



## 7.1.24 Editors - 3D Viewport - Header - Surface - Edit mode - Surface menu

### Table of content

Detailed Table of content.....	1
Edit Mode - Curve Menu.....	5
Transform.....	5
To Sphere.....	5
Shear.....	6
Bend.....	7
Push/Pull.....	7
Warp.....	8
Randomize Transform.....	8
Shrink/Fatten.....	9
Move Texture Space.....	9
Scale Texture Space.....	11
Set Dimensions.....	12
Mirror.....	12
Interactive Mirror.....	12
X Global, Y Global etc.....	12
Snap.....	13
Last Operator Snap.....	13
Operators.....	13
Duplicate.....	14
Split.....	14
Separate.....	15
Toggle Cyclic.....	15
Set Spline Type.....	15
Set Handle Type.....	15
Show / Hide.....	16
Delete.....	16

### Detailed Table of content

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Detailed Table of content.....	1
Edit Mode - Curve Menu.....	5
Transform.....	5
To Sphere.....	5
Usage.....	5
Last Operator Add Ico Sphere Panel.....	5
Factor.....	5
Proportional editing.....	6
Proportional Falloff.....	6
Proportional Size.....	6
Connected.....	6
Projected(2D).....	6

Shear.....	6
Last Operator Shear.....	6
Offset.....	6
Shear Axis.....	6
Axis.....	6
Axis Ortho.....	6
Orientation.....	6
Proportional editing.....	7
Proportional Falloff.....	7
Proportional Size.....	7
Connected.....	7
Projected(2D).....	7
Bend.....	7
Push/Pull.....	7
Last Operator Push/Pull.....	7
Factor.....	7
Proportional editing.....	7
Proportional Falloff.....	7
Proportional Size.....	7
Connected.....	8
Projected(2D).....	8
Warp.....	8
Last operator Warp.....	8
Warp Angle.....	8
Offset Angle.....	8
Min.....	8
Max.....	8
Randomize Transform.....	8
Last Operator Randomize Transform.....	8
Amount.....	8
Uniform.....	8
Normal.....	8
Random Seed.....	8
Shrink/Fatten.....	9
Last Operator Shrink/Fatten.....	9
Offset.....	9
Offset Even.....	9
Proportional editing.....	9
Proportional Falloff.....	9
Proportional Size.....	9
Connected.....	9
Projected(2D).....	9
Move Texture Space.....	9
Last Operator Translate.....	10
Move X, Y Z.....	10
Orientation.....	10
Proportional editing.....	10
Proportional Falloff.....	10
Proportional Size.....	10
Connected.....	10
Projected(2D).....	10
Scale Texture Space.....	11
Last Operator Resize Texture.....	11

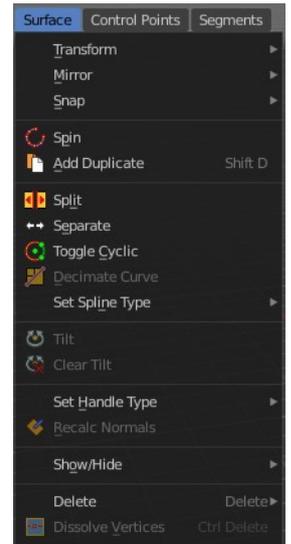
Move X, Y Z.....	11
Orientation.....	11
Proportional editing.....	11
Proportional Falloff.....	11
Proportional Size.....	11
Connected.....	12
Projected(2D).....	12
Set Dimensions.....	12
Last Operator Set Dimensions.....	12
New Dimensions.....	12
Mirror.....	12
Interactive Mirror.....	12
X Global, Y Global etc.....	12
Last Operator Mirror.....	12
Orientation.....	13
Constraint Axis.....	13
Proportional editing.....	13
Proportional Falloff.....	13
Proportional Size.....	13
Connected.....	13
Projected(2D).....	13
Snap.....	13
Last Operator Snap.....	13
Offset.....	13
Operators.....	13
Duplicate.....	14
Last Operator Duplicate.....	14
Move X , Y , Z.....	14
Orientation.....	14
Proportional editing.....	14
Proportional Falloff.....	14
Proportional Size.....	14
Connected.....	14
Projected(2D).....	14
Split.....	14
Separate.....	15
Toggle Cyclic.....	15
Last Operator Toggle Cyclic.....	15
Direction.....	15
Set Spline Type.....	15
Last Operator Set Spline Type.....	15
Type.....	15
Handles.....	15
Set Handle Type.....	15
Auto.....	15
Vector.....	16
Align.....	16
Free.....	16
Toggle Free/Aligned.....	16
Last Operator Set Handle Type.....	16
Type.....	16
Show / Hide.....	16
Show Hidden.....	16

