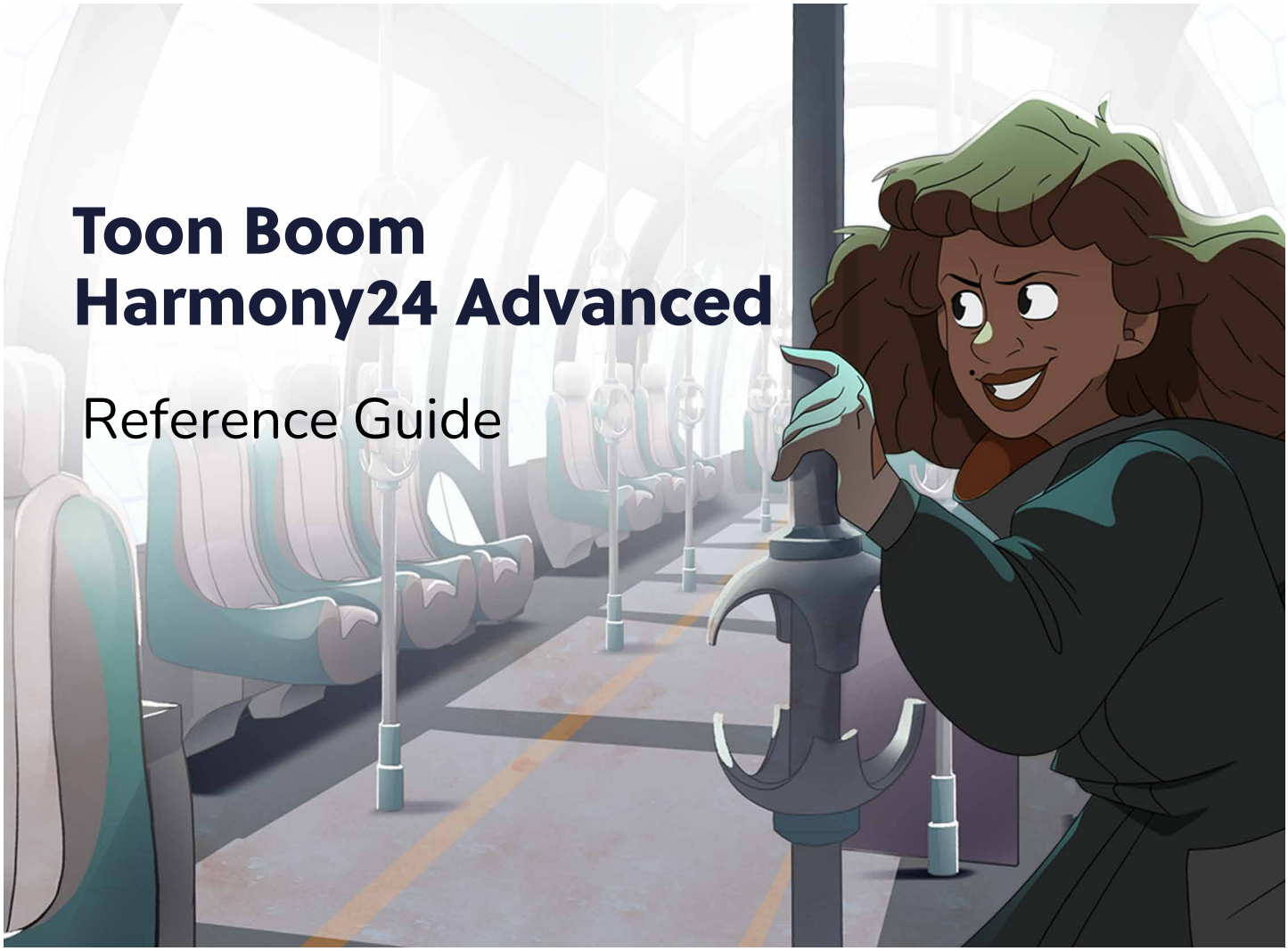
Harmony 24
Advanced



Toon Boom Harmony24 Advanced

Reference Guide

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Introduction

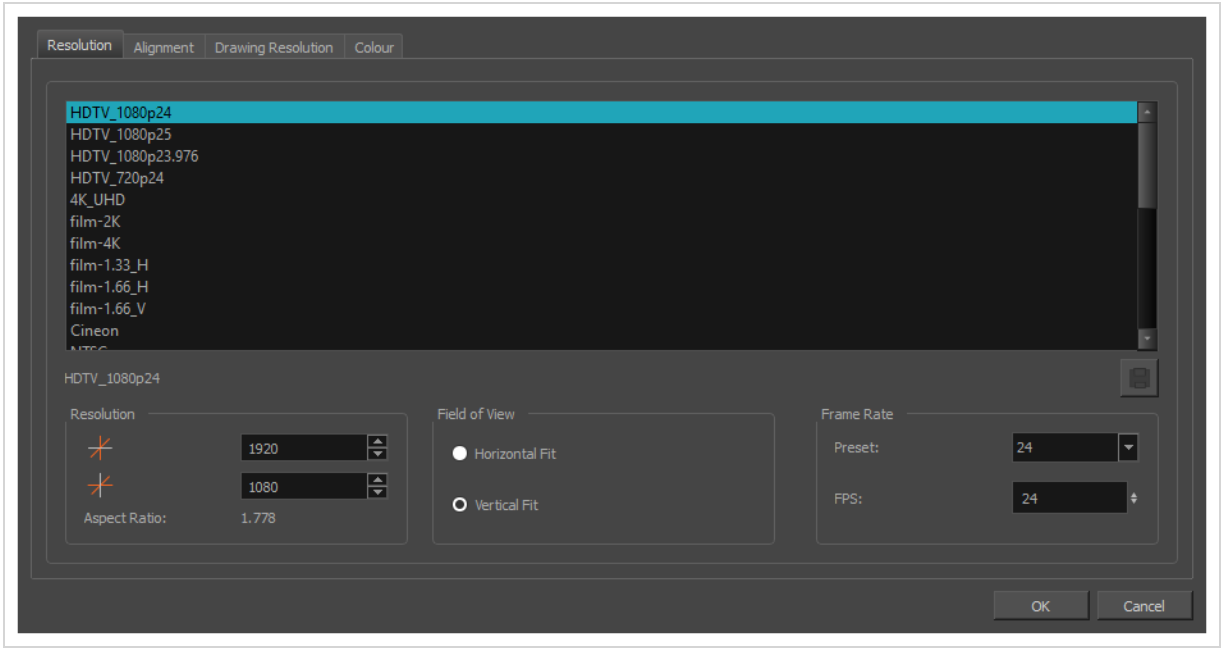
Harmony has several commands, dialog boxes, and buttons. The Reference section lists all of them along with the matching definition. To understand how to use these functions in a production context, read the User guide.

In the Reference guide, you will learn about the various parameters available in dialog boxes, menus, nodes, toolbars, views, and windows.

The Preferences guide provides additional details about each individual preference.

Chapter 1: Dialog Boxes

Dialog boxes contain controls such as options and lists through which you can carry out a particular command or task. For example, in the Scene Settings dialog box, you must indicate the resolution and alignment. A typical dialog box looks as follows:



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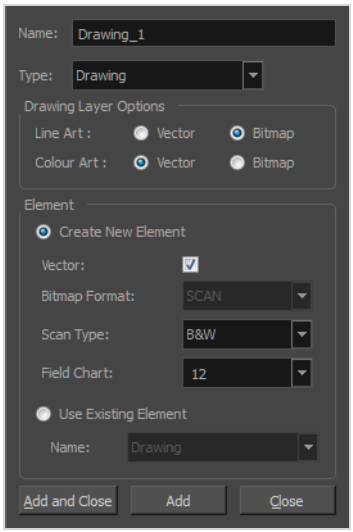
Add Column Dialog Box

The Add Column dialog box lets you add a column in the Xsheet view.

By default, when you create a new scene, there is one drawing column in the Xsheet view and one corresponding drawing layer in the Timeline view.

You can add an element for each drawing and it will appear as a column in the Xsheet view, a layer in the Timeline view, and a node in the Node view.



How to access the Add Column dialog box

1. Do one of the following:
    - In the Xsheet menu, right-click a column and select **Add Columns**.
    - Click the Add Columns button.
    - Press Shift + C.

Parameter	Description
Name	Lets you give the new column a meaningful name.
Type	Lets you select a type of column to create. Choices include: Drawing, Timing, Sound, 3D Path, 3D Rotation, Bezier Curve, Ease Curve, Expression and Annotation.
Drawing Layer Options	

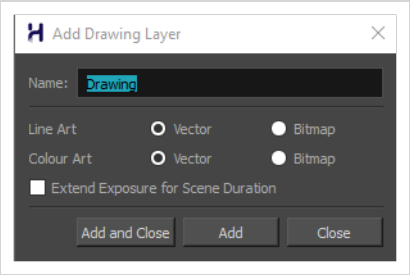
Line Art	Creates a vector or bitmap drawing column in the Line Art layer.
Colour Art	Creates a vector or bitmap drawing column in the Colour Art layer.
Element	
Create New Element	Creates an independent column with its own drawing folder.
Vector	Select this option if you want the layer to contain vector drawings. Deselect this option if you want the layer to contain bitmap images. Most of the time, the Vector option will be enabled.
Bitmap Format	Lets you select the type of bitmap image to insert in the column. Select **SCAN** from the list if you are planning to scan drawings using the Toon Boom Harmony Advanced Scan module.
Scan Type	If you chose **SCAN** from the Bitmap Format list, select the kind of scanning you want to achieve.
Field Chart	When importing traditional animation, lets you indicate the size of paper on which the animation or background was drawn. If you are not using perforated animation paper, leave the 12 field default value as is.
Use Existing Element	Uses drawings from an existing column in the new column. Both columns will be attached to the same set of drawings, but their timing will remain independent from one another. If you modify one of the drawings, it will be modified in both columns. This is the same principle as the Clone column.
Name	Lets you select the column to which you want to link your new column.
Add and Close	Adds the selected type of layers to the Timeline view and corresponding column in the Xsheet view and closes the dialog box. The names of the layers/columns are automatically numbered incrementally.
Add	Adds the selected type of layers to the Timeline view and corresponding column in the Xsheet view. The dialog box remains open for you to add as many layers/columns as needed. The names of the layers/columns are automatically numbered incrementally.
Close	Closes the dialog box.

Add Drawing Layer Dialog Box

The Add Drawing Layer dialog box lets you add a drawing layer to your project.

By default, when you create a new scene, there is one drawing column in the Xsheet view and one corresponding drawing layer in the Timeline view.

You can add an element for each drawing and it will appear as a column in the Xsheet view, a layer in the Timeline view, and a node in the Node view.



How to access the Add Drawing Layer dialog box

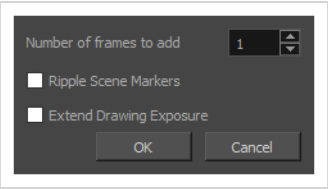
1. Do one of the following:
    - In the Timeline view, click the Add Drawing Layer button.
    - From the top menu, select **Insert > Drawing**.
    - Press Ctrl + R (Windows/Linux) or ⌘ + R (macOS).

Parameter	Description
Name	Lets you give the new layer a meaningful name.
Overlay Art	Creates a vector or bitmap drawing layer in the Overlay Art layer.
Line Art	Creates a vector or bitmap drawing layer in the Line Art layer.
Colour Art	Creates a vector or bitmap drawing layer in the Colour Art layer.
Underlay Art	Creates a vector or bitmap drawing layer in the Underlay Art layer.
Extend Exposure for Scene Duration	Automatically create and empty drawing exposure on each layer and expose them for the duration of the scene.

Add and Close	Adds the selected type of layers to the Timeline view and corresponding column in the Xsheet view and closes the dialog box. The names of the layers/columns are automatically numbered incrementally.
Add	Adds the selected type of layers to the Timeline view and corresponding column in the Xsheet view. The dialog box remains open for you to add as many layers/columns as needed. The names of the layers/columns are automatically numbered incrementally.
Close	Closes the dialog box.

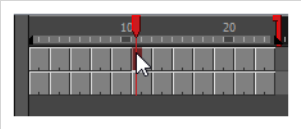
Add Frames Dialog Box

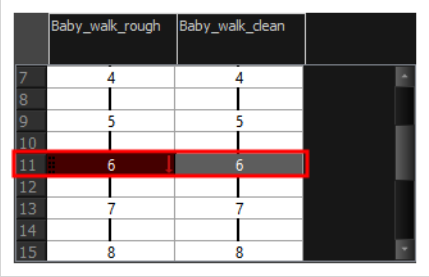
The Add Frames dialog box allows you to add a given amount of frames at a specific point in your scene. The new frames are added to every layer in your scene and will offset all the keyframes and drawings after the insertion point.



How to access the Add Frames dialog box

1. In the Timeline or Xsheet view, select a frame or a range of frames.





2. Do one of the following:

    - From the top menu, select **Scene > Frame > Add Frames at Start**, **Add Frames at End**, **Add Frames Before Selection** or **Add Frames After Selection**.
    - In the Xsheet view, right-click and select **Frame > Add Frames at Start**, **Add Frames at End**, **Add Frames Before Selection** or **Add Frames After Selection**.
    - In the Xsheet toolbar, click the Add Frames button to add frames after your selection.
    - Press Ctrl + G (Windows/Linux) or ⌘ + G (macOS) to add frames before the selection, or Ctrl + H to add frames after the selection.

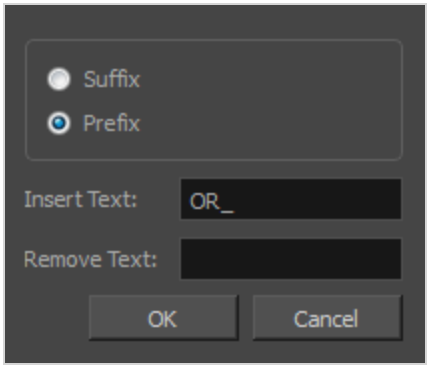
    The Add Frames dialog box appears.

Parameter	Description
Number of frames to add	The amount of frames to add.

Parameter	Description
Ripple Scene Markers	If checked, scene markers after the insertion point will be offset forward to remain synchronized with the keyframes and drawings in your scene. If unchecked, scene markers will remain in place while everything else after the insertion point is offset.
Extend Drawing Exposure	If checked, drawings that are exposed just before the insertion point will be exposed throughout the added rames. If unchecked, no drawing will be exposed in the added frames. **NOTE** This option has no effect when adding frames at the start of the scene.

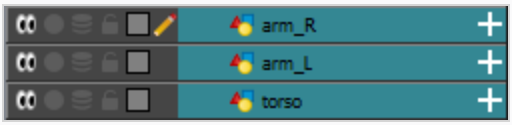
Add Prefix or Suffix Dialog Box

The Add Prefix or Suffix dialog box lets you add or remove a prefix or suffix for a multi-layer selection.



How to access the Add Prefix or Suffix dialog box

1. In the Timeline view, select all the layers to rename or press Ctrl + A (Windows/Linux) or ⌘ + A (macOS).

2. In the Timeline View toolbar, click the Add Prefix or Suffix Script button. If the Timeline View toolbar is not visible, you can display it by selecting **Windows > Toolbars > Timeline View** from the top menu. If the Add Prefix or Suffix Script button is not visible in the Timeline View toolbar.

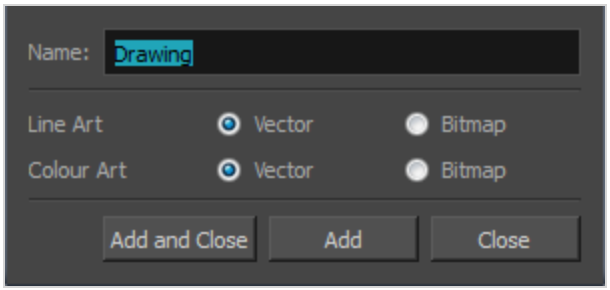
   The Add Prefix or Suffix dialog box opens.

Parameter	Description
Suffix	Allows you put a defined set of characters (letters, numbers, symbols) after the pre-existing layer name.
Prefix	Allows you put a defined set of characters (letters, numbers, symbols) before the pre-existing layer name.
Insert Text	Enter a set of characters to be added to the selected layers.
Remove Text	Enter a set of characters to be removed from the selected layers.

Add Synced Drawing Layer Dialog Box

The Add Synced Drawing Layer dialog box lets you add a drawing layer to your project that will automatically be synced with the currently selected layer.

Depending on whether the Support Overlay and Underlay Arts option was selected in the Advanced tab of the Preferences panel, the Add Synced Drawing Layer dialog box may look one of two ways.



How to access the Add Synced Drawing Layer dialog box

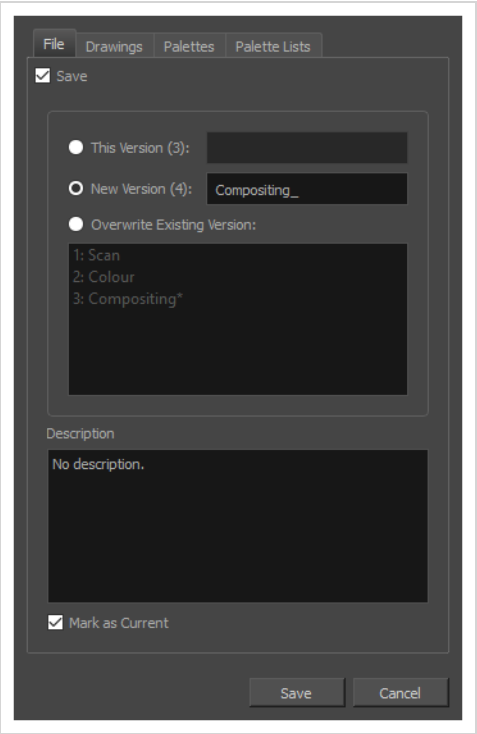
1. In the Timeline view, right-click on the drawing layer you would like to sync with another layer.
2. From the right-click menu, select **Add Synced Drawing Layer**.

Parameter	Description
Name	Lets you give the new layer a meaningful name.
Overlay Art	Creates a vector or bitmap drawing layer in the Overlay Art layer.
Line Art	Creates a vector or bitmap drawing layer in the Line Art layer.
Colour Art	Creates a vector or bitmap drawing layer in the Colour Art layer.
Underlay Art	Creates a vector or bitmap drawing layer in the Underlay Art layer.
Add and Close	Adds the selected type of layers to the Timeline view and corresponding column in the Xsheet view and closes the dialog box. The names of the layers/columns are automatically numbered incrementally.
Add	Adds the selected type of layers to the Timeline view and corresponding column in the Xsheet view. The dialog box remains open for you to add as many layers/columns as needed. The names of the layers/columns are automatically numbered incrementally.

Close	Closes the dialog box.

Advanced Save Dialog Box

In Harmony Server, the Advanced Save dialog box lets you save the scene as a new version, overwrite an existing version, set a new current version, display a list of modified drawings, colour palettes, and modified colour palette lists.

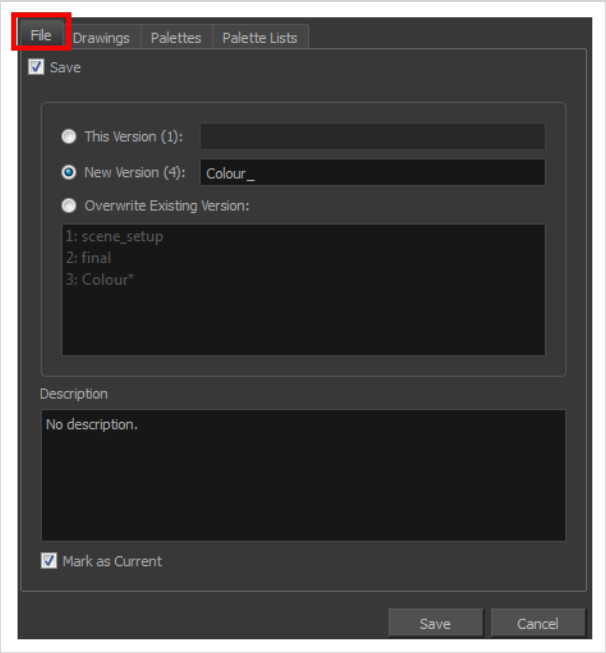


How to access the Advanced Save dialog Box

1. Make sure that you have the necessary rights to save the current scene version. If you do not, you can acquire the rights by selecting **File > Rights to Modify Scene Version** or **Rights to Modify Scene** from the top menu.
2. From the top menu, select **File > Advanced Save**.

   The Advanced Save dialog appears.

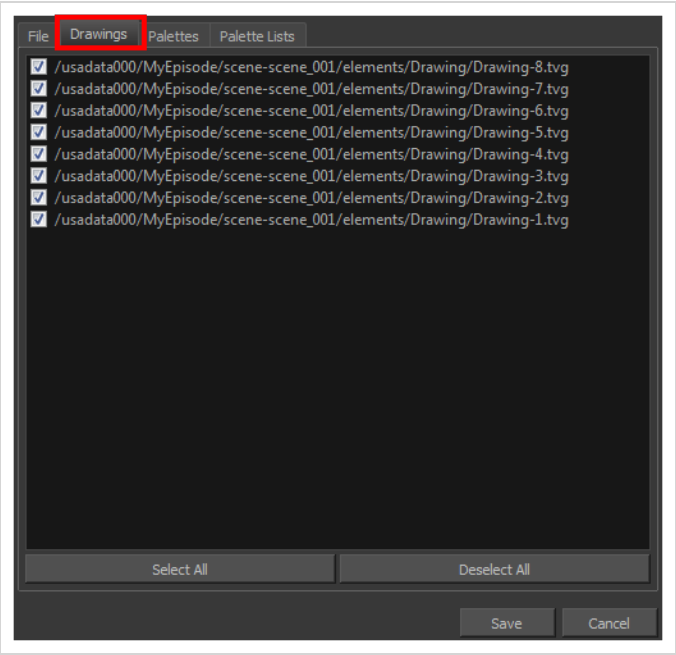
File Tab



Parameter	Description
Save	▸ Enable this option if you want to save the modifications made to the current scene. ▸ Deselect the Save option if you only want to save specific components of your scene listed in the Drawings, Palettes or Palette Lists tabs. This will disable all option in the File tab.
This Version (number)	Saves the current version of the scene. You can rename the current version by typing a new name into the field.
New Version (number)	Saves the current scene as a new version. You can name this new version by typing a name into the field.
Overwrite Existing Version	Lets you select an existing version of your scene from the list to overwrite it.
Description	Use this field to add or edit an existing description for the scene version you want to save.
Mark as Current	Lets you set this scene version as the current one. This version will be automatically selected as the default current version when the scene is selected in the **Database Selector** dialog box

Drawings (Harmony Server only)

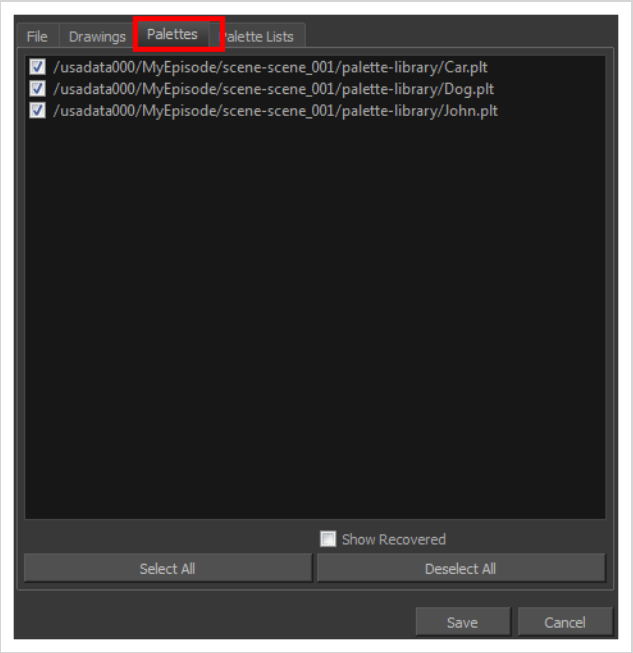
The Drawings tab lists the modified drawings.



Parameter	Description
Drawing list	Lets you select the modified drawings to save, and deselect the ones you do not want to save.
Select All	Selects all modified drawings in list.
Deselect All	Deselects all modified drawings in the list.

Palettes Tab

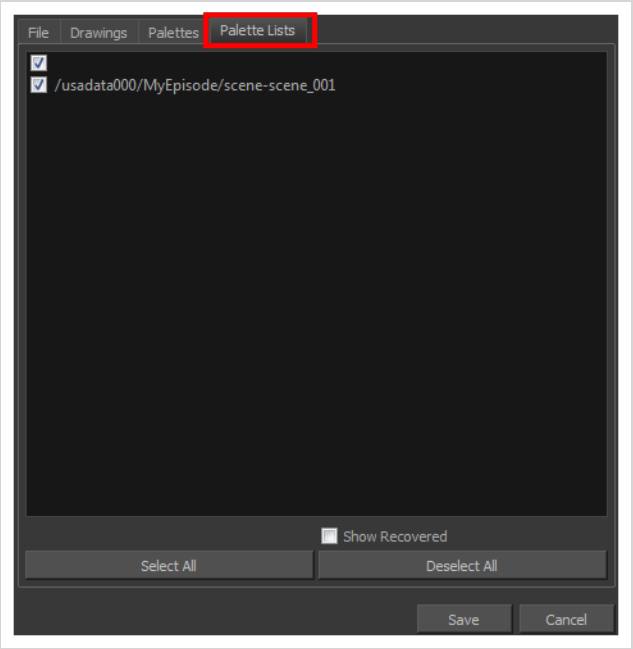
The Palette tab lists the modified colour palettes.



Parameter	Description
Colour Palette list	Lets you select the colour palette to save, and deselect the ones you do not want to save.
Show Recovered	Displays the recovered palettes in the list of modified palettes.
Select All	Selects all modified colour palettes in the palette list.
Deselect All	Deselects all modified colour palettes in the palette list.

Palette Lists Tab

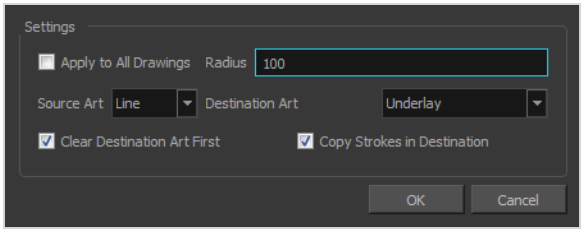
The Palette Lists tab lists all the modified colour palette lists.



Parameter	Description
Palette Lists	Lets you select the modified palette list to save, and deselect the ones you do not want to save.
Show Recovered	Displays the recovered palettes in the list of modified palettes.
Select All	Selects all modified palette lists in the list.
Deselect All	Deselects all modified palette lists in the list.

Auto-Matte Dialog Box

The Auto-Matte dialog box lets you generate a matte for a drawing.



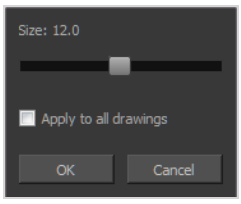
How to access the Auto Matte dialog box

1. In the Camera or Drawing view, select the drawing you want to create a matte for.
2. Do one of the following:
    - From the top menu, select **Drawing > Generate Auto-Matte**.
    - In the Camera or Drawing menu, select **Drawing > Generate Auto-Matte**.

Parameter	Description
Settings	
Apply to all Drawings	Creates a matte for all the drawings included in layer.
Radius	Lets you increase or decrease the radius value depending on the precision or roughness of your line. Use a lower value, the closer to your lines' contours the matte will be shaped. The higher the value, the looser the matte will be shaped.
Source Art	Lets you select the layer from which you want the matte created: **Line ArtColour Art**.
Destination Art	Lets you select the layer on which you want the matte to be created: **Line ArtColour Art**.
Clear Destination Art First	Deletes existing artwork on the destination layer before adding a matte to it.
Copy Strokes in Destination	Copies the contour of your lines as invisible lines in the matte drawing. This is useful if you need to reuse the lines later.

Close Gaps Dialog Box

The Close Gaps dialog box lets you close up drawing areas that not are closed. This may sometimes happen when painting. You can close small gaps in a drawing by creating small, invisible strokes between the two closest points to close the colour zone. You do not need to trace directly over the gap. You can draw it a few millimeters away. The two closest points automatically close the gap.



How to access the Close Gaps dialog box

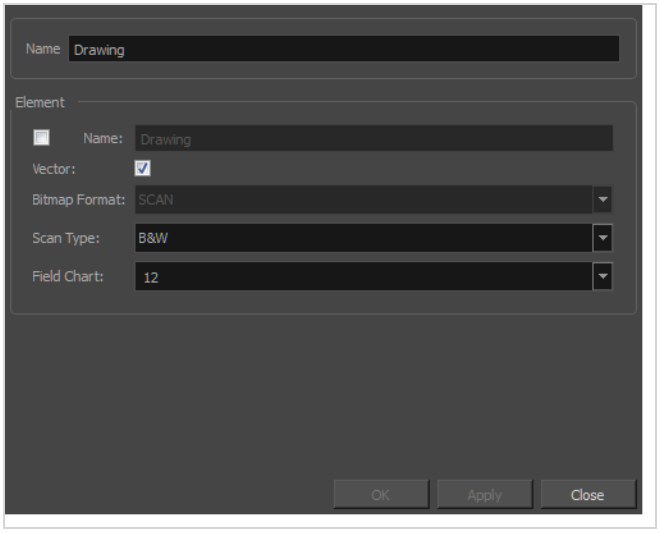
1. Select **View > Show > Show Strokes** or press K to see a preview of the result.
2. To flatten the strokes you draw, click the Auto-Flatten button in the Tool Properties view.
3. Select **Drawing > Clean Up > Close Gaps** or press Shift + F10 (Windows/Linux only).

   The Close Gaps dialog box opens.

Parameter	Description
Size	Lets you set the size of the gap you want to be closed.
Apply to all drawings	Closes all gaps in the drawing of the selected layer.

Column Properties Dialog Box

The Column Properties dialog box lets you add, delete or modify elements (drawing folders) in your scene.



How to access the Drawing dialog box

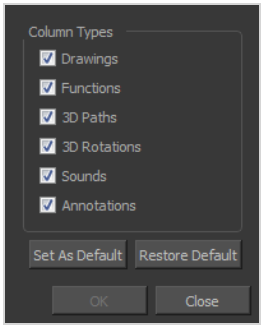
1. In the Xsheet view, double-click on a column name. Do not click on the drawing folder name that the column is linked to (this also appears in the column header just below the column name).

Parameter	**Description**
Name	Type in a new name in this field to create an element or to rename the selected element.
Element	
Name	Type in a new name in this field to create an element or to rename the selected element.
Vector	Select this option if the new element is a vector drawing or if you want to enable the parameters on the selected element in the Elements list.
Bitmap Format	Lets you select the file format of the bitmap layer.
Scan Type	If you're planning to scan elements with the Toon Boom Harmony Advanced Scan module, select the scan type from the list.

Field Chart	If you're importing traditional animation, select the size of the paper on which the animation was drawn.

Column Types Dialog Box

The Columns Types dialog box lets you show or hide columns in the exposure sheet.



How to access the Columns Types dialog box

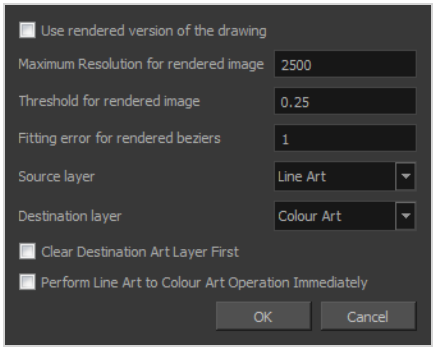
1. In the Xsheet view, select **View > Column Types Manager**.

   The Column Types dialog box opens.

Parameter	Description
Column Types	Lets you select the types of columns to display in the Xsheet view.
Save as Default	Makes these new settings the default ones used each time you start Harmony.
Restore Default	Returns the settings to their defaults.

Configure Line Art to Colour Art Dialog Box

The Configure Line Art to Colour Art dialog box lets you modify settings for the Line Art and Colour Art layers.



How to access the Configure Line Art to Colour Art dialog box

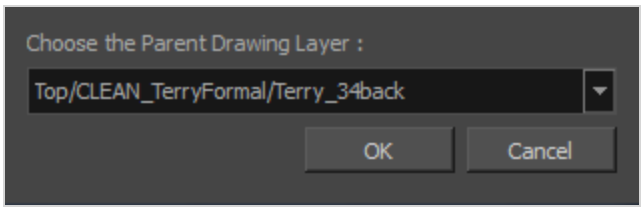
1. In the Tools toolbar, select the Select tool.
2. In the Tool Properties view, hold down the Shift key and click on the Creatre Colour Art from Line Art button.

