

modernknitting

Design Knittings with LibreCAD LESSON 3

For all knitters, machine or hand

by Harry Guetter

You have finished lesson 1 and 2 now and start with lesson 3. To see what you have passed and what still will be done we start each lesson with the overview of the lessons:

1. Lessons

We will have 6 lessons. I will build up the lessons step by step in the following weeks

Lesson 1: Modify an existing drawing (cut) to distinct personal dimensions

Content:

Learn about the use of zoom, layers and blocks

Modify dimensions, print in scale and use knit-radar

Without patterns

We use the drawing **Cut Sweater Man shaped with V-neck.dxf**

Lesson 2: Design a new drawing (cut)

Content:

We design a women's cardigan with double-round shaped neck

We save the drawing as **Cut cardigan woman double_round neck.dxf**

In Lesson 5 we will put pattern into this design

Lesson 3: Create a scaled grid for handknittings or machines without knit-radar

Content:

We create a grid to substitute the complete calculating for all shapings

Lesson 4: Create Pattern and Pattern Cards

Content:

We create mother-patterns and pattern Cards in LibreCAD

Lesson 5: Put scaled pattern into a design

Content:

We use a mother-pattern

copy it into drawing **cut cardigan woman double_round neck.dxf**

We scale the pattern to mesh-size

We make a pattern-block

We orient the pattern-block in the drawing

We fix start-point and end-point of the patterning. Fix start-point of the pattern-block

Lesson 6: Create a small cupboard

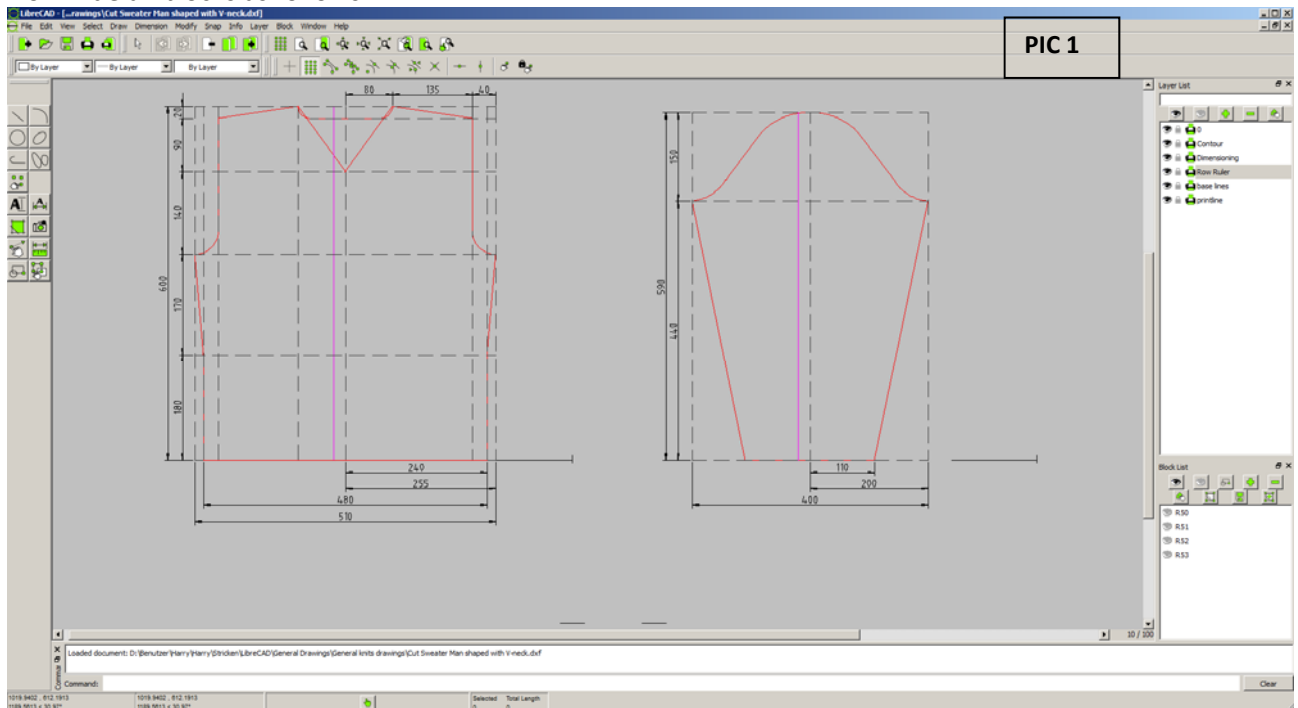
Content:

Construct a small cupboard to learn the use of LibreCAD for general items

In this lesson you create grids or raster which avoid all calculations for shaping. Usable for handknitting or machines without knitleader. We use drawing “Cut Sweater Man shaped with V-neck”. Please download it here:

<https://app.box.com/s/lfsznsp420dawp4v8gvw>

Now hide all blocks as follows:



For our project we use a hand knit swatch of 17x22 stiches per 10 cm (4 inch)

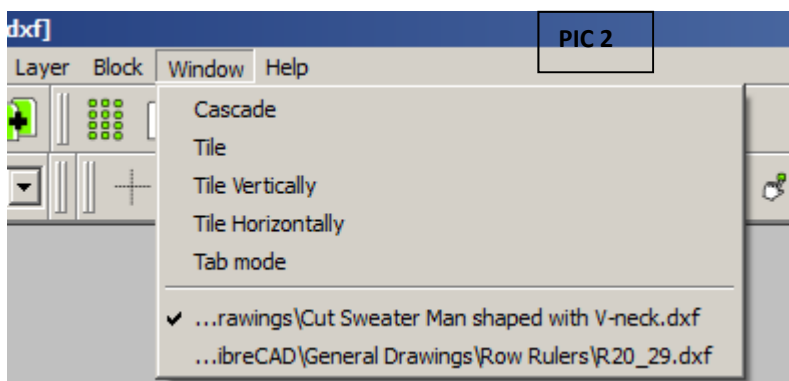
To get row rulers and stich rulers download these from BOX and save it in a folder on your PC. Best you download all at once :

