Multi-Rig Usage Guide

By Sel#6068

This guide covers setting up and using the Multiple Bodies Rig (which can be downloaded via Mega or via Mediafire). The rig was originally made for the Curvier Bodies v3 mod, but can be used for Tight & Firm (by TitanFirm), and BBWVR (by Natyusha) mods, which have morph targets included in the rig. It can also be used for any other Titan Firm morph rig body mod as well. It can also be used for other gear or body mods, though the morpher setup will not be applicable to those.

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- 3. <u>Using Animations</u>
- 4. Saving and Loading Weights
- 5. Normal Targets and Fixing Seams
- 6. Importing Other Gear into the Rig
- 7. Exporting From the Rig
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- 7. Baking Animations/Bone Changes
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Rig Setup and Explanation

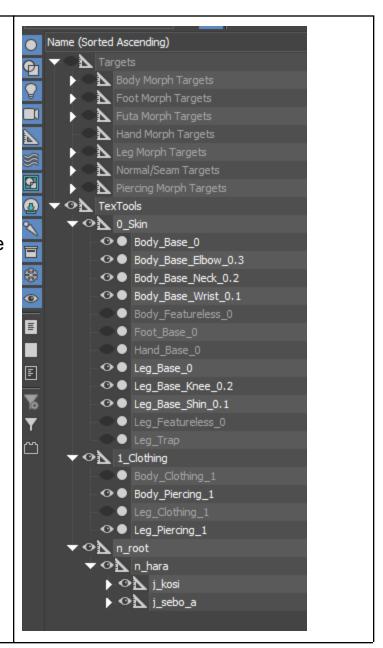
First off, Unzip the rig zip in whatever folder you like, and open up the CurvyRig.max scene in 3DS Max (2018 or higher).

The materials should automatically load, so you should be looking at a textured body. If they did not, see the appendix on fixing and loading materials <u>here</u>.

In the rig, there are many hidden objects, and the naming is not the same as standard exports from TexTools, so we'll walk through what all the items are, to get you familiar with how the rig is structured.

First, the 'Targets' Grouping - These are Morph target for driving Morphers. These should never be shown when doing an export, and generally will be hidden unless you're making a custom body mesh. You can comfortably keep this group collapsed and hidden.

Next, we have the main TexToools grouping. This grouping contains all the meshes and bones we will potentially be importing into TexTools. Anything you want to import goes in here somewhere. (This is the 'upaxis' group)



Next, you'll notice that there is a 0_Skin and 1_Clothing group. These house the actual exportable Player body and clothing meshes. Theses group names are *completely arbitrary*, you can name them "Potato" and "Pinata" if you want; the only requirement is that when exporting into TexTools, all the mesh parts in a mesh should be in the same parent group. (You can also just have all the meshes in a single group if you prefer that).

I named them with the 0_ and 1_ prefixes for convenience and so they sort nicely in alphabetical order.

In these groupings, the meshes themselves are named for convenience. The important thing to know with naming meshes for TexTools is that they must in _X.Y where X is the Mesh number and Y is the part number for the model (The ".Y" part is omitted if it is 0).

Additionally, if exporting with two meshes with the same name, you will get errors in TexTools, even if one of the objects is hidden. *Your Meshes should always have Unique names.*

Lastly, we have the standard bone structure for the full body (sans head) of the standard female non-lalafell character. These bone names should not be changed, as they are read per-name by TexTools.

Using Morphers

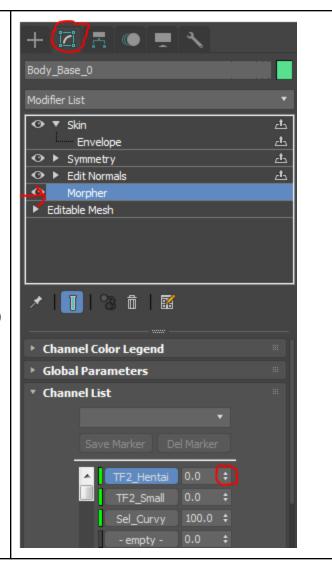
This rig comes equipped with a number of Morpher modifiers and Morph Targets to drive said Morphers. That may sound complicated, but in practice, they're actually very simple to work with.

Let's look at the Body_Base_0 mesh to start. If you notice in it's modifier stack on the right side, it has a Morpher modifier. Click on that modifier now.

In this modifier, you will notice there are entries in the 'Channel List' labeled after some different body mods. Go ahead and click on the double arrow next to one of them and drag your mouse up and down to change the value between 0 and 100. (Circled in the screenshot at the bottom). Notice how the mesh deforms based on your selection.

This is all there is to using Morphers.
Those entries in the Channel List are
pointing to the Morph Targets mentioned
before. (Remember those from the intro?)

Let's take a look at those now. Go ahead and hide the Body_Base_0 mesh, and open up the Targets group.

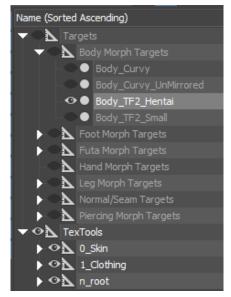


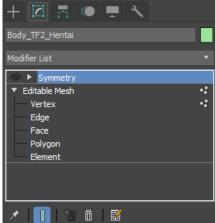
Open up the Body Morph Targets grouping, and show the Body_TF2_Hentai mesh. You should now see *half* a body in the viewport. This mesh is one of the *Morph Targets* we use to drive the Morpher modifier on the main body mesh.

