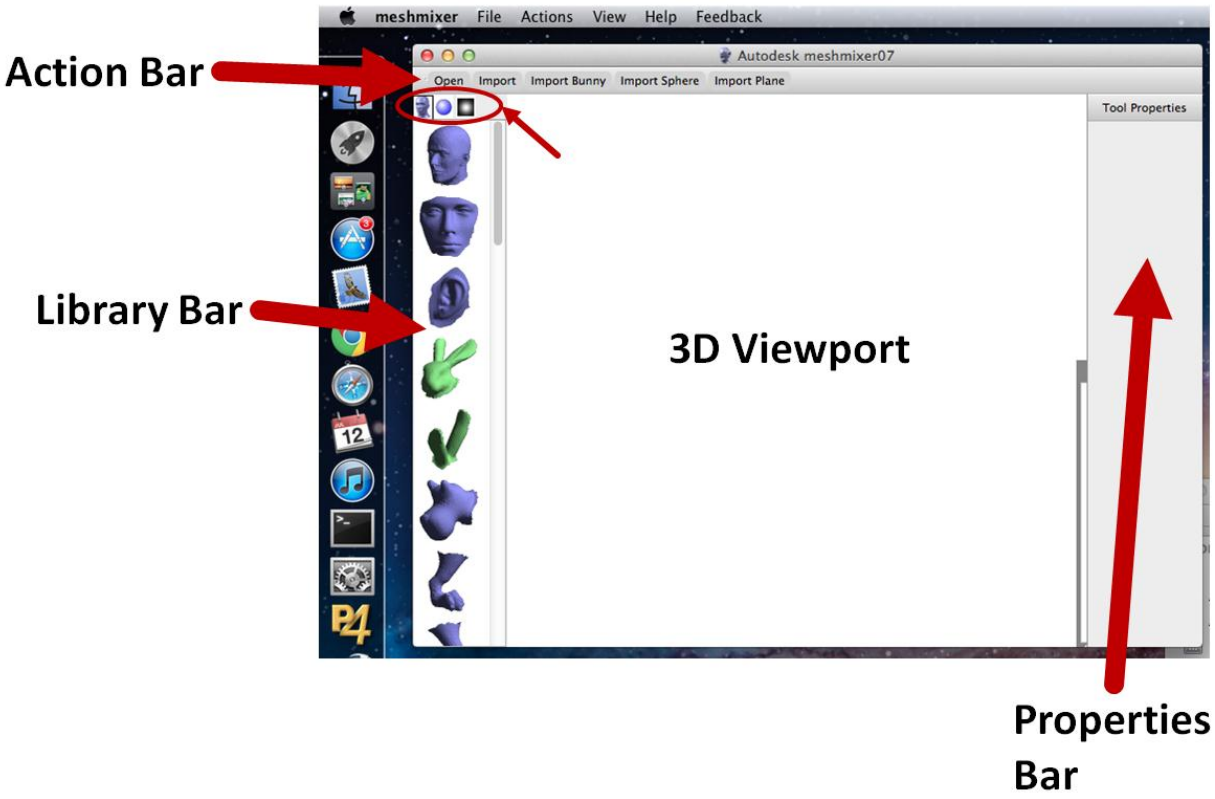
meshmixer manual

This manual is a work-in-progress. Please bear with us =)

Get the latest version here: http://meshmixer.com/help/

Contents:

UI Overview



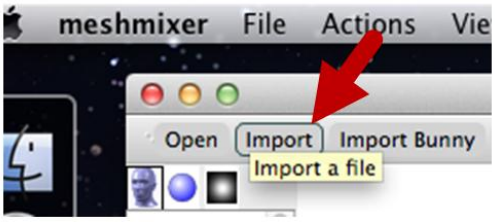
A key concept to understand in meshmixer is the **Action Bar**. The Action Bar is not a traditional menu, it is a dynamic context-sensitive menu that responds to the current scene.

For example, before you have loaded any objects into meshmixer, the Action Bar will provide you with commands such as **Open**, **Import**, etc. Once you load an object, those items will no longer be accessible from the Action Bar, you will have to use the **File** menu in the standard system menu (attached to the window on Windows, at the top of the screen on Mac OS X).

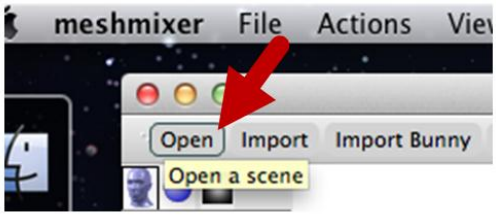
The Action Bar may change depending on the Tool you have selected. If ever you want to get back to the initial Action Bar state, just keep hitting Escape.