<https://app.box.com/s/h26qgnblwtyopaxiq84e>

We copy “row ruler 22” into our drawing as follows:

File, Open, ...Your folder row rulers..., **R20_29.dxf**

We have opened now two drawings. You can check that by clicking on „window“



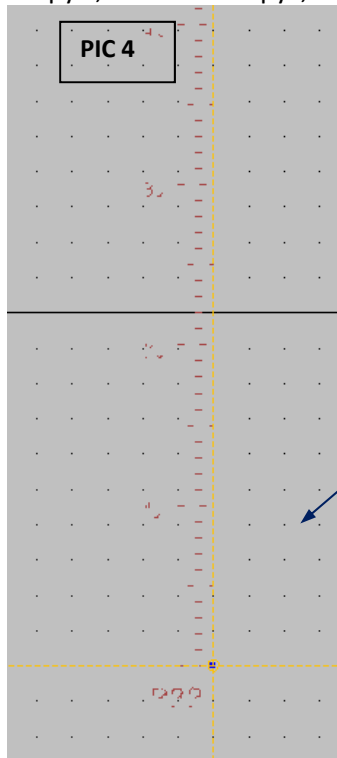
You can move between the two drawings by a click on the wished drawing

Now copy R22 from drawing to drawing (NOT WITH “normal” COPY/MOVE !!!)

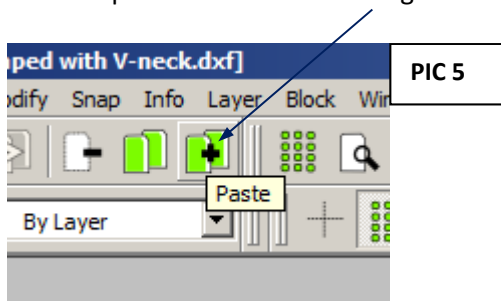


Activate ONLY snap “Raster”

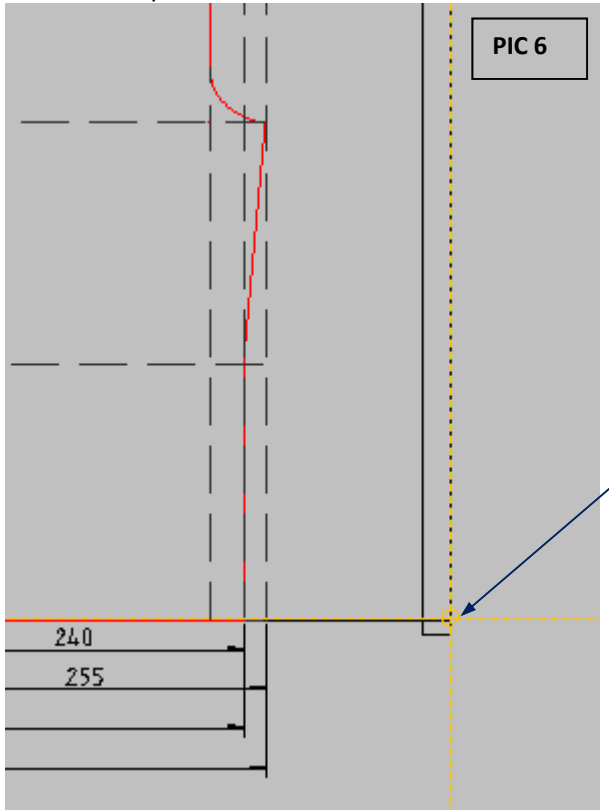
°Copy”, “Select to copy”, select R22, “Continue action”, “Specify reference point”



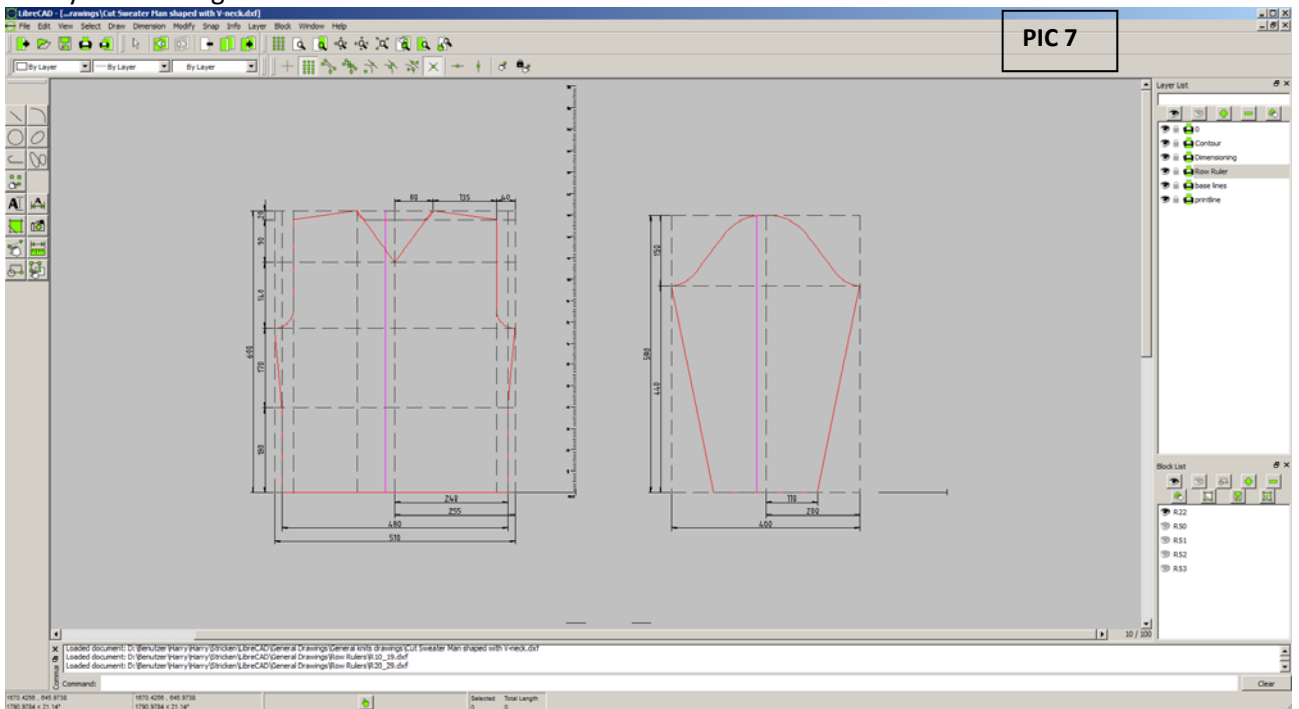
R22 is in the memory now. We move to our origin drawing by using “window” and click on this drawing.
Now we paste R22 to this drawing