Parameter	Description
Use rendered version of the drawing	Renders the drawing and vectorize it to calculate the position of the centreline that will produce the colour art stroke.
Maximum Resolution for rendered image	The size of the rendered image.
Threshold for rendered image	The value of grey processed to create the rendered vectorized arts.
Fitting error for rendered Beziers	This value represents how precise the fitting of the colour art zone in relation to the line art will be.
Source layer	Lets you select the layer (Line Art, Colour Art, Underlay or **Overlay**) you want the colour art to be created from.
Destination layer	Lets you select the layer (Line Art, Colour Art, Underlay or **Overlay**) you want the colour art to be created on.
Clear Destination Art Layer	Deletes the content before the colour art is added. This is useful when you

First	already have artwork on the destination layer.
Perform Line Art to Colour Art Operation Immediately	Performs the **Create Colour Art from Line Art** command when you click OK.

Convert to Synced Drawing Layer Dialog Box

The Sync Layer feature allows for drawings to be separated on different layers, but to have the same timing.



How to access the Convert to Synced Drawing Layer dialog box

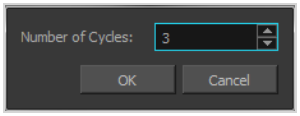
1. right-click on a drawing layer you would like to sync with another layer.
2. From the right-click menu, select **Sync Layers With**.

   In the Choose the Parent Drawing Layer drop-down list, with the exception of the selected layer, every layer in your scene is listed.
3. To sync a layer with your currently selected layer, from the drop-down list, select a parent drawing layer and click OK. The child layer immediately updates to the parent layer's timing.

Create Cycle Dialog Box

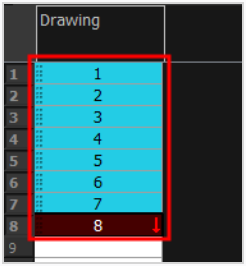
The Create Cycle dialog box lets you create cycles from a series of drawings and exposures.

When you create a drawing cycle, all the repeated drawings are linked to the same original files. When modify, repaint, or correct a drawing named "**1**" for example, all drawings named "**1**" are updated simultaneously. In order to modify a drawing independently from its other exposures, you must duplicate the drawing.



How to access the Create Cycle dialog box

1. In the Timeline or Xsheet view, select the cell range to loop.



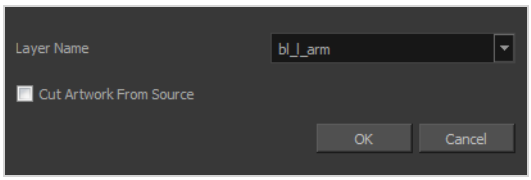
2. In the Timeline toolbar, click the Create Cycle button (you may have to customize the toolbar to display it).

   The Create Cycle dialog box opens.

Parameter	Description
Number of Cycles	Lets you specify the number of cycles, including the current selection.

Create Drawing from Drawing Selection Dialog Box

The Create Drawing from Drawing Selection dialog box lets you cut a part of a drawing and send it to a new or existing layer.



How to access the Create Drawing from Drawing Selection dialog box

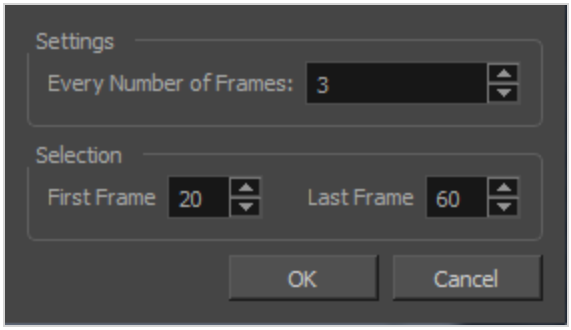
1. From the top menu, select **Edit > Create Drawing From Drawing Selection** or press F9 (Windows/Linux) or ⌘ + F9 (macOS).

   The Create Drawing From Drawing Selection dialog box opens.

Parameter	Description
Layer Name	Lets you enter a name for the layer using the naming convention you established.
Cut Artwork From Source	Lets you cut the selected artwork from the model.

Create Function Step On Dialog Box

The Create Function Step On dialog box lets you hold the same value over a selected number of frames for multiple parameters (pos x, scale y, etc.). This works well when you are animating drawings on 2s or 3s, for example, and you want to hold the same value for a function over those two or three frames.

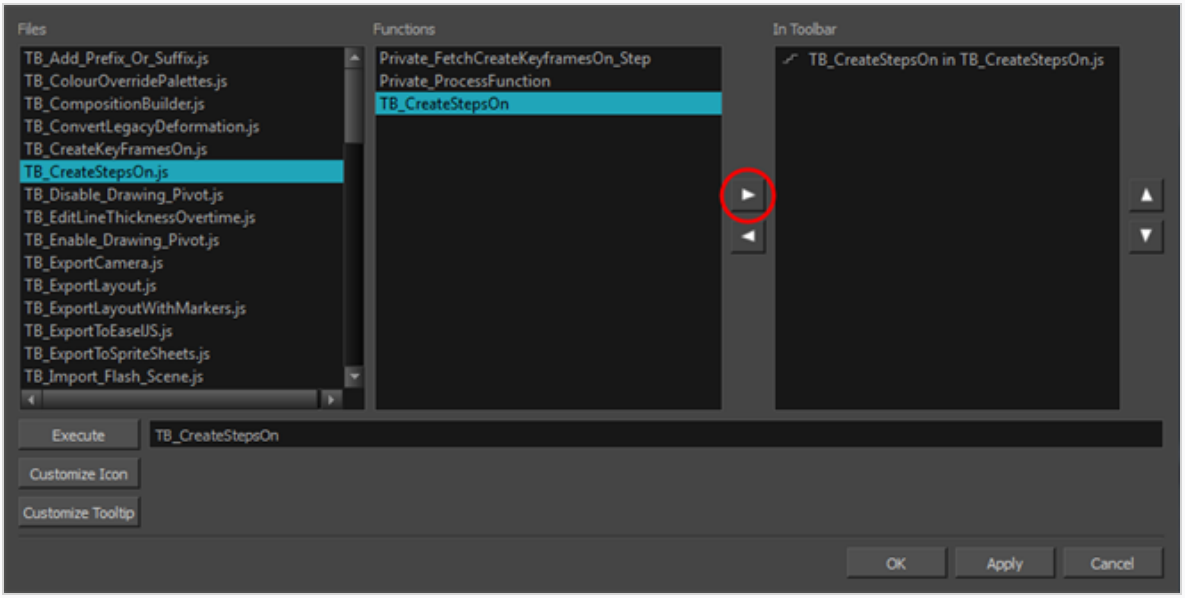


How to access the Create Function Step On dialog box

1. Add the Scripting toolbar to your interface:
    - Go to the top menu and select **Windows > Toolbars > Scripting**.
    - right-click on the empty space near the top of the interface and from the quick-access menu selecting **Scripting**.
    - right-click on the empty space near the top of a view and from the quick-access menu selecting **Scripting**.
2. In the Scripting toolbar, click on the Manage Scripts button to open the Scripts Manager window.
3. In the Scripts Manager, in the Files section, select the file **`TB_CreateStepsOn.js`**.

    The functions associated with that file appear in the Functions section.
4. In the Functions section, select **`TB_CreateStepsOn`**.

    The Add script to toolbar button becomes active.

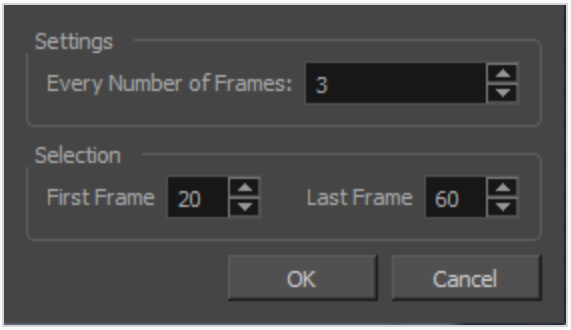


5. Click on the Add script to toolbar button.

   The TB_CreateStepsOn script button is added to the Scripting toolbar.

6. Click **Apply**.
7. Click **OK**.
8. In the Timeline view, select the layer whose parameter values you would like to hold.
9. In the Scripting toolbar, click on the TB_CreateStepsOn script button.

   The Create Function Step On dialog box appears.

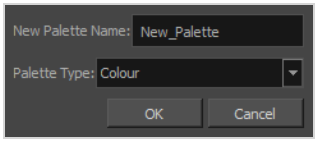


Parameter	Description
Settings	
Every Number of Frames	Enter in the number of frames you would like to hold your functions.

Selection	
First Frame	Enter in the frame number of where you would like the stepped holds to start. The playhead location determines the lowest value you can enter for the first frame. You need to move the playhead to frame one if you would like to set frame one as the lowest possible starting value.
Last Frame	Enter in the frame number of where you would like the stepped holds to stop.

Create Palette Dialog Box

The Create Palette dialog box allows you to create a colour palette for your scene. Palettes created with this dialog box are added to your scene's palette list, and stored in your scene's **`palette-library`** subdirectory.



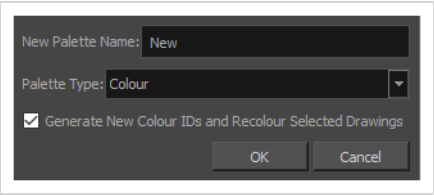
How to access the Create Palette dialog box

1. Do one of the following:
    - In the Colour View, click the New Palette + button over the palette list.
    - From the Colour view menu, select **Palettes > New**

Parameter	Description
New Palette Name	Allows you to type in the name of the palette to create.
Palette Type	Allows you choose the palette type to create: • **Colour:** A colour palette can contain colours, gradients and bitmap textures. • **Pencil Texture:** A pencil texture palette can contain textures to apply as transparency filters to pencil lines, in combination to their line colour, to create various styles of pencil lines.

Create Palette from Selection Dialog Box

The Create Palette from Selection dialog box allows you to create a palette that contains all the colours used by all the drawings in the selected drawing layers.



This can be useful, for example, if the colour design for a character model or rig, a background or another kind of asset was made using several different palettes, and you need to consolidate all of the colours used by the asset into its own dedicated palette.

NOTES

- The Create Palette from Selection dialog uses the colours in all the drawings in the selected layers, even drawings that are not exposed.
- For tasks related to this dialog box, see the User Guide.

How to access the Create Palette from Selection dialog box

1. In the Timeline, Xsheet, Camera or Node view, select one or more drawing layers.
2. In the top-left corner of the Colour view, open the View Menu and select **Palettes > New Palette from Selected Drawings**.

Parameter	Description
New Palette Name	Allows you to type in the name of the palette to create.
Palette Type	Allows you choose one of the type of palette to create: • **Colour:** Creates a palette containing all the colours, gradients and bitmap textures used in the selected drawing layers. • **Pencil Texture:** Creates a palette containing all the pencil textures used in the selected drawing layers.
Generate New Colour IDs and Recolour Selected Drawings	By default, the Create Palette from Selection dialog box generates the palette by copying the colour swatches used in the selected drawings from their original palette into a new palette, along with their colour ID. This means that the colour swatches in the generated palette will use the same colour IDs as the ones in the original palettes.

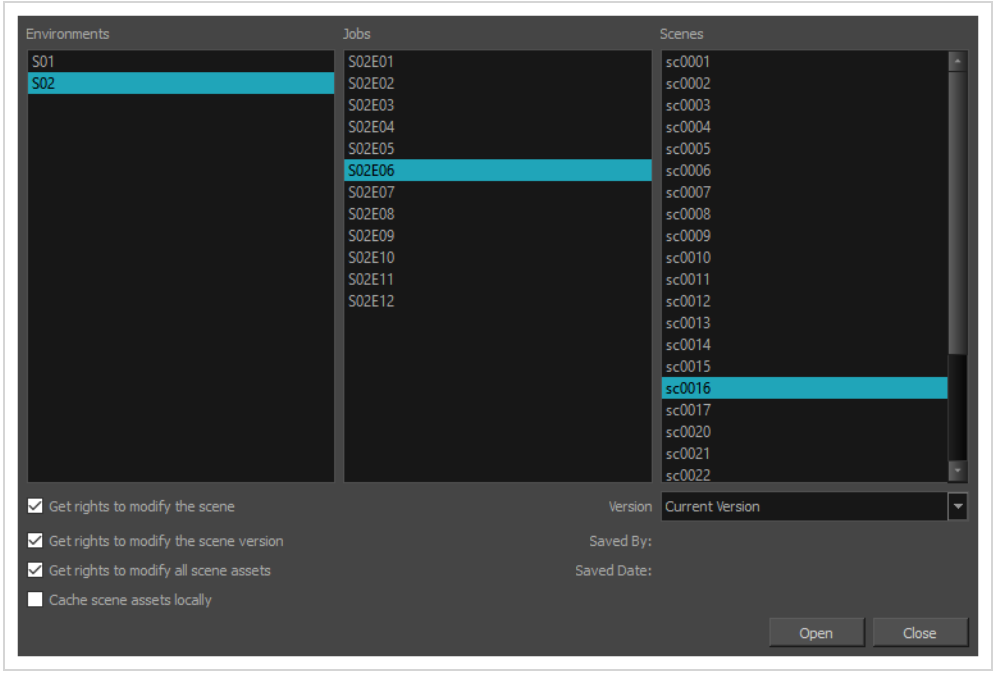
	If you select this option, Harmony will generate a palette with new colour IDs, and will replace the old colour IDs in your artwork with the new ones. This will usually have no visible effect, and will prevent the swatches in the new palette from having the same colour IDs as the swatches you originally used to colour your artwor. When two palettes have a swatch with the same colour ID, Harmony uses the swatch from the top-most palette in the palette list. **NOTE** If your artwork uses Colour-Override effects, the colour IDs used by these Colour-Override will not be replaced with the new colour IDs, making the Colour-Override ineffective unless you reconfigure them manually. Hence, you should avoid using this parameter if you are consolidating the palette of a character rig that uses a lot of Colour-Overrides.

Database Selector Dialog Box

The Database Selector dialog box lets you connect to your studio's central database when working on Harmony Server.

NOTE

When you connect to the database, you cannot create new scenes directly from Harmony. The available scenes must have been already created using the Control Center module.



How to access the Database Selector dialog box

1. Start Harmony
2. In the log-in dialog, select **Connect to Database**.
3. In the **User Name** field, type in your Harmony Server username.
4. Click on **OK**.

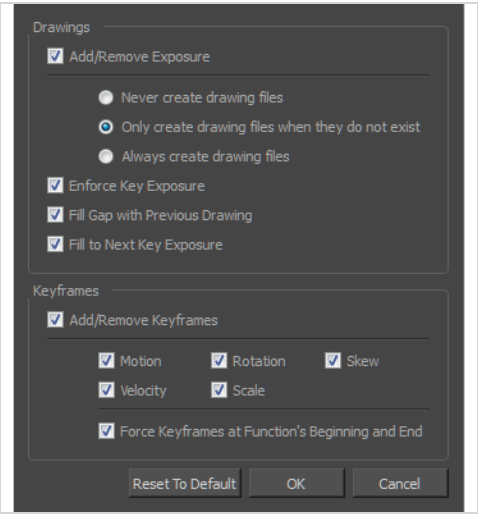
   The Database Selector dialog box opens.

Parameter	Description
Environments	Lets you select the scene's environment (project, movie).

Jobs	Lets you select the scene's job (episode, sequence).
Scenes	Lets you select the scene.
Get rights to modify the scene	Allows you to modify the selected version of the scene as well as to manage and overwrite other versions. Other users will not be able to open a different version of the scene until you close the scene.
Get rights to modify the scene version	Allows you to modify the currently selected scene version only. Unless the **Get rights to modify the scene** option is also checked, you will not be able to change other versions of the scene. This allows other users to modify different versions of the scene while you are working on the selected version.
Get rights to modify all scene assets	Automatically gets the rights to modify all of the scene's assets, locking other users from making changes to them until you close the scene. This means that you will have the rights to modify all the scene's versions, drawings, palettes, its palette list, but not its library folder. If this option is unchecked, drawings and palettes will be locked unless you unlock them manually. This can allow another user to work on the scene's drawings and palettes in Paint while you are working on the scene's timing or staging in Harmony.
Cache scene assets locally	Downloads the scene's drawings to your computer before opening the scene. Harmony will then load the drawings from your computer during the session, instead of loading them from their original location over the network. This can significantly increase performance, especially with resource-heavy scenes. When you save your scene, the updated drawings will be uploaded automatically to the database, so you do not have to re-upload them manually. **NOTE** If this option is checked, it may take a while to download all of the scene's assets when opening a particularly heavy scene.
Version	If you saved different versions of a scene, this lets you select one to open.

Edit Default Paste Preset Dialog Box

The Edit Default Paste Preset dialog box lets you modify settings for the keyframe and exposure paste presets, as well as setting the defaults.



How to access the Edit Default Paste Preset dialog box

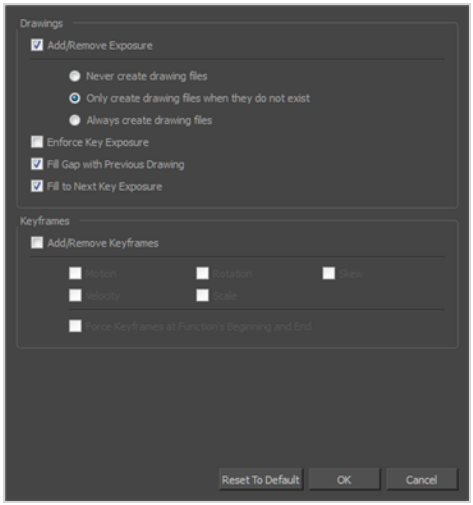
1. From the Timeline menu, select **Edit > Modify Paste Presets > All** or **Key Frame** or **Exposure**.

Parameter	Description
Drawings	
Add/Remove Exposure	**Never create drawing files**: When adding exposures to a drawing layer, drawing files will not be created.
	Only create drawing files when they do not exist: When adding exposures to a drawing layer, new drawings will be created only when drawings with the same name do not already exist in the destination.
	Always create drawing files: When adding exposures to a drawing layer, new drawings will always be created. If drawing files with the same name already exist, Harmony will create a new name for the drawing.
Enforce Key Exposure	If there are key exposures that exist on copied drawings, they are preserved when pasting. No key exposures are added. This is the default behavior when pasting.

Fill Gap with Previous Drawing	Fills selected area in the Xsheet or Timeline view with the previous drawing.
Fill to Next Key Exposure	Fills selected area till the next key exposure.
Keyframes	
Add/Remove Keyframes	**Motion:** Copies the properties of the selected motion keyframe to the new frame.
	Velocity: Copies the properties of the selected velocity keyframe to the new frame.
	Rotation: Copies the properties of the selected rotation keyframe to the new frame.
	Scale: Copies the properties of the selected scale keyframe to the new frame.
	Skew: Copies the properties of the selected skew keyframe to the new frame.
	Force Keyframes at Function's Beginning and End: Adds a keyframe to the beginning and end of the pasted function, reproducing the source function.

Edit Exposure Paste Preset Dialog Box

The Edit Exposure Paste Preset dialog box lets you reuse key exposures as you animate.



How to access the Edit Exposure Paste Preset dialog box

1. From the Timeline view menu, select **Edit > Modify Paste Presets > Exposure**.

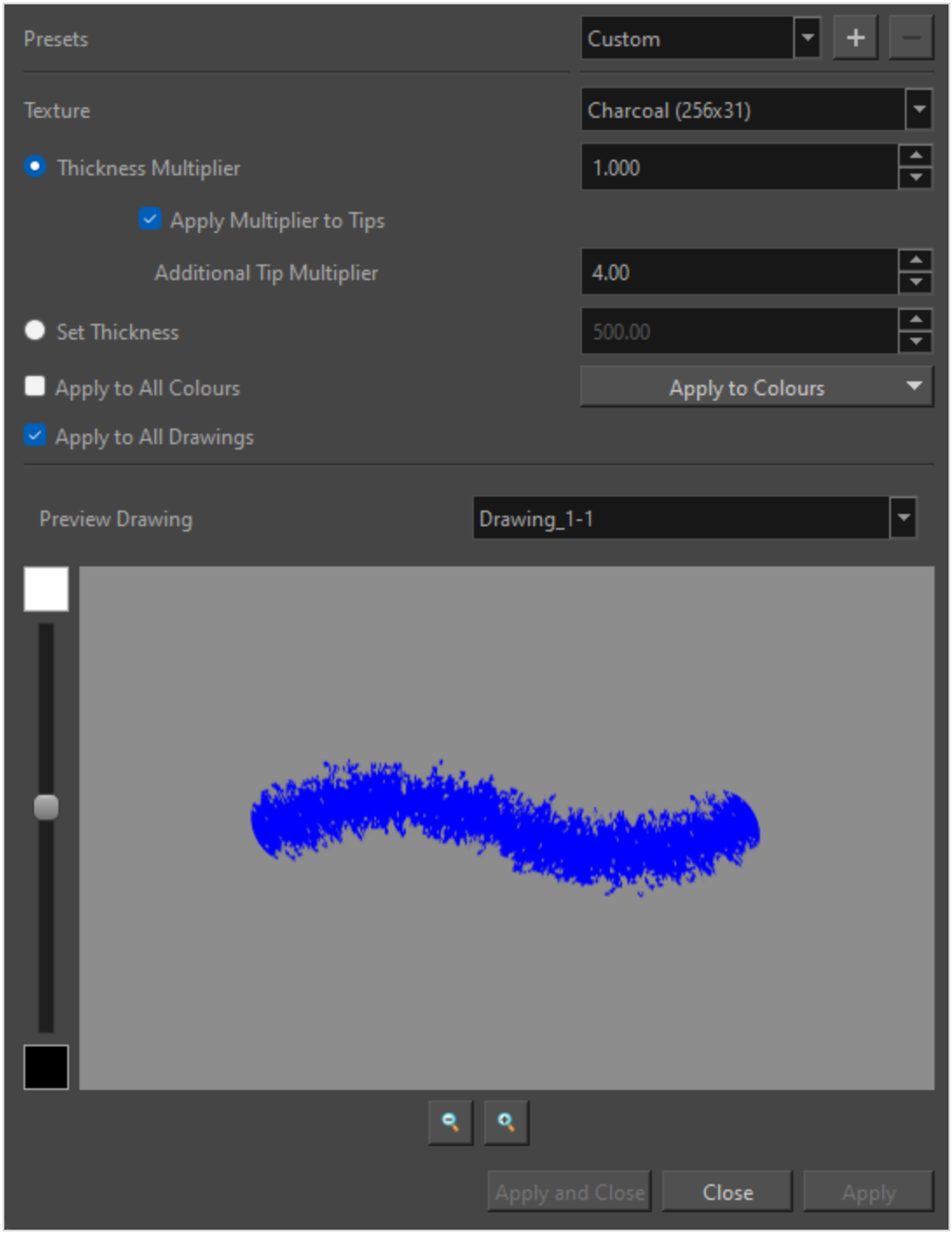
   The Edit Exposure Paste Preset dialog box opens.

Parameter	Description
Drawings	
Add/Remove Exposure	**Never create drawing files**: When adding exposures to a drawing layer, drawing files will not be created.
	Only create drawing files when do they do not exist: When adding exposures to a drawing layer, new drawings will be created only when drawings with the same name do not already exist in the destination.
	Always create drawing files: When adding exposures to a drawing layer, new drawings will always be created. If drawing files with the same name already exist, Harmony will create a new name for the drawing.
Enforce Key Exposure	Creates a key exposure on the same drawing.
Fill Gap with Previous Drawing	Fills selected area in the Xsheet or Timeline view with the previous drawing.

Fill to Next Key Exposure	Fills selected area till the next key exposure.
Keyframes	
Add/Remove Keyframes	**Motion**: Copies the properties of the selected motion keyframe to the new frame.
	Velocity: Copies the properties of the selected velocity keyframe to the new frame.
	Rotation: Copies the properties of the selected rotation keyframe to the new frame.
	Scale: Copies the properties of the selected scale keyframe to the new frame.
	Skew: Copies the properties of the selected skew keyframe to the new frame.
	Force Keyframes at Function's Beginning and End: Adds a keyframe to the beginning and end of the pasted function, reproducing the source function.
Reset to Default	Return all values to their defaults.

Edit Pencil Lines

The Edit Pencil Lines Dialog Box lets you edit the pencil lines' properties such as pencil texture and line thickness.



Icon	Parameter	Description
	Presets	Allows you to add and delete presets. This can be done using the Add Preset and Delete Preset buttons on the right of the list. The default preset name is Custom. Presets are saved in a file in the user preferences. **NOTE** When modifying a saved preset, the name will revert back to Custom. Any changes in values made will in turn be treated as a new preset without altering the original.
	Texture	Allows you to select a texture for the pencil line. Selecting **<Remove Texture>** will remove any existing texture from the line before alterations. Selecting **<Keep Texture As Is>** will maintain the existing texture and allow it to be altered.
	Thickness Multiplier	Will allow you to thicken or thin a line by a specified value.
	Apply Multiplier to Tips	Check **Apply Multiplier to Tips** below to apply the multiplication to the pencil line tips.
	Additional Tip Multiplier	Apply an additional multiplier to extend the line tips. This will affect the quality of the line's head and tail. A lower number will create a flatter, more abrupt head and tail. A higher value will create a rounder

Icon	Parameter	Description
		and tapered appearance.
	Set Thickness	Will convert the pencil line thickness to the specified numerical value. **NOTE** Must choose to use either the **Thickness Multiplier** or the **Set Thickness** option. They cannot be used simultaneously.
	Apply to All Colours	When checked, modifications are made to all pencil lines, regardless of their colours. This option will be beneficial if there are multiple coloured lines being stylized in the same way. **NOTE** This checkbox will not be available if only one pencil colour is selected.
	Apply to Colours	This dropdown menu will allow you to select one or more coloured lines to be affected. This is useful when you want one or more specific coloured lines to be influenced but not all. **NOTE** This dropdown will not be available if only one pencil colour is selected.
	Apply to All Drawings	When checked, the pencil style changes will apply to all selected

Icon	Parameter	Description
		pencil lines on all layers. When unchecked, the pencil style changes will only apply to the pencil lines of the currently selected layer.
	Preview Drawings	The dropdown field is enabled when multiple drawings are selected. The dropdown will list all of the selected drawing layers. The drawing you select will appear in the preview window below.
	Slider	Allows you to adjust background colour. The background colour can be shifted between black and white. This allows for greater visibility of certain colours.
	Zoom In	Will zoom in to the drawing being previewed. **TIP** You can zoom in using the mouse wheel.
	Zoom Out	Will zoom out of the drawing being previewed.

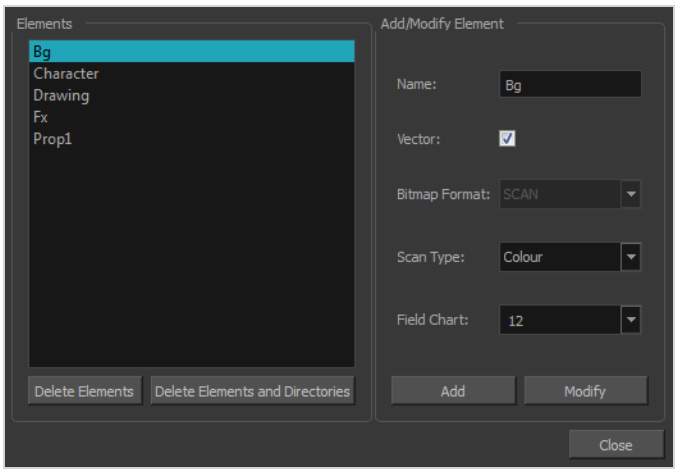
Icon	Parameter	Description
		TIP You can zoom out using the mouse wheel.

NOTE

You can pan your drawing by clicking and dragging anywhere within the preview area. This ability is most beneficial when the drawing selected is larger than the preview area.

Element Manager Dialog Box

The Element Manager window lets you Opens the Element Manager window where you can add, delete or modify elements (drawing folders) in your scene. If you have drawing folders that are not linked to a column in your scene, use the Element Manager to delete them if needed. See xref Reference > Windows > Element Manager.



How to access the Element Manager window

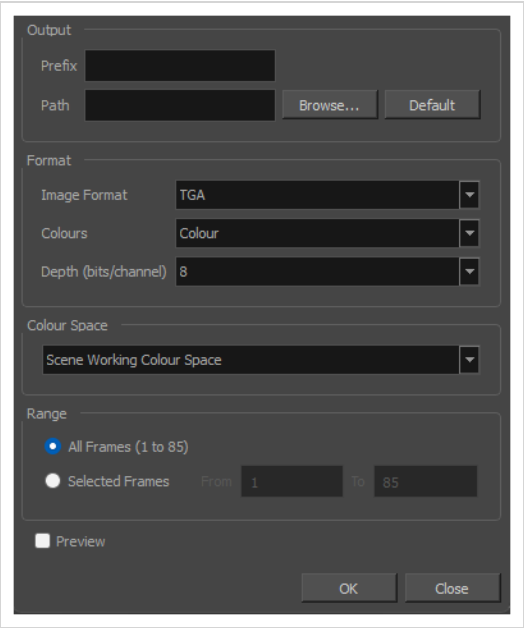
1. From the top menu, select **Scene > Element Manager**.

Parameter	Description
Elements	
Delete Elements	Deletes the selected elements.
Delete Elements and Directories	Deletes the selected layer and its directories (drawing folder).
Add/Modify Element	
Name	Type in a new name in this field to create an element or to rename the selected element.
Vector	Select this option if the new element is a vector drawing or if you want to enable the parameters on the selected element in the Elements list.

Bitmap Format	Lets you select the file format of the bitmap layer.
Scan Type	If you're planning to scan elements with the Toon Boom Harmony Advanced Scan module, select the scan type from the list.
Field Chart	If you're importing traditional animation, select the size of the paper on which the animation was drawn.
Add	Creates a new element with the current parameters entered in the **Add/Modify Element** section.
Modify	Applies the parameter changes made to the selected element.

Export Images Dialog Box

The Export Images dialog box allows you to export your scene as a sequence of image files, with one image for each frame.



How to access the Export Images dialog box

1. In the top menu, select **File > Export > Images**.

Parameter	Description
Output	
Prefix	The prefix for the file name of each exported image file. Each file name will start with the value in this field, followed by the number of the frame.
Path	The directory in which to export the rendered frames. You can click **Browse...** to open a dialog allowing you to navigate your file system and select a directory, or Default to set this to the **`frames`** sub-directory of your scene's directory.
Format	
File Type	The image format in which the exported frames will be saved. The following formats are supported:

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Description</th></tr>
<tr><td>TGA</td><td>Truevision TGA/TARGA (*.tga)
A standard image format with lossless compression and support for transparency.
TGA files use more disk space than PNG files, but rendering in TGA is faster.</td></tr>
<tr><td>SGI</td><td>Silicon Graphics Image (*.sgi)
A highly capable format with lossless compression as well as support for double precision and transparency.</td></tr>
<tr><td>PSD</td><td>Photoshop Document (*.psd)
An Adobe Photoshop proprietary format used for image editing.
PSD files exported by Harmony contain a single background layer with the rasterized image.
NOTE
PSD files exported from Harmony are tagged with their colour space information in their metadata, except for PSD files exported in greyscale.</td></tr>
<tr><td>YUV</td><td>Y'UV frame (*.yuv)
A legacy format optimized for NTSC television. The image information is encoded in the Y'UV color space, which means Luma (Y') and Chrominance (UV).
NOTE
YUV images must be exported in NTSC resolution (720 x 540), or they will not be legible.</td></tr>
<tr><td>PAL</td><td>PAL frame (*.pal)
A legacy format optimized for PAL television.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Description</th></tr>
<tr><td></td><td>
NOTE
PAL images must be exported in PAL resolution (768 x 576), or they will not be legible.</td></tr>
<tr><td>SCAN</td><td>Toon Boom Scan Files (*.scan)
A Toon Boom proprietary format used by Scan to store scanned image information along with its registration (peg), resolution and field chart metadata. SCAN files are in gresycale.</td></tr>
<tr><td>PNG</td><td>Portable Network Graphics (*.png)
A highly portable image format with high lossless compression as well as support for transparency and double-precision. PNG is typically used for Web applications, graphical user interfaces and image sharing.
Rendering in PNG takes more time than rendering in TGA or in uncompressed image formats, but saves a lot of disk space.
NOTE
PNG files exported from Harmony are tagged with their colour space information in their metadata.</td></tr>
<tr><td>JPG</td><td>Jpeg (*.jpg)
A very compact image format with lossy compression. It is typically used for Web pages and photo sharing. Because it does not preserve image quality, it is recommended to never render in Jpeg format unless you are exporting stills for a Web page or are making quick render tests.</td></tr>
<tr><td>BMP</td><td>Bitmap (*.bmp)
A standard uncompressed image format commonly used on Microsoft operating systems.</td></tr>
<tr><td>OPT</td><td>Toon Boom Optimized image (*.opt)
A legacy Toon Boom proprietary format that stores bitmap image data with lossless compression. It supports transparency.</td></tr>
<tr><td>VAR</td><td>Toon Boom Variable Header image (*.var)</td></tr>
</table>
</td></tr>
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<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Description</th></tr>
<tr><td></td><td>A legacy Toon Boom proprietary format that stores greyscale bitmap image data with lossless compression.</td></tr>
<tr><td>TIF</td><td>Tagged Image File Format (*.tiff)

An image format with many compression and encoding settings. It is often used for image exchange in visual arts and publishing.