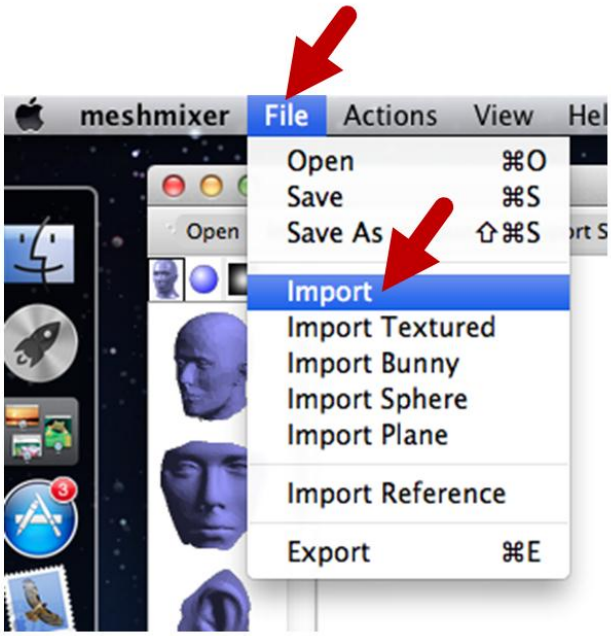
Importing/Loading Files

.OBJ, .STL, .PLY, …



.MIX





To bring an external mesh into meshmixer (.OBJ, .STL, .PLY), use the **Import** command in either the Action Bar or the File menu. This will load a mesh into the current scene.

If the scene already contains objects, you will be asked whether you want to Replace the existing objects, or Append to them (creating an additional object in the scene).

You can save your scene as a .MIX file using the **Save** and **Save As** commands. MIX is meshmixer's native format, and is the most effective for storing data if you want to load it back into meshmixer later, using the **Open** command. However, keep in mind that no other software supports .MIX, so you still may need to use the **Export** command to create an OBJ or STL file.

Camera Hotkeys

Tumble	Alt	or	
Pan	Alt	or	Shift or Alt Shift
Zoom	Alt *(Maya)*	or	Ctrl *(Sketchup)* or Alt Ctrl *(pen-friendly)*

Previous View	(
Next View	)
Wireframe	W
Boundaries	Ctrl B

Tool Hotkeys

Select Faces S	SurfaceBrush 1	Discard X	Cancel Esc
Transform T *(object or selection)*	SmoothBrush 2	Erase & Fill F	Accept Enter
	VolumeBrush 3	Smooth Loop B	

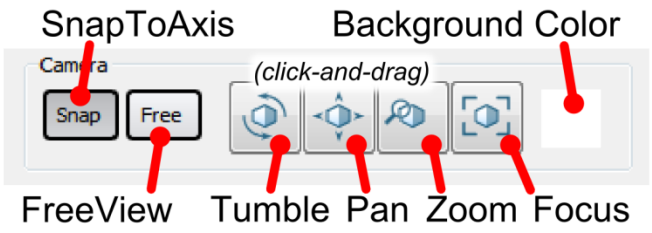
Selection Tool

Select All	Ctrl A
Connected	E
Invert	I
Expand	
Deselect	Shift
Brush Size	or [ ]

Brushing

Primary	
Secondary	Shift
Invert	Ctrl
Strength	
Brush Size	or [ ]

