26.9.8 Editors - Properties Editor - Modifiers Properties Tab - Grease Pencil - Deform Modifiers

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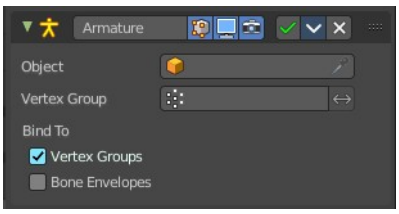
Deform modifiers

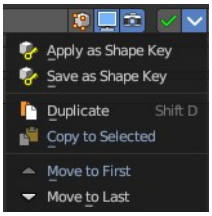
Armature

An armature system allows to deform objects accurately by posing bones. The Armature modifier contains the armature settings at the mesh end.

This modifier gets created automatically when you parent a grease pencil to an armature.



The armature modifier has two extra entries in the dropdown menu in the header.



Apply as Shape Key

Apply the modifier as a new shapekey to the mesh, and remove the armature modifier.

Save as Shape Key

Apply the modifier as a new shapekey to the mesh, but keep the armature modifier.

Object

The name of the armature object used by this modifier.

Vertex Group

A vertex group of the object, which weights will be used to determine the influence of this modifier's results when mixing it with the results from other Armature ones.

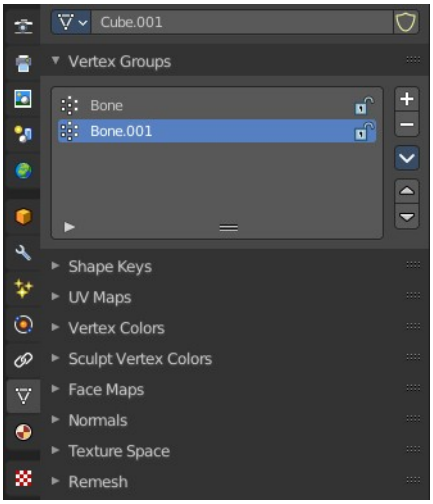
This is only of use when having at least two of these modifiers on the same object, with Multi Modifier activated.

Invert

Inverts the influence set by the vertex group.

Bind to

Vertex Groups



Meshes and lattices only. Use Vertex groups for deforming the mesh. A bone named "forearm", will only affect the vertices in the "forearm" vertex group. The influence of one bone on a given vertex is controlled by the weight of this vertex in the relevant group.

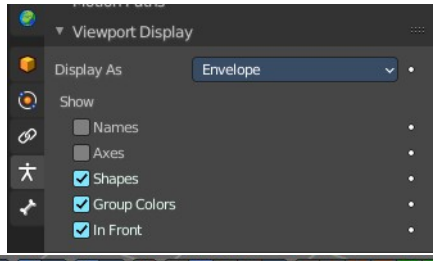
The vertex groups are located in the Object Data Properties in the Properties editor.

Bone Envelopes

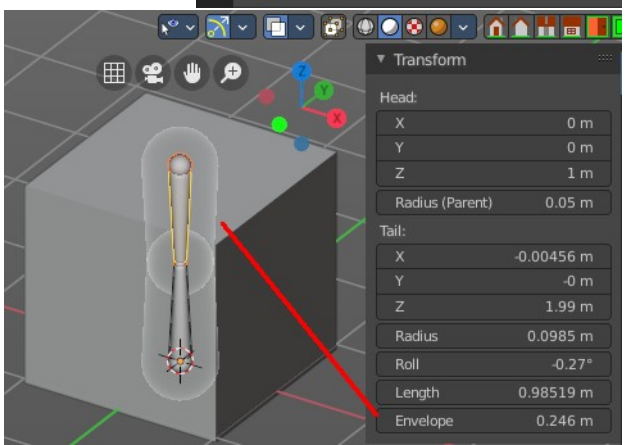
Use the Bone envelopes to deform vertices or control points near them, defined by each bone's envelope radius and distance.

When envelopes are disabled, Blender uses the set of existing vertex group names to determine which bones influences what mesh part.

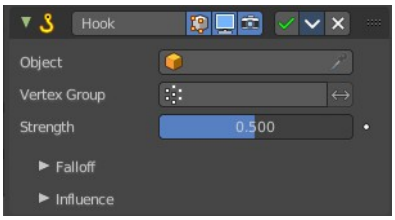
Bone envelopes display can be turned on in the Viewport Display panel in the Object Data properties tab in the Properties Editor. Display as ...



