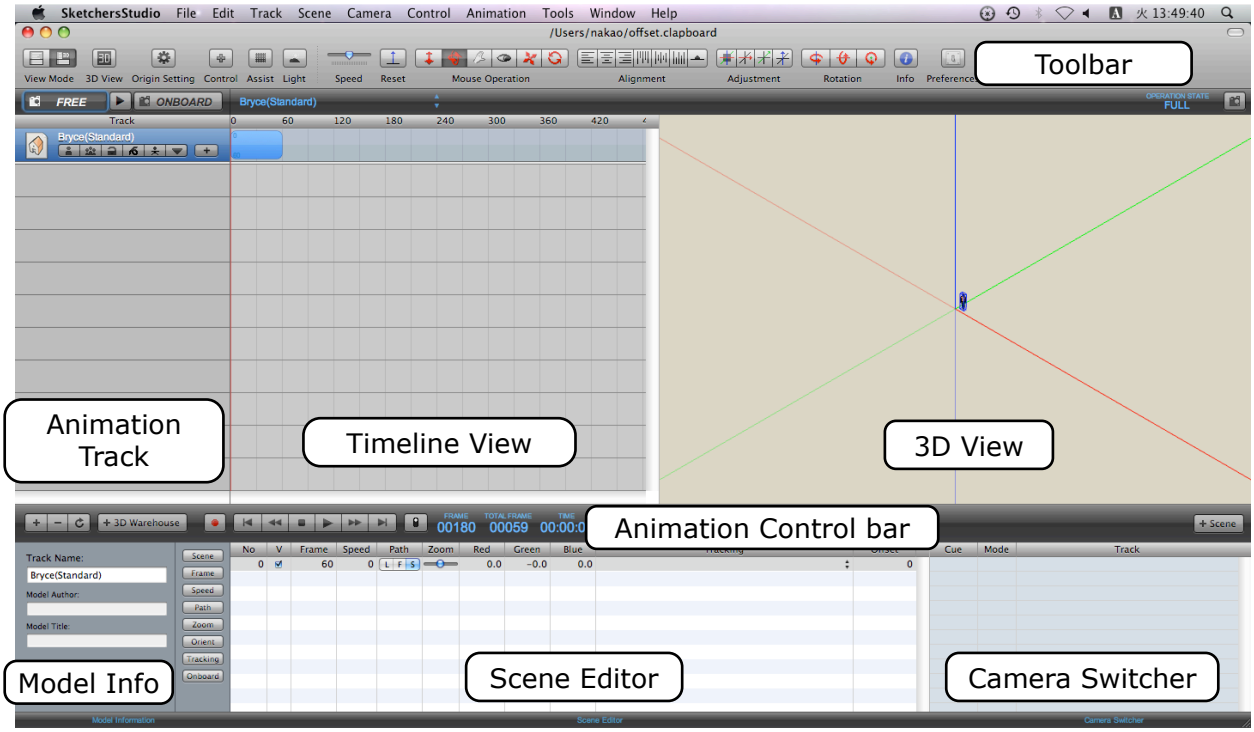
Sketchers Studio Manual

Version 1.0.7b

Table of Contents

Window of Sketchers Studio



- Animation Track
  Contains name of animation track and buttons for utility tools. Currently active track will be highlighted.

- Timeline View
  Shows scenes(keyframes) of animation and related info. The view also contains information related to each scene.

- 3D View
  Animation is played in this view.

- Model Info
  Contains name and author of the model in the active track.

- Scene Editor
  Shows info about each scene. You can edit scenes by changing values.

- Camera Switcher
  Shows frame count to switch cameras, camera mode and animation track camera is onboard.

Basic Operation

Window Appearance

Click to close the 3D view in the project window.

Click to show the 3D view in the project window.

Click to show the 3D view independently of the project window.

Setting Panels

Click to show the Origin Setting panel.

Click to show the Axes and Grids panel.

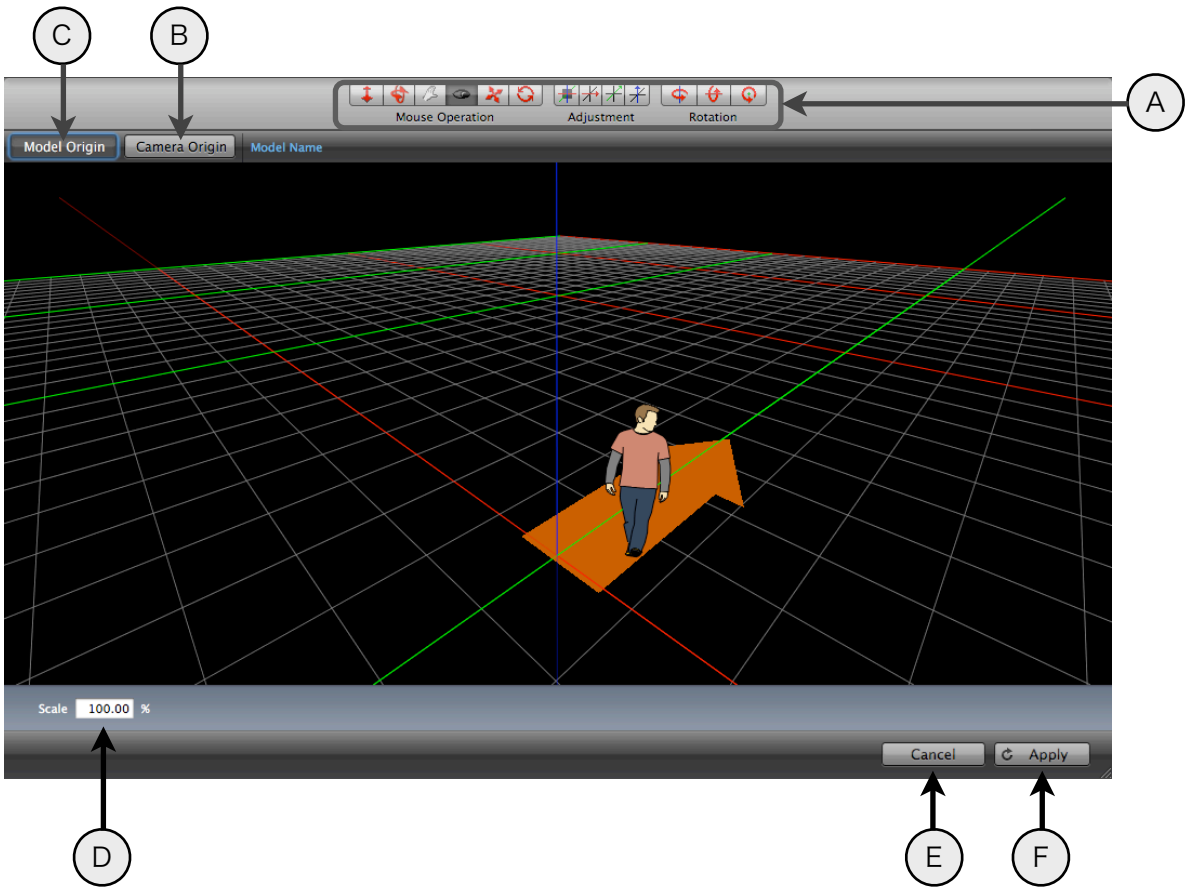
Click to show the Light and Background panel.

Click to show the Preferences panel.

Click to show the Project Info panel.

Origin Setting

After loading a SketchUp file, you will see the Origin Setting panel open. Here you will set each origin of the 3D model and its onboard camera.



A: Toolbar
B: Click to switch the mode for origin setting of the onboard camera.
C: Click to switch the mode for origin setting of the 3D model.
D: Enter a value to scale the model.
E: Click to cancel.
F: Click to apply the current setting.

