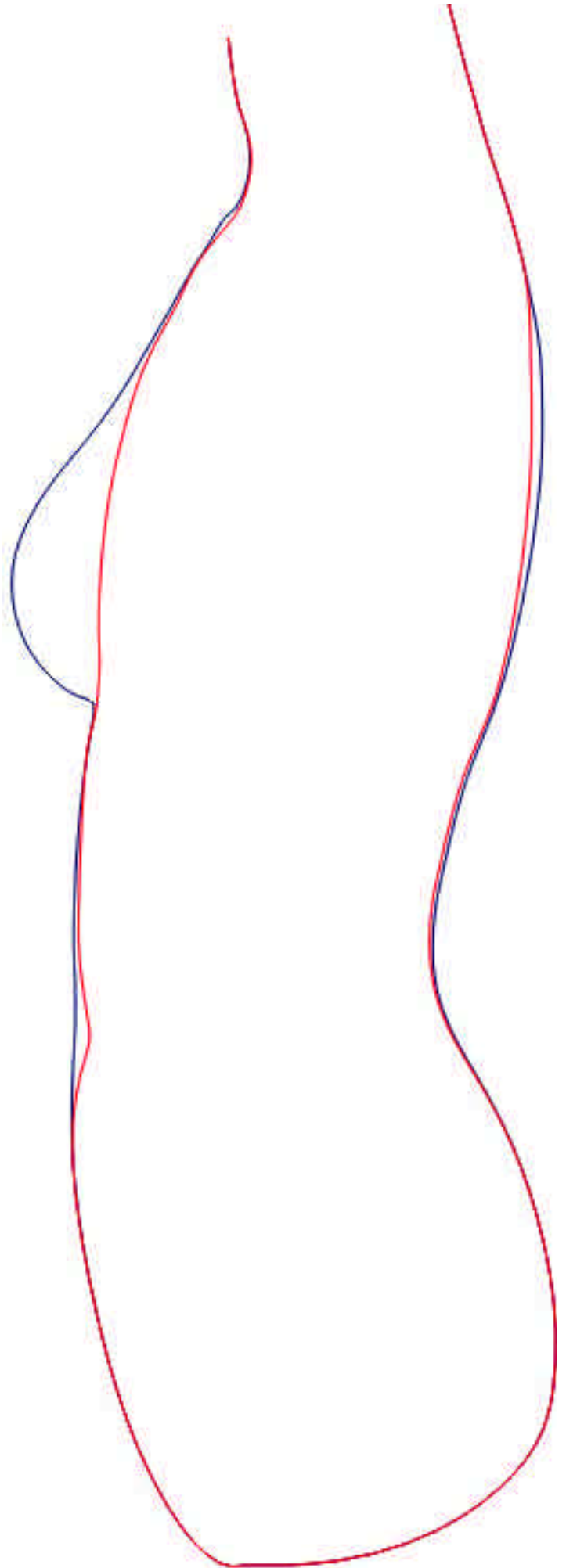


Body modelling tutorial (continued)

The torso

Now for the torso: Step 1.- draw these profile curves in the side window. Note that the dark blue one is indicating the silhouette, and the red line is marking the centerline cross-section.