And can be adjusted in the Transform panel in the sidebar of the 3D View, in Edit mode.

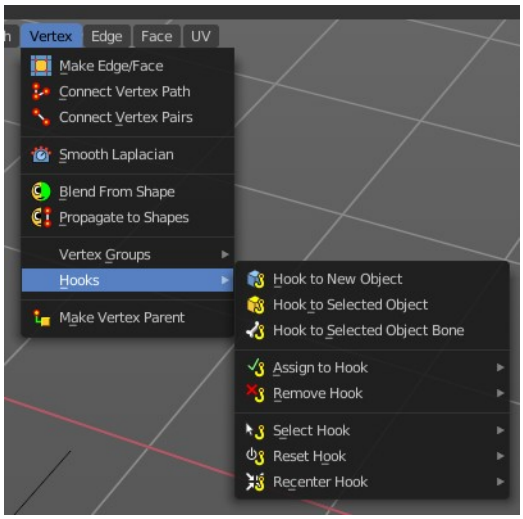


Hook



The Hook modifier is used to deform a mesh, curve or lattice by another object. When you move this hook object, then it pulls vertices or control points with it.

Assigning the hook object to specific vertices of the target object is done in Edit mode. The modifier shows a set of buttons then.



This modifier is automatically created when you add a Hook from the Hooks menu in the Edge menu in edit mode.

Some settings just exists in Edit mode.

Warning! The Hook Modifier stores vertex indices from the original mesh to determine what to affect. Modifiers that generate geometry, like Subdivision Surface, should always be put after the Hook modifier in the stack. Otherwise, the generated geometry can‘ t be affected by the hook’s influence.

Object

The name of the object to hook vertices to.

Vertex Group

Allows you to define the influence per vertex.

Invert

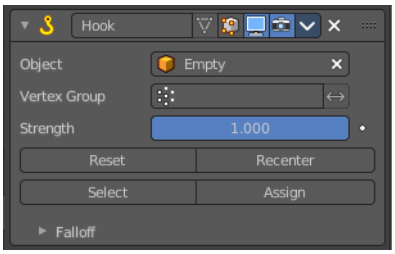
Inverts the influence of the selected vertex group.

Strength

Adjust this hooks influence on the vertices.

Reset

In Edit mode. Recalculate and clear the offset transform of the hook.



Recenter

In Edit mode. Set the hook center to the 3D cursor position.

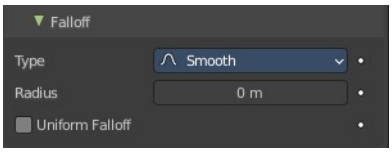
Select

In Edit mode. Select the vertices affected by this hook.

Assign

In Edit mode. Assigns selected vertices to this hook.

Falloff



Type

This can be used to adjust the kind of influence curve that the hook has on the mesh. You can also define a custom curve to get a much higher level of control.

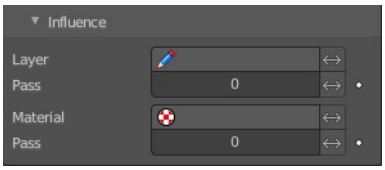
Radius

The size of the hooks influence.

Uniform Falloff

Compensate non uniform scale, and use a uniform falloff.

Influence



Layer

Restricts the effect only to one layer or to any layers that share the same pass index. Click to pick the layer that you want to use.

Invert

Inverts the influence.

Pass

The layer pass index.

Invert

Inverts the influence.

Material

Restricts the effect only to material that share the same material or pass index. Click to pick the material that you want to use.

Invert

Inverts the influence.

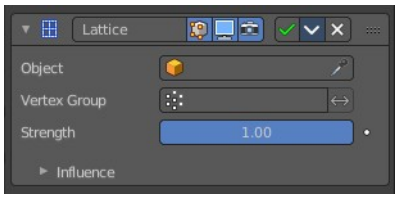
Pass

The material pass index.

Invert

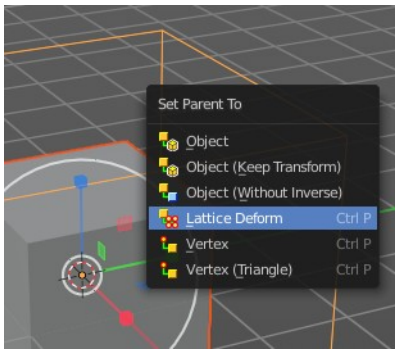
Inverts the influence.

