

# Marv's Re-Volt plugin for modern Blender

## Source Code

<https://github.com/breathingstatue/blender-plugin/releases>



This is the documentation for Marv's Re-Volt plugin for modern Blender.

It is intended to be used with Blender 5 version specifically.

Note: The plugin was updated from Marv's version by Theman with the help of AI.

Please report Bugs and suggest features on GitLab or Re-Volt Discord Server or the ReVolt Hideout Forum.

## Features

### Import, Export

- World (.w)
- Mesh (.prm)
- Collision (.ncp)
- Instances (.fin)
- Mirror Planes (.rim)

- Hulls (.hul)
- Car / Car Parameters (via parameters.txt)
- Track Zones (.taz)
- Triggers (.tri)
- Models (.m)
- Objects (.fob)
- Visiboxes (.vis)
- Lights (.lit)
- AI Nodes (.fan)
- Position Nodes (.pos)
- Force Fields (.fld)

## Tools

- Bake light to vertex color
- Simple vertex painting tool
- Car Auto Shader
- Car shadow generator
- Texture animation tool
- Worldcut (export World in split meshes)
- MAKEITGOOD Editor
- Hull Sphere Creator
- Convex Hull Creator

## Installation

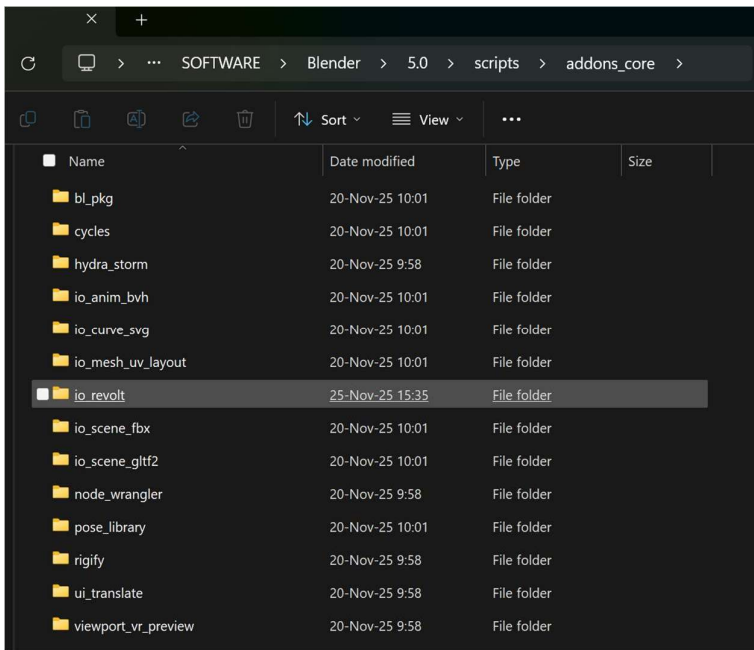
To install the add-on, locate the addons folder within your Blender configuration folder.

For example for me it is located at C:\...\Blender\5.1\scripts\addons\_core

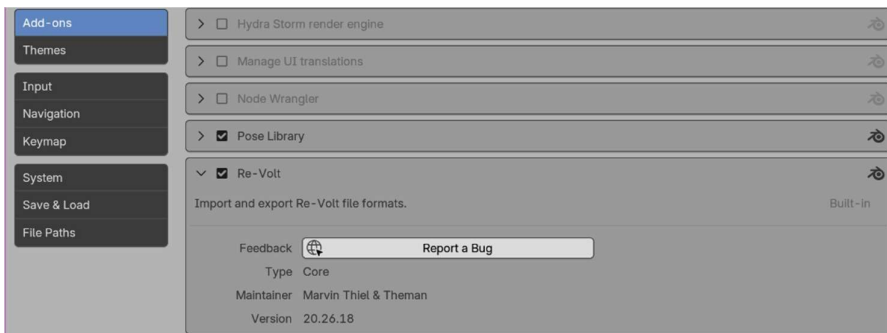
If you're on GNU/Linux, your add-on folder should be located at `~/.config/blender/5.1/scripts/addons_core/`, where 5.1 is the Blender version you are using.

