

## Project Based Tutorials - Human Modeling: Meissie

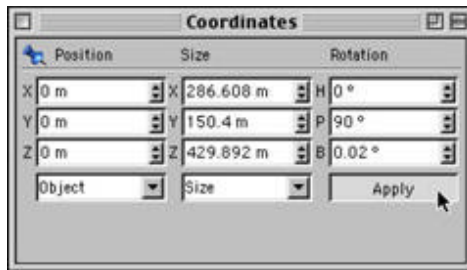
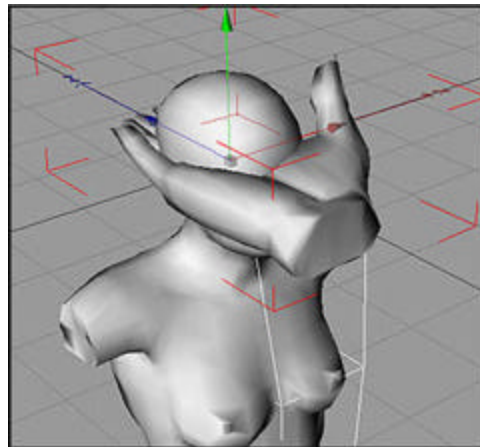
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**Human Modeling: Meissie:  
Modeling The Arm****Works with:**  
XL**Requires:**  
Version 6+

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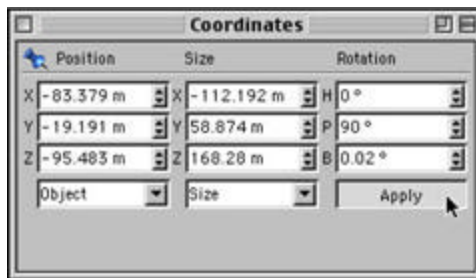
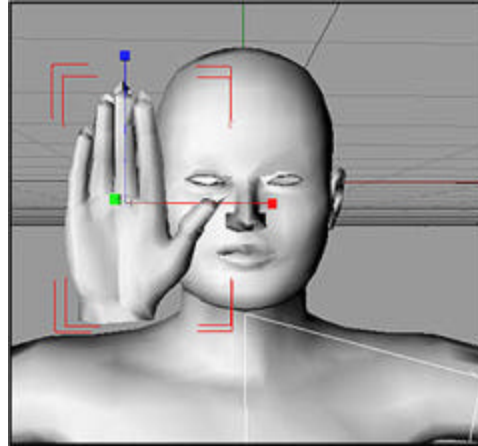
In this part of the tutorial you are going to connect your hand to the body.

**Step 1:** Open your hand scene (File=>Open) and copy the hand object (Edit=>Copy). Then open the body scene (File=>Open). Paste the hand object into the body scene (Edit=>Paste). When you have pasted the hand in your body document, you will find that it's rather large.



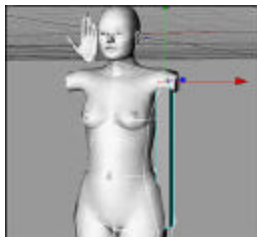
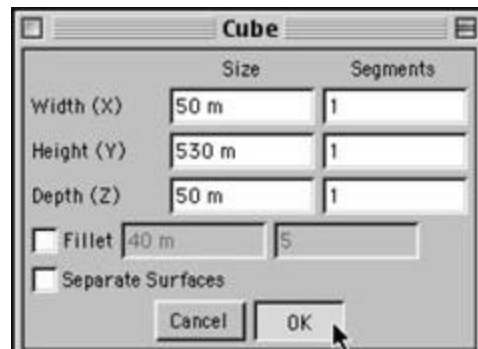
**Step 2:** The hand should be approximately the same length as the distance from the chin to the hair border on the forehead. With the hand active, enter 90 degrees for P under Rotation in the Coordinates Manager. Click Apply.

**Step 3:** Select the Scale Tool (Tools=>Scale) and scale your hand down until it is about the right length. You can scale this hand up or down later if you need to.



