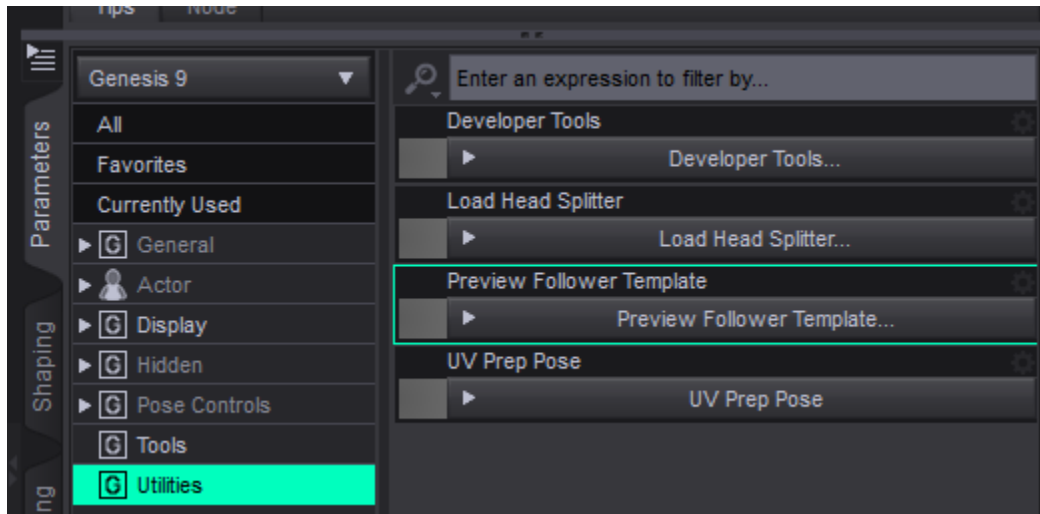


Genesis 9 comes with special tools to help with content creation. These can be accessed by selecting Genesis 9 and navigating to the Utilities group in the Parameters Pane.



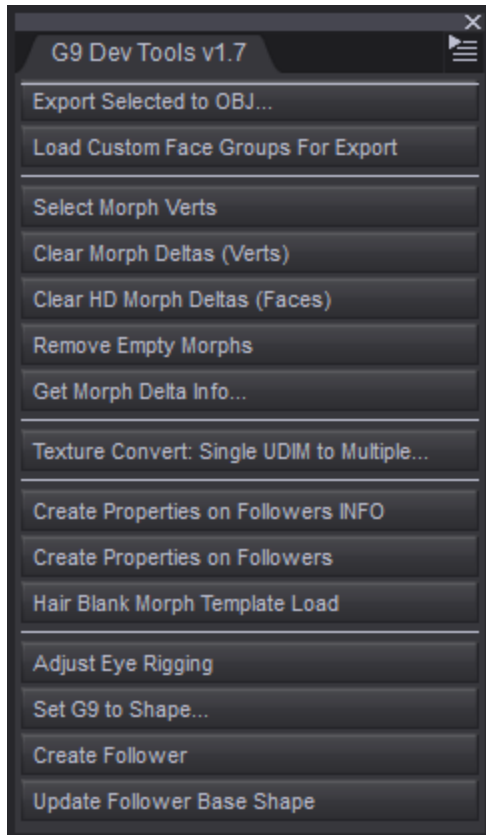
Here you will see a collection of tools that we have found incredibly valuable when working with Genesis 9:

- Developer Tools
- Load Head Splitter
- Preview Follower Templates
- UV Prep Pose

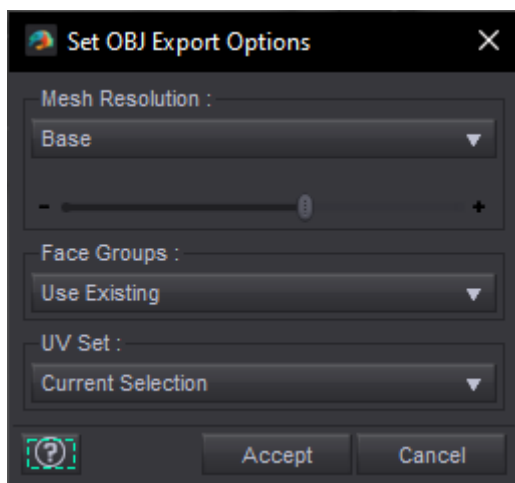
Click the button on these properties to run them (some load content, some run a script)

