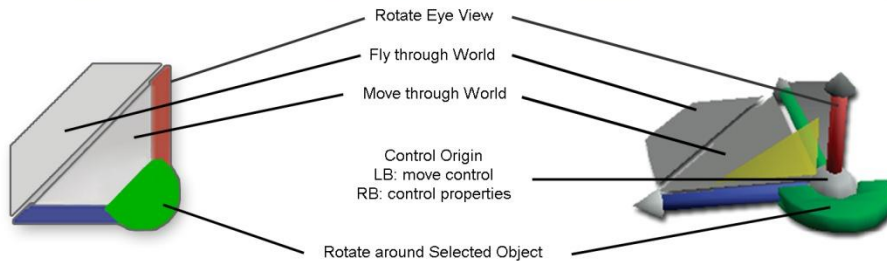


Workspace

View Navigation Controls

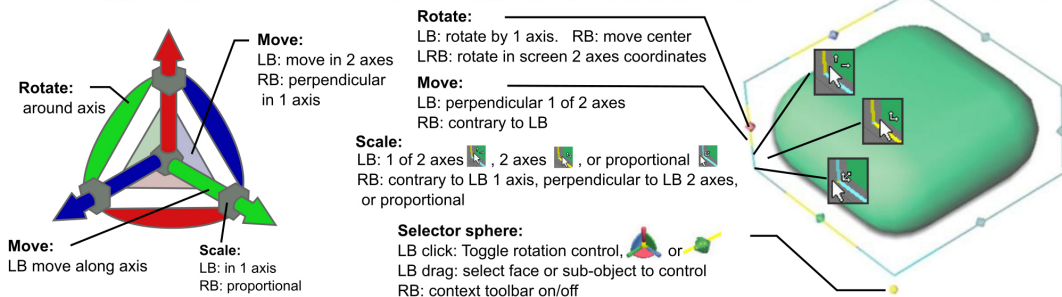
Model



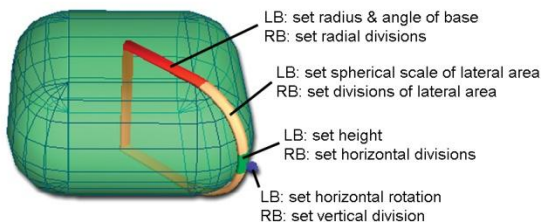
Workspace

Object Navigation Controls

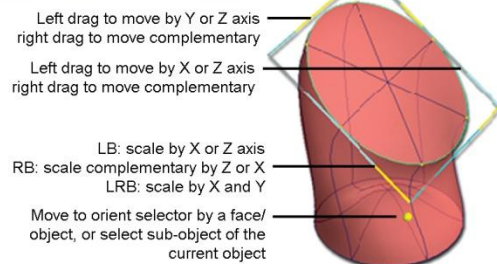
Model



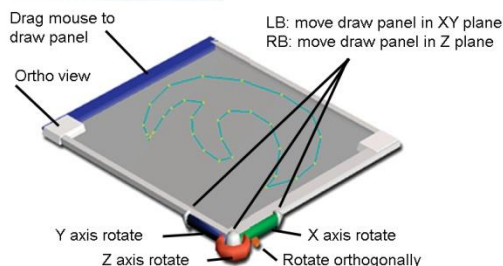
Magic Ring



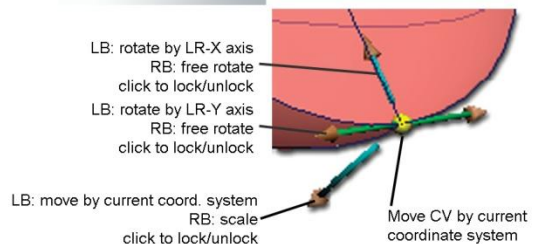
Isocurve Selector



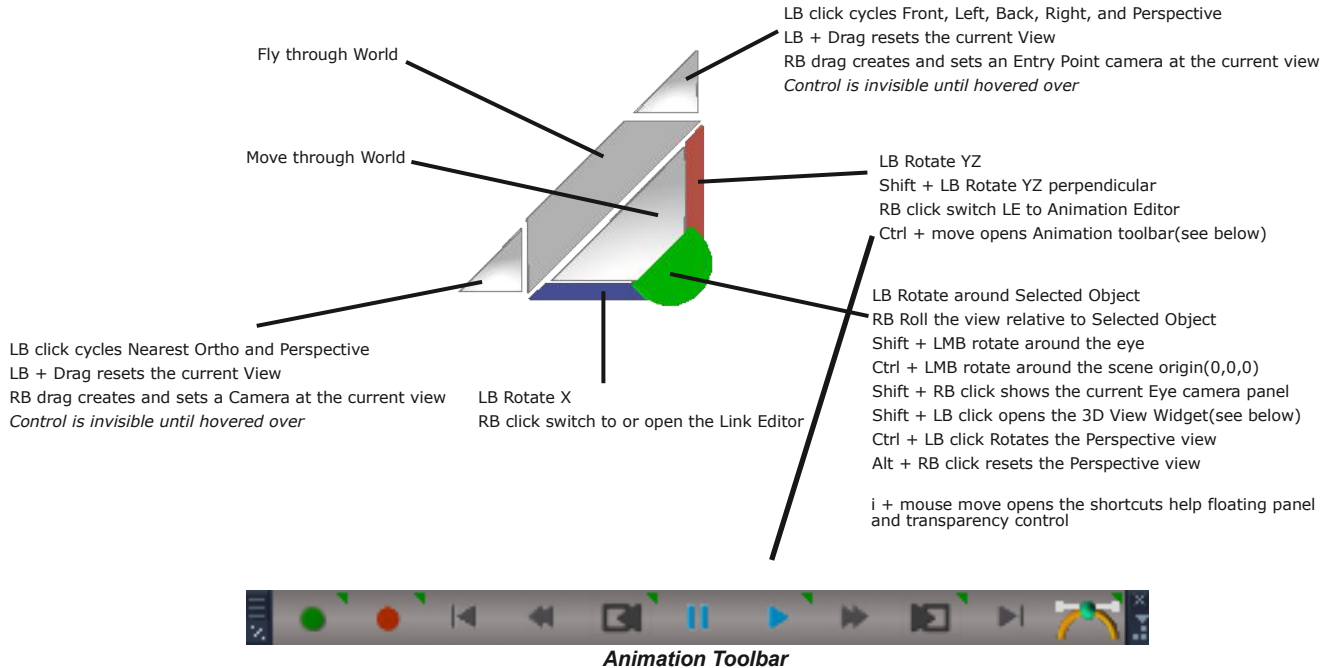
Draw Panel



CV Handles



View Navigation Controls



Animation Buttons from left to right

Automatic Keyframing - LMB - On, RMB - Off

Set Keyframe, RMB Keying Panel

Start Frame

Previous Keyframe

Previous Frame, RMB back 30 frames

Pause

Play, RMB preferences floating panel

Next Keyframe

Next Frame, RMB forward 30 frames

End Frame

Set Flat interpolation on selected keyframes, RMB open interpolation panel



Cube View Widget

[More Information](#)

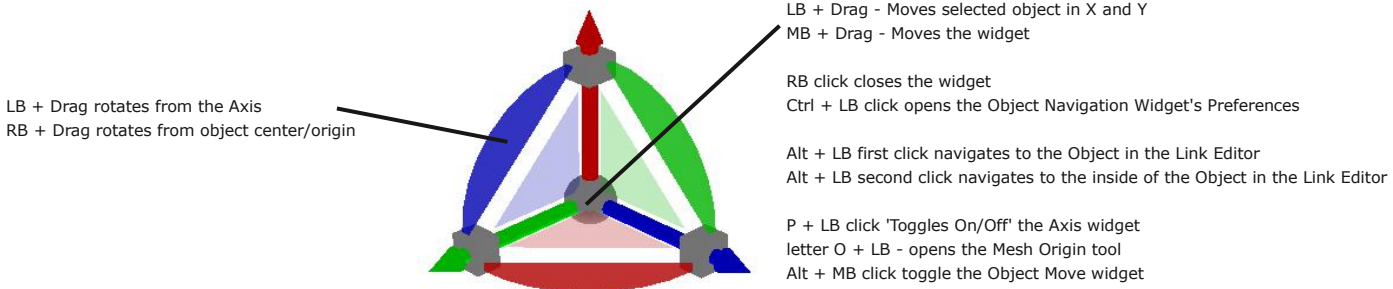


3D View Widget

[More Information](#)

CTRL SHIFT V = View Navigation Toolbar

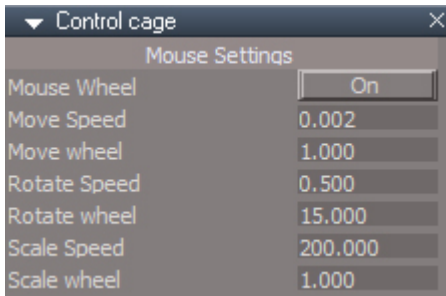
Object Navigation Controls



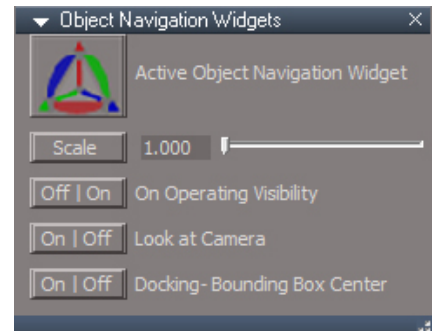
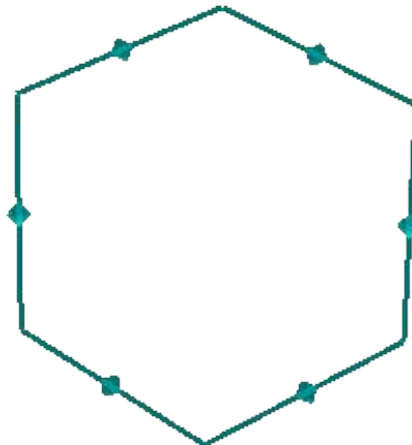
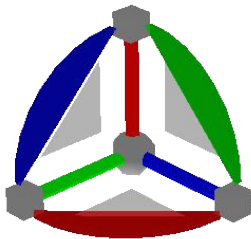
Ctrl + LB click any surface opens their Mouse settings
Shift + LB click in empty 3D Space deactivates Object widgets - Move, Rotate, Scale

Bars, Triangles, Cubes and Arcs

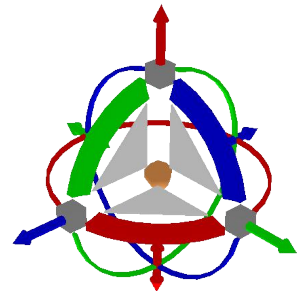
Shift + LB click = switch to the other Object Navigation Widgets
H + LB click = switch to/from the Selector Cage Widget
J + LB click = add/remove cage widget to the current widget



Mouse Wheel On - wheel will activate the rotation diamonds and move and scale in the direction of the lines instead of the perpendicular directions of the left and right buttons. So you can use the left and right mouse buttons to move/scale perpendicular to the line direction or use the middle wheel(not button) to move/scale parallel to the line. This setting has no effect on a cage that has been added to the normal navigation widgets. It is only used in the standalone cage widget.



Scale - resize the widget
On Operating Visibility - On = can see the widget element while dragging
Off = widget invisible while dragging
Look at Camera - widget orients to face the viewer
Docking- Bounding Box Center - widget centered in the middle of the selection. When off will be located at the nearest lowest bounding box corner



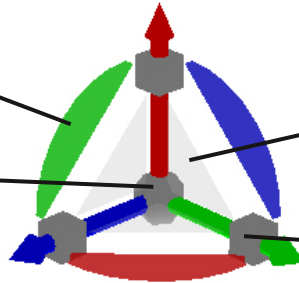
i + mouse move any surface = Opens the widget's Additional Shortcuts Help floating panel

CTRL SHIFT O = Object Navigation Toolbar

Point Edit Navigation Controls

LB to rotate about the selection center
RB to rotate about the Axis

LB + Drag - Moves selected element in X and Y
MB + Drag - Moves the widget
Ctrl + LB click - Opens the Point Edit Widget's Preferences

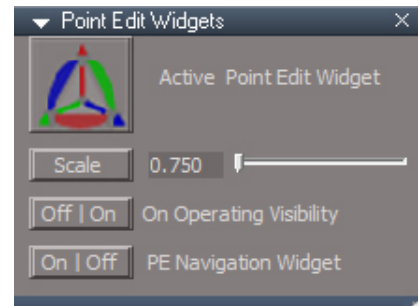


MB cycle front face selection

Alt + MB click toggle the Object Scale widget

Bars, Triangles, Cubes and Arcs

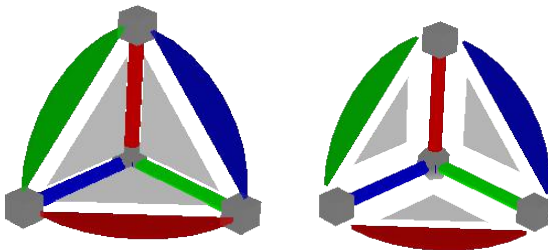
Ctrl + LB click opens their Mouse settings
P + LB click sets the Axis to the selected Face, Edge, or Vertex
P + RB click moves and rotates the Axis to the selected Face
P + MB click moves the Axis to object center and rotates the Axis to the selected Face
Period + move - Hides UnSelected elements
Comma + move - UnHides All elements
O + LB click Toggles - Mesh Object Coordinate Mode



Scale - resize the widget
On Operating Visibility -
On = can see the widget element while dragging
Off = widget invisible while dragging

Shift + LB click in empty 3D Space deactivates Object widgets - Move, Rotate, Scale

Shift + LB click any surface = switch to other Point Edit Widgets



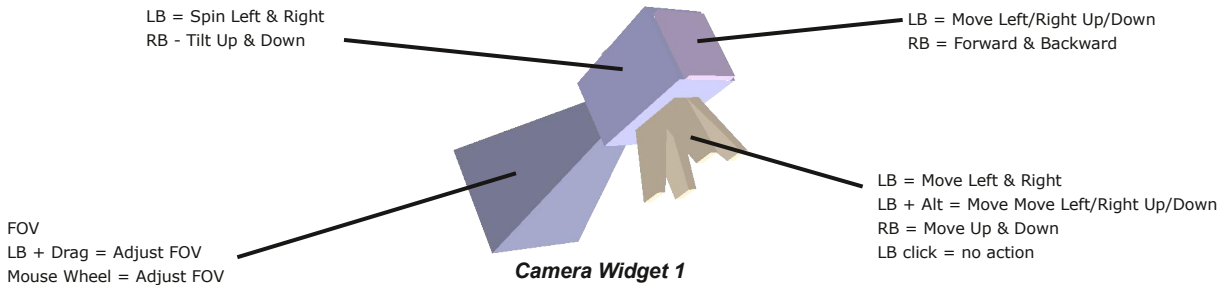
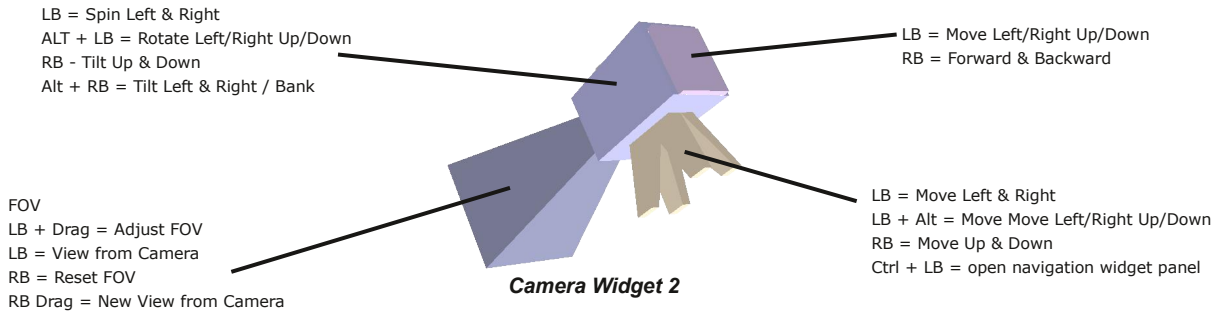
i + drag any surface = Opens the widget's Additional Shortcuts Help floating panel

pe and nav widget preferences/settings - On Operating Visible on/off clears undo history and only effects the active widget

CTRL SPACE = Point Edit Widget Toolbar

Camera Controls

Shift + LB click any surface = switch camera widget



Background Controls

b + i + mouse move = help

Wheel - Move view In and Out

Shift + Wheel - Zoom (FOV) and Move view In and Out

Ctrl + Shift + MB Drag - Zoom view (FOV)

MB Drag - Rotate view around selection or scene center if no selection

Ctrl + MB Drag - Move view up down left and right in screen space

Shift + MB Drag - Look around

Ctrl + MB Click - Look At Selection

MB DbtClick - Look at and fill the view with the current object selection or Point Edit selection