Origin and Orientation of the Model

Origin and Orientation Setting of the Model

In some cases, the origin and orientation of a 3D model are inappropriate for creating animation. You can change them in the Origin Setting panel if necessary.
If you open the panel, you will see coordinate axes and a yellow arrow in the view. The origin of the axes will be the new origin of the model. As for its orientation, the positive direction of the blue axis will be the new up direction and the positive direction of the green axis will be the new forward direction.
Make sure that you are working in the Model Origin mode and operate the model to set its new origin and orientation with a mouse and tools in the toolbar.

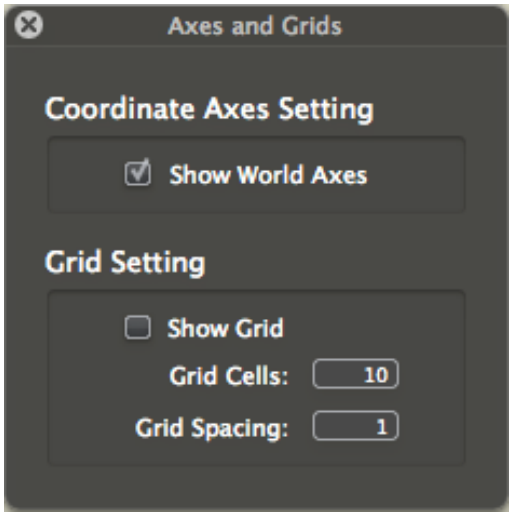
Origin and Orientation Setting of the Onboard Camera

The origin of the onboard camera is set at the origin of the coordinate axes. Set the position and direction of the camera appropriately and you will be able to create animation with the model's view.
The origin and orientation of the on board camera will be set as those of the camera which you are using to look at the model in the view.
Make sure that you are working in the Camera Origin mode and operate the camera to set its new origin and orientation with a mouse and tools in the toolbar.

Scaling of the Model

You can also scale the model as you set its origin and orientation. Enter a scale factor in percentage into the textbox. If you would like to scale it precisely, use the Google SketchUp.
The reference grid might help you for scaling. Here the grid spacing is assumed to be 1m. You should scale it to be as large as actual size unless it is huge.

Axes and Grids



Coordinate Axes Setting

Show World Axes

Shows absolute coordinate axes in the 3D space.

Grid Setting

Show Grids

Check to show grids on the plane formed by green and red axis.

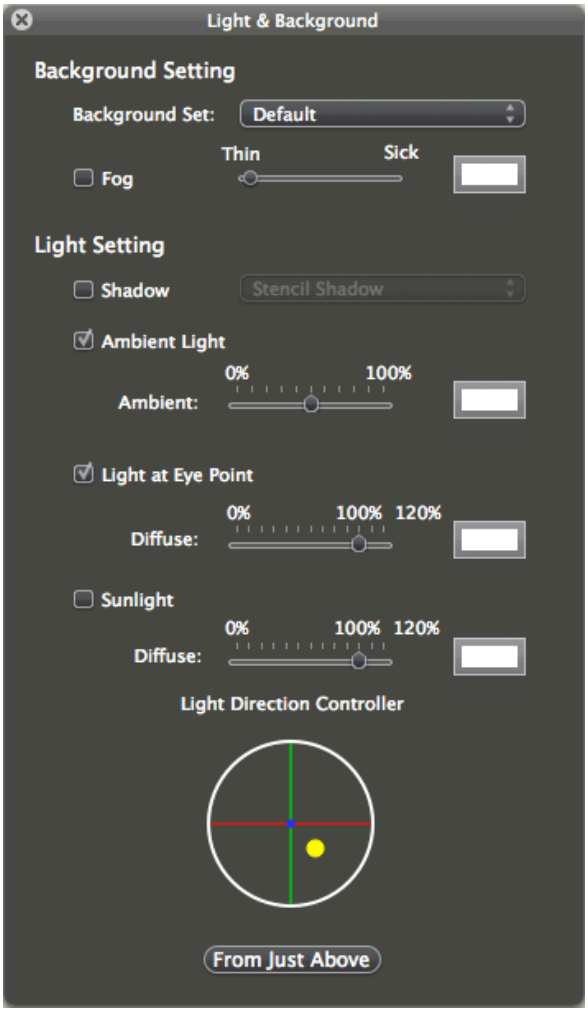
Grid Cells

Enter the number of grids to show in each direction of axis.

Grid Spacing

Enter grid-spacing. The metric system is assumed to be used in Sketchers Studio.

Light and Background



Background Setting

- Background Set
  Select a background set from the pull-down menu.

- Fog
  Check to enable fog effect. Drag the slider to change density of fog. Click on the color well to change color of the fog.

Light Setting

- Shadow
  Check to enable shadow effect.

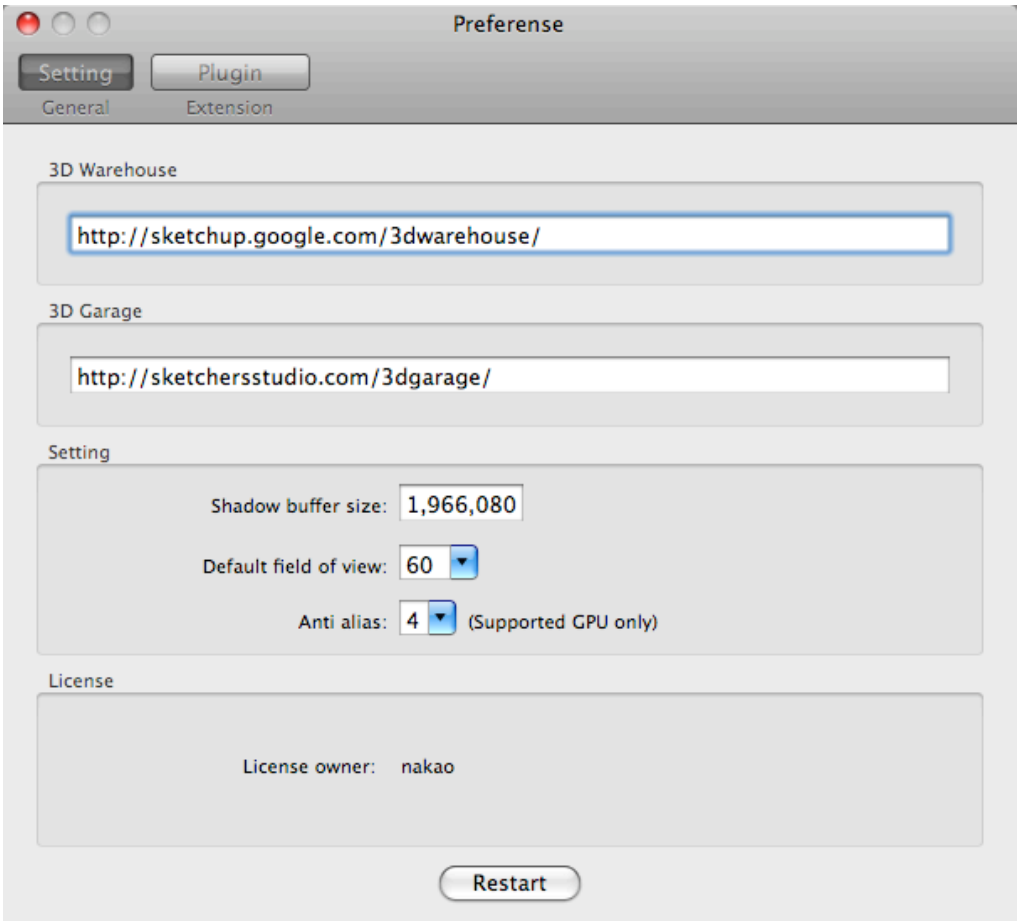
- Ambient Light
  Check to enable the ambient light. Drag the slider to change brightness. Click on the color well to change color of the light.