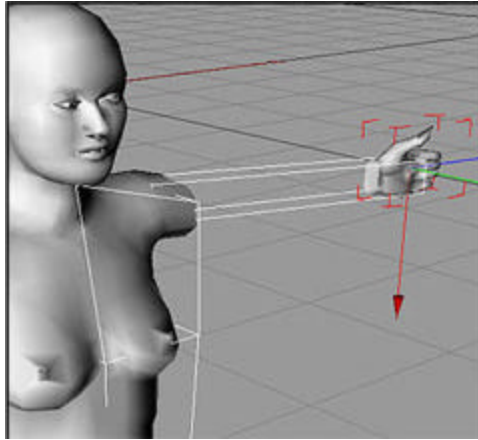
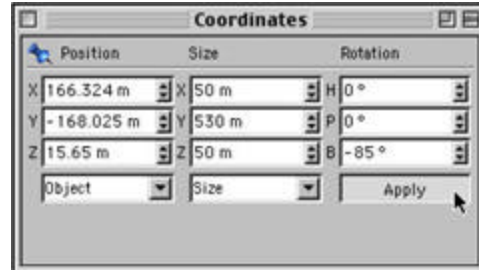
**Step 4:** You modeled a right hand but need this to be a left hand. All you have to do to accomplish this is put a minus sign in front of the X Size in the Coordinates Manager and click Apply. Don't forget to reverse the normals of the polygons (Structure=>Reverse Normals), since they are now facing inward.

**Step 5:** To make modeling the arm a bit easier you will first create a guide just like you did with the body. Create a new Cube (Objects=>Primitive=>Cube) and input the settings as shown. Click OK.

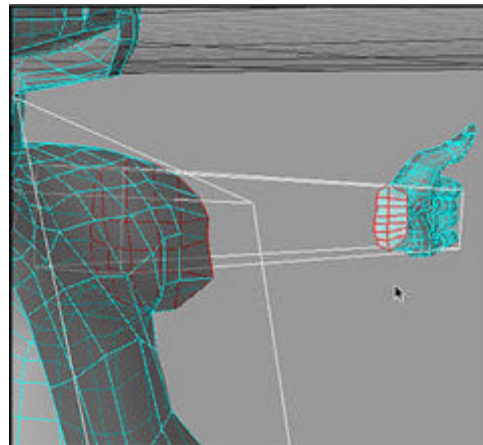


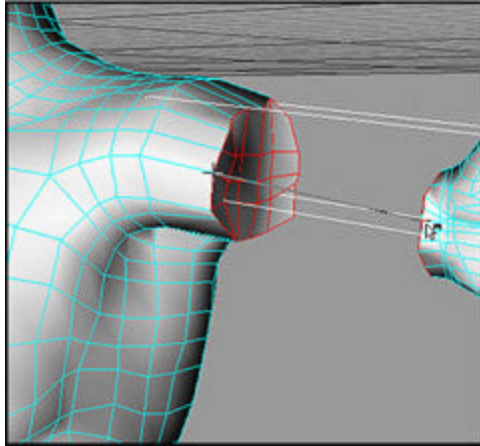
**Step 6:** Make it editable (Structure=>Make Editable) and place the axis on top using the Object Axis Tool (Tools=>Object Axis), or you can use Paul Everett's Dynamic Axis Plugin to accomplish this in a breeze. Place the Cube as shown.

**Step 7:** The axis should end up where you expect the rotation point of the arm to be. The bottom of the Cube should end up next to the hip bone. Depending on your model this can differ slightly. Next rotate the 'armguide' -85 degrees on the Z axis (B) and place/rotate the hand at it's end in such way that the fingers are just outside it's boundaries.



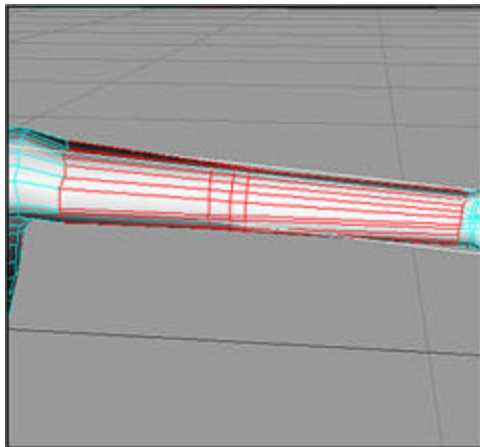
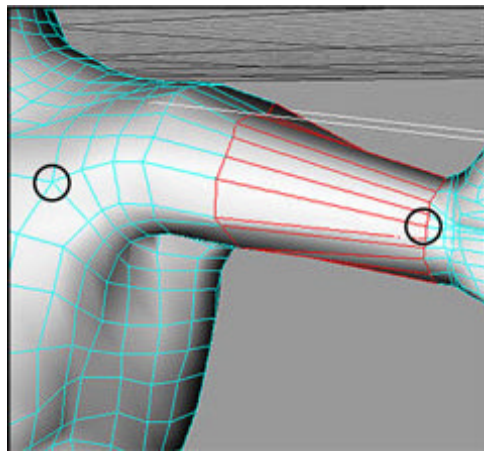
**Step 8:** Before you can bridge the hand to the arm you need to connect the two into a single polygonal object. Group the hand and body by going to Objects=>Group Objects in the Object Manager. Then go to Functions=>Connect. This creates a new mesh. Save the grouped body/hand in the 'bodybackup' and continue with the new created mesh. Select the polygons on the end of the stump and wrist of the hand.