For more information, see [Blender Manual](#).

Extract the io\_revolt folder into the addons folder.



Now start up Blender and open the user preferences (Edit -> User Preferences...). Click on the Add-ons tab and check Re-Volt.



# File Specifications

The following files are supported by the add-on:

- World (.w)
- Mesh (.prm)
- Collision (.ncp)
- Instances (.fin)
- Mirror Planes (.rim)
- Hulls (.hul)
- Car Parameters (parameters.txt)
- Track Zones (.taz)
- Triggers (.tri)
- Models (.m)
- Objects (.fob)
- Visiboxes (.vis)
- Lights (.lit)
- AI Nodes (.fan)
- Position Nodes (.pan)
- Force Fields (.fld)

## Textures:

The texture file name is used by the game engine to determine the texture number for exported faces. Make sure it's named correctly (e.g. tracka.bmp, car.bmp). Currently one car texture and up to 64 track textures are supported, all present files must be named in order using scheme presented bellow.

- 0 tracka
- 1 trackb
- 2 trackc □ 3 trackd □ ...
- 25 trackz
- 26 trackaa □ 27 trackba □ ...
- 51 trackza
- 52 trackab □ 53 trackbb □ ...
- 63 tracklb

Note: If the imported mesh is a car part, the texture path will be taken from either car.bmp / carname.bmp (for example a car named bigvolt uses texture bigvolt.bmp). If it's a level file, the texture name will be generated from the polygon's texture number and taken from the level folder.

The texture number is also written onto a bmesh integer layer. It is very important to set the texture numbers for each texture image. There is a function called Fix Texture Numbers and Materials for that purpose (assuming the textures are named correctly by following the forementioned texture naming logic).

## World (.w)

World file is used for the game's race tracks. In order to create a track, you have to create meshes, assign textures, do Vertex Colouring, Environment Map colouring, and add possible face properties and Texture Animations. The .w file's name and the track's foldername as well as the track's .ini file should follow the same naming logic. The textures' names were explained slightly above.

## Probe Mesh (.prm)

.prm file is used for various parts of the car including body.prm, wheel.prm, spring.prm, axle.prm, pin.prm, spinner.prm, as well as for the Instaced meshes. The assigned material for the texture should be named as "car.bmp".

Also instanced objects are .prm files. They use the texture tracka / trackb / trackc etc.

So you would use Texture Number for those as well.

Level of Detail (LoD):

If a PRM file includes multiple meshes all of them will be imported.

A suffix will be appended to the mesh name (|q0 is the highest quality, |q3 is a lower quality).

A fake user will be assigned to them so they're not lost when saving the file.

Note: Only car wheels support LoD.

## Collision (.ncp)

All objects of the scene will be merged into one mesh and then exported to the file.

Objects will be ignored if they're a debug object or have the ignore object property set. Faces that have the material NONE assigned to them will not be exported.

A lookup grid will be automatically exported. This can be turned off in the export settings.

## Instances (.fin)

Instance objects are .prm files placed around the track. An instance file contains data about multiple objects. For example you can have multiple “tree” objects in the track, but they may use only one tree.prm file and their location and orientation is saved in the .fin file. Instance’s filename follows the name of the track.

ModelRGB: Instance file saves Model Colour to make the Vertex Colours lighter or darker. This adds a variation to the otherwise similar .prm duplicates.

You should mark any object as Instance only in the Object Mode.

## Models (.m)

Models are used as Objects (.fob) in-game. You can modify the model file’s graphics in Blender, but you must define the .fob file as well, meaning the model placement and parameters. It is possible to use Texture Animations for models.

## Mirror Planes (.rim)

Mirror planes are .rim files placed around the track. If you want to make a mirror to the track, use this file type. Mirrors are always placed horizontally straight.

## Hull (.hul)

Note: For importing hull files qhull needs to be installed on GNU/Linux (macOS too) in order to import Hulls (on Arch, install it with `sudo pacman -S qhull`, package name

may be similar on your distro). The add-on is shipped with qhull.exe for Windows systems, nothing needs to be installed additionally.