Shift + MB Click - Moves the view to show all objects in the scene

Comma + LB Drag - Shows All hidden items

Period + LB Drag - Hides All Except the selected items

Default Context Controls

ALT + LB - Select Locked objects

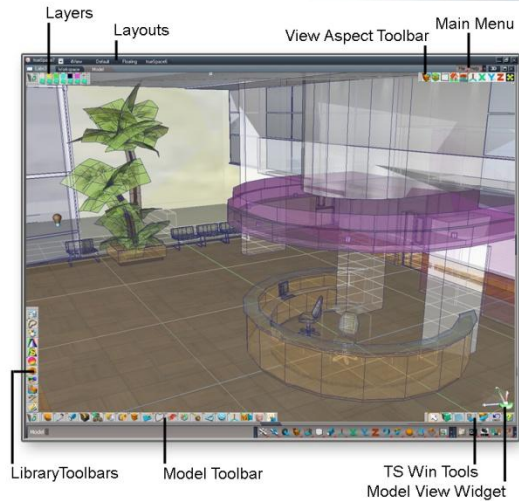
Esc + move - Unselect

CTRL SHIFT V = View Toolbar

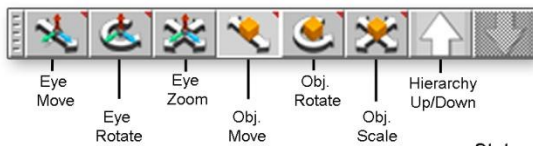
Workspace View



Model View

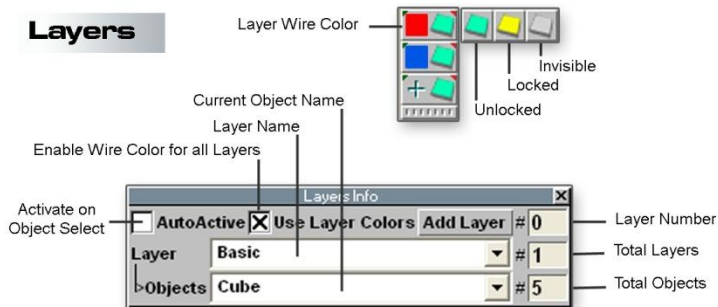


Nav Tools

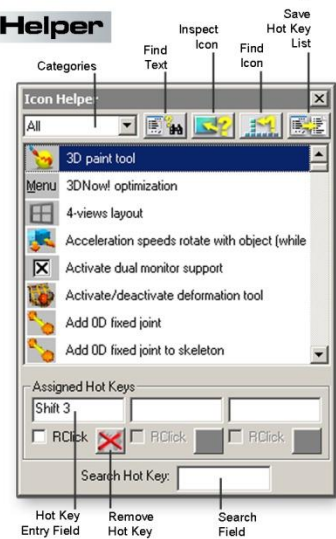


Status

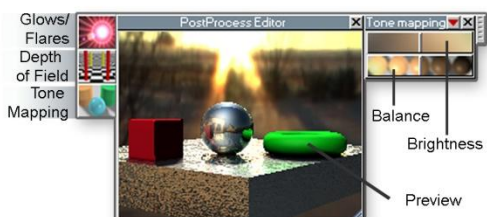
Layers



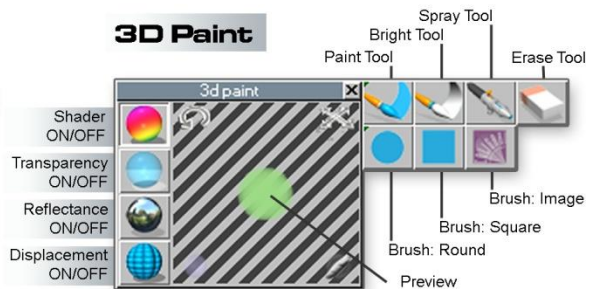
Icon Helper



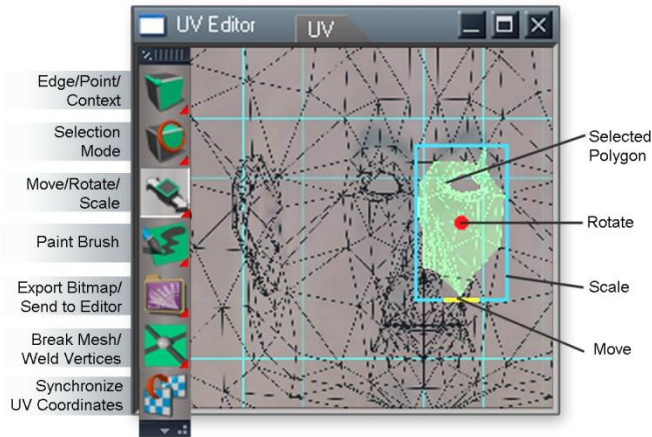
Post Process Editor



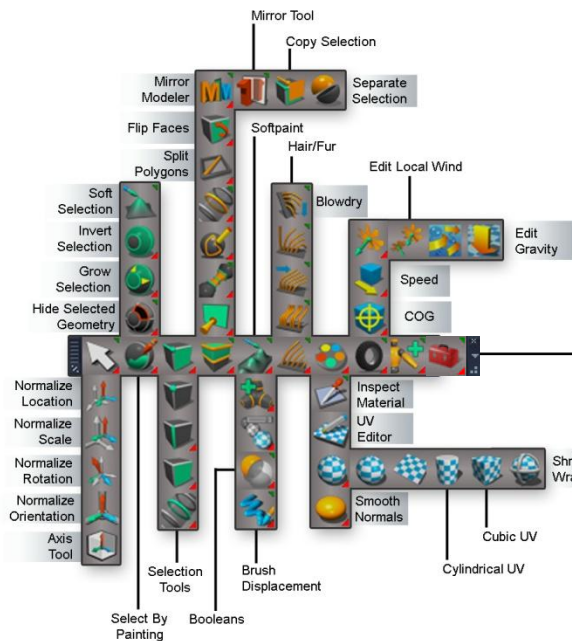
3D Paint



Workspace UV Mapping Editor



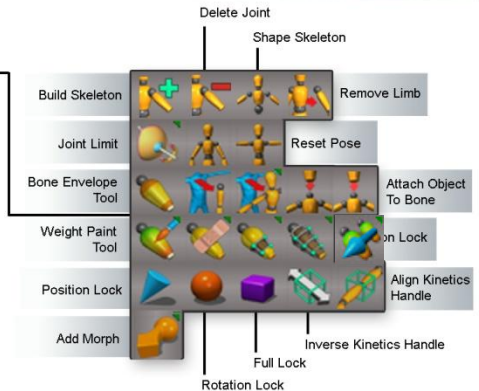
Workspace Toolbar



Preferences

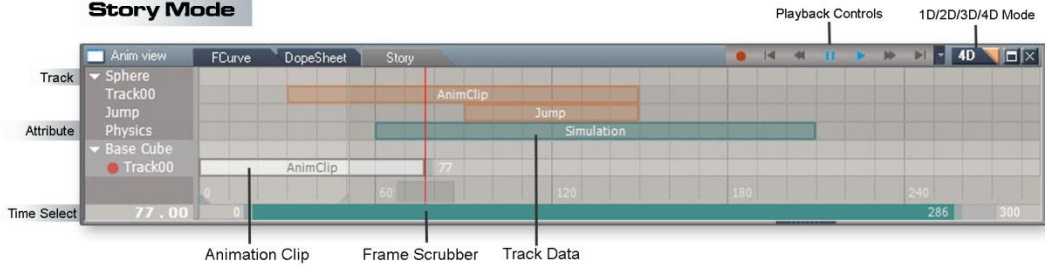


Character Animator

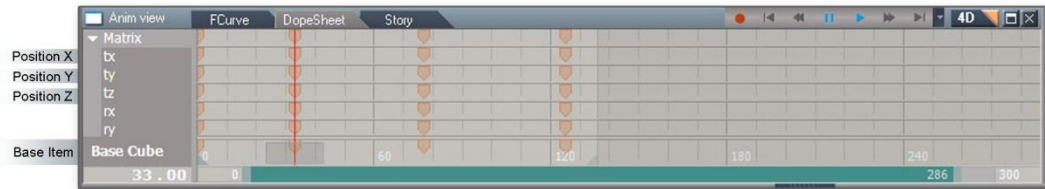


Animation Editor

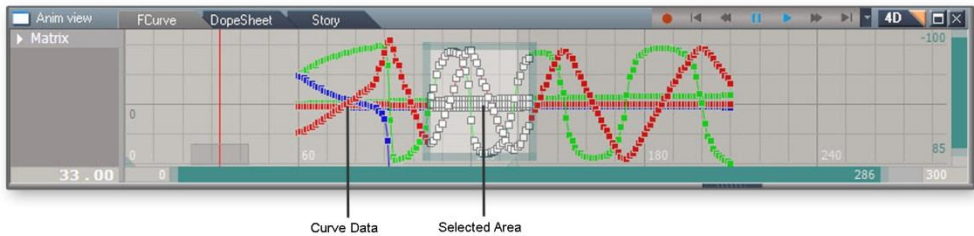
Story Mode



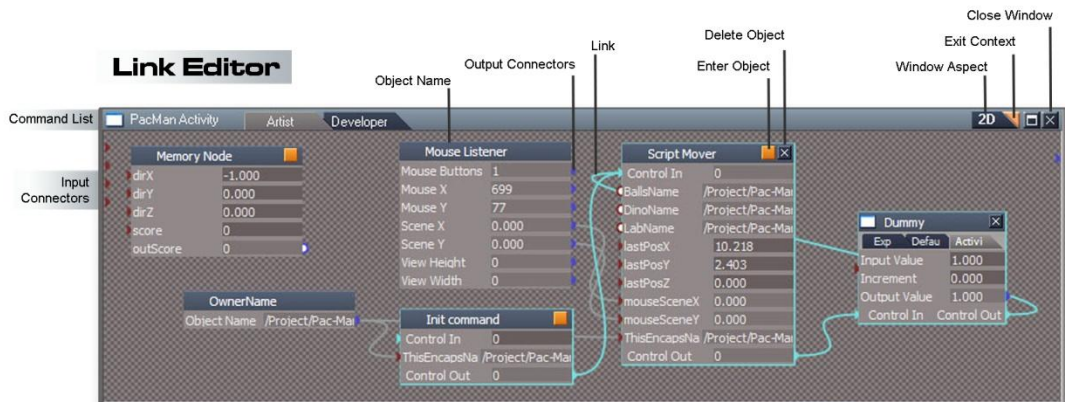
DopeSheet Mode

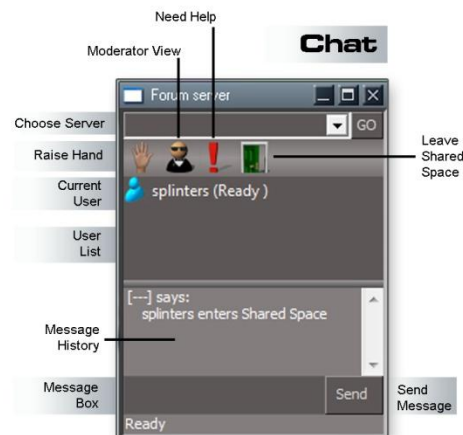
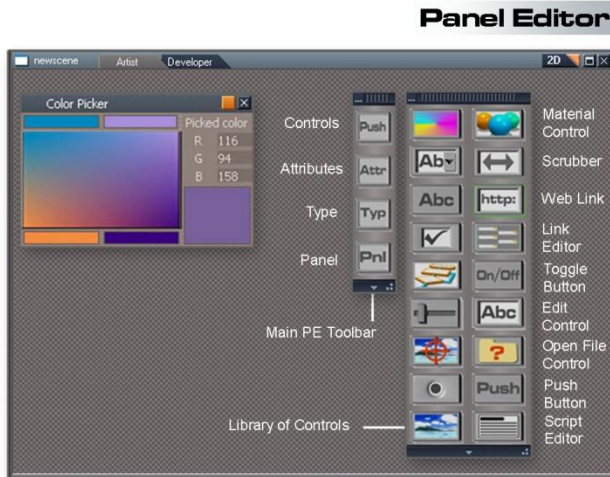
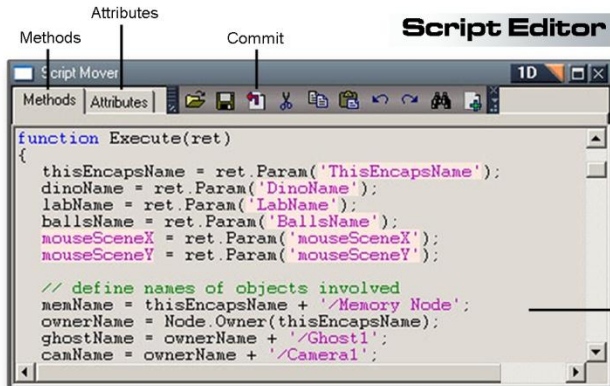


FCurve Mode

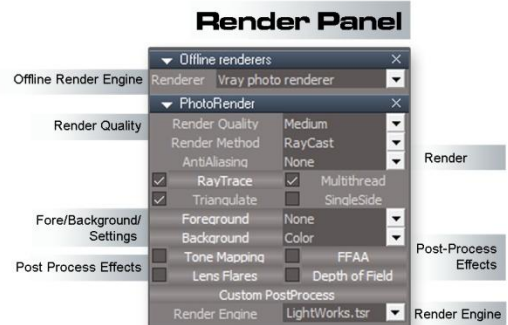
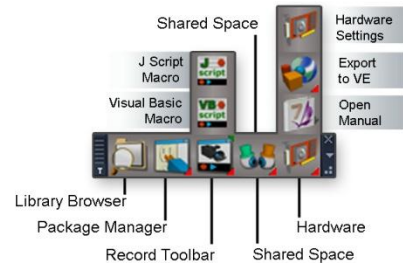


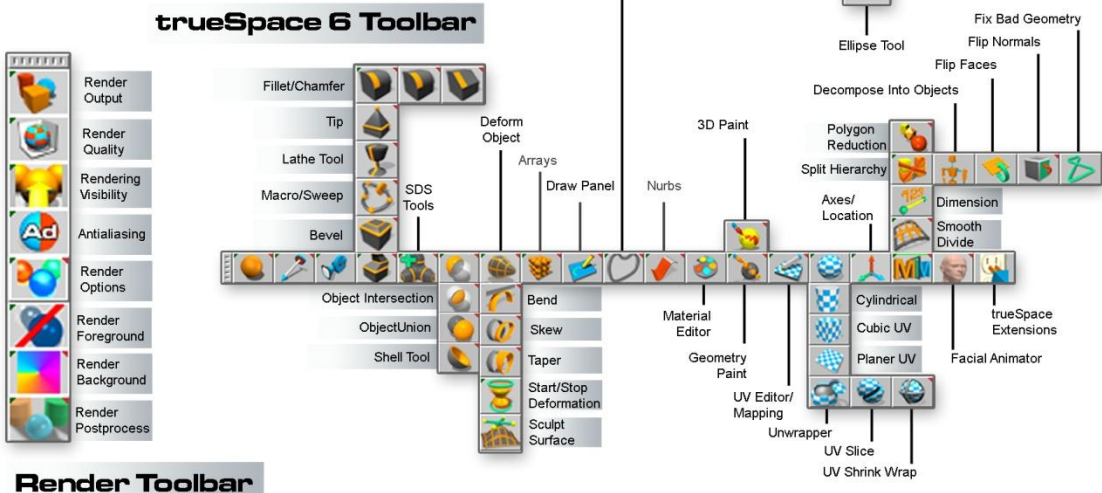
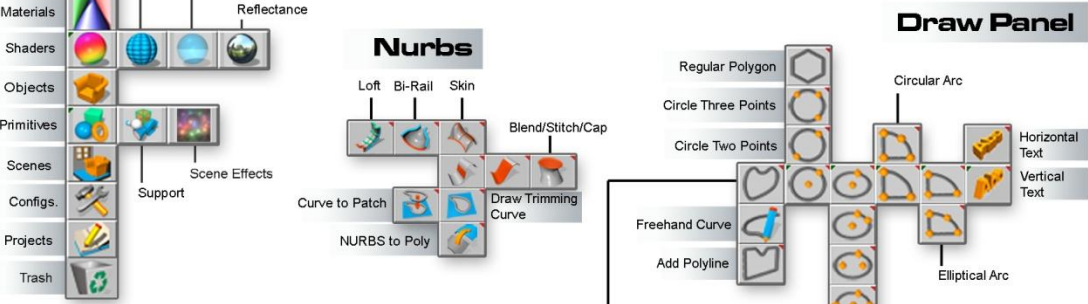
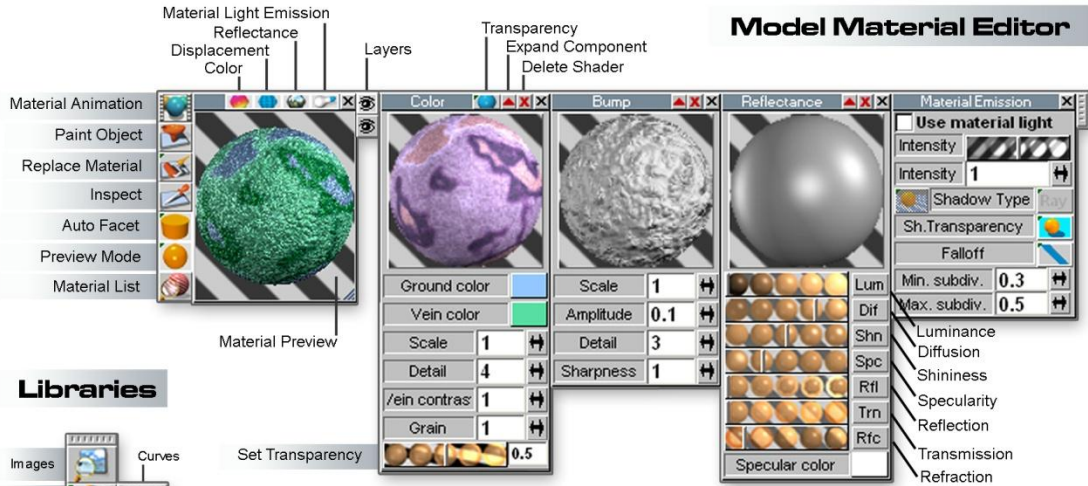
Link Editor





Options Toolbar





Render Toolbar

Chapter 1 Introduction

The trueSpace Unofficial Updates are a collection of bug fixes and scripts to enhance the capabilities of trueSpace 7.61 Beta and Std(Rosetta) versions of the software. This manual is a documentation of those changes and includes some corrections and additions to the original manual.

This document has the same chapter numbers and subheadings as the original manual so that items are easily cross referenced between the two. The final chapter of this document has information on new tools that were not added to the existing toolbars.

This manual is best viewed using a web browser that has been setup to open pdf documents within it's own window.



Warning - indicator that an action has some cost or undesirable side effects



Informational - helpful information, tips and mild warnings



[More Information](#)



Internal Link - connects related items together

"Same icon as ..." - Is a kind of warning that an icon image has been copied but does not have the same function as the original button.



Bottom Toolbar New Scene and Context



New Scene

This removes all objects from your Workspace and starts you off with a fresh scene. It will first prompt you to save your work by pressing no and saving it to a library or to continue and clear the scene.

RMB is New Scene plus close web server, close layers and delete marker widgets



Reset to Default Context

Opens a dialog to confirm the reset to default context. System reset operation.

RMB old behavior resets to default context without any warning or dialog choice.



Save current state

open save as dialog to Save a Context (ctx) file

2.4.5 Preset Shortcuts

trueSpace comes with a set of predefined shortcuts for Workspace, Link Editor, and some that work in every view. The following table shows the list of these predefined shortcuts plus all extras added.

For an up to date list of shortcuts use the Shortcuts Runner  [More Information](#) 

Global Shortcuts

Key	Description
CTRL F1	3D Window
CTRL F2	Link Editor
CTRL F3	Command Prompt
CTRL F4	Command History
CTRL F5	Output Console
CTRL F6	Status View
CTRL F7	Animation View
CTRL F8	Package Manager
CTRL F9	Scene View
CTRL F11	Library Browser
CTRL F12	Shared Space
SHIFT CTRL R	Reset to Default Context
SHIFT CTRL N	Generate New Space
LEFT	Select Previous object
RIGHT	Select Next object
DOWN	Select first encapsulated object
UP	Select object encapsulator
SHIFT CTRL RIGHT	Look at Next object
SHIFT CTRL LEFT	Look at Previous object

Global Shortcuts

Key	Description
Z	Start Move tool
X	Start Rotate tool
C	Start Scale tool
A	Camera Move tool
S	Camera Rotate tool
D	Camera Fov tool
SHIFT X	X lock
SHIFT Y	Y lock
SHIFT Z	Z lock
F1	World Coordinates
F2	Object Coordinates
F3	Screen Coordinates
F4	Tangent Coordinates
F5	X lock
F6	Y lock
F7	Z lock
F8	Reset View

3D Window Shortcuts

Key	Description
CTRL SHIFT V	View Toolbar
CTRL SHIFT O	Object Navigation Toolbar
DELETE	Delete selected object
CTRL K	Delete selected object
CTRL I	Inspect Material
CTRL R	Render to file
LEFT	Select Previous object
RIGHT	Select Next object
DOWN	Select first encapsulated object
UP	Select object encapsulator
Z	Start Move tool
X	Start Rotate tool
C	Start Scale tool
NUMPAD7	Rotate Yaw
NUMPAD9	Rotate Yaw
NUMPAD1	Rotate Roll
NUMPAD3	Rotate Roll
NUMPAD0	Rotate Pitch
DECIMAL	Rotate Pitch
CTRL NUMPAD7	Rotate Yaw
CTRL NUMPAD9	Rotate Yaw
CTRL NUMPAD1	Rotate Roll
CTRL NUMPAD3	Rotate Roll
CTRL NUMPAD0	Rotate Pitch
CTRL DECIMAL	Rotate Pitch
NUMPAD5	Normalize Rotation

NUMPAD8	Move
NUMPAD4	Move
NUMPAD6	Move
NUMPAD2	Move
CTRL NUMPAD8	Move
CTRL NUMPAD4	Move
CTRL NUMPAD6	Move
CTRL NUMPAD2	Move
PAGEUP	Move
PAGEDOWN	Move
CTRL PAGEUP	Move
CTRL PAGEDOWN	Move
HOME	Normalize Location
A	Camera Move tool
S	Camera Rotate tool
D	Camera Fov tool
SHIFT X	X lock
SHIFT Y	Y lock
SHIFT Z	Z lock
F1	World Coordinates
F2	Object Coordinates
F3	Screen Coordinates
F4	Tangent Coordinates

Point Edit Shortcuts

Key	Description
ESC	Cancel PE selection
DELETE	Delete selected Elements
SHIFT DELETE	Collapse Loop
CTRL K	Delete
CTRL C	Copy selection
CTRL F	Form Face
TAB	Point Edit Widget On
V	Select Vertices
F	Select Faces
E	Select Edges
L	Select Face Loops
T	Select Context
F4	Tangent
Shift I	Invert Selection
SHIFT A	Select Connected
SHIFT C	Convert Selection
SHIFT S	Smooth Selection
SHIFT O	Outline Selection
Q	Quad Divide Selection Faces
SHIFT Q	Smooth Quad Divide Selection
CTRL Q	Quadrify Selected polygons
M	Mirror Selection
CTRL M	Mirror Modeler
SHIFT B	Form Polygonal Bridge

SHIFT	Merge polygons
H	Hide Selected geometry
SHIFT H	Hide Unselected geometry
U	Show All hidden geometry
ADD	Add SDS
SUBTRACT	Remove SDS
CTRL D	Dynamic Sweep
CTRL S	Sweep selected Face
CTRL B	Bevel tool
CTRL T	Tip selected Face
CTRL P	Add Polygons
CTRL E	Add Edges
CTRL V	Add Vertices
CTRL L	Add Loop
CTRL W	Weld geometry together
CTRL H	Heal Vertices
CTRL O	Optimize Triangulation
1	Select by Painting
2	Select by Rectangle
3	Select by Lasso
4	Select by Move
5	Soft Selection
6	Select by Material
7	Select Edge Loops
8	Select Face Loops

Animation Editor Shortcuts

Key	Description
DELETE	Delete object
CTRL C	Copy object
CTRL X	Cut object
CTRL V	Paste object
CTRL A	Select All
CTRL U	Clear Selection
CTRL Z	Undo
CTRL SHIFT Z	Redo
SHIFT LEFT	Previous Keyframe
SHIFT RIGHT	Next Keyframe
K	Set Keyframe
CTRL LEFT	Previous Frame
CTRL Right	Next Frame
SHIFT HOME	Start Frame
SHIFT END	End Frame
CTRL HOME	Play
CTRL END	Pause
NUMPAD7	Rotate Yaw
NUMPAD9	Rotate Yaw
NUMPAD1	Rotate Roll

CTRL R = Render to File
CTRL O = Render Animation

Link Editor Shortcuts

Key	Description
DELETE	Delete selected object
CTRL Z	Undo
CTRL SHIFT Z	Redo
CTRL C	Copy selected object
CTRL SHIFT C	Copy selected objects to active Link Editor
L	Lock selection
U	Unlock selection
LEFT	Select Previous object
RIGHT	Select Next object
DOWN	Select first encapsulated object
UP	Select object encapsulator
CTRL SHIFT LEFT	Select Previous object
CTRL SHIFT RIGHT	Select Next object
HOME	Current scene in Link Editor
NUMPAD9	Maximize
NUMPAD3	Minimize
NUMPAD5	Center All
NUMPAD1	Zoom All
MULTIPLY	Iconize All
SUBTRACT	Minimize All
ADD	Maximize All
DIVIDE	Arrange All
ESC	Object tool

Clinton Toolbar Shortcuts

Key	Description
L	Lock selection
U	Unlock selection
SHIFT L	Workspace Layers 4

Clinton Point Edit Shortcuts

Key	Description
SPACE	Point Edit Toolbar
SHIFT SPACE	Point Edit Toolbar 2

Popup Shortcuts

Key	Description
CTRL SPACE	Point Edit Widget Toolbar
CTRL SHIFT P	Point Edit Widget Toolbar