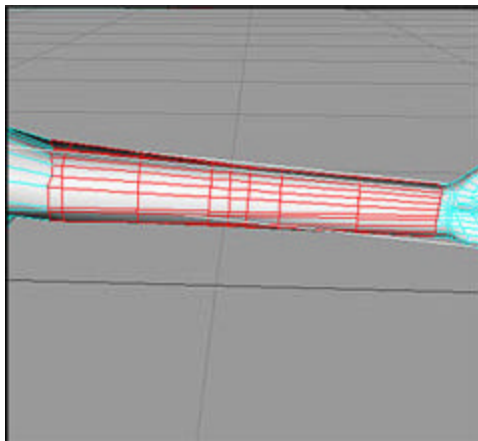
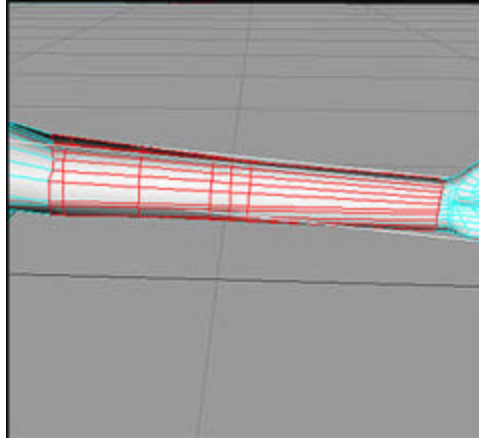


**Step 9:** Make the Bridge Tool active (Structure=>Bridge) and connect the stump with the wrist (for the sake of the screenshots the hand was moved towards the stump).

**Step 10:** The middle of the pentagon should be connected to the middle of the hand. With the Knife Tool active (Structure=>Knife), cut the arm three times in the middle. These polygons will form the elbow.

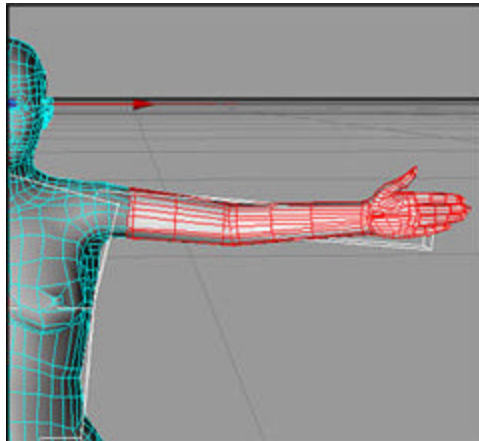


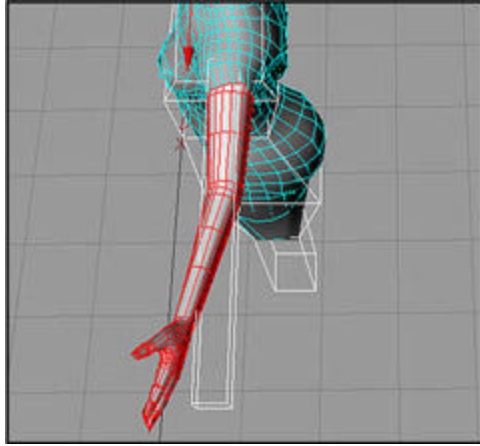
**Step 11:** Next cut the upper arm twice. Make the first cut next to the 'stump' and the next one more in the middle. Note: These two edges were shifted up toward the elbow during modeling.



