



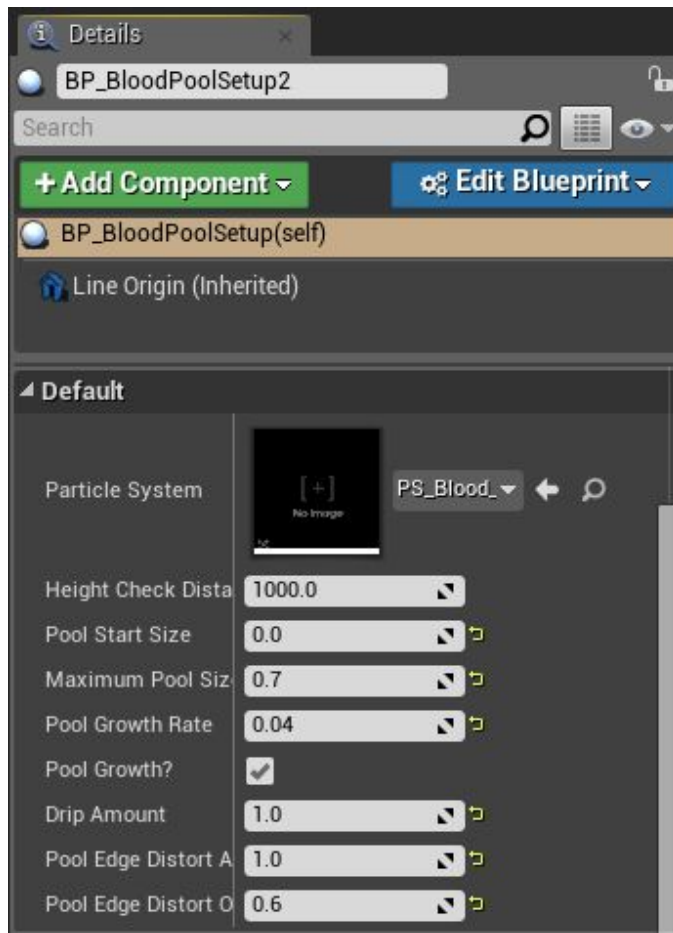
FXVille's Blood VFX Pack Help Doc
support@fxville.com

Thank you for purchasing our Unreal Blood VFX Pack! In this document you'll find information on the Blood Pool Blueprint (BP_BloodPoolSetup), Blood Drip (PS_Blood_Drip_01), and using our Blood Master Material (MAT_BloodClip_Master) to create custom material instances for your particle effects.

Working with the Blood Pool Blueprint

Included in the blood pack is a blueprint that, when placed in your scene, will automatically detect the ceiling and floor directly above and below the blueprint and then place dripping blood and a growing blood pool (*note: the effect won't be visible until the scene is playing*). Once the blueprint is placed it can be customized in the details panel, allowing you to control everything from how fast the pool of blood grows to the rate at which the drops of blood fall from the ceiling.

Here's a rundown of the options you'll find in the blueprint and some tips for tailoring the blood pool exactly how you want it.



Particle System: This is where the Blueprint gets the particle system it places on the ceiling, by default set to PS_Blood_Drip_01. Useful if you make a custom particle system that you want to place, or make a duplicate of our particle system with some different emitter attributes (see below for information on the Blood Drip particle system). Drag and drop a new particle system onto this slot and the blueprint should automatically change the particles the next time you play the scene.

Height Check Distance: This is the distance (in Unreal Units) that the blueprint will check for a ceiling and floor. Normally this should be set to a high number, but can be customized depending on the environment the blueprint is placed in.

Pool Start Size: This is the starting size of the pool, measured in meters (100uu). Change this value to change the size the pool will be when the scene is first played.

Maximum Pool Size: The maximum size (in meters) that the blueprint will allow the blood pool to grow. Useful if you don't want a lake of blood to form after ten minutes of playing a level. If this value is set below the pool start size, the blood pool will not grow.

Pool Growth Rate: This is the rate at which the blood pool will grow, measured in meters per second. Generally good to keep this value low (~0.04 worked well for us), but can be tweaked depending on the situation.

Pool Growth?: Check if you want the pool to grow, uncheck if you want the pool to remain the same size. If unchecked, the pool will start at the starting size and stay there.

Drip Amount: Changing this value will change the rate at which the blood drips off the ceiling. A higher value means a higher rate. In general, the value is about equal to how many drops will fall every second, though there is some randomization built into the emitter.

Pool Edge Distort Amount: The blood pool material has the ability to distort the shape of the edges of the pool. Changing this variable's value will affect the strength of that distortion. This value should be kept between 0 and 1, as values higher or lower tend to give strange results.

Pool Edge Distort Offset: This value will shift the distortion on the edges slightly so that multiple blood pools can be placed near each other without too much obvious repetition. This value is also from 0 to 1.

Other Notes:

- The pool and the drips won't spawn correctly if the blueprint is placed directly on the floor or ceiling. Try and give at least 1 or 2 uu's of empty space between the top and bottom of the blueprint's origin.
- The blueprint cannot distinguish objects from the floor or ceiling so make sure there is a direct line from the blueprint's origin to wherever you want the drips and blood pool to spawn.

Customizing the Dripping Blood: While you can customize the rate at which the blood drips within the blueprint, you may want to customize some other elements of the emitter to better fit your game. If you do, make sure to make a duplicate of the particle system, as any changes you make will propagate to any other blueprints with the same particle system attached. You'll find the original particle system, called PS_Blood_Drip_01 in the Particles folder in the BloodPack folder.