Activate snap intersection. Paste and select the intersection of the two helplines

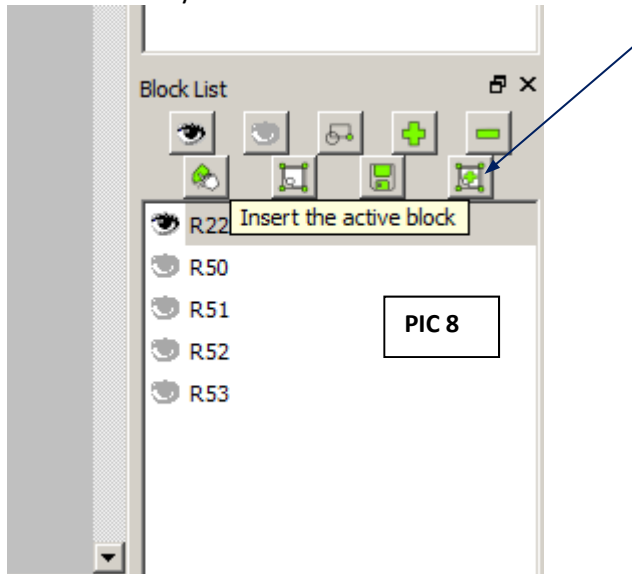


Now your drawing should look like follows:

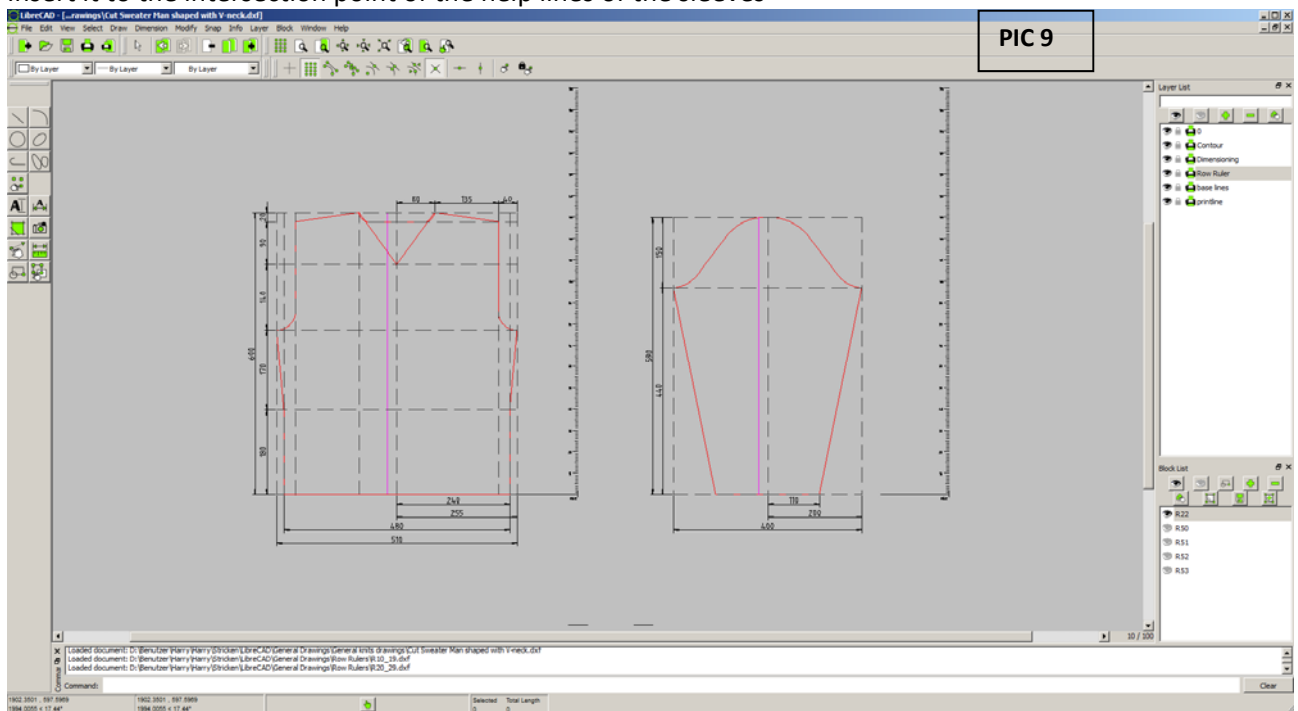


The body of the sweater has the row ruler and you see an active block R22
You could repeat the Paste and copy the row ruler to the sleeve. But we use a second method.