Hotbox Space

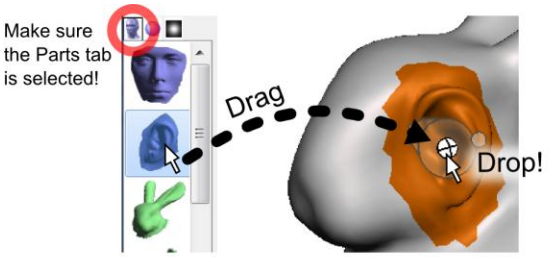


meshmixer
CheatSheet v1.0

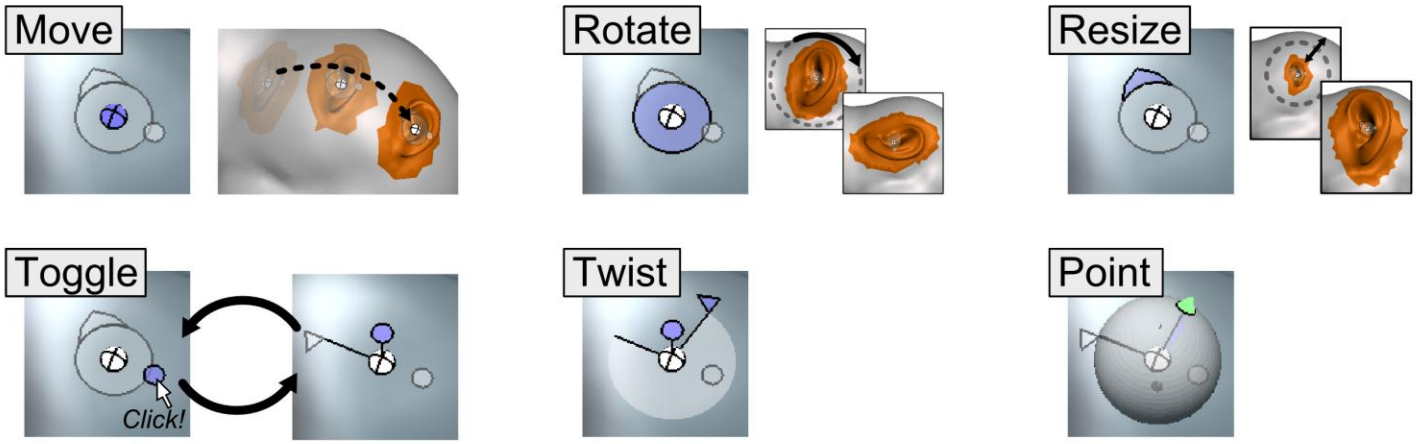
Drop Part Tool

Use this tool to add and position a Part from the Part Library on the surface of the model.

Drop at original scale Shift



Control Widget



Parameters

Type
The deformation algorithm used to bend the Part to fit the surface underneath.

Optimize
Optimize the Part to preserve shape and smoothness at the boundary.

Size
Global scaling factor applied to the Part.

Bend
Stiffness of the part relative to the shape of the underlying surface.

Offset
Control how the part is pushed in/out of the surface.

Bulge
Control how the part is bent in/out of the surface.

SmoothR
Size of the support region around the Part that is automatically smoothed.

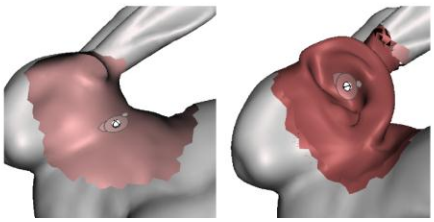
DScale
Internal scaling factor for the Part, linearly falls off from base to tip.

SFalloff
Controls the location of the linear transition for the DScale parameter.

TweakR
Expansion factor for the Part support area (use to fix stitching failures)

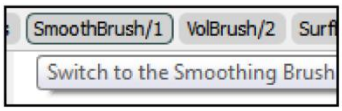
Tips

If the Part turns red or disappears, you cannot drop in this location. Try moving, shrinking, or rotating the Part.



Autodesk meshmixer

Smooth Brush Tool

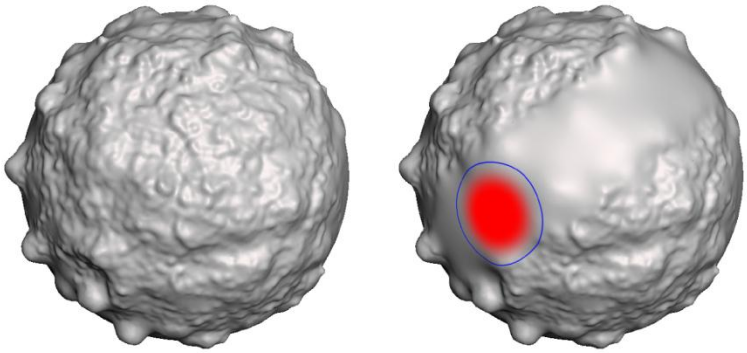


Hotkey 1

Brush Usage

Smooth 

Brush Size  or [ ]



Parameters

Symmetry
Mirror each brush stroke across the YZ Plane.

Hold Boundary
Keep the mesh boundary fixed in its current position.

Type
Weight calculation used in the smoothing algorithm.