Developer Tools

The first is the biggest of the tools. It opens a new pane called "G9 Dev Tools" that contains a variety of useful tools. Once it pops up you can position it wherever is convenient. Since many of the tools in this pane require property selection in the Parameters Pane, you may find it most convenient to set it as a floating window next to the Parameters Pane.



Export Selected to OBJ



Mesh Resolution

One of the most common issues when building morphs is vertex mismatch. This usually occurs because of two reasons:

1. Most Genesis 9 content has subdivision applied and it needs to be disabled before exporting an OBJ

2. The default OBJ export settings include all visible geometry. Genesis 9 has eyes, eyelashes, eyebrows, mouth and tear geometry that will break morph compatibility if not excluded when exporting

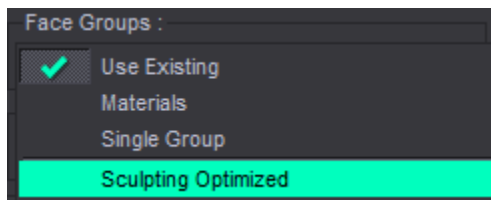
This OBJ Exporter deals with these two issues by only exporting the primary selection and by disabling subdivision. In the cases where you need to export a specific resolution, it can easily be set in the dialog.

Face Groups

The default setting exports the existing face groups, but some programs prefer specific configurations. The two most common are:

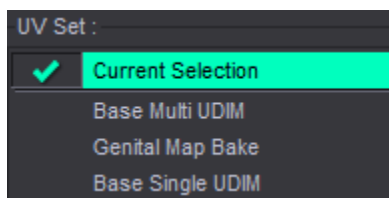
1. Materials - Writes the materials as face groups
2. Single Group - Writes only one face group. Some programs break the mesh out into multiple meshes based on face groups, which will morph compatibility.

There is a third option after the divider called "Sculpting Optimized". This is a custom face group set that our artists find most useful when working in ZBrush to allow easier isolation or masking of regions of geometry.



Users can also easily create their own custom face group sets if they have specific needs for their pipeline. See the "Load Custom Face Groups For Export" section for further information.

UV Set



This changes the active UV set during export. There are a few options included with Genesis 9 Starter Essentials:

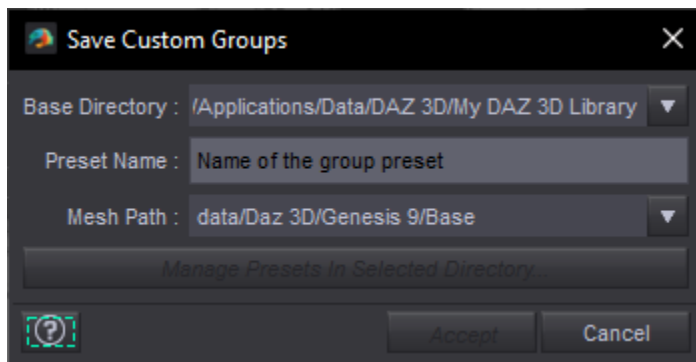
1. Base Multi UDIM - The default UV set and is the UV set of choice with most skin textures
2. Genital Map Bake - Useful when creating genital textures to match a skin texture

3. Base Single UDIM - Useful when creating skin textures. Many 3D paint programs work best with this UV configuration. *NOTE: See the "Texture Convert: Single UDIM to Multiple..." section for instructions on how to easily convert the textures back to the Base Multi UDIM configuration*

Load Custom Face Groups For Export

This is directly related to the Face Groups options of the exporter. If you have specific face group configurations that you find useful then you can use this script to save them out as a preset that will show up in the exporter. Follow these instructions:

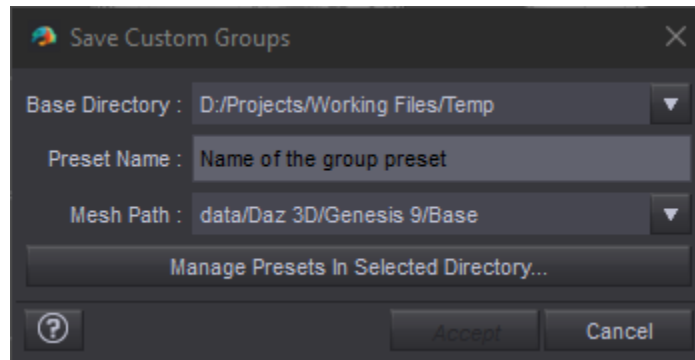
1. Customize the face groups - To avoid issues it is simplest to not do this directly on Genesis 9. First export the mesh to an OBJ then either: A) Load it into a modeler for customization, or B) Import it back into Daz Studio and use the Geometry Editor Tool to customize the face groups.
2. Select Customized OBJ - Wherever the face group customization occurred, make sure the customized OBJ is in Daz Studio and selected
3. Run Script - Click the "Load Custom Face Groups For Export" button to run the script
4. Configure Options - The custom face groups will be saved as a preset that can be accessed by the OBJ Export script.



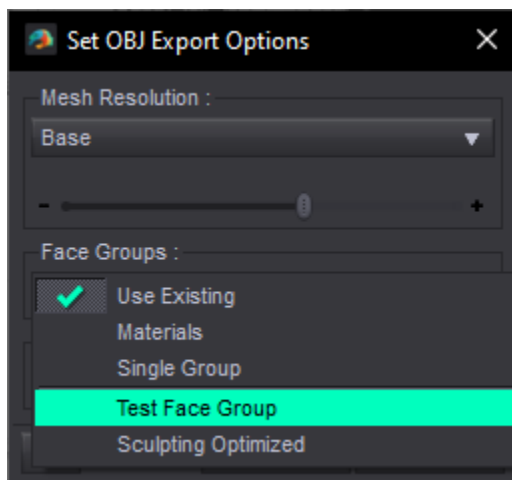
- Base Directory - The preset is saved into the mapped content directory of your choosing
- Preset Name - Provide a descriptive, unique name
- Mesh Path - When one of the Genesis figures is selected, there will be two valid paths the preset can be saved in. Any other geometry will only get the second option as described below:
 1. First path is specific to the selected geometry. If it is known geometry then you will have a path such as "data/Daz 3D/Genesis 9/Base" as the

first option. This is the preferred path to use to guarantee the OBJ Export script can find it, especially if the preset will be distributed

2. Second path is used when working with an unknown geometry. This is constructed with the author name registered with the running version of Daz Studio so will not be helpful when distributing the preset to others. If your author name is "Super Cool User" and Genesis 9 is selected the path will be "data/Super Cool User/OBJCustomGroupPresets/25182".
- Manage Presets - This button is only enabled when the combination of the Base Directory and the Mesh Path points to an existing path. In the image below, the path "D:/Projects/Working Files/Temp/data/Daz 3D/Genesis 9/Base/Tools/Geometry/Face Groups" contains a custom face group preset I previously saved. Clicking the Manage button allows me to easily navigate to that folder where I can delete any presets that are not needed.



Now that a custom preset has been saved for Genesis 9, launching the "Export Selected to OBJ" script will allow me to export any Genesis 9 mesh to my custom group preset



IMPORTANT: Many of the following tools require selecting a morph property. The Parameters Pane must be in Edit Mode to use these scripts. Right-click in the Parameters Pane and activate "Edit Mode" to make properties selectable.

Select Morph Verts

Select a morph and run this script. It will activate the Geometry Editor Tool, set it to Vertex Selection mode and select the vertices of the selected morph.

Clear Morph Deltas (Verts)

Select vertices, select a morph and run this script. The selected vertices will no longer be affected by the morph.

This tool works on any number of selected morphs.