Activate R22 by click. Then “Insert the active block”



Insert it to the intersection point of the help lines of the sleeves



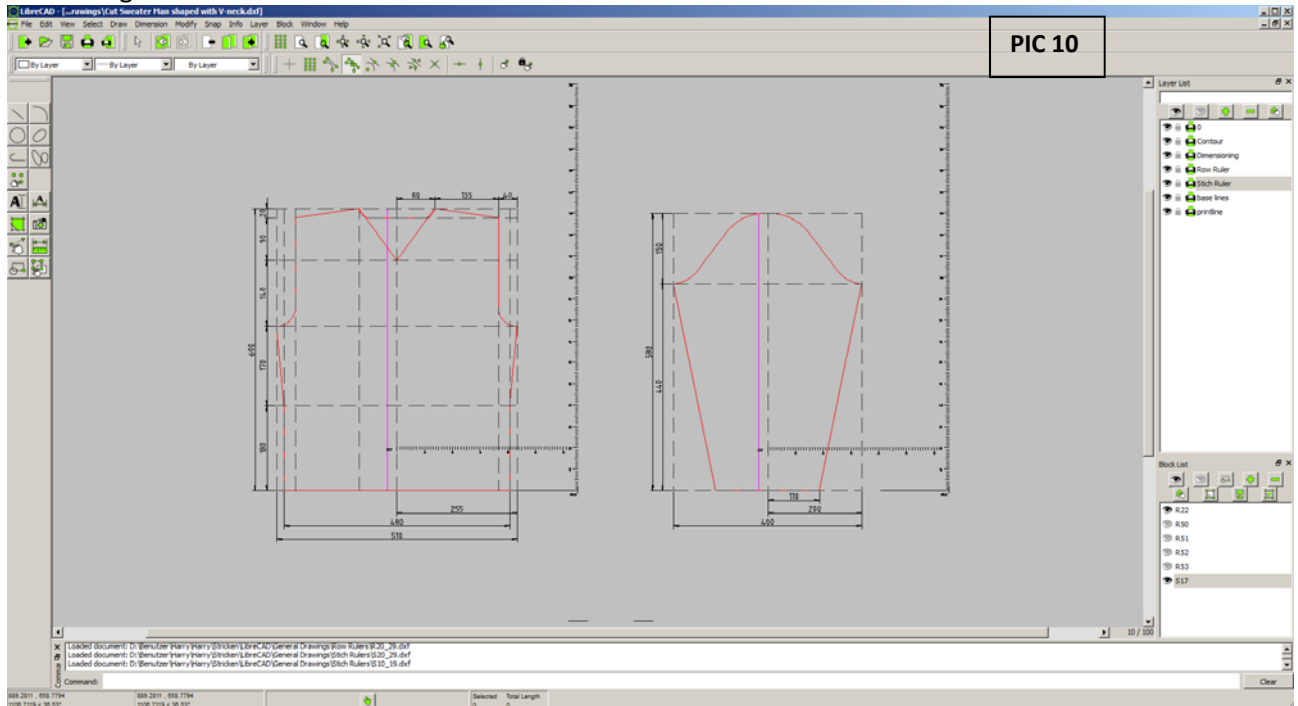
Now we need stitch ruler 17. The same procedure:

File, Open, ...Your folder stitch rulers..., **S10_19.dxf**

We have opened now 3 drawings. You can check that by clicking on „window“

Copy and paste the same way as the row ruler, but paste it with ONLY “snap Entity” to the vertical center base line.

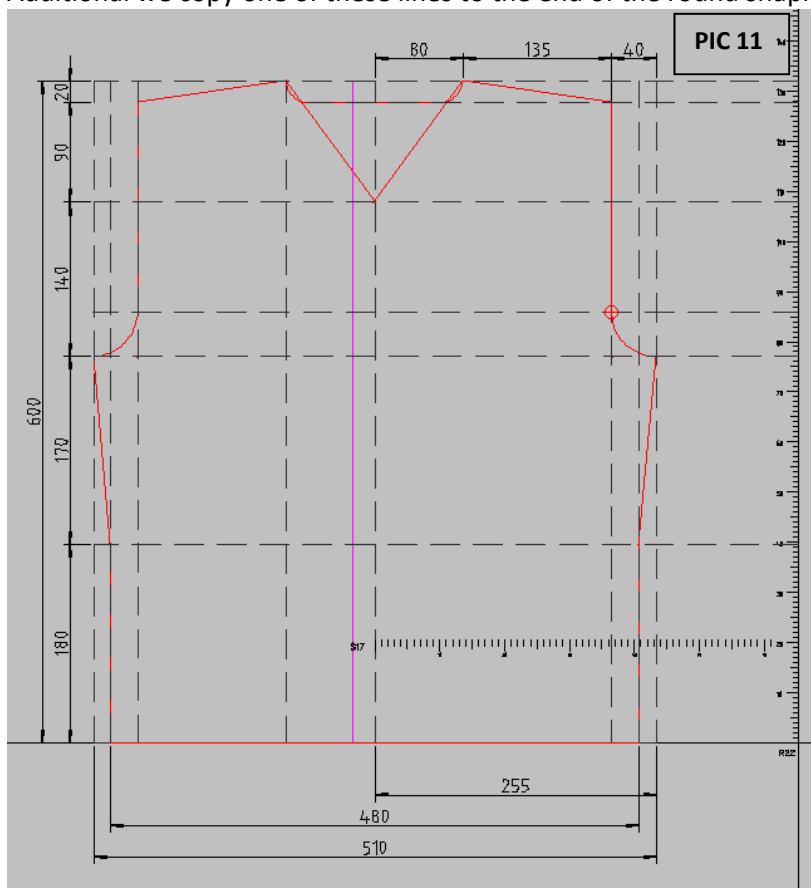
Then “Insert active block” to the vertical center base line of the sleeve. Your drawing should look now something like:



You see the new layer “Stich Ruler” (automatically edited by inserting the block). These stich-rulers can be moved along the centered vertical base line or additional inserted at distinct points to see how many stitches you need at the distinct point.