Hide Selected.....	16
Last Operator Hide Selected.....	16
Unselected.....	16
Hide Unselected.....	16
Delete.....	16
Vertices.....	16
Segment.....	17

## Edit Mode - Curve Menu

The Surface menu just exists for Surface objects.

Greyed out menu items are not available for surface objects. They are meant for curve objects of type Bezier. Those menu items are not covered here.



## Transform

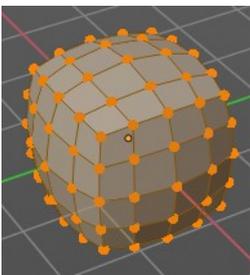
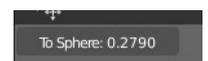
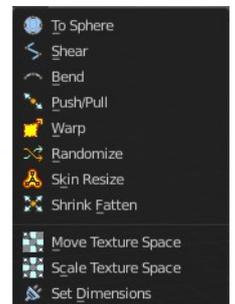
### To Sphere

Shapes a selection of objects into the shape of a sphere. The calculation happens with the object origins.

In Object mode this tool requires to have more than one object selected.

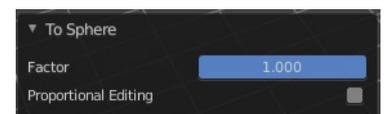
### Usage

Select the vertices, activate the tool, then drag the mouse in the 3D viewport. In the header you will read the current factor then. Which tells you how close you are towards the sphere shape. This also works with curves in the same way.



### Last Operator Add Ico Sphere Panel

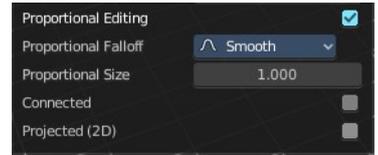
#### Factor



The factor to transform the selection into a shape form.

## ***Proportional editing***

Enables proportional editing. Activating proportional editing reveals further settings.



## ***Proportional Falloff***

Adjust the falloff methods.

## ***Proportional Size***

See and adjust the falloff radius.

## ***Connected***

The proportional falloff gets calculated for connected parts only.

## ***Projected(2D)***

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

---

## **Shear**

Shear shears the selection.

## **Last Operator Shear**

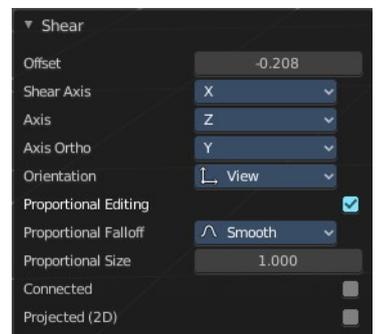
### ***Offset***

Adjust an offset.

### ***Shear Axis***

The shear tool works along an imaginary 2d plane. The shear axis controls if the items are sheared along the x or the y axes of this plane. This is the plane along which the transformation happens. You can shear along the x or the y axis of this plane.

To make things even more complicated, the orientation of this imaginary plane is defined by the Axis and Axis Ortho items below.



### ***Axis***

Defines one axis of the imaginary shear axis plane.

### ***Axis Ortho***

Defines the other axis of the imaginary shear axis plane.

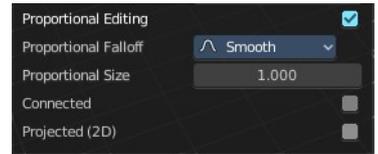
### ***Orientation***

Choose the orientation for the shear action.



## ***Proportional editing***

Enables proportional editing. Activating proportional editing reveals further settings.



### **Proportional Falloff**

Adjust the falloff methods.

### **Proportional Size**

See and adjust the falloff radius.

### **Connected**

The proportional falloff gets calculated for connected parts only.

### **Projected(2D)**

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

---

## **Bend**

Bends the selection.