- Light at Eye Point
  Check to enable the light at the eye point. Drag the slider to change brightness. Click on the color well to change color of the light.

- Sunlight
  Check to enable the sunlight. Drag the slider to change brightness. Click on the color well to change color of the light.

- Light Direction Controller
  Drag the yellow dot to change direction of the sunlight. Colored lines represent each world coordinate axis. If you place the dot at the center of the circle, the light comes from just above.

Preferences



Setting (General)

- Google 3D Warehouse
  Enter URL of the Google 3D Warehouse.

- 3D Garage
  Enter URL of the Google 3D Warehouse.

Setting

- Shadow buffer size
  Enter size of shadow buffer.

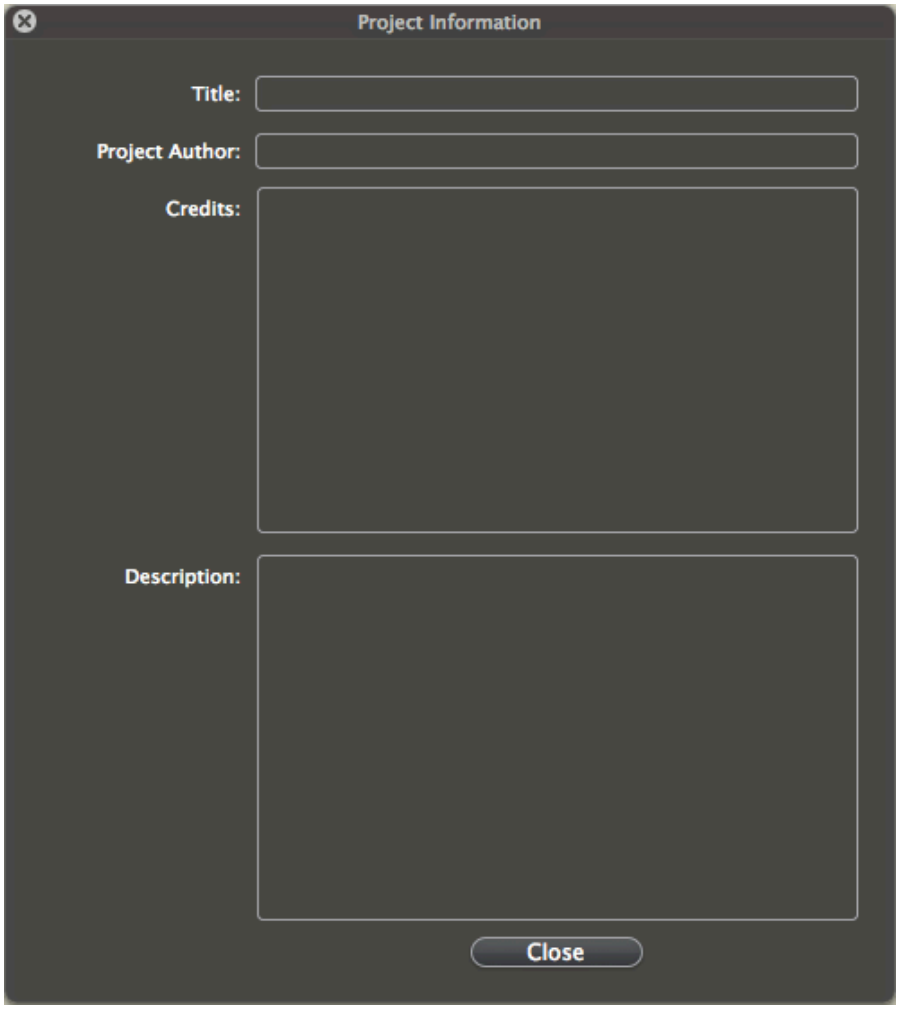
- Default field of view
  Enter default field of view of camera.

- Anti alias
  Choose a value for anti aliasing setting.

License

- License owner
  Shows name of the license owner.

Project Info



- Title
  Enter name of the project.

- Project Author
  Enter name of the project author.

- Credits
  Enter names of authors of 3D models in the project.

- Description
  Describe the project.

Operation in the 3D View

Double-click of the Mouse

Double-click in the 3D View and you can turn the Free Camera or the active model toward the point you clicked.
If you double-click with a shift key pressed, you can toggle mode of the orbit tool, the Normal Mode and the Space Mode as it turns. If you double-click a polygon to switch to the Space Mode, the view will rotate so that its up direction will be normal to the polygon.
See also the section of Mouse Operation Toolbar for the Space Mode.

Note

- Double-click in the 3D View is invalid when the onboard camera is offset from its origin.

Mouse Operation Toolbar

Use the tools in the Mouse Operation Toolbar to control the currently active model by the mouse. Click the button to activate the tool.

 Walk Tool

Use the Walk Tool to move the Free Camera or the active model by dragging the mouse.

- Drag the mouse to the front and back to move toward that direction.
- Drag the mouse to the left and right to rotate around the blue axis of the model.
- Scroll the mouse wheel to move up and down.

Note

- The Walk Tool is not available when the onboard camera is offset from its origin.
- You can adjust the speed when you move the object with the walk tool by the speed slider in the main toolbar.

Orbit Tool (Normal Mode)

Orbit Tool (Space Mode)

Use the Orbit Tool to rotate the Free Camera or the active model around the point you clicked.

- Click a point you would like to rotate around.
- Drag the mouse to rotate around the point.
- Scroll the mouse wheel to move to the front and back.

If you double-click in the 3D View with a shift key pressed, you can toggle the mode as you turn toward the point you clicked.
In the Normal Mode, the yaw axis will be parallel to the blue axis of the world coordinates. This mode is useful when you would like to create a ground-based animation.
In the Space Mode, the yaw axis will be normal to the face you double-clicked to toggle the mode. If you double-click in empty space, the yaw axis will be parallel to the blue axis of the world coordinates. This mode is useful when you would like to create a animation in space.

Note

- The Orbit Tool is not available when the onboard camera is offset from its origin.

Hand Tool

Use the Hand Tool to move the Free Camera or the active model to the up, down, left and right in the view.

- Drag the mouse to the front and back to move up and down in the view.
- Drag the mouse to the left and right to move left and right in the view.
- Scroll the mouse wheel to move to the front and back.

Note

- The Hand Tool is not available when the onboard camera is offset from its origin.

Look Around Tool

Use the Look Around Tool to turn the Free Camera or the active model on a fixed point.

- Drag the mouse to turn towards that direction.
- Scroll the mouse wheel to move to the front and back.

Note

- The Look Around Tool is not available when the onboard camera is offset from its origin.
- The yaw axis in the Look Around Tool corresponds to the one in the Orbit Tool.

Move Tool

Use the Move Tool to pick the active model and move it by the mouse. When you choose this tool, a double square appears in the 3D View. It shows the plane you can move the model on.
For example, when the square is blue, it shows that you can move the model on the plane normal to its blue axis.

- Drag the mouse to move the active model.
- Scroll the mouse wheel to move to the front and back.

Note

- Move Tool is available in the Free Camera mode only.
- The facing direction and color of the square changes according to the polygon the mouse pointer is hovering over.
- You should try to face perpendicularly to the plane you would like to move it on.

 Rotate Tool

Use the Rotate Tool to rotate the active model around the point you clicked. When you choose this tool, a protractor with an axis appears in the 3D View. It shows the axis you can rotate around. For example, when the protractor is blue, it shows that the axis you are about to rotate the model around is parallel to the blue axis of the model.

- Confirm the axis of rotation and click to set the center of rotation.
- Drag to rotate the model around the axis.
- Scroll the mouse wheel to move to the front and back.

