

ClayTools®

A Guide to What's New in Version 2.0

This document provides a brief summary of the new features and enhancements in ClayTools version 2.0.

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New Features:

SKETCH



Rectangular Array

Use the Rectangular Array tool to create a linear array in one or two directions from sketch elements drawn on a sketch plane.

CONSTRUCT CLAY

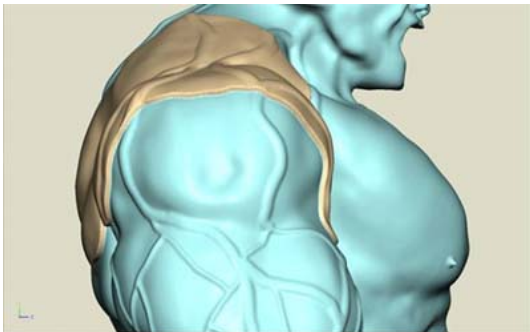
Buck

A buck is a protected volume within a piece. Bucks can serve as a reference, such as an armature, while sculpting. The benefit of a buck over an imported reference mesh is that the buck is touchable while you are sculpting and can be sculpted against. Clay can be turned to buck via the Object List or Select tools. Mesh can be converted to buck upon import.

Layer tool



Use the Layer tool to add clay to a clay piece or buck at a specified thickness by tracing the surface. The layer of clay will mimic the surface beneath it; if there are dimples or ridges in the surface, the added clay will reflect them. Enabling the tool “blocks out” the piece so that multiple passes over the same area will not add more material while you are in the tool. When you leave the tool, the block out is removed and new layered clay is added to the piece.



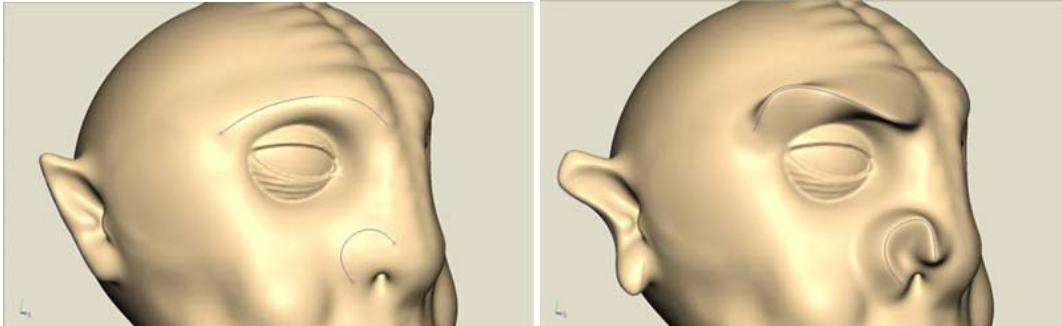
Volume of clay is layered over the shoulder

DEFORM CLAY

Tug with Curve tool



Use the Tug with Curve tool to sharpen details, create folds, and wrinkles and thin areas of clay using a “free” (i.e. not fitted) curve segment to “pinch” the surface.

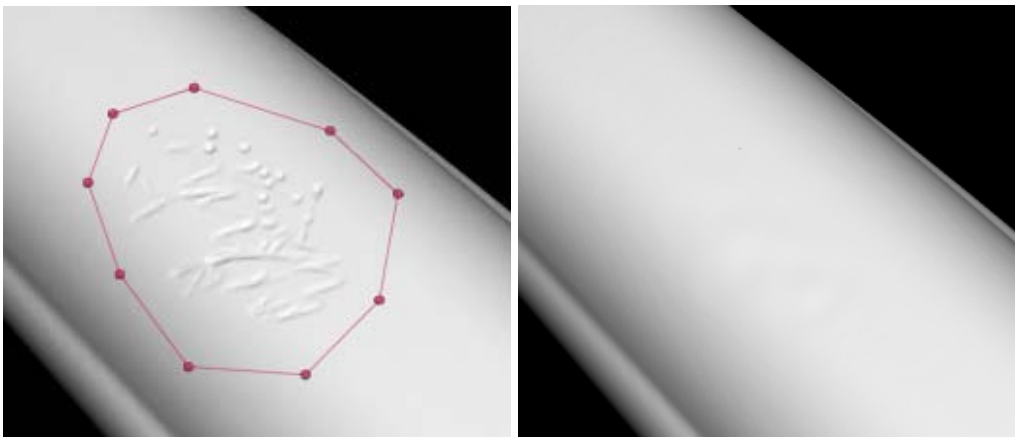


Curves are drawn at the brow and nose Curves are tugged and clay is deformed

Surface Fair tool



Use the Surface Fair tool to add superior smoothing to a selected area. Hotkey: Ctrl+F.



Area of clay with imperfections in the surface (left) is faired (right)

OBJECT LIST

Intersect With

This new Boolean option on context menu for clay enables you to create a new piece from the intersection of two pieces.

Add Clay to Mask, Add Clay to Buck

These two new options on the clay context menu enable you to add the volume to either the mask volume or buck volume.