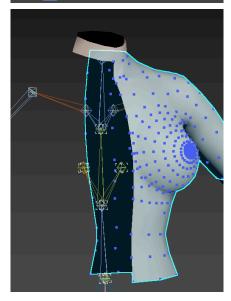
Morph targets are simple per-vertex copies of a mesh, that then have those vertices moved around into new positions. In this case, the bust is bigger and shaped differently.

Morph targets in this Rig also use half-bodies for the main body parts, which is then mirrored over afterwards to prevent symmetry mistakes. There are hidden Symmetry modifiers on the chest Morph targets, which you can turn on if you would like to look at the full version. These modifiers should be turned off however when you're not actively working on the morph targets.

In most instances, you will probably not be working directly with the morph Targets, but it's good to know they exist, and what they do. For now, go ahead and hide the TF2 Hentai mesh again.





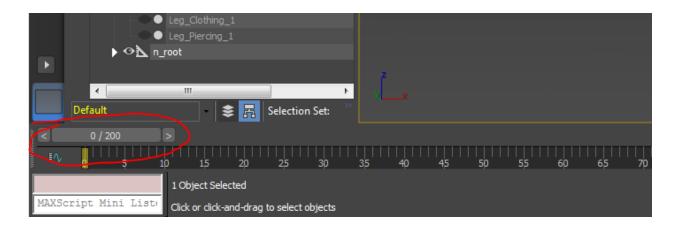


Using Animations

This rig comes equipped with a set of animations for testing to make sure your gear or body looks correct and does not clip even when animating. *These animations are not exported into the game, and are only used for testing in 3DS Max*.

For this tutorial, turn on the all the Body_Base_ and Leg_Base_ Meshes if you do not already have them shown/visible.

Animations can be scrolled through via the Time Slider at the bottom of your 3DS max UI (by default).



Go ahead and click and drag the circled slider, and slide it slowly along to the right. Notice how the body animates various states as you move it along. This is all you need to know to use the basic animations, there are some caveats to keep in mind, however.

- 1. Always restore the time slider to 0 before Exporting, Skin Wrapping, or creating a Skin Modifier.
- 2. The animations are driven off the bones in the file. So they will work for anything that uses those bones. If you import a new set of bones, they will not animate those bones. (See: Importing into the Rig)

Now, a list of animations in the rig, for your convenience. Animations are structured under the assumption you are looking at only the upper body or lower body at once, as most items only take up the slot of one or the other.

Upper Body:

- 1-20 Standard Bust Sizes. 0 is default 50 Slider. 10 is Min Slider, 20 is Max Slider.
- 21-30 Cheat Engine/Trainer Bust Size; goes up to 300% in game slider.
- 51-80 Breast bounce/jiggle test.
- 81-100 Shoulder shrug/Hakata bone test.
- 101-130 Shoulder and Hip turning tests.
- 131-190 Spine tests
- 191-200 Shoulder & Elbow test

Lower Body:

- 1-50 Splits test
- 51-100 Single leg upper bone test
- 101-130 Hip turning tests.
- 131-150 Knee Test

Saving and Loading Weights

Weights (those things that drive animation), are always a pain. This rig thankfully comes packaged with backup copies of the primary weights for all the body and clothing items. If you need a refresh on what bone/skin weights are, or how they work, or their limitations in TexTools/FFXIV, that is available in the Skin Weights appendix entry.

If you accidentally at some point blow up your skin weights (or intentionally delete the skin modifier while working on something else), there a few ways to restore them. We'll start from most precise, to least.

For all of the following options, you should make sure the time/animation slider is at 0 before you begin.

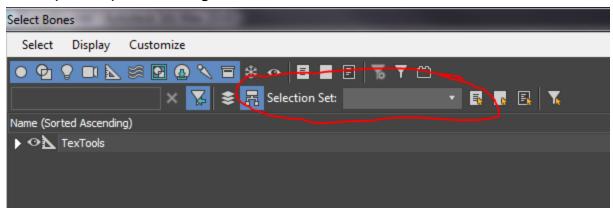
Directly Loading Skin Weights

Pros:

You will restore exactly the same weights you had previously.

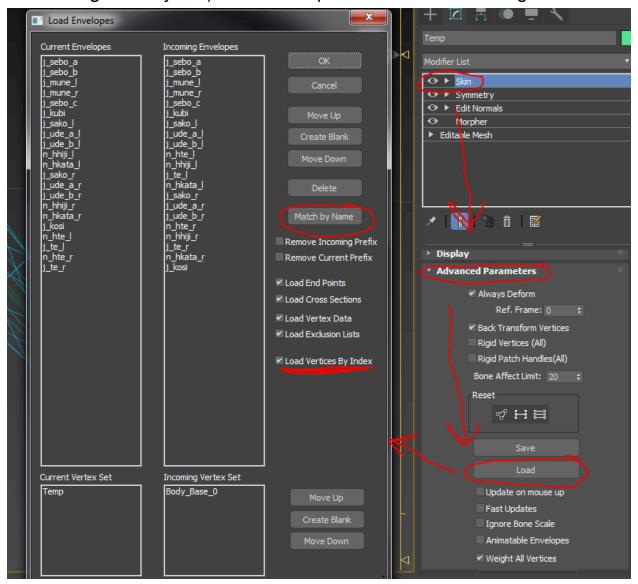
Cons:

- Requires exactly the same vertex order (Cannot have added/deleted vertices)
 OR the same vertex positions (Cannot have moved vertices).
- 1. Add a fresh Skin modifier to an item.
- 2. Under the Parameters for the Skin Modifier, press the 'Add' button, where it says Bones: [Add] [Remove]
- 3. This opens up this dialog.