Clear HD Morph Deltas (Faces)

HD morph technology is made possible due to Subdivision Surfaces, enabling the morphs to utilize the resolution that is dynamically generated based on the resolution settings. Typical morph data is stored on vertices but HD morph data is stored on the faces, so using the "Clear Morph Deltas (Verts)" script above won't clear the HD morph data.

To clear HD morph data, select the affected faces, select a morph and run this script.

This tool works on any number of selected morphs.

ADVANCED TIPS:

- If you prefer selecting faces instead of vertices, this script is also useful for non-HD morphs. HD morphs actually do affect vertices in addition to faces. This tool defaults to clearing the morph data from both the faces and their connected verts (which is what you usually want).
- To build on the above tip, if you want the vert component of a morph and not the face (such as when you want to convert an HD morph to just be a regular vert morph) then hold CTRL when you launch this script. It will only clear the faces and you will now have a non-HD morph remaining

Remove Empty Morphs

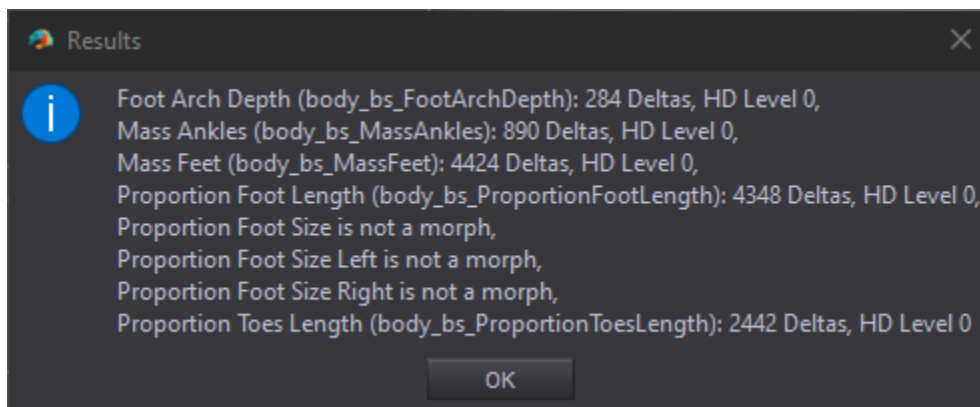
There have been situations where we have created empty morphs and then needed to clean them up. This script evaluates all selected morph properties and looks for empty morphs. Only the empty morphs will be removed, so it is safe to select a large batch of properties you think might be empty and run this.

This tool works on any number of selected morphs.

Get Morph Delta Info

This is a fast way to get important information about selected morphs. Any non-morph properties will simply list their label and state they are not a morph

- Label - The label of the property
- Name - The internal name of the morph
- Delta Count - The number of deltas
- HD Level - Lists the HD level of the morph. Non-HD morphs will be HD Level 0



This tool works on any number of selected morphs.

Texture Convert: Single UDIM to Multiple

Some texturing programs prefer UVs in the single UDIM space, so when creating skin you generally will export Genesis 9 with the "Base Single UDIM" UV active. For compatibility with other textures or the high resolution texture resources included with Genesis 9 Starter Essentials, it is necessary to convert those images back to the "Base Multi UDIM" UV set. This script automates the process

To use this script:

1. Place the skin textures in a folder and name them something useful. For example, you might have "Amala_AO.png", "Amala_D.png", "Amala_NM.png" and "Amala_R.png" as your maps on the single UDIM. This script will break those out into each UDIM and name them like "Amala_Arms_AO_1004.png" and "Amala_Body_D_1002.png"
2. Run the script and point it to the folder that contains the images.

3. The converted images will be placed in a folder named "convert" inside the specified folder
4. The arm and leg maps will have a red block where the nails were originally. These areas of the images will not be visible on the skin so can be left like this or you can fill them to match the neighboring pixels

Create Properties on Followers INFO

Clicking this will open a PDF that explains how to use the "Create Properties on Followers" and "Hair Blank Morph Template Load" scripts.