Selection Tool

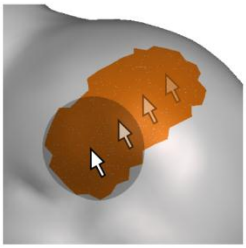
Hotkey S Select All Ctrl A Invert I Expand to Connected E
Invert Connected Shift I

Brush Select

Paint

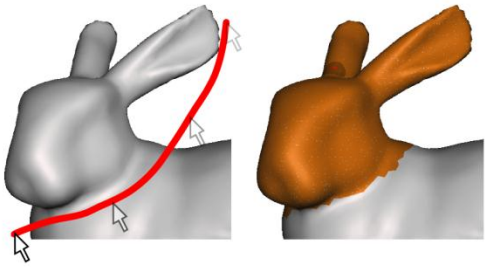
Unpaint Shift

Brush Size or [ ]



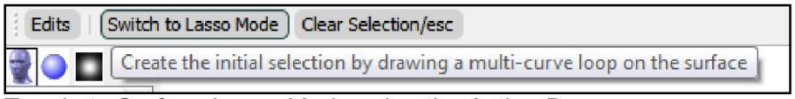
Laser-Lasso Select

Draw a cutting or lasso stroke across the object, starting on the background

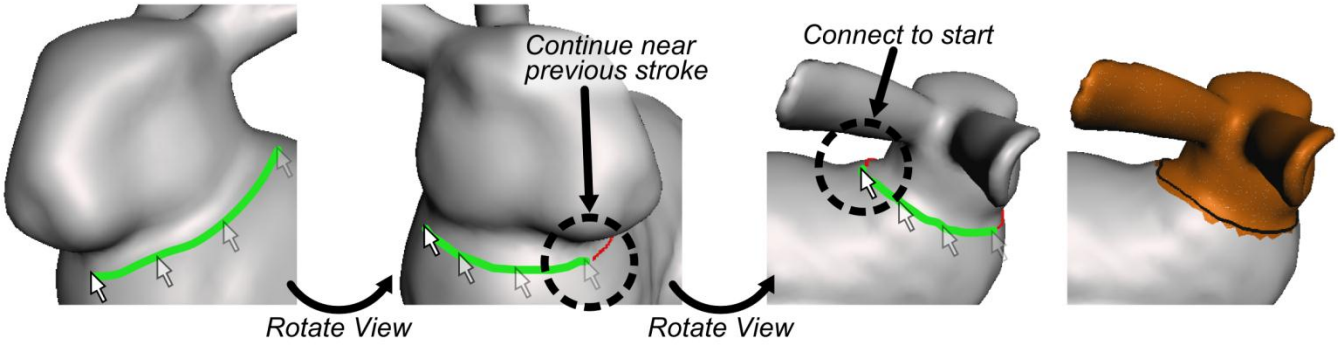


Surface Lasso Select

Draw a sequence of connected curves on the surface to select the enclosed area

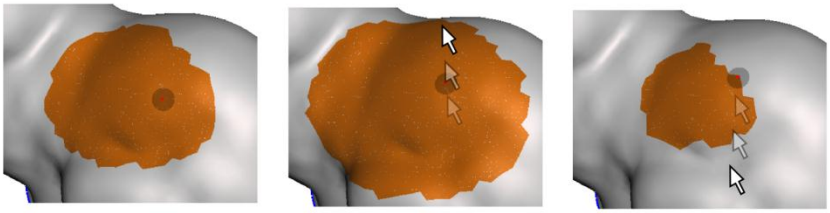


Toggle to Surface Lasso Mode using the Action Bar



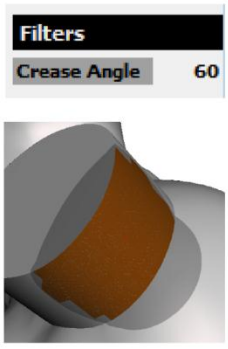
Grow/Shrink

Drag the mouse to expand or contract the boundary of the selected area



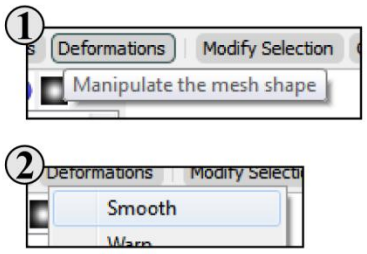
Crease Filter

Selection Brush will stop at sharp edges or creases



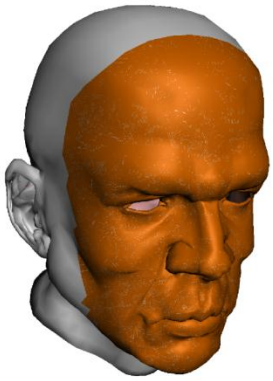
Smooth Tool

Use this tool to smooth out the details on a selected area of the mesh. You can control the scale of details that are smoothed out.