To get some help for the positioning of our trim the base lines to the short vertical line at the row ruler. To be able to read the number of the distinct rows of the raster.

Additional we copy one of these lines to the end of the round shaping of the arm hole.



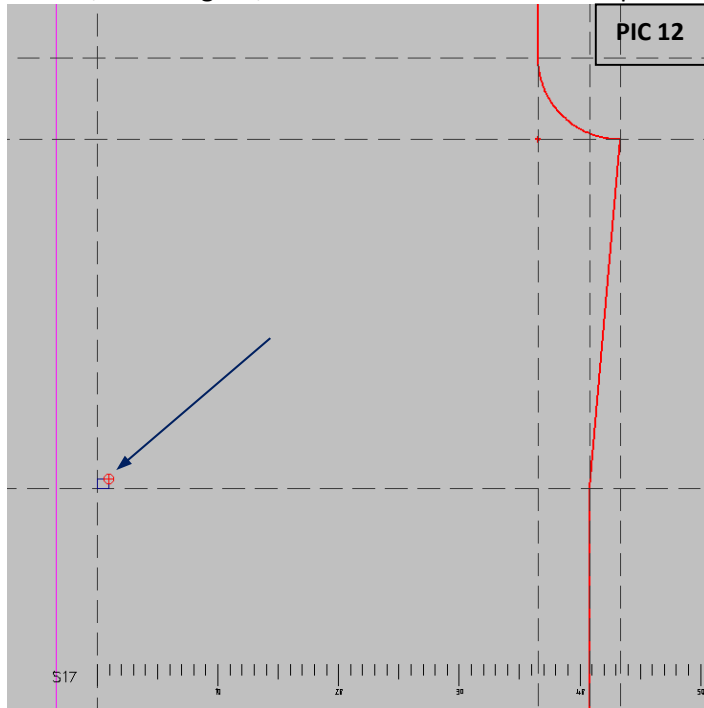
Now we create the grids for the shaping. First we have to calculate the stitch size in mm.

We have 17 stitches/10 cm that means $10/17 = 0.5882\text{cm}$ or 5.882mm

We have 22 rows/10 cm that means $10/22 = 0.4545\text{cm}$ or 4.545mm

We draw one mesh at the center base line in height of the start of the side shaping. Snap ONLY intersection.

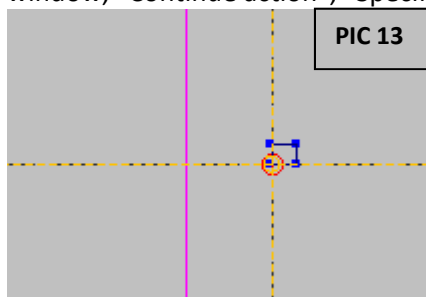
“Lines”, “Rectangles”, activate command line with space key, type “@4.54545, 5.88235



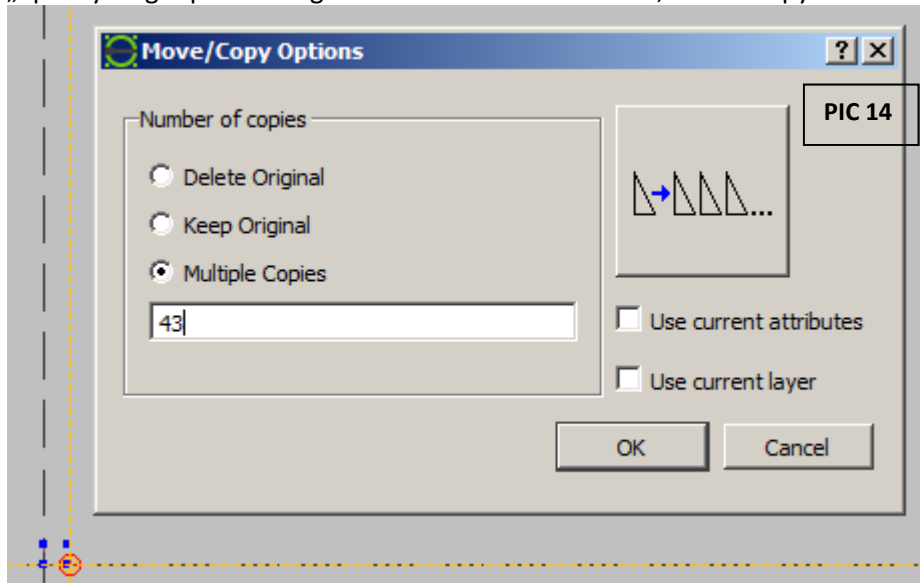
The stitch ruler tells us that we need 44 (or 43, that is your decision) needles. Therefore we multi copy the mesh 43 times.