---

## **Push/Pull**

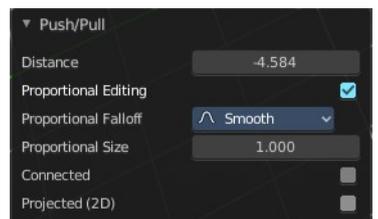
It pushes or pulls the object positions relative to the center of the selection.

In Object mode this tool requires to have more than one object selected.

### **Last Operator Push/Pull**

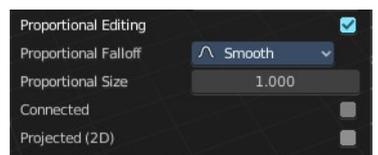
#### ***Factor***

Adjust the strength of influence of the tool.



#### ***Proportional editing***

Enables proportional editing. Activating proportional editing reveals further settings.



### **Proportional Falloff**

Adjust the falloff methods.

### **Proportional Size**

See and adjust the falloff radius.

## Connected

The proportional falloff gets calculated for connected parts only.

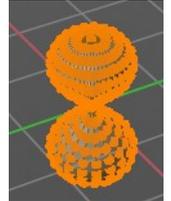
## Projected(2D)

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

---

## Warp

Warp a mesh selection between two defined points. This also works with curves.



## Last operator Warp

### *Warp Angle*

The strength of the warp effect.

### *Offset Angle*

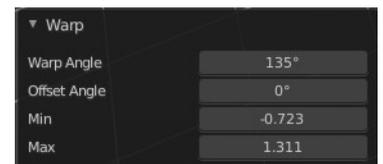
An offset angle to bend side wards.

### *Min*

The start point.

### *Max*

The end point.



## Randomize Transform

This tool allows randomizes the positions of the selected vertices.

## Last Operator Randomize Transform

### *Amount*

Adjust the amount.

### *Uniform*

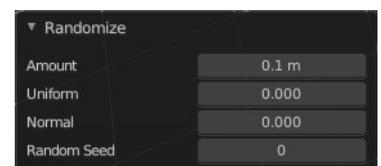
The uniform offset distance.

### *Normal*

Align the offset direction to the normals.

### *Random Seed*

The seed value for randomization.



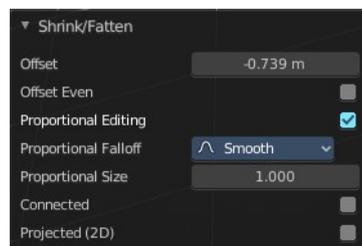
## Shrink/Fatten

Shrink/Fatten scales the selected geometry along its normals. Transform orientation and Pivot point gets ignored.

A positive value pushes the vertices outwards. A negative value pushes the vertices inwards.

### Last Operator Shrink/Fatten

The Last Operator Shrink/Fatten panel gives you tools to adjust the Shrink/Fatten operation. Here you have numeric input for the strength and a few more options.



#### Offset

Offset is the strength of the offset for Shrink/Fatten.

#### Offset Even

Offset Even scales the selection to give more thickness in even areas.

#### Proportional editing

Enables proportional editing. Activating proportional editing reveals further settings.

#### Proportional Falloff

Adjust the falloff methods.

#### Proportional Size

See and adjust the falloff radius.

#### Connected

The proportional falloff gets calculated for connected parts only.

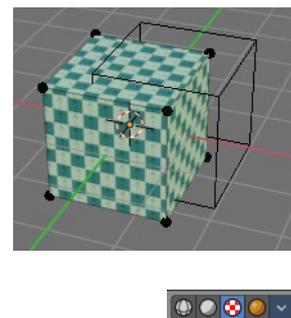
#### Projected(2D)

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

## Move Texture Space

Move Texture space is meant for mesh objects, but has also functionality with a curve object.

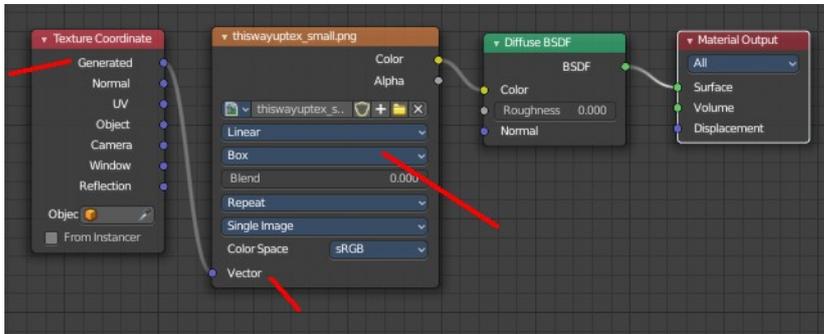
This tool relies at the move tool. With the difference that it moves the texture space instead of the object. It has also a very special use case, and just works with a material with a Texture Coordinate / Generated node. And requires to have the shading at Material or Rendered to see a result in the viewport.