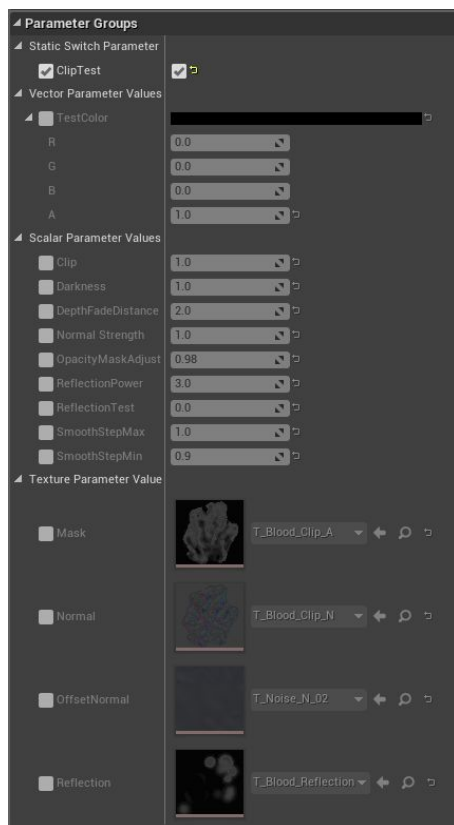
Changing the Size of the Drops: If you wish to change the size of the blood drops then you want to change the 'Start Size' values in the Initial Size tab under the Drip emitter. By default the emitter uses a uniform starting size value, meaning it will spawn a drip with a size randomly

chosen between the min and max values. X is the width of the particle, and Y is the height. Since the emitter spawns 2D textures, Z is not used.

Changing the Spawn Area of the Drips: If you want to change the starting size or make the emitter drip from a single point then you need to change values found in the Initial Location tab under the Drip emitter. The minimum and maximum x, y, and z values in the 'Start Location' drop-down represent the length, width, and height of a box that the emitter spawns randomly within. The default values of -20 to 20 in the x and y mean that the emitter will spawn particles within a 40x40 uu square (no z value means no height). Increasing or decreasing the range between the x and y values will increase or decrease the size of this square. A minimum and maximum value of 0 in the x, y, and z inputs will cause the drip to emit from a single point.

Creating/Adjusting Custom Material Instances of MAT_BloodClip_Master

Our blood master material played a huge part in the overall look and feel of the asset pack; nearly every effect in FXVille's Blood VFX Pack, both realistic and stylized, incorporates an instance of MAT_BloodClip_Master in some way. Unfortunately, if you want to make any changes to a material instance (or make your own), it can be difficult to dig through the master material and find out how it works. To help you out, we've made a quick overview of the options in the blood clip material and how they're used.



'ClipTest' is checked.

Clip Test: This is used to test values before the material instance is placed into a particle system. Checking this opens up the 'TestColor,' 'Clip,' and 'ReflectionTest' parameters. Generally, this should be turned off after finding the values you want, as leaving it on takes away a lot of the functionality of the material within a particle emitter.

TestColor: Used to test colors on the material before placing in an emitter. Only visible if 'ClipTest' is checked.

Clip: Allows you to test clipping values for the material. The blood material uses a technique called alpha clipping to give the appearance of the texture being animated over time. The 'Clip' parameter drives that technique. Decreasing the parameter will "eat away" the texture, and doing so over time (which is what we do in the particle systems using Dynamic Parameters), makes it look like the texture is dissolving or thinning out. Use the 'Clip' parameter to find a good max and minimum range for your clip values (usually ~ 0.95 to ~0.3) to use in your particle emitters. Only visible if

Darkness: Decreasing this value will darken the edges of your material based on the original grayscale image.

DepthFadeDistance: Depth fade helps get rid of hard clipping lines when particles intersect geometry by fading out the part of the particle where the intersection occurs. The depth fade distance is how far away from an object (in uu) the fading will start.

Normal Strength: A multiplier changing the influence of the normal map on the texture. Used in conjunction with 'ReflectionPower' and Dynamic Parameters (or 'ReflectionTest' in ClipTest mode) to fake lighting on the texture.

OpacityMaskAdjust: A value that allows you to "preclip" the texture to a certain extent. Useful for getting rid of hard edges in the texture, or separating a large texture into smaller pieces.

ReflectionPower: Similar to specularity. This value will increase or decrease the specular highlights on the texture. Not noticeable until ReflectionTest in the MIC or the Reflection dynamic parameter in the emitter is increased.

ReflectionTest: Used to test the strength of the reflections in the liquid. Find a good number (we found between 3 and 5 to be a good start) and use it in the dynamic parameter of the emitter with the material. This parameter is only visible if 'ClipTest' is checked.

SmoothStepMax and SmoothStepMin: This parameter and the next are used in the SmoothStep material function we made that clips the textures. In general, these values don't need to change. If you want to experiment with it, try decreasing the value of SmoothStepMin, which will change the way that the texture clips out.

Mask: The texture used to define the alpha of the particle. This is a grayscale image with only the green channel being used. The gradient of this image, from white to black, controls the dissolve of the particle over time.

Normal: This is the normal map image used for the particle.

OffsetNormal: This is a texture used to distort the UVs of the other textures, in order to gain variation in each particle.

Reflection: This is a texture that is mapped to the particle using the normal map in order to create small highlights to achieve a wet look.