TIFF images exported by Harmony are uncompressed, encoded on a per-pixel (interleaved) basis in PC byte order.</td></tr>
<tr><td>DPX</td><td>Digital Picture Exchange (*.dpx)

A professional photo format that supports various different approaches to storing colour information, which can be used for storing, exchanging and editing raw information recorded by cameras. It is commonly used in film production.</td></tr>
<tr><td>EXR</td><td>OpenEXR (*.exr)

A highly capable deep image format. Each pixel in an EXR file is exported with its Z-depth information. Additionally, if a pixel is semi-transparent, the color and depth information of pixels further back is stored along with it. If your scene has multiplane or 3D elements, this format can be used for compositing your animation with other graphical elements in 3D animation software.

NOTES
OpenEXR files exported from Harmony are tagged with the white point and primaries coordinates for their colour space.
OpenEXR files are always exported by Harmony always have 1 line Zip compression if they contain a 3D image.</td></tr>
<tr><td>PDF</td><td>Portable Document File (*.pdf)

Typically, PDF files are used to store, archive, share and print documents. However, Harmony uses the PDF format for its capability to store bitmap images and vector graphics.

If the write node is connected to a vector drawing layer or to a vector composite, the exported PDF files will contain the image as a vector graphic. It will ignore bitmap layers, effects and deformations. Otherwise, the PDF files will contain the rendered image as a bitmap.</td></tr>
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</td></tr>
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<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Description</th></tr>
<tr><td>DTEX</td><td>Deep Texture (*.dtex)

A commonly used deep image format. Each pixel in an DTEX file is exported with its Z-depth information. Additionally, if a pixel is semi-transparent, the color and depth information of pixels further back is stored along with it. If your scene has multiplane or 3D elements, this format can be used for compositing your animation with other graphical elements in 3D animation software.

NOTE
Exporting in Deep Texture requires RenderMan to be installed on the machine and the path to RenderMan properly configured in Harmony. For more information, see the Setting 3D Renderer Paths topic of the User Guide.</td></tr>
</table>
</td></tr>
<tr><td>Colours</td><td>Depending on the selected file type, you can select one of the following colour modes:

• Colour: Exports images in three channels: red, green and blue.
• Colour + Alpha: Exports images in four channels: red, green, blue and alpha.
• Greyscale: Exports images in a single channel, grey.

NOTE
Only some file types support Colour + Alpha and Greyscale.</td></tr>
<tr><td>Depth</td><td>Depending on the selected file type, you can select one of the following colour depth:

• 8-bits / channel: The standard colour depth. Each channel can have a value ranging from 0 and 255. Displays typically only support this much precision.
• 16-bits /channel: Also known as double-precision. Each channel can have a value ranging from 0 to 65,536. Although displays typically can’t display at this precision, this allows compositing several images with effects and feathering without causing any dithering.</td></tr>
<tr><td>Colour Space</td><td>The colour space in which to render your frames. The rendered frames will be converted from your scene’s working colour space to the selected colour space.

The following colour spaces are supported in Harmony:

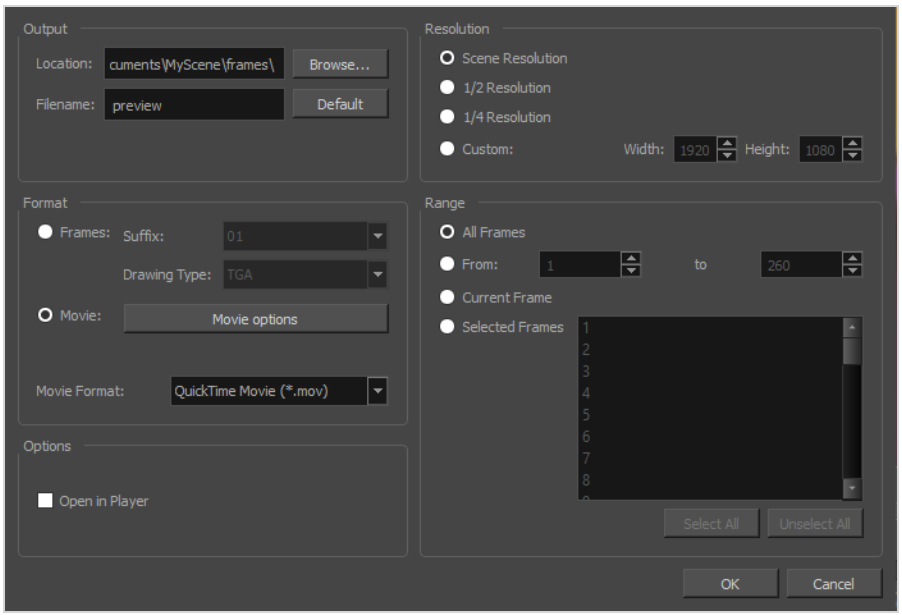
• Scene Working Colour Space: The same colour space as the one selected in the</td></tr>
</table>

Parameter	Description
	Colour Space tab of the **Scene Settings** dialog. • **ACES2065-1**: An ACES linear colour space that uses the AP0 colour primaries and is intended for image file interchange. • **ACEScg**: An ACES linear colour space that uses the AP1 colour primaries and is intended for CGI rendering and compositing. • **Linear Rec.709 (sRGB):** The colour space that uses the same primaries and white point as sRGB and Rec. 709, but with no gamma transfer curve applied to the colour values. • **Linear Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Linear P3-D65:** The same as Display P3, except with no gamma transfer curve. This colour space is useful for compositing intermediary images that are meant to be rendered in Display P3. • **Display P3:** A colour space commonly used for digital projection. It has the same primaries as DCI-P3, the same white point as sRGB and the same gamma transfer curve as sRGB. • **Rec. 709:** The colour space used for HDTV. It has the same primaries and white point as sRGB, but has a different gamma transfer curve. • **Rec. 709 2.4:** The same colour space as Rec. 709 or sRGB, except with a gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 709. • **Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Rec. 2020 2.4:** The same colour space as Rec. 2020, except with a simple gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 2020. • **sRGB:** A colour space typically used for standard computer monitors. It has the same primaries and white point as Rec. 709, but has a different gamma transfer curve.
Range	

Parameter	Description
All Frames	Exports all the frames in your scene.
Selected Frames	Allows you to specify the frame range to export using the two input fields to the right. The first input field is for specifying the first frame to export, and the second one is for specifying the last frame to export. All the frames in-between, including the ones specified, will be exported.
Preview	If checked, the rendered frames will be opened in the Play application.
OK	Renders the frames with the selected settings and closes the dialog box.
Cancel	Closes the dialog box without rendering frames.

Export OpenGL Frames Dialog Box

The Export OpenGL Frames dialog box allows you to export your scene as a sequence of images as they appear in the OpenGL View mode of the Camera view. This means they are exported without effects, antialiasing and proper compositing. This allows you to quickly preview the animation in your scene without having to wait through the full rendering process.



How to access the Export to OpenGL Frames dialog box

1. In the top menu, select **File > Export > OpenGL Frames**.

Parameter	Description
Output	
Location	The directory in which to export the frames or movie file. You can click **Browse...** to open a dialog allowing you to navigate your file system and select a directory.
Filename	The name of the file to export. If you are exporting frames, the file name of each frame will start with this value, followed by the number of the frame.
Format	

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Image Sequence</td><td>Select this option to create an image sequence.</td></tr>
<tr><td>Movie</td><td>Exports the frames into a movie file.</td></tr>
<tr><td>Frames</td><td>Exports each frame as an individual image file.</td></tr>
<tr><td>Suffix</td><td>Allows you to select the number of digits in the number used to identify each frame.</td></tr>
<tr><td>Drawing Type</td><td>
<table>
<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td>TGA</td><td>Full colour</td><td rowspan="4">Truevision TGA/TARGA (*.tga)
A standard image format with lossless compression and support for transparency.
TGA files use more disk space than PNG files, but rendering in TGA is faster.</td></tr>
<tr><td>TGA1</td><td>Greyscale</td></tr>
<tr><td>TGA3</td><td>Full colour</td></tr>
<tr><td>TGA4</td><td>Full colour with transparency</td></tr>
<tr><td>SGI</td><td>Full colour / 8 bits per channel</td><td rowspan="6">Silicon Graphics Image (*.sgi)
A highly capable format with lossless compression as well as support for double precision and transparency.</td></tr>
<tr><td>SGI1</td><td>Greyscale / 8 bits per channel</td></tr>
<tr><td>SGI3</td><td>Full colour / 8 bits per channel</td></tr>
<tr><td>SGI4</td><td>Full colour with transparency / 8 bits per channel</td></tr>
<tr><td>SGIDP</td><td>Full colour / 16 bits per channel</td></tr>
<tr><td>SGIDP3</td><td>Full colour / 16 bits per channel</td></tr>
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<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td>SGIDP4</td><td>Full colour with transparency / 16 bits per channel</td><td></td></tr>
<tr><td>PSD</td><td>Full colour / 8 bits per channel</td><td rowspan="8">Photoshop Document (*.psd)

An Adobe Photoshop proprietary format used for image editing.

PSD files exported by Harmony contain a single background layer with the rasterized image.

NOTE
PSD files exported from Harmony are tagged with their colour space information in their metadata, except for PSD files exported in greyscale.</td></tr>
<tr><td>PSD1</td><td>Greyscale / 8 bits per channel</td></tr>
<tr><td>PSD3</td><td>Full colour / 8 bits per channel</td></tr>
<tr><td>PSD4</td><td>Full colour with transparency / 8 bits per channel</td></tr>
<tr><td>PSDDP</td><td>Full colour / 16 bits per channel</td></tr>
<tr><td>PSDDP1</td><td>Greyscale / 16 bits per channel</td></tr>
<tr><td>PSDDP3</td><td>Full colour / 16 bits per channel</td></tr>
<tr><td>PSDDP4</td><td>Full colour with transparency / 16 bits per channel</td></tr>
<tr><td colspan="2">YUV</td><td>Y'UV frame (*.yuv)

A legacy format optimized for NTSC television. The image information is encoded in the Y'UV color space, which means Luma (Y') and Chrominance (UV).</td></tr>
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<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td colspan="2"></td><td>NOTE
YUV images must be exported in NTSC resolution (720 x 540), or they will not be legible.</td></tr>
<tr><td colspan="2">PAL</td><td>PAL frame (*.pal)
A legacy format optimized for PAL television.
NOTE
PAL images must be exported in PAL resolution (768 x 576), or they will not be legible.</td></tr>
<tr><td colspan="2">SCAN</td><td>Toon Boom Scan Files (*.scan)
A Toon Boom proprietary format used by Scan to store scanned image information along with its registration (peg), resolution and field chart metadata. SCAN files are in gresycale.</td></tr>
<tr><td>PNG</td><td>Full colour / 8 bits per channel</td><td>Portable Network Graphics (*.png)
A highly portable image format with high lossless compression as well as support for transparency and double-precision. PNG is typically used for Web applications, graphical user interfaces and image sharing.
Rendering in PNG takes more time than rendering in TGA or in uncompressed image formats, but saves a lot of disk space.</td></tr>
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<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td></td><td></td><td rowspan="5">NOTE
PNG files exported from Harmony are tagged with their colour space information in their metadata.</td></tr>
<tr><td>PNG4</td><td>Full colour with transparency / 8 bits per channel</td></tr>
<tr><td>PNGDP</td><td>Full colour / 16 bits per channel</td></tr>
<tr><td>PNGDP3</td><td>Full colour / 16 bits per channel</td></tr>
<tr><td>PNGDP4</td><td>Full colour with transparency / 16 bits per channel</td></tr>
<tr><td colspan="2">JPG</td><td>Jpeg (*.jpg)
A very compact image format with lossy compression. It is typically used for Web pages and photo sharing. Because it does not preserve image quality, it is recommended to never render in Jpeg format unless you are exporting stills for a Web page or are making quick render tests.</td></tr>
<tr><td>BMP</td><td>Full colour</td><td rowspan="2">Bitmap (*.bmp)
A standard uncompressed image format commonly used on Microsoft operating systems.</td></tr>
<tr><td>BMP4</td><td>Full colour with transparency</td></tr>
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<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td>OPT</td><td>Full colour</td><td rowspan="4">Toon Boom Optimized image (*.opt)
A legacy Toon Boom proprietary format that stores bitmap image data with lossless compression. It supports transparency.</td></tr>
<tr><td>OPT1</td><td>Greyscale</td></tr>
<tr><td>OPT3</td><td>Full colour</td></tr>
<tr><td>OPT4</td><td>Full colour with transparency</td></tr>
<tr><td colspan="2">VAR</td><td>Toon Boom Variable Header image (*.var)
A legacy Toon Boom proprietary format that stores greyscale bitmap image data with lossless compression.</td></tr>
<tr><td colspan="2">TIF</td><td>Tagged Image File Format (*.tiff)
An image format with many compression and encoding settings. It is often used for image exchange in visual arts and publishing.
TIFF images exported by Harmony are uncompressed, encoded on a per-pixel (interleaved) basis in PC byte order.</td></tr>
<tr><td>DPX</td><td>8 bits per channel / Full color / RGB channel order</td><td rowspan="4">Digital Picture Exchange (*.dpx)
A professional photo format that supports various different approaches to storing colour information, which can be used for storing, exchanging and editing raw information recorded by cameras. It is commonly used in film production.</td></tr>
<tr><td>DPX3_8</td><td>8 bits per channel / Full color / RGB channel order</td></tr>
<tr><td>DPX3_10</td><td>10 bits per channel / Full color / RGB channel order</td></tr>
<tr><td>DPX3_12</td><td>12 bits per channel / Full color / RGB</td></tr>
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<table>
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<tr><td></td><td>
<table>
<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td></td><td>channel order</td><td rowspan="5"></td></tr>
<tr><td>DPX3_16</td><td>16 bits per channel / Full color / RGB channel order</td></tr>
<tr><td>DPX3_10_ INVERTED_ CHANNELS</td><td>10 bits per channel / Full color / BGR channel order</td></tr>
<tr><td>DPX3_12_ INVERTED_ CHANNELS</td><td>12 bits per channel / Full color / BGR channel order</td></tr>
<tr><td>DPX3_16_ INVERTED_ CHANNELS</td><td>16 bits per channel / Full color / BGR channel order</td></tr>
<tr><td>EXR</td><td>16 lines Zip compression</td><td>OpenEXR (*.exr)

A highly capable deep image format. Each pixel in an EXR file is exported with its Z-depth information. Additionally, if a pixel is semi-transparent, the color and depth information of pixels further back is stored along with it. If your scene has multiplane or 3D elements, this format can be used for compositing your animation with other graphical elements in 3D animation software.</td></tr>
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<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td></td><td></td><td rowspan="2">NOTES
OpenEXR files exported from Harmony are tagged with the white point and primaries coordinates for their colour space.
OpenEXR files are always exported by Harmony always have 1 line Zip compression if they contain a 3D image.</td></tr>
<tr><td>EXR_ZIP_1LINE</td><td>1 line Zip compression</td></tr>
<tr><td colspan="2">PDF</td><td>Portable Document File (*.pdf)
Typically, PDF files are used to store, archive, share and print documents. However, Harmony uses the PDF format for its capability to store bitmap images and vector graphics.
If the write node is connected to a vector drawing layer or to a vector composite, the exported PDF files will contain the image as a vector graphic. It will ignore bitmap layers, effects and deformations. Otherwise, the PDF files will contain the rendered image as a bitmap.</td></tr>
<tr><td colspan="2">DTEX</td><td>Deep Texture (*.dtex)
A commonly used deep image format. Each pixel in an DTEX file is exported with its Z-depth information. Additionally, if a pixel is semi-transparent, the color and depth information of pixels further back is stored along with it. If your scene has multiplane or 3D elements, this format can be used for compositing your animation with other graphical</td></tr>
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<table>
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<tr><td></td><td>
<table>
<tr><th>Format</th><th>Specification</th><th>Description</th></tr>
<tr><td></td><td></td><td>elements in 3D animation software.

NOTE
Exporting in Deep Texture requires RenderMan to be installed on the machine and the path to RenderMan properly configured in Harmony. For more information, see the Setting 3D Renderer Paths topic of the User Guide.</td></tr>
</table>
</td></tr>
<tr><td>Image Format</td><td>Drop list with all formats listed alphabetically.
• BMP
• DPX
• DTEX
• EXR
• JPG
• OPT
• PAL
• PDF
• PNG
• PSD
• SCAN
• SGI
• TGA
• TIF
• TVG
• VAR
• YUV</td></tr>
</table>

Parameter	Description
Colours	Drop list with colour modes. Available modes depend on the selected file type. • Greyscale • Colour • Colour + Alpha
Depth (bits/channel)	Drop list with bit depth value and a label next to it "bits/channel". Available bit depth depends on the selected file type. • 8 • 10 • 12 • 16
Compression	Drop list that appears for EXR and TIF formats only. • Zip (per scanline) • Zip (16 scanlines)
Inverted Channels	A checkbox that appears for DPX only in 10, 12, 16 bit depths.
Movie options	Opens the movie settings dialog box for your selected video format, in which you can set the video and audio compression settings for your video file: • QuickTime Movie (*.mov) on Windows: , • QuickTime Movie (*.mov) on macOS: • Windows Media Video (*.wmv): **NOTE** This button is available on Windows and macOS only.
Video options	Opens the video settings dialog box, which allows you to set the video compression settings for your video file. **NOTE** This button is available on GNU/Linux only.

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Sound options</td><td>Opens the audio settings dialog box, which allows you to set the audio compression settings for your video file.

NOTE
This button is available on GNU/Linux only.</td></tr>
<tr><td>Movie Format</td><td>Allows you to choose one of the following movie formats:

• QuickTime Movie (*.mov): The Apple QuickTime format. This is the default export format and is recommended for its portability, and also because it allows you to choose among several video codecs.

NOTES
• On Windows, Apple QuickTime must be installed to allow Harmony to export QuickTime movies. You can configure the export of QuickTime movies to use any codec that is compatible with QuickTime, including H.264, MPEG-4 and Animation.
• On macOS, Harmony uses Apple AVFoundation to export QuickTime movies, which allows you to export using codecs such as H.264, Apple ProRes 422 and Apple ProRes 4444, among others.
• If you are looking to export a QuickTime movie with transparency, be sure to choose a codec that supports encoding with an alpha channel.
• On GNU/Linux, Harmony uses the OpenQuickTime library to export QuickTime movies. This only allows you to export videos in non-proprietary formats such as Motion-JPEG, Photo JPEG, PNG or Uncompressed (RGB).

• H.264/MPEG-4 (*.mov) : A simple movie format that uses the H.264 codec, which is supported by most web browsers.

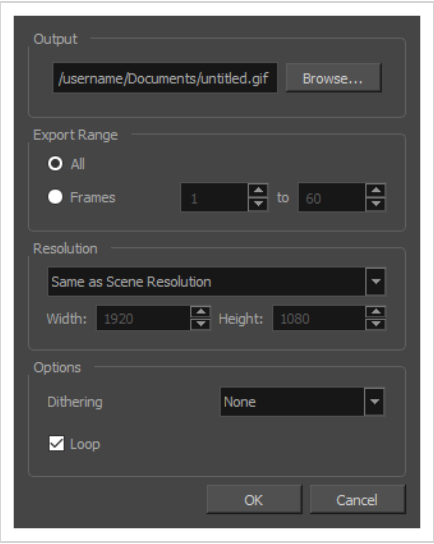
NOTES
• Using this format does not require additional software. However, if this is the first time you export a movie in H.264/MPEG-4 format, you will be prompted to download the OpenH264 library from Cisco. Simply click Yes when prompted, and Harmony will automatically download the library, then export the movie.
• There are no encoding options for this format.
• This format supports resolutions of up to 4096×2304. Each dimension must be a multiple of 16 pixels.
• Audio exported in this format is encoded in PCM 16-bit stereo, 22.05 kHz.</td></tr>
</table>

Parameter	Description
	• **Windows Media Video (*.wmv):** The native format for Windows Media Player. **NOTES** • Windows Media Video (`.wmv`) files can only be exported on Windows. • Video players and editors on non-Windows systems can generally not open Windows Media Video (`.wmv`) files.
Options	
Open in Player	If checked, the exported images or movie will be opened after the export is finished: • If you are exporting frames, they will be opened in the Play application. • If you are exporting a movie, it will be opened in your operating system's movie player.
Resolution	Allows you to specify a resolution to export in, relative to your scene's actual resolution: • **Same as Scene Resolution:** Exports a movie in the same resolution as your scene's resolution. • **3/4 of Scene Resolution:** Exports a movie at 75% of the scene's width and height. • **1/2 of Scene Resolution:** Exports a movie at 50% of the scene's width and height. • **1/4 of Scene Resolution:** Exports a movie at 25% of the scene's width and height. • **Custom:** Allows you specify the preferred resolution of your exported video file, in pixels, in the **Width** and **Height** fields.
Range	Allows you to specify the range of frames in your scene to export: • **All Frames**: Exports all the frames in your scene. • **From / to**: Allows you to specify the frame range to export using the two input fields to the right. The first input field is for specifying the first frame to export, and the second one is for specifying the last frame to export. All the frames in-between, including the ones specified, will be exported. • **Current Frame**: Exports the current frame only.

Parameter	Description
	• **Selected Frames**: Allows you to select which frames to export. You can enable or disable exporting a specific frame by clicking on it. You can also toggle exporting a range of frames by clicking and dragging over that range in the list.
OK	Exports OpenGL frames with the selected settings and closes the dialog box.
Cancel	Closes the dialog box without exporting anything.

Export to Animated GIF Dialog Box

Using the Export to Animated GIF dialog box, you can export your scene, or an excerpt of it, as an animated GIF image.



Animated GIFs are a portable format commonly used for exchanging short animations and clips on the web. They can be played in any web browser and in many image viewers.

Animated GIFs are a convenient sharing format, but they are not a publishing format. They are not as optimized for fast download and playback as movie files, cannot contain audio and, most importantly, can only contain up to 256 different colours throughout the entire animation. Hence, if your animation contains textures or gradients, it is likely to lose quality when exported as an animated GIF, as Harmony will have to limit the amount of different colours used in the exported image.

NOTE

For steps on how to use the Export to Animated GIF dialog box, see the User Guide.

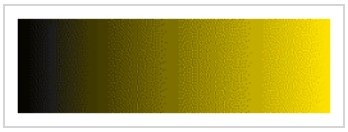
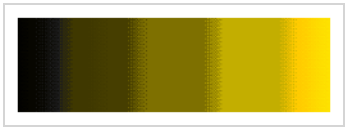
How to access the Export to Animated GIF dialog box

1. In the top menu, select **File > Export > Animated GIF**.

   The Export to Animated GIF dialog box appears.

Parameter	Description
Output	

Parameter	Description
Output	The full path and file name of the GIF file to export.
Browse	Opens a dialog allowing you to browse to the desired export directory and enter the desired file name.
Export Range	
All	Exports all the frames in your scene.
Frames	Allows you to specify a range of frames to render.
Resolution	
Resolution list	Lets you specify a resolution to export in relative to your scene's actual resolution: • **Same as Scene Resolution:** Exports a movie in the same resolution as your scene's resolution. • **3/4 of Scene Resolution:** Exports a movie at 75% of the scene's width and height. • **1/2 of Scene Resolution:** Exports a movie at 50% of the scene's width and height. • **1/4 of Scene Resolution:** Exports a movie at 25% of the scene's width and height. • **Custom:** Allows you specify the preferred resolution of your exported video file, in pixels, in the **Width** and **Height** fields.
Width	If you selected the Custom resolution, use this field to specify the width, in pixels, of the exported movie.
Width	If you selected the Custom resolution, use this field to specify the height, in pixels, of the exported movie.
Options	Options
Dithering	Since GIF images can only have up to 256 colours, you have the option to add dithering to the rendered image. Dithering blends pixels of different colours where the image contains gradients to simulate colours that do not exist in the GIF image's colour palette.

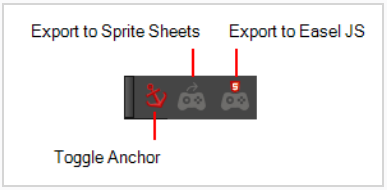
Parameter	Description
	• **None:** No dithering will be applied. Each pixel rendered is rendered with the colour in the palette that is the closest to its actual colour. • **Diffusion:** Blends pixels in irregular patterns to blend pixels and simulate the colour as closely as possible.  • **Pattern:** Blends pixels in regular checkered patterns to simulate the colour without created clusters of pixels. 
Loop	If this option is checked, the exported GIF animation will loop when previewed in web browsers and other image viewers that support animated GIFs. Otherwise, it will only play once and stop.

Export to Easel JS Dialog Box

The Export to Easel JS window lets you flatten an image sequence of your animation. Even if you have a fully rigged puppet or a single drawing layer with your animation sequence, the outcome will still be a flattened output of each frame, grouped together in your sprite sheet. This allows for more flexibility and freedom of work as you have access to any tools or effect modules you want to use. However, this can result in heavier files depending on the length, complexity and export size of your animation.

How to access the Export to Easel JS window

1. Select **Windows > Toolbars > Game**.



2. Click the Export to Easel JS button.

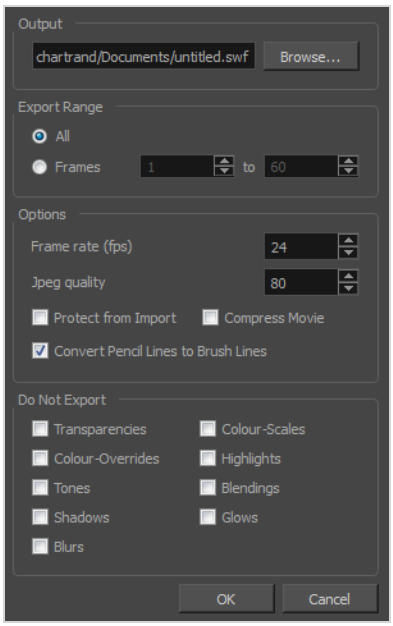
Parameter	Description
Select Directory	

Save Path	The folder path where you want to save your export.
Save Name	The folder name in which you will save your export. This will also be the name of your asset in Unity. Your scene file name will be used as the clip name.
Existing Clips in Folder	Displays the clips in the folder.
Scene Options	
Display	Here, you must select the Display of your character. This is the one that will be used to render out all of the information attached to that Display node. If the Unconnected_Display option is selected, all of the visual information in your scene will be rendered out.
Sprite Sheet Preferences	
Max Width	This is a value, in pixels, for the maximum width and height the exported sprite sheet should be. By default, both values are set to 2048 pixels.
Max Height	
Expand Sprite Sheet	Uses the minimum size necessary up until it reaches the maximum resolution.
Fixed Sprite Sheet	Creates a texture of the specified size (Max Width and Max Height) even if it does not fill it up completely by all the drawings in your scene.
Resolution Type	**POT**: Exports to sprite sheets with sizes that are a power of 2. For example: 1024 x 1024. This is optimized for many graphics cards, but consumes more memory. **NPOT**: Some game engines are optimized specifically to render to non powers of two, so that it will avoid those numbers. Example: 1000 x 1000.
Reuse Frames	This option works in tandem with the Threshold option. The export will compare the drawings in your project to reuse a maximum of similar drawings and reduce the amount of information found in the sprite sheet, making it lighter. The export will omit the creation of new drawings if the difference is less than the threshold percentage.
Threshold	Calculates the differences between multiple drawings. A 2% threshold will prevent the creation of a new drawing if the drawing is too similar to an existing drawing. For instance, with a 2% threshold, and my drawing is 100 pixels big, only 2 of those pixels need to be different from my other drawing in order to

	create a new one. The higher the threshold, the fewer similar drawings you will have.
Sprite Resolutions	Size of the render of the individual sprite, when it exports each drawing out.

Export to Flash Movie Dialog Box

The Export to Flash Movie dialog box lets you export your animation as a Flash (.swf) movie.



How to access the Export to Flash Movie dialog box

1. From the top menu, select **File > Export > SWF**.

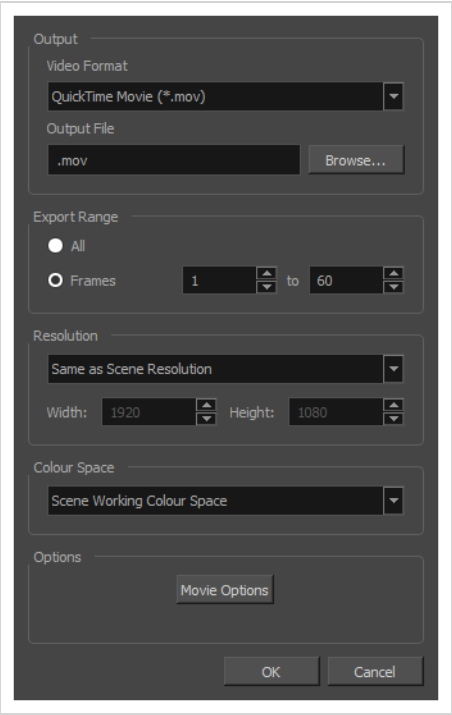
   The Export to Flash Movie (.swf) dialog box opens.

Parameter	Description
Output	Lets you specify the location in which the file will be exported.
Export Range	
All	Exports all the frames of your movie.
Frames	Export a frame range which you specify
Options	
Frame Rate	Lets you enter a Frame rate (fps). By default, it will be set to match the fps of your Harmony project. If you choose a lower frame rate, your export playback will be faster than your actual project. The reverse is also true for a higher frame rate.

Jpeg Quality	Lets you select a JPEG quality: ▸ 100 = Full quality ▸ 50 = Average quality at about 1/5th of the size. ▸ 25 = Medium quality where loss of high image resolution starts to occur. ▸ 10 = Low quality where "macro-blocking" or large pixelation become obvious. ▸ 1 = Lowest quality where there is extreme loss of colour and detail and the image becomes nearly unrecognizable.
Protect from Import	Prevents the movie from being imported into another application.
Convert Pencil Lines to Brush Lines	Retains the thickness of pencil lines.
Compress Movie	Compresses the movie for a lighter format. The movie may lose some quality, but the file will be lighter.
Do Not Export	Lets you select the effects you do **NOT** want to be rendered in the SWF movie. **NOTE** Certain Harmony effects are not listed in this section as they are not compatible and therefore not available for SWF export. These effects will not appear in the SWF render.

Export to Video Dialog Box

The Export to Video dialog box lets you export your animation as a movie file.



How to access the Export to QuickTime Movie dialog box

1. From the top menu, select **File > Export > Movie**.

Parameter	Description
Output	
Video Format	Allows you to choose one of the following movie formats: • **QuickTime Movie (*.mov):** The Apple QuickTime format. This is the default export format and is recommended for its portability, and also because it allows you to choose among several video codecs.

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NOTES

On Windows, Apple QuickTime must be installed to allow Harmony to export QuickTime movies. You can configure the export of QuickTime movies to use any codec that is compatible with QuickTime, including H.264, MPEG-4 and Animation.
On macOS, Harmony uses Apple AVFoundation to export QuickTime movies, which allows you to export using codecs such as H.264, Apple ProRes 422 and Apple ProRes 4444, among others.
If you are looking to export a QuickTime movie with transparency, be sure to choose a codec that supports encoding with an alpha channel.
On GNU/Linux, Harmony uses the OpenQuickTime library to export QuickTime movies. This only allows you to export videos in non-proprietary formats such as Motion-JPEG, Photo JPEG, PNG or Uncompressed (RGB).

H.264/MPEG-4 (*.mov) : A simple movie format that uses the H.264 codec, which is supported by most web browsers.

NOTES

Using this format does not require additional software. However, if this is the first time you export a movie in H.264/MPEG-4 format, you will be prompted to download the OpenH264 library from Cisco. Simply click Yes when prompted, and Harmony will automatically download the library, then export the movie.
There are no encoding options for this format.
This format supports resolutions of up to 4096×2304. Each dimension must be a multiple of 16 pixels.
Audio exported in this format is encoded in PCM 16-bit stereo, 22.05 kHz.

Windows Media Video (*.wmv): The native format for Windows Media Player.

NOTES

Windows Media Video (<code>.wmv</code>) files can only be exported on Windows.
Video players and editors on non-Windows systems can generally not open Windows Media Video (<code>.wmv</code>) files.