UV Editor

Key	Description
CTRL Z	Undo
CTRL SHIFT Z	REDO

Info panel

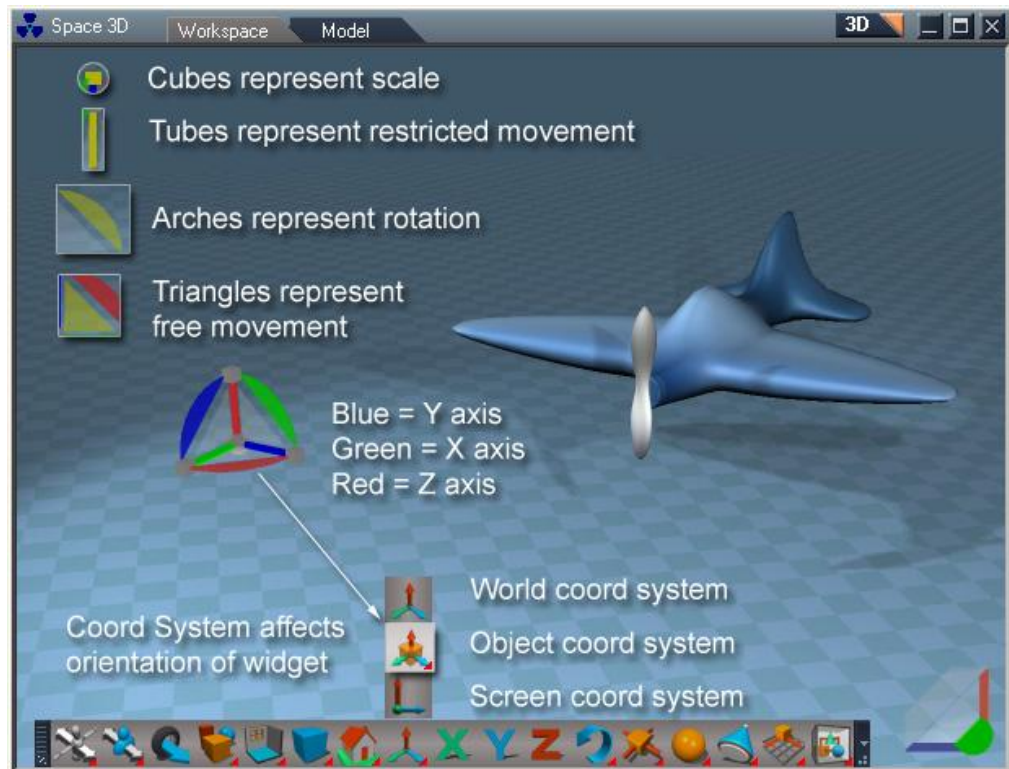
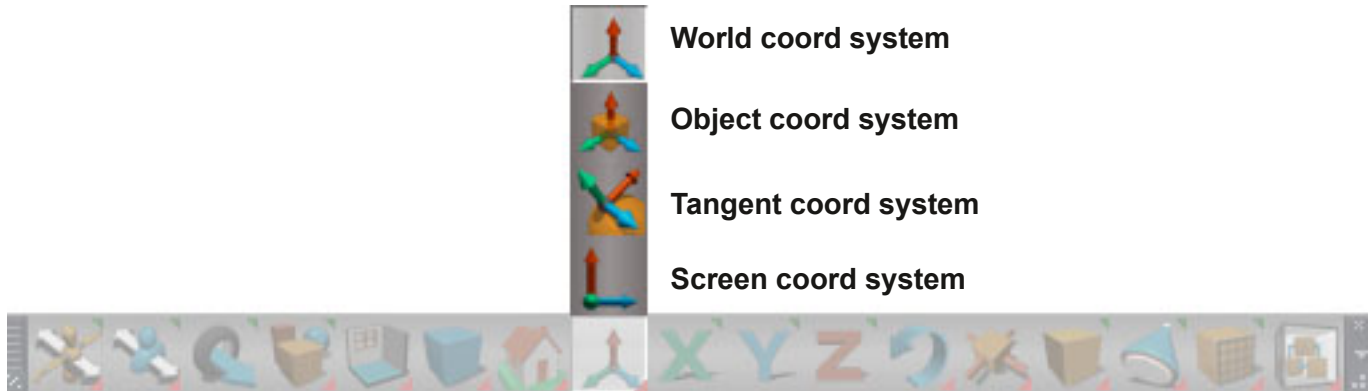
Key	Description
CTRL Z	Undo
CTRL SHIFT Z	REDO

Shortcuts Runner

 [More Information](#) 

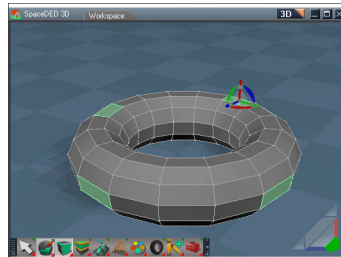
Link Editor	
Key	Description
<i>Mouse buttons</i>	
RMB	Zoom ALL/Move to Top Left
RMB + Drag	Zoom In/Out
MMB	Center selection
MMB + Drag	Move
CTRL + MMB	Up one level
MMW	Scroll Up and Down

2.5.1 Using Widgets

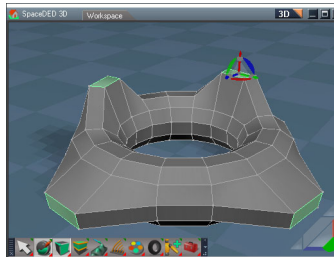




Tangent Coordinate System is useful for point edit modeling. The object navigation widget in tangent mode behaves the same as in world coord mode.
The tangent Coordinate system is not documented in the original manual.



Before move



After move

When 2 or more unconnected elements are selected the widget will be centered on one of the elements and each of the elements will move as if they each have an individual widget with the z handle aligned with the normal direction of the element and that moves with the visible widget. The elements will each move, rotate and scale individually instead of from a shared central location.

When 2 or more meshes are in point edit mode together and the selection has elements from two or more of the meshes, the rotation and scale will be centered on the widget and the elements do not move as individuals.

When a single edge or point is selected the tangent coordinate behaves the same as the object coord system.

When a single face is selected it behaves almost identically to the object coord. At some angles the widget will be slightly rotated on the z axis.

If 2 adjacent elements are selected the tangent widget is the same as object widget. This includes two points joined by an invisible triangle edge.

The object navigation widget will line up with the first selected object when in object coord mode.



Toggle Object Coordinate Mode [↗ More Information ↖](#)

2.6 Stack View

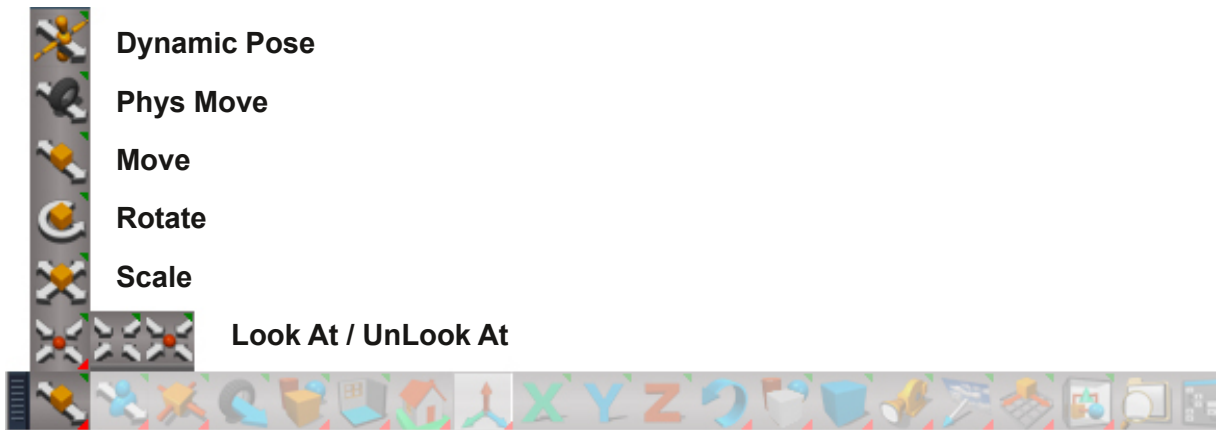
Info Panel

math expressions can be used in the numeric input fields:

+, **-**, *****, **/**, **sin**, **cos**, **arcsin**, **arcos**, **ln**, **log**, **exp**, **sqrt**, **PI**

2.7 3D View – Workspace

2.7.1 Object Navigation Tools



Object Move - RMB to exit tool.



Object Rotate - RMB to exit tool.

Ctrl + LB click - Yaw rotate selected mesh object +45 degrees
Alt + LB click - Yaw rotate selected mesh object -45 degrees



Object Scale - RMB to exit tool.



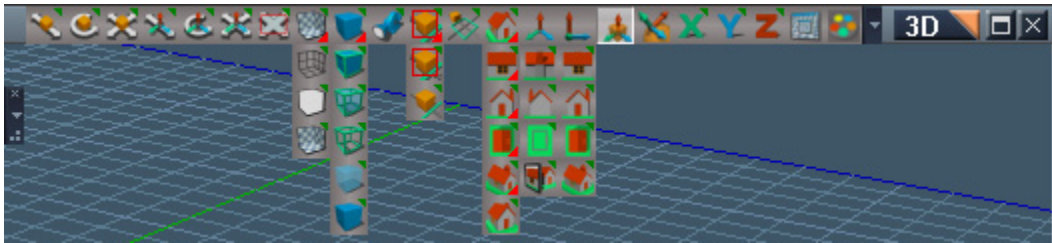
Object Look At



Object UnLook At

To use UnLook At, select the object that is to be freed then click the button to remove the Look At constraint.

Main View Toolbar



Unofficial Update Main View Toolbar



Perspective View



Isometric

Perspective and Isometric include a RMB action to rotate the view in 90 degree increments. The view positions and orientations are relative to the default view position not the current view position and orientation.



Open New 3D View - includes a version of the main view toolbar



Open Material Editor



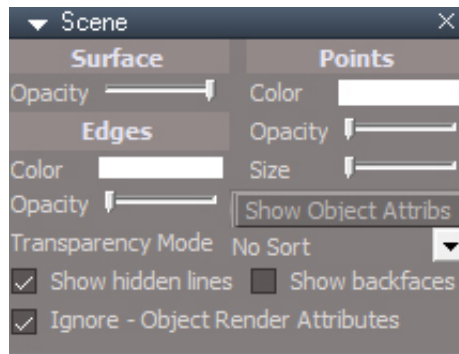
Set Camera - RMB switch to perspective view.



Zoom To Selection - RMB reset view.

The view buttons in the Main View Toolbar will change the active 3D view or they will change the main 3D view if there are no active 3D views.

2.7.4 Render Preferences Presets



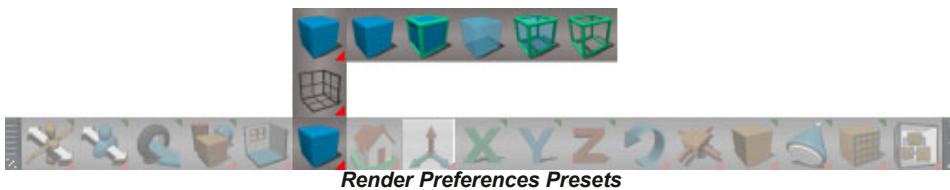
Show Object Attribs

LMB = Shows the first selected object's ORA panel in Settings

RMB = Closes any panels opened in Settings

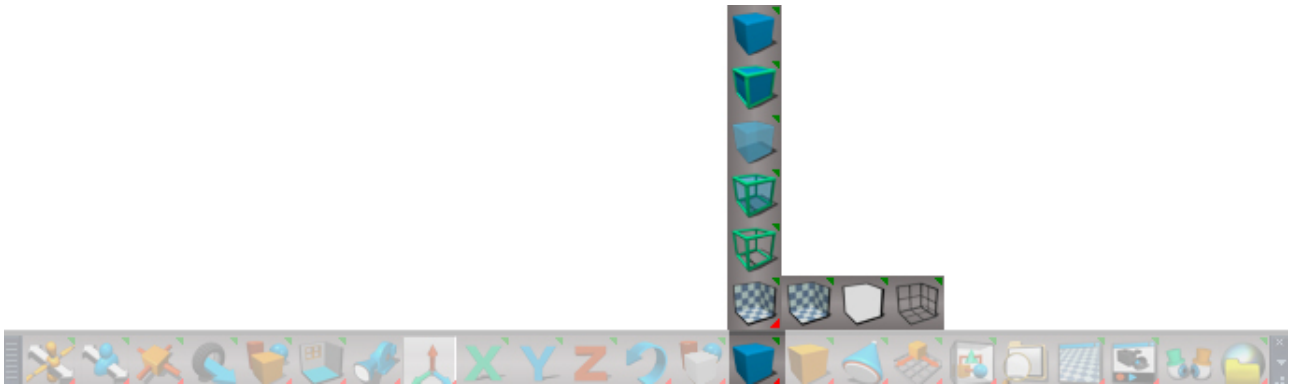
Only allows one panel at a time to be displayed. Restricted selection to a single item

With this icon group you can set the real-time render modes.



All the buttons in the render preferences and ground display preferences will change the active 3D window.

RMB will change all 3D windows.



Unofficial Update Render Preferences Presets

Draw as Solid

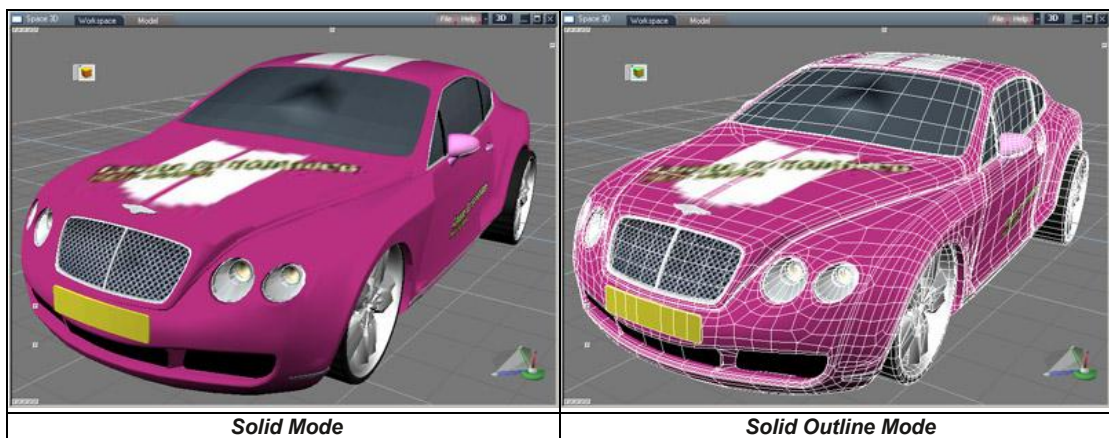


trueSpace will render all objects in your scene as completely opaque, shaded, and preview rendered.

Draw as Solid Outline



trueSpace will render the objects just as in solid mode and also outline the edges and vertices of the objects.

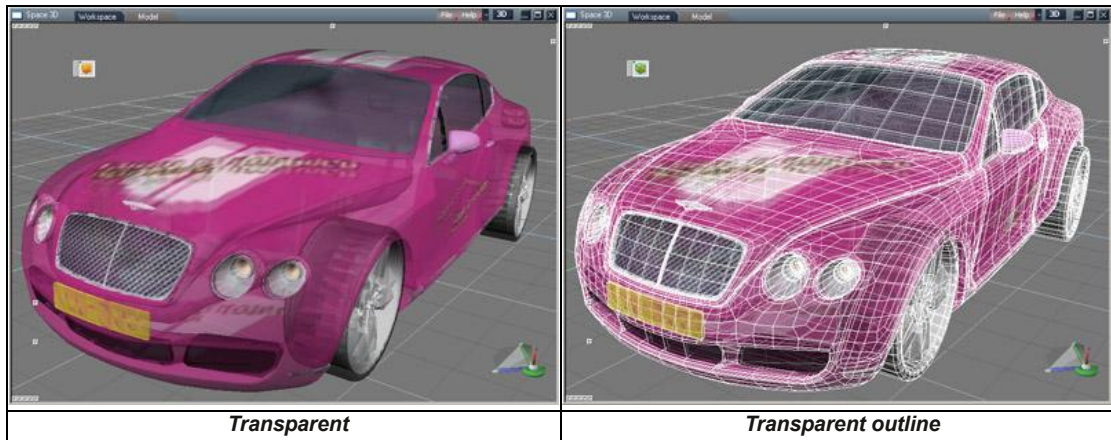


Draw as Transparent

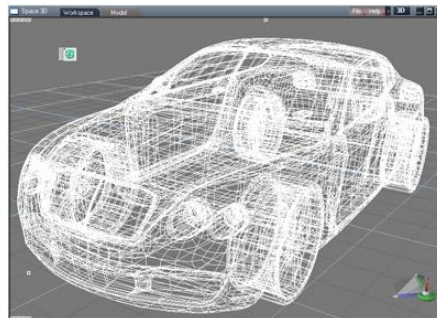
This will allow you to partially see through objects.

Draw Transparent Outline

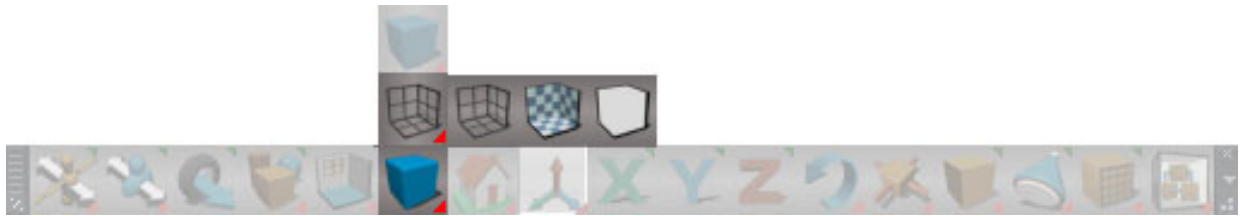
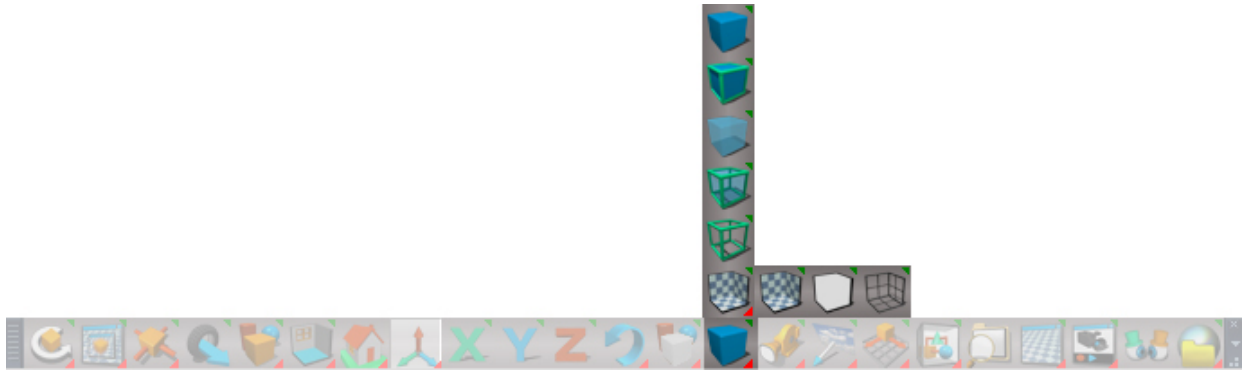
This is similar to Draw as Transparent, with the added function of highlighting all vertices and edges.

**Draw as Wireframe**

Draw the polygon edges with transparent faces



Wireframe

*Ground Display Mode**Unofficial Update Ground Display Mode***Ground Solid****Ground None****Ground Wire**

The Render Preferences Ground settings also has a **TwoSided** ground which is the same as solid but with a visible bottom surface.

All the buttons in the render preferences and ground display preferences change the active 3D window.

RMB will change all 3D windows for these buttons.



Show Selected



will erase undo history if any NURBS objects are in the selection



Hide Selected



Hide Unselected



Show Cameras and Lights - show all cameras and lights



Hide Cameras and Lights - hide all cameras and lights



Show All

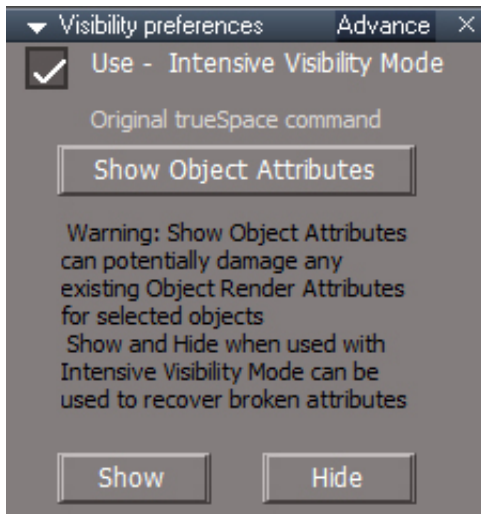


will erase undo history if any NURBS objects are in the scene



Hide All

RClick on the buttons opens the Visibility preferences panel.



Use - Intensive Visibility Mode - the internal structure of scene items will be rebuilt to ensure proper behavior of the visibility show/hide buttons. This can be extremely slow if Show All or Hide All is run with a large number of items in the scene. In these cases run a Show All or Hide All with this option enabled once and disable it for future runs.