Lattice



The Lattice modifier deforms the base object by the shape of a Lattice object. It can be used at meshes, curves, surfaces, text, lattices and even particles.

A Lattice modifier with valid settings can be added by selecting the object, holding down shift, select the target lattice object, and then choose Lattice Deform in the Parent menu.



Note! When you want to use a lattice to deform particles, then you need to place the Lattice modifier after the Particle System modifier.

Object

The Lattice object that deforms the base object.

Vertex Group

Limit the modifier's effect to a vertex group of the base mesh.

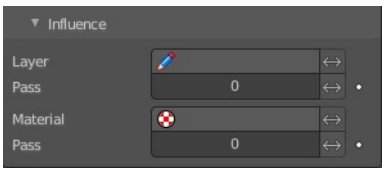
Invert

Inverts the influence of the selected vertex group.

Strength

A factor to control blending between original and deformed vertex positions.

Influence



Layer

Restricts the effect only to one layer or to any layers that share the same pass

index. Click to pick the layer that you want to use.

Invert
Inverts the influence.

Pass
The layer pass index.

Invert
Inverts the influence.

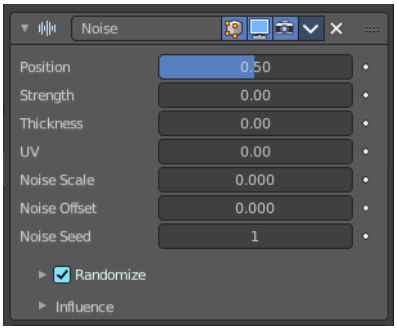
Material
Restricts the effect only to material that share the same material or pass index. Click to pick the material that you want to use.

Invert
Inverts the influence.

Pass
The material pass index.

Invert
Inverts the influence.

Noise



The Noise Modifier adds noise to make the grease pencil line unstable and noisy.

Position
Strength of the noise effect over the point location.

Strength
Strength of the noise effect over the point strength (opacity).

Thickness
Strength of the noise effect over the point thickness.

UV
Strength of the noise effect over the point UV rotation.

Noise Scale
Control the noise frequency scale.

Noise Offset

Offset the noise along the stroke.

Noise Seed

Add a random seed.

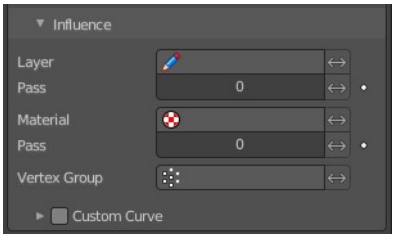
Randomize

Use a random value over time.

Step

Number of frames before using a new random value.

Influence



Layer

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Invert

Inverts the influence.

Pass

The layer pass index.

Invert

Inverts the influence.

Material

Restricts the effect only to material that share the same material or pass index. Click to pick the material that you want to use.

Invert

Inverts the influence.

Pass

The material pass index.

Invert

Inverts the influence.

Vertex Group

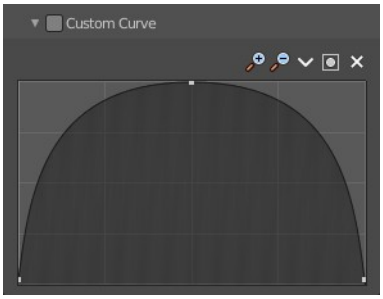
Limit the influence to a vertex group.

Invert

Inverts the influence.

Custom Curve

Use a custom curve to define the noise along the strokes.



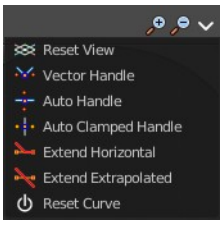
Navigation elements

The navigation elements at the top are described from left to right.

Zoom in and out

The two buttons with the magnifying glass at it zooms in and out in the curve window.

Tools



Tools is a menu where you can find some curve related tools.

Reset View

Resets the curve windows zoom.

Vector Handle

Set handle type to Vector.

Auto Handle

Set handle type to Auto.

Auto Clamped Handle

Set handle type to Auto Clamped.

Extend Horizontal

Extend the curve points horizontal before the first curve point and after the last curve point.