“Modify”, “Move/Copy”

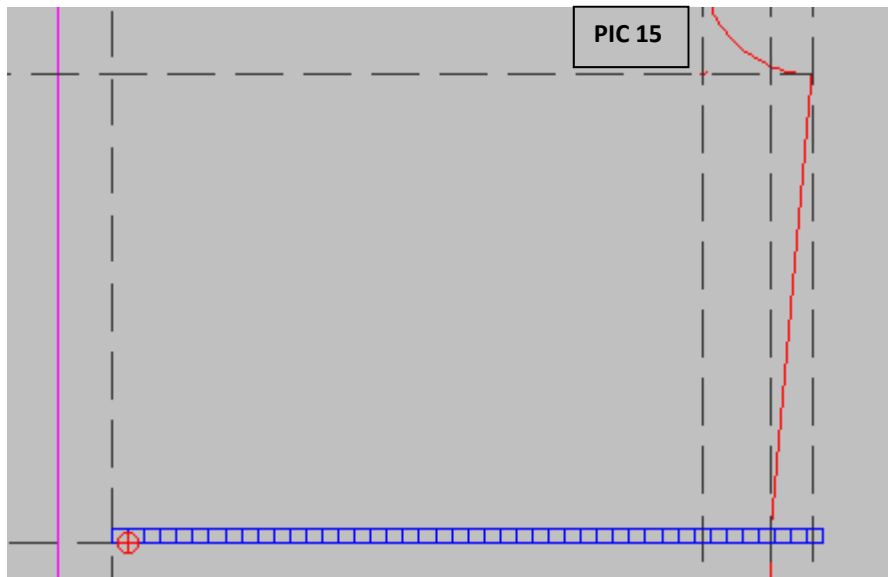
Or better with a shortcut: type “mv” and you get command move/copy direct. Then select the mesh with window, “Continue action”, “Specify reference point” = left down corner of the mesh



„Specify target point“ = right down corner of the mesh, “Multi copy” = 43

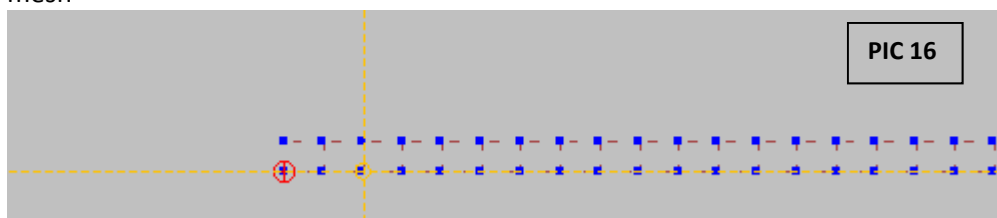


We have a row with 44 mesh now

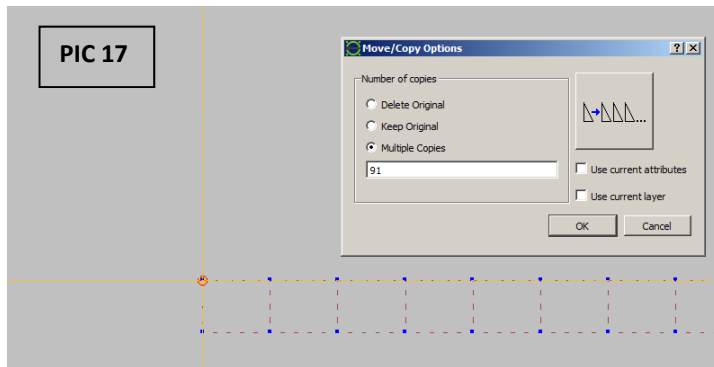


The row ruler tells us that we need rows from row40 until row132. That means 92 rows. We multi copy the 44 mesh 91 times. To be sure to copy only the mesh and no other parts we hide all layers and show only layer grid.

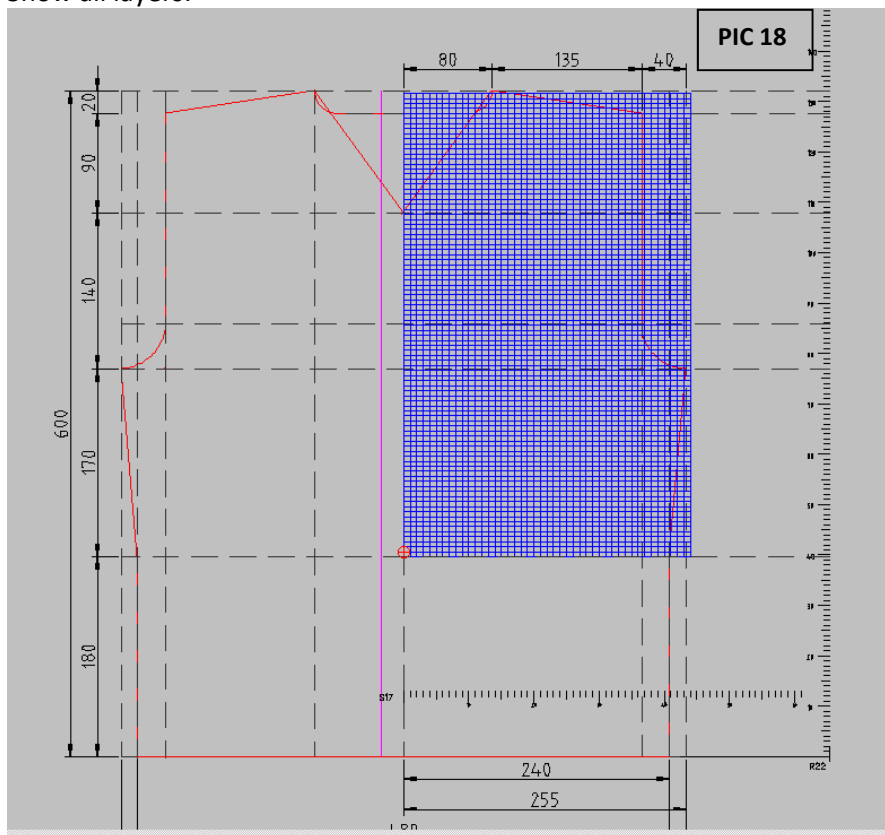
Type “mv” , select by window, “Continue action”, “Specify reference point” = left **down** edge of the left mesh