Show Object Attributes - the original unmodified action - see section 2.7.4, Show Object Attribs button of Render Preferences panel



Background shortcuts

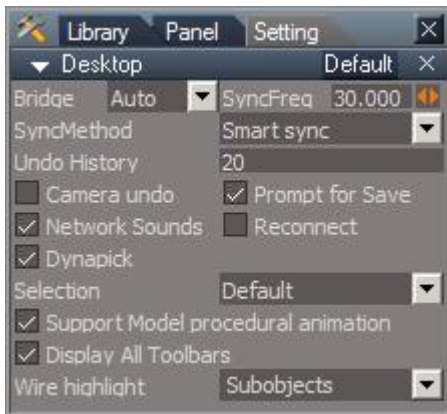
Period + LB Drag - Hide Unselected (Isolate Selected)
Comma + LB Drag - Shows All

[More Information](#)

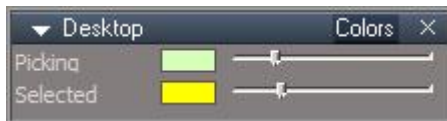
show / hide tools can be found in the view popup toolbar

[More Information](#)

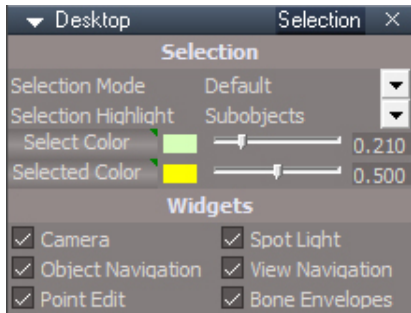
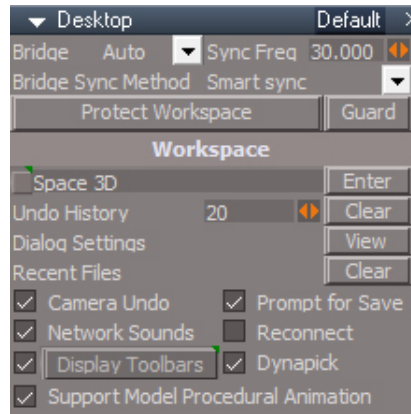
2.7.6 Desktop Preferences



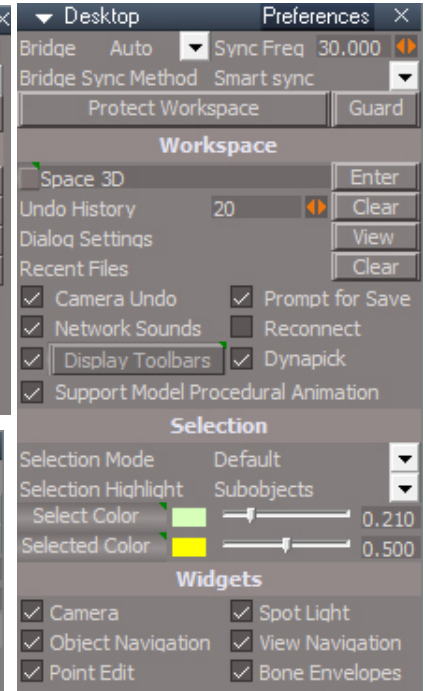
Desktop Default



Original Colors Aspect.



Unofficial Update Desktop Panels



Protect Workspace - open the Protect Workspace panel

Guard – opens the Guard panel [More Information](#)

Scene naming - small button LMB copies the scene name into the text input field, RMB sets the text input field to “Space 3D”,

Enter - rename the scene based on the text input field.

Clear – clear undo history

View - open the dialog settings panel

Clear – clear recent files list

Display Toolbars button and checkbox – uncheck to only show the 3D toolbars in the active 3D window. Press the button to restore normal behavior.

Picking Select and Selected Color reset buttons – RMB to reset, LMB no effect

Picking Select Color: Double click to Set the selected object wire color.

Selected Color: Double click to Set selected object wire color.

Desktop Preferences - missing information in the manual
Selection ("Selection Mode") not documented:

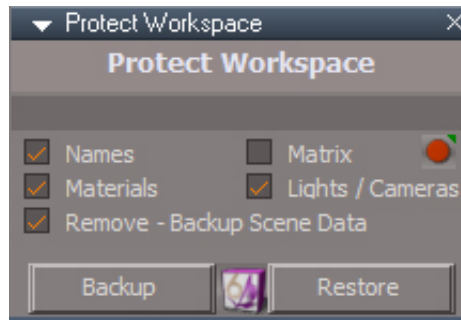
Default - select front object or cycle among all objects that are overlapping/touching

First Object - select front object

Small BBox - select through to the smallest object

Through - each click cycle through occluded objects, not necessarily overlapping/touching

Protect Workspace



open and dock a
model view

The Protect Workspace script saves and restores workspace attributes to protect them against modelspace changes. It protects materials, object names, matrix transforms, camera fov and spotlight angle.

Record - create a matrix key at frame 0 for all mesh objects that don't have animation. Matrix must be set in the keying panel. RMB go to time of first keyframe

Protection Options

Name - backup object names

Materials - backup object materials

Matrix - backup object transformation values

Lights/Camera - backup spotlight angle and camera fov

Remove Backup Scene Data - optionally delete the backup data when the restore is run

Backup - save data and materials nodes to temporary stores in the scene

Restore - restore the data and material nodes

Usage:

Push the Backup button to backup the nodes and values

Open modelspace and do modelspace work

Close the modelspace window

Push the Restore button to retrieve the previous workspace state



Protecting materials will destroy modelspace standalone deformations

Workspace copy, erase, undo and redo are missing from the workspace portion of the original manual.



2.76b Undo and Redo



Undo



Redo

The Undo tool (CTRL+Z keyboard shortcut) reverses the last operation performed on an object. This makes it easy to try things out in trueSpace and quickly undo something that did not work out the way you planned.

If you Undo something and then change your mind, you can use the Redo icon.

Each of these tools can store multiple levels of actions. If you wish to undo the last 4 actions you performed on your object, selecting Undo 4 times will bring you back to where you were prior to those actions. If you wish to redo the changes you just made, 4 clicks on the Redo icon will restore all the changes.

2.7.6a Copy and Erase

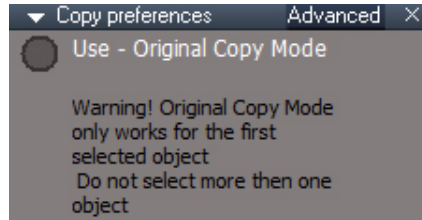
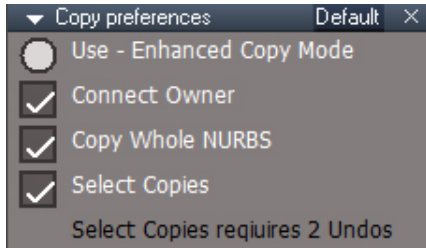


Copy LMB creates a duplicate of the selected object(s) and arrange the new nodes in the link editor. Will copy the entire NURBS object.



Delete LMB will remove the currently selected object(s). It also formally deselects to fix a ghost selection bug (tS scripts think the objects still exist). Will delete the entire NURBS object.

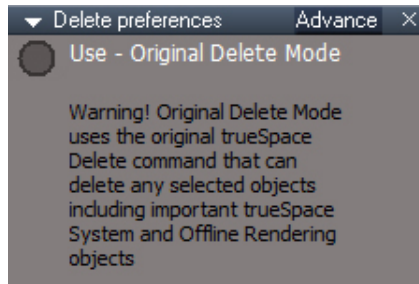
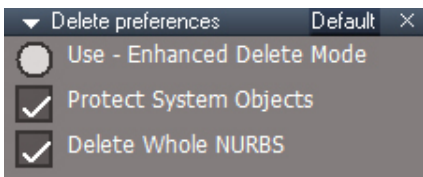
Use - Enhanced ... / Original ... - toggle between using the original trueSpace copy or delete command and the enhanced unofficial updates version



Connect Owner - when the selected object is part of a 3D group the copy will be connected to the same 3D group

Copy Whole NURBS - will copy the entire NURBS structure of the selected object

Select Copies - the copied items will be selected instead of retaining the original selection



no compensation for NURBS objects or ghost selection fix

Protect System Objects - display a dialog if the selected object is outside of the scene or is used for rendering, answer "Yes" to delete anyway and "No" to cancel the deletion

Delete Whole NURBS - will delete the entire NURBS structure of the selected object



Cut



Copy



Paste

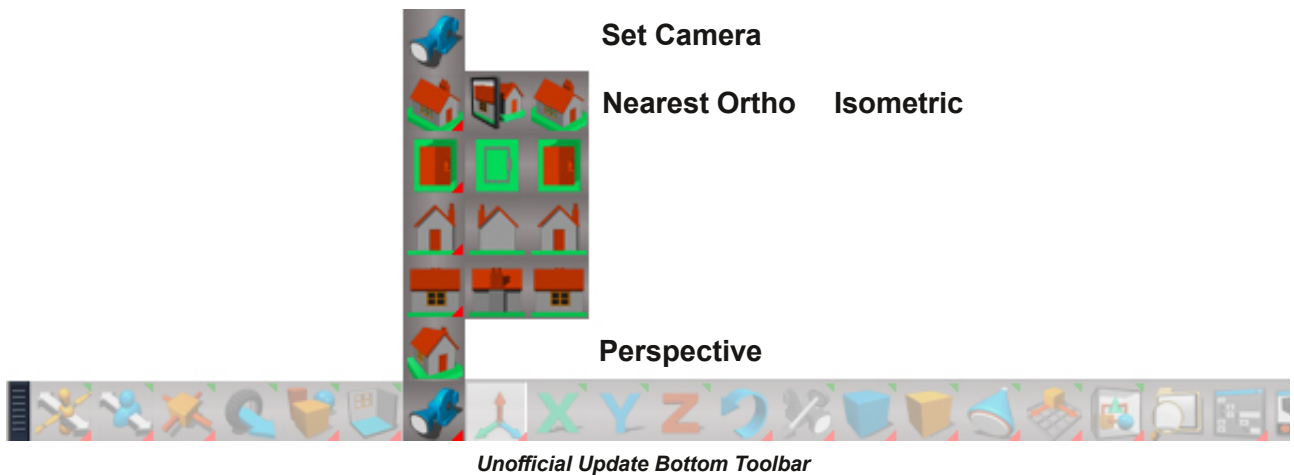
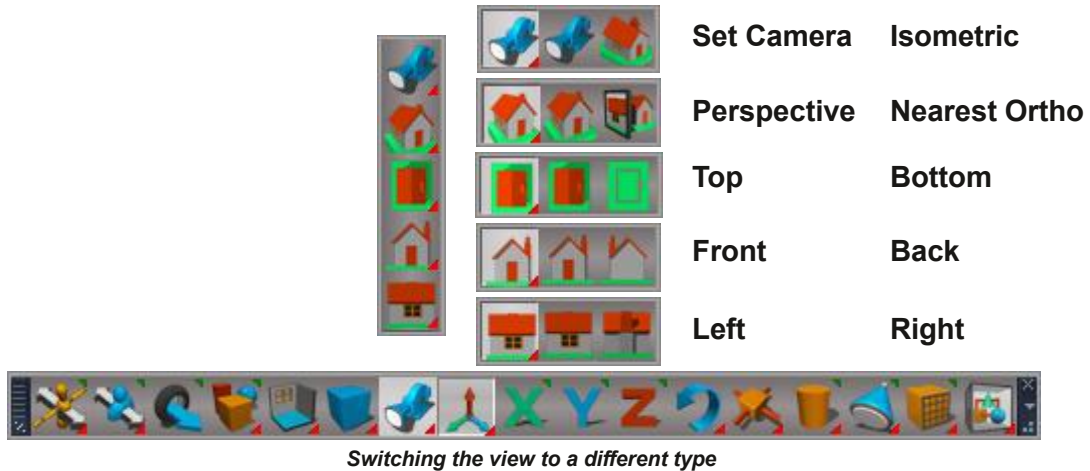


[More Information](#)



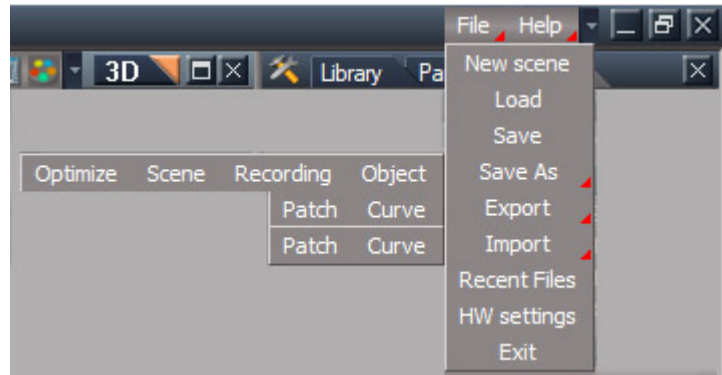
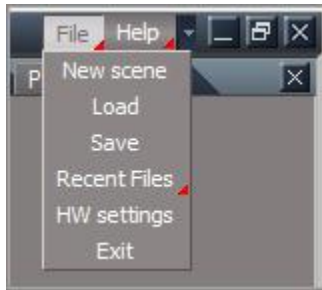
2.7.7 Perspective and Orthogonal Views

You can switch the view type from perspective projection to special orthogonal projections like top-view and front-view by clicking on the appropriate icons on the Workspace tool bar.



In the Unofficial Update the camera view is not grouped with the isometric view and the perspective view is not grouped with the nearest ortho view.

2.7.9 Workspace File and Help Menu



Unofficial Update File Menu

Save As > Optimize

Opens the Optimize Wokspace Scene panel used to clean the scene before saving as a recording file.

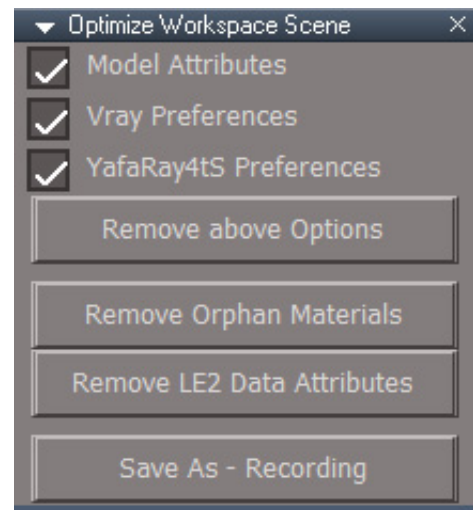
Model Attributes - setup to remove connectors added to the scene and scene objects from modelspace, also setup to remove Layer Info and PhotoRender nodes from the scene.

Vray Preferences - setup to remove Vray and PhotoRender nodes from the scene. Safe to use if you did not use Vray rendering for your scene.

YafaRay4tS Preferences - setup to remove the YafaRay4tS node from the scene. Safe to use if you did not use YafaRay rendering for your scene.

Remove above Options - executes the removal setup in the previous checkboxes

Remove Orphan Materials - If a mesh has multiple materials applied to it and the Separate Selection tool is used all the materials are copied which can result in orphan material nodes and connections.



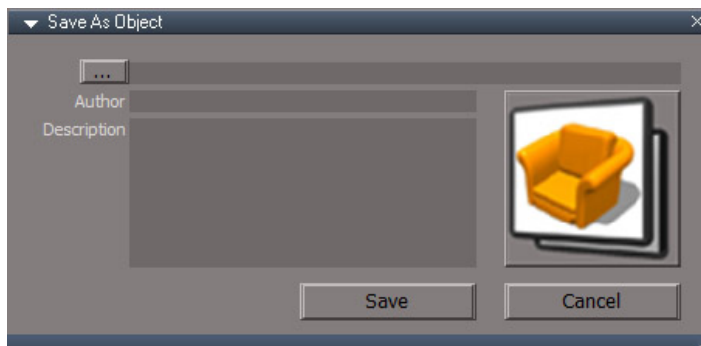
Remove LE2 Data Attributes - some scene items seem to have excessive numbers of LE2 Data connectors.

 will erase undo history

Save As - Recording - save the scene as an RsRcd file type. This has all the same information as a scene file but takes up much less file space

Save As > Scene - file save as dialog with RsScn file extension as the only choice. More direct and convenient than using Save.

Save As > Recording - save the scene as an RsRcd file. This format has a smaller file size than the default RsScn file format without any apparent lose of data.

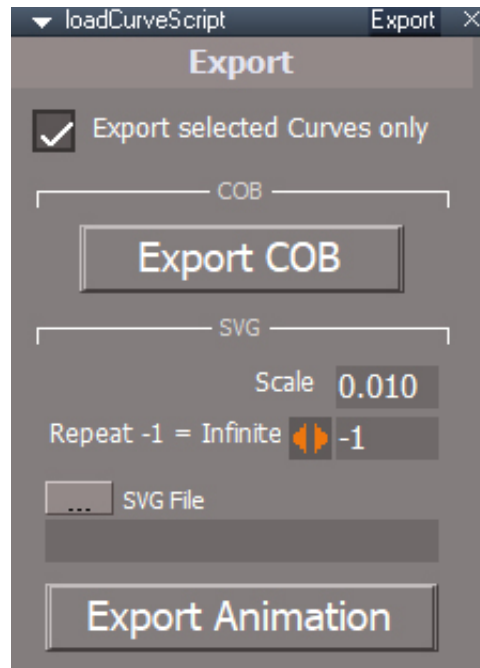


Save As > Object - save object file, RsObj, with extra information

... button to choose a file name

Author and **Description** optional information to add to the file

Save button to write the file to disc



Export > Curve

Export selected curves only - don't export a curve unless it is part of the selection. All curves in the scene will export when unchecked.

Export COB - save in truespace modelside compatible ascii format(COB). Only curves will be exported.

----- *svg export* -----

Scale - default of 0.01 corresponds to 1cm in trueSpace translates to 1pixel in the svg file

Repeat - how many times to play the animation in the html file. A value of -1 means infinite repeats.

SVG file - input file to use when generating the sample html file

Export Animation - save html and CSS animation files to be used with the SVG file. Saves translation, rotation, scale and opacity(transparency) animations. Only animated items will export.

Open the html file in a browser to see the animation. The html file will have the same name as the css file created.

Import > Curve

Load curves from trueSpace scn and cob files generated from the modelside or earlier truespace versions. It also reads bezier curves from turbocad dxf files and svg format files. Most of the import options are for svg format files.

----- *svg import* -----

Scale - default of 0.01 corresponds to 1cm in trueSpace translates to 1 pixel in the svg file

Z Offset - each element will be offset in the z direction by this amount

Ellipse as polygon - imports ellipses and circles as solid curve shapes

Line as polygon - lines and polylines imported as triangles each with only 1 edge visible

Path as polygon - import closed paths as solid curve shapes

Rectangle as polygon - import rectangles as solid curve shapes

Freeze polygons - converts the solid curve shapes imported as polygons into polygon meshes

Close paths with a line - add a line from the end to the beginning of closed curves - this option is only valid with non-polygon import

Break down compound paths - splits compound paths into distinct curves

Always close paths - close all open paths

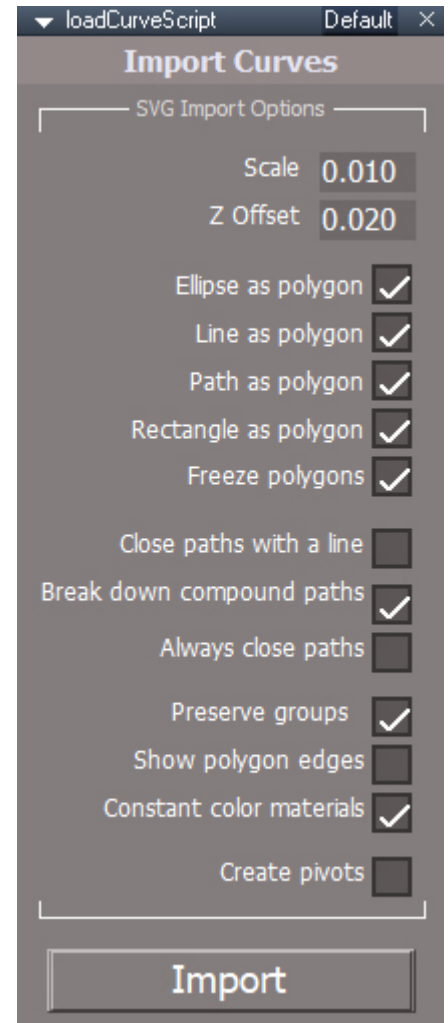
Preserve groups - if unchecked will ignore groups that have no transform values

Show polygon edges - items converted to polygon meshes will have edge visibility turned on

Constant color - use a constant color material for curves imported as polygons

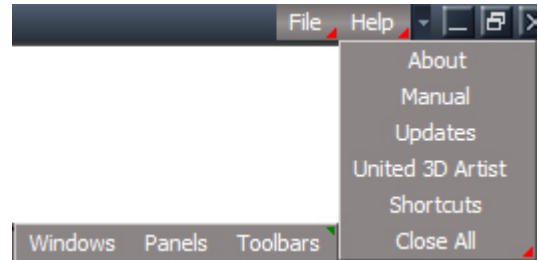
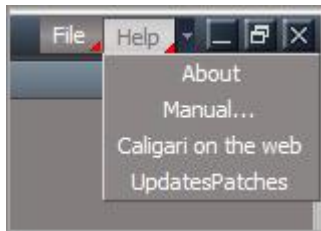
Create pivots - pivots are needed for items that will be animated and exported as css animations

Import - press to load a curve file.



Export > Patch - save a NURBS patch as an ascii format cob file, the first selected object will export.

Import > Patch - load a trueSpace cob ascii format file that contains NURBS patches



Help: About

This displays the trueSpace splash screen with the programming credits, the version information, and the display mode in which trueSpace is running. The Unofficial Update version first shows a popup dialog with version information.

Help: Manual

This will take you to the contents page of the PDF version of the manual you are reading now.

Help: United 3D Artist

Open a web browser to the United3DArtists forum.

Help: Updates

Open a web browser to the United3DArtists trueSpace Unofficial Updates sub forum.

Help: Close All - Windows

Close all open floating windows. No effect in the Floating layout.