The purpose of these tools is to help solve the issue where morphs on Genesis 9 may unnecessarily affect followers. For example, if a hair style has bangs that hang down over the eyes, the default behavior will make it so actions such as moving the eyes, blinking, or moving the brows up and down will affect the bangs. The solution to this problem is to create empty properties on the hair to block this from happening. Some notes about marking morph properties as favorites:

- It is important to note that some morphs control others, such as "Brow Down". Make sure to carefully identify the morphs that are actually affecting your follower in a bad way.
- In the case of "Brow Down", marking it as favorite won't fix anything. You will need to dig deeper to find that "Brow Down Left" and "Brow Down Right" are actually the ones that need to be marked as favorite.
- Another example is "Jaw Left-Right". This controls "Jaw Left" and "Jaw Right", which are hidden properties, so you will need to check the "Show Hidden Properties" option in the Parameter Pane options to be able to see those.
- For best performance, only mark as favorite the morphs that are necessary for your follower to work.

Create Properties on Followers

With the target follower loaded and fit to the base figure:

1. Select morphs to block by favoriting them on the base figure. A straightforward method is to dial any morphs that affect the geometry near the follower. Watch for how the follower is affected by these morphs. If you find any that are problematic, mark them as favorite.
2. Run the "Create Properties on Follower" script

3. Select the target follower in the popup and the morphs will be created
4. Select the follower where the properties were created and save the created properties (File>Save As>Support Asset>Modifier Assets)

Hair Blank Morph Template Load

Some may find it easier to start from a version of Genesis 9 that already has the most commonly problematic morphs favorited.

Click this to load the template, then:

1. Fit the follower to this template version of Genesis 9 and select this Genesis 9
2. Sort through the Favorited list in the Parameters Pane and unfavorite any properties that are unnecessary to create blocker properties for
3. Run the “Create Properties on Follower” script
4. Select the target follower in the popup and the morphs will be created
5. Select the follower where the properties were created and save the created properties (File>Save As>Support Asset>Modifier Assets)

Adjust Eye Rigging

Eyes are a follower of Genesis 9, so adjusting rigging on the head will not place the eye bones in the correct location. You should never adjust rigging on the eye follower directly. Instead, you need to be using the eye geometry as reference for how the eye bones on G9 should get placed. This is automated by using this script.

Before running this script:

- For best results, make sure only the morph that needs rigging is dialed
- Make sure the eyes are the correct shape for this morph and the eye morph has been saved
- Rig the morph on Genesis 9 using your typical rigging method

Once you are fully prepped:

- Put the Parameters Pane in Edit Mode
- Select the morph on Genesis 9
- Run the script

- Save the morph (On Genesis 9 because it only adjusts eye bones on G9)

Follower (ie. Clothing, Hair, etc) Tools

Follower content must be built for the Genesis 9 base shape but there are cases where it might make sense to build for a different shape initially. Some might find it is easier to build for the masculine or feminine base, or maybe the content was originally built for Genesis 8 and is being migrated to Genesis 9.

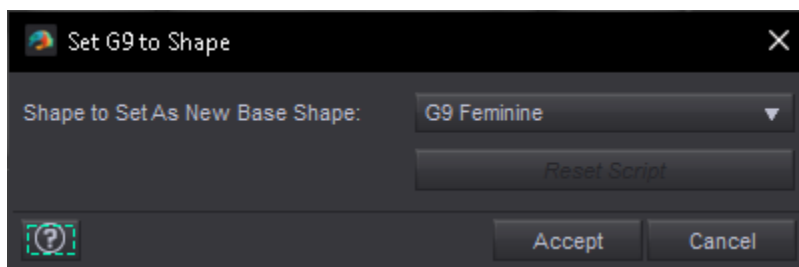
Such content needs to be converted to the Genesis 9 base shape before it can be rigged. This can be done with Transfer Utility or Autofit, but those methods often distort the mesh badly and the amount of cleanup work can be significant. The following three tools can provide much better results more quickly.