Note

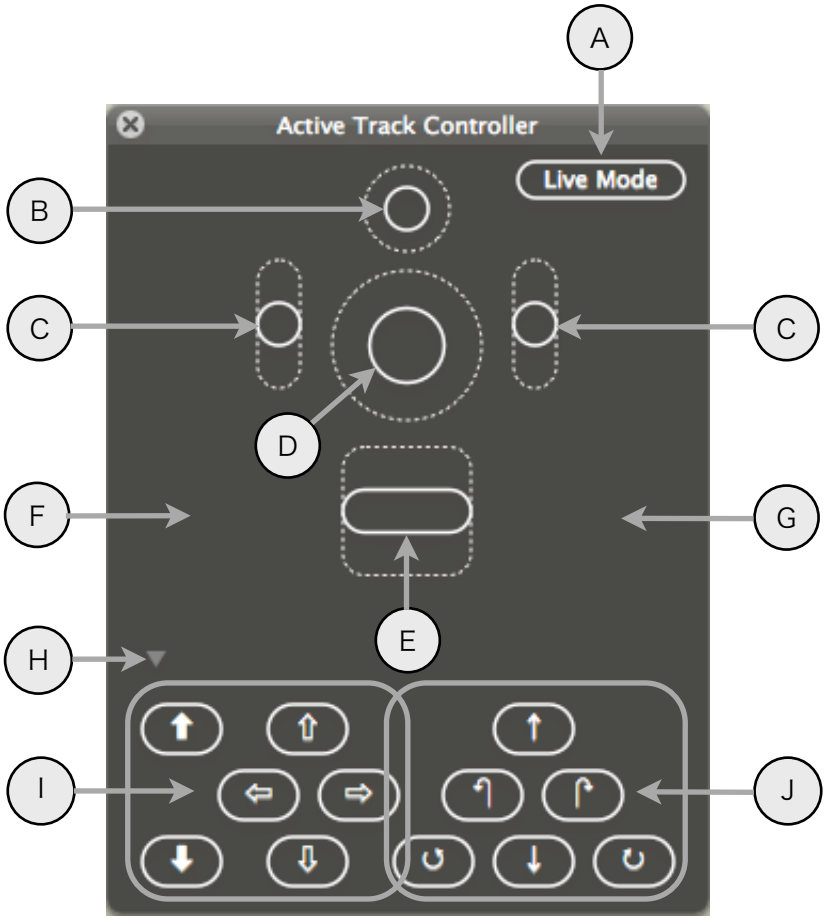
- Rotate Tool is available in the Free Camera mode only.。
- The facing direction and color of the protractor changes according to the polygon the mouse pointer is hovering over.
- You should try to face perpendicularly to the axis you would like to rotate it around.

Active Track Controller

The Active Track Controller is also available to control the active model. Choose “Tool > Show Controller” or click the button in the toolbar to show the controller.

 Click to show the Active Track Controller.

Normal Mode

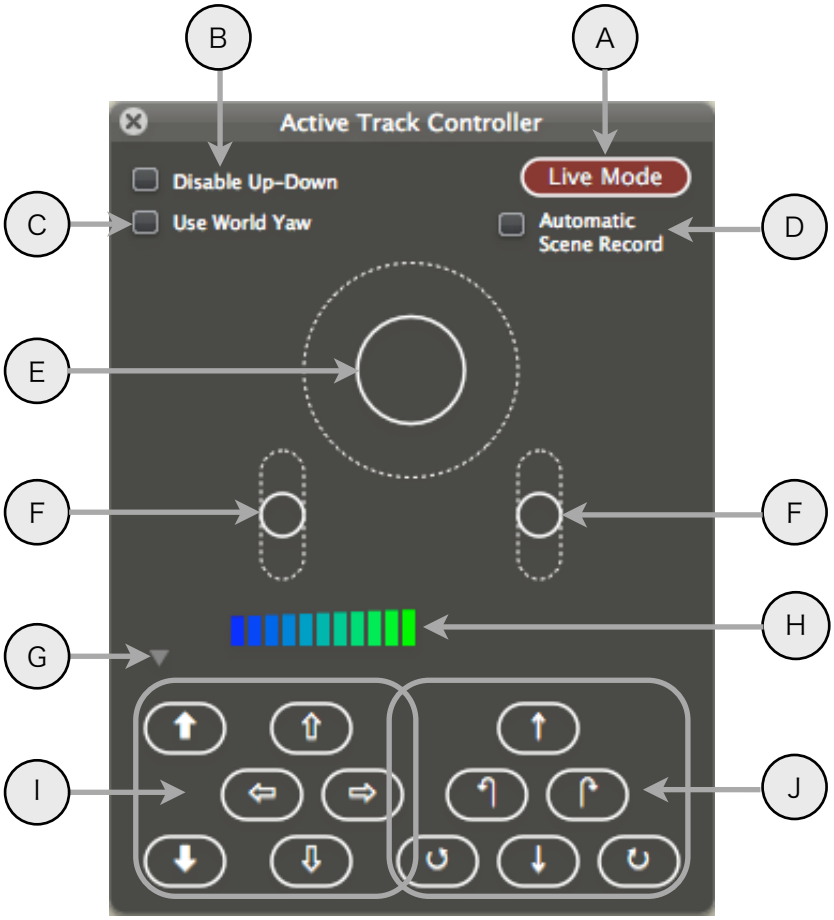


A: Click to switch to the Live Mode.
B: Drag to move to the left, right, front and back.
C: Drag to roll (rotate around the green axis of the model).
D: Drag up/down to move to the front and back. Drag left/right to yaw (rotate around the blue axis of the model).
E: Drag to pitch (rotate around the red axis of the model).
F: Drag to rotate the onboard camera around the model.
G: Drag to change distance of the onboard camera from the model.
H: Click to expand/collapse the controller panel.
I: Press buttons to move.
J: Press buttons to rotate.

Note

- Buttons for the onboard camera (F and G) will not be displayed in the Free Camera mode and therefore unavailable.
- Operate the controller with command key pressed and the change you've made will be applied for to all the scenes after the current one.

Live Mode



A: Shows it is in the Live Mode. Click to return to the Normal Mode.
B: Check to disable move up and down.
C: Check to yaw around a fixed axis which is parallel to the blue axis of the world coordinates.
D: Check to add scenes automatically as you move the model.
E: Press to move forward. Drag up or down to rotate around the red axis of the model. Drag left or right to rotate around the blue axis of the model.
F: Drag to rotate around the green axis of the model.
G: Click to expand or collapse the controller panel.
H: Shows the speed when you move the model.
I: Press buttons to move.
J: Press buttons to rotate.

Note

- Operate the controller with command key pressed and the change you've made will be applied for to all the scenes after the current one.

Useful Toolbars

Adjustment Toolbar

 Click to position the bottom-center of the active model at the origin.

 Click to reset the direction of the active model parallel to the red axis.

 Click to reset the direction of the active model parallel to the green axis.

 Click to reset the direction of the active model parallel to the blue axis.

Note

- Adjustment toolbar is available in the Free Camera mode only.

Rotation Toolbar

 Click to rotate the active model 90 degrees around yaw axis (blue axis).

 Click to rotate the active model 90 degrees around pitch axis (red axis).

 Click to rotate the active model 90 degrees around roll axis (green axis).

Note

- Rotation toolbar is available in the Free Camera mode only.

Alignment Toolbar

 Click to align the active model with a model in the left.

 Click to place the active model in between models in the left and right.

 Click to align the active model with a model in the right.

 Click to align the active model with a model in the front.

 Click to place the active model in between models in the front and back.

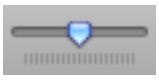
 Click to align the active model with a model in the back.

 Click to align the active model with a model in the below.

Note

- Alignment toolbar is available in the Free Camera mode only.

Misc Tools



Drag to adjust the speed when you move a model with the active track controller or mouse.

Click to reset the up direction of the active model parallel to the blue axis of the world coordinates.

