Armory Crafter

DOCUMENTATION

Version 1.3

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1. INTRODUCTION

Armory Crafter is a tool for Unity that allows you to create and edit weapons and shields for your game projects. You can easily gear your game characters with this tool.

This tool uses modular assets and prepares them in a way that you can modify and combine for creating the most fitting model for your game. You can tweak the options and change scale, texture, color and even rotation in some cases.

Armory Crafter comes with different modular weapons and shields but there is a way to add your own custom models and combine them with the default ones. More info about adding custom models at the **Custom Content** section.

2. HOW IT WORKS

The tool is made to be used in Unity Editor as a scene. That means you have to open and play the scene to start the tool. There is a top menu for quick access that will open the scene:

Tools > Crafter Series > Armory Crafter > Open Editor Scene

The scene allows you to edit different meshes with different parts and modify them. After done editing, you can export it in two formats: **.obj** and **.prefab**.

Exporting as **prefab** will create an asset ready to use directly in your game. It generates a prefab, new mesh files and a combined texture. You can then move these elements even to another Unity project and there won't be any problem, the generated asset is independent from the plugin. (**Unity version of the destination project must be the same or more recent**).

Exporting as **obj** will generate the combined texture, an obj file and a mtl file. This is useful if you want to edit even more your model using a 3D software. However, since the obj exporter is not fully polished yet, you would like to convert tris to quads and remove double vertices before editing or using it in Unity.

Aside of exporting, you can save your weapons and continue editing later or use the save system as a library of assets.

3. HOW TO USE

To start creating you have to open the Armory Crafter scene as mentioned before. At the Unity top menu:

Tools > Crafter Series > Armory Crafter > Open Editor Scene

After opening the scene you will see a screen with the tool logo at the 'Game' Unity window. Is recommended to maximize the window as you won't need the inspector or other Unity windows.

The first time you play the scene it may take some seconds to load.

3.1 Screen Explanation

Once you play the scene you will see the next screen:

1. Type of Asset
2. Model Viewer
3. Parts Editor
4. Poly Count
5. Autorotate
6. Name
7. Reset View
8. Scale Dimensions
9. Texture Viewer
10. Texture Size
11. Fill Texture Holes
12. Render Final Texture
13. Parts Edit Mode
14. Save
15. Export

1. Type of Asset

This shows the available asset types to create. Click on the icon of the desired one and it will be loaded with its modification options. Changing between the different models won't lose the modification done in the other types of the current session. If you want to keep your modifications for a future session you must use the save system explained in point number 14 of this section.

2. Model Viewer

This is the asset you are creating. You can move, rotate and zoom in/out the model. You can use the 3D axis at the left bottom corner for reference.

To Move the model click and drag with the **left mouse button**.

To rotate the model along its vertical axis click and drag the **right mouse button**.

To rotate the model along the horizontal axis click and drag **the wheel or third mouse button**.

To zoom in or zoom out **rotate the wheel** forwards or backwards.

3. Parts Editor

This is one of the most important panels of the tool. In this panel you can navigate through the different parts of the weapon type and change their meshes, textures and colors among other things.

You will see it consists of a list of buttons with a name and some arrows and icons. Some of them will have extra options:

3.1. Panel Button.
Each panel corresponds to a part of the selected type of weapon. Clicking on the panel will open a submenu with more modification options explained on this section.

3.2. Shape Icon.
The arrows next to this icon will change the **mesh** of this part. The '1/11' numbers represent the index of the current mesh and the max meshes available.

3.3. Base Texture Icon.
The arrows next to this icon will change the **base texture** of this part. The '1/3' numbers represent the index of the current base texture and the max base textures available.

There are two types textures: base textures which are always on and secondary textures which work as a layer texture above the base texture and can be switched off. To edit the secondary texture you must enter in the submenu of the part by clicking on the panel button.

3.4. Disable / Enable Button.
You can disable some parts you don't want for your final asset. Each disabled part won't be exported in the final model. Note that not all parts can be disabled.