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<tr>
<td>Output file</td>
<td>The full path and file name of the movie file to export.</td>
</tr>
</table>

Browse	Opens a dialog allowing you to browse to the desired export directory and enter the desired filename.
Export Range	
All	Exports all the frames in your scene.
Frames	Allows you to specify the frame range to export using the two input fields to the right. The first input field is for specifying the first frame to export, and the second one is for specifying the last frame to export. All the frames in-between, including the ones specified, will be exported.
Resolution	
Resolution list	Allows you to specify a resolution to export in, relative to your scene's actual resolution: • **Same as Scene Resolution:** Exports a movie in the same resolution as your scene's resolution. • **3/4 of Scene Resolution:** Exports a movie at 75% of the scene's width and height. • **1/2 of Scene Resolution:** Exports a movie at 50% of the scene's width and height. • **1/4 of Scene Resolution:** Exports a movie at 25% of the scene's width and height. • **Custom:** Allows you specify the preferred resolution of your exported video file, in pixels, in the **Width** and **Height** fields.
Width / Height	Lets you specify the width and height of video file you wish to export, in pixels. To preserve your scene's aspect ratio, changing the value of the Width or Height field will automatically update the other field with a proportional value.
Colour Space	The colour space in which to render your movie. The rendered frames will be converted from your scene's working colour space to the selected colour space. The following colour spaces are supported in Harmony: • **Scene Working Colour Space:**The same colour space as the one selected in the **Colour Space** tab of the **Scene Settings** dialog. • **ACES2065-1**: An ACES linear colour space that uses the AP0 colour primaries and is intended for image file interchange. • **ACEScg**: An ACES linear colour space that uses the AP1 colour

	primaries and is intended for CGI rendering and compositing. • **Linear Rec.709 (sRGB):** The colour space that uses the same primaries and white point as sRGB and Rec. 709, but with no gamma transfer curve applied to the colour values. • **Linear Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Linear P3-D65:** The same as Display P3, except with no gamma transfer curve. This colour space is useful for compositing intermediary images that are meant to be rendered in Display P3. • **Display P3:** A colour space commonly used for digital projection. It has the same primaries as DCI-P3, the same white point as sRGB and the same gamma transfer curve as sRGB. • **Rec. 709:** The colour space used for HDTV. It has the same primaries and white point as sRGB, but has a different gamma transfer curve. • **Rec. 709 2.4:** The same colour space as Rec. 709 or sRGB, except with a gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 709. • **Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Rec. 2020 2.4:** The same colour space as Rec. 2020, except with a simple gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 2020. • **sRGB:** A colour space typically used for standard computer monitors. It has the same primaries and white point as Rec. 709, but has a different gamma transfer curve.
Options	
Movie Options	Opens the movie settings dialog box for your selected video format, in which you can set the video and audio compression settings for your video file: • QuickTime Movie (*.mov) on Windows: , • QuickTime Movie (*.mov) on macOS: • Windows Media Video (*.wmv):

	NOTE This button is available on Windows and macOS only.
Video Options	Opens the video settings dialog box, which allows you to set the video compression settings for your video file. **NOTE** This button is available on GNU/Linux only.
Sound Options	Opens the audio settings dialog box, which allows you to set the audio compression settings for your video file. **NOTE** This button is available on GNU/Linux only.

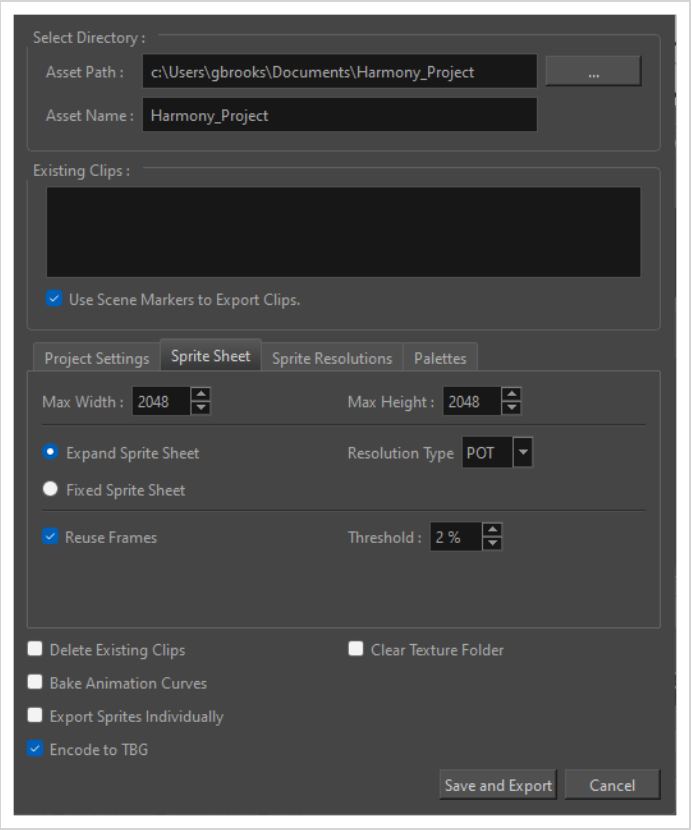
Export to Sprite Sheet Dialog Box

The Export to Sprite Sheets Publish for Game Engine window exports to multiple resolutions, generating multiple .xml files and one or multiple sprites sheets depending how many sprite resolutions you defined.

This saves different animations of the same character into the same name. For example, if there's an idle, run, and jump animation, these should all share the same Asset Name. You can think of it as the overall collection of animations. Inside are the different saved scene versions whose drawings you can reuse for all the animations in that character set. Each scene version will be displayed as an item in the list.

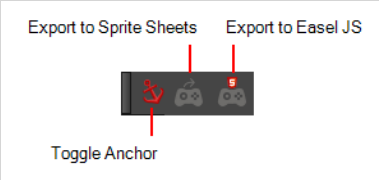
When you export an animation, only the drawings used in that scene are exported. All the drawings are exported individually first and then atlased together into a sprite sheet.

If you saved multiple animations to the same Asset Name (i.e. SpaceDuck: run, idle), then it will re-atlas the sprite sheet to include all the drawings from all the animations in that folder, creating a new animation file, but reusing the same skeleton.



How to access the Export to Sprite Sheets window

1. Select **Windows > Toolbars > Game**.



2. Click the Export to Sprite Sheets button.

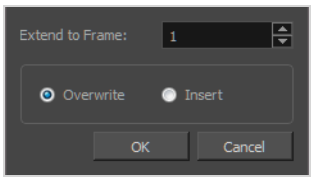
Parameter	Description
Select Directory	
Asset Path	The folder path where you want to save your export.
Asset Name	The folder name in which you will save your export. This will also be the name of your asset in Unity. Your scene file name will be used as the clip name.
Existing Clips in Folder	
Preview Window	Displays a list of pre-existing clips in the same export folder location, most likely exported there from a previous time.
Use Scene Markers to Export Clips	Uses scene markers to define the export range, instead of exporting the entire scene.
Project Settings	
Unit Scale	Lets you change the scale when exporting to Unity to accommodate the size of the export without it affecting the Harmony scene. This helps you resize assets properly for Unity without having to resize them in Harmony. The basic scale is one Animation Field for one Unity unit.
Preset	Lets you select the unit conversion from Harmony to Unity, by selecting one of 4 presets. Note: a field is a unit of measure in traditional animation grid.
Sprite Sheet	
Max Width	This is a value, in pixels, for the maximum width and height the exported sprite sheet should be. By default, both values are set to 2048 pixels.

Max Height	Makes linear values for interpolation. This increases the amount of memory used but frees up the calculation so it is not done on the fly.
Expand Sprite Sheet	Uses the minimum size necessary up until it reaches the maximum resolution.
Fixed Sprite Sheet	Creates a texture of the specified size (Max Width and Max Height) even if it does not fill it up completely by all the drawings in your scene.
Resolution Type	**POT**: Exports to sprite sheets with sizes that are a power of 2. For example: 1024 x 1024. This is optimized for many graphics cards, but consumes more memory. **NPOT**: Some game engines are optimized specifically to render to non powers of two, so that it will avoid those numbers. Example: 1000 x 1000.
Reuse Frames	This option works in tandem with the Threshold option. The export will compare the drawings in your project to reuse a maximum of similar drawings and reduce the amount of information found in the sprite sheet, making it lighter. The export will omit the creation of new drawings if the difference is less than the threshold percentage.
Threshold	Calculates the differences between multiple drawings. A 2% threshold will prevent the creation of a new drawing if the drawing is too similar to an existing drawing. For instance, with a 2% threshold, and my drawing is 100 pixels big, only 2 of those pixels need to be different from my other drawing in order to create a new one. The higher the threshold, the fewer similar drawings you will have.
Sprite Resolutions	Size of the render of the individual sprite, when it exports each drawing out.
Palettes	Allows you to exclude certain palettes that you don't want included in your exported file, This will cover all possible variations of palettes that will result in different colours showing on the character
Delete Existing Clips	Select this option to delete any pre-existing clips in the export location.
Bake Animation Curves	Makes linear values for interpolation. This increases the amount of memory used but frees up the calculation so it is not done on the fly.
Clear Texture Folder	Removes any information from the texture folder within the Harmony file. This has no incidence towards the Unity export but contributes to a lighter Harmony file.

Export Sprites Individually	Exports each drawing separately instead of putting them inside a spritesheet. This allows the game engine to deal with sprite sheets or sprite atlases at the import.
Encode to TBG	Zips the XML files to the TBG custom file format so that they may be imported to Unity with Unity custom importers. When the files are imported, they will be treated like any asset in Unity and will contain sub-assets for textures, sprites, and animations. This improves the ergonomics of creating and moving character data and checking changes into source control.

Extend Exposure Dialog Box

The Extend Exposure dialog box lets you extend the exposure of a selected cell in the Timeline or Xsheet.



How to access the Extend Exposure dialog box

1. Select a cell and do one of the following:
    - From the top menu, select **Animation > Cell > Extend Exposure**.
    - Press F5.

    The Extend Exposure dialog box opens.

Parameter	Description
Extend to Frame	Lets you enter the frame up to which you want to extend the exposure. You can expose the drawing in the frames and replace the drawings that were originally there or move the subsequent frames forward in time.
Overwrite	Lets you expose the drawing in the frames and replace the drawings that were orginally there.
Insert	Lets you expose the drawing in the frames and move the subsequent frames forward in the Timeline view.

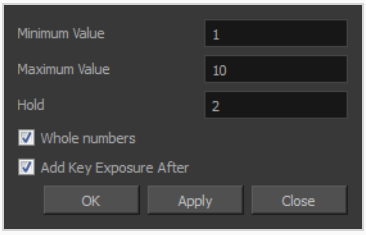
Fill Cells Randomly Dialog Box

The Fill Cells Randomly dialog box lets you Lets you fill in random values over a selection. You can give a maximum and a minimum value and create a range for Harmony to choose the random values from. The selection can be over one cell or a cell range in one column or more or an entire column or many entire columns.

How to access the Fill Cells Randomly dialog box

1. Do one of the following:
    - Select **Animation > Cell > Fill Cells Randomly**.
    - In the Xsheet view, click the Fill Cells Randomly button (you may have to customize the toolbar to display it).

    The Fill Cells Randomly dialog box opens.



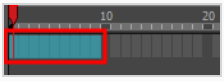
Parameter	Description
Minimum Value	The lowest value to be used in the randomized exposure or keyframe value.
Maximum Value	The highest value to be used in the randomized exposure or keyframe value.
Hold	The exposure holding value.
Whole Numbers	If you are applying this to a drawing column, this option lets you avoid having decimal points.
Add Key Exposure After	Inserts a key exposure on the frame following the last cell of the selection.

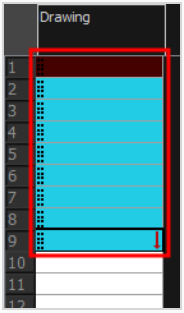
Fill Selection Dialog Box

The Fill Selection dialog box lets you Lets you fill the same value over an entire selection. The selection can be over one cell, a cell range in one column, a cell range over many columns, an entire column, or many columns. You can use numbers, words, letters, or any alphanumeric value.

How to access the Fill Selection dialog box

1. In the Timeline or Xsheet view, select a cell range.

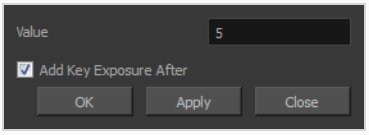




1. Do one of the following:

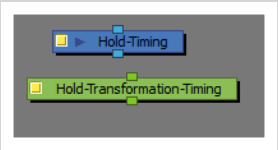
    - From the top menu, select **Animation > Cell > Fill Selection**.
    - In the Xsheet toolbar, click the Fill Selection button. Note that you may have to add this button to your toolbar by right-clicking on it and selecting **Customize**.
    - Press Ctrl + T (Windows/Linux) or ⌘ + T (macOS)).

    The Fill Selection dialog box opens.



Parameter	Description
Value	This is the value to be used in the filled selection.
Add Key Exposure After	Inserts a key exposure on the frame following the last cell of the selection.

Hold Timing



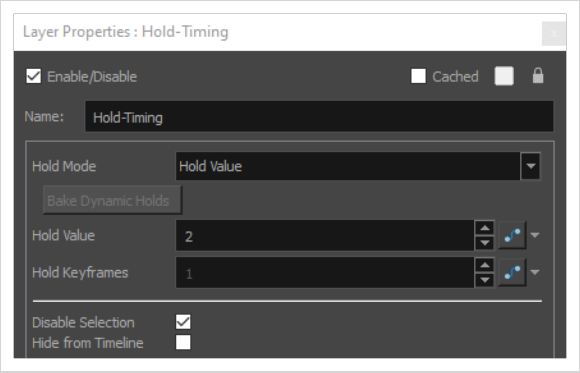
The Hold Timing node exists as Hold Timing (for Images) and Hold Transformation Timing (for Pegs and Transformations). This node is used to apply holds to the input transformation or images, in order to expose certain frames for specific durations. These nodes can be used to change the exposure increments of input images and transformations so that the output updates at the appropriate frames. This is particularly useful for retiming the animated content.

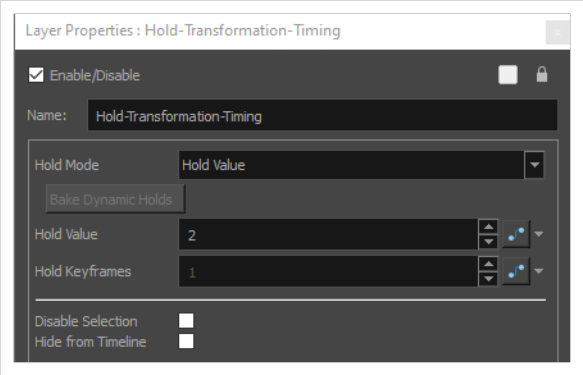
The Hold Timing node takes an image input and output, and will provide the retimed transformation and render of that image with sections held given the settings of the node.

The Hold Transformation Timing node takes a transformation input and output, and will provide the retimed transformation with sections held given the settings of the node.

How to access the Hold Timing and Hold Transformation Timing dialog box

1. In the Node View press Enter.
2. Type in the name of the node you want to search.
3. Select the node.
4. Click the yellow box on the left to open the dialog box.





- **Hold Mode:** Defines the mode in which the held frame transformations and renders are applied. You can select the value from the drop-down list.
    - **Dynamic:** Dynamic mode will scan all connected modules in the in-port and will also calculate the most reasonable timing based on all connected nodes' attribute keyframes and timing. The dynamic mode aims for a maximum exposure as defined in the hold value attribute, and will divide up timed-sections based on attached keyframes and the appropriate amount of subdivisions possible in that section, while considering the timing of the animation.
    - **Hold Value:** Hold Value mode will use the value defined in the Hold Value attribute, and will only update the transformation or render in increments of that value. Setting a keyframe on this attribute will start a new section of exposures and all subsequent exposures will be based on the last keyframe. This is useful for retiming sections on twos and adding sections on ones by simply adding a keyframe.
    - **Hold Between Stop-Motion Keyframes:** Hold Between Stop-Motion Keyframes uses the keyframes and tweens in the Hold Keyframes attribute to define regions that will update and render new images and transformations. The node will only output the current frame from the input when a key, or tween, is present on that frame, otherwise it will hold the last value it has previously output.
- **Bake Dynamic Holds:** Bake Dynamic Holds will convert the dynamic mode to another mode that is static and no longer dependent on the input nodes. When clicking the Bake Dynamic Holds button, a prompt will request the type of mode to convert the dynamic values into. This prompt allows the user to select the mode into which the values are baked.
- **Hold Value:** Defines the exposure increments in which the image or transformation is updated and output. This attribute is used when the node is in Dynamic and Hold Value mode.
- **Hold Keyframes:** Defines the keys in which the image or transformation is updated and output. This attribute is used when the node is in Hold Between Stop-Motion Keyframes mode.

- **Disable Selection:** This option is available in all timing nodes. It is recommended to disable the timing node when modifying content, and reapply it when the content is complete.
- **Hide from Timeline:** This option will collapse all attached content above this node in the Timeline, preventing it from being selected or modified directly in the Timeline.

Import Images Dialog Box

T-HFND-007-011

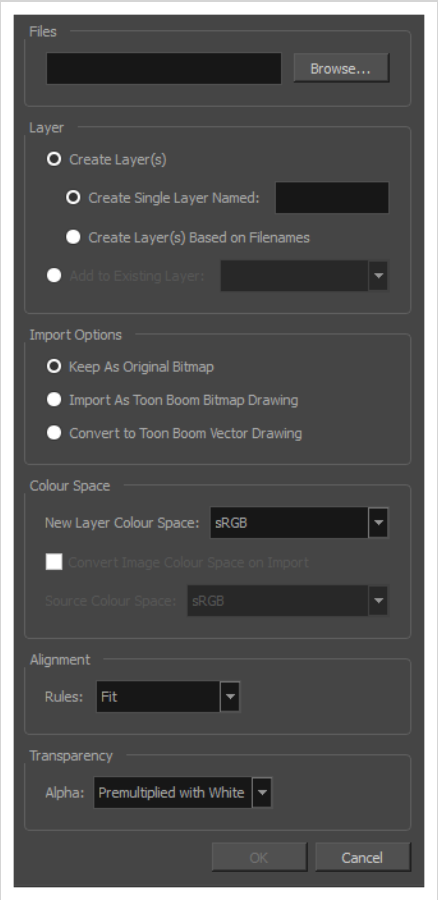
The Import Images dialog box lets you import bitmap images and vectorize them, making the images editable. Then you can use a variety of drawing tools to edit the image. Or you can always keep the original bitmap image as is.

Also, you can choose to import bitmap images on bitmap or vector layers depending on your project.

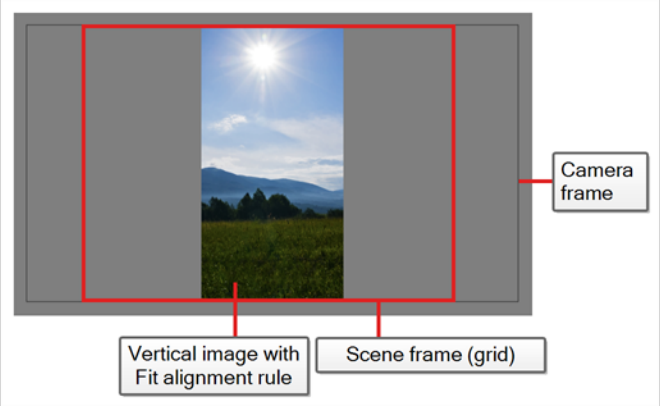
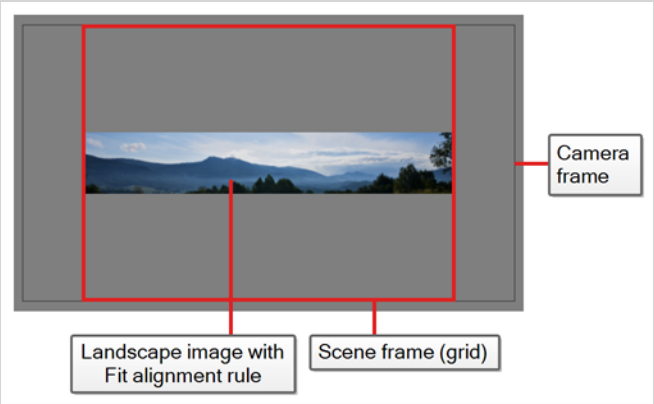
How to open the Import Images dialog box

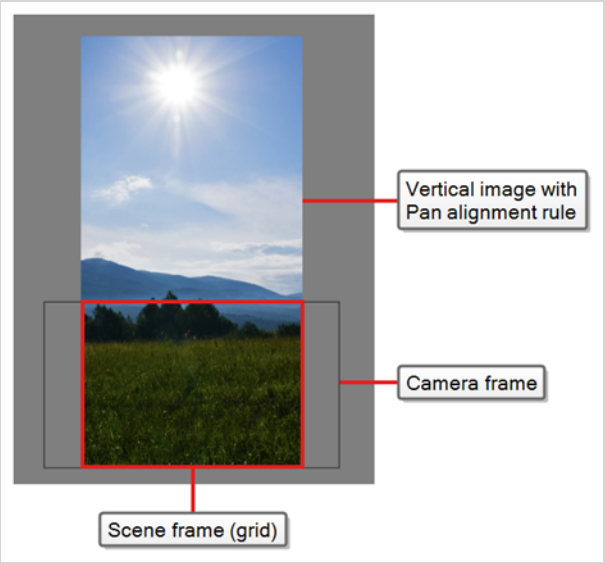
1. Do one of the following:
   - From the top menu, select **File > Import > Images**.
   - In the File toolbar, click the Import Images button.
   - In the Xsheet view, right-click anywhere in the frame area and select **Import > Images**.

   The Import Images dialog box opens.

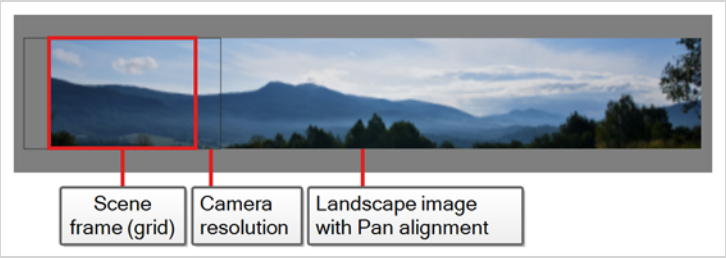


Parameter	Description
Files	
Browse	Lets you find and select images on your computer.
Layer	
Create Layers(s)	Create layers for imported images.
Create Single Layer Named	Creates a new layer with the specified name and imports the images into it.
Create Layer(s) Based on Filenames	Creates a layer based on each unique filename prefix. For example, if you import three files named a-1.tga, a-2.tga and b-1.tga, this will create two layers, one named "a" and one named "b". Layer "a" will contain the two first images and "b" will contain the third one.
Add to Existing Layer	Imports the images into the specified layer. Note that you can only import into layers that are compatible with your import options. For example, if you're importing images as vector drawings, you can only import them into vector drawing layers.
Import Options	Depending on how you choose to import images, the Alignment section offers different options.
Keep as Original Bitmap	Retains an imported image as a bitmap. In the Alignment section, decide on the size and placement of your image within the camera frame. Depending on the Scene Settings (the height and width in pixels that you chose for your project), an image that you import may get scaled to the point where all its individual pixels become visible.
Import as Toon Boom Bitmap Drawing	Imports a drawing into a vector layer where you can edit the image using the drawing tools.
Convert to Toon Boom Vector Drawing	Imports a drawing and converts it to a Toon Boom vector drawing.
Alignment (Keep As Original Bitmap)	

Rules	**Fit**: Adjusts the image's size to fit completely within the scene's field, both vertically and horizontally, making sure the entire image is visible. If the image's orientation is portrait, then it will adjust the image's height to fit the field's height, without affecting the image's aspect ratio:  If the image orientation is landscape, then it will adjust the image's width to fit the field's width, without affecting the image's aspect ratio: 
	Pan: This has the opposite effect to the fit parameter. The image's smallest dimension will be made to fit the scene frame's matching dimension, and the image's largest dimension will be adjusted proportionally, making the image fill the entire scene field, and bleed past its boundaries it if its aspect ratio does not match the field's aspect ratio. This option can be used to import a panning background image, also referred to as a *pan*. If the image's orientation is portrait, it will adjust the image's width to fit the field's width, without affecting its aspect ratio:



If the image's orientation is landscape, it will adjust the image's height to fit the field's height, without affecting its aspect ratio:



This has the opposite effect to the fit parameter. The image's smallest dimension will be made to fit the scene frame's matching dimension, and the image's largest dimension will be adjusted proportionally, making the image fill the entire scene field, and bleed past its boundaries it if its aspect ratio does not match the field's aspect ratio. This option can be used to import a panning background image, also referred to as a *pan*.

If the image's orientation is portrait, it will adjust the image's width to fit the field's width, without affecting its aspect ratio:

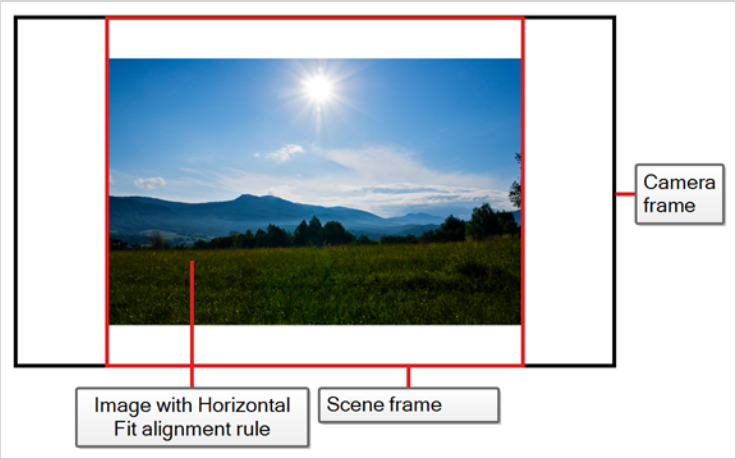
Project Resolution: Scales the image to fit the scene's resolution, making each pixel in the image take one pixel in the scene's field. For example, if the image's dimensions in pixels are half of the scene's resolution in pixels, then the image's dimensions will appear to be half of the scene field's dimensions.

Alignment (Import as Toon Boom Bitmap Drawing)

Rules

Horizontal Fit:

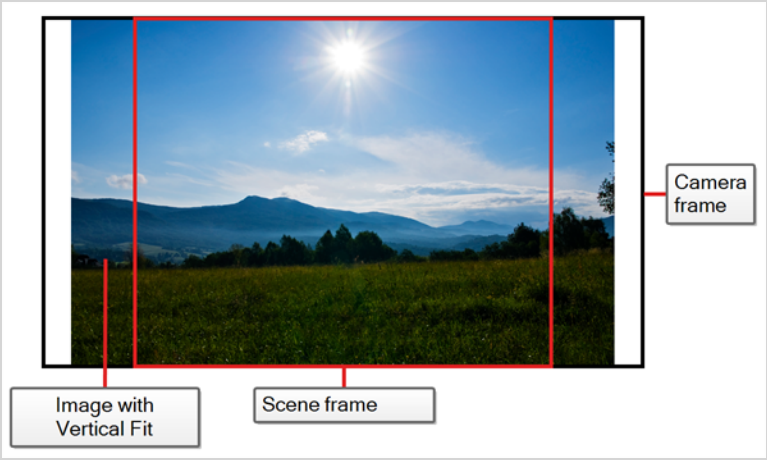
Adjusts the image's size so that its width matches the scene's width, without affecting its aspect ratio.



Vertical Fit:

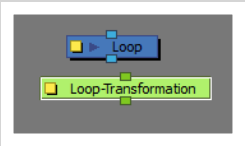
Adjusts the image's size so that its height matches the scene's height, without affecting its aspect ratio.

This has the opposite effect to the fit parameter. The image's smallest dimension will be made to fit the scene frame's matching dimension, and the image's largest dimension will be adjusted proportionally, making the image fill the entire scene field, and bleed past its boundaries it if its aspect ratio does not match the field's aspect ratio. This

	
	Actual Size: Imports the image in its actual size, without adjusting its size relative to the scene's resolution. For example, if the image's dimensions in pixels are half of the scene's resolution in pixels, then the image's dimensions will appear to be half of the scene field's dimensions.
Transparency	
Alpha	**Premultiplied with White**: The colour values of semi-transparent pixels in the image have been encoded so that the more transparent they are, the closer to white they are. When an image that is premultiplied with white is loaded in a software that does not support transparency, it appears blended with a white background. Select this to make Harmony reverse this premultiplication so that the image blends properly with other visual elements in your scene.
	Premultiplied with Black:The colour values of semi-transparent pixels in the image have been encoded so that the more transparent they are, the closer to black they are. When an image that is premultiplied with black is loaded in a software that does not support transparency, it appears blended with a black background. Select this to make Harmony reverse this premultiplication so that the image blends properly with other visual elements in your scene.
	Straight: The colour of semi-transparent pixels in the image is encoded independently from their transparency. When an image that is not premultiplied is loaded in a software that does not support transparency, semi-transparent pixels simply appear fully opaque, making its edges appear pixelated.
	Clamp Colour to Alpha:This is the same as **Premultiplied with Black**, except that it also prevents the colour values for a given pixel from being higher than that pixel's alpha value. This option is only useful if you are working with images that are supposed to be premultiplied with black, but where the colour values of pixels have been increased without their alpha values being adjusted accordingly.

Vectorization	
Black and White	Vectorizes drawings with a solid black line. This creates a 100% vector-based drawing and paints it with the Vectorized Line colour swatch from your scene's palette.
Grey	Vectorizes the image as a mix of vector contour and greyscale bitmap filling. Lines keep the texture from the scan, and the white of the paper becomes transparent.
New Preset	Lets you create a new preset.
Delete Preset	Lets you delete any preset in the list.
Edit Preset	Lets you edit the vectorization parameters for the selected preset.

Loop Node



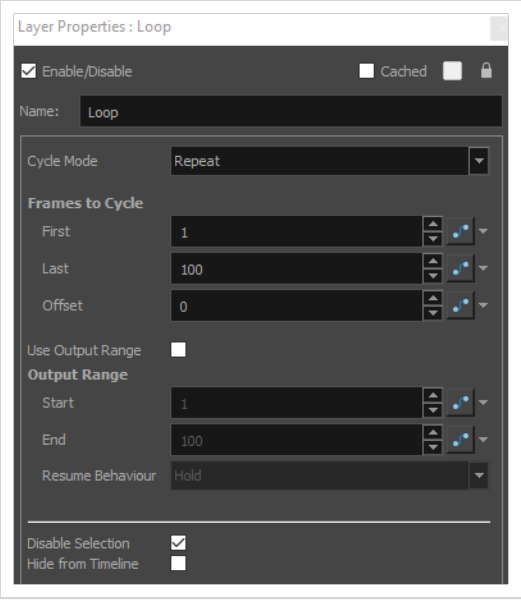
The Loop node exists as both Loop (for Images) and Loop Transformation (for Pegs and Transformations). This node is used to create looping sections in the Timeline by referencing the input content at different frames. The Loop node is able to start a loop at a given frame, loop a section of frames a number of times, and continue after looping is required.

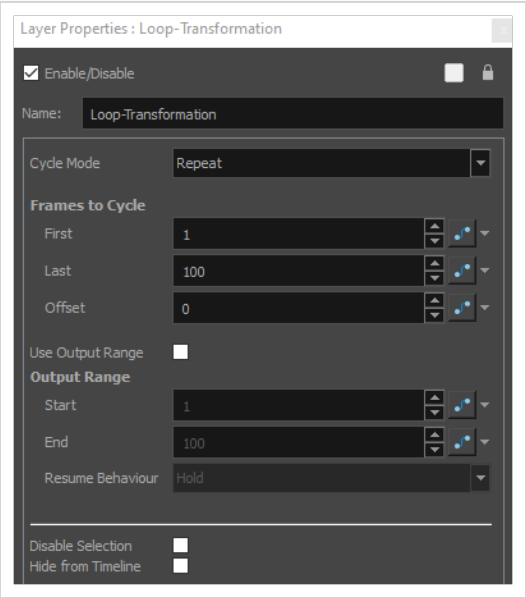
The Loop node takes an image input and output, and will provide the retimed transformation and render of that image, looping over a number of frames.

The Loop Transformation node takes a transformation input and output, and will provide the retimed transformation looping over a number of frames.

How to access the Loop and Loop Transformation Timing dialog box

1. In the Node View press Enter.
2. Type in the name of the node you want to search.
3. Select the node.
4. Click the yellow box on the left to open the dialog box.



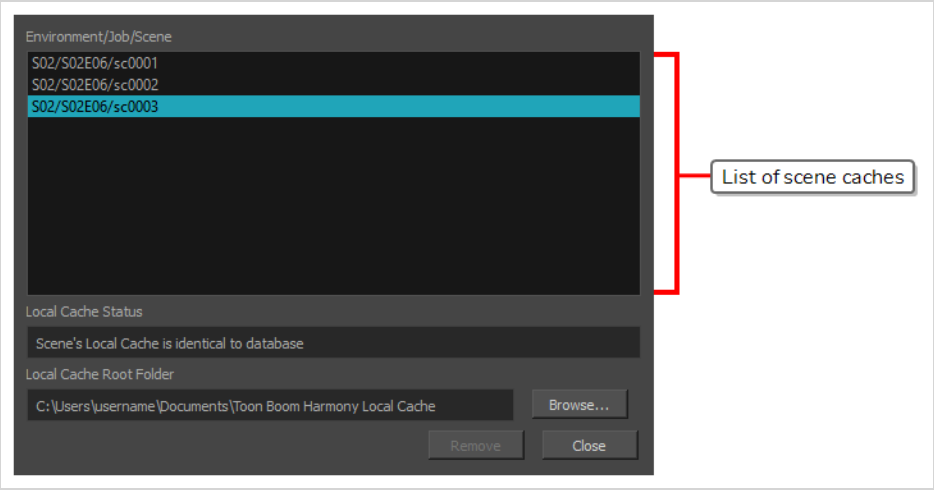


- **Cycle Mode:** Defines the way in which the output frames are calculated when cycling.
    - **Repeat:** It will simply cycle the looping frames, and will repeat the cycle from the first frame when finished. 1,2,3,4,1,2,3,4
    - **Ping Pong:** It will cycle the looping frames, and will repeat the cycle backwards when finished. 1,2,3,4,3,2,1,2,3 . . .
- **Frames to Cycle:** This area defines the input range to be used in the looped content.
    - **First:** The first frame to be used in the looping content.
    - **Last:** The last inclusive frame to be used in the looping content.
    - **Offset:** Offsets the internal frame of the loop by this amount. This is useful for reusing loops, but simply offsetting their starting frame.
- **Use Output Range:** Defines whether the loop is considered infinite (when disabled) or, if the loop is mapped to a specific output range and will have a start and ending range in the Timeline.
    - **Disabled:** The loop will begin at frame one, and will persist for the total length of the scene.
    - **Enabled:** The loop will begin at the start frame and plays to the end frame.
    - **Start:** The output frame number that defines where the loop begins in the output frames. The input images or transformation will play normally up until this point.
    - **End:** The inclusive output frame number that defines where the loop ends in the output frames. The loop will continue until one frame after this value is reached, and will resume its output based on the resume behaviour of the node.