External Tools

Click to launch the Google SketchUp (If installed)

Click to connect to the 3D Garage.

Camera

Two types of camera are available in Sketchers Studio. Each camera has the following feature.

Free Camera

This is the camera you can control freely by the mouse. It is designed to look at models from a fixed point. Some operations are valid in the Free Camera mode only.

Onboard Camera

This is the camera placed on the model. You can also place the camera at offset position from its origin. Every model has one onboard camera. This is useful to create animation from the view of a model.

Click the buttons shown below to switch these cameras.

Click to switch to the Free Camera.

Click to switch to the onboard camera of the active model.

Appears in the Free Camera mode. Click to copy the position and orientation of the Free Camera to the current scene of the active track.

Appears in the Onboard Camera Mode. Click to copy the position and orientation of the onboard camera to the Free Camera.

Animation Track

Adding an Animation Track

Choose "Track > New Track" from the menubar or click the botton in the toolbar to add a new animation track.

 Click to add an animation track.

Deleting an Animation Track

Choose "Track > Delete Track" from the menubar or click the button in the toolbar to delete the active animation track.

 Click to delete the active animation track.

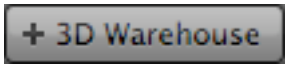
Updating an Animation Track

Choose "Track > Update Track" from the menubar or click the button in the toolbar to update the active animation track. You need to update a model after you made a change on it with the Google SketchUp.

 Click to update the active animation track.

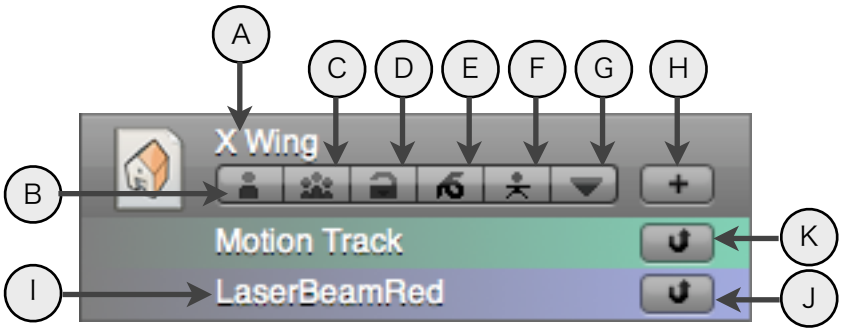
Adding an Animation Track from Google 3D Warehouse

Choose "Track > 3D Warehouse..." from the menubar or click the button in the toolbar to add an animation track from the Google 3D Warehouse. If you download a 3D model with the Google 3D Warehouse Browser, a new track with the model will be added automatically.



Launch the Google 3D Warehouse Browser

Operation in Animation Tracks



A: Name of animation track.
B: Click to toggle visibility of the own track.
C: Click to toggle visibility of the other tracks.
D: Click to toggle edit lock.
E: Click to toggle visibility of the track path.
F: Click to toggle appearance mode of the track (Normal/Simple).
G: Click to expand/collapse subtracks.
H: Click to add a particle track.
I: Shows name of the particle track.
J: Click to update the particle track.
K: Click to update the motion track (If available).

Note

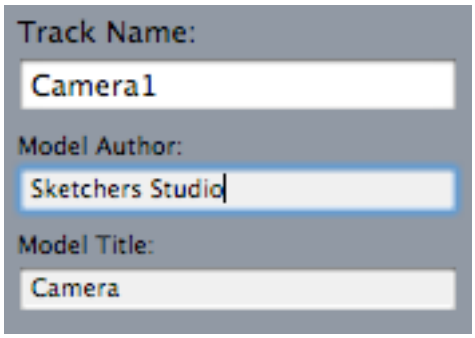
- Currently active track will be highlighted.
- You might want to show a 3D model in a simple appearance mode if it consists of enormous numbers of polygons.

Camera Track

This is the animation track for a camera. Choose “Track > Add New Camera Track” to add a camera track. This track works same as other animation tracks but has a model of frustum which represents a camera.

Model Info

Info about the 3D model used in an animation track will be shown in the Model Info area. You can update the info if necessary.

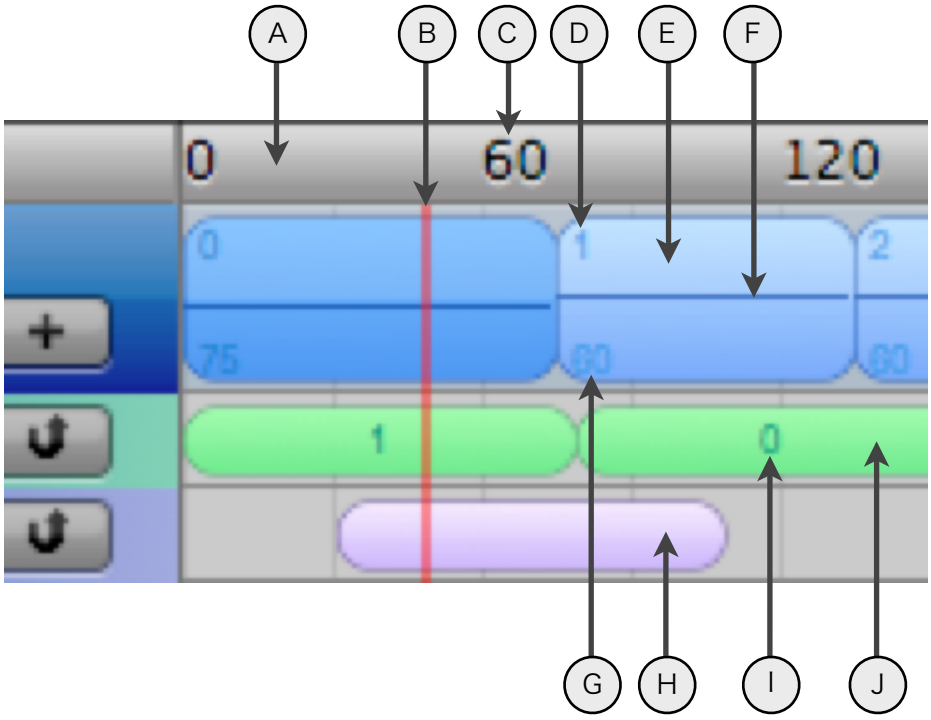


Note

- Textbox will be blank in case any information is not provided.

Timeline View

Info in the Timeline View



A: Timeline header.
B: Frame Indicator.
C: Frame count.
D: Scene number.
E: Represents a scene of animation.
F: Indicates moving speed of the model.
G: Shows the number of frames the scene contains.
H: Represents a particle frame.
I: Shows the a state of motion.
J: Represents a motion frame.

Note

- Selected scenes/frames will be highlighted.
- The mouse cursor will be changed as you point
- Drag in the timeline header to move the frame indicator and the part of animation will be played.

Editing Scenes in the Timeline View

Selecting Scenes

Click a scene to select it. In the active track, you can also select scenes by dragging the mouse over them.

Adding Scenes

Click the mouse in an animation track with the command key pressed and you can add a scene in the track. If you already have any scenes there, a scene same as the previous one will be added. Otherwise a scene at the origin will be added.

Deleting Scenes

Press the delete key to delete the selected scene.

Copying Scenes

When the shape of the mouse cursor is a hand, drag a scene and drop it into another track. Then you can copy the scene.

Editing the Order of Scenes

When the shape of the mouse cursor is a hand, drag a scene and drop it into the same track. Then you can change the order of the scene.

Editing the Frame Counts of the Scenes

If you hover the mouse cursor on the bottom right of the scene cell, the cursor changes its shape. Then drag it to change the frame counts of the scene.

Editing Motion Frames

Adding Motion Frames

Click the motion track with command key pressed, and you will see a list of available motions. Select the number of motion to add a motion frame.