The basic workflow is:

1. Load Genesis 9 Dev Load
2. Import OBJ of the follower geometry
3. Run the "Set G9 to Shape" tool
4. Select the follower geometry and run the "Create Follower" tool
5. Dial off the favorited morph to check how well the geometry converts to G9 base.
Configure smoothing, rigidity, etc to get best results possible
6. Run "Update Follower Base Shape" tool on the follower to accept the results
7. Run "Set G9 to Shape" tool on Genesis 9 to reset
8. Save as Figure/Prop Asset and move on to rigging process or export to OBJ for further geometry cleanup

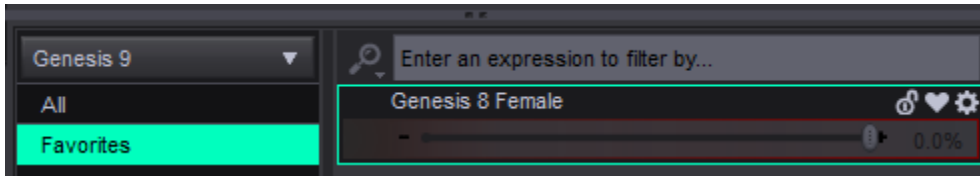
Detailed explanations for these tools are provided below.

Set G9 to Shape...



The tool does the following:

- Changes the base shape of Genesis 9 to the specified shape
- Marks the specified shape (such as Genesis 8 Female) as favorite and configures the morph so moving the value to the left morphs the figure back to the G9 base shape



Once the base shape of Genesis 9 has been changed in this way, Transfer Utility can be run on the mesh that needs converting. This will set it up to allow morph projection so you can dial the morph off and see how well it converts to the Genesis 9 base shape. *(Keep in mind that this is only useful for converting the shape of the geometry, rigging should be ignored)*

If the geometry has issues (such as buttons or other details distorting) there are a few ways you can attempt to fix it that are unique benefits of using this method for converting shapes:

- If the geometry works well with the Smoothing Modifier, you can play with the iterations to see if it will correct the issues
- Rigidity can be used to preserve details
- Settings in the Transfer Utility (such as Adaptive Tolerance, User Near Vertices and Distance Tolerance) can be adjusted to improve how vertices follow the underlying mesh

Working with these options can enable a much better automated result, which will minimize (or in many cases, eliminate) the work required to clean up the geometry after the conversion to the Genesis 9 base shape.

Create Follower

This is an optional convenience tool that configures geometry as a follower of Genesis 9 with a single click. It does the following:

- Applies default settings from the Transfer Utility dialog
- Applies Smoothing Modifier

If you have specific settings in Transfer Utility you prefer to use, manually run the Transfer Utility instead of using this tool.

Update Follower Base Shape

Once you are happy with the results on the follower geometry, run this tool. It will immediately look broken but don't worry, this is temporary!

Resetting Genesis 9 (by running the "Set G9 to Shape" tool) completes the process and this geometry is now complete. It can now be saved as a Figure/Prop Asset and is ready for the rigging process or be exported to your favorite modeling tool for further geometry fixes.