        - **Resume Behaviour:** Defines the node's behaviour after the end frame has been reached when the output range is enabled.
            - **Hold:** Holds the final output frame's value after the end frame has been reached.
            - **Continue from Looped Frame:** Continues from the input frame that was last played in the Timeline when the end frame of the loop has been reached.
            - **Continue from Timeline Frame:** Continues from the actual Timeline frame, regardless of the looping frame or output range, once the end frame of the loop has been reached.
    - **Disable Selection:** This option is available in all timing nodes. It is recommended to disable the timing node when modifying content, and reapply it when the content is complete.
    - **Hide from Timeline:** This option will collapse all attached content above this node in the Timeline, preventing it from being selected or modified directly in the Timeline.

Manage Local Cache Dialog Box

The Manage Local Cache dialog box displays a list of all the Harmony Server scenes for which you have cached drawings. In this dialog, you can check if the drawings you have in a scene's cache match the drawings in the database server, you can delete unused caches and you can change the directory in which scene data is cached.



NOTE

A scene's data is cached on your computer when you check the **Cache scene assets locally** option in the Database Selector before opening the scene—see *Database Selector Dialog Box* on page 46.

How to access the Manage Local Cache dialog box

1. In the top menu, select **File > Manage Local Caches**.

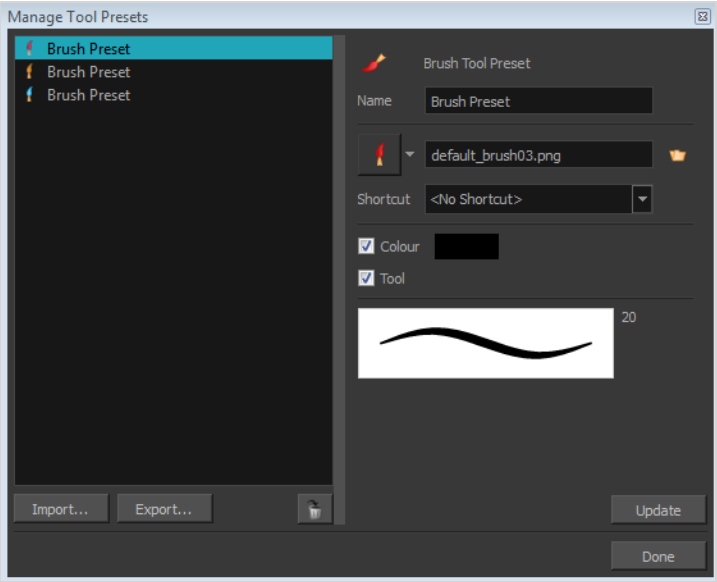
   The Manage Local Caches dialog appears.

Parameter	Description
List of scene caches	The list of caches stored on your computer. There is one item for each scene for which there is cached data. Each item is identified by the scene's environment, followed by its job, then its name, in this format: Environment/Job/Scene If you select a scene cache in the list, the Manage Local Caches dialog will compare the drawings that are cached on your computer to the drawings in the actual scene in the database, and report if they are identical or not in the **Local Cache Status** field.

Parameter	Description
Local Cache Status	If you select a cache, the Manage Local Cache dialog will analyze whether the data in the selected cache matches the data in the actual scene in the Harmony Server database. If it displays **Scene's Local Cache is identical to the database**, then the drawings in the selected cache on your computer are identical to the drawings in the corresponding scene in the database, meaning that your cache and that the database are up to date. If it displays **Scene's Local Cache is different than database**, then some drawings in the selected cache on your computer are different from the drawings in the corresponding scene in the database. This usually means one of the following: • If the selected cache is the cache of the currently opened scene and you just saved your scene, Harmony may still be uploading the updated drawings to the database. In this case, you can close the dialog, wait a few seconds, and reopen it to see if Harmony is done uploading the drawings. If it is, it will report that the cache is identical to the database. • If this is not the cache of the currently opened scene, it is likely that the database scene has been changed by someone else since the last time you opened it. That would mean that the database version is more up to date than your cache. This is not a problem, as next time you open the scene, your cache will be updated.
Local Cache Root Folder	Indicates where scene caches are stored on your computer. By default, scene caches are stored in a folder named Toon Boom Harmony Local Cache, inside your Documents folder.
Browse	Allows you to change the folder where caches are downloaded when you open a scene. **NOTE** The caches that are currently stored on your machine will not be moved to their new location. Hence, when you change the local cache root folder, the list of scene caches will become empty until you open a scene.
Remove	Deletes the selected scene cache from your computer. **NOTE** This button is greyed out if the selected scene cache is for the currently opened scene, as this cache is currently in use by Harmony.
Close	Closes the dialog.

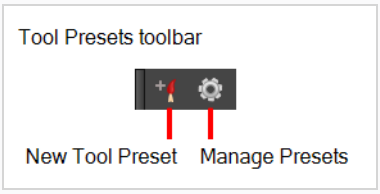
Manage Tool Presets Dialog Box

The Tool Presets window lets you create new tool presets and manage them.



How to access the Manage Tool Presets window

1. Do one of the following:
    - From the top menu, select **Windows > Toolbars > Tool Presets**.
    - Right-click an empty area below the top menu and select **Tool Presets**.



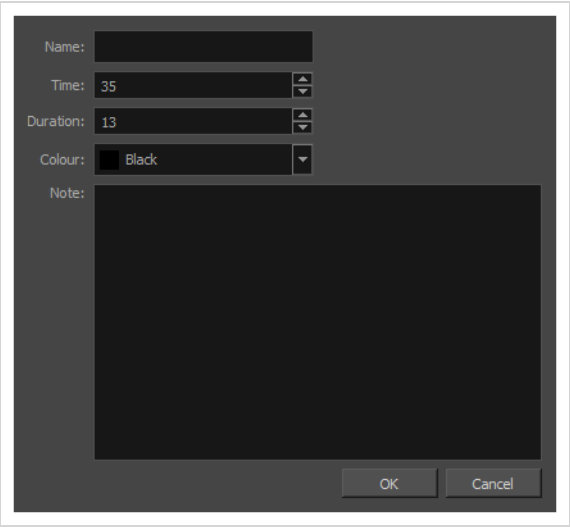
2. In the Tool Presets toolbar, click the Manage Presets button.

Parameter	Description
Icon	Lets you select a preset to manage.
Import	Lets you import an existing preset.
Export	Lets you export a preset for use in other projects.

Delete	Removes the preset from the list of tool presets.
Name	Lets you change the name of the preset.
Icon list	Lets you select an icon for the preset.
Folder icon	Lets you select an image for the preset.
Shortcut	Lets you assign a keyboard shortcut to the new preset.
Colour	Saves the current colour into the tool preset.
Tool	If you disable this option, only the colour will be associated. You could, for example, set three different colours with shortcuts not associated with any tool. The colour preset would then work on any selected tool. Selecting the brush tool was only a vehicle to get into the New Tool Preset dialog box.
Update	After adjusting the settings for a preset, the current properties are applied to the presets, as well as any other changes you made in the Manage Tool Presets window.

Marker Dialog Box

The Timeline Scene Marker dialog box lets you create and manage scene markers in the Timeline view.



Scene markers are visual indicators displayed at the top of the Timeline view in the frame counter area. You can use it to denote anything relevant to your work. You can indicate the frames you want to clean up, a change in action, an impact, or where you intend to apply an effect. You can also add a note to a scene marker. If you hold the mouse cursor over a scene marker, its name, starting frame, duration and note will be displayed in the tool tip box.

How to access the Timeline Scene Marker dialog box

1. In the Timeline view, do one of the following:
    - If you want to create a scene marker at a single frame, select that frame on any layer.
    - If you want to create a scene marker that spans over several frames, select this range of frame on any layer.
2. Right-click on the ruler at the top of the Timeline view and, in the context menu, select **Scene Markers > Create Scene Marker**.

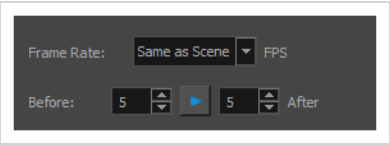
NOTE

If your scene already contains scene markers, you can also open this dialog box by clicking on a scene marker to select it, then right-clicking anywhere on the timeline ruler and selecting **Scene Markers > Edit** in the contextual menu.

Parameter	Description
Name	The name of the marker.
Time	The frame number at which the marker starts.
Duration	The amount of frames during which the marker spans. **TIP** You can set the duration to zero to make a marker that just points at the starting frame.
Colour	Allows you to select a colour for the scene marker.
Note	Allows you to type a description for the scene marker.

Mini Playback Dialog Box

The Mini Playback dialog box alllows you to configure and start Mini Playback. Mini Playback allows you to quickly preview a short span of animation starting a few frames before the current frame and ending a few frames after the current frame, at a customizable frame rate.



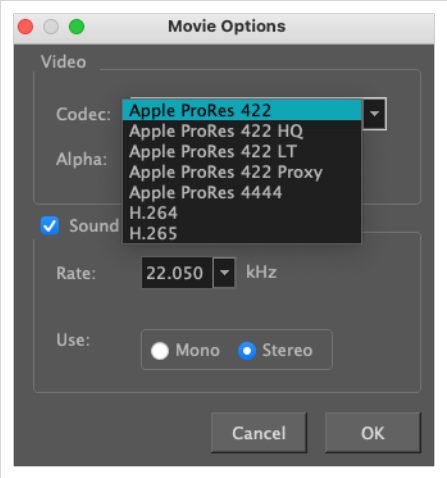
How to access the Mini Playback dialog

1. Do one of the following:
    - In the top menu, select **Play > Mini Playback**.
    - In the Mini Playback toolbar, click on the Mini Playback Dialog button.

Icon	Parameter	Description
	Frame Rate	The speed at which Mini Playback should play your animation. By default, it is set to **Same as Scene** to play at the same pace as your scene's frame rate. Otherwise, you can choose among a set of commonly used frame rates.
	Before	The amount of frames before the current frame at which to start Mini Playback.
	Play	Starts Mini Playback. Playback will start at the amount of frames in the **Before** field before the current frame, and end at the amount of frames in the **After** field after the current frame, at the frame rate in the **Frame Rate** drop-down.
	After	The amount of frames after the current frame at which to end Mini Playback.

Movie Options Dialog Box (macOS)

The Movie Options dialog box allows you to configure the video and audio settings when exporting a movie in QuickTime Movie (**.mov**) format on macOS.



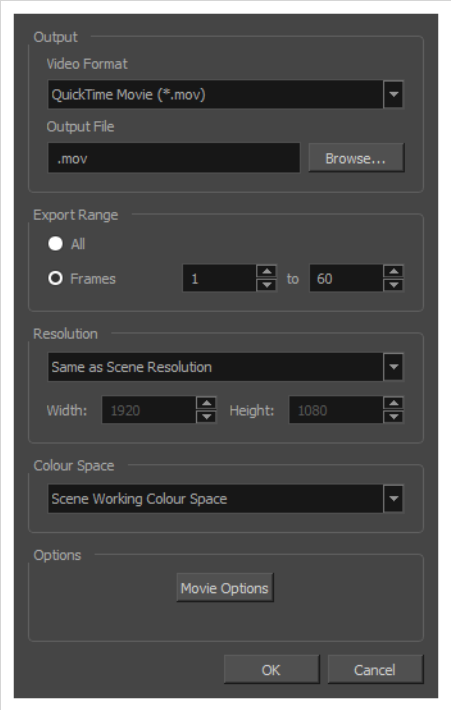
NOTES

- For tasks related to this dialog box, refer to the User Guide.

How to access the Movie Settings dialog box

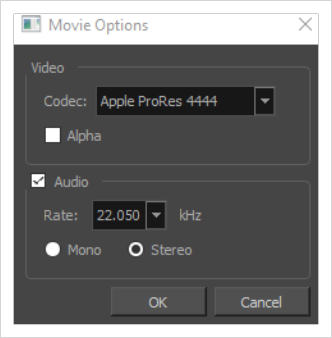
1. From the top menu, select **File > Export > Movie**.

   The Export Movie dialog box appears.



2. In the **Movie Format** drop-down, select QuickTime ProRes Movie (*.mov).
3. Click on the Movie Options button.

   The QuickTime Movie Options dialog box appears.

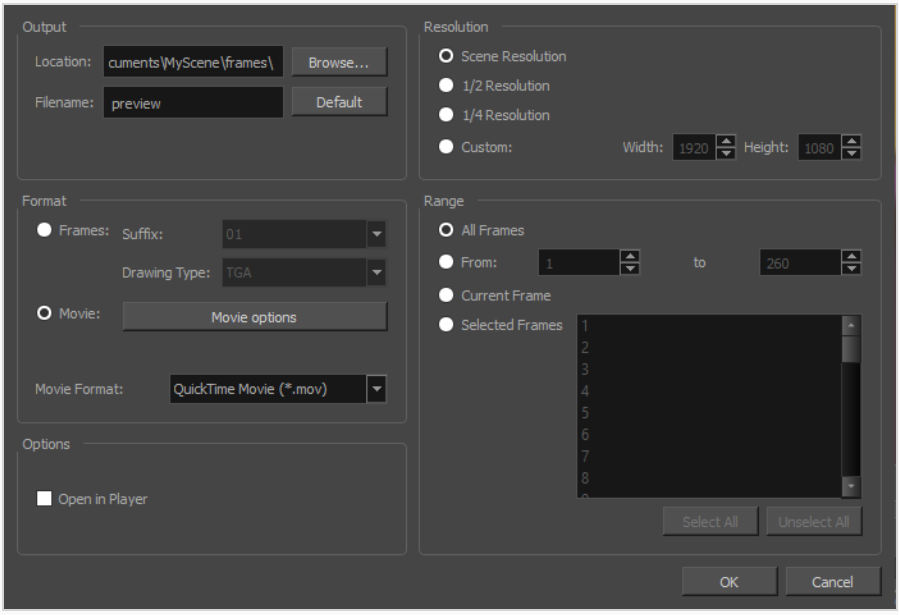


4. In the Codec drop-down, select any of the movie options.

How to access the Movie Settings dialog box from the Export OpenGL Frames dialog

1. In the top menu, select **File > Export > OpenGL** Frames.

   The Export OpenGL Frames dialog box appears.



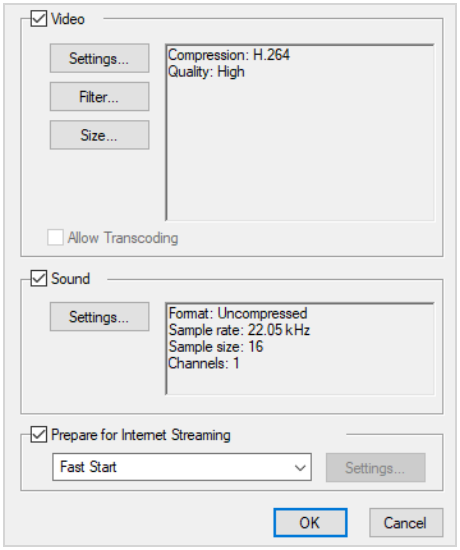
2. In the **Format** section, select **Movie**.
3. In the **Movie Format** drop-down, select **QuickTime Movie (*.mov)**.
4. Click on the **Movie Options** button.

Parameter	Description
Video	
Codec	Allows you to select which algorithm to use to compress the video data. The following video codecs are supported: • **H.264 Legacy:** A very effective lossy compression algorithm that is commonly supported by web browsers and media players. • **H.265 Legacy:** Same compression quality as H.264, but with a smaller compression size. This is useful for videos intended for the web and mobile devices. Not supported on all major browsers or operating systems. • **Apple ProRes 422 Legacy:** A nearly lossless compression algorithm commonly used for video editing on Apple systems. This codec is optimized for preserving video quality, but not for publishing or streaming. • **Apple ProRes 422 HQ Legacy:** Preserves visual quality at the same high level as Apple ProRes 4444 but for 4:2:2 image sources (cleaner footage for things like green screening). Heavier than Apple ProRes 422 for real-time editing performance. • **Apple ProRes 422 LT Legacy:** A more highly compressed codec than Apple ProRes 422, with roughly 70 percent of the data rate and 30 percent smaller file sizes. This codec is perfect for environments with limited storage capacity and data rates.

Parameter	Description
	• **Apple ProRes 422 Proxy Legacy:** An even more highly compressed codec than Apple ProRes 422 LT, intended for use in offline workflows that require low data rates but full-resolution video. • **Apple ProRes 4444 Legacy:** A nearly lossless compression algorithm commonly used for video editing on Apple systems. Compared to Apple ProRes 422, this codec preserves more colour detail and supports transparency. However, it results in heavier file sizes.
Alpha	Check this option if you want to export a video with transparency. **NOTE** This option is only available when exporting with the **Apple ProRes 4444** codec. Other codecs do not support transparency.
Sound	Uncheck this checkbox if you want to export a movie without an audio track.
Rate	Allows you to select the sample rate, or frequency, in which to export the audio track for the movie. **NOTE** Harmony cannot export audio at a higher sample rate than 22.050 kHz. If you select a higher sample rate, your project's audio will be upsampled, which means it will take more disc space without increasing in quality.
Use	Allows you to select whether to export the movie's audio track using the **Mono** or **Stereo** channel mode. **NOTE** Stereo sound has a separate track for the left and right speakers, whereas mono sound only has a single audio track for all speakers.

QuickTime Movie Settings Dialog Box (Windows)

The Movie Settings dialog box allows you to configure the video and audio compression settings when exporting a QuickTime Movie (**.mov**) file.



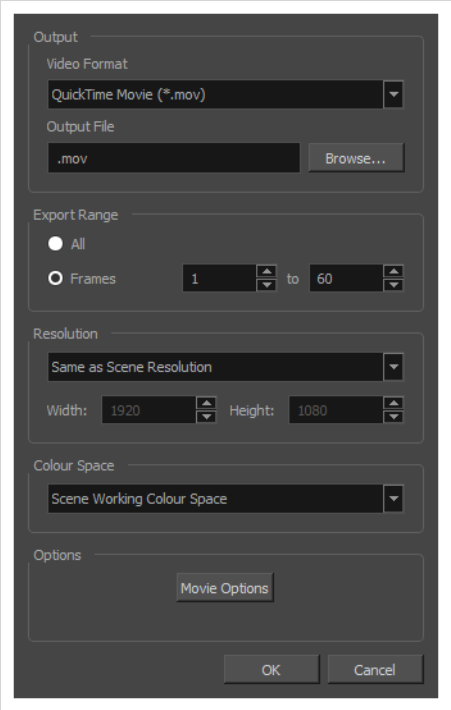
NOTES

- For tasks related to this dialog box, refer to the User Guide.
- This dialog can only be accessed on Windows and requires Apple QuickTime to be installed.

How to access the QuickTime Movie Settings dialog box

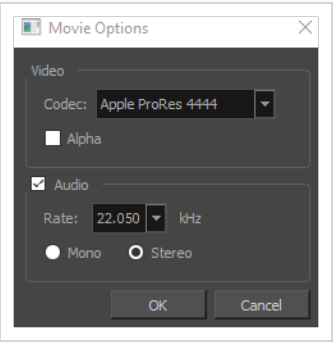
1. From the top menu, select **File > Export > Movie**.

   The Export Movie dialog box appears.



2. In the **Movie Format** drop-down, select QuickTime ProRes Movie (*.mov).
3. Click on the Movie Options button.

   The QuickTime Movie Options dialog box appears.

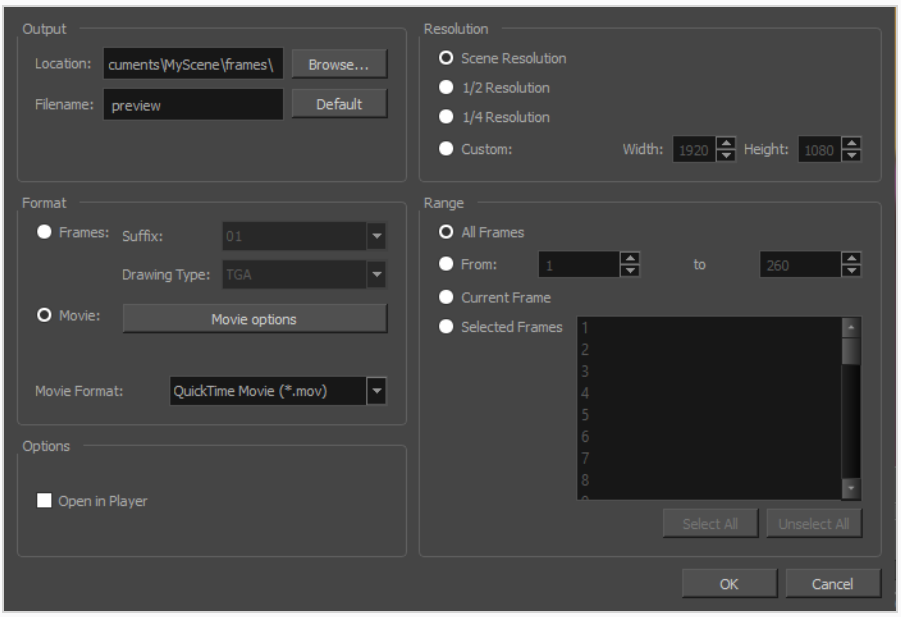


4. In the Codec drop-down, select any of the movie options.

How to access the QuickTime Movie Settings dialog box from the Export OpenGL Frames dialog

1. In the top menu, select **File > Export > OpenGL** Frames.

   The Export OpenGL Frames dialog box appears.



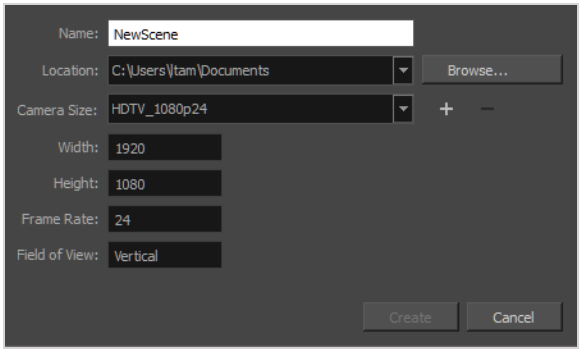
2. In the **Format** section, select **Movie**.
3. In the **Movie Format** drop-down, select **QuickTime Movie (*.mov)**.
4. Click on the **Movie Options** button.

Parameter	Description
Video	
Settings	Opens the Standard Video Compression Settings dialog box. This is where you can set the video compression settings for the movie you will export—see *QuickTime Standard Video Compression Settings Dialog Box (Windows)* on page 199.
Filter	Opens the Choose Video Filter dialog box, where you can select from a range of filters to apply to your video export.
Size	Opens the Export Size Settings dialog box. This dialog is available because of the way the Apple QuickTime interface is designed, but its settings are not taken in account by Harmony. The size of the exported video is determined by Harmony.
Sound	
Settings	Opens the Sound Settings dialog box. This is where you can you set the sound compression settings for the movie you will export—see *QuickTime Sound*

	Settings Dialog Box (Windows) on page 195.
Prepare for Internet Streaming	If this option is enabled, the video will be optimized to start playing while it is downloading, as videos do in web browsers and web-based streaming applications. • **Fast Start:** The video plays as soon as enough data required to start playback has been downloaded. • **Fast Start - Compressed Header:** Same as Fast Start, except the header is compressed for an even faster start. Requires QuickTime 3.0 or later. • **Hinted Streaming:** Allows you to optimize the movie file for streaming through QuickTime Server Software. Click on the Settings button to configure how hints are created in your movie file.

New Scene Dialog Box

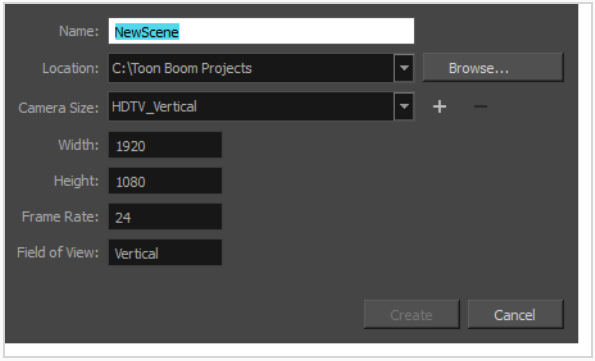
The New Scene window lets you create a new scene.



How to access the New Scene window

1. Do one of the following:
    - From the top menu, select **File > New.**
    - In the File toolbar, click the New button.
    - Press Ctrl + N (Windows/Linux) or ⌘ + N (macOS).

    The New Scene dialog box opens.



Parameter	Description
Name	Lets you type in a name for the new scene.
Location	Lists the locations you used most frequently for storing scenes.
Browse	Opens a browser in which you can specify a location for the new scene that is not listed in the Location list.

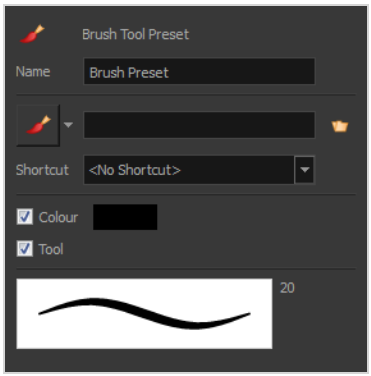
Camera Size	Opens a list of resolutions.
+ (Create Custom Resolution)	Opens the New Resolution window in which you can create a custom resolution that is added to the Camera Size list.
- (Delete Custom Resolution)	Lets you remove a custom resolution from the Camera Size list.
Width	Indicates the width of the resolution you chose from the Camera Size list.
Frame Rate	Indicates the frame rate of the resolution you chose from the Camera Size list.

New Tool Preset Dialog Box

The New Tool Preset dialog box lets you create new tool presets and manage them.

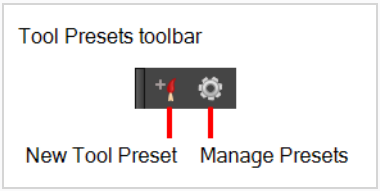
Tool presets let you save a variety of settings and are very efficient for accessing the tools you use most often. That way, the tool is already set with the desired properties, such as colour, line thickness, whether to enable Draw Behind or Auto Flatten mode, and so on. You can create presets for these tools and many more: Brush, Pencil, Eraser, Rectangle, Ellipse, and Line.

The difference between a tool preset and a brush preset is that when you save a tool preset, you have the option of saving the colour and assigning a shortcut, which you cannot do with brush presets.



How to access the New Tool Preset dialog box

1. Do one of the following:
    - From the top menu, select **Windows > Toolbars > Tool Presets**.
    - Right-click an empty area below the top menu and select **Tool Presets**.



2. In the Tool Presets toolbar, click the New Tool Preset button.

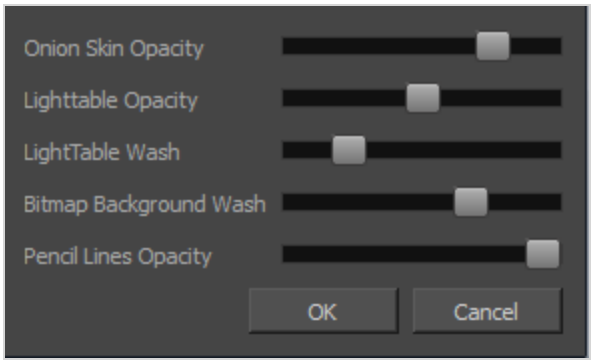
Parameter	Description
Name	Lets you give the preset a meaningful name.
Icon list	Lets you select an icon for the preset.

Folder icon	Lets you select an image for the preset.
Shortcut	Lets you assign a keyboard shortcut to the preset.
Colour	Saves the current colour into the tool preset.
Tool	If you disable this option, only the colour will be associated. You could, for example, set three different colours with shortcuts not associated with any tool. The colour preset would then work on any selected tool. Selecting the brush tool was only a vehicle to get into the New Tool Preset dialog box.

Onion Skin and Light Table Transparency Dialog Box

T-ANIMPA-006-009

This dialog box lets you adjust the Onion Skin and Light table transparency parameters.



How to access the Onion Skin and Light Table Transparency dialog box

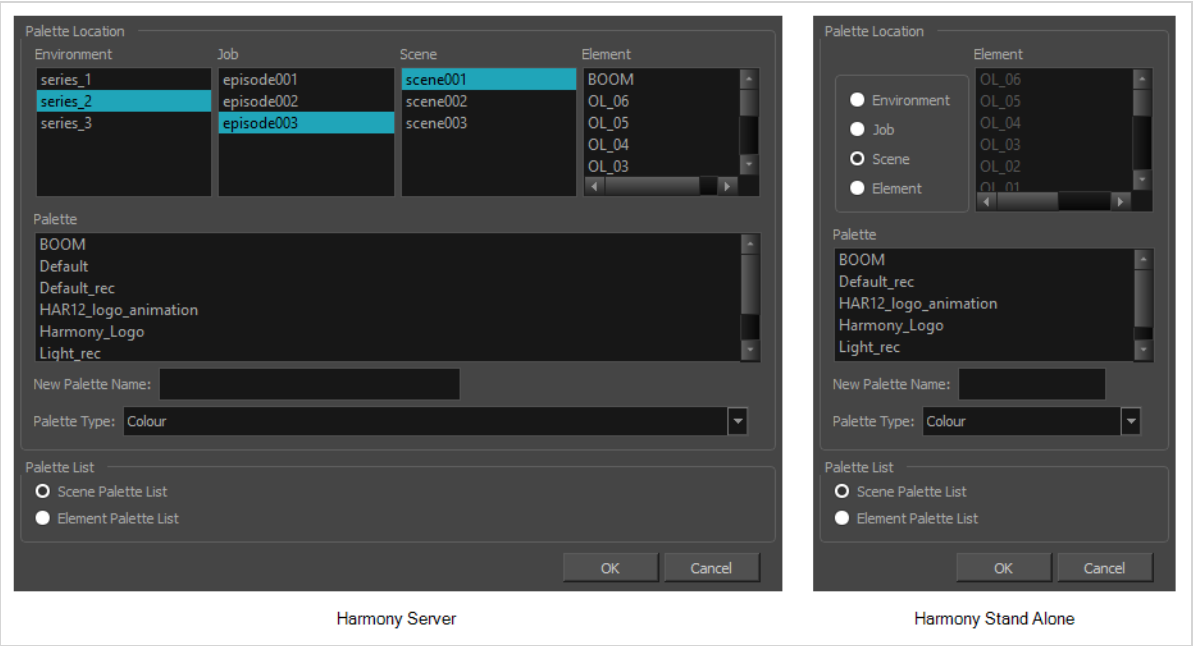
- In the Drawing view toolbar, click on the Top Light button to open the Onion Skin and Light Table Transparency dialog box.

Command	Description
Onion Skin Opacity	Sets the maximum opacity value for the onion skin opacity display. Moving the slider all the way to the left = 0% opacity. Moving the slider all the way to the right = 100% opacity.
Lighttable Opacity	Sets the maximum opacity value for the light table display. Moving the slider all the way to the left = 0% opacity. Moving the slider all the way to the right = 100% opacity.
LightTable Wash	Sets the washed-out value for the light table display. Moving the slider all the way to the left = 0% opacity. Moving the slider all the way to the right = 100% opacity.
Bitmap Background Wash	Sets the maximum opacity value for the background wash. Moving the slider all the way to the left = 0% opacity. Moving the slider all the way to the right = 100% opacity. Only works for bitmap layers.
Pencil Lines Opacity	Sets the maximum opacity value for central vector lines (lines made by the Pencil or Shape tools). Moving the slider all the way to the left = 0% opacity. Moving the slider all the way to the right = 100% opacity.

Palette Browser Dialog Box

The Palette Browser dialog allows you to decide the level of palette list and palette storage to use when you want to create, clone, link to or import a palette.

This dialog only appears if you have the Advanced Palette Lists preference enabled, which is disabled by default. When Advanced Palette Lists mode is disabled, Harmony automatically stores palettes in a scene's palette list, inside the scene's **`palette-library`** subdirectory.