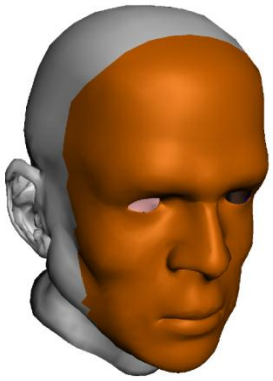


Basic Usage

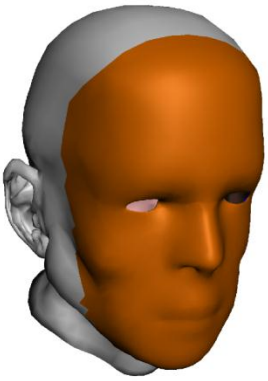
Select a set of faces using the Selection Tool



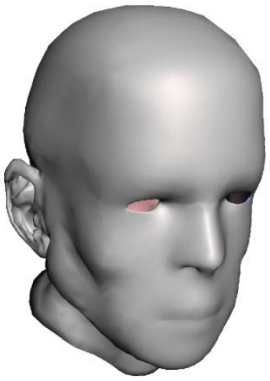
Start the Smooth Tool



Adjust parameters



Accept



Parameters

Type

The weight type used to compute the smoothing

Smooth

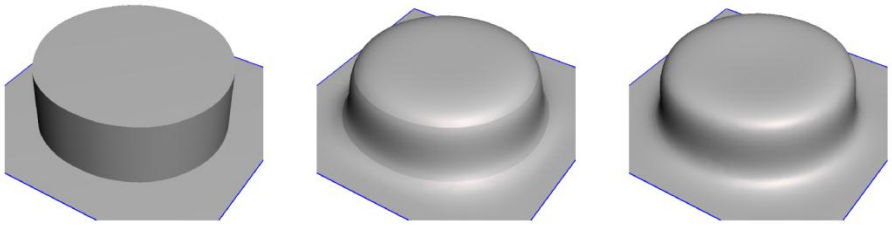
The amount to smooth (or exaggerate) the local details

Scale

The magnitude of details to smooth

Tips

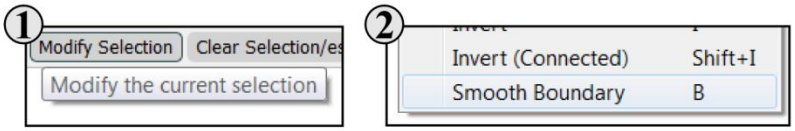
Run the Remesh Tool to roughen sharp creashes before smoothing to avoid creases in the smoothed output.



Smooth Boundary Tool

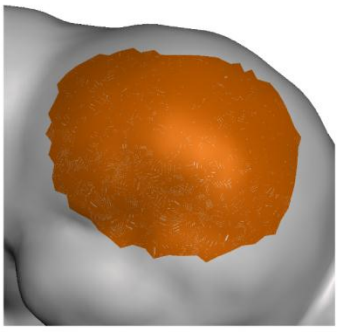
This tool turns a rough selection boundary into a smooth loop, which can then be used in other tools (Replace, Extrusion, ...)

Hotkey B

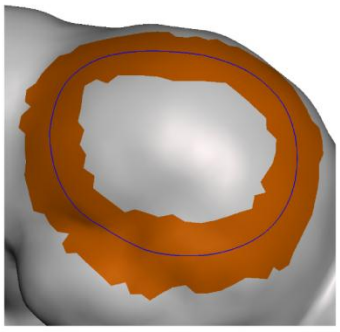


Basic Usage

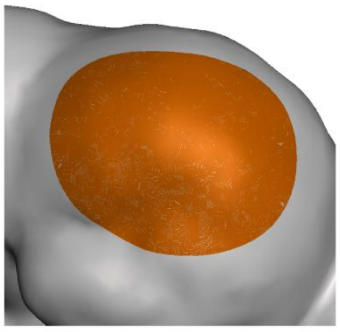
1. *Select a set of faces using the Selection Tool*



2. *Start the Smooth Boundary Tool (use menu or press **b**)*



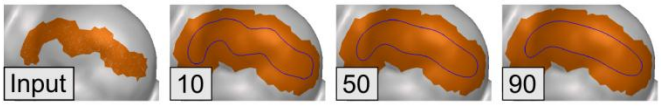
3. *Accept the result to return to the Selection Tool*



Parameters

Smoothness

Controls amount of smoothing applied to the selection border.



Preserve Shape

Inflation factor that counter-acts smoothing to preserve overall selection shape.

Iterations

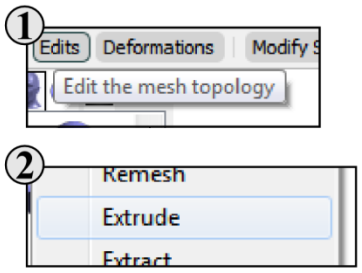
Rounds of smoothing. More == smoother.

ROI

Size of support region in which mesh is relaxed around the selection boundary.