4. Click the Selection Set option, and select the appropriate set for your item (ex. Feet use Feet bones). If your mesh uses additional bones/non-standard bones, manually select those in addition, then press [Select] at the bottom.

5. Scroll down in the Skin modifier and open the Advanced Parameters section. Click the [Load] Button and select the saved weight file you wish to load (ex. /Weights/Body.env) You will be presented with this dialog.



- 6. First, press the [Match by Name] button, to make sure the bones are mapping correctly to the appropriately named bones.
- 7. To load by vertex order, keep [Load Vertices by Index] checked. If you wish to instead load them by their *position*, uncheck this box. Press [OK] when you're done, and verify if weight are working correctly via the time slider animations.

Rigid Skin Wrapping

Pros:

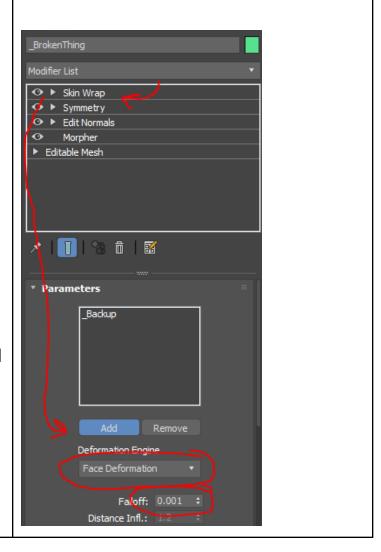
You will restore nearly identical weights to what you had before.

Cons:

- Geometry needs to be roughly the same. (Can be stretched/scaled slightly, but should be relatively close)
- Requires a weighted backup copy of the mesh to wrap from.

For both forms of Skin Wrapping, we require a base mesh to skin wrap from. If your 3DS Max scene does not include a backup copy of your mesh, you'll need to load one from another file and merge it in or vice versa. (Always keep backups!)

- 1. Delete or Hide the existing Skin modifier on your broken item.
- 2. Add a Skin Wrap Modifier.
- 3. Press the [Add] button in the Parameters section of the Skin Wrap modifier, and select your backup mesh.
- 4. Change the 'Deformation Engine' drop down to "Face Deformation"
- 5. Change the Falloff to 0.001
- 6. Click "Convert to Skin"
- 7. Verify the weights are working via animation slider.
- 8. You can now delete the backup and skin wrap from the scene if you wish. (Or just hide them)



Loose Skin Wrapping

Pros:

 Will work as long as geometry is vaguely similar, regardless of # of vertices or other changes.

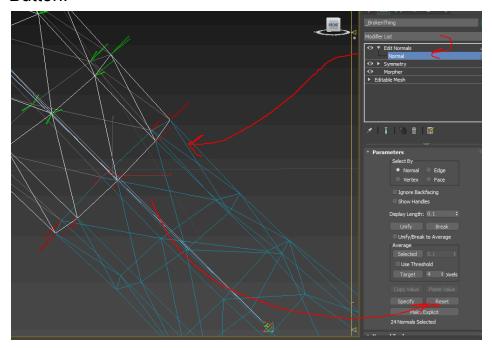
Cons:

- Weights will not be the same as the original version.
- Requires manual tweaking to get best results.
- 1. Repeat steps 1 through 4 of the Rigid Skin Wrapping version.
- 2. Instead of using a Falloff of 0.001, use a value of 1.0
- 3. Verify the quality of the wrapping via the animation/time slider.
 - a. Tweak the Falloff value to try to get best results.
 - b. You can also change over to using Vertex Deformation and try that if you still can't get an acceptable result.
- 4. When satisfied with the result, reset the time slider to 0 and click [Convert to Skin].
- 5. You can now delete the backup and skin wrap from the scene if you wish. (Or just hide them)

Normal Targets and Fixing Seams

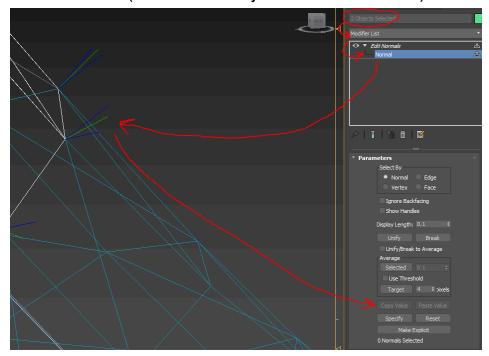
It's easy to accidentally break your normals, resulting in nasty visible seams when your item is equipped with standard gear. Thankfully, this rig includes backup copies of some of the original SE body pieces, which you can copy the normals from to fix that problem.

- 1. Add an edit Normals modifier to your piece of gear, Expand it and click the 'Normal' sub-selection.
 - a. If your mesh has completely broken normals over the entire mesh, press ctrl-a to select all normals, then click the [Use Threshold] checkbox, set a value of 0.002, and press the [Selected], button to average the normals of the mesh. This will give you a reasonable result across the body other than the seams. Cloning full-body broken normals is not covered here (Google 'Normal Thief Script')
- 2. Select all the normals along the seam you wish to fix, and press the [Reset] Button.