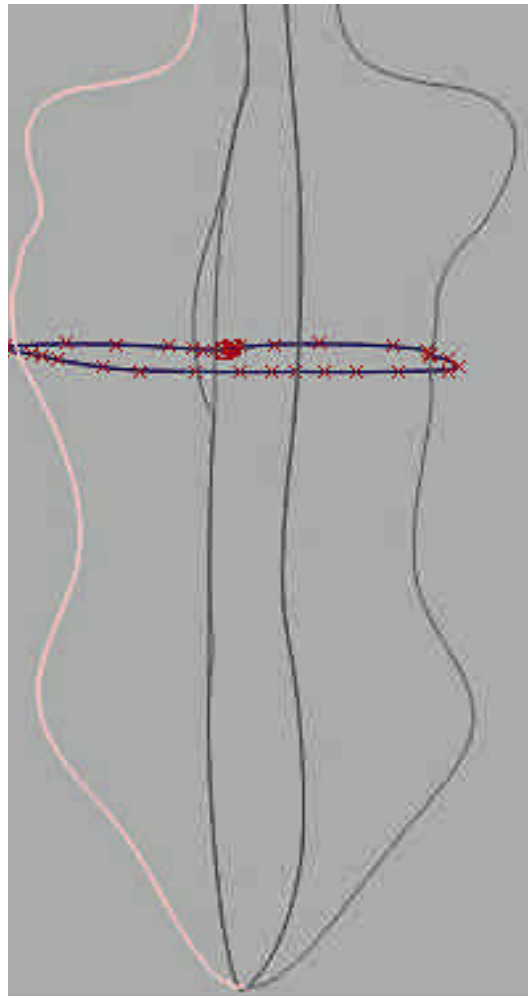
Step 2. - Also draw profile curves in the front window, as in the screenshot below, centered symmetrically around the first ones of course.



Step 3. - These 'side-profiles' can also be curved in the Side window if you like, instead of being straight lines, so that they lie along the parts of the torso they describe - look at the lower right quadrant on the side view screenshot at right (the one with the red arrow). Although I don't think it's vital to the next step.