How to access the Palette Browser dialog box

1. Start and log in.
2. Close the Database Selector dialog box.
3. From the top menu, select **Tools > Palette Operations**.
4. In the Palette Operations dialog box that opens, select the palette you want to clone at the location and level in which it was stored.
5. Click **Clone**.

Parameter	Description
Palette Location	This allows you to browse for the physical location of the palette file in your database. If you are using Harmony Stand Alone, you can still select the scene's own job or

	environment as a location. Stand alone scenes have a provisional job and environment storage space inside the scene's directory. The files in these storage spaces can be imported into a database scene's actual job and environment when importing the scene to a Harmony database. If you never intend to use Harmony Server, you should keep your palettes inside your scene or element's palette libraries.
Environment	Stores the palette file in the selected environment's palette library. Environments are typically used to contain a whole production, series or feature film. • In Harmony Server, this stores the palette in **`/USA_DB/environments/[environment name]/palette-library`**. • In Harmony Stand Alone, this stores the palette inside the scene's directory, under **`environments/Digital/palette-library`**.
Job	Stores the palette file in the selected job's palette library. Jobs are typically used to contain episodes in a series, or any set of scenes that is intended to be put in the same sequence. • In Harmony Server **`/USA_DB/jobs/[job name]/palette-library`**. • In Harmony Stand Alone, this stores the palette inside the scene's directory, under **`jobs/Digital/palette-library`**.
Scene	Stores the palette file in the selected scene's palette library, which is the **`palette-library`** subdirectory of the scene's directory.
Element	Stores the palette file inside the selected element's palette library. This library is located inside the scene's directory, under **`elements/[element name]/palette-library`**.
Palette	This lists the existing palettes in the selected location.
New Palette Name	If you are creating or cloning a palette, use this field to enter the palette file's name. The palette will be listed under this name in your palette list. On your file system, it will be named after its palette name, followed by the extension **`.plt`**.
Palette Type	When creating a palette, you can choose between the following palette types: • **Colour:** A colour palette can contain colours, gradients and bitmap textures. • **Pencil Texture:** A pencil texture palette can contain textures to apply as transparency filters to pencil lines, in combination to their line colour, to create various styles of pencil lines.

Palette List	This allows you to decide if you want the palette to be added to your scene's palette list, or to the currently selected element's palette list.
Scene Palette List	Adds the palette to the scene's palette list. Palettes in the scene's palette list are available to all the elements in your scene. This is especially useful if you are doing digital animation, where character models can be made of many layers that need to use the same palette.
Element Palette List	Adds the palette to the currently selected element's palette list. Palettes in an element's palette list can only be used by the drawings in this element, and will only be listed in the Colour view when this element is selected. This can be useful if you are doing traditional animation, where each character is usually drawn on a single layer, and you want each layer to have its own palette.

Palette Operations Dialog Box

When you start Toon Boom Harmony Advanced connected to the database, you can access the Palette Operations dialog box which lets you clone, rename, or delete palettes in your database, without having to open a scene or browse the database's file system in your operating system's shell.

In Harmony, palettes are individual **`*.plt`** files that can be copied, transferred and stored. When a palette is created from Harmony, it needs to be stored somewhere. By default, the palette file is stored in the scene directory in a palette-library folder unless you specify a different location.

There are four locations where you can find palette-library folders: Element, Scene, Job and Environment.

How to access the Palette Operations dialog box

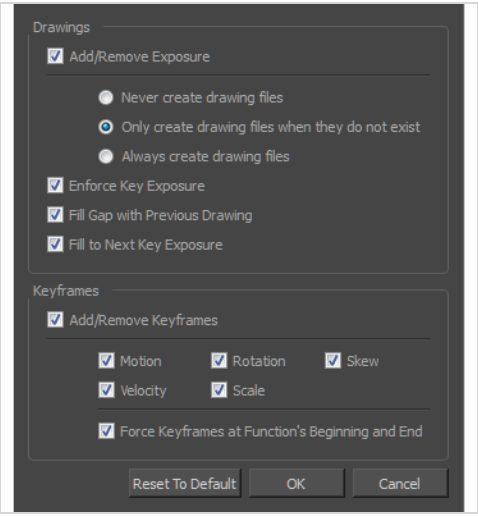
1. Start and log in.
2. Close the Database Selector dialog box.
3. From the top menu, select **Tools > Palette Operations**.

Parameter	Description
Environment	The production, project, feature film or series.
Job	The episode and sequence from each environment.
Scene	The scenes from each job.
Element	The layers and columns in each scene.
Palette	The scene palettes.
Description	Notes, if any, of the project.

Clone	Opens the Palette Browser dialog box from which you can select the level in which to store the palette file.
Rename	Lets you rename a palette.
Delete	Lets you delete a palette. **NOTE** It is not recommended to disable the warning message that appears when you are attempting to delete a palette as this operation cannot be undone.
Close	Closes the Palette Operations dialog box.

Paste Preset Dialog Box

When pasting key frames and exposures, you can modify the existing presets to your liking. There are three presets you can modify: the default presets for both key frames and exposures, key frames only and exposures only.



Parameter	Description
Drawings	
Add/Remove Exposure	**Never create drawing files**: When adding exposures to a drawing layer, drawing files will not be created.
	Only create drawing files when they do not exist: When adding exposures to a drawing layer, new drawings will be created only when drawings with the same name do not already exist in the destination.
	Always create drawing files: When adding exposures to a drawing layer, new drawings will always be created. If drawing files with the same name already exist, Harmony will create a new name for the drawing.
Enforce Key Exposure	If there are key exposures that exist on copied drawings, they are preserved when pasting. No key exposures are added. This is the default behavior when pasting.
Fill Gap with Previous Drawing	Fills selected area in the Xsheet or Timeline view with the previous drawing.
Fill to Next Key Exposure	Fills selected area till the next key exposure.

<table>
<tr><td colspan="2">Keyframes</td></tr>
<tr><td rowspan="6">Add/Remove Keyframes</td><td>Motion: Copies the properties of the selected motion keyframe to the new frame.</td></tr>
<tr><td>Velocity: Copies the properties of the selected velocity keyframe to the new frame.</td></tr>
<tr><td>Rotation: Copies the properties of the selected rotation keyframe to the new frame.</td></tr>
<tr><td>Scale: Copies the properties of the selected scale keyframe to the new frame.</td></tr>
<tr><td>Skew: Copies the properties of the selected skew keyframe to the new frame.</td></tr>
<tr><td>Force Keyframes at Function's Beginning and End: Adds a keyframe to the beginning and end of the pasted function, reproducing the source function.</td></tr>
</table>

Paste Special Dialog Box

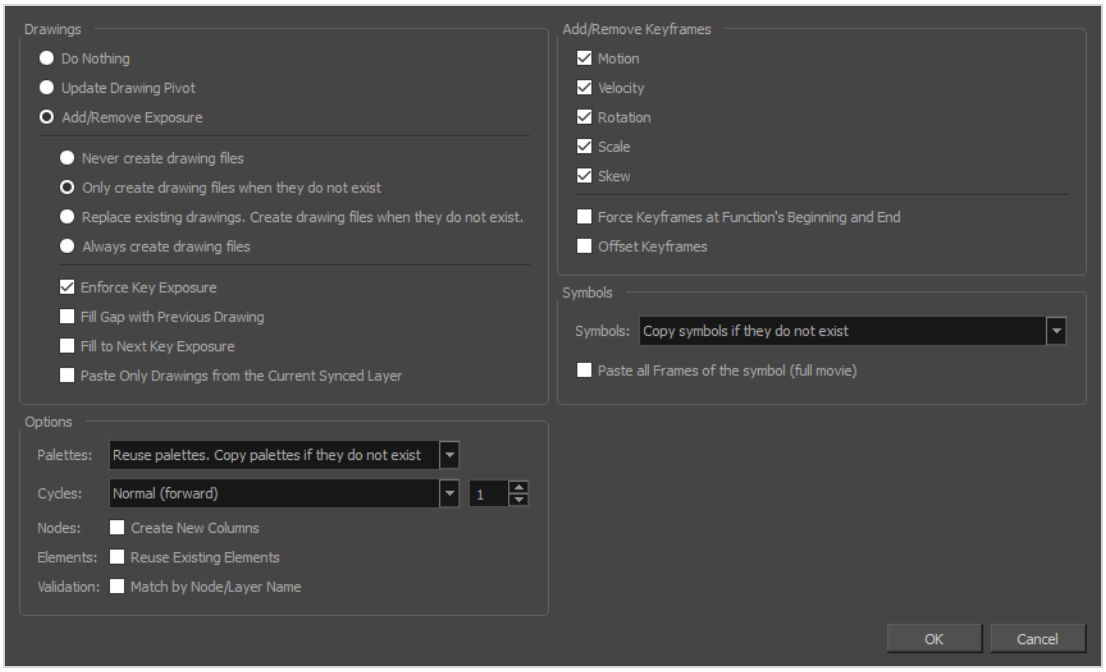
The Paste Special dialog box lets you determine how templates and symbols are imported in the Timeline view.

When you import a template in the Timeline view, all layers are created as well as drawings and keyframes. You can choose to import only the keyframes without the drawings or import only the drawings that are not already in your layers. You can adjust the behaviour using the Paste Special dialog box.When you import a symbol in your scene, its full length is exposed by default. If you import a symbol in the Timeline view's left side, all the frames will be exposed. However, if you import it into an existing layer, you can use the Paste Special dialog box to adjust the import behaviour to fit your requirements.Once you set the parameters, Harmony will reuse them each time you import a symbol in the Timeline view's right side until you set new parameters.

How to access the Paste Special dialog box

1. In the Library view, select the symbol or template to import.
2. Do one of the following:
    - While holding down the Alt key, click and drag on the template, then drop it on the Timeline view, over the layer and at the frame where you want to paste it.
    - Press Ctrl + C (Windows/Linux) or ⌘ + C (macOS). Then, in the Timeline view, click on the frame where you want to paste the template and press Ctrl + B (Windows/Linux) or ⌘ + B (macOS)

    The Paste Special dialog box opens.



Parameter	Description
Drawings	
Do Nothing	Does not create or overwrite drawings.
Update Drawing Pivot	Revises the drawing pivot in the destination to use the same drawing pivot as the first drawing in the template. If you have a range of drawings selected in the destination, the pivot points of all selected drawings will be updated.
Add/Remove Exposure	**Never create drawing files**: When adding exposures to a drawing layer, drawing files will not be created.
	Only create drawing files when they do not exist: When adding exposures to a drawing layer, new drawings will be created only when drawings with the same name do not already exist in the destination.
	Replace existing drawings. Create drawing files when they do not exist: Replace drawings with the same names to update a scene with new modified drawings and preserve the animation. **Tip**: If you don't want to lose the existing animation when pasting a template, such as when placing new drawings after the animation, then delete the template's animation. It will still have updated the drawings but not override the existing animation.
	Always create drawing files: When adding exposures to a drawing layer, new drawings will always be created. If drawing files with the same name already exist, Harmony will create a new name for the drawing.
	Enforce Key Exposure: If there are key exposures that exist on copied drawings, they are preserved when pasting. No key exposures are added. This is the default behavior when pasting.
	Fill Gap with Previous Drawing: Fills selected area in the Xsheet or Timeline view with the previous drawing.
	Fill to Next Key Exposure: Fills selected area till the next key exposure.
	Paste all frames of the symbol (full movie): When enabled, the Paste Special command exposes all the symbol's frames instead of only the first one.

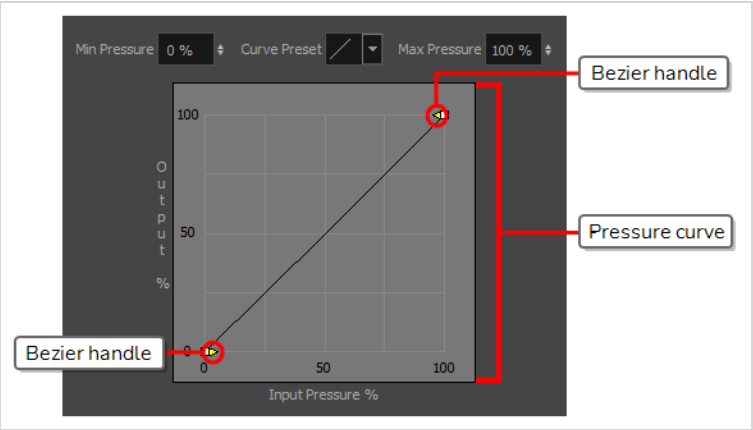
Symbols	
Copy symbols if they do not exist	This is the default setting for this operation and will prevent Symbols in an Action template from being copied.
Duplicate symbols	Creates a duplicate of the symbol instead of linking the Symbol instance to the original one. The new Symbol is created in the Library.
Paste all Frames of the symbol (full movie)	When enabled, the Paste Special command exposes all the symbol's frames instead of only the first one.
Add Remove/Keyframes	
Motion	Copies the properties of the selected motion keyframe to the new frame.
Velocity	Copies the properties of the selected velocity keyframe to the new frame.
Rotation	Copies the properties of the selected rotation keyframe to the new frame.
Scale	Copies the properties of the selected scale keyframe to the new frame.
Skew	Copies the properties of the selected skew keyframe to the new frame.
Force Keyframes at Function's Beginning and End	Adds a keyframe to the beginning and end of the pasted function, reproducing the source function.
Offset Keyframes	When pasting functions, offsets keyframes from the function's last frame value by the values in the pasted function. This will continue the progression of a function instead of repeating the values.
Options	
Palettes	**Do nothing**: Does not create, overwrite, merge or link palettes. **Reuse palettes. Copy palettes if they do not exist**: Palettes in the destination drawings are left as they are. **Copy and overwrite existing palettes**: Overwrites destination palettes with the palettes from the source drawings.

	Copy and create new palette files: Creates new palette files, placing them at the same relative environment and scene level as the source. If the palettes in the templates were stored at the environment level of the source scene, the paste operation will place the palettes in the environment level of the destination scene. **Copy and create new palette files in element folder**: Creates new palette files in the element folders of the destination scene, rather than in the same relative job or environment. **Copy palette and merge colours. Add new colours only**: Adds new colours to the destination palettes and ignores colours that are the same in the two palettes. **Copy palettes and update existing colours**: Adds new colours to the destination palette and updates duplicate colours in the destination with colour values from the source. **Link to original palettes (colour model)**: Links the colour palettes in the destination scene to the palettes in the source. Use this to link drawings to the palettes in a colour model. **Copy scene palettes and merge colours. Add new colours only**: Adds new colours to the destination scene palettes and ignores colours that are the same in the two palettes. **Copy scene palettes and update existing colours**: Adds new colours to the destination scene palette and updates duplicate colours in the destination with the colour values from the source.
Cycles	**Normal (forward):**Pastes your selection as is, starting with the first cell and ending with the last. **Reverse**: Pastes your selection in reverse, starting with the last cell and ending with the first. **Forward > Reverse:**Pastes your selection as a yo-yo, starting with the first cell, going to the last one and ending with the first cell. **Reverse > Forward**: Pastes your selection as a reverse yo-yo, starting with the last cell, going to the first one and ending with the last cell.
Nodes	**Create New Columns**: A new column is created when you copy and paste nodes from the layer in the Timeline view. If the layers are linked to function curves, the function curves, drawings and timing will be duplicated.
Elements	**Reuse existing elements**: Lets you paste existing elements without creating new ones. This should be used only when pasting within versions of the same scene.
Validation	**Match by Node/Layer Name**: When pasting a template with a hierarchy onto another hierarchy, this option looks to match the pasting elements with the same

	layer or node name, rather than the same hierarchical structure. This means that even if the two hierarchies are different, a new pose of a character's body part will still be pasted on the correct body part layer, as long as both layers are named the same.

Pen Pressure Feel Dialog Box

The Pen Pressure Feel dialog box allows you to configure how Harmony processes the pressure you put on your tablet pen to apply it to the size of your drawing tool.



By default, Harmony applies the pressure you put on your pen to your tool in a linear fashion. That is, if you put 25% of the maximum pressure on your pen, your tool's size will be 25% of the way between its minimum and maximum size. If you put 75% of the maximum pressure on your pen, your tool's size will be 75% of the way between its minimum and maximum size.

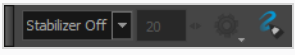
However, you may find that it would feel more natural, or that it would make it easier to control the size of your drawing strokes, if Harmony interpreted the pressure you put on your pen differently. For example, you may want Harmony to make your brush strokes small unless you put a lot of pressure on your pen, or you may want Harmony to make your brush strokes big unless you put very little pressure on your pen. This is where the Pen Pressure Feel dialog box comes in handy.

NOTE

For information on how to use the Pen Pressure Feel dialog, refer to the User Guide.

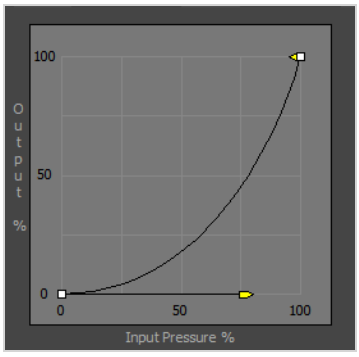
How to access the Pen Pressure Feel dialog

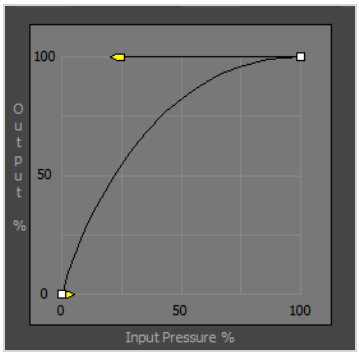
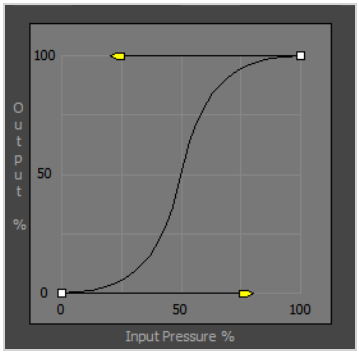
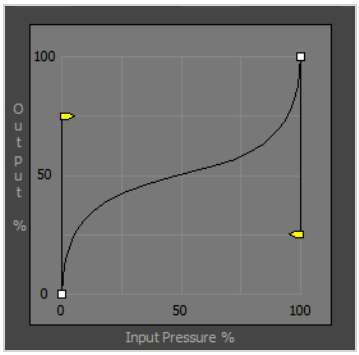
1. Add the Pen Settings toolbar to your workspace by doing one of the following:
   - In the top menu, select **Windows > Toolbars > Pen Settings**.
   - Right-click on any existing toolbar and, in the context menu, select **Pen Settings**.

2. In the Pen Settings toolbar, click on the Pen Pressure Feel button.

   The Pen Pressure Feel dialog appears.

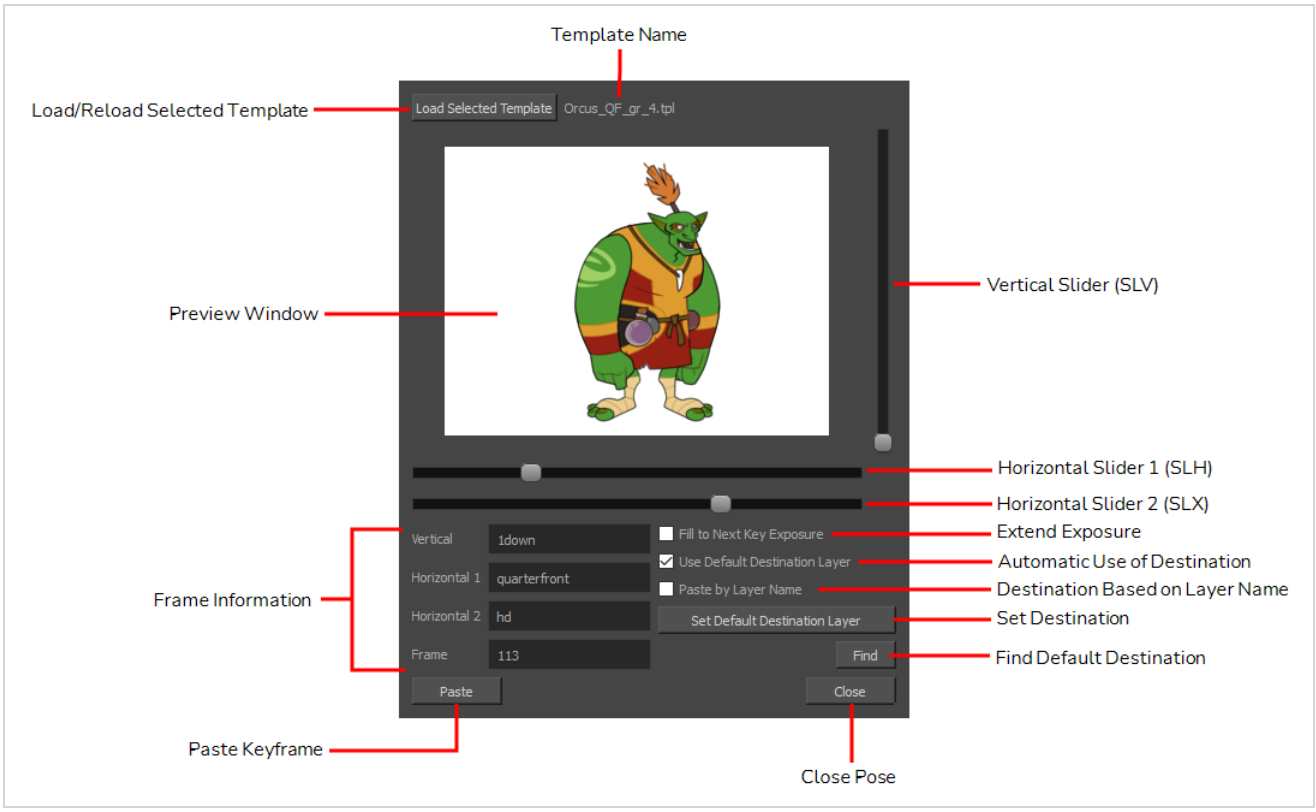
Parameter	Description
Min Pressure	The percentage of your pen's maximum pressure you must apply before Harmony registers that you are drawing. If you increase this setting, you can lightly brush your tablet with your pen without drawing, and you must apply a certain amount of pressure on it to draw. For example, if you set this to 15%, you can apply up to 15% of your pen's maximum pressure without actually drawing. If you apply exactly 15% of your pen's maximum pressure, Harmony will draw a stroke in your tool's minimum size. By default, this is set to 0%, which means that just brushing the tablet with your pen will draw in your tool's minimum size. You can increase this setting up to 25%.
Curve Preset	Allows you to instantly apply a curve preset to the pressure curve below.
Max Pressure	The percentage of your pen's maximum pressure at which point your drawing tool should draw in its maximum size. For example, if you set this to 80%, your drawing tool will draw in its maximum size if you apply 80% of your tablet pen's maximum pressure. By default, this is set to 100%, which means you have to press your tablet pen all the way to draw in your drawing tool's maximum size. You can decrease this setting down to 75%.
Pressure Curve	This curve determines how to process the amount of pressure you apply to your tablet pen into your drawing tool's size. By default, it is linear, meaning that the amount of pressure you put on your tablet pen is directly applied to the size of your drawing tool. By moving the two Bezier handles between the extremities of the curve, you can change the curve's shape. • If you make an ease-in curve like the one below, the size of your drawing strokes will tend to be closer to the minimum size of your drawing tool, unless you apply a lot of pressure on your tablet pen.  • If you make an ease-out curve like the one below, the size of your drawing strokes will tend to be closer to the maximum size of your drawing tool, unless you apply very little pressure on your tablet pen.

Parameter	Description
	 • If you make an ease-in-ease-out curve like the one below, the size of your drawing strokes will tend to be closer to the minimum size of your drawing tool when applying light pressure, and to be closer to the maximum size of your drawing tool when applying more pressure, but it will rarely be the median between the minimum and the maximum size.  • If you make an ease-out-ease-in curve like the one below, the size of your drawing strokes will tend to be closer to median between the minimum and maximum size of your drawing tool, unless you apply very little or a lot of pressure on your tablet pen. 

Pose Copier Dialog Box

T-RIG3-007-007

The pose copier contains many buttons and other information to facilitate the insertion of poses in the animation.

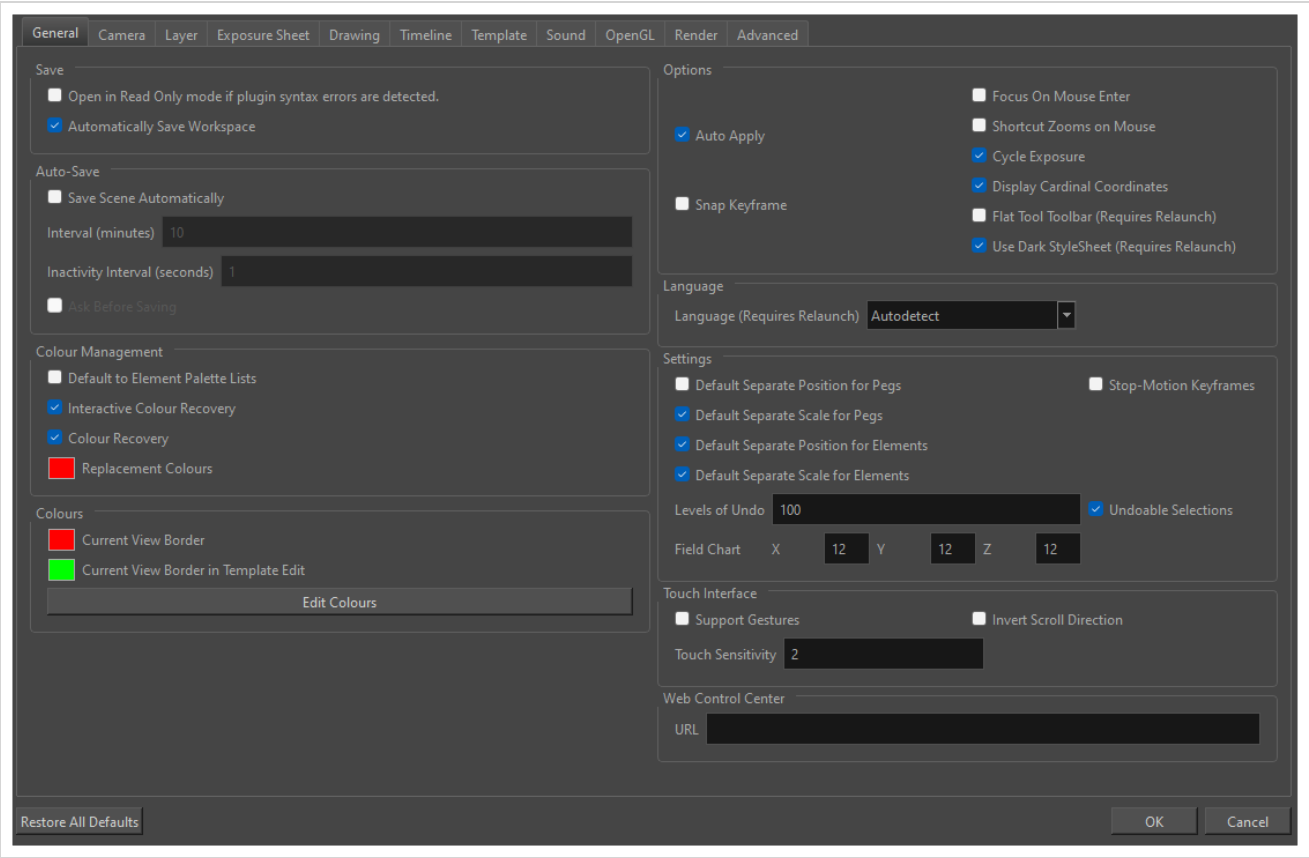


Parameter	Description
Preview Window	Based on master template's generated thumbnails, previews currently selected frames.
Load Selected Template	Updates the template with the newly selected template.
Template Name	Name of the currently selected template.
Vertical Slider (SLV)	Linked to the slv- node of the node system.
Horizontal Slider 1 (SLH)	Linked to the slh- node of the node system. Default slider for the pose copier if no guide layers are created.

Horizontal Slider 2 (SLX)	Linked to the slx- node of the node system.
Fill to Next Key Exposure	Having this option checked will automatically extend the exposure of the pasted frame up to the next key.
Use Default Destination Module	When enabled, the pasted keys will automatically refer to the destination defined in the option Set Default Destination Module.
Paste by Layer Name	When this option is checked the pasted layers will look for the individual layer name instead of matching the hierarchy of the template.
Set Default Destination Module	Instead of selecting the destination every time, the layer set as default destination will automatically paste the keys onto those layers.
Find	This will center on the default destination in the timeline.
Paste	Paste the current position of the pose copier onto the destination.
Vertical	Currently selected frame on the vertical slider. (based on frame name in slv-node)
Horizontal 1	Currently selected frame on the horizontal slider 1. (based on frame name in slh-node)
Horizontal 2	Currently selected frame on the horizontal slider 2. (based on frame name in slx-node)
Frame	Frame number of the selected frame within the master template.

Preferences Dialog Box

The Preferences dialog box allows you to adjust preferences to suit your workflow and your production's needs.



> **NOTE**
>
> For a list of all the preferences as well as their functionality, refer to the Preferences guide.

How to open the Preferences dialog box

1. Do one of the following:
    - **Windows or GNU/Linux:**
        - In the top menu, select **Edit > Preferences**.
        - Press Ctrl + U.

- **macOS:**
  - In the top menu, select **Harmony Advanced > Preferences**.
  - Press ⌘ + U.

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Preference Set</td><td>
This drop-down allows you to select among one of the available preference presets.

The different preference presets have a lot of settings in common. The following table lists how each preset differs for specific preferences:
<table>
<tr><th rowspan="2">Tab / Location</th><th rowspan="2">Preference</th><th colspan="5">Preference Set</th></tr>
<tr><th>Basic</th><th>Compositing</th><th>Cutout Animation</th><th>Paperless Animation</th><th>Rigging</th></tr>
<tr><td rowspan="3">General</td><td>Focus on Mouse Enter</td><td>Off</td><td>On</td><td>On</td><td>On</td><td>On</td></tr>
<tr><td>Default Separate Position for Pegs</td><td>Off</td><td>Off</td><td>On</td><td>Off</td><td>On</td></tr>
<tr><td>Stop-Motion Keyframes</td><td>Off</td><td>Off</td><td>On</td><td>Off</td><td>On</td></tr>
<tr><td rowspan="2">Timeline</td><td>Reduce Indentation</td><td>Off</td><td>On</td><td>On</td><td>Off</td><td>On</td></tr>
<tr><td>Drawing Substitution: Create Key Exposure</td><td>On</td><td>Off</td><td>Off</td><td>Off</td><td>On</td></tr>
<tr><td>Advanced</td><td>Support Overlay</td><td>Off</td><td>On</td><td>On</td><td>Off</td><td>On</td></tr>
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<tr><td rowspan="4"></td><td>and Underlay Arts</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Advanced Palette List</td><td>Off</td><td>On</td><td>On</td><td>On</td><td>On</td></tr>
<tr><td>Advanced Element Mode</td><td>Off</td><td>On</td><td>Off</td><td>Off</td><td>Off</td></tr>
<tr><td>Element Node Animate Using Animation Tools</td><td>On</td><td>On</td><td>Off</td><td>On</td><td>Off</td></tr>
<tr><td>Pencil Tool Properties</td><td>Auto Close Gap</td><td>On</td><td>On</td><td>On</td><td>On</td><td>Off</td></tr>
</table>
</td></tr>
<tr><td>Save...</td><td>Allows you to export your current preference settings as an XML file, which you can import later.</td></tr>
<tr><td>Load...</td><td>Allows you to browse for and import a preference file that was exported with the Save... button.</td></tr>
<tr><td>Preference Tabs</td><td>Where you can browse for and change preferences.

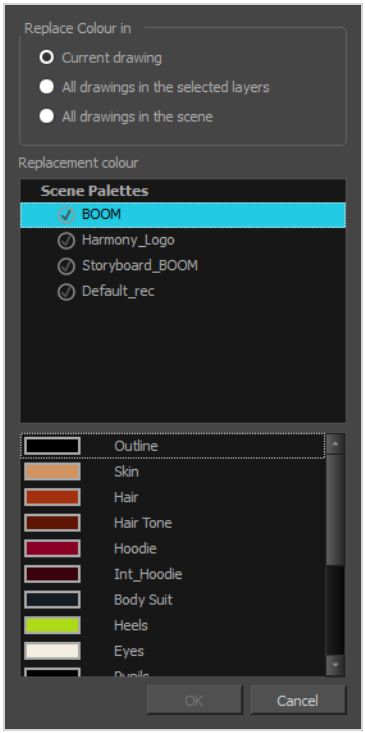
NOTE
For a list of all the preferences as well as their functionality, refer to the Preferences guide.</td></tr>
</table>

Parameter	Description
Restore All Defaults	Restores all your preferences to their default setting for the selected preference set.
OK	Commits your changes to the preferences and closes the dialog.
Cancel	Undoes your changes to the preferences and closes the dialog.