In the viewport you will see the UV cage in black color. In the header you will see the values for the current position of the UV cage.



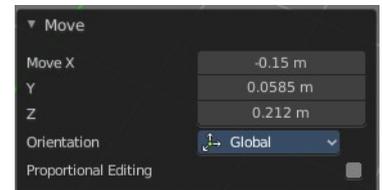
Note that once done and applied, there is no way to reset the UV cage back to zero. When you repeat the operation, then the values will start at 0 again. Even when the UV cage is already offset.



## Last Operator Translate

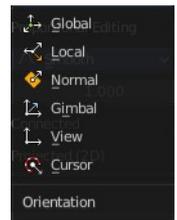
### Move X, Y Z

Limit the position relative to the source object.



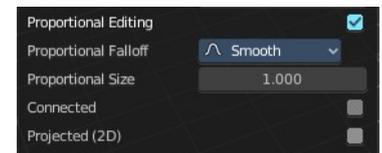
### Orientation

Orientation is a drop-down box. Choose the type of orientation for the mirroring action.



### Proportional editing

Enables proportional editing. Activating proportional editing reveals further settings.



### Proportional Falloff

Adjust the falloff methods.

### Proportional Size

See and adjust the falloff radius.

### Connected

The proportional falloff gets calculated for connected parts only.

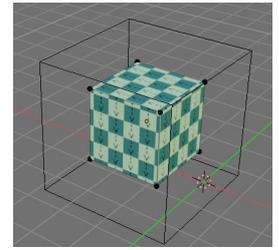
### Projected(2D)

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

## Scale Texture Space

Scale Texture space is meant for mesh objects, but has also functionality with a curve object.

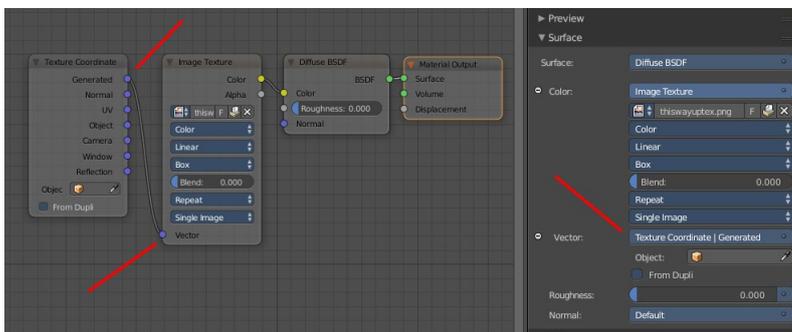
This tool relies at the scale tool. With the difference that it scales the texture space instead of the object. It has also a very special use case, and just works with a material with a Texture Coordinate / Generated node. And requires to have the shading at Material or Rendered to see a result in the viewport.



In the viewport you will see the UV cage in black color. In the header you will see the values for the current position of the UV cage.

Dx: -0.1501 m Dy: 0.05851 m Dz: 0.2117 m (0.2661 m)

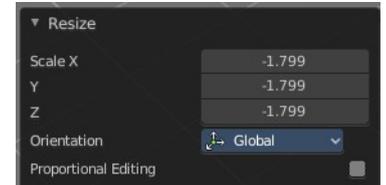
Note that once done and applied, there is no way to reset the UV cage back to zero. When you repeat the operation, then the values will start at 0 again. Even when the UV cage is already offset.



## Last Operator Resize Texture

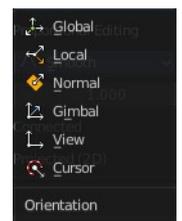
### Move X, Y Z

Limit the position relative to the source object.