Extend Vertical

Extend the curve points vertical before the first curve point and after the last curve point.

Reset Curve

Resets the curve to the initial shape.

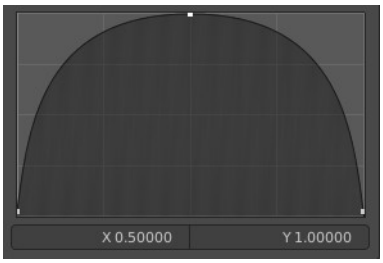
Use Clipping

Clipping options. Set up clipping for the stroke.

Delete Points

Deletes selected curve points.

Curve window



Tweak and adjust the falloff curve by clicking at a curve point and dragging it around.

Double click adds a new point.

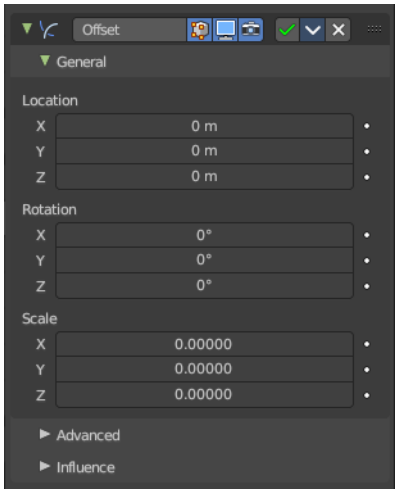
Holding down ctrl activates temporary snapping.

Holding down shift enables slower movement, which allows more accurate setting.

X / Y

The position of the currently selected curve point.

Offset



The Offset Modifier changes the strokes location, rotation or scale, starting from the object origin.

General Subpanel

Location X, Y, Z

Sets strokes location offset from its object origin.

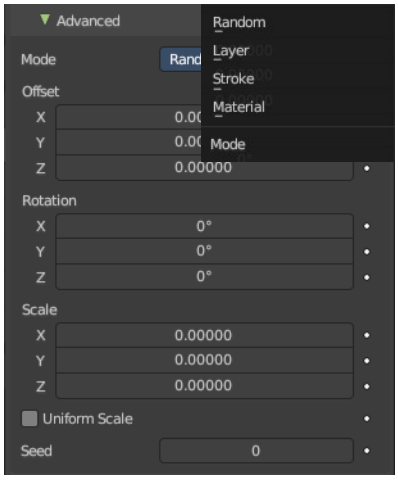
Rotation X, Y, Z

Sets strokes rotation.

Scale X, Y, Z

Sets strokes scale.

Advanced Subpanel



Mode

Random

Randomize Stroke Offset.

Layer

Offset Layers by the same factor.

Stroke
Offset stroke by the same factor based on stroke draw order.

Material
Offset materials by the same factor.

Offset

Randomize the offset in x y and z axis.

Rotation

Randomize the rotation in x y and z angle.

Scale

Randomize the size in x y and z axis.

Uniform Scale

Mode random. Use the same random seed for each scale axis for a uniform scale.

Seed

Mode Random. The random seed for the uniform scale.

Layer Step

Mode Seed. Number of elements that will be grouped.

Layer Offset

Mode Seed. Offset Starting Point.

Stroke Step

Mode Stroke. Number of elements that will be grouped.

Stroke Offset

Mode Stroke. Offset Starting Point.

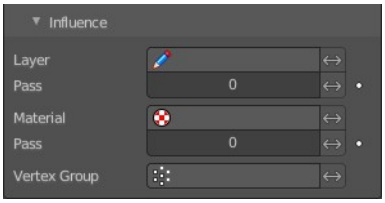
Material Step

Mode Material. Number of elements that will be grouped.

Material Offset

Mode Material. Offset Starting Point.

Influence subpanel



Layer

Restricts the effect only to one layer or to any layers that share the same pass index. Click to pick the layer that you want to use.

Invert

Inverts the influence.

Pass

The layer pass index.

Invert

Inverts the influence.

Material

Restricts the effect only to material that share the same material or pass index. Click to pick the material that you want to use.

Invert

Inverts the influence.

Pass

The material pass index.

Invert

Inverts the influence.

