the first chosen point.



My path was B7, B6, curve for neck, B2, B1, B3, B11, armhole (with “shift”, so that it reversed), B10, armhole + ”shift” again.

I wanted so see B10 because I'll need it later on. But if you choose a point on a curve, you have to choose the curve again, else Valentina / Seamly2D will only take the part before the curve.

If you succeed the window with the path will pop up. Right now you can

only press ok (and pat yourself on the shoulder, you've done a lot work!)

Oh, and just for practicing – make a detail out of the reference square, please :) If the square is grayed out and you can't click on it, choose it in the pull-down-menu of the pattern-pieces.



When you've done that, you can go to the **details-mode**. The screen should look like this then:

You could already go to layout and print your piece, only it wouldn't be wise.

We should label the pieces and maybe give them a seamline.

I grew up with ready-made patterns without seamline, but I got used to it very, very fast since I use Valentina / Seamly2D.

And label is mandatory – else you don't know what you thought when you use your pattern in ten years again :)