Load Head Splitter

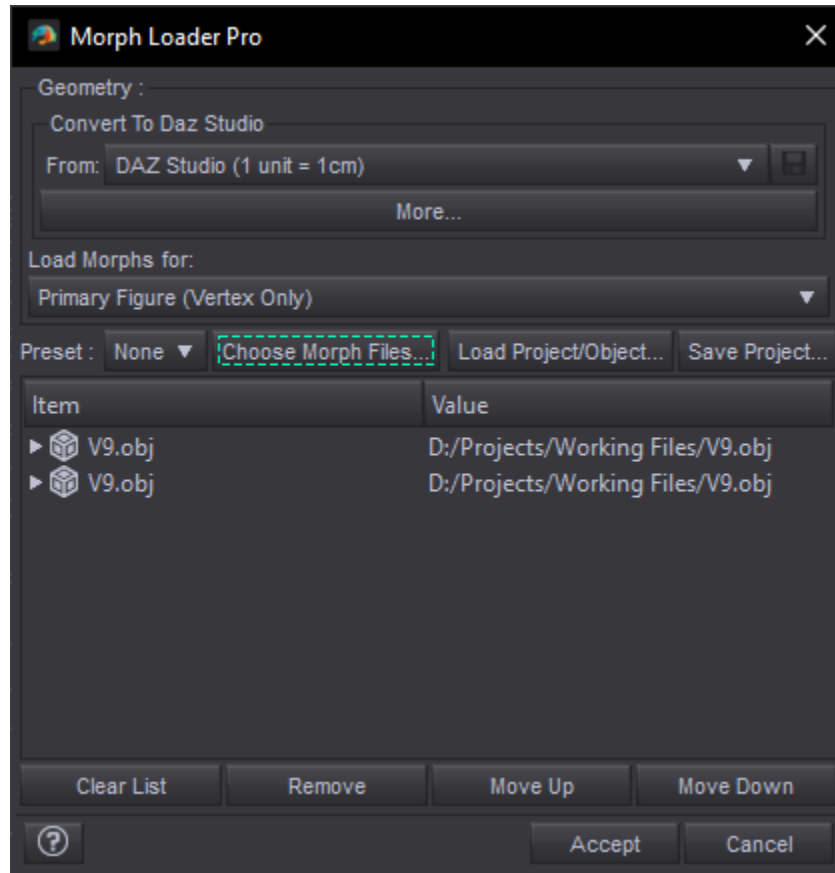
The "G9 HeadSplit DFormer" is used in the character shape creation process to make the split between head and body consistent. Character shapes should first be built as a complete shape, then use the weightmap from this DFormer to split to body and head in Morph Loader Pro.

The "G9 HeadSplit DFormer" can be loaded from here or from the Content Library at `"/People/Genesis 9/Developer Kit/G9 HeadSplit DFormer.duf"`

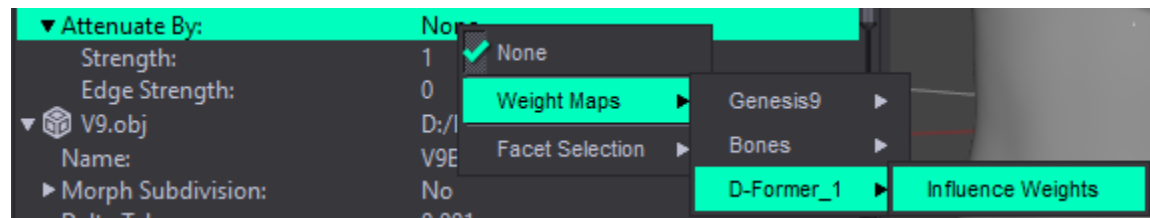
Instructions:

1. Load Genesis 9 Dev Load (assuming you created your shape on the Dev Load, which is highly recommended for avoiding issues. If you did not, load whatever you built the shape on)
2. Load the Head Splitter
3. Launch Morph Loader Pro

- Load the OBJ twice. The first will be the head, the second the body

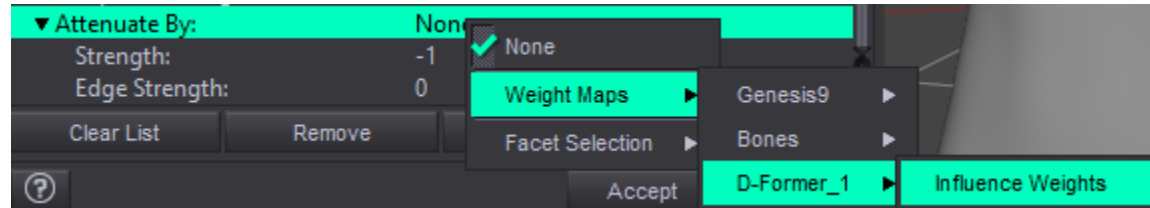


- Open the options for the head OBJ:
 - Set the name to specify it is the head morph
 - Configure any other necessary settings
 - Right-click on "Attenuate By" and navigate to "Weight Maps > D-Former_1 > Influence Weights"



- Set "Strength" to 1
- Open the options for the body OBJ:
 - Set the name to specify it is the body morph
 - Configure any other necessary settings