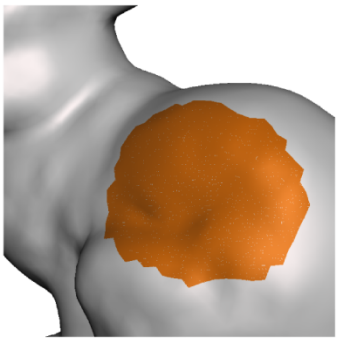
Extrude Tool

Use this tool to push/pull a selected area of the mesh.

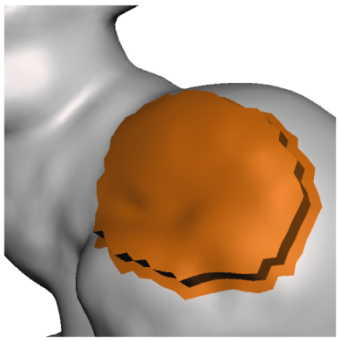


Basic Usage

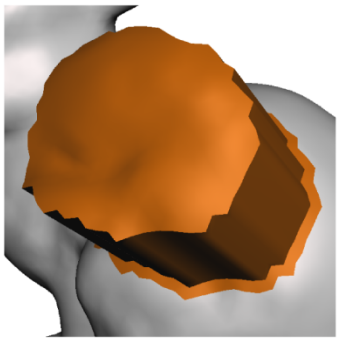
1. *Select a set of faces using the Selection Tool*



2. *Start the Extrude Tool*



3. *Adjust the extrusion offset, then Accept*



Parameters

Offset
The distance the surface is pushed/pulled

Harden
Sharpness of the transition at the edges of the extrusion

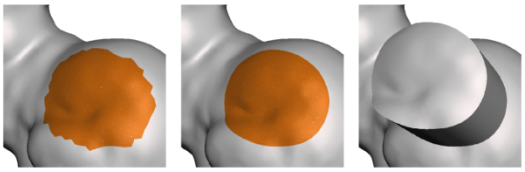
Density
Resolution of triangles along the sides of the extrusion

Direction
Direction in 3D space that the selected area will move

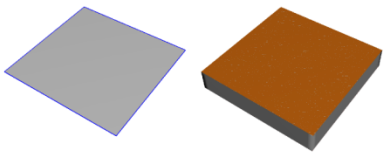
EndType
Shape of the "moving end" of the extrusion

Tips

Use the Smooth Boundary Tool to create a clean boundary loop before applying your extrusion operation.



Extrude all the faces of an open shell to thicken it into a closed solid.



Volume Brush Tool

Hotkey 2

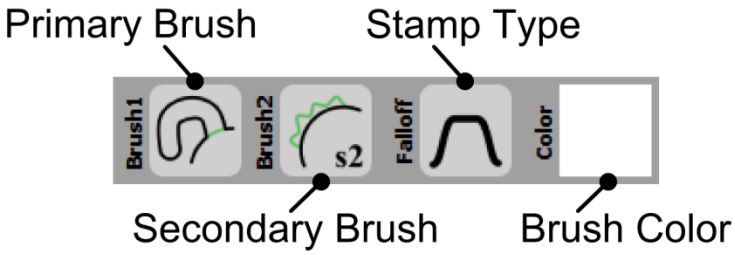
Brush Usage

Paint

Invert Ctrl

Smooth Shift

Brush Size or [ ]



Brush Operation Types

Drag
Push the mesh around with the brush

Flatten
Push the mesh towards the average plane

SmoothRound
Smooth towards roundness

Refine
Add triangles

Move
Drag with no refinement

Inflate
Push vertices out along their normals

SmoothFlat
Smooth towards flatness

Reduce
Remove triangles

Draw1
Displace mesh and fill gaps

Pinch/Crease
Pull vertices towards the brush center

SmoothRobust
Like SmoothFlat but smoother

ReduceNU
Remove triangles but preserve details

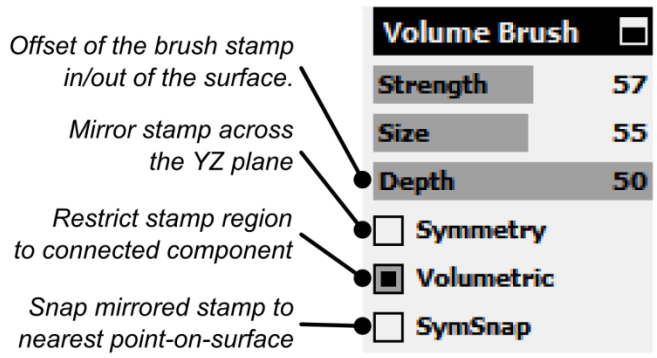
Draw2
Displace mesh

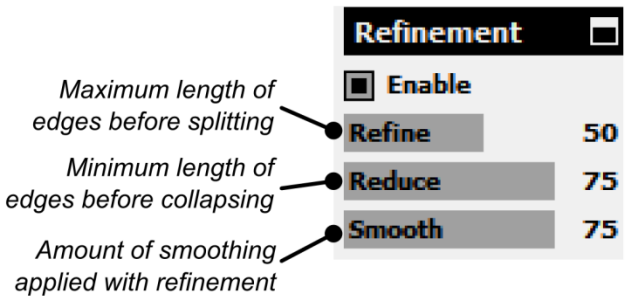
Spikes
Grow small spikes very quickly

Paint
Color vertices.