Recolour Drawings Dialog Box

The Recolour Drawing dialog box allows you to replace all instances of a colour or texture in drawings with a different colour or texture swatch in one of the scene's palettes. This replaces the colours or textures in the drawings without requiring you to modify the palettes. You can use this dialog to perform colour replacement in the current drawing, in all the drawings in one or several layers or in all drawings in your scene.

This dialog will replace the colour or texture that is currently selected in the Colour view with the colour or texture that you select inside the dialog.



How to access the Recolour Drawings dialog

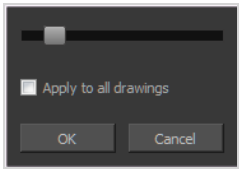
1. In the Colour view, select the colour or texture swatch you want to replace by doing one of the following:
    - Select the palette in which the colour or texture swatch is located, then select the swatch you wish to replace.
    - If the drawing in the Camera or Drawing view contains the colour or texture you want to replace, select the Colour Eyedropper tool in the Tools toolbar, then click on that colour or texture in the drawing. The Colour view will automatically select that colour or texture's palette as well as that colour or texture's swatch.

2. Do one of the following:
    - Right-click on the swatches list, then select **Recolour Drawings**.
    - Open the Colour view menu ☰, then select **Colours > Recolour Drawings**.

Parameter	Description
Replace Colour In	Allows you to select which drawings will be affected by the colour replacement: • **Current drawing:** Replaces the selected colour in the currently selected drawing only. • **All drawings in the currently selected layers:** Replaces the selected colour in all the drawings in the layer that is currently selected in the Timelime or Xsheet Timeline view. **NOTE** This option can work with several drawing layers selected. • **All drawings in the scene:** Replaces the selected colour in every drawing in the current scene.
Replacement Colour	Allows you to select the palette and colour or texture swatch to replace the selected colour or texture with.

Remove Dirt Dialog Box

The Remove Dirt dialog box lets you select small dots and hairs on a drawing for removal.



When paper drawings are passed through a scanner, there can be some hair and dirt scattered across them. These lines and dots need to be cleaned. Harmony provides different tools to help get rid of them quickly.

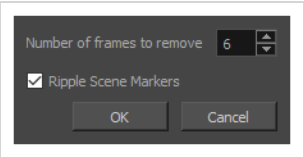
How to access the Remove Dirt dialog box

1. Do one of the following:
    - From the top menu, select **Drawing > Clean Up > Remove Dirt.**
    - From the Camera or Drawing View menu, select **Drawing > Clean Up > Remove Dirt**.
    - Press Shift + D.

Parameter	Description
Slider	Lets you adjust the amount of detail removed from the layer. Raising the Remove Dirt level will select bigger dots. When selecting larger dots, be careful not to lose small details like pupils and nostrils. Once you have chosen the level, you can apply it to the current drawing or the entire animation sequence. This is a quick way to get rid of most dirt and dust. During this process, the dirt that will be removed is highlighted in red.
Apply to all drawings	Applies the operation to all drawings in the layer.

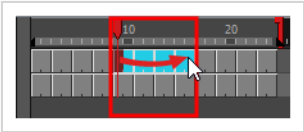
Remove Frames Dialog Box

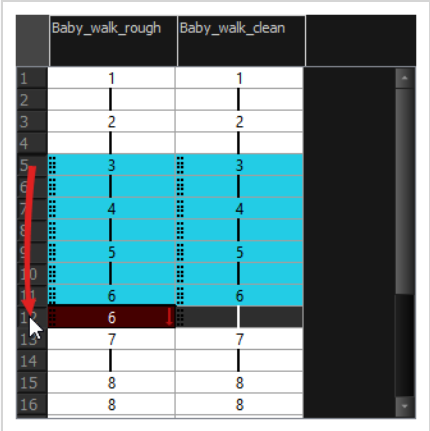
The Add Frames dialog box allows you to remove a range of frames from your scene. All the keyframes and the exposed drawings in the removed range will be deleted, and the keyframes and exposed drawings after the removed range will be offset backwards, so as to close the gap.



How to access the Remove Frames dialog box

1. In the Timeline or Xsheet view, select a frame or a range of frames.





2. Do one of the following:

    - From the top menu, select **Scene > Frame > Remove Selected Frames**.
    - In the Xsheet view, right-click and select **Frame > Remove Selected Frames**.

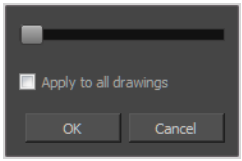
    The Add Frames dialog box appears.

Parameter	Description
Number of frames to remove	The amount of frames to remove. The range of frame that will be removed starts from the selected frame—or the first selected frame, if a range of frames is selected—and ends after the selected number of frames.

Parameter	Description
	By default, this is set to the amount of selected frames.
Ripple Scene Markers	If checked, scene markers after the removed frames will be offset backward to remain synchronized with the keyframes and drawings in your scene. If unchecked, scene markers will remain in place while everything else after the removed frames is offset.

Remove Hair Dialog Box

The Remove Hair dialog box lets you remove any small strokes created in the Colour Art layer from very thick lines or filled zones. Increasing the Remove Hair level value will select larger strokes for removal from the drawing.



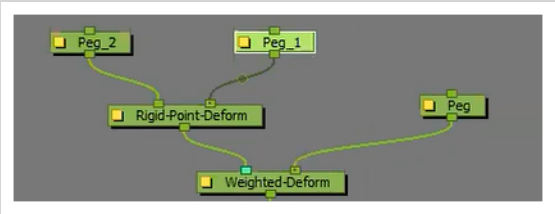
When paper drawings are passed through a scanner, there can be some hair and dirt scattered across them. These lines and dots need to be cleaned. Harmony provides different tools to help get rid of them quickly.

How to access the Remove Hair dialog box

1. In the Timeline or Xsheet view, select the drawing containing the drawing to clean.
2. From the top menu, select **View > Show > Show Strokes** to display the invisible lines or press K.
3. In the top menu, select **Drawing > Clean Up > Remove Hair**.

Parameter	Description
Slider	Lets you adjust the number of length of hairs selected.
Apply to all drawings	Applies the operation to all drawings in the layer.

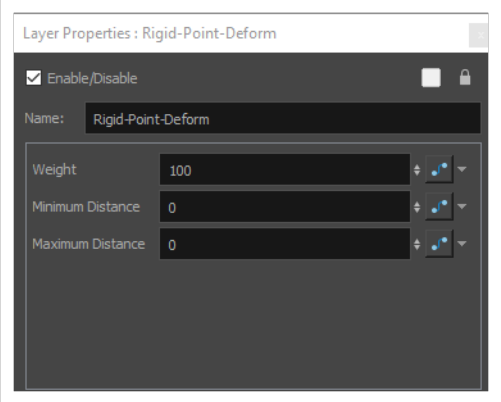
Rigid Point Deform Node



The Rigid Point Deformer is a type of weighted-deformation that prioritizes rigid transformations over deformations and is applied by tracking the position of attached pegs. It is particularly useful for tracking and deforming textures on characters and animated surfaces and is used with the Weighted Deformer node.

How to access the Rigid Point Deform Node dialog box

1. In the Node View press Enter.
2. Type in the name of the node you want to search.
3. Select the node.
4. Click the yellow box on the left to open the dialog box.



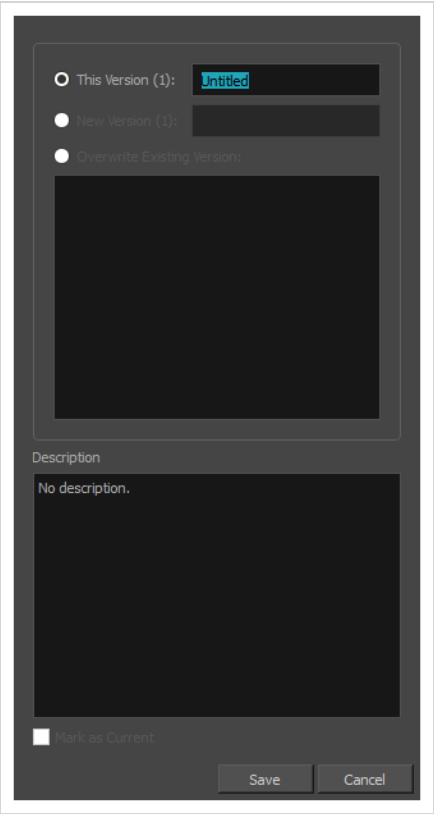
- **Weight:** A percentage value that defines the weight of all points connected to the Rigid Point Deform. This weight is considered when calculating the influence of all points, curves and Rigid Point Deforms connected to the Weighted Deform. These weights are relative to one another in the Weighted Deform system. A weight of 50% would have half the influence in the Weighted Deformation system than a weight of 100% when connected to that same system.
- **Minimum Distance:** The Rigid Deform considers the proximity of the elements in the drawing and the points influence is based on that distance. When a minimum distance is defined, any points within that minimum distance are completely influenced by that point and this influence falls off as it approaches the maximum distance.

- **Maximum Distance:** Similar to the Minimum Distance, the Maximum Distance defines the distance in which the point has little to no control over the surrounding elements in the drawing.

The Minimum and Maximum distance are useful in defining particular regions of control within a Weighted Deformation system.

Save Dialog Box

The Save dialog box appears when you save a scene for the first time in Harmony Server.



How to access the Save dialog Box

1. Make sure you have the necessary rights to save the current scene version. If you do not, you can acquire the rights by selecting **File > Rights to Modify Scene Version** or **Rights to Modify Scene** in the top menu.
2. Do one of the following:
    - In the top menu, select **File > Save**.
    - In the File toolbar, click on the Save button.
    - Press Ctrl + S (Windows/Linux) or ⌘ + S (macOS).

    When saving the scene for the first time, the Save dialog box opens, prompting you to name the version.

Parameter	Description

This Version	Allows you to enter the name of the current version.
Description	Enter a short description of the current version.

Scene Settings Dialog Box

The Scene Settings dialog box lets you select settings for the resolution of your scene, its alignment and the resolution of bitmap drawings and textured brush strokes.

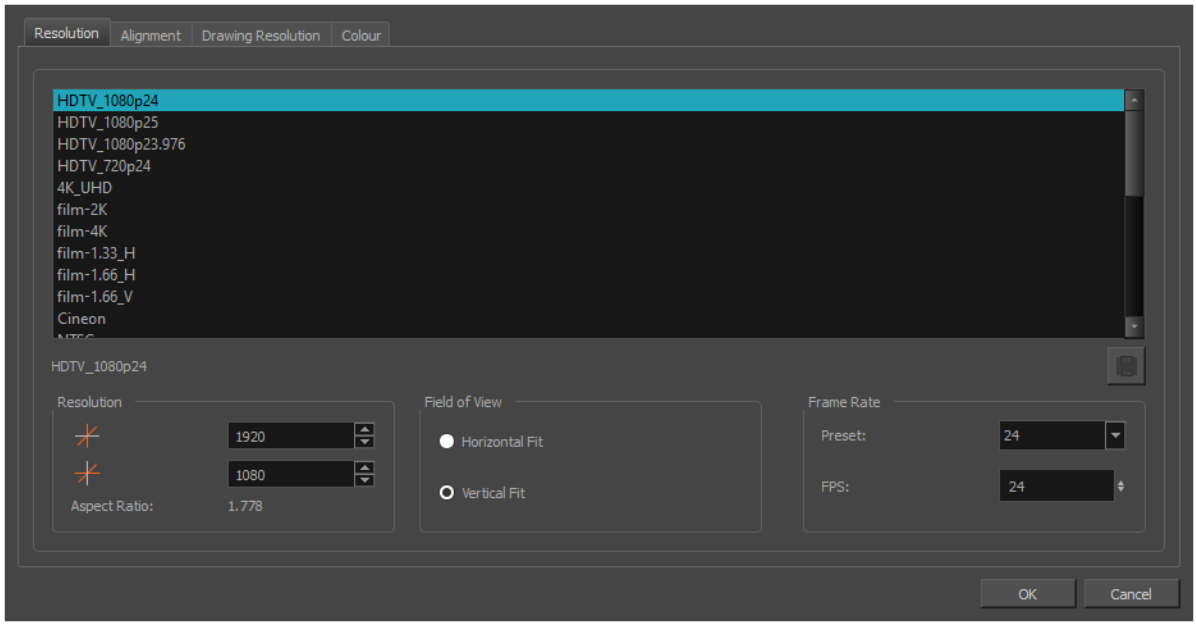
You are already required to select resolution and alignment settings when creating a scene, but those settings can also be modified later using the Scene Settings dialog box.

How to access the Scene Settings dialog box

1. In the top menu, select **Scene > Scene Settings.**

   The Scene Settings dialog box opens.

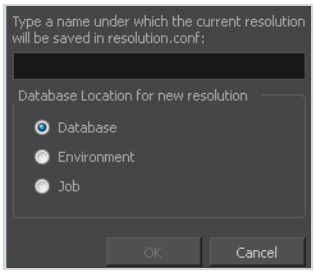
Resolution Tab



The resolution tab allows you to set the width and height of your scene in pixels as well as whether the angle of the field of view.

Icon	Parameter	Description
	Resolution Presets	You can select your project's resolution (camera frame size) from this preset list. • **HDTV_1080p24:** The standard definition for high definition television at 24 frames per second, mostly used in the Americas and some Asian countries that used the NTSC standard for analogue television.

Icon	Parameter	Description
		• **HDTV_1080p25:** The standard definition for high definition television at 25 frames per second, usually for broadcasting in European, African, Asian and Australian countries that used the PAL or SECAM standard for analogue television. • **HDTV_1080p23.976:** The standard definition for high definition television at 23.976 frames per second. This is useful if the remainder of your pipeline uses the 23.976 framerate for legacy reasons. • **HDTV_720p24:** The former standard high definition resolution at 24 frames per second. • **4K_UHD:** A standard ultra HD (4K) format for television productons. 4K implies that the width of the image is of, give or take, 4000 pixels. • **film-2K:** A standard HD format for film projectors with a low aspect ratio. • **film-4K:** A standard ultra HD (4K) format for film projectors with a low aspect ratio. • **film-1.33_H:** The standard resolution for the academy film format that conforms to the standard 4:3 aspect ratio. • **film-1.66_H**: The standard resolution for widescreen film format that conforms to the 16:9 aspect ratio. • **film-1.66_V**: The standard resolution for widescreen film format, but with a vertical field of view. • **Cineon:** The standard format for 35 mm Kodak/Cineon film. • **NTSC:** The standard resolution and framerate for analogue standard definition televisions in most of the Americas (except Brazil, Paraguay, Uruguay and Argentina), Japan, Taiwan, South Korea, the Philippines and Myanmar. • **PAL:** The standard resolution and framerate for analogue standard definition televisions in Europe, Africa, Australia, most of Asia, Brazil, Uruguay and Argentina. • **2160p-240p:** A series of standard widescreen presets named after their resolution heights. • **low:** A resolution based on NTSC with half of its standard dimensions. • **Web_Video:** A legacy format for web streaming. • **Game_512:** A preset for the gaming pipeline, with a square canvas.

Icon	Parameter	Description
		• **WebCC_Preview:** The preset used by WebCC to render previews of scenes in a Harmony Server database. • **HDTV:** The standard definition for high definition television at 24 frames per second, with a horizontal fit field of view. • **HDTV_Vertical:** The standard definition for high definition television at 24 frames per second, with a vertical fit field of view.
	Selected Resolution Preset	Displays the name of the selected resolution preset just below the presets list. If you have made any changes to the resolution since selecting a preset, this will display "(custom)".
	Save Resolution Setting	Allows you to save the current resolution settings as a new preset. If you have a resolution preset selected, this button is only available if you have made changes to the resolution since selecting the preset. You will be prompted to type in the name of the new resolution preset. If using Harmony Server, you will also be asked to select in which part of the database you want the preset to be saved. 
	Resolution	The resolution of the scene defines the width and height of the canvas in pixels. By default, the scene will be rendered in this resolution. If using bitmap layers or textured brush strokes, the definition of the pixels in your artwork will also be based on the scene's resolution.
	Scene Width	The width of the resolution for the scene, in pixels.
	Scene Height	The width of the resolution for the scene, in pixels.
	Aspect Ratio	Displays the ratio between the horizontal and vertical dimensions of the scene. For example, if the scene width and height are the same

Icon	Parameter	Description
		value, this ratio equals 1. The standard aspect ratio for widescreen televisions is 1.$\overline{777}$. For legacy displays, it is 1.$\overline{333}$.
	Field of View	The angle of the field of view, which determines the size of the camera cone as well as the way the field grid used to position elements is adjusted to fit the scene. • Horizontal Fit: The field of view is automatically adjusted so that the field grid and camera cone fit the horizontal length of the scene. • Vertical Fit: The field of view is automatically adjusted so that the field grid and camera cone fits the vertical length of the scene.
	Frame Rate	The amount of animation frames to play each second. Increasing the FPS will make your animation play faster, and decreasing it will make it play slower. • Preset: Allows you to select a frame rate for your scene among one of many commonly used preset frame rates. • FPS:Allows you to type in the frame rate for your scene. **NOTE** The standard framerate for film production is 24 frames per second. However, televisions in some countries play at 25 frames per second. Some productions may use 23.976 frames per second to preserve compatibility with legacy standard displays.

Alignment Tab

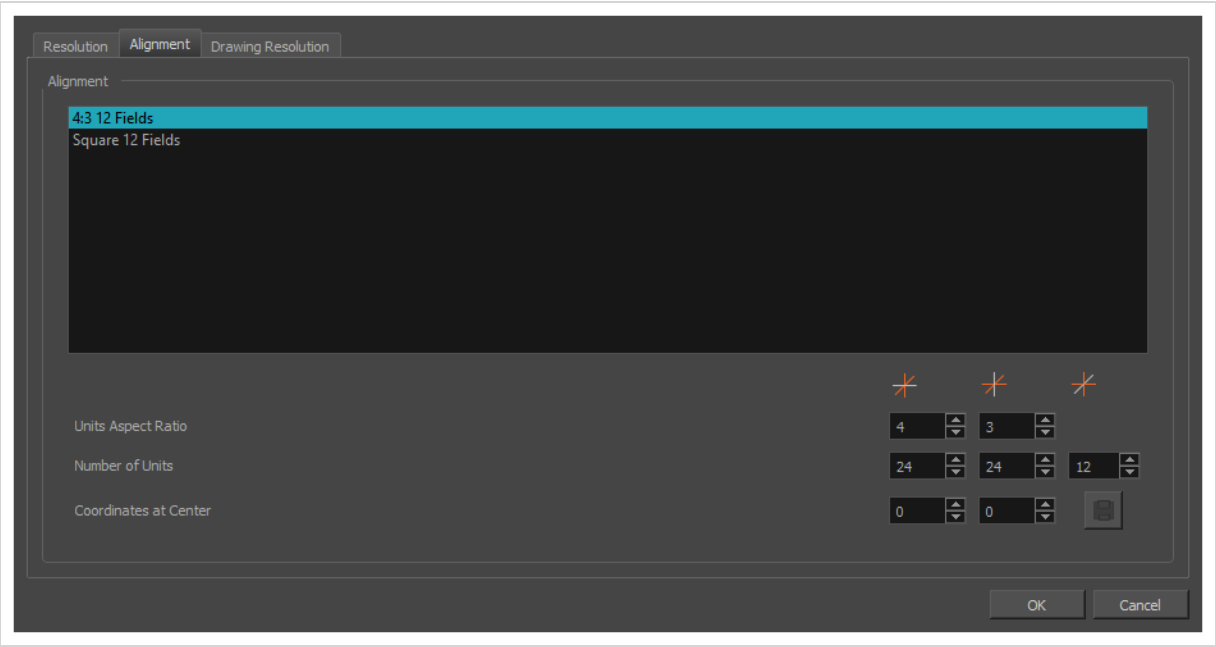
The alignment tab is used to determine the aspect ratio, the position and the size of the field grid used to position elements in the scene.

In Harmony are positioned in *fields*, a unit used in traditional animation which traditionally ranges from 0 to 12 followed by a cardinal direction, and in which 0,0 is the center of the scene.

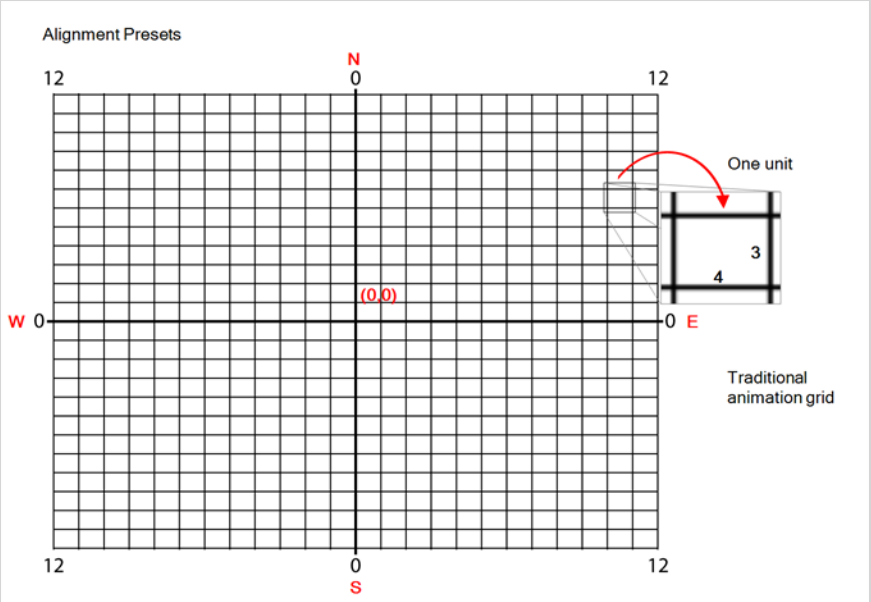
The default Alignment setting in Harmony is based on such a traditional 4:3 drawing grid. In a scene with an aspect ratio of 4:3, this means that positioning an element 12 fields in any direction will make it reach one of the edges of the camera field. For example, 12 North is the vertical position of the upper edge of the camera field, and 12 East is the horizontal position of the right edge of the camera field.

However, since the most commonly used scene resolutions have an aspect ratio of 16:9, and the default grid is in a 4:3 proportion, the grid used to position element will not be in the same proportions as the camera field. The way this is handled is determined by the Field of View setting in the Resolution tab. If your field of view is set to Horizontal fit, the field grid will be made to fit the scene horizontally, and stretch beyond the vertical edges of the scene. This means that 12 East will still be the right edge of the screen, but the position of the upper edge of the scene will be about 9.36 North. Likewise, if the field of view is set to Vertical Fit, the upper edge of the field will be at 12 North, but the right edge will be at about 16 East.

Some artists or studios may prefer to use a square fields grid, where fields have the same size horizontally and vertically.



Parameter	Description
Alignment	The list of alignment presets. By default, Harmony has these two alignment presets: • **4:3 12 Fields**: Defines the units of your project to have a 4:3 ratio and sets up 12 of these units to run both vertically and horizontally in four cardinal quarters (NW, NE, SW, SE). This is the default setting, and it corresponds to an animation grid used in traditional animation. Hence, coordinates based on a traditional animation grid can be entered in Harmony as is to position elements where they are expected to be. • **Square 12 Fields**: Defines the units of your project to have a 1:1 or square ratio and sets up 12 units to run both vertically and horizontally in four cardinal quarters (NW, NE, SW, SE).

Parameter	Description
	NOTE When the Grid is displayed in the Camera and Drawing view, it is always based on the 4:3 12 Fields alignment preset, regardless of your scene's alignment setting. To display the grid, from the top menu, select **View > Grid > Show Grid**.
Units Aspect Ratio	The aspect ratio of each field. This describes the proportional difference between the width and the height of the field. By default, it is set to 4:3, which means the width of each field will take 4 unites of length for each 3 units the height of the field takes. In other words, the width of a field is $1.\overline{333}$ times its height. If set to, for example, 1:1, the fields will be perfectly square. 
Number of Units	The number of fields the grid should have in each direction. In the Number of Units fields, enter the number of horizontal, vertical and depth units for your scene's grid. The grid is a specific size based on the scene's resolution and field of view angle. Changing the amount of units for each direction will not change the size of the grid, but rather, the size of the units. Hence, if an element is offset at 3 North, 4 East, and you change the number of horizontal and vertical units from 24 to 12, the element will become offset twice as far from the centre as it originally was. The third setting in this field determines the amount of units across the Z axis. This determines how far each unit will take an element further or closer to the camera when moved on the Z-axis. By default, the grid has 12 fields across the Z-axis, which is half the amount of fields on the X and Y axes by default. Hence,

Parameter	Description
	each field on the Z-axis is worth exactly twice the length of a field on the horizontal axis. Animators who are familiar with traditional animation method will understand the default setting of 24 units horizontal by 24 units vertical as it corresponds to a traditional animation grid.
Coordinates at Centre	The offset for the centre of the fields grid. The centre of the fields grid is where elements are positioned by default, when they themselves are at coordinates 0,0. To change the centre, you must enter its offset from the actual centre of the grid in fields. For example, if your fields grid is 24 x 24, and you want the centre to be at the top-left corner, you should enter -12,-12.
Save	Saves your current Alignment settings and be able to select them later from the list.

TIP

If you prefer working in pixel-based positions, you must set the aspect ratio of your units to be the same as the aspect ratio of your scene resolution, set the horizontal number of units to the width of your scene in pixels, the vertical number of units to the height of your scene in pixels, and the depth number of units to the width of your scene in pixels. This way, each unit will translate to exactly 1 pixel, in all directions.

NOTE

Each layer also has an alignment rule, which determines how it is positioned relative to the fields grid. By default, it is set to "Centre First Page". However, this alignment rule is made to be compatible to 4:3 fields grids. Hence, if you change your scene's alignment rules, your layers will be offset. To avoid this issue, change the alignment rules of your layers to "Centre" via the Advanced tab of the Layer Properties view.

Drawing Resolution Tab

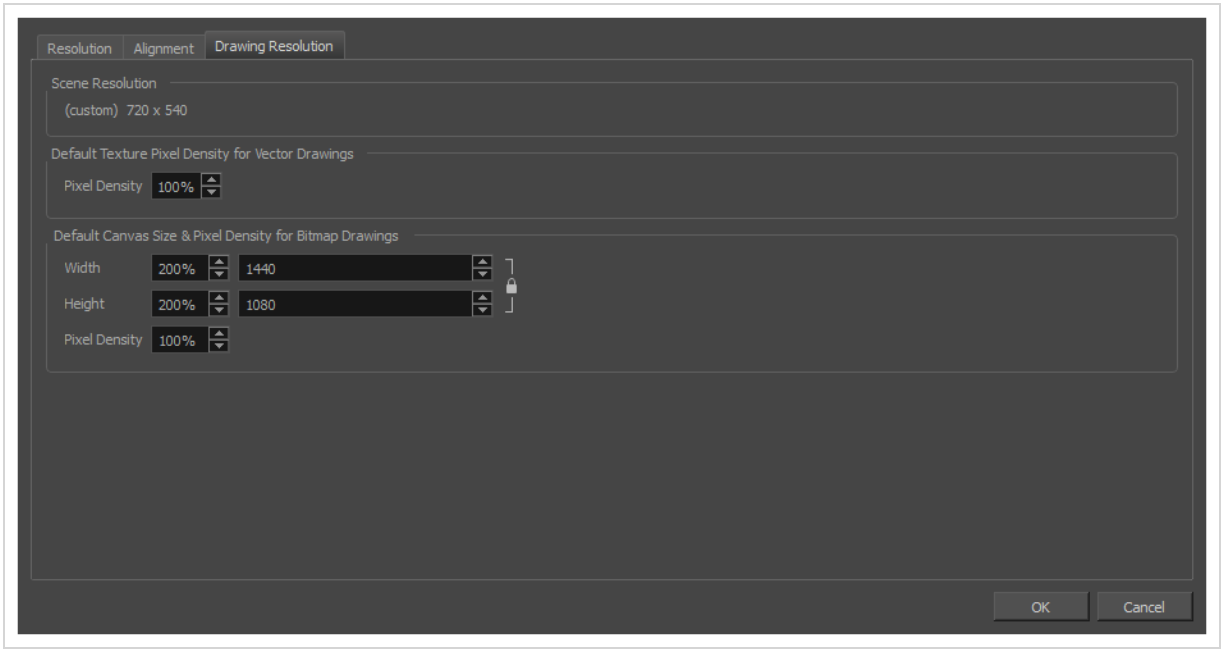
The drawing resolution tab is used to set the pixel density of bitmap drawings as well as of bitmap textures in textured brush strokes in vector drawings. Also, it is used to set the size of the canvas for bitmap drawings relative to the size of the scene.

NOTE

These settings are applied to newly created drawings in the scene, but not to existing drawings in your scene. To change the pixel density of existing vector drawings, you must select **Drawing > Change Vector Drawing Brush Resolution** from the top menu. To change the pixel density and canvas size of existing bitmap drawings, you must select **Drawing > Change Bitmap Drawing Resolution** from the top menu.

NOTE

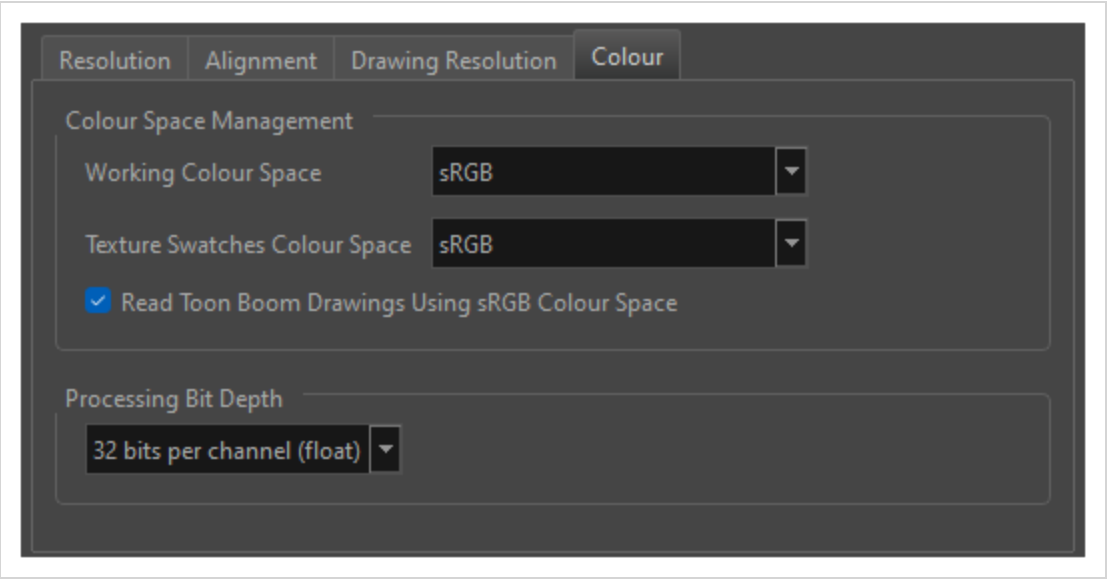
You can change the default drawing resolution settings for new scenes in the Drawing tab of the Preferences dialog.



Parameter	Description
Scene Resolution	This indicates the currently selected scene resolution preset and its dimensions in pixels.
Default Texture Density for Vector Drawings	**Pixel Density:**Determines the amount of pixels to store in textured brush strokes for each pixel that displays when the drawing is not zoomed in or scaled up. For example, at 100%, zooming in or scaling up textured brush strokes will make them lose texture quality. If set to 200%, textured brush strokes can be zoomed in or scaled up until they're twice their original size without losing picture quality.
Default Canvas Size and	**Width:** The default width of the canvas when creating drawings in a bitmap

Parameter	Description
Pixel Density for Bitmap Drawings	drawing layer. The percentage is relative to the width of the scene. Its default value, 200%, makes the width of the canvas twice the width of the stage. **Height:** The default height of the canvas when creating drawings in a bitmap drawing layer. The percentage is relative to the height of the scene. Its default value, 200%, makes the height of the canvas twice the height of the stage. **Pixel Density:** Determines the amount of pixels to store for each pixel that displays on the screen when the drawing is not zoomed in or scaled up. For example, at 100%, zooming in or scaling up a bitmap drawing will make it lose picture quality. If set to 200%, bitmap drawings can be zoomed in or scaled up until they're twice their original size without losing picture quality.