3.5. Rotate Part.
Some parts are allowed to be rotated. Pressing this button will rotate the part depending of its type. Not all parts can be rotated.

Editing the parts.
By clicking on the part panel button a submenu will appear with more options to edit your mesh.

This new menu have some of the same options we had before (**Shape Index** and **Base Texture**) but with some extra buttons. These new buttons are **Random Button** and **Clear Button.**

Random Button (represented with a '?') will change randomly the value of its option.

Clear Button (represented with a red cross) will reset its option value to the initial one.

The new options available are: **Scale, Texture Priority** and **Secondary Texture.**

Scale. This allows you to scale the part and make it more unique. The slider will scale from the three axis but clicking on the arrow will show options for scaling one by one the axis. Note that scaling globally will reset individual scale, so it's better to find a global scale fit first and then tweak the individual axis.

Texture Priority. The different options here determine the part texture size in the final combined texture. The bigger the mesh, the bigger its texture should be. Max priority represents the biggest possible and low priority the smallest.

Secondary Texture. Additionally to the base texture you can configure a second one. This one works as a second layer above the base texture. Setting the secondary texture index to 0 will deactivate it.

You can also change the color of both base texture and secondary texture.

To close the menu and go back to the parts list just click again the part panel button on the top.

Make double weapons.
Some weapons are available to make them double sided. So you craft double sided blades or double edge axes. Just press the button to activate it and press it again to go back to the single version.

Random and clear buttons.
These buttons will affect all the parts of the current model. The first will change all the meshes randomly. The second button will do the same but for the textures. The last button will reset all parts to their initial state.

4. Poly Count

This panel indicates the number of polygons of the enabled parts from the current model.

5. Autorotate

Enabling this will make the model rotate smoothly along its vertical axis automatically.

6. Name

You can give a name to your creation by editing this field. When you save or export the model it will have the type of asset name (Blade, Axe, Hammer or Shield) and the name you type here. It is highly recommended to give a name and don't leave it as the default 'Weapon' name.

7. Reset View

This button will reset the model to its initial position and rotation. Useful if you mess up the view and lose the sight of the model.

8. Scale Dimensions

Pressing this button will change the view and will show a measurement tool. Useful for checking the model real size.
1 metre = 1 Unity unit.

9. Texture Viewer

This panel displays the result of combining all the part textures in a final combined texture which is the one that will be exported along with the mesh.

10. Texture Size

You can select the size of the final texture. It is not recommended to use large formats when editing because performance issues. If you need a big texture set its size at the end of the editing just before exporting.

11. Fill Texture Holes

This option will try to fill the gaps in the final combined texture. It will modify the size of the textures and take advantage of space.

The filled textures will have better quality but be aware that you may face stretching if you are planning to edit the final output texture with a 2D editing software.

12. Render Final Texture

For performance issues, the texture shown on the model is not at its full resolution. To check how the created asset will look after export press this button. Any change to any texture will reset this option.

13. Parts Edit Mode

This is an interesting feature. The tool can work in three different modes. Depending on the current mode the available parts and textures to change will vary.

- **Default only**. Only the models and textures **given with this tool** will be available.
- **Default & Custom**. Both **custom and non-custom** models and textures will be available.
- **Custom only**. Only **custom** models and textures will be available.

This feature can be very useful for example when you have several custom parts exclusively for your gae and you don't want to mix them with the default ones.

14. Save

You can save your current creation for editing it later and not lose your modifications. All the options, meshes and colors of the model will remain when loading.

15. Export

This is the star feature of the tool. It would be a bit useless if you couldn't use the weapon you created in your Unity Game, but it is not the case.

You can export your creation by pressing the export button. A window will appear with some options:

- **OBJ export.**
- **Prefab export**

- **Single combined mesh**
- **Split parts in different meshes**

Exporting as **obj** will generate the combined texture, an obj file and a mtl file. This is useful if you want to edit even more your model using a 3D software. However, since the obj exporter is not fully polished yet, you would like to transform tris to quads and remove double vertices before using it in Unity.