- 3. In the mesh/object list, open Targets->Normal/Seam Targets.
- 4. Turn on/make visible the seam target most applicable to your item; ex. Body for a body mesh.
- 5. Select both the seam target you just made visible, and your broken mesh at the same time.
- 6. Add an 'Edit Normal' modifier with both still selected, and again, expand the modifier and click on the 'Normal' sub-selection.

7. At each vertex on the seam line, you should see one green normal, and multiple blue normals. Click on the Green normal, and press [Copy Value] in the Normal Modifier, then select all of the normals at that vertex (green and blue), and press [Paste Value]. The Blue normals should now be Green and laying on-top of the existing Green normal. (It will look like just one normal now)



- 8. Repeat this process of select-copy-paste for all the normals along the seam.
- 9. De-select your objects. Click on the Seam target object, and delete the 'Edit Normal' Modifier, and hide the Seam Target. Click on your mesh and Move the new 'Edit Normal' modifier under you Skin modifier. You may now delete the first 'Edit Normal' modifier you made (the lower of the two in the stack).

Unrelated to Normal alignment seaming issues, the Seam Target meshes can also be used for making sure your UV unwrap uses the same coordinates as SE standard UV coordinates, via selecting both and adding a UVW Unwrap modifier, if you have need to do so.

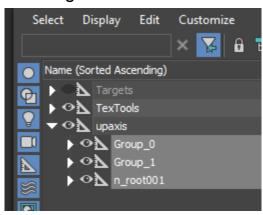
Importing Other Gear into the Rig

It is possible to simply directly use the 'Import' functionality in TexTools to import objects into this rig and call it a day, however, that comes with two issues.

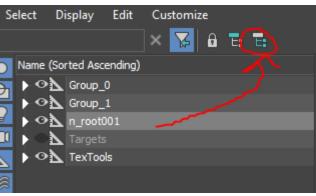
- 1. The item you import will include bones/groupings/etc., which will increase the clutter and mess of your scene.
- 2. The animations won't work on the item, because it uses its own bone set.

To resolve these issues, I suggest using the following workflow when importing items into the rig.

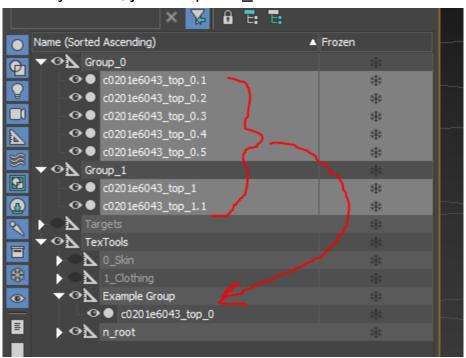
- 1. Import the item into a blank scene (File -> Reset)
- 2. For each piece of gear, Save the weights via -> Skin Modifier -> Advanced Parameters Settings -> [Save]
- 3. Close that file/Open the Curvy Rig.
- 4. Import the item as normal via the 3DS Max Import Dialog (Don't forget to use OpenCollada). 3DS will ask you to rename some bones. Check [Rename all], and then press [OK] You will get a result similar to this:



5. Delete the imported bones. Select n_root001 and press the 'Select Children' button, then press your Delete key.



- a. If your item has any non-standard bones not already in the Rig, move them into their appropriate place in the skeleton in TexTools->n_root before deleting the rest. (Any non-standard bone will still have it's original name without a 001 on the end of it, since it wasn't renamed)
- 6. Move the meshes from the import into the TexTools area of the rig, in whatever grouping you want them to be in. (You can make new groups by selecting an existing group, pressing Ctrl+V, and choosing 'Copy' in the resulting dialog). You may also rename the meshes if you like; just keep the #.# at the end of them.



7. For each mesh, Delete the existing Skin, and create a new one; Load the weights that you saved as detailed in the <u>Saving and Loading Weights Chapter</u>. They will now be using the bones in the Rig, and can be Animated with it for testing. Your item is now fully integrated into the Rig.

Exporting From the Rig

Unlike Importing; exporting out of the rig is very simple.

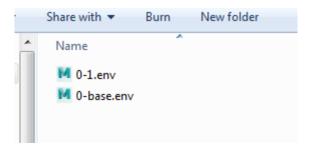
- Make sure your items are still named properly with their _#.# endings for TexTools.
- 2. Make sure items in the same Mesh Group (the first # in the _#.#) are in the same group.
- 3. Make sure all your meshes in each group use the same material.
 - a. Press 'M' on your keyboard to open the material editor.
 - Select all your items that should have skin; right click on the '00 Skin' material in the editor and select 'Assign Material to Selection'
 - c. Repeat step B for the clothing items with the '00 Clothing' material.
- 4. Make sure all bones are visible (you can select them all with the 'All Bones' selection set, or by selecting 'n_root' and then pressing the Select Children' Button.
- 5. Make sure your Meshes you want to export are visible, and any you do not want to export are not visible.
- 6. Export as normal via OpenCollada.

Example Workflow

This is a simple end-to-end example, in which we're going to make a custom body morph target, and put an Endless Summer Top on it.

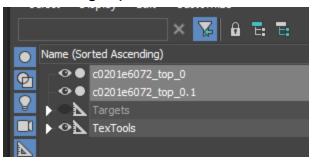
Prep Work

First, we're going to import the Endless Summer top into a new scene in 3DS, and save all the weights, at least for the Clothing part of it. Backups are good!