Vertex Group

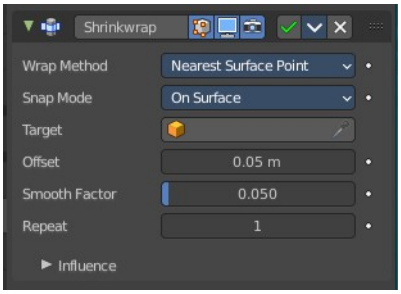
Limit the influence to a vertex group.

Invert

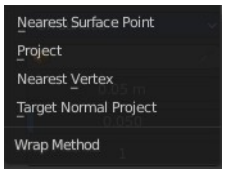
Inverts the influence.

Shrinkwrap

Shrinks the geometry to the surface of another object.



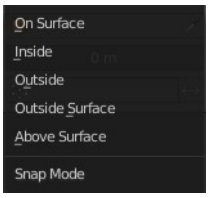
Wrap Method



The method to determine the nearest point on the target's surface for each vertex of the object.

Nearest Surface Point + Target Normal Project

Nearest Surface Point selects the nearest point at the surface. Additionally, Target Normal Project tries to match the interpolated normals of the surface.



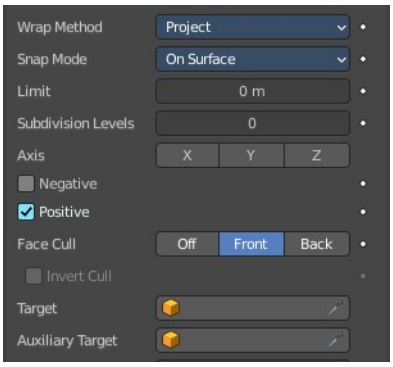
Snap Mode

How the vertex snaps to the surface. The methods should be self explaining.

Target

The target mesh to shrink to.

Project

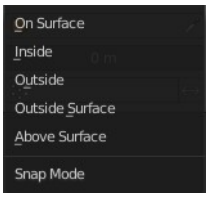


Projects all vertices along a chosen axis until they hit the surface of the target object.

Vertices that never hits the surface are not calculated.

Snap Mode

How the vertex snaps to the surface. The methods should be self explaining.



Limit

A distance limit between original vertex and surface. If the distance is larger than this limit vertex would not be projected onto the surface.

Subdivision Levels

This applies a (temporary) Catmull-Clark subdivision to the modified object's geometry, before computing the wrap.

Axis

Along which local axis of the modified object the projection is done. These options can be combined with each other, yielding a "median axis" of projection. If none are selected, the normal direction is used.

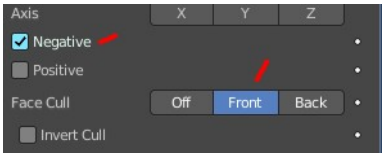
Negative/Positive

This allows you to select the allowed direction(s) of the shrink along the selected axis. If both options are enabled, both ways are evaluated and the closest hit is selected.

Face Cull

Allows you to prevent any projection over the "front side" or the "back side" of the target's faces. The "side" of

a face is determined by its normal.



Invert Cull

When projecting in the negative direction then invert culling.

You need to have negative ticked and face cull either front or back to set this property active.

Target

The target mesh to shrink to.

Auxiliary Target

An additional object to project to.

Nearest Vertex

Target

The target mesh to shrink to.

Offset

An offset distance to keep to the target surface.

Smooth factor

Amount of smoothing to apply

Repeat

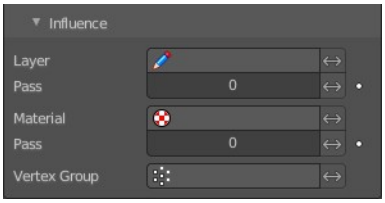
Number of steps to apply smooth.

Vertex Group

Restrict the affected vertices to a vertex group.

Invert

Inverts the influence of the selected vertex group.



Influence subpanel

Layer

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Invert

Inverts the influence.

Pass

The layer pass index.

Invert

Inverts the influence.

Material

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Invert

Inverts the influence.

Pass

The material pass index.

Invert

Inverts the influence.

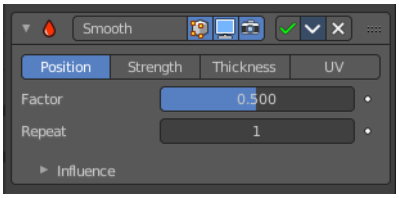
Vertex Group

Limit the influence to a vertex group.

Invert

Inverts the influence.