Help: Close All - Panels

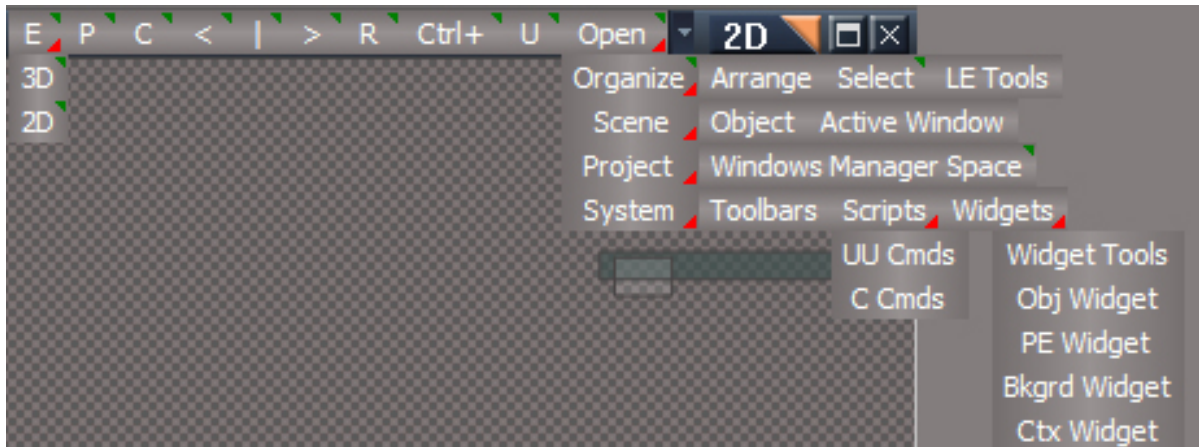
Close all open floating panels.

Help: Close All - Toolbars

Close all toolbars. This will also close the toolbar in the lower left of all non-floating 3D windows. A dialog box will show giving the option to reopen this toolbar for the main 3D window. RMB will reset all toolbars, ⚠ which will take some time to run.

2.8 2D View – Link Editor

2.8.1 Link Editor Description



Unofficial Update Link Editor Navigation Toolbar

Link Editor Navigator Toolbar

3D : encapsulate 3D

2D : encapsulate 2D

P : LMB select parent(owner) node, RMB open selected node in the link editor

C : LMB select first renderable child node, RMB open selected node in the link editor

< : LMB select previous renderable sibling node, RMB open selected node in the link editor

| : LMB center the selected node in the view, RMB select next renderable sibling node in the link editor and center it

> : LMB select next renderable sibling node, RMB open selected node in the link editor

R : (3D View) LMB start rectangle select tool, RMB open options panel

Ctrl+ : LMB simulate ctrl button press and hold, LMB again to end ctrl button behavior, RMB If a subobject of a scene object is currently selected, the top most scene level object will be selected.

 Ctrl+ can be unpredictable when used inside of a NURBS object.

U : LMB unselect, RMB unselect and close all open object panels

Open : RMB open the link editor to the scene

Organize : LMB minimize nodes and arrange, RMB maximize nodes and arrange

Arrange :

Select : open the Select panel, LMB open the Cycle aspect, RMB open the Default aspect. Alphabetize aspect is also available once the panel is open.

LE Tools : open LEtools panels

Scene : open link editor to the scene

Object : open link editor to the selected object

Active Window : open link editor to the active window

Project : open link editor to the project

Windows Manager Space : open link editor to the windows manager space

System : open link editor to the top level root

Toolbars : open link editor to the toolbar prototypes encapsulator

Scripts : open link editor to the scripts

UU Cmds : open link editor to the scripts

C Cmds : open link editor to the scripts

Widgets : open link editor to the active widgets

Widget Tools : open link editor to the widgets tools

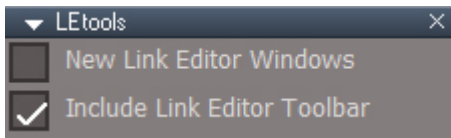
Obj Widget : open link editor to the active object navigation widget

PE Widget : open link editor to the active point edit navigation widget

Bkgrd Widget : open link editor to the background widget

Ctx Widget : open link editor to the background widget

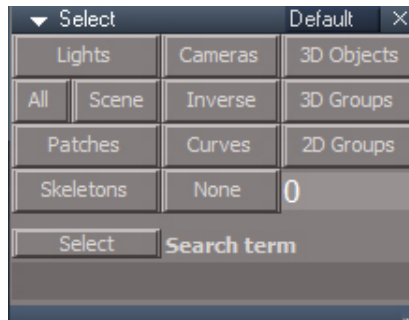
LE Tools



New Link Editor Windows : link editor toolbar buttons open link editor in a new window

Include Link Editor Toolbar : if New Link Editor Windows then add the link editor toolbar to the new window

Select



Default aspect

Select items based on their common characteristics.

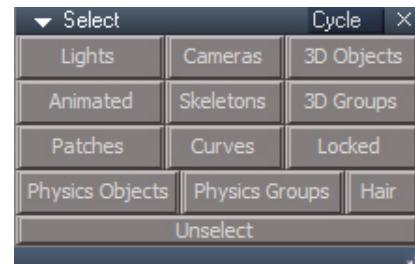
By object type: Lights, Cameras, 3D Objects, 2D Objects, NURBS Patches and Curves. Scene refers to all objects that can be manipulated in the 3D view.

Modify selection: All, None, Inverse.

Name matching: Enter a search term in the text input field and press the Select button. The search is case insensitive and the search term will be found at the start, end or in the middle of the object name..

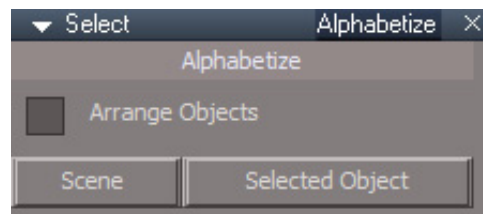
The number field will show the number of selected items after a button is pressed.

 The 3D Objects button does not include NURBS Patches and Curves



Cycle aspect

Cycle aspect Cycle Select items based on the type of object.



Alphabetize aspect

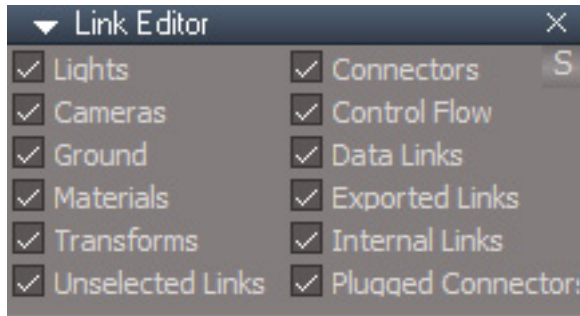
Place the objects in alphabetical order by a delete and restore process. A link editor window will open to the scene or selected object.

Arrange Objects : Nodes will be rearranged inside the link editor.

Scene : Alphabetize the scene.

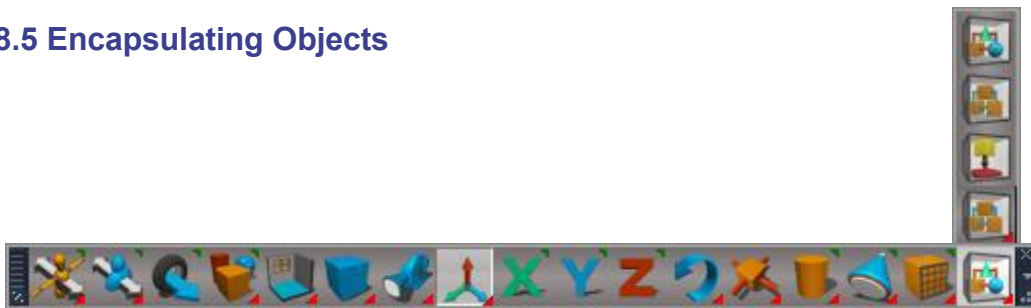
Selected Object : Alphabetize the nodes inside the selected object.

2.8.2 Main Elements of the Link Editor



S - same as the link editor navigation toolbar Select button - see previous page

2.8.5 Encapsulating Objects



Bottom Toolbar



Unofficial Update Bottom Toolbar



Encapsulate Objects - RMB open the UnEncapsulate panel



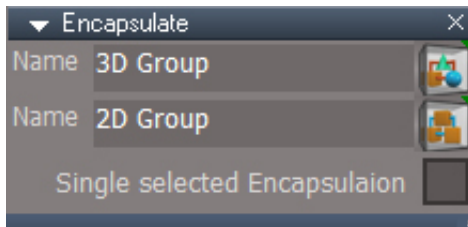
Encapsulate in 3D - RMB open the Encapsulate panel



Unencapsulate Objects The Unencapsulate tool, breaks a group apart.
RMB open the UnEncapsulate panel

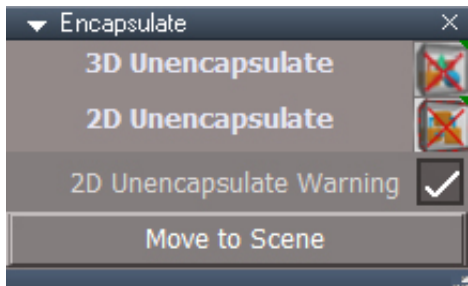


Unencapsulate in 3D The UnEncapsulate In 3D tool breaks a group apart and cleans up extra nodes that were used by the 3D group.
RMB open the UnEncapsulate panel



The panel buttons allow you to name the new group before creating it. RMB for both buttons opens the Unencapsulate panel.

Single selected Encapsulation - allows making a group with a single member.

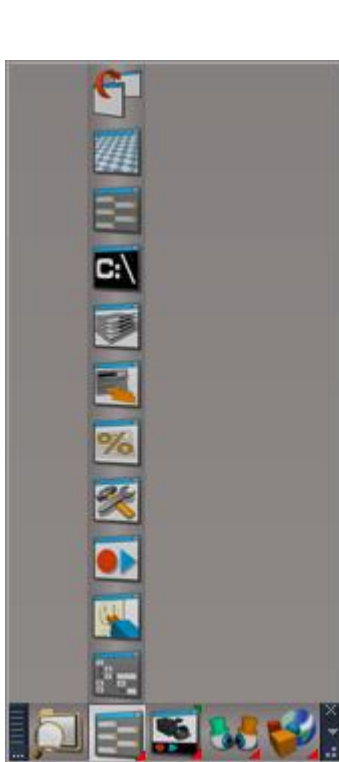


Panel buttons seem to be identical to the toolbar Unencapsulate and Unencapsualte 3D buttons. RMB for both buttons opens the Encapsulate panel.

2D Unencapsulate Warning - uncheck to remove the warning every time you disassemble a group.

Move to Scene - move the selection from inside a group in the scene to the scene level

2.12 Other Views



Stack Toolbar

	Make copy of Window
	3D Window
	Link Editor
	Command Prompt
	Command History
	Output Console
	Status View
	Stack View
	Anim View
	Package Manager
	Scene View



Unofficial Update Combined Stack Toolbar

The Stack Toolbar has been combined with the main bottom toolbar



Stack View - will open a floating stack view if the stack view is not open.

original would simply close the stack view, requiring a layout reset



Make copy of Window - LMB runs original command and then cleans up the result
RMB original command



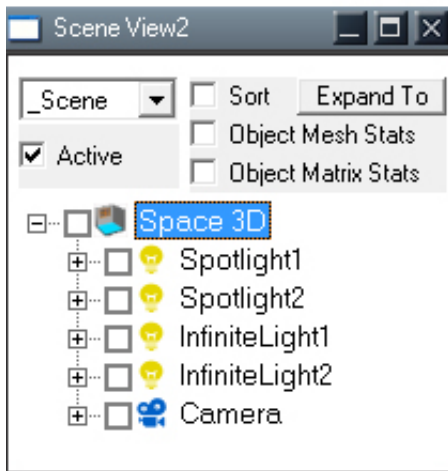
3D Window - LMB - original command
RMB - original command plus adds Scene & Postprocess nodes



Link Editor - LMB - original command plus adds Link Editor toolbar and sets the window as the active LE window for the toolbar and closes any other LE windows that have a toolbar.
RMB original command



Scene View 2 - LMB open Scene View2 window, RMB open Scene Graph Utilities window



Scene View2 Controls

_Scene - refresh/load with the scene as the top level node

_Root - refresh/load with the Kernel root as the top level node

Active - update the tree interactively from changes in trueSpace

Sort - sort alphabetically

Object Mesh Stats - update the object statistics panel mesh element counts

Object Matrix Stats - update the object statistics panel matrix values

Expand To - open the tree to the currently selected node

[link to statistics here](#)

Rows from left to right

Checkbox - selections used in the item checkbox context menu

Icon indicating the type of object - click to refresh the tree branch of the parent item

Object name - click to select, rclick to open the item context menu

Right click context menu:

Browse in LE - open and look inside the node in the LE view

Delete - remove the node from trueSpace

Rename - open an edit control to rename the node, press enter when complete

Show Node in LE - centers the node in the LE view

Copy - copy the node to a temporary holding area

Cut - copy the node to a temporary holding area and delete the original

Paste Into - paste the previously copy or cut nodes into the node

Duplicate - copy the node as a sibling node

UnGroup3D - same as Ungroup but will cleanup connections and remove the transform node

UnGroup - unencapsulate the node

Copy Path - copy the full path of the node into the windows clipboard

Update Tree - will update the tree from the items parent downward in the tree hierarchy

Right click checkbox context menu:

Select using the checkboxes then use this menu to operate on the selection

Select - select all chosen items

Delete - remove the items from trueSpace

Copy - copy the items to a temporary holding area

Cut - copy the items to a temporary holding area and delete the original items

Paste Into - paste the previously copy or cut nodes into the item

Duplicate - copy the items as a sibling nodes

Group3D - make a 3D Group from the selected items , UU required

Group - make a 2D Group from the selected items

Move into Group - move selected nodes into another node

Move into Group 3D - move into group for 3D objects with matrix connections

Update Tree - will update the tree from the items parent downward in the tree hierarchy



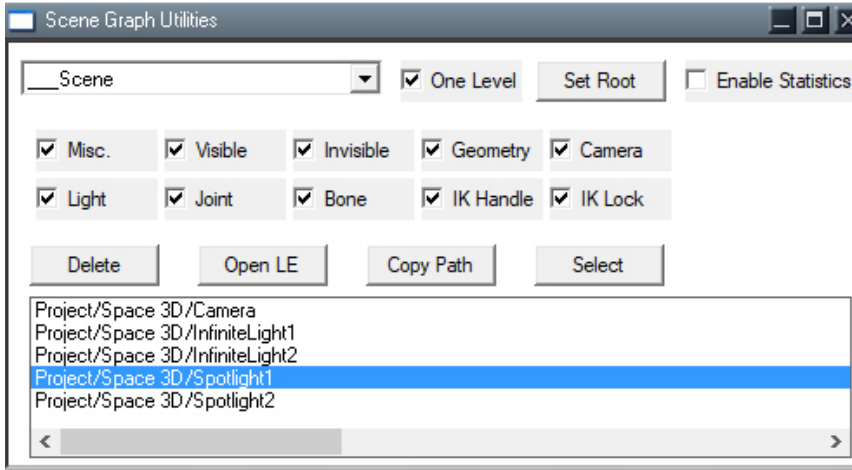
Light, Camera, Material, Scene, 2D Group, 3D Group

Joint, Bone, IK Handle IK Lock, Skeleton, Actor

NURBS Patch, NURBS Curve, Text, Animation

Geometry, Mesh, Particle System, Physics, Hair

Constraint, Modifier, Object Render, Default blank



The listbox has an unusual selection method. To select an item you left click then right click. For multiple selections drag or use combinations of shift and ctrl.

The **root level dropdown** list holds bookmarks. "___Scene" is the scene level and "___Root" is the top level in truespace.

One Level checkbox will display only one level of nodes at the current root level. When unchecked it will display all the child nodes and their descendants.

Set Root button is used to add a bookmark and set the root level to that bookmark. To remove a bookmark select the node and press the Set Root button

Enable Statistics - seccion changes will update the Statistics display

[link to statistics here](#)

The **Misc, Geometry, Light ...** checkboxes act as filters. If it's not checked then it won't show in the list.

Misc is a catch all for items that don't fit into the other filter categories.

The **Visible** and **Invisible** filters only work for One Level lists.

To get a list of invisible objects, check One Level and uncheck Visible and check Invisible.

Delete to delete the selection

Open LE button to open the link editor to a node

Copy Path button will copy the full path of the selected node to the windows clipboard.

Select button will select the scene items based on the chosen items from the list. Right click in the list after making the choice will also select the nodes.

2.13 Macro Recording and 3D Recording

2.13.1 Macro Record



Macro Record – jScript RMB create a blank jscript command node in the scene.



Macro Record - VBScript RMB create a blank vbscript command node in the scene.

2.13.4 Record Toolbar



Open 3D Record Toolbar

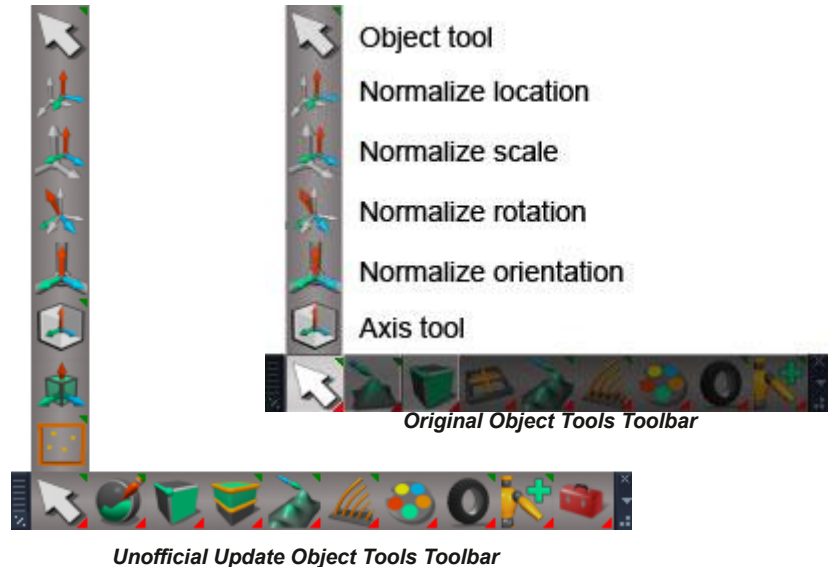
The tooltip was updated to "3D Record Toolbar" from simply "Record Toolbar". The usage in the original manual is inconsistent and uses both terms. Adds actions to show the stack view.

LB - Opens the 3D Record Toolbar & Record Preferences panel in Settings

RB - Opens the Record Preferences panel in Settings

Chapter 3 MODELING - Workspace

3.1 Object Tools



3.1.1 Object

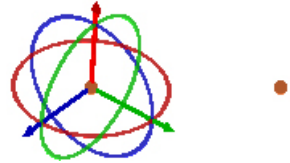


The Object tool is used to select an object. Once an object has been selected, the remaining object tools can be used. Choose the Object tool and left click on an object in the Workspace to select it.

If a subobject at any level of a scene object is currently selected, the top most scene level object will be selected.

RMB open the Info Panel in a floating window.

3.1.6 Axis Tool



RMB toggles showing the axis in front and in back of the object.
A clickable sphere control has been added to the axis tool widget

P + Left click - open Axis Snap panel without the need to enter point edit mode - see Axis to Selection below

Right click close Axis Snap panel

Middle click hide arcs and arrows

Left click show arcs and arrows



Flatten Axis - "Store pivot transformation into mesh and reset pivot to identity."



Axis to Selection

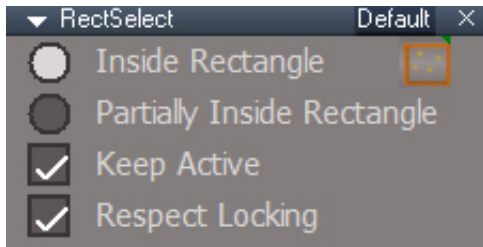


[More Information](#)

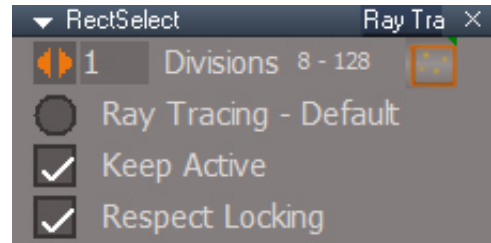




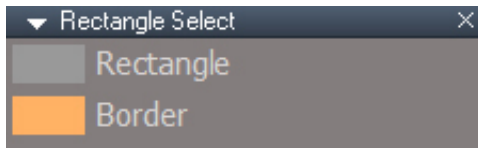
Rectangle Select - rectangle style object selection via bounding box/frustrum or ray tracing
also includes a zoom in and out function
RMB to open the default aspect of the panel



Rectangle Select Panel Default aspect



Rectangle Select Panel Ray Tracing aspect



RB + Drag rectangle from top down right - Zooms In
RB + Drag rectangle from bottom up left - Zooms Out

Icon button in the panel is the same as the toolbar button except Right Click to open the color panel

Usage:

- Left click the button to run with current options
- Right click to open the options panel.

Default Aspect

Inside Rectangle - objects must be fully enclosed in the selection rectangle.

Partially Inside Rectangle - objects can be only partially inside the selection rectangle

Ray Tracing Aspect

Divisions - the number of vertical and horizontal ray traces used to find objects.

Ray Tracing - Default - sets up the default values to use ray tracing

Keep Active - tool stays valid until RMB click in space.

Respect Locking - if an object has been marked as unselectable it will not be selected.