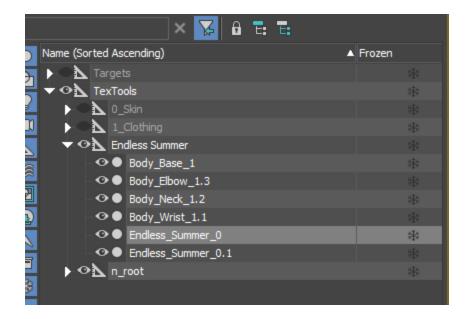


Bringing the Scene Together

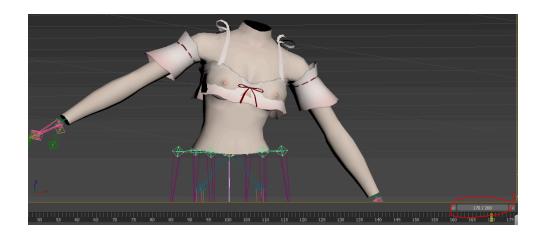
Now we're going to get the Endless Summer top into the rig. I'm going to import the endless summer top .dae into my Rig, and delete the skin meshes, bones, and groups. All I want is just the clothing top.



Now, I'm going to make an extra group under the TexTools group, and move the Endless Summer top meshes into there, along with copies of the body meshes from the rig, and rename them all to be nice names. (Note: The Summer Top has the Body in Mesh Group _1 instead of _0 so I renamed the body items with _1).



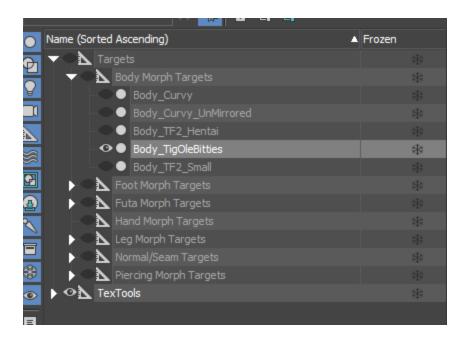
Lastly, I'm going to delete the Skin modifiers on the Endless Summer pieces, and replace them with new Skin modifiers, which I will load bones into via the 'Upper Body Bones' selection group, and weights into from the previously saved weights. I can then verify that all the parts are animating together properly by sliding the time slider along and watching the animations.



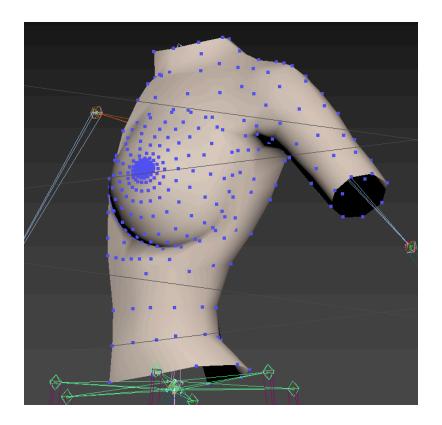
Making a new Morph Target

Now that our scene is set up, we're going to start out by making a new body morph target; maybe we just really like *gigantic* knockers.

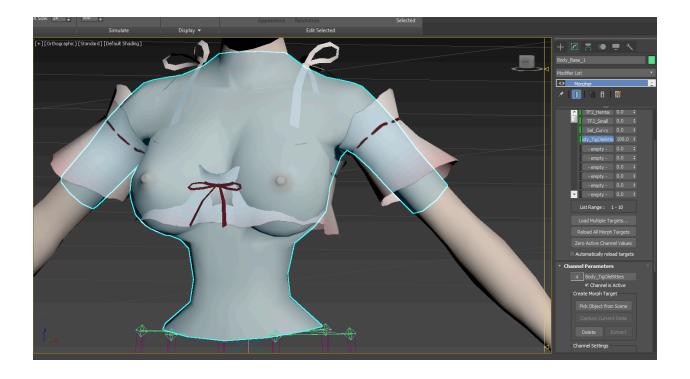
First off, hide the Endless summer meshes we were just working with, and go into the Targets->Body Morph Targets, and make a copy of the TF2 Hentai morph target (Ctrl+V).



Now that that's done, edit this new mesh however you like. I just did some super quick and dirty vertex scaling for this example



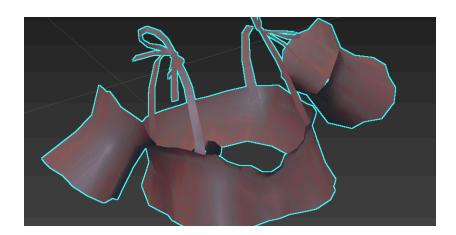
Now hide the Morph Target, and go back to our Endless Summer group. In the main body mesh, select the Morpher Modifier, and then click the [-empty-] 4th group. Scroll down to [Pick Object from Scene] and click it, then select the Morph Target we just made. After that, change the scaling for the body so it's 0 for everything other than our morph target, and 100 for ours.



Now we're looking appropriately ridiculous. At this point, let's save a backup copy of the file. [File]->[Save Copy As...]

Fixing up the Top

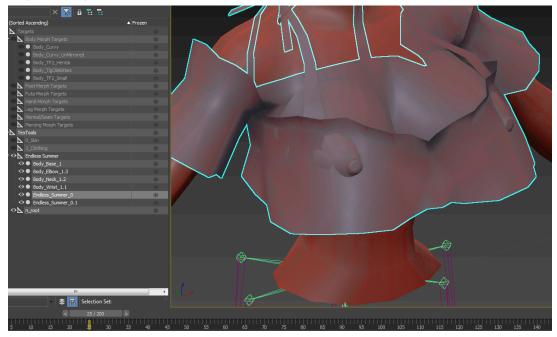
Now that that's done, we can work on the top. Select the Endless_Summer_0 top piece, and then editable mesh -> Element, and select and delete that inner bra. These bad-boys ain't going to be contained so easily.