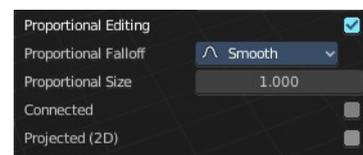
### Orientation

Orientation is a drop-down box. Choose the type of orientation for the mirroring action.



### Proportional editing

Enables proportional editing. Activating proportional editing reveals further settings.



### Proportional Falloff

Adjust the falloff methods.

### Proportional Size

See and adjust the falloff radius.

## Connected

The proportional falloff gets calculated for connected parts only.

## Projected(2D)

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

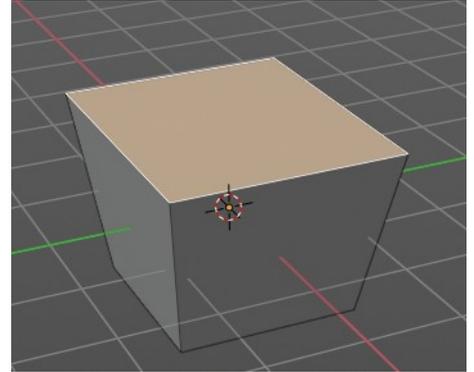
## Set Dimensions

Edit Mode Only!

Normally all scale operations in Bforartists are relative to the current selection and dimensions. And you always start with a relative value of 1.

Set dimensions allows to scale mesh selections in absolute world values. No matter how the initial values are. The new values gets set in the Last Operator.

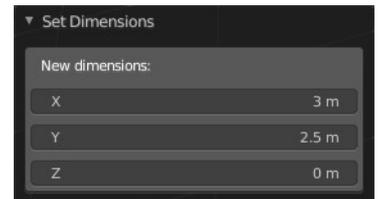
Set dimensions is an add-on. You can turn it off in the add-ons section of the user preferences when you want.



## Last Operator Set Dimensions

### New Dimensions

When you activate the tool then you will see the world coordinates of the selection. Change the values to other world coordinates.



## Mirror

Mirror mirrors the selected geometry along the defined axis.

## Interactive Mirror

Mirror by hotkeys. You activate the tool, type in x for x global for example, or x x for x local. And the selection gets mirrored

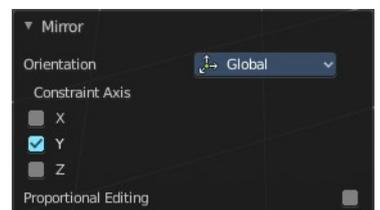


## X Global, Y Global etc.

Mirrors the selection around the chosen axis.

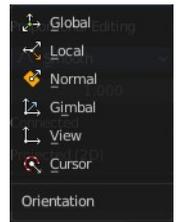
## Last Operator Mirror

The Last Operator Mirror panel gives you tools to adjust the mirror action.



## Orientation

Orientation is a drop-down box. Choose the type of orientation for the mirroring action.

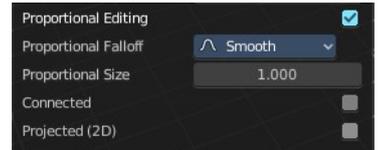


## Constraint Axis

Constraint Axis gives you again the possibility to define the mirror axis. You can choose more than one axis here.

## Proportional editing

Enables proportional editing. Activating proportional editing reveals further settings.



## Proportional Falloff

Adjust the falloff methods.

## Proportional Size

See and adjust the falloff radius.

## Connected

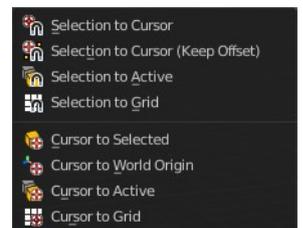
The proportional falloff gets calculated for connected parts only.

## Projected(2D)

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

# Snap

Choose several methods to snap one element to another. The menu items should be self explaining.

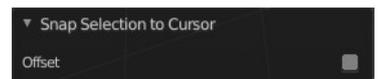


## Last Operator Snap

Some snap operations shows a last operation panel, some not.

## Offset

If the selection should snap as a whole, or if each individual element of the selection should snap.



# Operators

## Duplicate

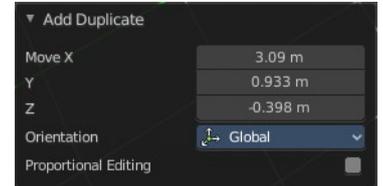
Duplicates the current selection. This can be a single control point or a whole curve.