IMPORT/EXPORT

- VRML Export
- DXF Import/Export (Export from Object List)
- Adobe Illustrator and PDF Export (from Object List)

TOOLS

Customize – Hotkeys

- Pop-through - A default Hotkey “T” has been added to enable Pop-Through. This allows you to easily pass through the surface from outside to inside or inside to outside when are touching it. Useful when working with thin pieces.
- Refresh model - A default hotkey “CTRL+R” has been added for Refresh Model.

Options

New user preferences added:

- License Folder – An option to set the directory path for ClayTools Licenses has been added. This will be particularly useful for systems that are taking advantage of serialized licensing and being shared on more than one computer.
- On-screen Rendering Settings – An option that will set all on-screen rendering options to mimic ClayTools v1.3 on-screen rendering has been added (see below for more information).

SYSTEM

Windows Vista Support

In addition to Windows XP, ClayTools now operates on Vista operating systems, both 32-bit and 64-bit. There are special considerations for Installing PDD on Vista. Be sure to read the installation instructions. **Note ClayTools v3.0 does not support Windows 2000.

On-Screen Rendering Enhancements

We have made enhancements in ClayTools that affect how your model is rendered in your ClayTools workspace (as opposed to photo-realistic rendering). These options are accessible from the View menu and adjustable via Tools>Options. Your Graphics Card and driver must support this functionality; see note above. If you encounter on-screen rendering issues, in Tools>Options>View>Rendering click **v1.3 Settings**.

- The shading options for clay and reference pieces have been collected in two new submenus on the View menu; View > Shade Clay and View > Shade Reference Piece
- New Wireframe and High Quality (adds a reflection to the surface, adjustable via Tools>Options) shading options for clay and reference piece.
- New option Show Drop Shadows – You need a light colored background to see the shadows. NOTE: Enabling Drop Shadows can adversely affect performance.
- Transparency - See through mode for both clay and reference pieces (mesh) is now displayed as transparent rather than the old dot-mode. Access transparency via See-through option via the Object List or hot-key “D”. A user preference for changing to Dot-Mode is available in Tools>Options. Create a custom hotkey via Tools>Customize>Repository to toggle between transparent and dot-mode.
- Sparse Shade - Sparse Shade is now by default displayed as low resolution polygons (You may see dot mode briefly in heavy models while the low resolution polygons are rendered. If functionality is not supported by your graphics card, behavior will revert to dot-mode.) A uUser preference for changing to Dot-Mode is available in Tools>Options. Create a custom hotkey via Tools>Customize>Repository to toggle between low-res and dot-mode.

Changes to Existing Features:

CURVES

Draw Curve tool

- Trace - A new drawing mode "Trace" has been added in the Draw Curve Advanced options. This mode enables you to draw a fit curve more naturally, without having to place click points as you draw the curve. To use: Click on the surface of the piece (clay or mesh) to place your starting point and hold the button while you draw the fit curve. Release to button to end the curve.
- New modifier that gives the ability to draw a 3D curve along one of the global axes. Hold Shift to snap to the nearest axis.

Slice tool – Renamed and enhanced

Slice Clay has been renamed "Plane to Clay Intersection Curve" for clarity and advanced settings have been added to improve the fit of the curve.

Curve Length Readout

Curve Length readout now available on the dynabar in Draw Curve and Select Curve. It was removed from the Advanced dialog. If Selecting multiple end-connected curves, the sum of the length of the selected curves will be displayed. If multiple curves are selected that are not connected, no length will be displayed.

Edit Curve tool – Tangency arrow

When editing the tangency arrow of a curve with Axis Snap enabled, the axis anchor point is by default placed at the curve end point. An option to have the anchor point placed at the tangency arrow is available in Tools>Options.

Split 3D Curves tool – New & enhanced options for splitting with greater accuracy

- NEW Ability to split multiple curves at once. Ctrl+click to select more than one curve.
- Split by Selecting a Point. Enhanced.
- Split at Parametric Point. Enhanced. User can now enter specific parameter

PLANES

As you pass in front of a plane it is highlighted for increased ease-of-use. Highlight and click to select the plane.