Now, we're still left with the issue that these knockers aren't fitting under the outer cloth, and are clipping like crazy. Nothing to do here but some good old fashion vertex work. If this was a higher quality project I might split the top up into more faces to make it conform better to the bust, but for this example, we're doing it quick and dirty.

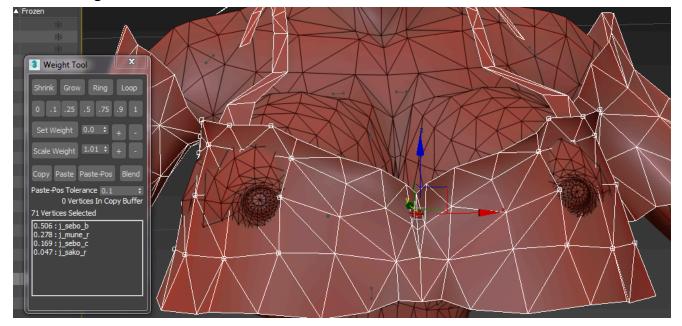
For this sort of work, I frequently switch between Wireframe and Clay views, to see how the clipping is.

Once I have it more or less where I want it, It's time to check how it does with animations. Sliding the time slider along shows it mostly does well, except there's still some clipping at larger bust sizes.

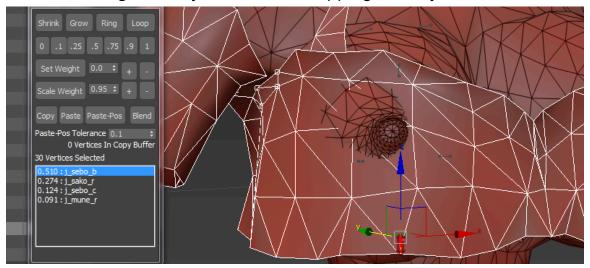


We could try to futz with a skin wrap, but given how different the items' geometries are, that would be more likely to just break everything. We could pull the vertices out more, but that would just end with it looking extra weird on smaller bust sizes. Instead, lets try editing the weights ourselves.

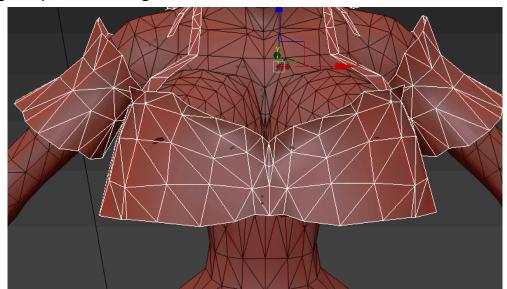
First, we'll go into the skin modifier, envelope->[Vertices] checkbox, and select the troublesome verts, and right click anywhere in the viewport and open the 'Weight Tool Dialog'



Now we're going to set the scale weight value to .95, and select 'j_sebo_b', then click 'Scale Weight. This will cause all the vertices to individually scale their sebo_b (spine) weights down to 95% their current value. Since the weights are Normalized, this means the respective Bust bones and other elements will be increased. Clicking this a few times has significantly reduced the clipping already.

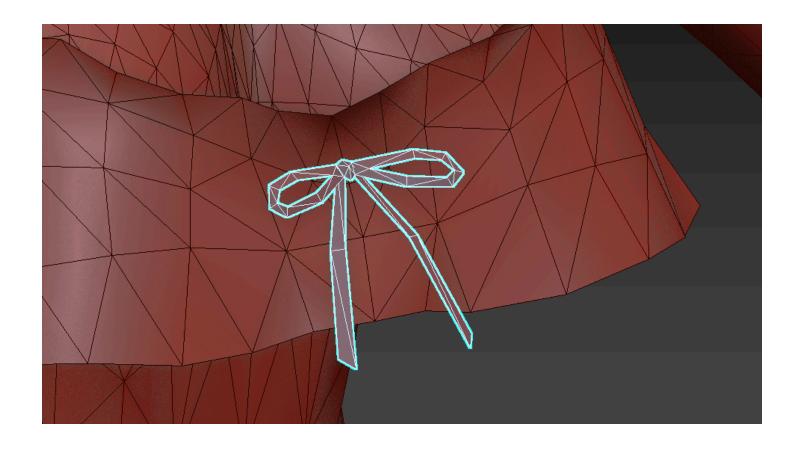


From here, it's fine tune adjusting the few remaining troublesome vertices via weights and original positions to get them where we want them.



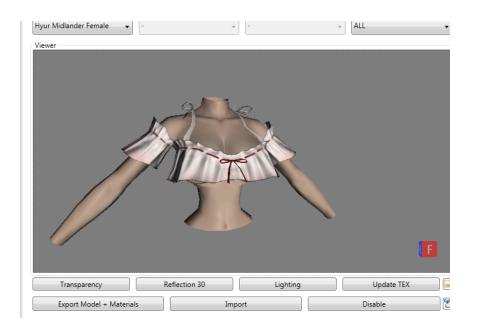
Still a bit of clipping with really large Cheat Engine/Trainer sizes, but it's good enough for everyday use.