Exporting as **prefab** will create an asset ready to use directly in your game. It generates a prefab, new mesh files and a combined texture. You can then move these elements even to another Unity project and there won't be any problem, the generated asset is independent from the plugin. You don't need to have the Armory Crafter tool in the project folder of the game you are going to use the generated assets.

Exporting a single combined mesh will generate one single mesh.

Exporting as splitted parts will generate a mesh for each part of the model. Useful for assigning different materials to the different parts.
Note: If you are having trouble when exporting custom meshes as splitted parts in OBJ format, make sure your custom meshes have only 1 material assigned.

Exported models are saved at:

Assets/ArmoryCrafter/CreatedModels/

4. CUSTOM CONTENT

One of the star features of this tool is the ability to use your own meshes and textures and combine them with the default ones.

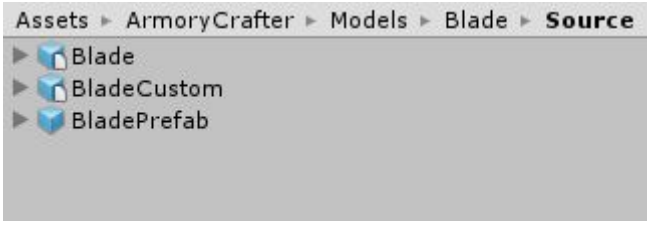
To add your custom parts or textures you will need to find the source folder of the weapon you want to add your custom assets. The path should be as follows:

Assets/ArmoryCrafter/Models/**Blade**/Source/

In this example we are adding custom parts to the Blade model type.

Note: Just to clarify, there is a 'Blade' model type which represents swords and daggers and there is the 'blade' part of a model like the edge of the sword or an axe. In this case we are adding a custom blade part (edge) to the Blade model type.

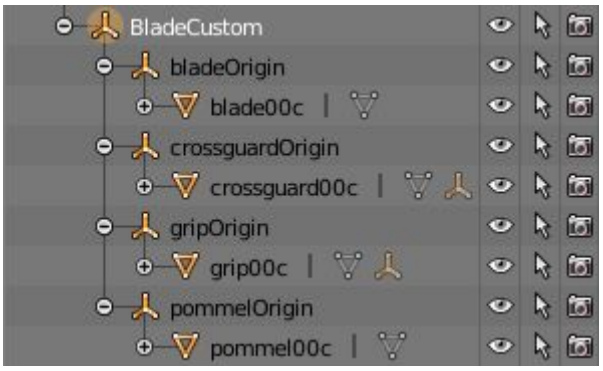
Now, in this folder we will find 3 files. You will have to worry about only 1, the one with 'Custom' at the end of its filename which is an FBX file.



4.1 Adding custom mesh

In this example, we will see how to import custom mesh using Blender. It will be similar in other 3D software.

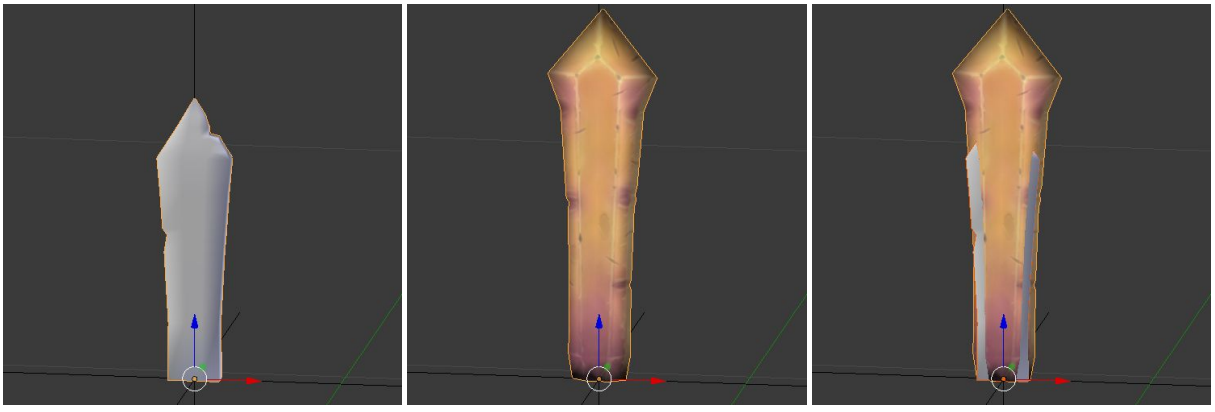
Open the file and you will find this or a similar structure in the outliner:



It is very important to keep this structure. You will see there are already meshes in the part nodes. These meshes are just for reference.