The copy sticks to the mouse until you release it. A Right click while moving will reset the position of the duplicate. The duplicated part will be part of the same object.

When you drag the duplicate around you will see the position values in the header.

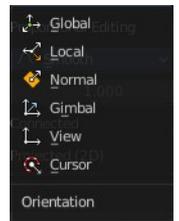
## Last Operator Duplicate

### *Move X , Y , Z*



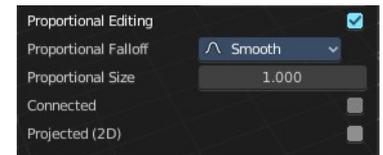
### *Orientation*

Choose the orientation.



### *Proportional editing*

Enables proportional editing. Activating proportional editing reveals further settings.



### *Proportional Falloff*

Adjust the falloff methods.

### *Proportional Size*

See and adjust the falloff radius.

### *Connected*

The proportional falloff gets calculated for connected parts only.

### *Projected(2D)*

The proportional falloff gets calculated in the screen space. Depth doesn't play a role. When it's in the radius, then it gets calculated.

---

## Split

Splits the curve at the selected control point(s). You need to select two control points to select the segment between it.

---

## Separate

Separates the selected control points, and creates a new curve object out of it. You need to select two control points to select the segment between it.

---

## Toggle Cyclic

Toggle Cyclic closes or opens the curve.

### Last Operator Toggle Cyclic

#### Direction

Direction is a drop-down box. Choose the direction in which the curve gets closed.

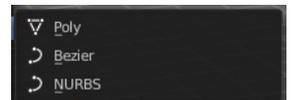
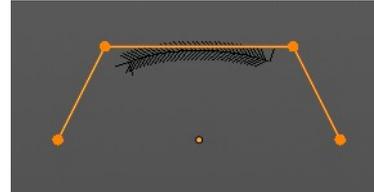
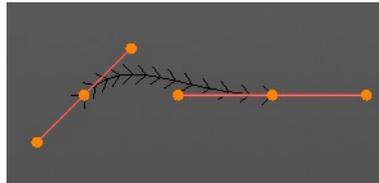
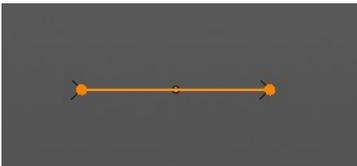
---



## Set Spline Type

With set Spline Type you can set the type of the curve.

Poly is a straight line between the control points. Bezier has curve handlers. A nurbs curve has a control cage.



### Last Operator Set Spline Type

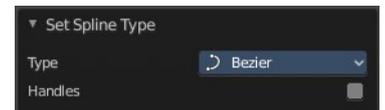
#### Type

Type is a drop-down box. Choose the spline type

#### Handles

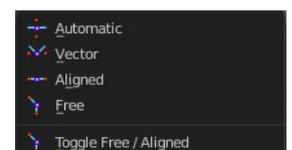
Use Handles when converting Bezier curves into polygons.

---



## Set Handle Type

Handles defines the type of handle for the knots of the curve. You have the choice between Auto, Vector, Align and Free. And the Last Operator gives you a fifth possibility to toggle between Free and Align.



#### Auto

Auto aligns the handles automatically.

## Vector

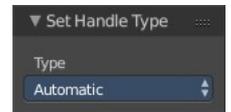
Set Handle type to Vector.

## Align

Set Handle type to Align.

## Free

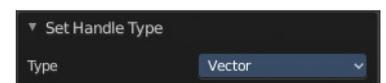
Set Handle type to Free.



## Toggle Free/Aligned

Toggle Free/Aligned.

## Last Operator Set Handle Type



## Type

Type is a drop-down box where you can set the handle type. You have the choice between Auto, Vector, Align, Free. And the fifth possibility toggles between Free and Align.

## Show / Hide

### Show Hidden

Makes all curve geometry in the scene visible again.



### Hide Selected

Hides the selected curve geometry.

### Last Operator Hide Selected

### Unselected

Hides the not selected curve geometry.



### Hide Unselected

Hides the not selected curve geometry. The selected geometry stays visible.

## Delete

### Vertices

Dissolves the selected vertices. When removing vertices in between then the curve stays intact and connected.



## **Segment**

Removes the segment between the selected vertices.