Modifying Motion Frames

Click the motion frame you would like to change with command key pressed, and you will see a list of available motions again. Select the number of motion to change a motion frame. Click the mouse on the right boundary of the motion frame and drag. Then you will change the duration of the motion frame.

Deleting Motion Frames

Select a motion frame you would like to delete. Press the delete key to delete the frame. You can also delete a motion frame if you change its duration to zero.

Editing Particle Frames

Adding Particle Frames

Click the particle track with command key pressed, and you can add a particle frame.

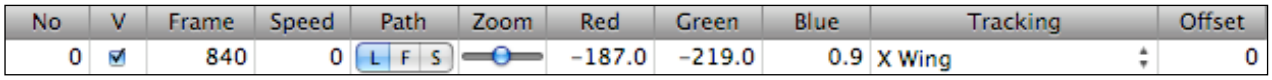
Modifying Particle Frames

Click the mouse on the right boundary of the particle frame and drag. Then you will change the duration of the particle frame.

Deleting Particle Frames

Select a particle frame you would like to delete. Press the delete key to delete the frame. You can also delete a particle frame if you change its duration to zero.

Scene Editor



- No
  Shows the number of the scene.

- V
  Check to toggle visibility at the scene.

- Speed
  Shows approximate speed of the model at the scene.

- Path
  Shows the interpolation methods of the path. The methods are Linear (L), Fillet (F), and Spline (S). Click the buttons to change the methods,

- Zoom
  Shows the zoom factor of the onboard camera. Drag to the left to zoom out and to the right to zoom in.

- Red
  Shows the position of the model in the red axis of the world coordinates.

- Green
  Shows the position of the model in the green axis of the world coordinates.

- Blue
  Shows the position of the model in the blue axis of the world coordinates.

- Tracking
  Shows the target to track at the scene. If you specify a target, the model will be forced to turn toward the target at the scene.

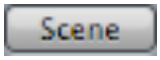
- Offset
  Shows the distance between the current position of the onboard camera and its origin.

Note

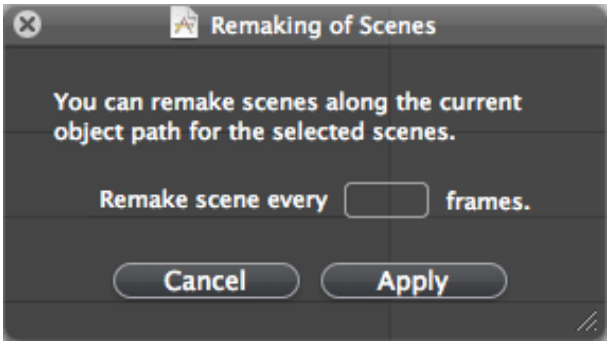
- You cannot edit No, Speed and Offset in this table.

Editing Scenes All Together

Click the bottons in the left of the Scene Editor to edit selected scenes all together.



Remaking of scenes.



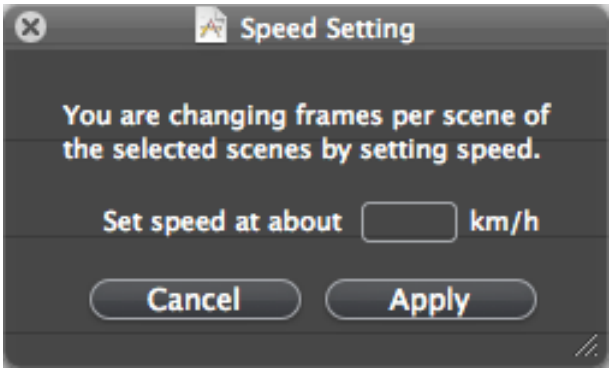
Frame setting.

Note

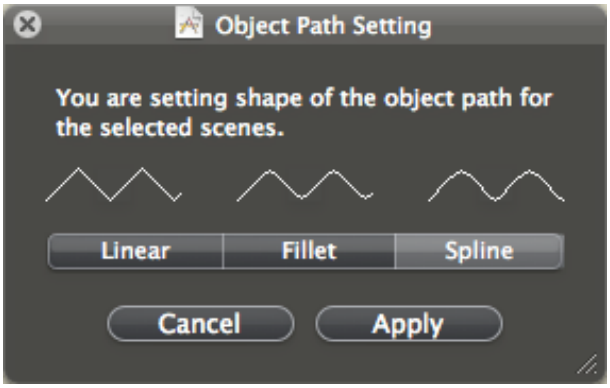
- The result will vary depends on the button you selected, x, ÷ or =. Suppose the frames of the scene is 60 and you enter 3 into the textbox, the result will be as follows:

  x: The number of frames will be 3 times, that is 180.
  ÷: The number of frames will be 1/3 times, that is 20.
  =: The number of frames will be 3.

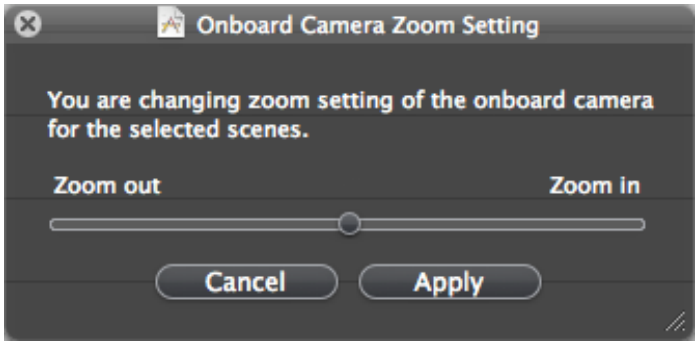
Speed Speed setting.



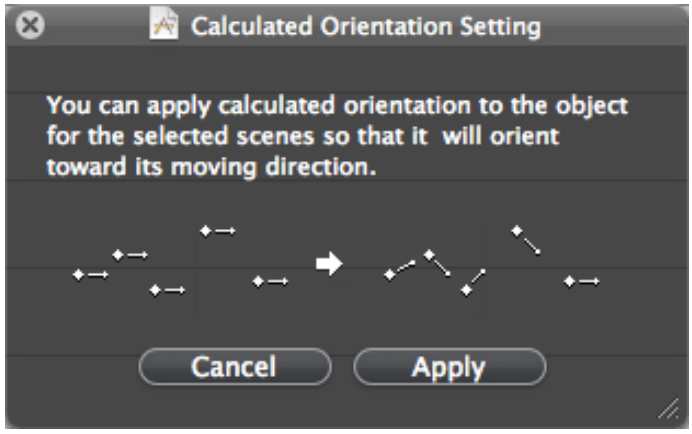
Path Object path setting.



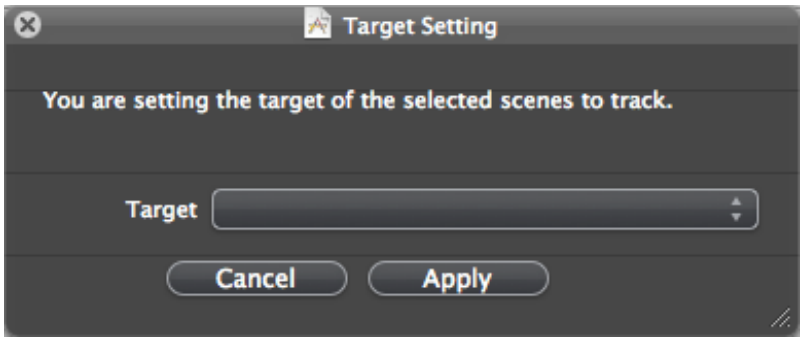
Zoom Onboard Camera Zoom Setting.