Notes:

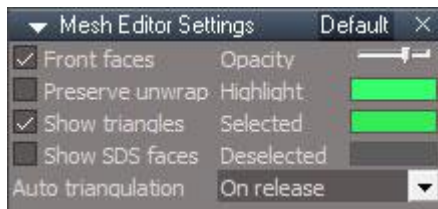
- Use combinations of Ctrl and Shift like all other selection tools.
- Small items can be missed in ray tracing mode - increase the Divisions
- Only visible non-occluded objects will be selected in ray tracing mode.
- Occluded objects will be selected in the default rectangle frustum mode

3.2.0 Mesh Editor Settings

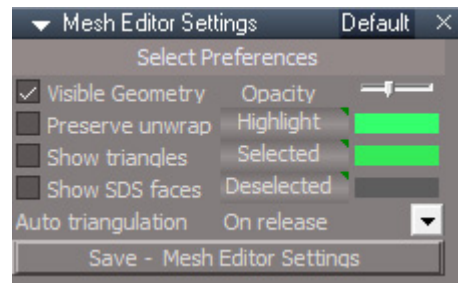
There are many options and settings that will control how Point Edit works, adjusting everything from the colors used in making a selection, to how certain tools work. This section details those options before we get into looking at the tools themselves. Where the options apply to a particular tool, you will find them repeated under that tool's description.

The Default aspect

This aspect is shown on activating Point Edit mode.



The Default aspect of the Mesh Editor Settings panel.



Unofficial Update Default aspect

Highlighted, Selected, Deselected – RMB reset buttons.

"Front faces" renamed to "Visible Geometry"

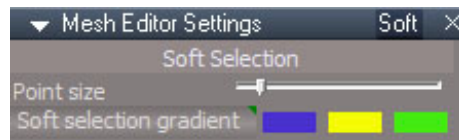
Save - Mesh Editor Settings will make the current values the defaults when resetting the default context.

The Soft aspect

This aspect must be selected manually. This section is repeated under the Soft Selection tool write up.



The Soft aspect of the Mesh Editor Settings panel.

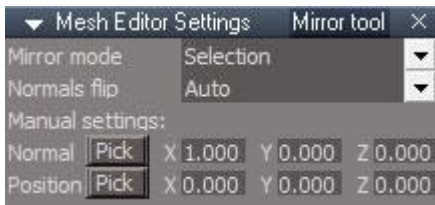


Unofficial Update Soft aspect.

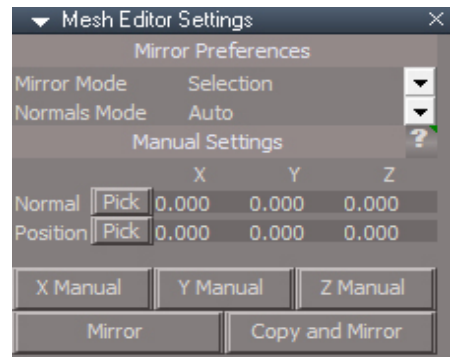
Soft Selection Gradient – RMB reset gradient colors

The Mirror Tool aspect

This aspect can be selected manually, or opened with a right click on the Mirror Tool. This section is repeated under the Mirror Tool write up. Note that these settings apply solely to the Mirror Tool, and not the Mirror Modeler.

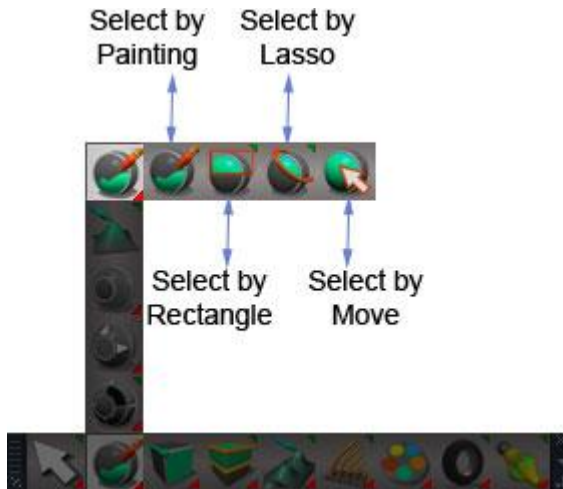


The Mirror Tool aspect of the Mesh Editor Settings panel.



Unofficial Update Mirror Tool aspect.

- **X Manual** – Sets mode to Manual, sets Normal to 1,0,0, sets Position to 0,0,0
- **Y Manual** – Sets mode to Manual, sets Normal to 0,1,0, sets Position to 0,0,0
- **Z Manual** – Sets mode to Manual, sets Normal to 0,0,1, sets Position to 0,0,0
- **Mirror** – run the mirror on the selection
- **Copy and Mirror** – copy the selection and then mirror



The basic selection tools for Point Editing.



Visible | All - switch between select visible geometry and select all geometry

Cycle - change selection element from/to context
 > vertex > face edge > triangle edge > face > triangle > triangle edge > edge loop > face loop and back to context

3.2.1 Select By Painting



RMB sets to context mode and front faces.

3.2.2 Select By Rectangle

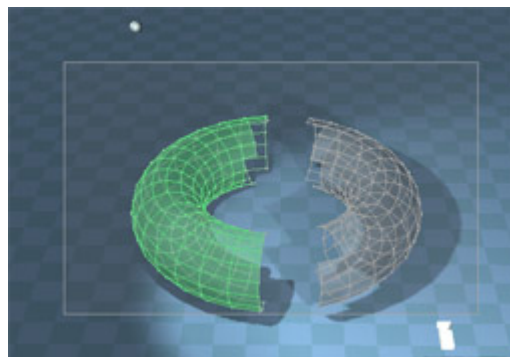


Connected – RMB panel, This checkbox determines if the selection is allowed to select other object's elements or not.

3.2.3 Select By Lasso



Connected – RMB panel, This checkbox determines if the selection is allowed to select other object's elements or not.



Connected active, only 1 part can be selected at a time.



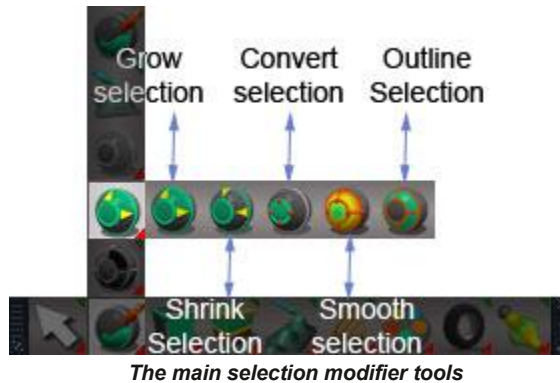
Select Plane Loop

[More Information](#)



Select by Normals

[More Information](#)



3.2.11 Grow Selection



The Grow Selection tool first converts the current selection to vertices, and then expands the selection to include surrounding neighbor vertices and finally converts the selection to use the current point edit selection mode.

The original version of the tool did not convert the vertex selection back to the point edit selection mode. Set the selection mode to points to get the old behavior.

3.2.12 Shrink Selection



The Shrink Selection tool first converts the current selection to vertices, and then shrinks that selection by removing the outer vertices and finally converts the selection to use the current point edit selection mode.

The original version of the tool did not convert the vertex selection back to the point edit selection mode. Set the selection mode to points to get the old behavior.

3.2.17 Hide Unselected Geometry

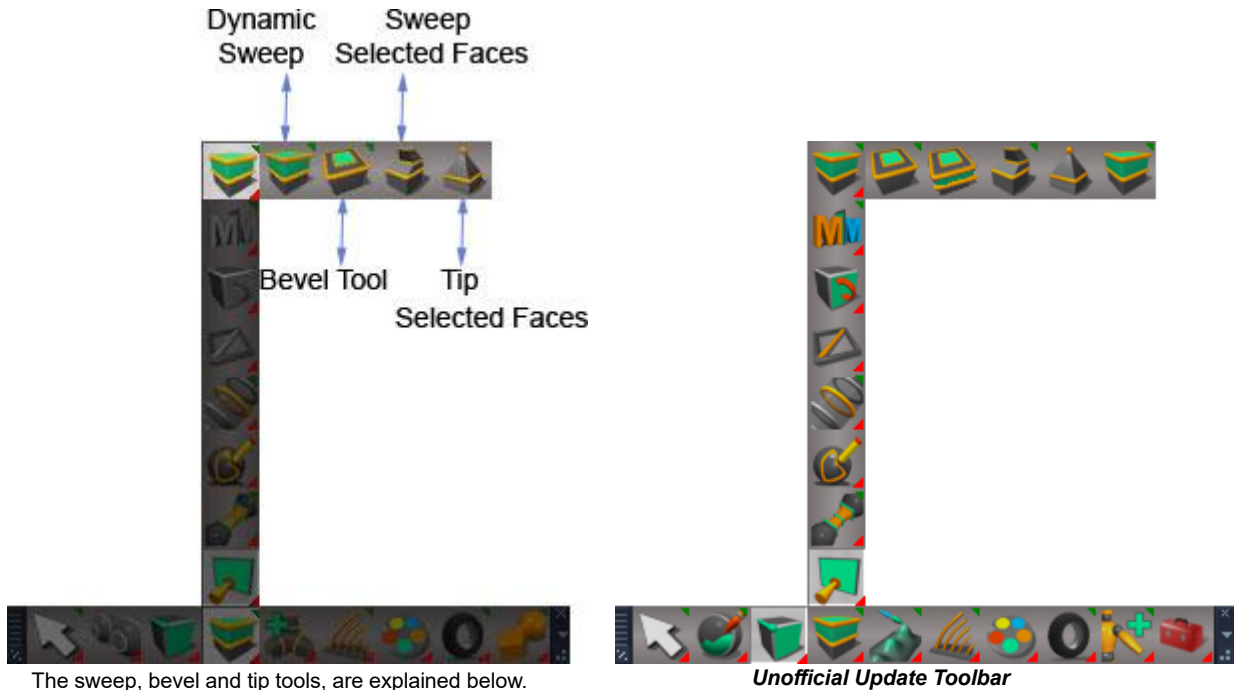


This hides the unselected elements, so that the selected elements are the only ones that remain visible, and are the only ones that can be selected and edited. This is useful for focusing work on a particular area of an object, without the distraction of other elements being visible in the scene.

The original manual has the wrong button image

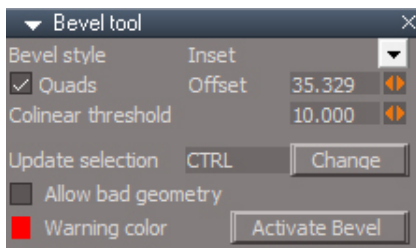
3.4 Sweep, Draw, Topology Tools

The Point Edit tools allow you to perform tasks on your mesh to change the geometry. These tools are used in conjunction with the Select and Context Point Edit tools to provide you with essential mesh-editing tools. The Point Edit Operations tools are as follows:



The sweep, bevel and tip tools, are explained below.

3.4.2 Bevel Tool



The Advanced tab information for the bevel tool is missing from the original manual.

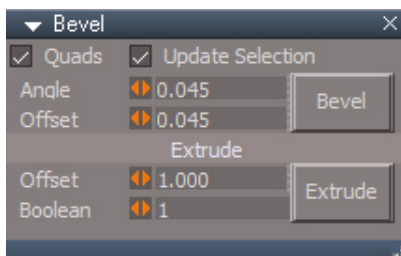
Update selection- when the indicated key is pressed while beveling, the new geometry will be selected after the operation is complete.

Change - will open a shortcut key dialog to choose the desired key for updating the selection.

Allow bad geometry - will not stop the creation of messy geometry.

Warning color - indicator of bad geometry.

Activate Bevel - unofficial update addition, same as pressing the bevel toolbar button.



Bevel and Extrude- opens the non-interactive bevel/extrude panel

Bevel- perform a bevel with the basic options for angle and offset

Extrude- perform an extrude with the basic options of offset and boolean

Note that this panel does not read any of the options from the bevel tool or extrude tool panels.



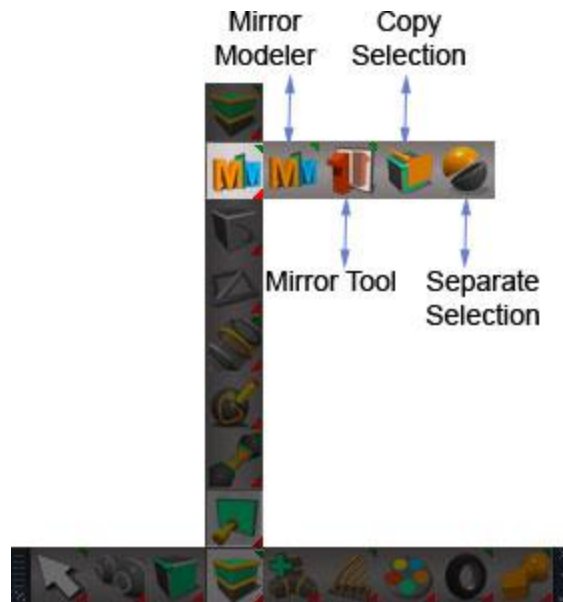
Lathe [More Information](#)



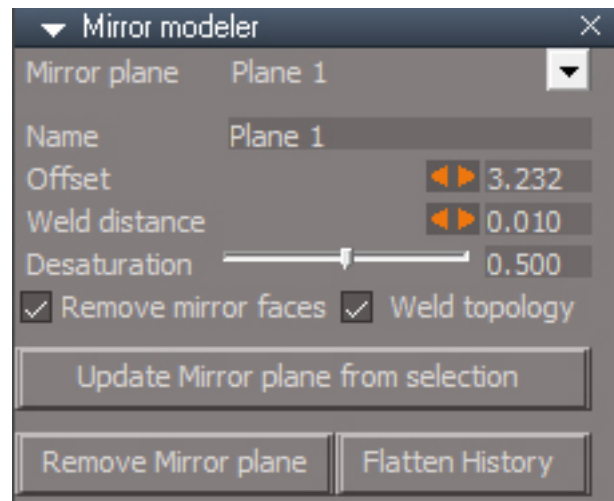
Static Sweep [More Information](#)



True Bevel [More Information](#)



3.4.5 Mirror Modeler



Mirror Matrix



Mirror Matrix - opens the mirror matrix panel

[More Information](#)

3.4.6 Mirror Tool

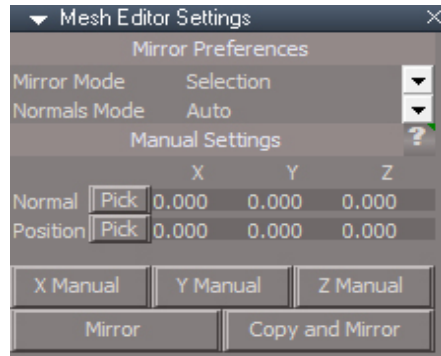


The Mirror Tool allows you to make a selection of elements on an object and Mirror that selection. If no selection of elements is made, the entire object is mirrored across the x-axis.

The Mirror Tool has some options associated with it. These can be selected manually in the Mirror Tool aspect of the Mesh Editor Settings option panel in the stack, or opened with a right click on the Mirror Tool.



The Mirror Tool aspect of the Mesh Editor Settings panel.



Unofficial Update Mirror Tool aspect.

[jump to Mirror Tool panel](#)

3.4.16 Quadrify Polygons



Quadrify



[More Information](#)



3.4.21 Add Polygons



The Add Polygons tool allows you to create a polygon on existing geometry. You can begin on an existing edge or vertex, or start in the middle of an existing face.

Information missing from the original manual

To modify the position of a previous drawn vertex simply drag it to the desired location.

To remove a vertex while drawing, move it to another vertex. This looks slightly cleaner when the other vertex does not share a line segment with the point being removed.

The tool will snap to edges and vertices even when snapping is disabled.

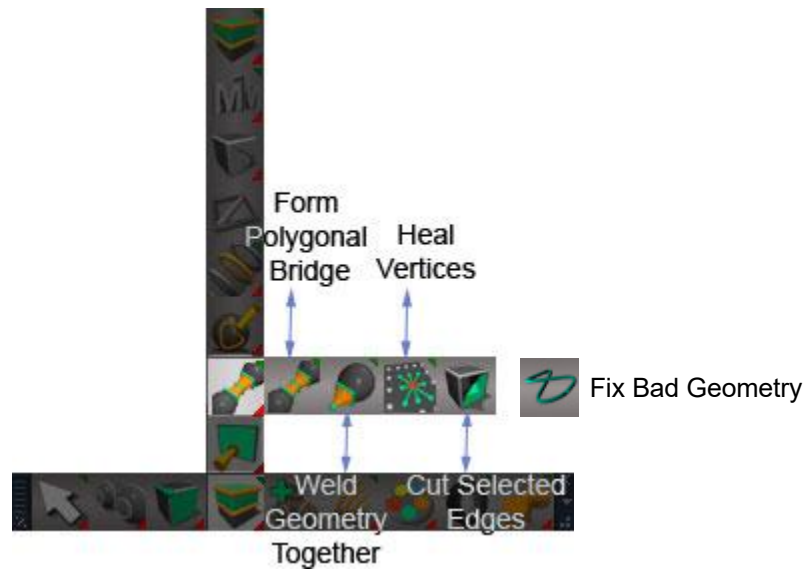
The regular snapping and constraint tools can be used with the add polygon/edge/point tools.

The snapping can be locked to an edge by holding the shift key. To lock movement perpendicular to the current snap location on the edge hold the shift and ctrl keys.

3.4.25.a Target Weld



[!\[\]\(5f99a9243d548108cb02a04439111373_img.jpg\) More Information !\[\]\(70a34073ddc7b04082a0de7e9ea71cc0_img.jpg\)](#)



3.4.27.a Fix Bad Geometry



This is a collection of tools to help fix bad geometry. It can be used for example to create a selection based on mesh characteristics such as side count, planarity and whether it has non-manifold edges. The only direct fixing tool is used to remove corrupt SDS geometry that can occur inside trueSpace. It also includes some random selection tools that can be used for artistic purposes.

Triangles - select 3 sided polygons

Quads - Select 4 sided polygons

Ngons - select polygons with more than 4 sides

Non-Manifold Edges - select edges that joins more than 2 polygons

Lamina Polygons - select polygons that share all the same vertices

Concave - select concave polygons

Floating Points - delete points that have no edge connections. If the points fail to get deleted try to quadrify or triangulate the polygons to reconnect the floating points.

Random Point Weight - selected points will have a random weight value

Random Threshold - percentage of elements to select, 0.5 would be 50%, 0.9 would be 90%, note that the slider goes with the Random Threshold value, not the Random Point Weight

Random Points - select random points

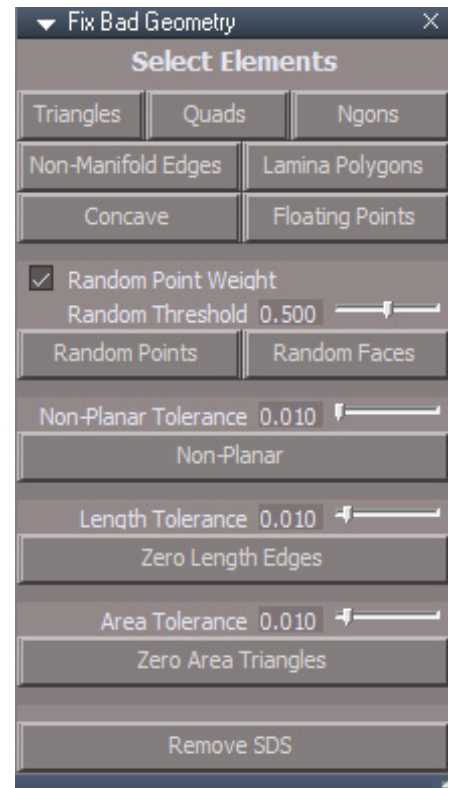
Random Faces - select random faces

Non-Planar - select polygons that are not flat using the **Non-Planar Tolerance** to determine maximum polygon bending

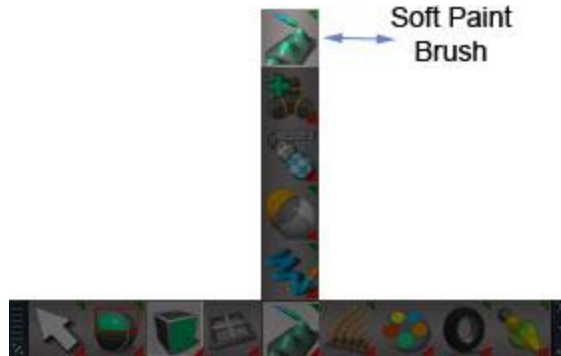
Zero Length Edges - select triangles that have a zero length side with the zero being defined by the **Length Tolerance**

Zero Area Triangles - select triangles that are very small with small defined by the **Area Tolerance** value

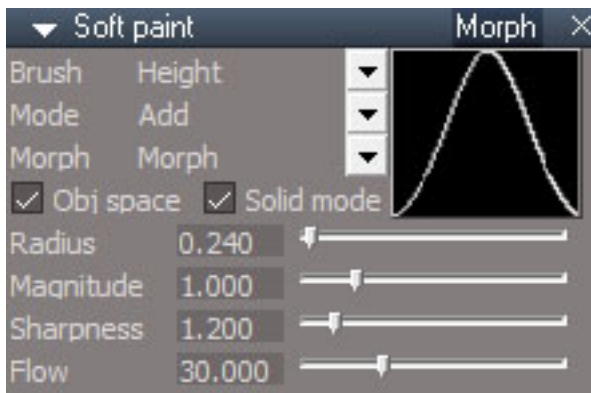
Remove SDS - removes a bad SDS from a mesh so it can be reapplied



3.5 Soft Paint



Information missing from the original manual



Soft paint has a morph mode to paint one morph into another. Once the morphs for the mesh are created, activate a morph, then start the soft paint and choose Morph aspect of the panel. Choose the source morph in the Morph dropdown list and start painting. The source shape will be used to alter the current morph.