Hull files are mainly used for car collision and moving model objects.

Importing a hull file results in several Blender objects:

One (sometimes more) convex hull which resembles the car body.

The interior (one per convex hull) consisting of spheres.

Note: Vertex and edge data is ignored when importing but written to exported files. Many custom .huls don't include vertex and edge data, apparently the game works without them.

## Car Parameters (parameters.txt)

The add-on imports the car's body, wheels, springs, axles and pins and their positions and angles (even wheel camber) using the parameters.txt.

In here, naming matters. You should always name the car parts as follows:  
body, wheel

/ wheel / wheelfl etc..., spring, pin, axle, spinner, aerial. Even though the parameters.txt accepts different file names, the Blender plugin can't connect the car textures and handle the loading of the car and Copy Params otherwise.

Use Copy Params function for the wheels, springs, axles, pins, aerial and locations/ orientation. It copies the car part OFFSETS to clipboard to be pasted into parameters.txt. In order to use the Copy function, you must parent the to-be-copied car part to the body mesh.

## Track Zones (.taz)

You can import / export track zones, which are shown in Blender as transparent meshes. There is a function in the addon called Reverse Zone IDs with which you can make the reverse (R) track zones. The functions are in Scene tab.

## Triggers (.tri)

There are functions in Scene and Object Tabs to create and choose the correct trigger, set its ID and even copy a trigger. You can also search for any Trigger that is in Blender with "Find Special Objects" UI button at Output Tab.

## Objects (.fob)

You can create a Object in Scene Tab. While being able to adjust the angle of the object, you can only see the actual presentation of the Object in-game. In Object Tab you can edit the properties and duplicate any Object. You can also search for any Object that is in Blender Scene with "Find Special Objects" UI button at Output Tab.

## Visiboxes (.vis)

You can create a Visibox in Scene Tab. You can modify the visibox file's ID and subproperty in Blender, and you're able to adjust the size of the visibox by modifying their size in Blender. You can also search for any Visibox that is in Blender with "Find Special Objects" UI button at Output Tab.

## Lights (.lit)

You can create a Light in Scene Tab. You can modify the light file's ID and properties. You can adjust the size of the Square Shadow by modifying its size in Blender. You can also set the Light's angle in Blender. The Light properties and duplicate tool are in Scene Tab. You can also search for any Visibox that is in Blender with "Find Special Objects" UI button at Output Tab.

## AI Nodes (.fan)

You can create an AI Node in Scene Tab. You can modify the AI Node in Object Tab. You can also use the automatic AI Node creation tools and Overtake Line Automation. In order to use those, you will need to import the .ncp and .taz (collision file and track zones) of the track.

## Position Nodes (.pan)

You can create a Position Node in Scene Tab. You can modify the Position Node in Object Tab. You can also use the automatic Position Node creation tool. In order to use that, you will need to import or have the .fan (AI Nodes) in the scene.

## Force Fields (.fld)

You can create a Force Field in Scene Tab. You can modify or duplicate the Force Field in Object Tab.