Smooth



The Smooth modifier smoothens a stroke.

Mode

What elements to affect.

Position

Affects the position of the point.

Strength

Affects the color strength of the point

Thickness

Affects the thickness of the point.

UV

Affects the uv rotation factor of the point.

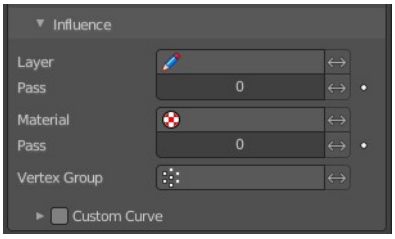
Factor

The smoothing amount. Higher values will increase the effect. Values outside expected range (above 1.0 or below 0.0) will distort the mesh.

Repeat

The number of smoothing iterations.

Influence



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Invert

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Vertex Group

Limit the influence to a vertex group.

Invert

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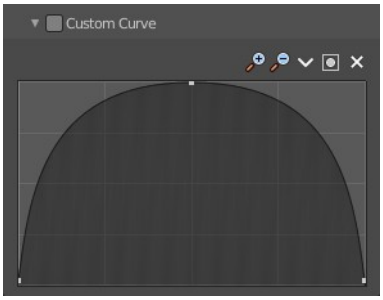
Custom Curve

Use a custom curve to define the noise along the strokes.



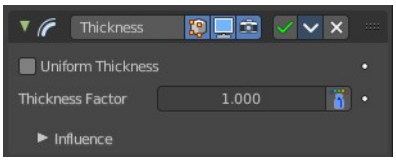
Navigation elements

The navigation elements at the top are described from left to right.

Zoom in and out

The two buttons with the magnifying glass at it zooms in and out in the curve window.

Thickness



The Thickness Modifier change the stroke points thickness.

Uniform Thickness

When enabled, makes the thickness equal for the entire strokes.

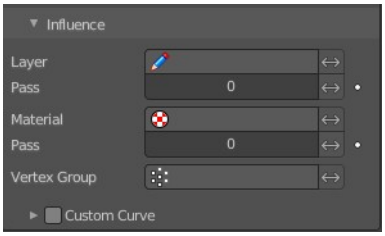
Thickness Factor

Value to add or subtract to the actual points thickness.

Weighted

Use weight to modulate effect.

Influence



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Invert

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Pass

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Vertex Group

Limit the influence to a vertex group.

Invert

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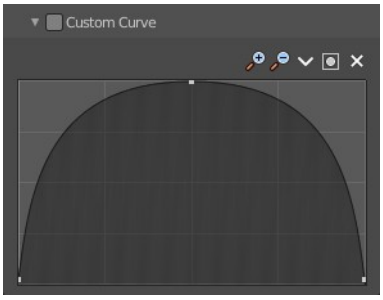
Custom Curve

Use a custom curve to define the noise along the strokes.



Navigation elements

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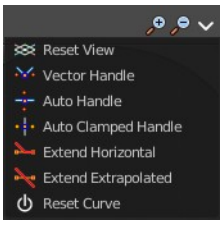
Zoom in and out

The two buttons with the magnifying glass at it zooms in and out in the curve window.

Tools

Tools is a menu where you can find some curve related tools.



Reset View

Resets the curve windows zoom.

Vector Handle

Set handle type to Vector.

Auto Handle
Set handle type to Auto.

Auto Clamped Handle
Set handle type to Auto Clamped.

Extend Horizontal
Extend the curve points horizontal before the first curve point and after the last curve point.

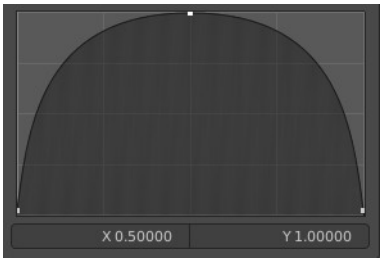
Extend Vertical
Extend the curve points vertical before the first curve point and after the last curve point.

Reset Curve
Resets the curve to the initial shape.

Use Clipping
Clipping options. Set up clipping for the stroke.

Delete Points
Deletes selected curve points.

Curve window



Tweak and adjust the falloff curve by clicking at a curve point and dragging it around.

Double click adds a new point.

Holding down ctrl activates temporary snapping.

Holding down shift enables slower movement, which allows more accurate setting.

X / Y
The position of the currently selected curve point.