Lastly, we need to move the cute little ribbon in the 0.1 mesh back into place, and make sure it moves nicely with the main shirt. The weights on it look good, so just a simple movement of the Vertices put it where we wanted.



Exporting the Finished Product

We're now ready to export this bad boy out into the world of Eorzea. First, Move the time slider back to zero. We've already got our scene set up with the right names and items shown/hidden, so we don't need to do any work there. We're also only using the base materials for things, since we didn't mix and match parts from anywhere, so we don't need to touch the materials interface. All in all, it's just Export -> Import into TexTools



A quick check in game shows the item working as expected as well. She seems pleased at her new look. (If for some reason you want this abomination of a mod, just DM me on discord, Sel#6068)



Appendix Items

The following items are for more niche application and/or for fixing errors you may come across, and do not go in any particular sequential order.

Converting TF2 Body Morph Targets to Curvy Rig Morph Targets

The Curvy Rig uses half-body targets, whereas Titan Firm's original rig uses full-body targets. For converting upper body TF2 Targets, simply delete the the character's right half (your left if you're looking at the character from the front). Unfortunately due to the vertex order of TitanFirm's morph targets, this cannot be reversed easily via a Symmetry modifier.

TexTools Import Naming Conventions and Requirements

TexTools is fairly loose on naming conventions, but must follow some rules still.

- 1. There must be only one visible top-level group.
- 2. All Mesh Parts in the same Mesh Group must have the same parent node.
- 3. Mesh Parts must be named ending with "_X.Y" where X is the Mesh Group and Y is the Mesh Part number. The ".Y" is omitted on Part 0.
- 4. The bones must be on the 2nd level of the file, and named exactly as they are spit out by TexTools. You may however have extraneous bones in the file still visible, as long as they are not referenced by any of the visible meshes.
- 5. Meshes must all have unique names, even if they are not visible.
- 6. Meshes in the same Mesh Group must all have the same Material (It does not matter what this material does, but they must all use the same material).

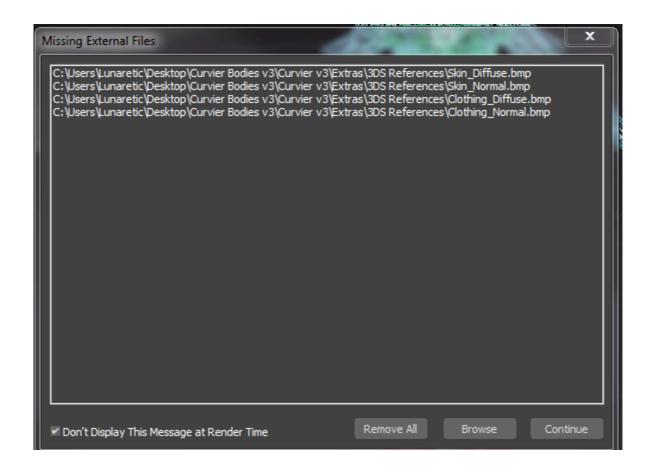
Skin Weights and TexTools

The way TexTools/XIV works with Skin Weights is somewhat unique.

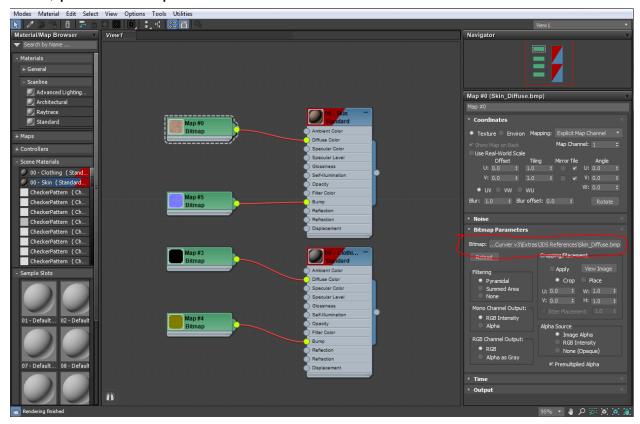
- 1. All Weights must be Normalized and Manually weighted.
- 2. Weights are converted from sum 1.0 to byte-value sum 255 on import. Sometimes this can result in slight discrepancies in the normalization summing to 255 correctly, in which case TexTools will add/remove weight to/from the most major bone influencing a vertex until the sum of the weights is 255.
 - a. In this case, you will see a pop-up error about weight correction from TexTools where all the values are +/- 1. This is mostly harmless, as a correction of functionally 0.004 is extremely minor (and the method in which it does so is consistent, so it will always modify them in the same way).
- 3. Vertices can only be influenced by a maximum of 4 bones. If a vertex has more bones influencing it than this, TexTools will remove the bone weights from the *least major bones first*, until it is less than 4, then proceed along point #2 to re-add any missing bone weight back into *most major bone* until the sum is 255 again.
 - a. In this case, you will see a pop up about weight correction from TexTools where at least one of the weights corrected is greater than +/- 1, this is usually pointful to note, as you can end up with vertices where (for example) one shoulder or breast bone had its weights removed, but the other did not, causing asymmetry in the weighting.
 - b. In this case, I would suggest writing down the vertex numbers that were greater than +/- 1, and removing bones from their weight list yourself. You can also edit the Skin modifier to specifically limit the maximum number of influencing bones to 4, which was done for all the skin modifiers in this rig.
- 4. As a byproduct of #2, weights less than ~.002 will be eaten by TexTools and have no effect, as they are rounded off to 0.