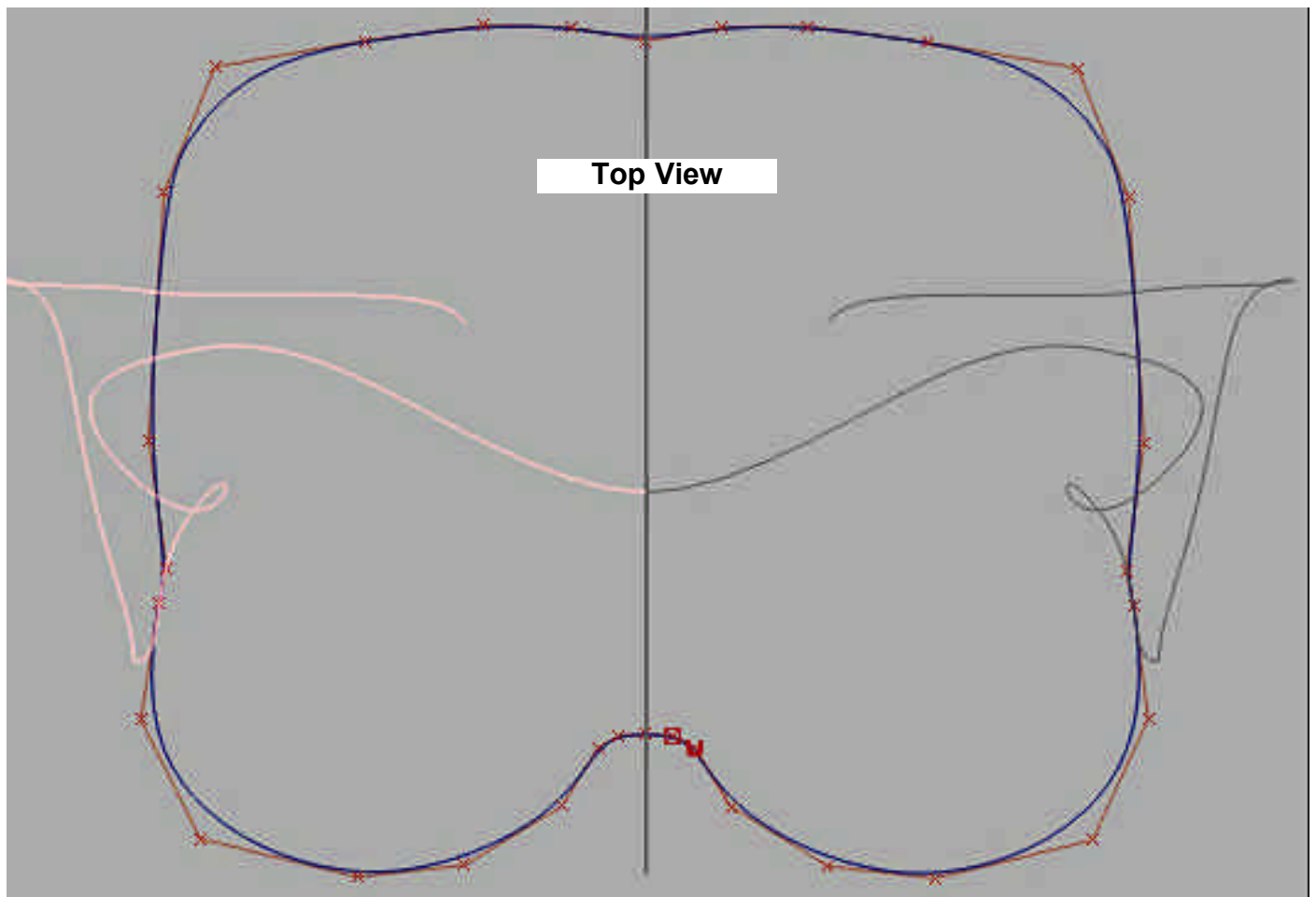


Side View



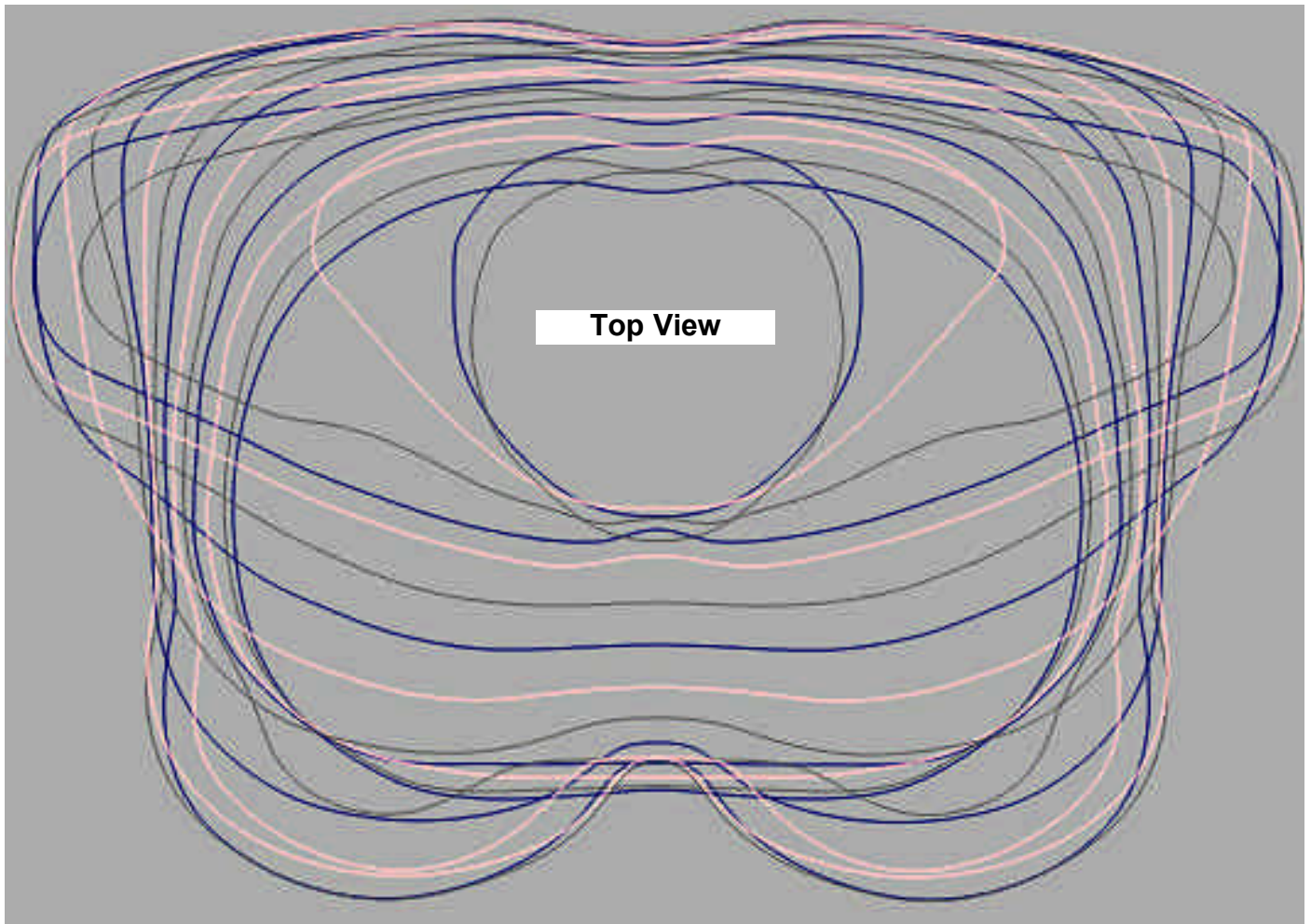
Perspective View

Step 4. - Then draw the first horizontal curve at the region of most complexity, center of the breasts. You shouldn't need more than 32 or 34 cv's at most. (Note: it doesn't matter much, but I made a bad choice in where I started and ended the curve - I suggest you try and start it along the spine instead.)

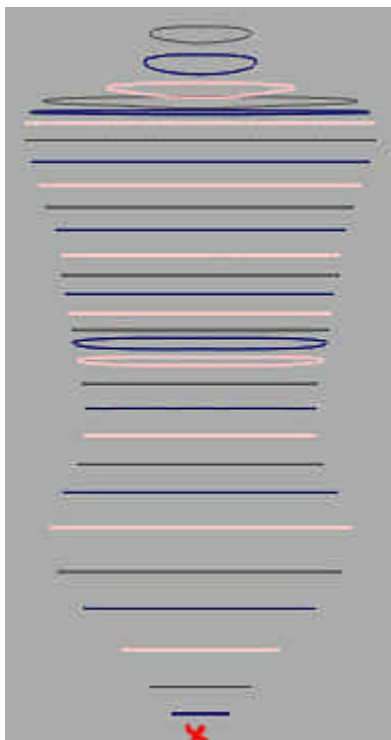


Top View

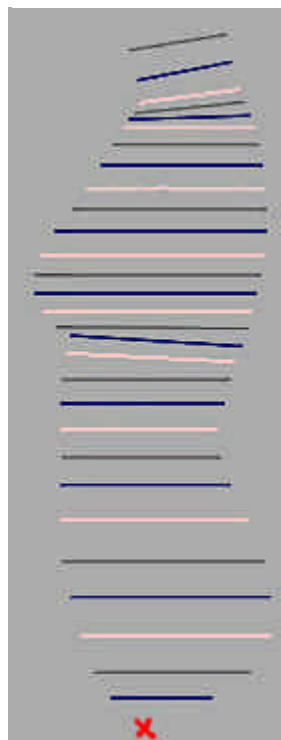
Step 5. - Then copy and edit this curve like we did before into these new curves, in these positions. Note that some are slightly skewed. I've colored the curves different colors to make them easier to tell apart. In the top view there are two images, one showing the top half of the torso and the other the lower half. The red cross shows where you must put an additional curve, shrunk almost to a point.