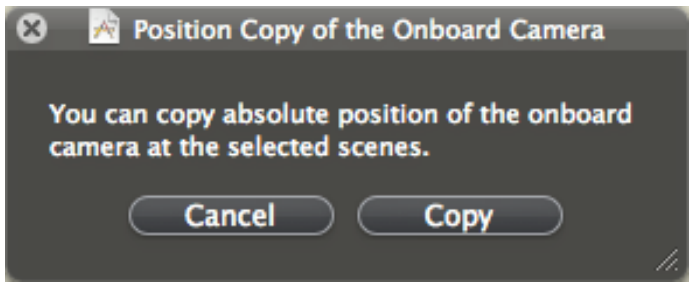
Orient Calculated orientation setting.



Tracking Tracking setting.



Onboard Position copy of the onboard camera.

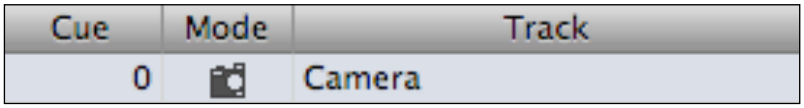


Note

- This is useful when you would like to use the positions of the onboard camera in the other tracks.

Camera Switcher

The camera switcher allows you to play an animation as switching the onboard camera of the animation tracks.



- Cue
  Shows the frame count to switch cameras. Enter a new frame count to change the timing to switch.

- Mode
  Shows the mode the camera works in. Click the icon to toggle the mode.

   Represents the normal mode.

   Represents the macro mode.

- Track
  Shows the name of the track to switch.

Note

- If you have cues of the same frame count, only one cue will be valid. Invalid cues are shown in red.
- Select a cue and press a delete key to delete it from the table.

How to Use the Camera Switcher

The following procedure shows how to use the Camera Switcher.

1. Select the animation track you would like to switch.
2. Set the frame at the count you would like to switch cameras.
3. Drag the number of frame shown in the Animation Control Bar and drop it into the Camera Switcher table.
4. Change the mode of the camera if you need.
5. Validate the camera switcher before start playing the animation. Click the botton in the Animation Control Bar to enable/disable the camera switcher.

 Click to enable/disable the camera switcher.

Note

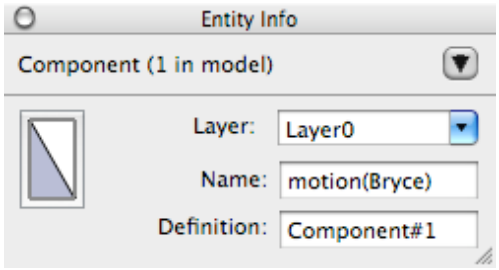
- You can also drag a scene from the Scene Editor table and drop it into the Camera Switcher table to add a cue.

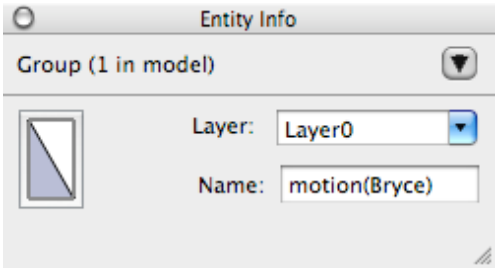
Simple Motion

The Simple Motion of Sketchers Studio implements a motion effect by interpolating between key poses. You need to use Google SketchUp to make preparations, by procedure either A or B, as shown below before using the Simple Motion.

A Setting key poses by Google SketchUp.
(Choose this if you need to scale up and down by the Motion Effect)

1. Launch Google SketchUp and select the part you would like to apply the Simple Motion and make it a group or component of Google SketchUp.
2. Name it as "motion(UNIQUE_NAME)", like "motion(Bryce)".





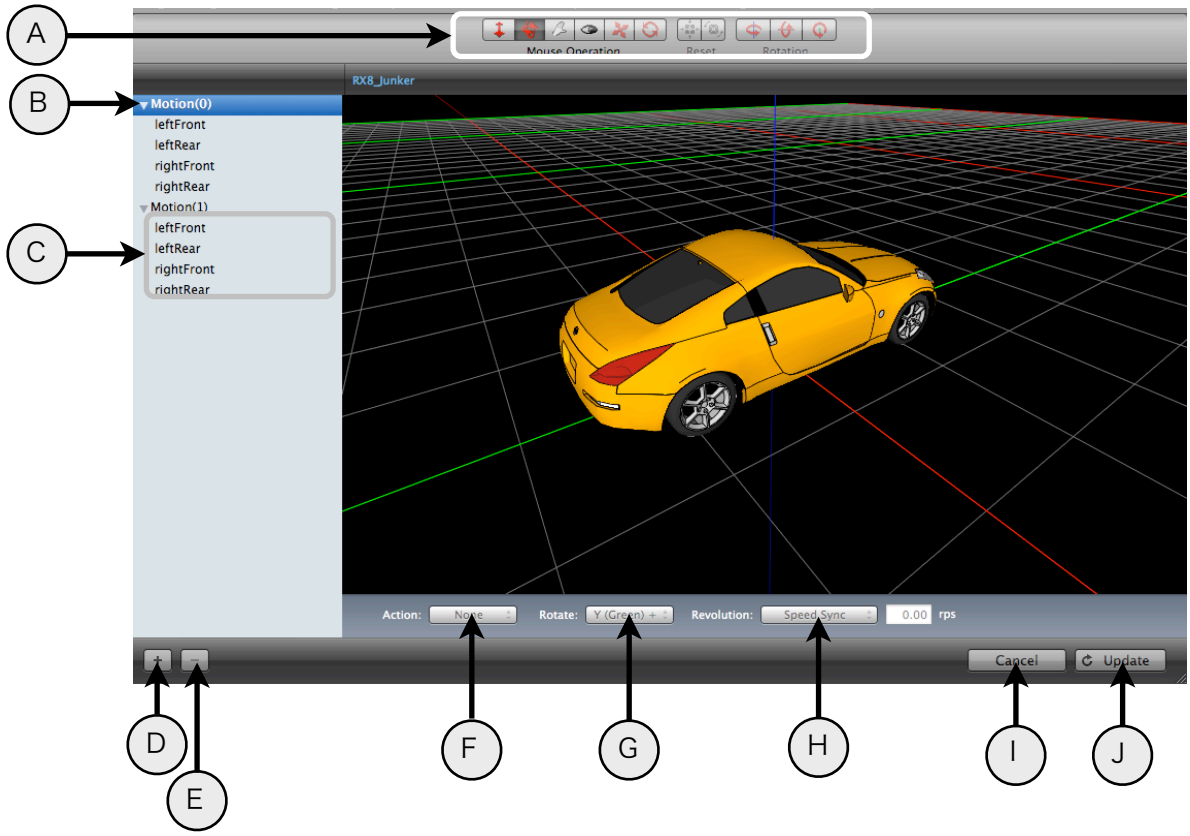
3. Repeat procedure 2 if you have more parts to apply the Motion Effect.
4. Set its pose as a basic pose and save it. You can name the SketchUp file arbitrarily when you save it.
5. Set its pose so as to show different state of the model. You can also change its scale. Then save the model. You have to add "-motion(NUMBER)" to the name of the skp file that represents the basic pose when you save it. The number between the parentheses has to be more than 0 and unique. Suppose you name the skp file as "car.skp" at the procedure 4, the name here should be like "car-motion(1).skp".
6. Repeat the procedure 5 to create key poses if you need.
7. Back to Sketchers Studio and add a new track or update a track with a skp file of key poses.
8. If the motion is available, a motion track will appear as a subtrack of the animation track. Open the Motion Browser and you will see a list of key poses you defined. The basic pose will appear as motion(0) in the list.

B Setting key poses by the Motion Browser.