SKETCH

Mirror

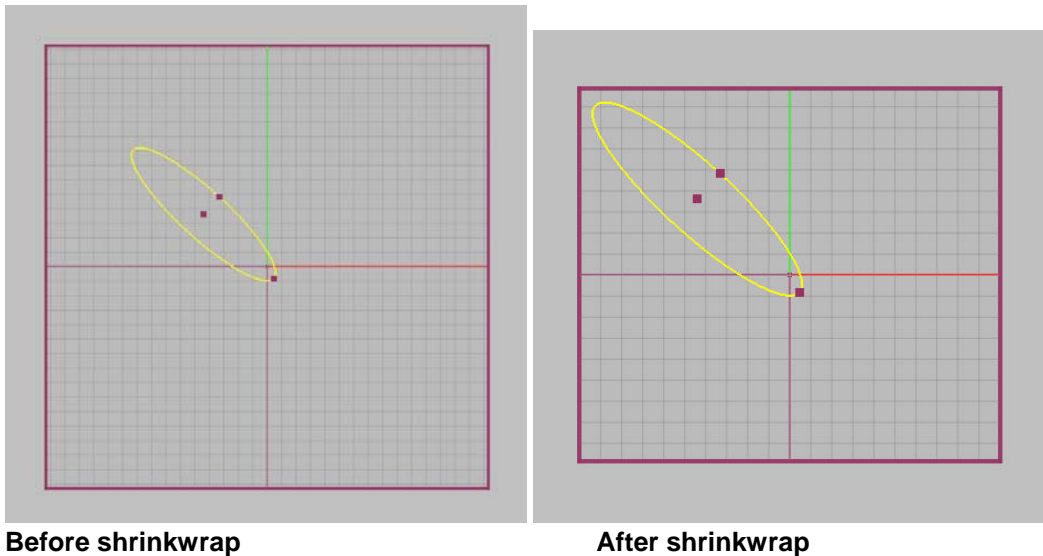
The mirror line has been modified to improve visibility. It is now thicker and black.

Select Sketch Object tool - Add/Remove Edit Point

When editing a freehand or control point curve with the Edit with Click Points option, there is a new dynabar option to Add/Delete edit points. The old method of Shift +/- key is still available.

Shrink Sketch Plane to Sketch Object

When using the sketch tool, you can use the Esc+M keyboard shortcut to shrinkwrap the sketch plane. The sketch plane will be resized around the planes centerpoint to the outer most edge of the sketch object(s).



Sketch: Angle of a line is now standard with CAD

A horizontal line drawn from left to right is now 0° . User preference to use old SensAble style (180°) can be set via Tools>Options.

Offset tool

Now has two modes, the default mode is the existing method of entering a distance then identifying the direction of the offset using the direction arrow. Additionally the length of the direction arrow now indicates the distance of the offset. A dynamic mode has been added that allows you to haptically place the offset.

CONSTRUCT CLAY

Create in New Piece Option for a couple of tools

Basic Shapes and Spin now have a “Create in New Piece” dynabar option with ability to set Clay Coarseness for the new piece.

DETAIL CLAY

Groove tool

- New Taper options in dynabar
- Custom profile no longer needs to be centered; it will auto-center.

Emboss with Image tool



Text Emboss & Invert

- Text Emboss - Creates a bitmap of text to easily add markings to a piece using standard Windows font dialog options.
- Invert - Use to invert how the light and dark values are used to create the emboss.

New method for Selecting Images

You are no longer prompted to select an image when the Emboss with Image tool is activated. Instead, the dynabar contains an image thumbnail you can select when you want to browse for and select a new image to emboss with.

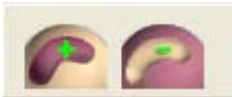
SELECT/MOVE CLAY

Separate with Curve tool – tool renamed and enhanced

Renamed “Separate with Curve or Plane” tool. Additional option to separate with a plane(s).

Select Clay tools

New options have been added to the dynabar for the Select Clay tools:



- Add to Buck – Adds the selected clay to a buck.
- Remove from Buck – Removes the selected clay from a buck.

OBJECT LIST

- Options to Add Clay to Mask/Buck
- Ability to Duplicate a Clay or Mesh Reference Piece
- Lock no longer Blocks eyeball. Locked items can now be hidden/shown.
- When an inactive clay piece(s) is selected in the object list it is highlighted (green by default) in the workspace to aid in locating the selected piece.

IMPORT/EXPORT

Save Screen to...

- Ability to save screen as JPG (Choose JPEG from file type drop-down)
- Ability to save views to JPG (Saves the standard views and any named view as a series of files.)

OBJ – Import/Export

- Ability to export multiple pieces as multiple groups in a single OBJ file.
- Ability to Import pieces within an OBJ file as separate pieces in ClayTools

Import Model Preview

When in preview, once you make selection in “Import As”, object is shown in appropriate display color (Clay, Reference, Buck, Solid)

TOOLS

Customize – Hot Keys & Modifiers

- Suspend Gravity – Default has been changed from Ctrl to Esc in default Keyboard mapping for hotkeys. This was required to avoid conflict with use of Ctrl+Click to multi-select. For existing FF users, you will need to reset your mappings for this to take effect.
- Viewing Touchable Workspace – the modifier to show the green pane that indicated the touchable workspace has been changed. This can now be brought up with ALT+G,H or J.-

Options

- Ability to relocate palette stack to right side of workspace via Tools > Options
- New Reference Piece Palette collects the Mesh tools
- Floating Palettes - Location of palettes is now remembered from session to session.

USER INTERFACE

On-screen Rendering Options

The new modes for See Through (Transparency) and Sparse Shade (Low-Res) can be set to the old Dot-Mode via Tools>Options. Additionally, via Tools>Customize, you can create hotkeys to toggle the mode for each between the new transparent mode and dot mode.

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