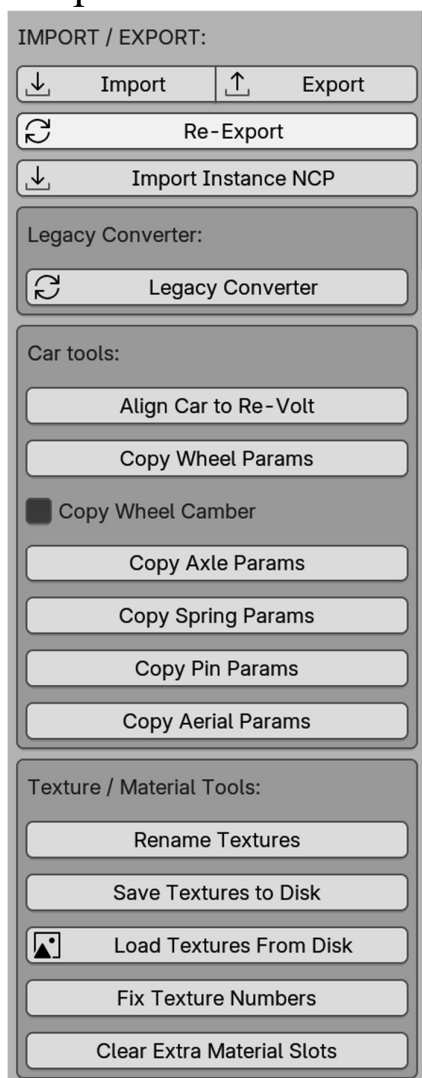
# Re-Volt plugin User Interface

The user interface is located at the Properties View.

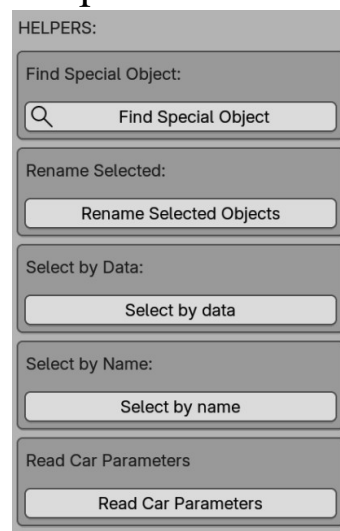
The user interface is scattered along the Output, View Layer, Scene, World, Object, Data and Material Tabs.

Mesh Face Properties, NCP Properties and Vertex Colour Tool appear and work only in the Edit Mode. Object Tab is only visible when you have an object selected.

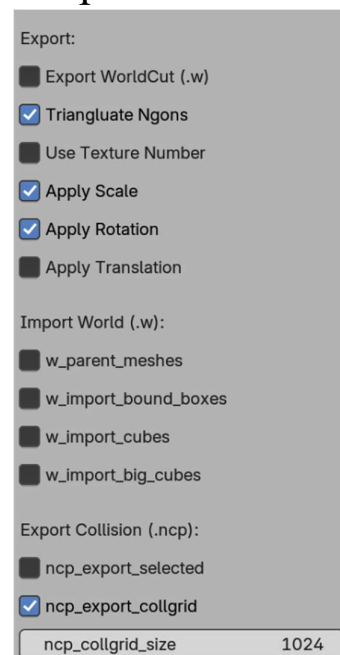
## Output Tab 1/3



## Output Tab 2/3



## Output Tab 3/3



## View Layer Tab:

Texture / Material

Layer: **Tex+VC+Alpha** ▾

Set to All

Car Skin

Viewport Visibility

- Track Zones
- AI Nodes
- Pos Nodes
- Instance NCP
- FOB Objects
- Force Fields
- Lights
- Triggers
- Visiboxes

## Scene Tab 2/2:

Pos Nodes

Split Route

**+** Create Pos Node

Auto Spacing

Automated Pos Nodes

Objects

Object: **Spinning Barrel (0)** ▾

**+** Create FOB Object

Lights

Type: **Omni** ▾

Create Light

Force Fields

Type: **Linear** ▾

Shape: **Box** ▾

Create Force Field

Triggers

Trigger: **Piano** ▾

**+** Create Trigger

Visiboxes

Visibox: **Camera** ▾

ID

**+** Create Visibox

## Scene Tab 1/2:

Car Hull:

Add Hull Sphere

MAKEITGOOD

Track Zones:

Create Track Zone

Reverse Zone IDs

AI Nodes

New Width

New T... **Racing Line** ▾

Left Wall  Right Wall

Connect to Selected

Additional Route

**+** Create AI Node

Automated AI Nodes

Automated Overtake Line

Selected Mesh Path

Starting Node | Ending Node

AI Nodes to Selected


## World Tab:

**i** Tip: Change Shading Mode.

### AUTO SHADING

Bake Light to Vertex Colors  
Batch Bake Light to .fin Env  
Bake Light to RGB Model

Car Shade Colour:

 CAR AUTO SHADER

### CAR SHADOW

Quality: 128 Samples ▾  
Resoluti... 128x128 ▾  
Shadow Strength 4  
Bake Shadow  
Shado...