Now it is time to import your custom part and place it under its correspondent origin (e.g., if you are adding a custom blade it must be a child of the node called 'bladeOrigin').

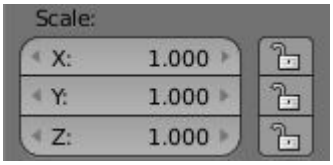
Make sure the pivot point is the same as the one of the reference mesh. See how in both cases are in the bottom middle of the edge:

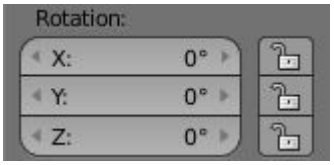


Reference mesh Custom mesh Both meshes

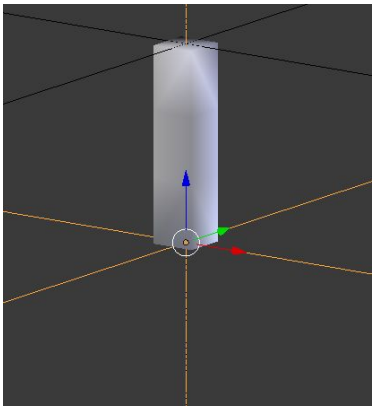
Scale must be 1 and rotation 0, so apply these transformations if needed (CTRL + A in the 3D View of Blender).

In other softwares this is called **'Freeze transformations'** or similar.

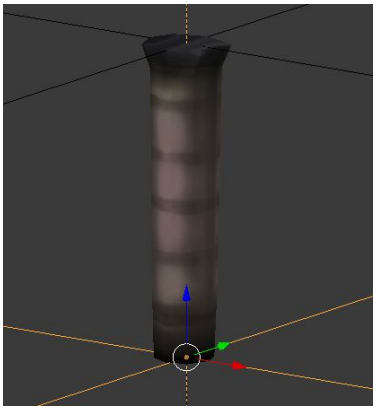




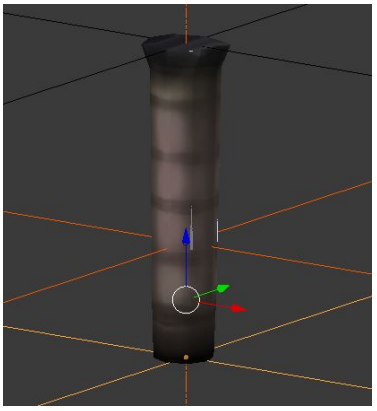
Some parts will have one or more empty nodes in it. Check the example part of the one you want to add, if it is the case, you have to copy or duplicate that end node and parent it to your custom mesh in the equivalent position. Example of a custom grip part which have an empty node at the bottom:



Reference mesh

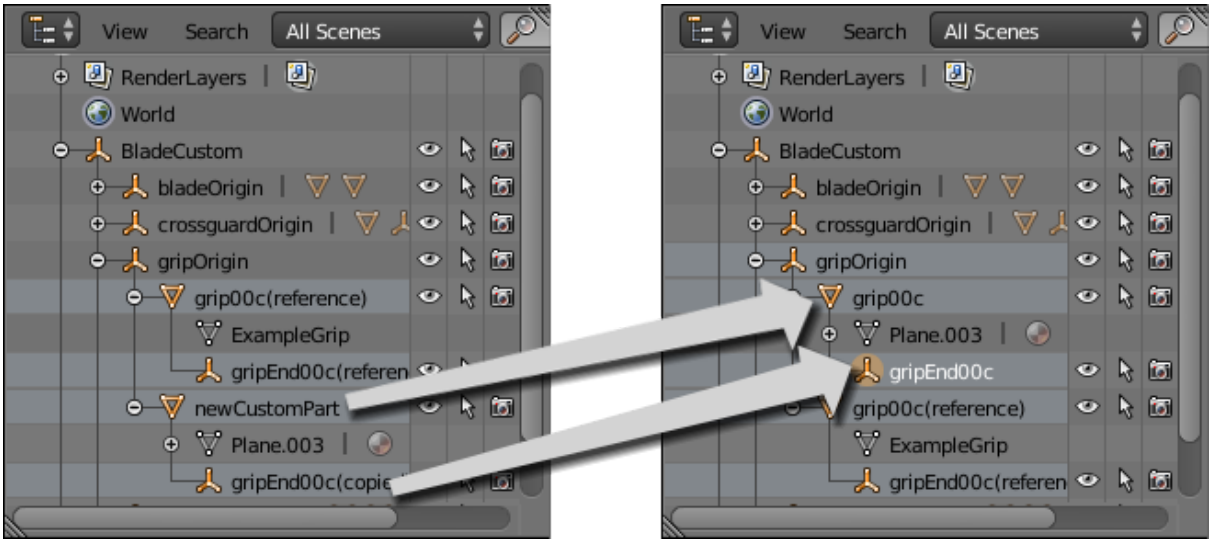


Custom mesh



Both meshes

Your hierarchy structure should be like this or similar:



Now you have to rename your custom parts with the same name of its equivalent reference mesh (e.g., **grip00c** where 'c' stands for custom). If you want to add more they will need to be named as grip**01**c, grip**02**c, grip**03**c, and so on.

You can now delete the example parts but before, a back up of the file **BladeCustom** is highly recommended for future reference. If you decide to keep the example parts you must rename them as if they were a new custom part (e.g., grip00c or grip01c).

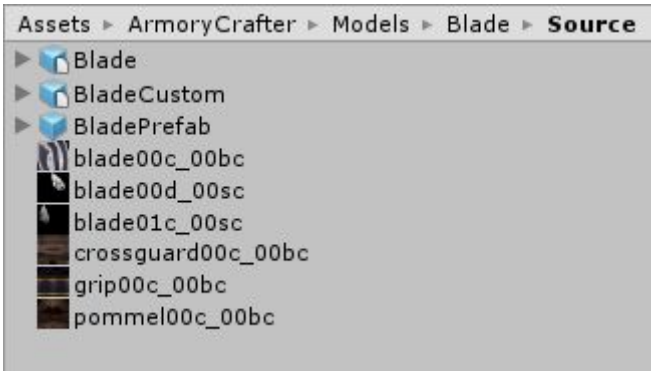
Save the Blender file or export as FBX in the same folder and we are done with this step. Make sure the name ends with '**Custom**' if you save as Blender file.

4.2 Adding custom textures

This part takes place in the same folder as the previous step:

Assets/ArmoryCrafter/Models/**Blade**/Source/

Textures you want to add must be placed in this folder. Only **.PNG** textures are supported and they have to be in a correct name format:



The possible name formats are these:

grip00d_00bc
grip00d_00sc
grip00c_00bc
grip00c_00sc

- 'd' stands for **default**. These are custom textures for non-custom models of the tool.

- 'c' stands for **custom**. If the texture is for your custom model the texture name will need a 'c' just right after the part name.

- 'b' stands for **base texture**. If your texture is a base texture, must have a 'b' before the last 'c'.

- 's' stands for **secondary texture.** If your texture is a secondary texture, must have an 's' before the last 'c'.

Make sure you respect the structure of the name format:

partName + 00 + firstLetter + _ + secondaryLetter + lastLetter

- **partName** can be ‘blade’, ‘grip’, ‘crossguard’, ‘pommel’, ‘head’...
  It must be followed by **two digits** (first part is 00, second 01, third 03...).