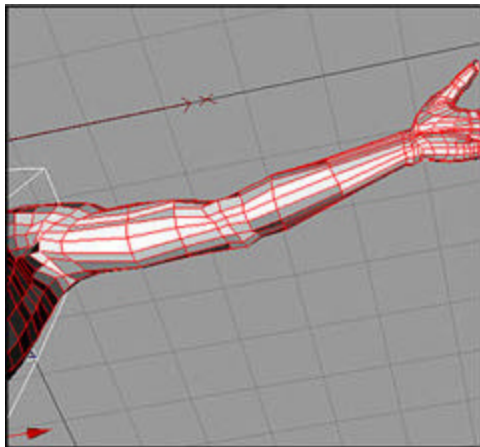
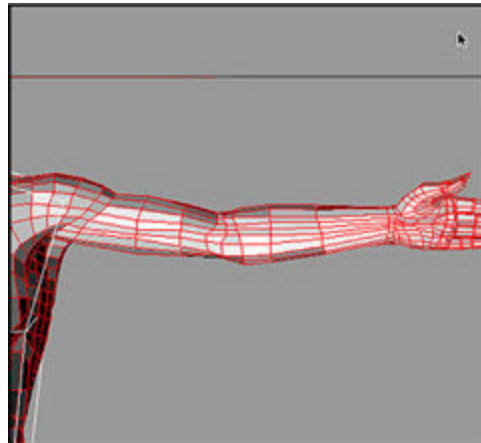
**Step 12:** Use the Knife Tool to cut the lower arm twice as well. Make the first cut in the neighborhood of the elbow and the other in the middle of the part that's left. With these polygons you should be able to model the arm. Feel free to add more polygons with the Knife Tool when you feel the need for more detail.

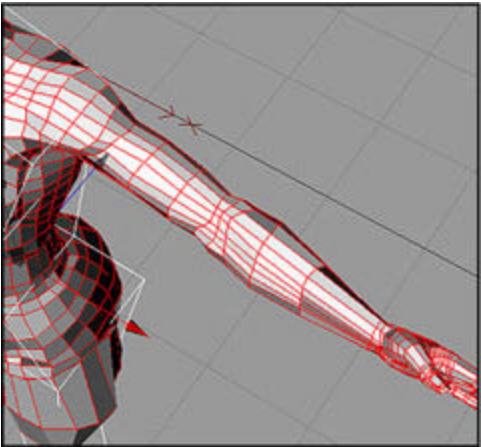
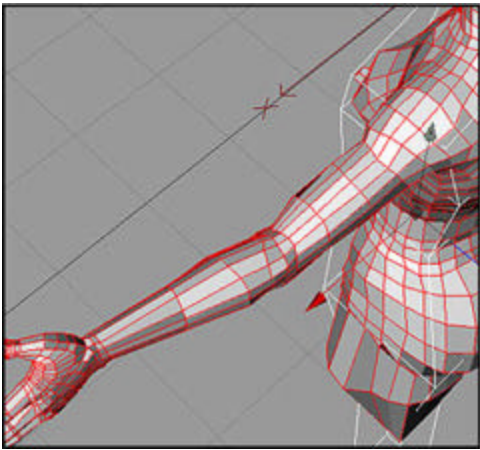
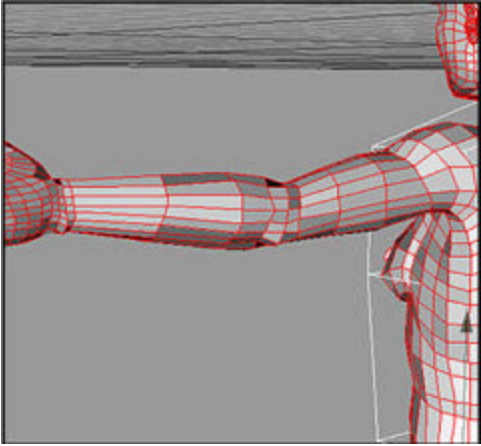
**Step 13:** Before you start to model, give the arm a more relaxed look by rotating the lower arm (including the hand) a bit.



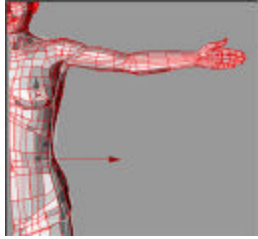


**Step 14:** Also, drag a copy in your 'bodybackup' and save your work. The next few pictures show where the polygons in this arm tutorial ended up. Success!









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For more information email: [info-usa@maxon.net](mailto:info-usa@maxon.net)

**MAXON Computer, Inc.**

2640 Lavery Court, Suite A | Newbury Park, CA91320  
Toll Free 877-2ANIMATE | 805-376-3333 | Fax 805-376-3331

**MAXON Computer, GmbH**

Max-Planck-Str. 20 | D-61381 Friedrichsdorf | Germany  
Tel. +49 6172 5906-0 | Fax +49 6172 5906-30

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