## Object Tab (Edit Mode) 1/4:

### FACE PROPERTIES

Face Properties:

- Double sided
- Translucent
- Animated
- Mirror
- Additive blending
- No EnvMap
- EnvMap
- Cloth effect
- Do not export

### NCP Properties:

- Double sided NCP
- No Skid Marks
- Oil
- Non-Planar
- Object Only
- Camera Only
- No Collision

### Material Settings:

Set: NONE ▾  
Find: DEFAULT ▾

### Set Texture

(Texture layer missing/unset)

Create Layer / Set Texture Page

## Object Tab 2/4:

Instances: 1/1024

Mark as Instance

Remove Instance Property

EnvMap

SWITCH TO EDIT ... ENVMAP COLOR

Use Modeling Color

SWITCH TO EDIT ...ODELING COLOR

Hide

Fin Priority	1
LoD Bias	1024

No Mirror Mode

Not affected by Lights

No Camera Collision

No Object Collision

Model Properties:

Mark/Unmark as .m Model

Is Model (.m)

Mirror Properties:

Is Mirror Plane

Hull Properties:

Generate Convex Hull

is Hull Sphere

is Hull Convex

Debug Properties:

Object is a BigCube

Object is a Cube

Object is a Boundary Box

Ignore for .ncp

Set BCube Mesh Indices

## Object Tab (MAKEITGOOD)

3/4:

Track Zone Properties

Track Zone ID 0

Duplicate Track Zone

AI Node Properties

Type: Racing Line

Start Node

Left Node Wall  Right Node W...

Width	2.00
Racing Line	0.50
Overtake Line	0.50

From: -

To: -

Additional Route

Reverse Nodes

Hide / Show AI Nodes

Connect Selected

Connect by Name

Disconnect Selected

Pos Node Properties

Connect Selected

FOB Object Properties

Object ... Spinning Barrel

Object ID: 0

Type Name: Spinning Barrel

Speed	0	-255 -255
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Duplicate FOB Object

# Object Tab (MAKEITGOOD)

4/4:

**Light Properties**

Type: **Omni** ▾  
World/...: **World and Objects** ▾

RGB:

	0
	0
	0

Reach: 512.00

Flicker

Flicker Speed: 1

Duplicate Light

**Force Field Properties**

Type: **Linear** ▾  
Shape: **Box** ▾  
Apply: **Force** ▾  
Direction: **Linear** ▾  
Distribu...: **Uniform** ▾

Magnitude	0.00
Damping	0.00

Size (from scale): 128.0 128.0 128.0

Duplicate Force Field

**Trigger Properties**

Type: **Piano** ▾

PianoFlagLow	0
PianoFlagHigh	0

Duplicate Trigger

Copy Trigger Values

Paste Trigger Values

**Visibox Properties**

Type: **Camera** ▾

ID	0
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# Data Tab 1/1:

**TEXTURE ANIMATION**

Slots Limit	0
Current Slot	0
Frames Limit	2

Current Frame: 0  
Current Texture: 0

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UV0	0.00	0.00
UV1	1.00	0.00
UV2	1.00	1.00
UV3	0.00	1.00

Assign Animation  
 Remove Assign  
 Clear Slot

(x) Transform Animation

Start Fra... 0	End Frame 2
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Texture: a (0) 0

Frame Time: 0.02

Transform Animation

# Grid Animation

Start Frame	0
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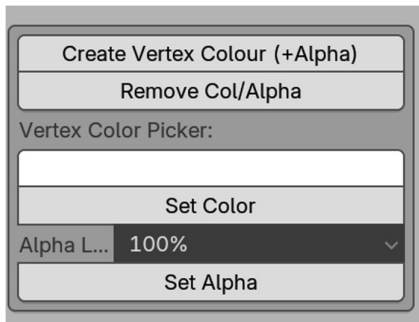
X Resolut... 2	Y Resoluti... 2
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Texture: a (0) 0

Frame Time: 0.02

# Grid Animation

## Material Tab 1/1:



-Theman (28th of May 2026)