3.7 Boolean Tools



Boolean Slice – creates a slice through geometry by using the boolean cut function with a plane sized larger than the mesh and perpendicular to the active 3D viewport

Select a mesh object in a 3D view

Push the button and adjust the cut with the object navigation widget.

Left click to start a new cut and commit the previous slice or ctrl+left click to start a new cut at the last cutter location and commit the previous slice.

Left click to commit the slice and start a new cut using the default orientation

Ctrl-left click to commit the slice and start a new cut in the current location (this will be invisible because the committed cut and the new slice will be at the same location)

Right click to end the tool and abort the last cut.

Ortho views will have a more predictable default cut orientation

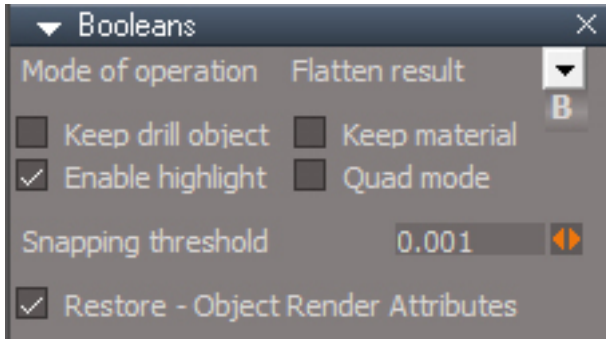
It does not work with grouped objects.

The name of the object will change during the boolean operation.

A pivot will be added to the mesh.

If you get the "Construction history will be removed" message - check the box and answer yes.

3.7.7 Boolean Options Panel



Restore - Object Render Attributes - if checked the currently selected item's object render attributes node is saved when the boolean tool is started and copied back in to the new boolean item. If unchecked a default object render attributes node is added to the new boolean item.

B - open a boolean toolbar

If the selected item does not have an object render attribute node, then the last saved object render attribute will be used.

3.11 Flatten History



The location of the Flatten History tool



Unofficial Update location of the Flatten History tool



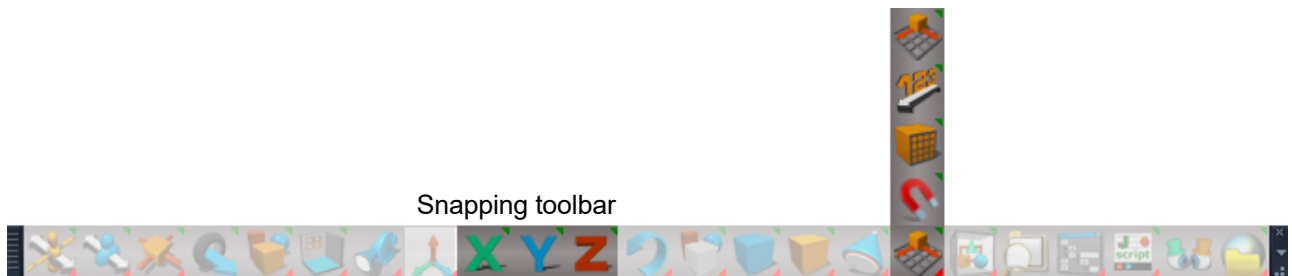
LMB flattens history, will not flatten lights, cameras, mesh in point edit mode or objects marked as uneditable. Will not flatten NURBS or dimension objects. Will only flatten objects that have a WildMatrix connector.

RMB original trueSpace flatten tool

3.12 Snapping and Distance Tools



The location of the snapping tools

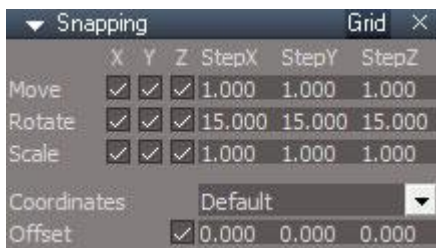


Unofficial Update location of the snapping tools

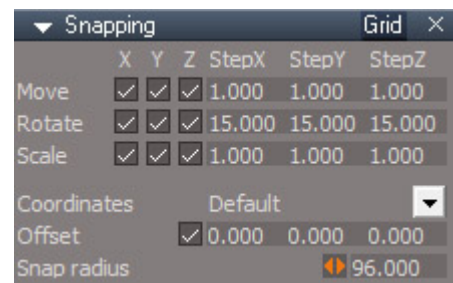
3.12.1 Grid Snapping



Grid Snapping lets you control whether edits to an object's position, rotation or size happen smoothly, or whether they snap to preset values and amounts.



The Grid Snapping options panel.



Unofficial Update Grid Snapping options panel.

Snap radius – This value controls how close to a snapping grid location you need to move before snapping will take place

3.12.2 Other Snapping Options

The Snapping panel has other aspects that let you control other options for snapping. These are listed below (except Dimensions, which is listed under the Distance Feedback Display section).

Axes Lock Aspect

This lets you lock out movement in certain directions, and control movement in the orthogonal views. Note that these settings affect movement even when Grid Snap is NOT enabled.



The Axes Lock aspect of the Snapping options panel.

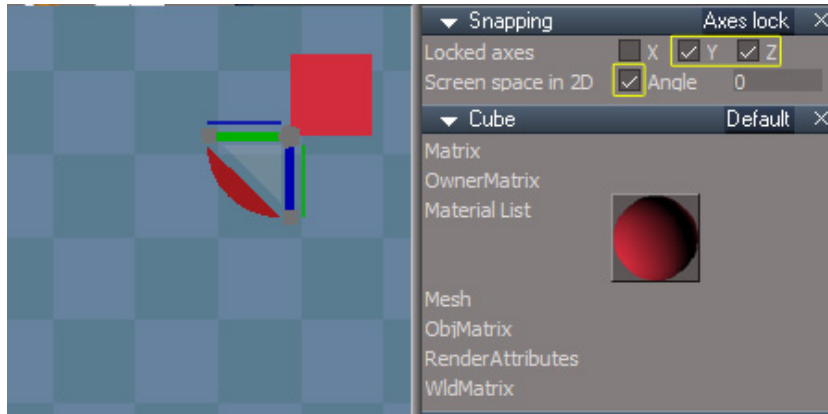
- **Locked Axes** – This locks changes in the X, Y or Z directions, and is the same as activating or deactivating the X, Y and Z locks on the main toolbar. Activating or deactivating these checkboxes will highlight or un-highlight the icon on the main toolbar, and using the icons on the main toolbar will check or un-check these parameters.



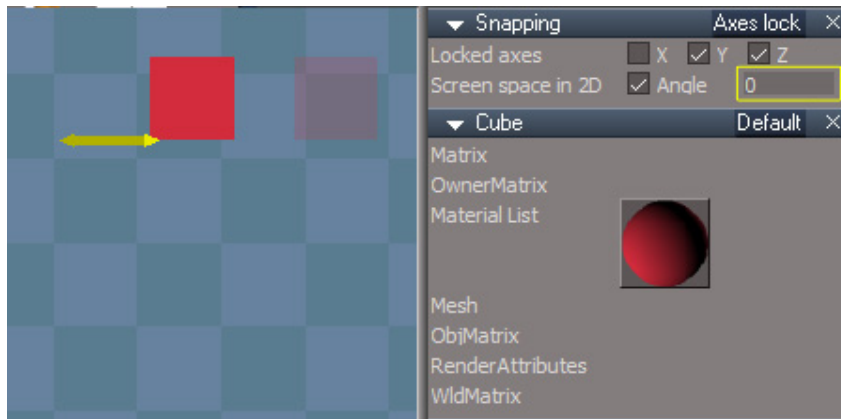
RMB open the Snapping Panel

- **Screen Space in 2D** – This has an effect in the orthogonal views (top, front, side) only. When unchecked, the X and Y constraints apply to the world X and Y, meaning you may not be able to move the object in the X direction on screen from the angle you are looking at even if the constraint for X is not checked. When checked, then the X and Y constraints apply to the on-screen X and Y, irrespective of world X and Y, so that you would be able to move the object in the X direction on screen if it is not locked, even if that is the Y or Z direction in World space.
- **Angle** – When Screen Space In 2D is checked, this allows you to rotate the axis by an angle so that movement along an axis occurs at that angle.

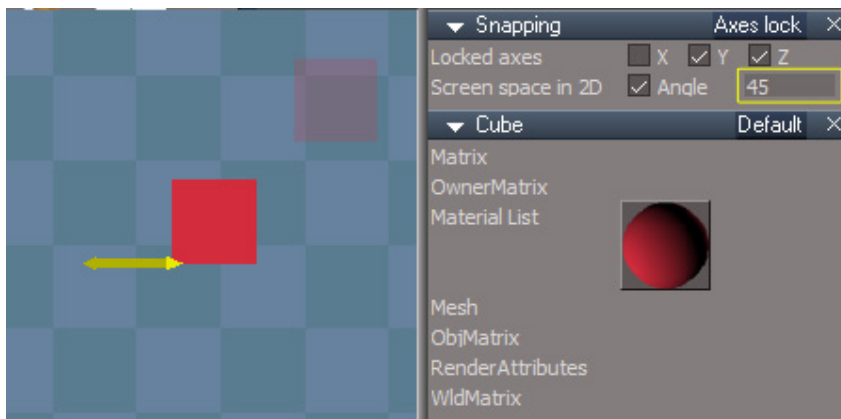
Images and text on next page have been altered for clarity in this manual



A cube viewed from the Top view, ready to move. Screen Space In 2D is checked, and all movement is constrained except along the X axis.



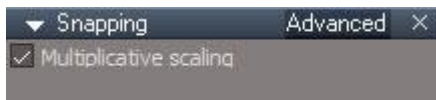
With an Angle of 0, movement occurs directly along the screen X axis, irrespective of what direction this might be in the World axis.



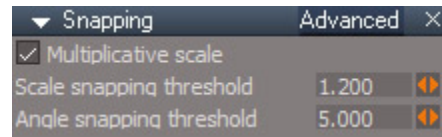
By setting the Angle to 45, clicking on the X movement axis of the widget this time moves the object along a line rotated 45 degrees.

Advanced Aspect

This aspect lets you control snapping with the Scale tool.



The Advanced aspect of the Snapping options panel.



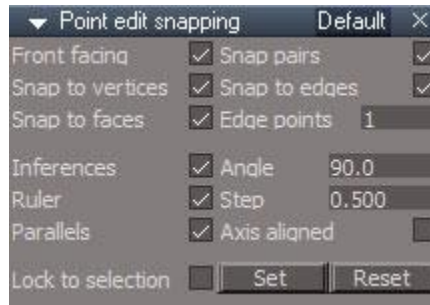
Unofficial Update Advanced aspect of the Snapping options panel.

- **Scale snapping threshold** – This value controls how much you must move before snapping will take place for scaling.
- **Angle snapping threshold** – This value controls how close to a snapping angle you need to be before snapping will take place

3.12.4 Point Edit Snapping



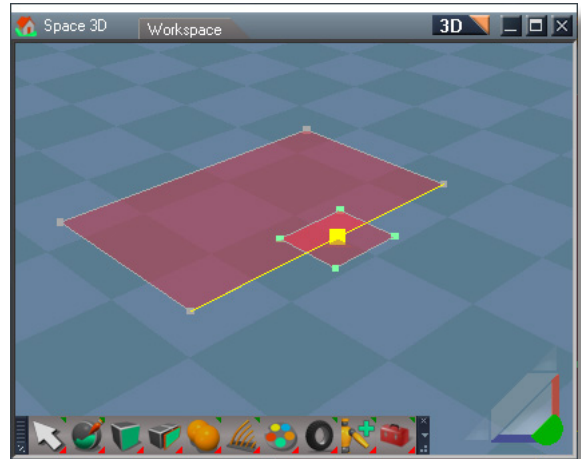
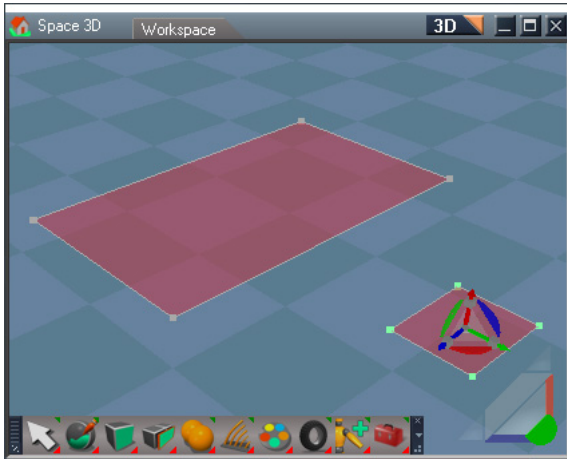
Point Edit Snapping works when in Point Edit mode, and allows snapping when you are moving vertices, adding edges and loops, etc.



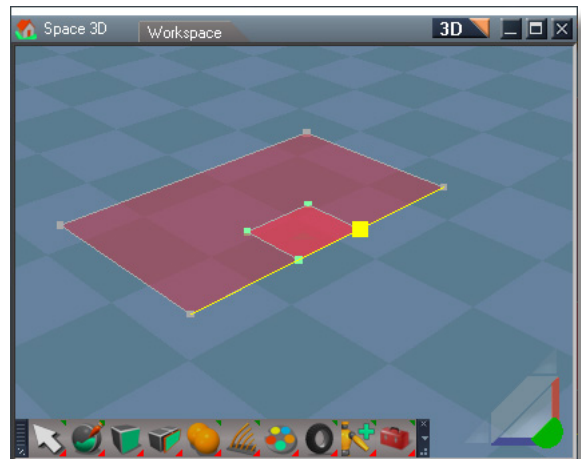
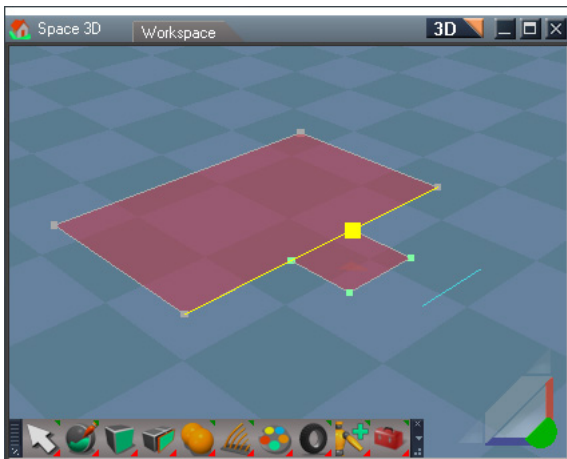
The Default aspect of the Point Edit Snapping options panel.

- **Front Facing** – Controls whether snapping is only done to front facing edges and faces (note that Snap To Vertices will be unaffected by this setting). When checked, snapping will only be to front facing elements, limiting snapping to visible elements facing the camera. When un-checked, snapping will work on elements that are not facing the current view, allowing snapping to faces and edges to apply to back faces on an object, etc.
- **Snap Pairs** – This parameter takes effect when you are working with selections of more than one element. If this is checked, then snapping occurs when any of the vertices in that selection gets close to a snapping point. If this is unchecked, then snapping only occurs when the widget for the selection gets close to a snapping point.

An example is shown below. The snapping point shows as the yellow spot which snaps to the edge which is also yellow when snapped to.



The initial set up has four vertices selected for moving (left). With Snap Pairs disabled, only the widget will snap, as can be seen clearly when we cross over the existing edge – the first two vertices do not cause a snap, only when the widget near the snapping point does snapping take place (right).



When Snap Pairs is enabled, the vertices themselves snap to the edge, resulting in two different snaps. The first occurs when the first set of vertices near the snapping point (left), and then the selection snaps again when the other vertices near the snapping point (right).

Lock to Selection –This option lets you constrain editing in Point Editing to particular directions. For example, if you set a lock based on a polygon, then you will only be able to move points in the plane defined by that polygon (ie, in 2 directions), or if you set a lock based on an edge, you would only be able to move points in the direction defined by that edge.

Once you have checked this option, you will need to make a selection on your object, and then use the Set button to define the lock (or you can use the Set button first, and then check this box).

Lock to selection - extra information

To use the tool, in point edit mode select a face, two faces or an edge.

- o When selecting a face, movement will be constrained to a direction parallel to that face. This will be visualized by showing 2 arrows from the face center.
- o When selecting two faces, movement will be constrained to the edge defined by the intersection of the two planes. If the 2 planes are parallel then 1 plane will be ignored for the locking.

Vertex Aspect



Error from the original manual

2D Snap – When checked, snapping will only occur to snapping points on the current face beneath the mouse pointer. When unchecked, snapping can occur to any snapping points beneath the mouse pointer, even those on a back face, so long as it is within the Snap Distance. This parameter is checked by default.

2D Snap means that the 3D arrangement of the elements are ignored for snapping and only their distance in screen space is used. Unchecked and items have to be near each other in 3D space to snap.

Missing information from the original manual

The snapping can be locked to an edge by holding the shift key. This also displays a guide line. When the guideline is active you can lock movement perpendicular to the current snap location on the edge by holding the shift and ctrl keys. This perpendicular locking only works when moving along an edge connected to the vertex that is moving. If you have enabled edge points and you snap to edge, snapping positions will also be evaluated outside that edges end points.

If you snap to a face not connected to the selected element and hold the shift key the snapping will lock to the face. This can be most easily be seen when using the Select by Move tool instead using of the point edit widget. When using the point edit widget it will constrain to a line on the plane. Shift and control together do not move perpendicular to the face.

Inferences only work on perfectly flat faces.

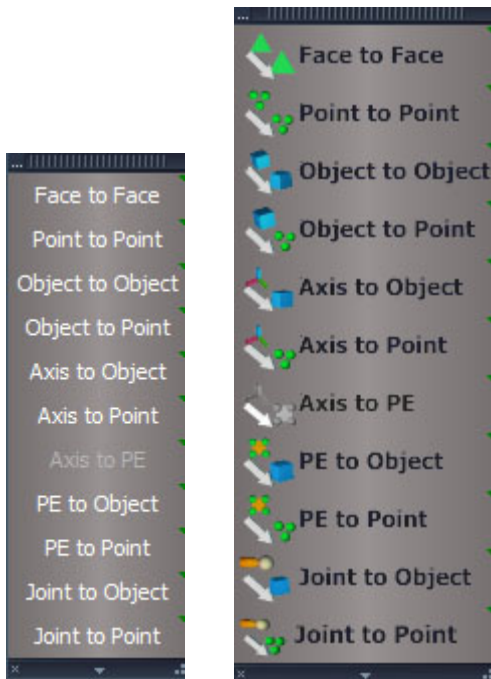
Inferences are useful when used with the drawing tools for polygons and lines and also may be useful for moving some elements around on a flat surface like after a bevel insert.



Snapping Toolbar - Open Snapping Toolbar.



Snapping Toolbar – standard style

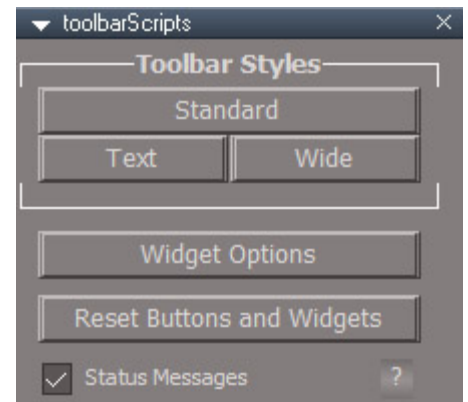


Snapping Toolbar – text and wide styles

Standard - square icon buttons

Text - text based buttons

Wide - icon plus text



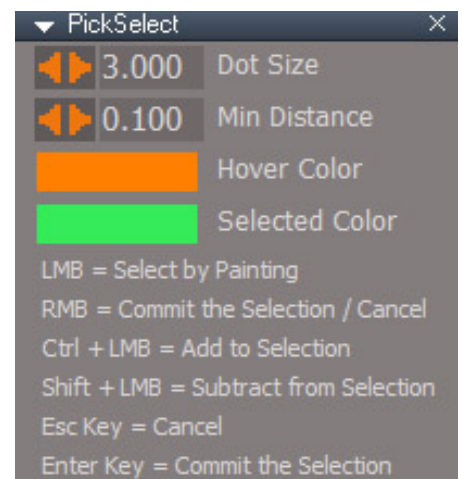
Snapping Toolbar Options

Widget Options - set hover and selected colors and dot size

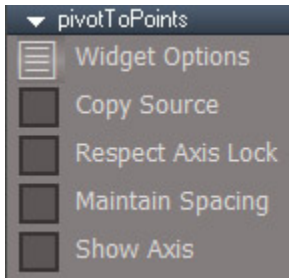
Reset Buttons and Widgets - clean out of sync widgets

Status Messages - if unchecked status messages do not show. Recommend leaving this checked.

The Reset Buttons and Widgets is used as a safety net to clean the user interface. It will deactivate any picking widget, clear the button highlighting, clear mesh highlighting effects and clear the status line.



Widget Options



Snapping Tools Options

Widget Options is the same thing as the Pick Widget Options of the toolbar button.

Copy Source makes a copy and snaps it to the target selection and the widget stays active to continue copying to new target selections.

Respect Axis Lock uses the state of axis locking to restrict the movement of the snapped selection.

Maintain Spacing will snap the selected items as a fixed group instead of individually snapping each to the target selection

Show Axis option to flash the axis after it has been snapped

General Usage:

Select the objects/elements to be snapped

Press one of the snapping buttons

Select the destination objects/elements

RMB to commit the selection and move the original selection to the center of the target selection

The Face to Face and Point to Point snap tools do not use the current selection and start by deselecting everything.

If the Copy Source option is active RMB will snap move then reselect the source and wait for another target selection.

The Copy Source option can be confusing when used with axis snapping because no visible change occurs.

Object picking selections process uses 2 widgets so there are 2 cancel processes. Before any selection RMB will cancel. After an object is selected RMB the blue cube widget to cancel.

Joints should be in Shape Skeleton mode for selection.