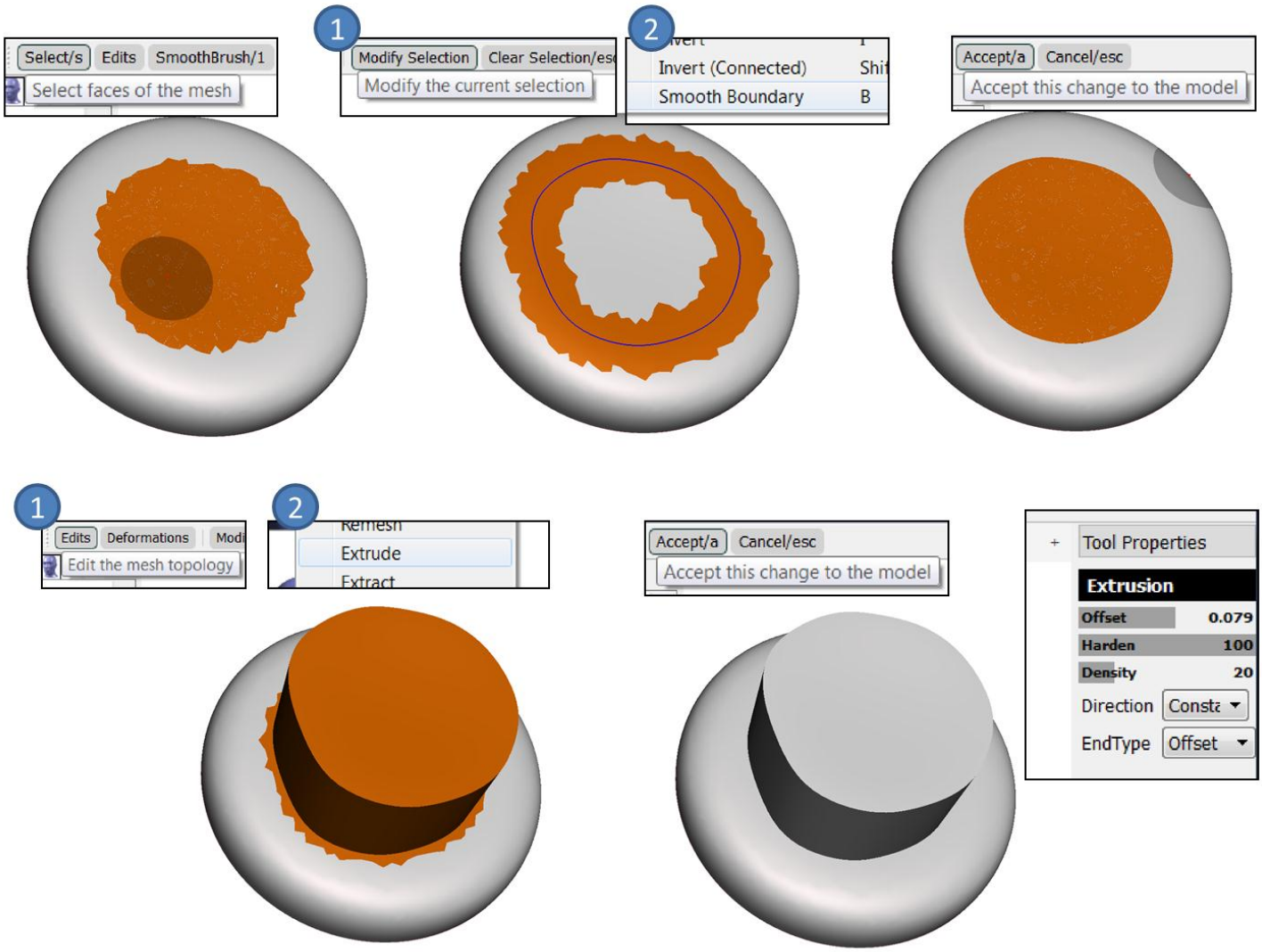
Zipper
Pull open mesh boundaries together