1. Launch Google SketchUp and select the part you would like to apply the Simple Motion and make it a group or component of Google SketchUp.
2. Name it as “motion(UNIQUE_NAME)”, like “motion(Bryce)”.
3. Repeat procedure 2 if you have more parts to apply the Motion Effect.
4. Name the model as you like and save it.
5. Back to Sketchers Studio and add a new track or update a track with the skp file.
6. If the motion is available, a motion track will appear as a subtrack of the animation track. Open the Motion Browser and you will see the basic pose in a list as motion(0).

Motion Browser

In the Motion Browser, you will edit key poses of motion and apply action to motion elements of the model.



A: Toolbar
B: Key pose of motion.
C: List of motion elements in the model.
D: Click to duplicate the selected key pose.
E: Click to delete the selected key pose.
F: Click to choose action.
G: Click to set the rotation axis when action is Rotate.
H: Set rotational speed.
I: Click to cancel.
J: Click to apply the current setting.

Note

- You will set the order of key poses and the timing to switch them in the motion track of the 3D View.

Reset Tool

Use Reset Tool to reset elements of motion at their initial position/orientation of the Motion(0), i.e., the basic pose.

 Click to reset the selected element at its initial position of the basic pose.

 Click to reset the selected element at its initial orientation of the basic pose.

Note

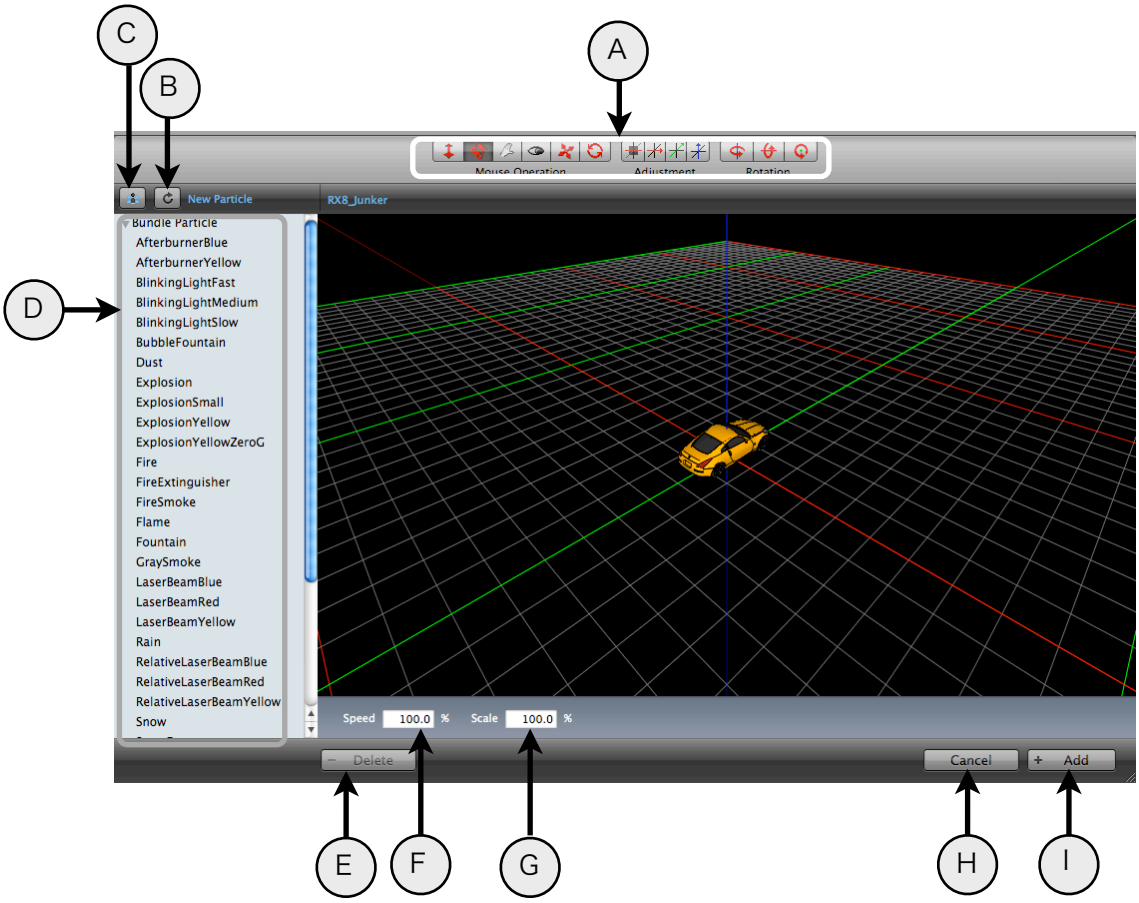
- Click both buttons to reset the selected element at the initial state of the basic pose.
- As for other tools in the toolbar, see the section of Operation in the 3D View.

Particle Effect

Particle effects available in Sketchers Studio are Bundle Particle and Extension Particle. The Bundle Particle is a set of particles provided with the software and the Extension Particle is a set of particles added by users.
Click the button with a plus sign in the animation track to add a particle effect to the track.

Particle Browser

In the Particle Browser, you will choose a particle effect and set its position and orientation to attach to the active model.

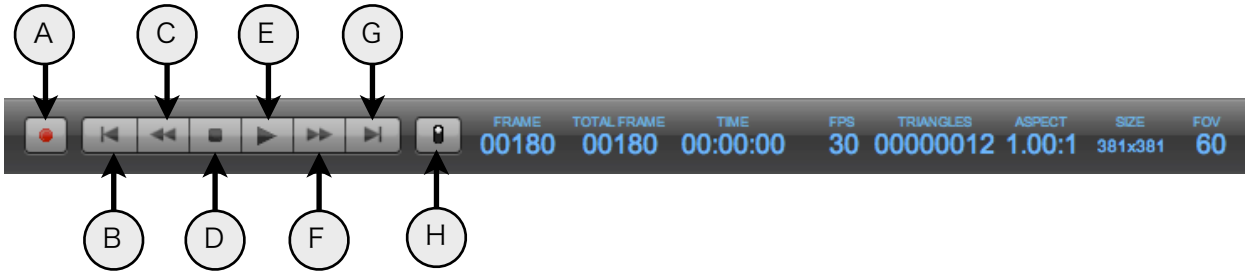


A: Toolbar
B: Click to replay the selected particle.
C: Click to show all the particle applied so far.
D: Shows the available particles.
E: Click to remove the particle from the model.
F: Enter the speed of the particle in percentage.
G: Enter the size of the particle in percentage.
H: Click to cancel.
I: Click to apply the particle to the model.

Note

- You will set the timing to enable or disable the particle in the particle track of the 3D View.
- As for tools in the toolbar, see the section of Operation in the 3D View.

Animation Control Bar



A: Click to record the animation(exporting to a movie file).
B: Click to move to the previous scene.
C: Click to move to the previous frame.
D: Click to stop the animation.
E: Click to play the animation.
F: Click to move to the next frame.
G: Click to move to the next scene.
H: Click to enable/disable the Camera Switcher.

- Frame
  Shows the index number of current frame.

- Total Frame
  Shows the total number of frames in the animation.

- FPS
  Shows the current frame rate.

- Triangles
  Shows the number of triangles drawn in the view.

- Aspect
  Shows the aspect ratio of the 3D View (width:height).

- Size
  Shows the size of the 3D View (width x height).

- FOV
  Shows the current field of view of the camera.

Note

- Drag the index number of frame and drop it into the Camera Switcher table to set the frame count to switch cameras.

An Easy Way to Create an Animation

You can create an animation easily with the following procedure.

1. Add a 3D model from the Google 3D Warehouse.
2. Add a scene after setting its position and orientation.
3. Continue to add scenes to create a path the model move along.
4. Select all scenes and click the Orient button so that the model will orient toward its moving direction at each scene.
5. Click the Play button and you will see the model move along the path.

Credits

“bryce” by bryce
“Nissan 350Z/Fairlady Z” by DJ MASDR