“Specify target point” = left **up** edge of the left mesh
 Multi copy = 91

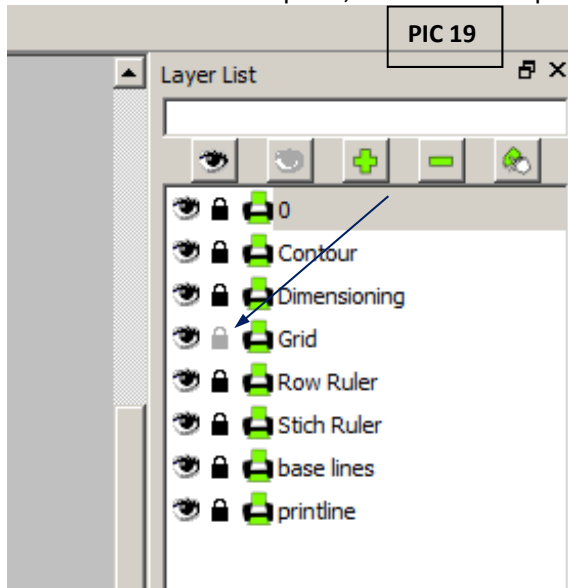


Show all layers:



We have created a grid over all interesting parts of the body. Now we delete the not interesting parts of the grid to get more transparency.

To do not delete other parts, but still see all parts of the drawing we freeze all layers but layer grid:

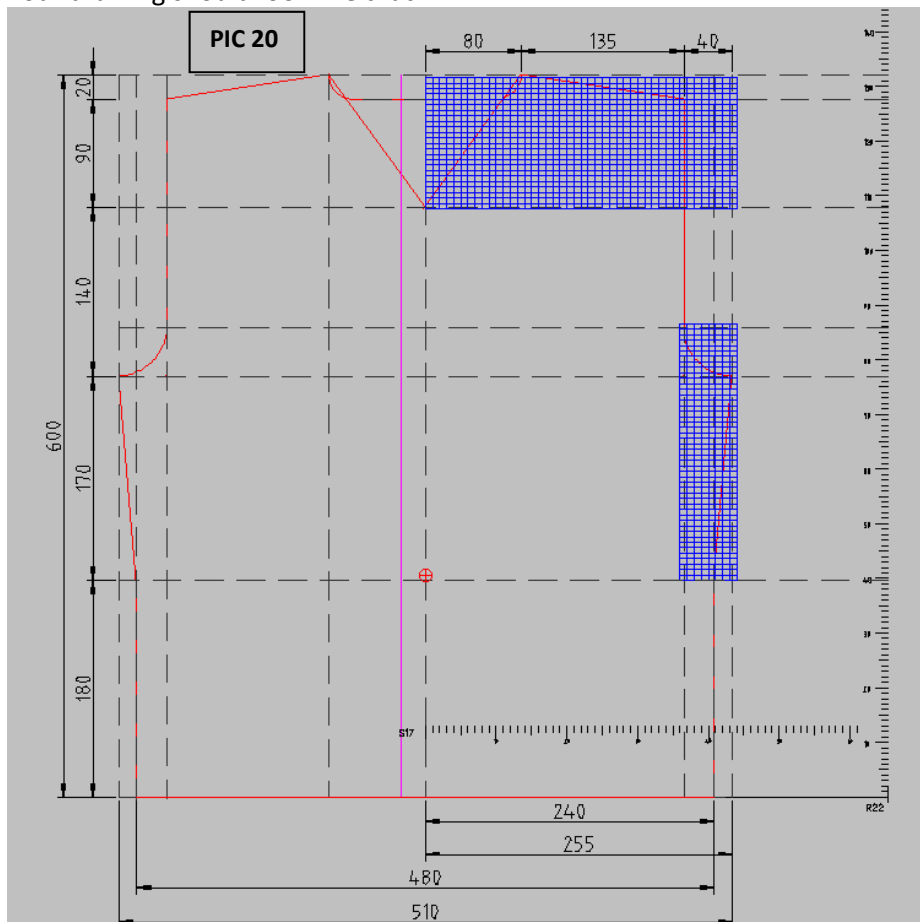


Then we delete the unneeded parts as follows. Please remind:

- a window opened from right to left deletes all **included and touched** parts
- a window opened from left to right deletes **only complete included** parts

I advise to start with rough deleting from left to right and then fine deleting the rest of the remaining lines from right to left.

Your drawing should look like that:

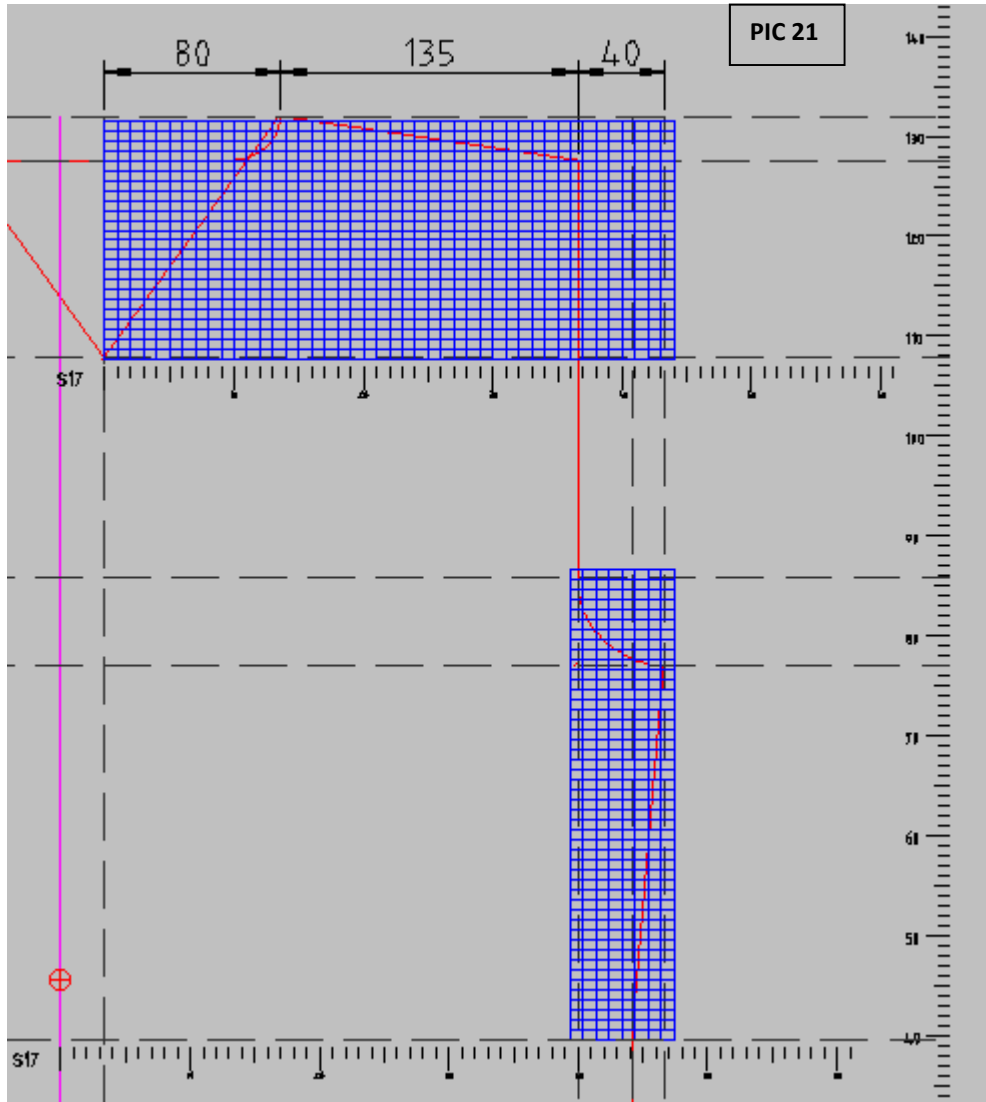


Now we

DEFREEZE ALL LAYERS!! Otherwise you can not work with them

Now we move the stich ruler up to the start of the side shaping with “snap on entity”. Entity= center base line.

And we activate block S17 and insert the active block nearby the upper grid, “snap on entity”. Entity= center base line



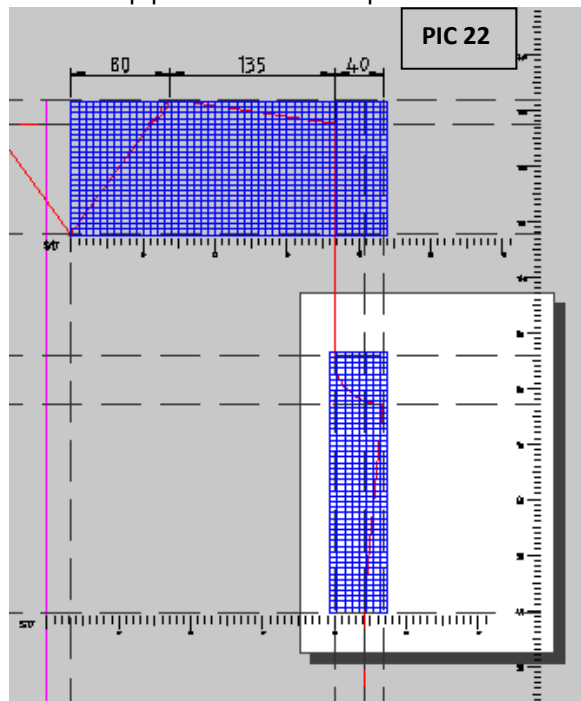
Additional if you want to get more transparency you can modify each tenth line wider or in a different color.

Or you can draw additional lines from grid to row ruler each tenth line.

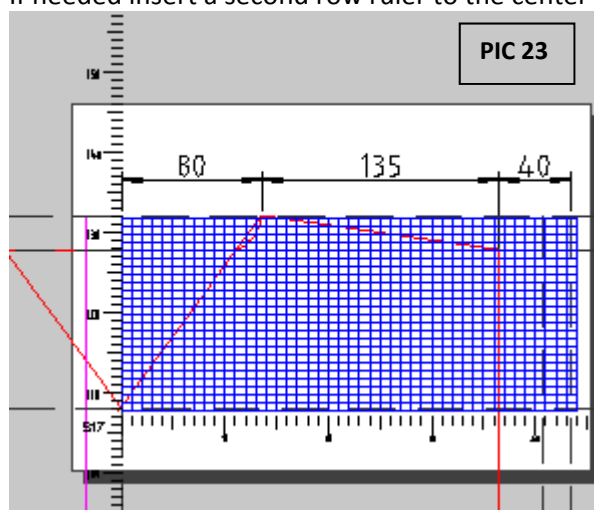
Find your own way.

Put a grid onto the sleeve in the way you like. You know the principle now!

As last step print the relevant parts. Choose a scale that fits for a max blow-up:



If needed insert a second row ruler to the center base line to get a better blow-up:



FIND YOUR OWN WAY!!

Finish of Lesson 3

HAVE FUN!