Parameters



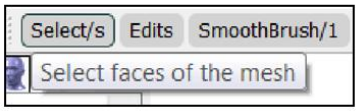


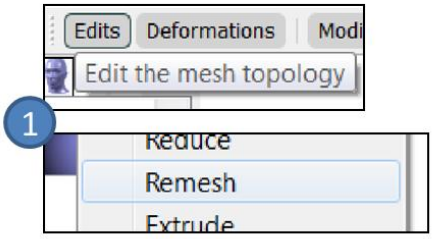
Extrusion Workflow

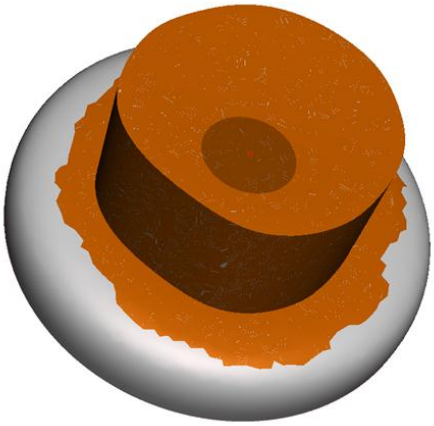


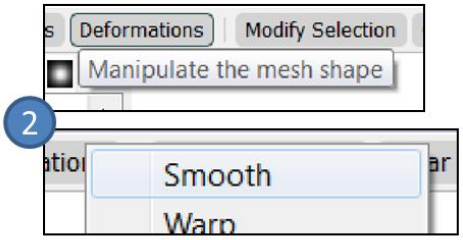
Smoothing Workflow

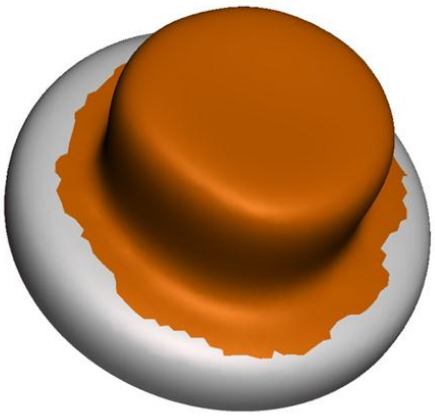
Smoothing











Collar Workflow

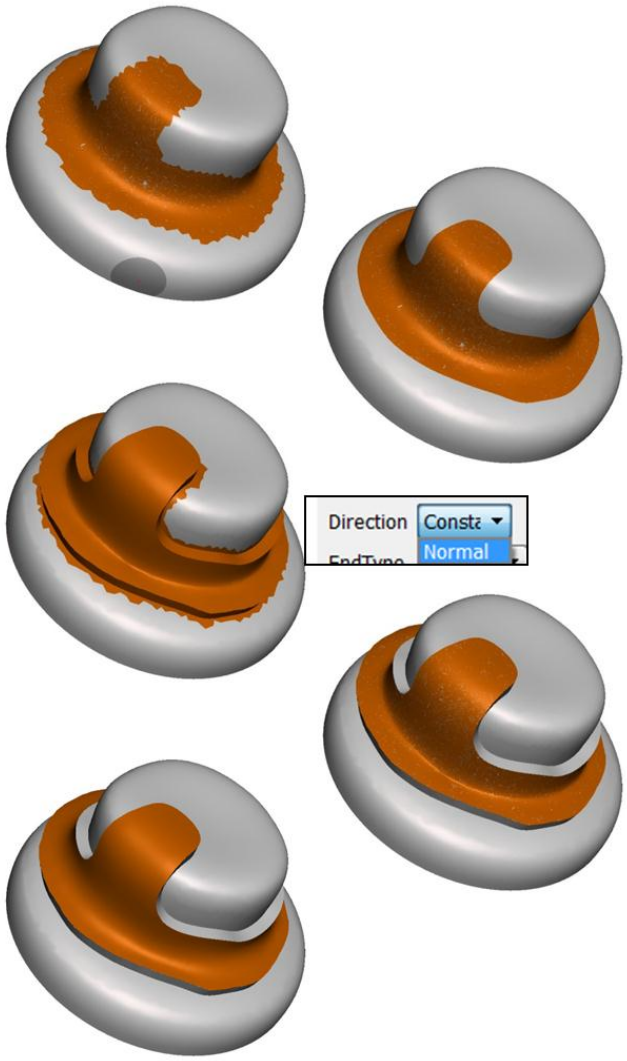
1) Select

2) Smooth Boundary

3) Extrude
   – Set Direction to Normal

4) Remesh

5) Smooth
   – Maximum smoothness



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