Face to Face - Move and rotates one object to another based on triangle face selections.



Point to Point - Move one object to another based on point selections.



Object to Object - Move an object selection to the center of a target object selection.



Object to Points - Move an object selection to a target vertex selection center.



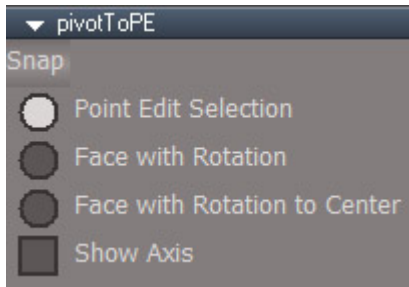
Axis to Object - Move the axes of an object selection to the center of a target object selection.



Axis to Points - Move the axes of an object selection to a target vertex selection center.



Axis to PE selection - Moves the axis of the current point edit object to the center of the point edit selection.



Snap – same as pressing the toolbar button

Point Edit Selection - move the pivot to selection

Face with Rotation - orient the pivot to the face selection then move the pivot to the selection center

Face with Rotation to Center - orient the pivot to the face selection then move the pivot to the geometry center

Show Axis - will flash the axis for a short time after the snap is complete



PE to Object - Moves the current point edit selection to the center of a target object selection.



PE to Points - Moves the current point edit selection to a target vertex selection center



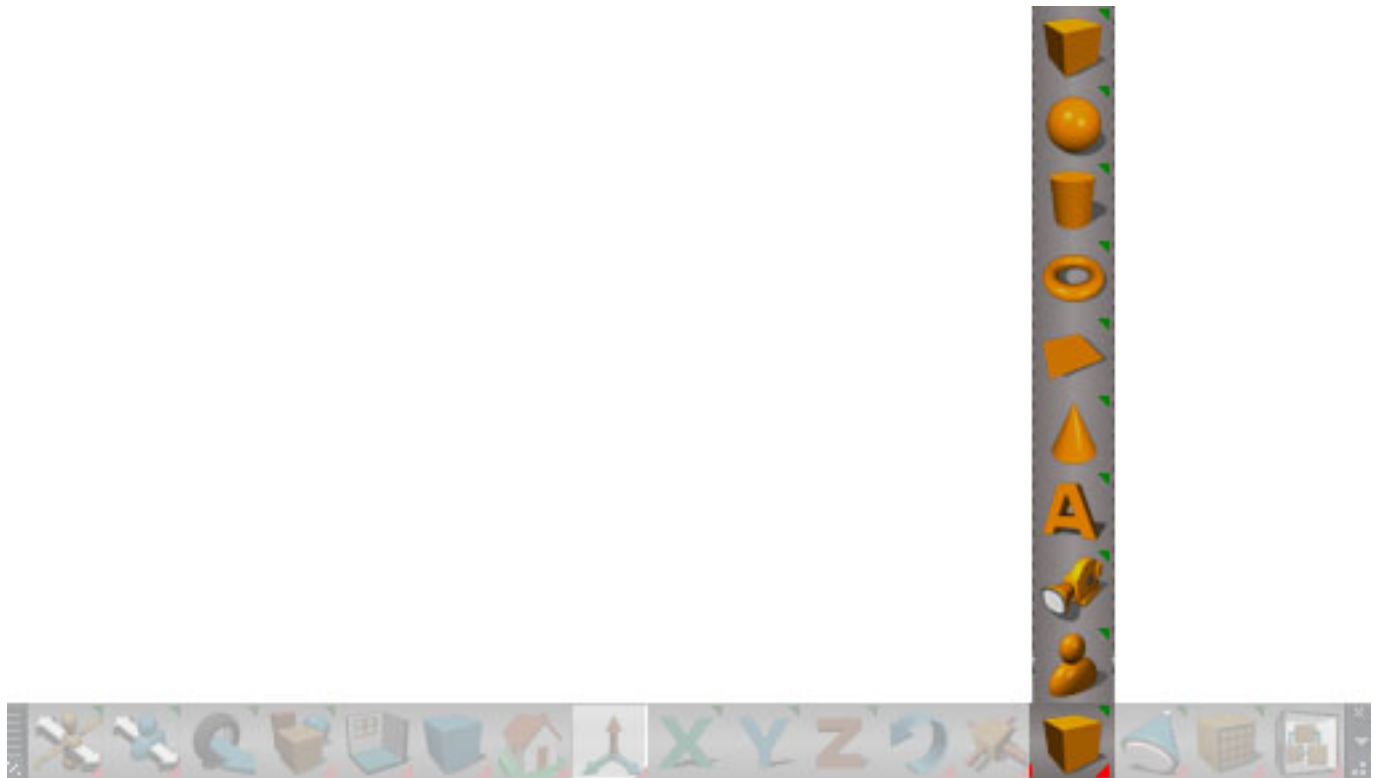
Joint to Object - Move a joint selection to the center of a target object selection



Joint to Points - Move a joint selection to a target vertex selection center.

3.13 Primitives

Primitives information missing from original manual



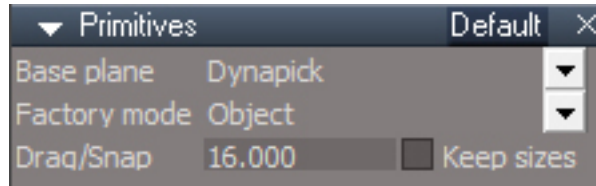
Primitives in the bottom toolbar (original trueSpace)



Unofficial Update Primitives in the bottom toolbar

RMB panels

Default Aspect - primitive tool preferences panel



Base plane

Dynapick - will create primitives aligned to and touching the face of a preexisting object, if no object is below the cursor it will behave the same as Ground

Ground - create primitive on the ground plane, isometric view create on the perpendicular plane of the view

Screen - will create primitives aligned with the view and located behind the view mirrored relative to the object location under the cursor. This is a bug, it should be centered on the object, not behind the view. Move object in local space along it's z axis to reposition. If no object is under the cursor, screen behaves the same as Ground.

 *To work around the Screen base plane bug, use vertex snapping with 2D snap enabled.*

Factory mode

Add - boolean add to the selected item

Cut - boolean cut the selected item, lines need to be visible to see the result

Intersect - boolean intersection

Merge - boolean merge

Object - create a new stand alone primitive object

Sibling - create a grouped relationship with the selected item as children of the same group object

Subtract - boolean subtraction

Union - boolean union

Cameras and lights only have Object and Sibling factory modes.

Drag/Snap - sets a radius where snapping cannot occur when creating primitives with snapping enabled. To override and force snapping press the ALT key. **This setting does not seem to be working.**

Keep sizes - will remember and for single click creation will use the last size that a primitive is created while the tool is active. Dropping the tool will reset to the default size. When unchecked will use the size parameters from the individual primitive preferences panels.

Boolean factory modes

When using the boolean modes, add, cut, intersect, merge, subtract and union first set the primitive preferences before drawing or clicking to create the next instance.

Boolean modes are applied with a flatten mode of operation. Other modes are not supported.

Boolean modes operate on the currently selected mesh object.

Text primitive with cut mode can be slow and unstable.

Wireframe solid draw mode is needed to see the cut boolean properly.

Plane and sphere primitives will not boolean cut the face that they are drawn on.

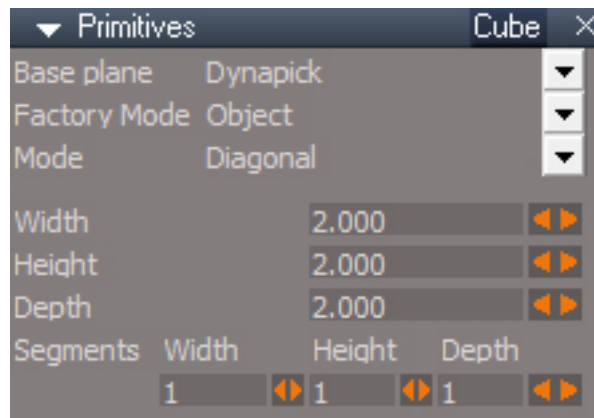
"Primitive employs extensive snapping."

Can set the height by snapping to other objects in the scene when RMB dragging during creation of the primitive. Snapping can also be done during the LMB phase of primitive creation.

RMB - primitive preferences panels



Cube Primitive



Mode

Diagonal - define base plane by LDrag, RDrag to define the height

Edges - define first edge by LDrag, release the button and move mouse to finish defining the base then RDrag to define the height or LClick to use the current height

Points - LClick define first point of the edge, LClick to define the last point of the edge, LClick to define the base, LClick to define the height

Width - size in the local X direction

Height - size in the local Z direction

Depth - size in the local Y direction

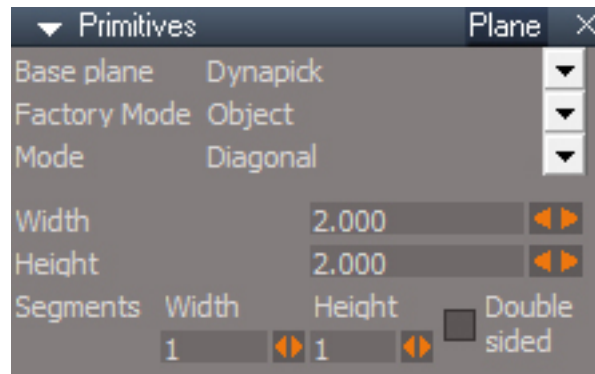
Width Segments - number of edges in the X direction

Height Segments - number of edges in the Z direction

Depth Segments - number of edges in the Y direction



Plane Primitive



Mode

Diagonal – LDrag to define first corner and the opposing corner of the plane.

Edges – define first edge by LDrag, LClick to finish the plane

Points – LClick 3 times to define 3 corners of the plane

Width - size in the local X direction

Height - size in the local Y direction

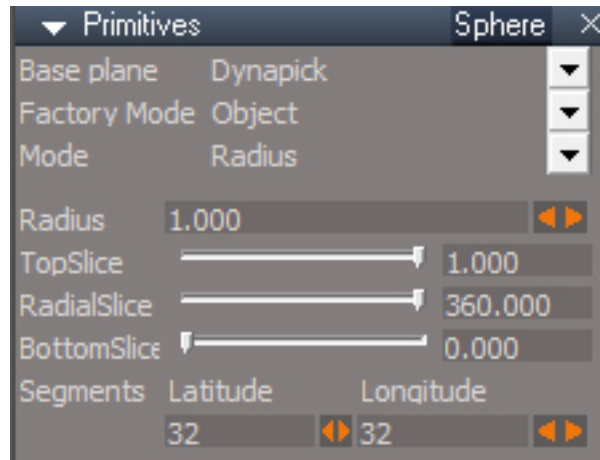
Width Segments - number of edges in the X direction

Height Segments - number of edges in the Y direction

Double sided - number of edges in the Y direction



Sphere Primitive



Mode

Diameter – define diameter for base by LDrag or RDrag defines height.

Radius - define center + radius for base by LDrag or RDrag defines height.

Radius - size of the sphere as measured from its center

TopSlice - percentage of the top portion to keep after slicing 1.0=100%=keep all of the top

RadialSlice - number of degrees in the radial direction

BottomSlice - percentage of the bottom portion be sliced 0=0%=no slice

Latitude Segments - number of edges in the radial direction

Longitude Segments - number of edges in the axial direction



Cylinder Primitive



Mode

Diameter – define diameter for base by LDrag, RDrag defines height.

Radius - define center + radius for base by LDrag, RDrag defines height.

When switching between LDrag and RDrag do not release the held button until after the switch.

Radius - size of the circle cross section as measured from its center

Height - height

Shell - remove the geometry in the center of the circular cross section to create a hole

Thickness - shell thickness

RadialSlice - number of degrees in the radial direction

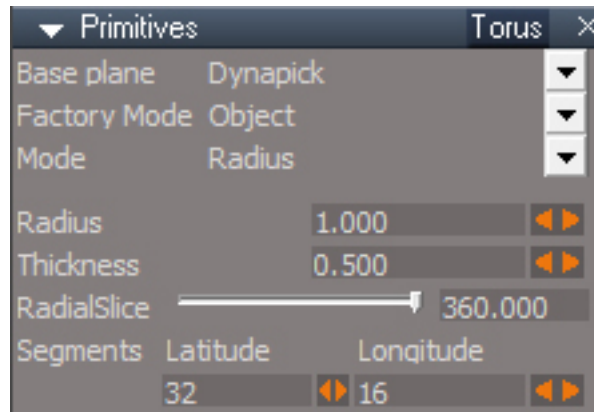
Radial Segments - number of edges in the radial direction

Height Segments - number of edges in the local Z direction

Cap Segments - number of edges at the top and bottom of the mesh, the first edge is invisible



Torus Primitive



Mode

Diameter – define diameter for base by LDrag

Radius - define center + radius for base by LDrag

RDrag does not work for the Torus primitive.

Radius - size of the torus as measured from its center, not to the center of the circular cross section

Thickness - diameter of the circular cross section of the torus

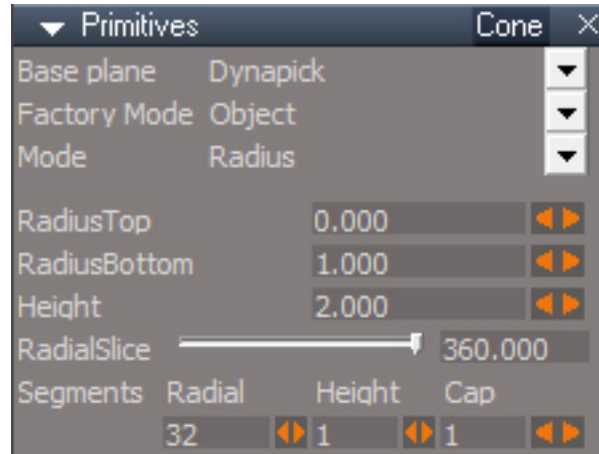
RadialSlice - number of degrees in the axial direction

Latitude Segments - number of edges around the major axis

Longitude Segments - number of edges around the minor axis or cross section



Cone Primitive



Mode

Diameter – define diameter for base by LDrag, RDrag defines height.

Radius - define center + radius for base by LDrag, RDrag defines height.

When switching between LDrag and RDrag do not release the held button until after the switch.

RadiusTop - size of the circle cross section at the top

RadiusBottom - size of the circle cross section at the bottom

Height - height

RadialSlice - number of degrees in the radial direction

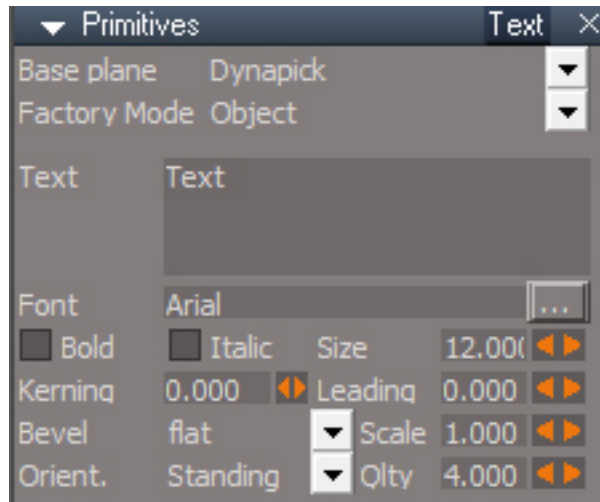
Radial Segments - number of edges in the radial direction

Height Segments - number of edges in the local Z direction

Cap Segments - number of edges at the bottom of the mesh, the first edge is invisible



Text Primitive



LDrag to control orientation about the local Z axis, RDrag to scale along the local Z axis.

Text -

Font -

Bold -

Italic -

Size - width/height of a character where a value of 4 translates to about 1 meter for TrueType fonts

Kerning - adjust spacing between letters

Leading - adjust spacing between lines of text

Bevel - type of bevel, **base** has no bevel and **2D** has zero thickness

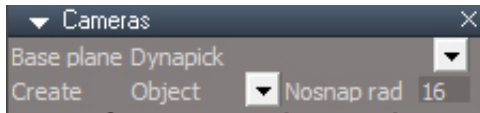
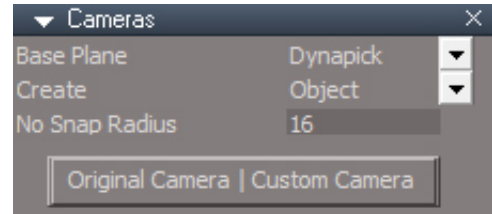
Scale - bevel scale, positive values effect the bevel and negative values effect the base(more or less)

Orient - **Lying** against the base plane or **Standing** up on it

Qty - controls the number of vertices used to create the text

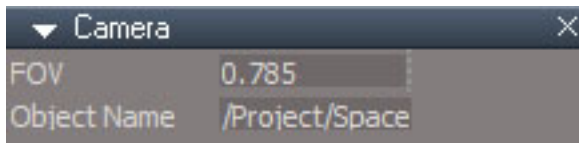
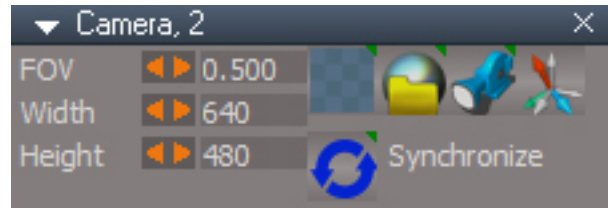
The thickness of the text depends on the bevel type.

Large values for Qty will reduce the characters smoothing. Values of the form "X.1" like 4.1, 5.1, 6.1 seem to work best in reproducing the shape defined by the chosen font.

*Cameras creation panel**Unofficial Update Cameras creation panel*

No Snap Radius - sets a radius where snapping cannot occur when creating primitives with snapping enabled. To override and force snapping press the ALT key. *This setting does not seem to be working.*

Original | Custom - toggle creation of the full custom unofficial update camera or a custom (not original) camera with many of the added controls removed

*Camera panel (original trueSpace)**Unofficial Update Camera panel*

Camera - Create a camera in the scene facing in the negative Y direction. The camera has a FOV of 0.785 by default.

The Unofficial Update version of the camera has extra buttons, altered widget controls and the Object Name is not shown in the panel.

The camera FOV units are in radians and is measured in the vertical direction by default. trueSpace default of 0.785 radians is about 45 degrees, that translates to 22.5 up and 22.5 down.

Camera Panel buttons



Camera Window - Open a new 3D window to the camera view and move it to the upper left of the tS screen with the size of the window taken from the Width and Height parameters.
Window includes the view toolbar.
RClick selects the camera



Camera Render to File - Same as the Camera Window button except it also opens the Render to file dialog. Note that the size in the Render to file dialog may need to be manually updated to match the Width and Height set on the camera.
RClick opens windows explorer to the render folder set in the Render to file dialog.
Same icon as Render to File



This will stop the View synchronization before rendering.



LMB press after opening the window with the Camera Window or Camera Render to File will close the previous window and reopen it.



View - Switch the active 3D Window to this Camera's view.
RClick -Switch the active 3D Window to the previous non-camera view

Same icon as Camera



Synchronize - when active the modelspace camera will follow the transform and FOV of this workspace camera



Normalize Rotation orients the camera to point in the negative Y direction.
RClick orient and position the camera to values of the default perspective view.

Same icon as Normalize rotation for axes



Entry point is the same as a camera except it has no Object name connector and the FOV is set to 0.5 by default(~28.6 degrees).



The entry point camera has the special name "EntryPoint". Any object at the root level of the scene with the name "EntryPoint" will have it's transform and FOV values copied to the 3D view when loading the scene. The view is not tied/set to the EntryPoint. So if the entry point camera moves the view does not move with it and if the view moves the camera is left behind.



Do not use the "EntryPoint" name with a non-camera object unless you have a specific reason for doing so.

If the object does not have a transform value then the value will not be copied to the view. If it does not have a FOV value then the value will not be copied.



Background Image Camera



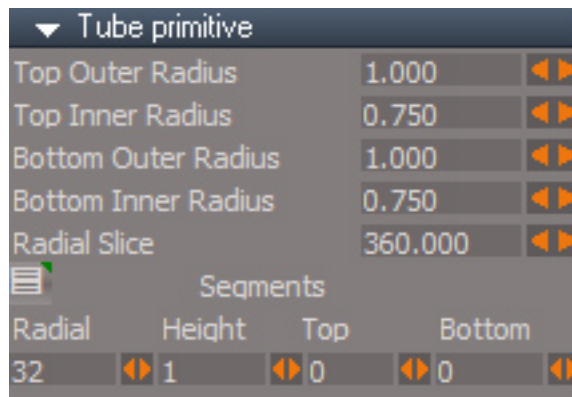
[More Information](#)



New for the Unofficial Updates



Tube Primitive



Top Outer Radius - size of the circle cross section at the top

Top Inner Radius - top inner radius

Bottom Outer Radius - size of the circle cross section at the bottom

Bottom Inner Radius - bottom inner radius

Radial slice - number of degrees in the radial direction

Blank Button - LClick open Keying panel and select the internal primitive node, RClick select the full mesh object

Radial Segments - number of edges in the radial direction

Height Segments - number of edges in the local Z direction

Top Segments - number of edges at the top of the mesh

Bottom Segments - number of edges at the bottom of the mesh



Gear Primitive - makes a star shaped mesh



Height - size local Z direction

Inner Radius - size of the central hub

Longitude - number of gear teeth or star points

Outer Radius - length of the teeth

Blank Button - LClick open Keying panel and select the internal primitive node, RClick select the full mesh object

Flatten - flattens the mesh and fixes the normals - do not use if animating the gear attributes

Tube and Gear primitives are not created with widgets and do not have their own Preference options. They do use the **Base plane** and **Factory Mode** defined by the other primitives preference panels.



NURBS Toolbar

[More Information](#)



Dimensions

[More Information](#)