Fixing Broken Materials

If you ever get a dialog like this when opening a file in 3DS, it means 3DS was unable to find the textures for a scene. Click [Continue], and the following instructions will show how to fix the materials.



1. First, press m to open the material editor.



- 2. Now, double click the node labeled "Map #0 Bitmap"; note now it is connected to the "Diffuse Color" of the material "00 Skin"
- 3. Click the Bitmap filename in the Bitmap Parameters on the right (circled in red in the screenshot). This will open a file browser.
- 4. Navigate to wherever you have your Skin texture stored; For this rig, there are copies of the textures used in the /3DS References/ folder.
- 5. Repeat this process for the rest of the Bitmap nodes for their respective textures.

TexTools Material Limitations and Rig Materials

Textools import requires that all parts of a mesh in the same mesh group must use the same Material in 3DS Max. What material it is, does not actually matter, as it won't read any of that information, but the structure of the OpenCollada .DAE file will not be the way TexTools wants it if they are not using the same material.

As such, this rig includes two Materials pre-set, called [00 - Clothing] and [00 - Skin], with basic Diffuse and Bump maps set up. By default, all the skin meshes in the Rig use the [00 - Skin] material, and clothing use the [00 - Clothing] material; however, if you import objects from elsewhere, they will have their own materials. If you mix-and match pieces from different items, you will likely need to manually re-assign the materials for all the objects you are exporting. This can be done by selecting all the objects, pressing 'M' to open the materials menu, then right clicking on a material and choosing 'Assign to Selection'.

Futa/Trap Morphers and Featureless Bodies

This rig includes support for Futa and Trap morphers, but by nature they require a multi-step process.

- Create a copy of the [Leg_Base_0 or Leg_Trap] and [Futa_Base or Trap_Base] (under Targets->Futa Morph Targets). Select both the leg and basd dick and press Ctrl-V and choose 'Copy'.
- 2. Adjust the Morphers as you like on these two meshes.
- 3. Collapse the modifier stacks (other than the Skin modifier) for both meshes. (Right click the first modifier under the Skin modifier and select 'Collapse To.')
- 4. Run the Rigging Combine script from the main TexTools website with the two meshes selected to combine them together.

This rig also includes Featureless bodies and Trap Legs driven off of the same Morph targets as the main full-nude bodies. Simply select a Featureless body and adjust the Morpher settings as you like. You may want to slightly tweak the result in the top-most 'Edit Mesh' modifier to slightly adjust the nipple placement or to make sure the center-line vertices on the leg mesh didn't go out of alignment afterwards.

Baking Animations and Bone Changes

One of the simplest ways to make decent looking edits to the body is to bake in bone position/rotation/scaling changes. You can do such with this Rig relatively easily, but it is worth noting that doing so requires collapsing the modifier stack, and as such will destroy your Morpher setup, so the resulting mesh can no longer be adjusted with the normal Morph targets, effectively becoming a stand-alone mesh afterwards.

None-the-less, this technique is still very useful for creating modified meshes, such as a tighter waist and pushed up/together breasts for a corset look, or simply scaling the bust larger for basic upscales.

- 1. Make whatever mesh you wish to work with visible.
- 2. Select bones to modify; Ex. in this case, we'll adjust the breast/mune bones.
- 3. Move the Time slider to 0 and press the 'Set Key' button in the bottom right, the bar should turn red.
- 4. Press the large plus sign button next to it to set a keyframe for the bones at the default position.
- 5. Move the time slider to 1.
- 6. Edit the scaling, position, and/or Rotation of the bones as you like.
- 7. Press the large plus sign button again to create keyframes for each of them.
- 8. Turn off 'Set Key' mode.
- 9. Verify by changing between the two frames that the positions/etc. In frame 1 are how you like them.
- 10. Select the mesh you wish to modify.
- 11. Save the Skin weights you wish to modify.
- 12. Set the time slider to 1.
- 13. Collapse the entire stack via selecting the skin modifier and selecting 'Collapse to.
- 14. Move the time slider back to 0.
- 15. Create a new Skin modifier and reload the saved weights.
- 16. Your mesh now has the bone scaling/changes baked into its default vertex positions.
- 17. Delete the Animation keyframes you made on frame 1 via selecting the bones, then right clicking their keyframes and selecting [Delete Selected Keyframes].
- 18. Test your new mesh via the time slider animations.

Parting Notes and Other Quirks

On the whole, while this rig setup is relatively comparable with Titan Firm's original rig release, there are some differences to note when working between the two.

- 1. This Rig uses half-body morph targets for the body, instead of full-body morph targets. Morph targets for Titan Firm's rig can be converted into half targets simply by deleting the character's left side. You cannot however go in reverse easily due to the vertex order of the TF Morph targets.
- 2. The skin weights for the body are different between the two morph rigs (You can however, save/load the skin weights between them via vertex position or skin wrap, if you wish)
- 3. The Featureless bodies in this rig are based off the same Morph targets as the full-featured bodies, instead of being a separate set of Meshes and Morph targets. The editing to convert the morph targets into featureless versions is done in Editable Mesh modifiers after the Morpher has been applied. In most cases the featureless bodies were generated by collapsing verts and tweaking the UV layout/Normals.
- 4. This rig includes the full body in one scene, instead of being separate scenes like the TF Rig set, though obviously you can just delete the legs or top from this rig if you just want half of one.

That just about covers everything I can think of to realistically include in this guide. If you have questions or need help with something in this guide, feel free to DM me on discord @Sel#6068