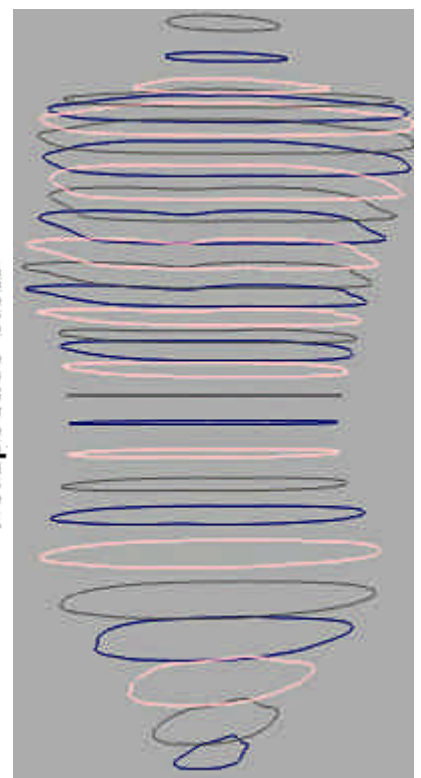
Front View

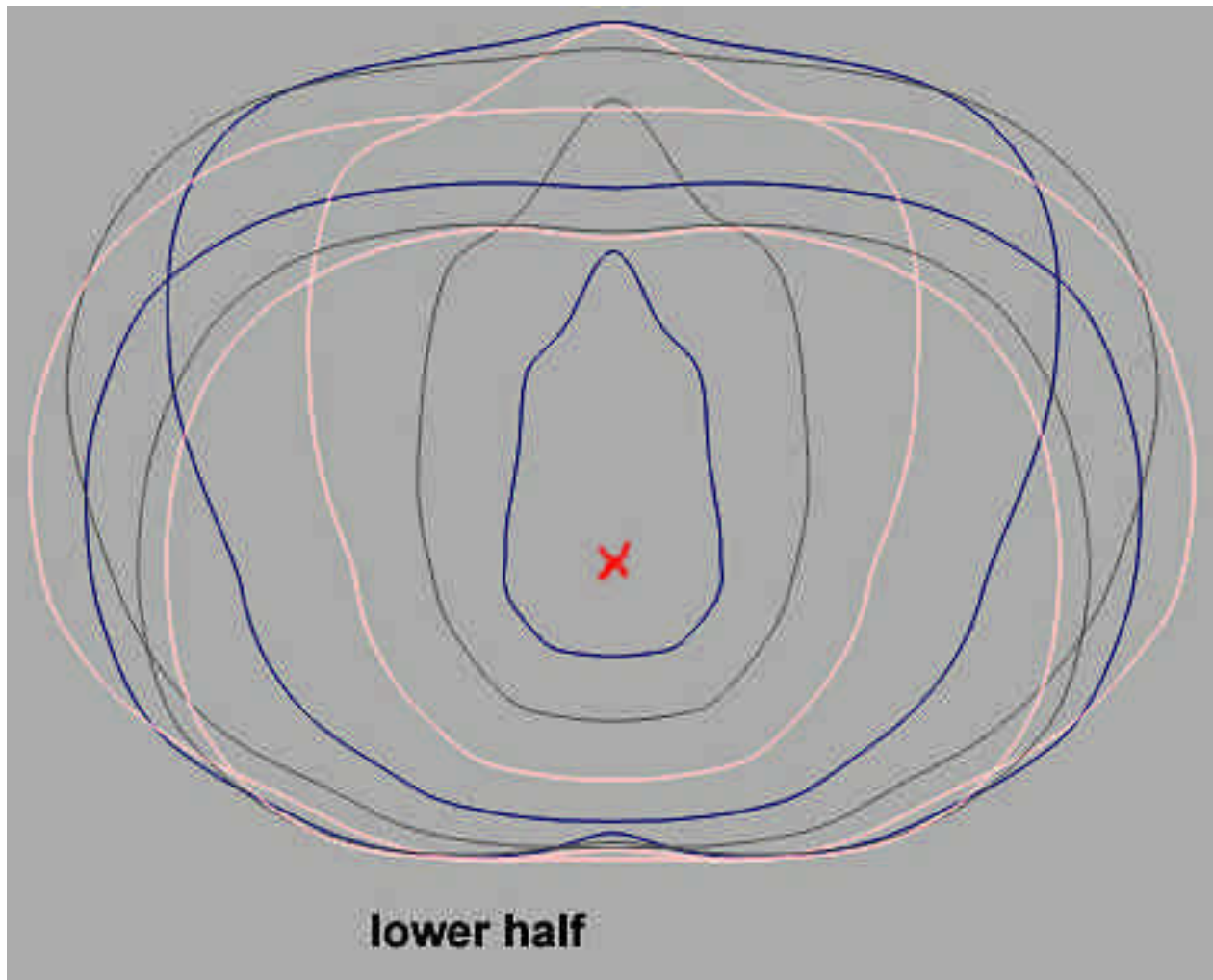


Side View



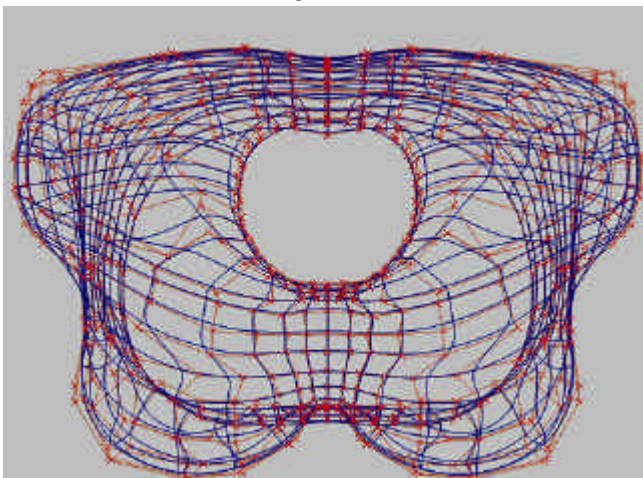
Perspective View



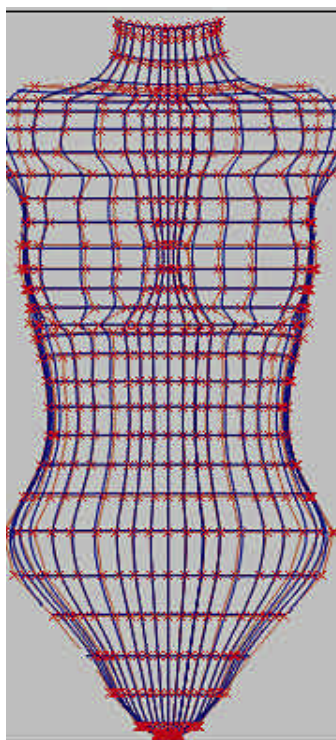


Step 6. - Now loft all the curves together, and it should look roughly like this in wireframe once done:

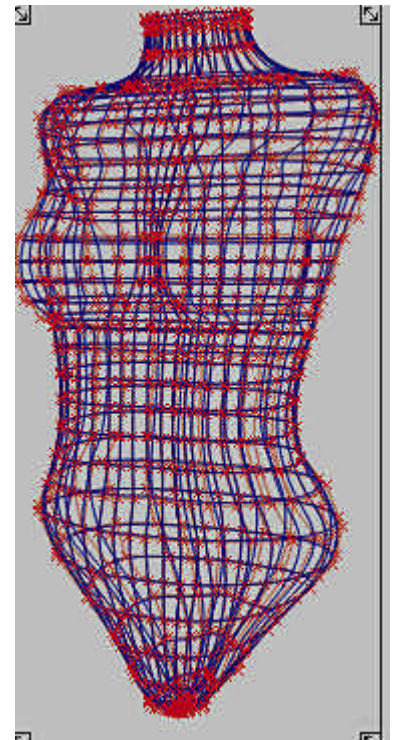
Top View

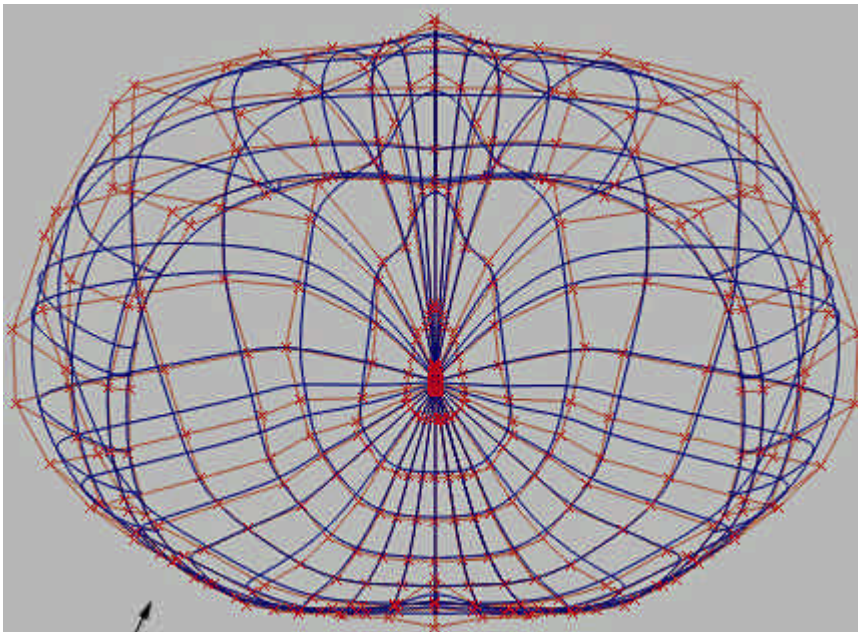


Front View

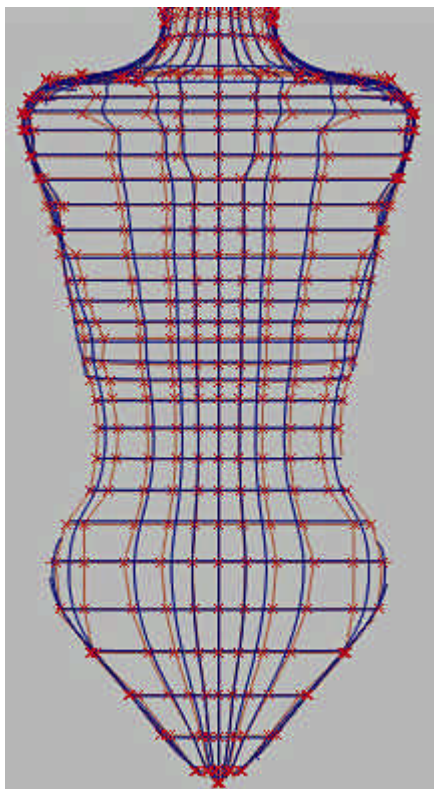


Front View





Bottom View / Lower Half



Back Half

Step 7. - You will notice some zig-zags in the cv hulls (in the front and side windows but mostly the top window, at the collarbones), these usually indicate a problem when they are found right after skinning like here.