- Right-click on "Attenuate By" and navigate to "Weight Maps > D-Former_1 > Influence Weights"



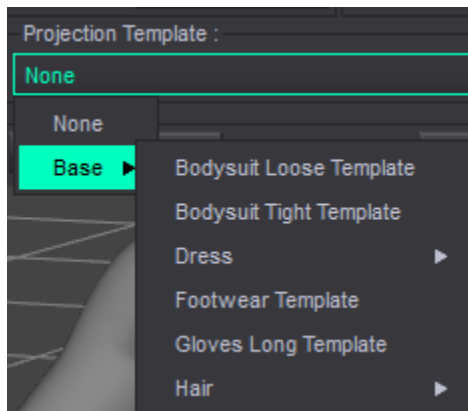
- Set "Strength" to -1
 - Click Accept
4. You now have head and body split to work correctly when blended with other characters on Genesis 9. Adjust rigging and save the morphs.

Preview Follower Template

Why Use Templates?

Multiple follower templates are included with Genesis 9 to help with the creation process. These can be used to speed up the rigging process or throughout the entire process as a starting point for any followers you want to build. These are considered a merchant resource, so please use them!

To use the follower templates during the rigging process, simply select the appropriate template in the Transfer Utility dialog



The benefits of using a template include:

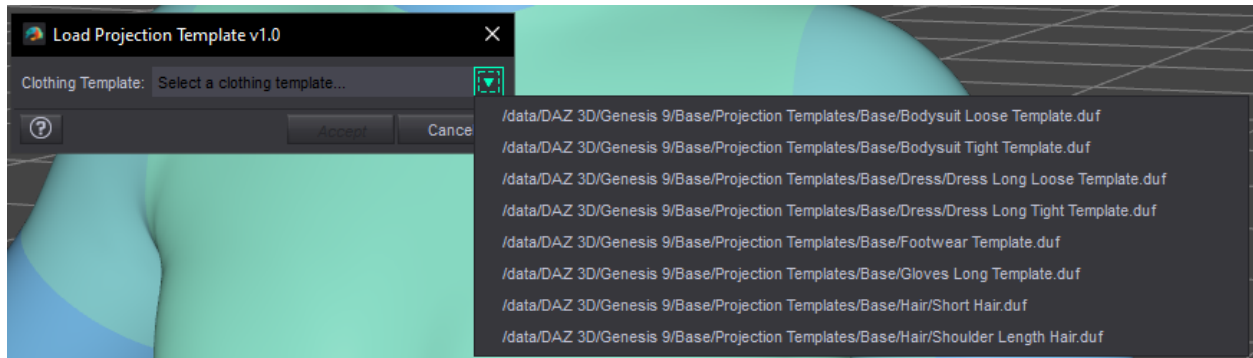
- Improved rigging: Nearly all followers will require weightmap adjustments. The templates have had the weightmaps optimized already. While every geometry is

different and may require some work, the templates usually give a much better starting point

- Improved morphs: Dozens of morphs are included with the templates. Correctives, common character shapes, and useful control shapes (such as Expand All and localized loosen shapes) are all included to make the follower more versatile and compatible

The "Preview Follower Template" Tool

This provides a list of all templates that are installed for Genesis 9.



Preview

Select one to load it in the viewport to compare with your geometry to help decide which template matches your geometry the best. For example, use it to determine whether it is closer to the Loose or Tight bodysuit template or to see if your hair should use the Short or Shoulder Length template

As A Starting Point

Load the template you want to use as a starting point, take the mesh into a modeler and customize the geometry, adding details, changing shape, etc. Once done, import the geometry into Daz Studio and pick the template during the Transfer Utility process.

UV Prep Pose

The UV Prep Pose is helpful for texture artists when they will be working in a 3D paint tool. It does the following:

- Opens the jaw
- Closes the eyes
- Spreads the fingers and toes

This pose is frequently combined with the UV Set options in the OBJ Exporter as described above to work with the Single UDIM UV template.

The "G9 UV Prep Pose" can be loaded from here or from the Content Library at
"/People/Genesis 9/Developer Kit/G9 UV Prep Pose.duf"