- **firstLetter** can be ‘d’ if it is a custom texture for a default non-custom part. Use ‘c’ in case of a custom texture for a custom part. It must be followed by an **underscore** ‘_’.

- **secondaryLetter** can be ‘b’ if it is a base texture or ‘s’ if it is a secondary texture.

- **lastLetter** must be always ‘c’ since all the textures to add are custom.

Check the previous image to see how your folder should look after finishing this step.

4.3 Custom Content Manager

After completing points 4.1 and 4.2 of this section there is a last thing left for making Armory Crafter detect your custom assets.

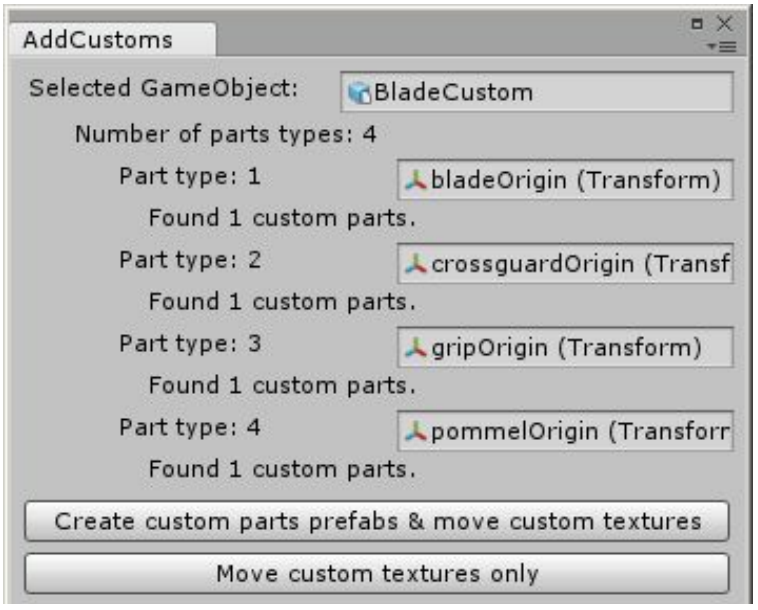
Custom Content Manager is a custom Unity Window that creates prefabs from your custom files. It move them together with their textures to their correct folders in order to be detected by the tool.

To open the Custom Content Manager, find in the Unity top menu:

Tools > Crafter Series > Armory Crafter > Custom Content M.

With the manager opened, select your custom file.

After selecting the file, if there isn't any errors you will see something like this:



At the middle of the window you will see two buttons:

1. 'Create custom parts prefabs & move custom textures'
2. 'Move custom textures only'

Use the first button to add custom meshes that you previously added to the custom file. This will move any texture in the folder to their correct location too.

Use the second button to just move the textures of the folder to their correct location to be detected by the tool.

In this example we need to click the first button, as we just added our custom meshes to the custom file (**BladeCustom**).

If we want to add just new textures, we should use the second button only.
After pressing one of the buttons, you should see a message in the console. If no errors are shown and everything is correct the process of adding custom content will be done.

Now, the next time you open the Armory Crafter tool you should see your custom parts when navigation through the different meshes and textures with the menu arrows. The custom parts will appear in yellow numbers, instead of white numbers like default parts.

Make sure your Part Edit Mode is set to '**Default & Custom**' or '**Custom Only**', otherwise you won't be able to select your custom parts.

5. CHANGELOG

Version 1.3 (current version)

- Blades, Hammers and Axes now share the same pommels.
- Hammers, Axes and Clubs now share the same grips.
- Fixed some minor UI bugs.
- Added 1 more handle mesh with 2 base and 1 secondary textures to Shields.

Version 1.2

- Added color picker and different blend modes.
- Changed OBJ export texture path to relative.

Version 1.1

- Added club model as a new weapon type.
- Added load progress bar at start.
- Fixed XYZ axis reset when switching models.

6. CONTACT SUPPORT

If you have any questions or doubts don't hesitate to contact me:

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