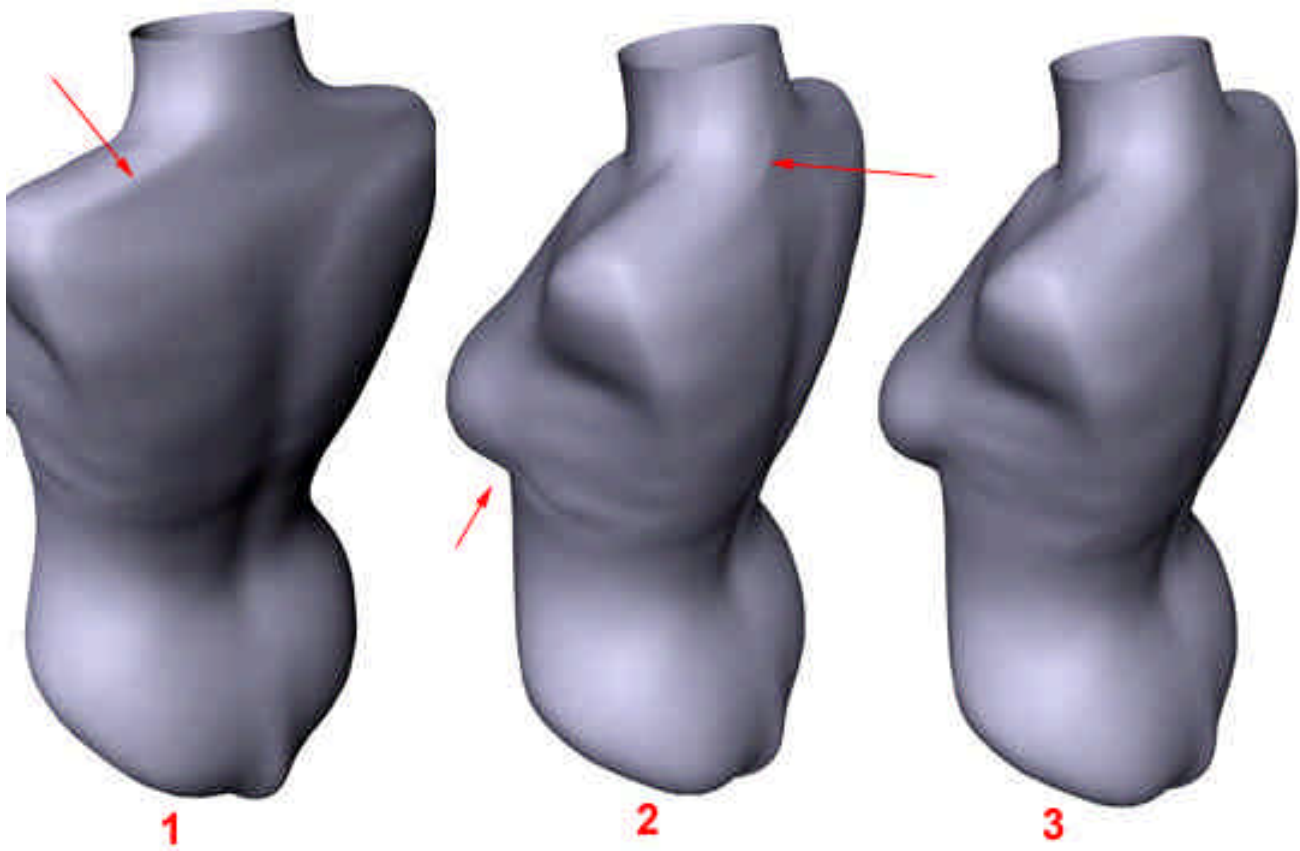
If you have access to it, use PA's 'Move CV-Normal' tool, if not there's a Maya 1.5 plug-in that does it.



Step 8 - You can see that the collarbones need some editing, the bellybutton should go deeper, and perhaps some smoothing here and there. Test render from all angles, use reference when you edit.

Here's a rendering from the back, with 3 stages of development. The red arrows indicate problems that have been adjusted in the next image. The tail-like thing at the bottom is not a mistake, it is needed in certain extreme poses with the legs.

You can see here that whenever the parameterisation of the surface 'goes against the grain' of its topology, like when you try to do perfectly round breasts using a square horizontal-vertical grid, you are working uphill. Ideally the breasts should be done using a spherical parameterisation, but then we need at least 2 more separate surfaces for this body, maybe more including blend-surfaces... another problem that would be solved beautifully by h-splines or subdivided surfaces.



You can of course stop here, or keep on editing forever, that must be up to you. As I've said before, this is not an exact science, but an iterative process where you close in bit by bit on an elusive ideal, each step getting smaller as you approach, so that you reach a point of diminishing return after a while - it is literally possible to go on editing forever.