Colour



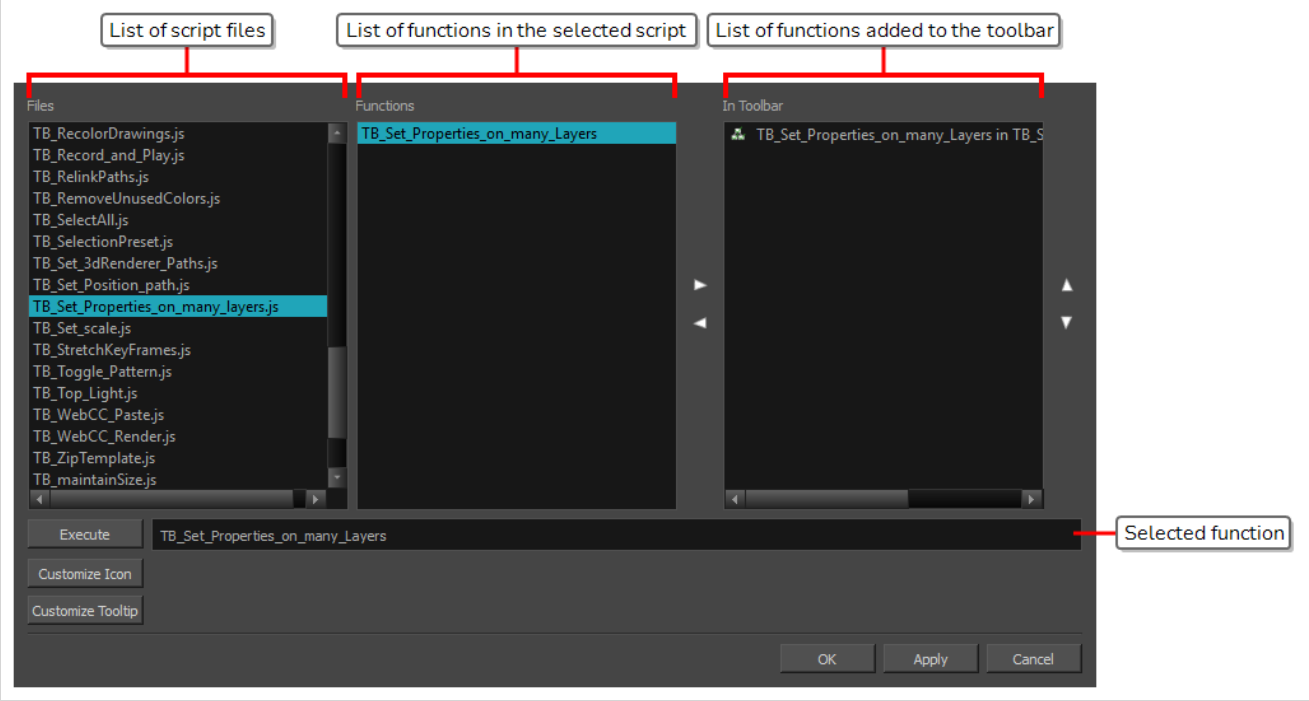
Parameter	Description
Colour Space Management	
Working Colour Space	The working colour space of a project is the one used internally by Harmony. It is also the default colour space used for decoding the colours in drawing layers as well as for exporting images and movies. However, those can be configured to be different from the project colour space if needed. The following colour spaces are available in Harmony: • **No Colour Space Management:** No colour space conversion will be done in the entire

Parameter	Description
	project, even if you set the colour space for your drawing layers or for rendering your scene. • **ACES2065-1**: An ACES linear colour space that uses the AP0 colour primaries and is intended for image file interchange. • **ACEScg**: An ACES linear colour space that uses the AP1 colour primaries and is intended for CGI rendering and compositing. • **Linear Rec.709 (sRGB):** The colour space that uses the same primaries and white point as sRGB and Rec. 709, but with no gamma transfer curve applied to the colour values. • **Linear Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Linear P3-D65:** The same as Display P3, except with no gamma transfer curve. This colour space is useful for compositing intermediary images that are meant to be rendered in Display P3. • **Display P3:** A colour space commonly used for digital projection. It has the same primaries as DCI-P3, the same white point as sRGB and the same gamma transfer curve as sRGB. • **Rec. 709:** The colour space used for HDTV. It has the same primaries and white point as sRGB, but has a different gamma transfer curve. • **Rec. 709 2.4:** The same colour space as Rec. 709 or sRGB, except with a gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 709. • **Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Rec. 2020 2.4:** The same colour space as Rec. 2020, except with a simple gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 2020. • **sRGB:** A colour space typically used for standard computer monitors. It has the same primaries and white point as Rec. 709, but has a different gamma transfer curve. By default, your drawing layers are read in the same colour space as your project, and your rendered frames are created in the same colour space as your project as well. However, if the colour space for the project is different from the colour space used for drawing layers or from the colour space used for rendering your scene, the project colour space serves as the “intermediary” colour space. This means that, in the process of rendering your scene, your drawing layers are converted to

Parameter	Description
	the project's colour space, after which they are composited together along with your scene's visual effects, and finally the rendered image is converted to the colour space selected for rendering your scene. Hence, from a compositing perspective, it is recommended to set your project's workspace to the linear variant of the colour space used for your drawing layers and for rendering your scene. Working this way ensures that calculations made on the colour values for compositing visual elements effects are not affected by the colour space's gamma curve.
Texture Swatches Colour Space	Colour space used for the Texture Swatches. The options are the same as above for the Working Colour Space.
Processing Bit Depth	Allows you to select either 16 bits or 32 bits per channel processing. The default value is 32 bits.

Scripts Manager Dialog Box

The Scripts Manager dialog allows you to create buttons in the Scripting toolbar. Each button you create can run a specific function in one of your scripts. You can also choose an icon and a tool tip for the button, if you want.



NOTE

For tasks related to this dialog box, see the User Guide.

How to access the Scripts Manager Dialog Box

1. Add the Scripting toolbar to your workspace by doing one of the following:
   - In the top menu, select **Windows > Toolbars > Scripting**.
   - Right-click on any existing toolbar and select **Scripting**.
2. In the Scripting toolbar, click on the f_x Manage Scripts button.

   The Scripts Manager dialog box opens.

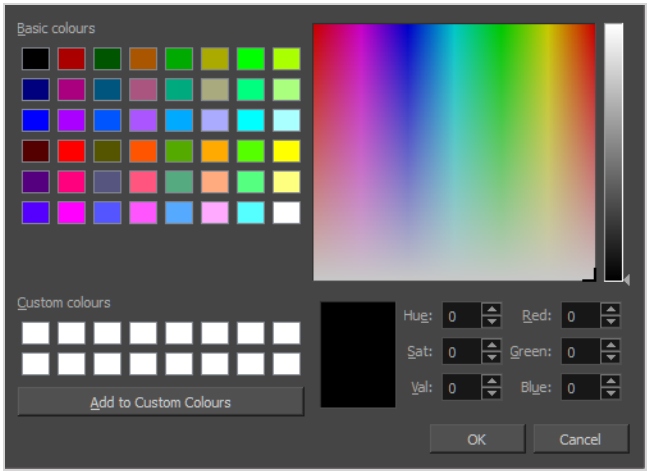
Parameter	Description
Files	A list of the available JavaScript files.

Functions	A list of the available functions for the selected script.
In Toolbar	The list of script functions already added to the Scripting toolbar.
Execute	Runs the selected function. **TIP** Press Esc to interrupt the execution of the script.
Customize Icon	Allows you to select an icon for the toolbar button. Clicking on this button will open an Open dialog prompting you to browse for and select a **`.png`**, **`.jpg`**, **`.xpm`** or **`.svg`** file.
Customize Tooltip	Allows you to type in a custom tooltip for the toolbar button.

Select Colour Dialog Box

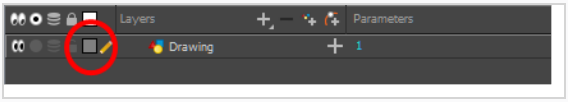
The Select Colour dialog box lets you set the colour of layers and columns. Using colours for layers and columns helps to differentiate them visually, making them easy to identify. The colours you choose will be reflected in the Node view.

You can select a colour by choosing from a basic set of colours, using the colour wheel or by specifying the HSV or RGB values. Once you have selected a colour, you can adjust its intensity and save it as a custom colour that you can reuse.



How to access the Select Colour dialog box in the Timeline view

1. In the Timeline view, click the Change Track Colour button of the layer you want to modify.



The Select Colour dialog box opens.

How to access the Select Colour dialog box in the Xsheet view

1. In the Xsheet view, select one or more columns to modify.
2. Right-click on the column's header and select **Colour > Change Columns Colour**.

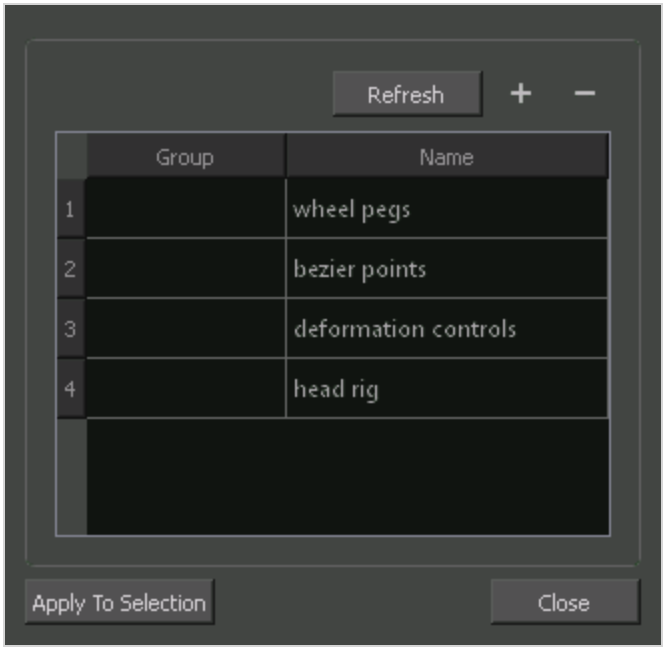
The Select Colour dialog box opens.

Parameter	Description
Basic colours	A basic set of colours to choose from.

Custom colours	Displays the custom colours you previously stored using the Add to Custom Colours button.
Add to custom colours	Lets you add the selected colour to the Custom colours list above.
Colour wheel	Lets you select a colour by dragging the T-shaped pointer.
Value slider	Once you select a colour, you can drag the slider to change the intensity and see it previewed in the Colour Preview window below..
Colour Preview	Displays the colour you are currently selecting. To apply the colour, click OK.
Hue, Saturation, Value	Lets you set the hue (colour), saturation (amount of colour) and brightness (value) of the colour.
Red, Green, Blue	Lets you set the red, green and blue values.

Selection Presets Dialog Box

As you're animating, you might find that you are constantly selecting the same pegs, drawing layers, bezier points on a deformation envelope, part of a character rig, etc. You can create a preset that automatically selects any defined element or group of elements.

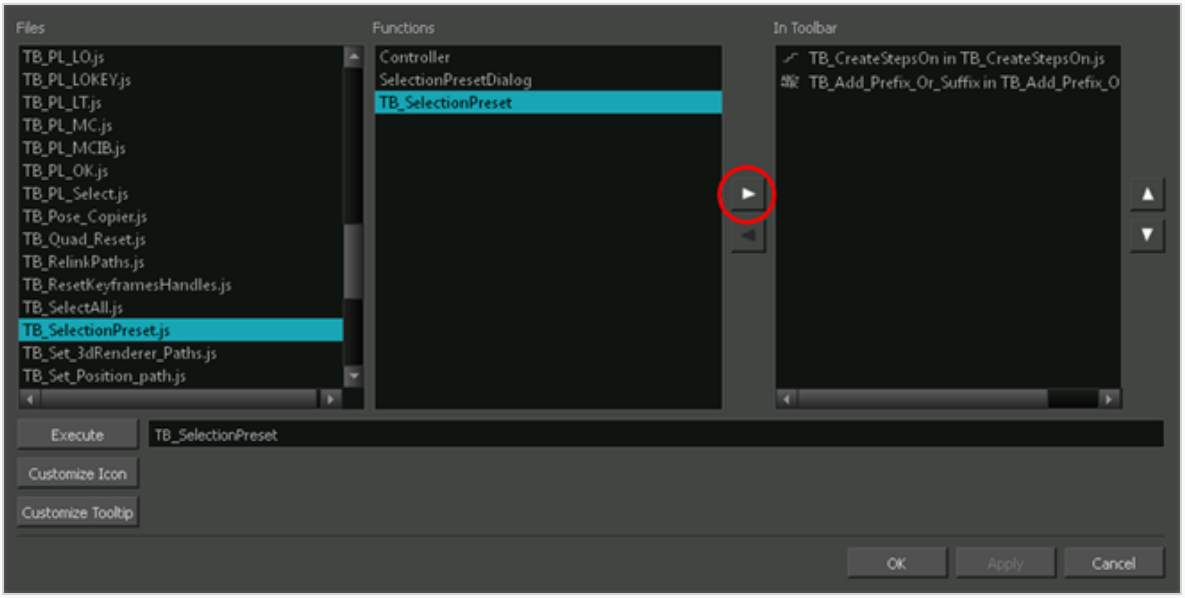


How to access the Selection Presets dialog box

1. Add the Scripting toolbar to your interface:
    - Go to the top menu and select **Windows > Toolbars > Scripting**.
    - right-click on the empty space near the top of the interface and from the quick-access menu selecting **Scripting**.
    - right-click on the empty space near the top of a view and from the quick-access menu selecting **Scripting**.
2. In the Scripting toolbar, click on the Manage Scripts button to open the Scripts Manager window.
3. In the Scripts Manager, in the Files section, select the file **`TB_SelectionPreset.js`**.

    The functions associated with that file appear in the Functions section.
4. In the Functions section, select **`TB_SelectionPreset`**.

    The Add script to toolbar button becomes active.



5. Click on the Add script to toolbar button.

   The TB_SelectionPreset script button is added to the Scripting toolbar.

6. Click **Apply**.
7. Click **OK**.
8. In the Scripting toolbar, click on the TB_SelectionPreset button.

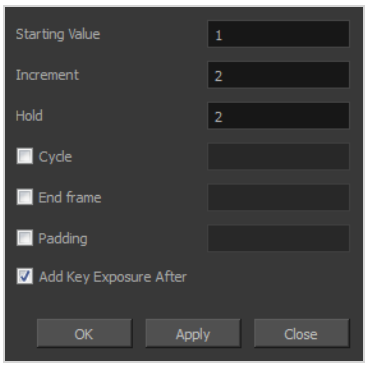
   The Selection Presets window opens.

Parameter	Description
Refresh	Removes any highlighted zones from the Group column.
+ Add Selection Preset	Opens the Save Selection As Preset dialog box. After entering a name for the new preset and clicking OK, a new Selection Preset is added to the Selection Presets list. Note: before clicking on the Add button, make a selection in your scene of the elements for which you wish to create a Selection Preset.
— Delete Selection Preset	Deletes the selected Selection Preset from the list.
Group	Double-click in this area, next to the Selection Preset you wish to use, to select the elements defined by the preset.
Name	Displays the name of the preset.

Apply to Selection	Selects the elements defined by the selected preset from the Name list.
Close	Closes the Selection Presets window.

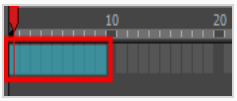
Sequence Fill Dialog Box

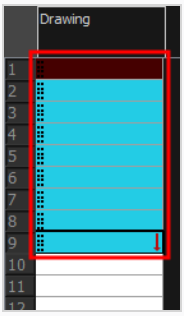
The Sequence Fill dialog box lets you Lets you create a numbered sequence over a selection. The sequence can be forward, backward, single, double or higher increment, as a cycle, and so on. The selection can be over one cell or a cell range in one column or more or an entire column or many entire columns.



How to access the Sequence Fill dialog box

1. In the Timeline or Xsheet view, select a cell range.

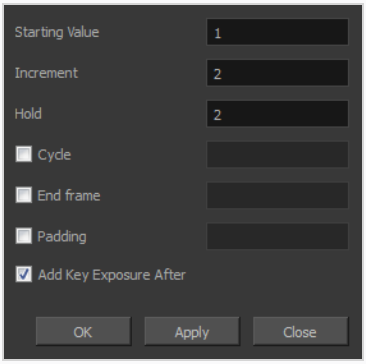




2. Do one of the following:

   - From the top menu, select **Animation > Cell > Sequence Fill**.
   - In the Timeline view, right-click and select **Exposure > Sequence Fill**.
   - In the Xsheet toolbar, click the Sequence Fill button (you may have to customize the toolbar to display it).
   - Press Ctrl + M (Windows/Linux) or ⌘ + M (macOS)).

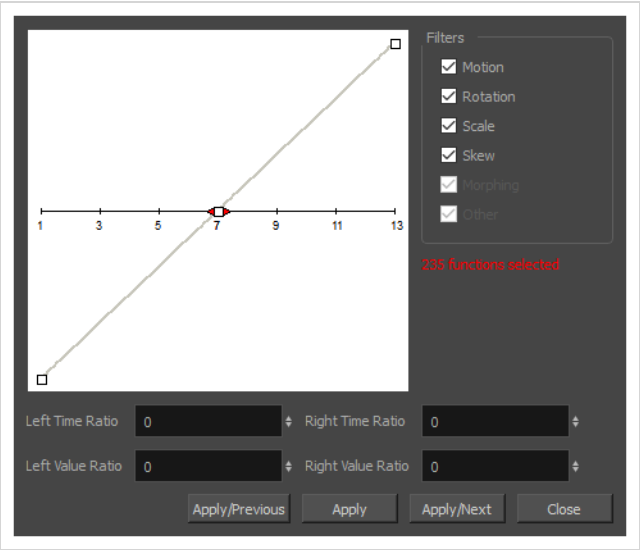
   The Sequence Fill dialog box opens.



Parameter	Description
Starting Value	The first number in the sequence.
Increment	Lets you type the number by which the drawing number will increase from frame to frame. For example, an increment of 1 gives you: **1-2-3-4**; an increment of 2 gives you: **1-3-5-7**; and -2 gives you this: **8-6-4-2**.
Hold	The exposure holding value.
Cycle	Enable this option to cycle the values and enter the number of cycles in the Cycle field.
End Frame	Enable this option to stop the fill at a specific frame within the selection. Indicate the frame number in the End Frame field.
Padding	Enable this option to add a 0 padding before the drawing name. In the Padding field, enter as many hash symbols (#) as digit you want in your drawing name, including the value itself.
Add Key Exposure After	Inserts a key exposure on the frame following the last cell of the new fill selection.

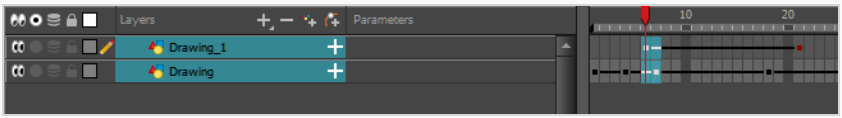
Set Ease for Multiple Parameters Dialog Box

The Edit Set Ease for Multiple Parameters dialog box lets you apply ease to multiple functions and keyframes. You can display the function curve and modify the Bezier or Ease curve.



How to access the Set Ease for Multiple Parameters dialog box

1. In the Timeline view, select a keyframe on one or more layers.



2. Do one of the following:
   - In the Timeline view, right-click and select **Set Ease For Multiple Parameters**.
   - In the Timeline toolbar, click the Set Ease For Multiple Parameters button.

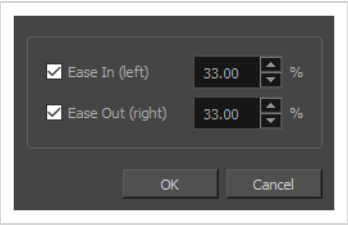
   The Set Ease For Multiple Parameters dialog box opens.

Parameter	Description
Filters	
Motion	**Motion**: Applies the easing parameters to the selected Position X, Position Y, Position Z and 3D Path functions.
	Rotation: Applies the easing parameters to the selected Angle functions.

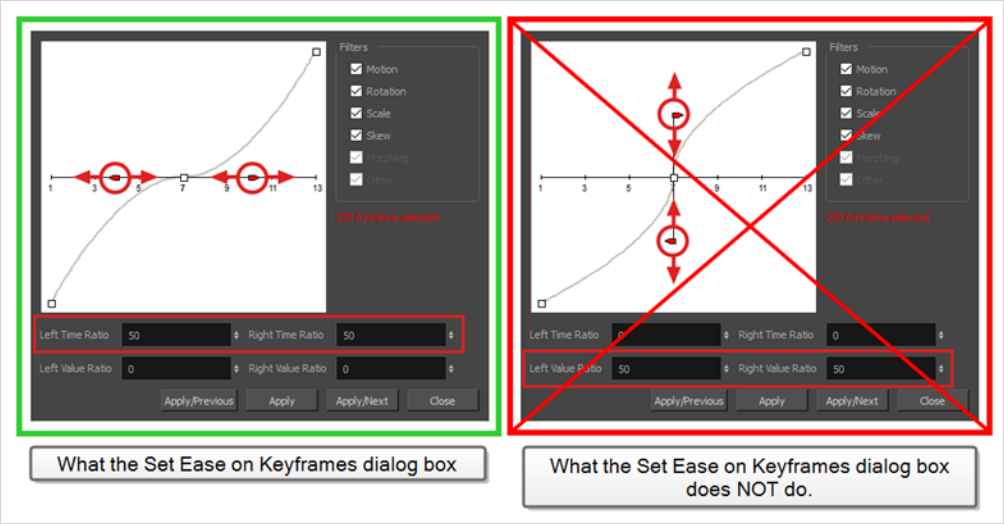
Parameter	Description
	Scale: Applies the easing parameters to the selected Scale functions.
	Skew: Applies the easing parameters to the selected Skew functions.
	Morphing: Applies the easing parameters to the selected Morphing Velocity functions. Note that it applies to the Morphing velocity function found in the Layer Properties window, not the basic morphing ease in the Tool Properties view.
	Other: Applies the easing parameters to all the other the selected functions, such as all functions created to animate effect parameters.
Left and Right Time Ratio	Lets you type the percentage value corresponding to the length of time you want the easing to last. Stay between 0% and 100%. If you go beyond 100%, your motion will overshoot.
Left and Right Value Ratio	Lets you type the percentage value of how strong you want the easing out to be. Stay between 0% and 100%. If you go beyond 100%, your motion will overshoot.
Apply/Previous	Applies the easing parameters to the selected keyframes and then selects the previous keyframe in the timeline.
Apply	Applies the easing parameters to the selected keyframes.
Apply/Next	Applies the easing parameters to the selected keyframes and then selects the next keyframe in the timeline.
Close	Close the dialog box. If you did not apply the modifications, they will be cancelled.

Set Ease on Keyframes Dialog Box

The Set Ease on Keyframes dialog box allows you to quickly change the percentage of ease before and after a selection of keyframes.



This dialog box is designed to quickly adjust the “time ratio” of the ease on your animations. To give you a better idea of its effect, select a keyframe and open the Set Ease for Multiple Paramters dialog box. This dialog box allows you to adjust the ease of your animations using Bezier handles. Moving the Bezier handle laterally changes the time ratio of the ease, and moving it vertically changes its value ratio.



How to access the Set Ease on Keyframes dialog box

1. In the Timeline view, select one or several animation keyframes.
2. In the Timeline toolbar, click on the Set Ease on Selected Keyframes button.

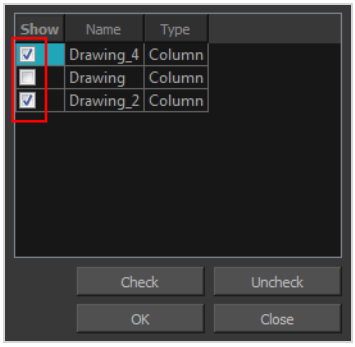
   The Set Ease on Keyframes dialog box appears.

Parameter	Description
Ease In (left)	Allows you to adjust the ease left of the selected keyframes. • If the checkbox is unchecked, the ease left of the selected keyframes will be unchanged.

Parameter	Description
	• If the checkbox is checked, the ease left of the selected keyframes will be set to the percentage in the input-field right of the checkbox.
Ease Out (right)	Allows you to adjust the ease right of the selected keyframes. • If the checkbox is unchecked, the ease right of the selected keyframes will be unchanged. • If the checkbox is checked, the ease right of the selected keyframes will be set to the percentage in the input-field right of the checkbox.
OK	Applies the selected changes and closes the dialog box.
Cancel	Closes the dialog box without making any changes.

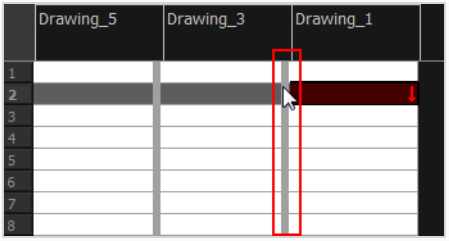
Show Hidden Columns Dialog Box

The Show Hidden Columns dialog box lets you display all the columns contained in the exposure sheet. It can be used to hide individual columns.

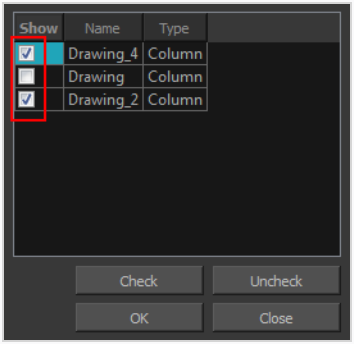


How to access the Show Hidden Columns dialog box

1. In the Xsheet view, do one of the following:
    - Click the thick grey line that represents a hidden column.
    - Right-click on the column header and select **Show Hidden Columns**.
    - Press Alt + Shift + H.



The Show Hidden Columns dialog box opens.



Parameter	Description

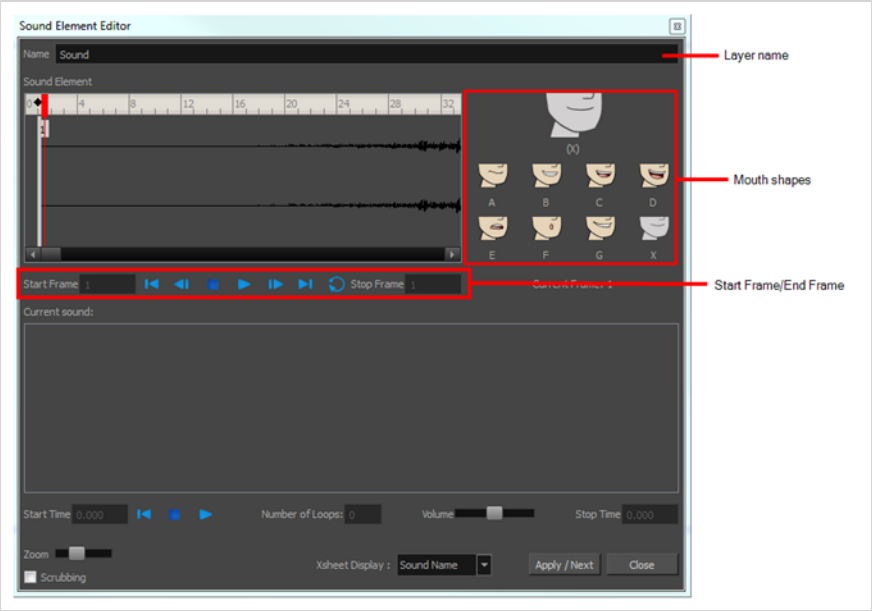
Show	Lets you select the hiddens columns to display in the Xsheet view.
Name	Name of the drawing.
Type	Indicates the column type such as column, timing, and expression.
Check	Selects all columns.
Uncheck	Deselects all selected columns.

Sound Element Editor Dialog Box

When you double-click on a sound layer in the Timeline view, the Sound Element Editor appears.

How to access the Sound Element Editor dialog box

1. Do one of the following:
    - In Xsheet view, select the Sound column.
    - In the Layer Properties view, select Sound Editor.
    - Double-click on a sound layer in the Timeline view.

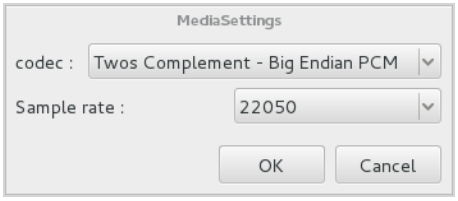


Parameter	Description
Mute/Unmute	This button mutes and unmutes the sound layer during the scene play back.
Layer Name	This field displays the layer's name.
Sound Editor	This button opens the Sound editor.
Start Frame/End Frame	These fields determine the start and end frame of the sound file.
Detect	This button launches the automated lip-sync detection.

Parameter	Description
Map	This button opens the Map Lip-sync dialog box.
Mouth Shapes	: This section shows the automated lip-sync detection during the scene play back. Click on the thumbnail image of each mouth to change the phoneme assigned to the current frame.

OpenQuickTime Sound Options Dialog Box (GNU/Linux)

The OpenQuickTime Sound Options dialog box (titled MediaSettings) allows you to configure the audio compression settings when exporting a QuickTime movie on Linux.



On GNU/Linux, Harmony uses the OpenQuickTime framework to export QuickTime movies. This framework uses its own user interfaces to allow you to configure the video and audio compression settings for a movie. Because OpenQuickTime only comes bundled with non-prorprietary codecs, its compression options are limited.

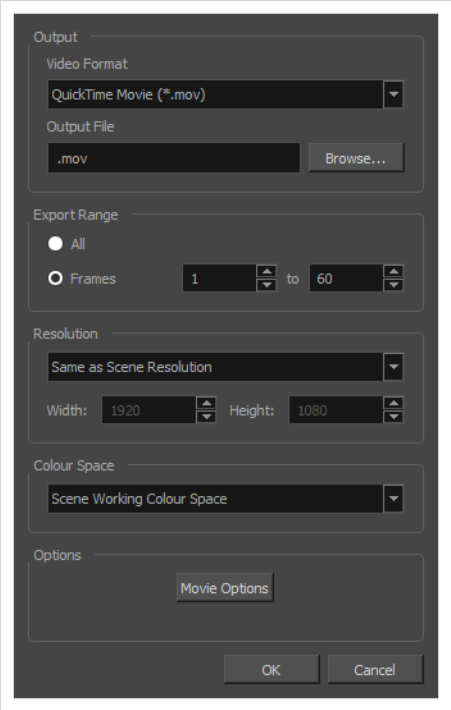
NOTES

- For tasks related to this dialog box, refer to the User Guide.
- This dialog can only be accessed on GNU/Linux.

How to access the OpenQuickTime Sound Options dialog box

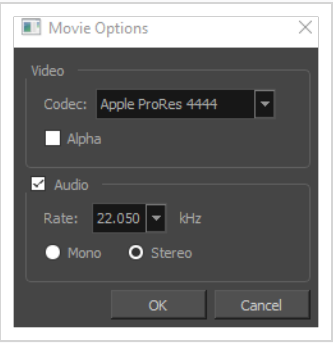
1. From the top menu, select **File > Export > Movie**.

   The Export Movie dialog box appears.



2. In the **Movie Format** drop-down, select QuickTime ProRes Movie (*.mov).
3. Click on the Movie Options button.

   The QuickTime Movie Options dialog box appears.

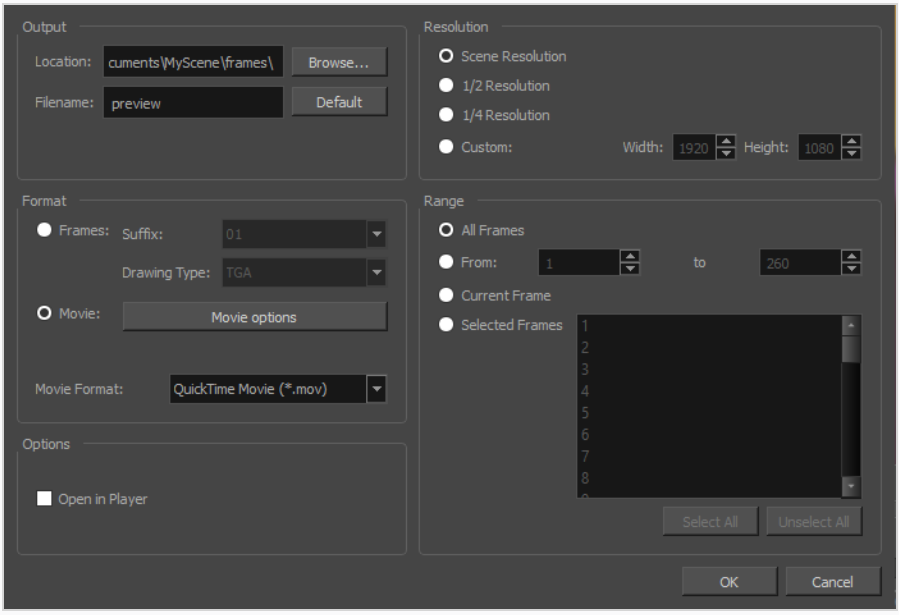


4. In the Codec drop-down, select any of the movie options.

How to access the OpenQuickTime Sound Options dialog box from the Export OpenGL Frames dialog

1. In the top menu, select **File > Export > OpenGL** Frames.

   The Export OpenGL Frames dialog box appears.



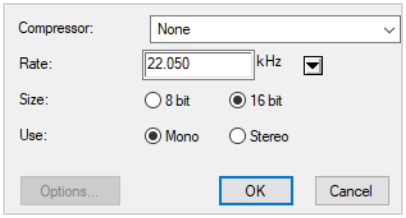
2. In the **Format** section, select **Movie**.
3. In the **Movie Format** drop-down, select **QuickTime Movie (*.mov)**.
4. Click on the **Sound Options** button.

Parameter	Description
codec	Lets you select a codec. By default, the following codecs will be available: • **A-Law 2:1:** This codec uses logarithms to compress audio data. The resulting audio stream requires half the disk space of uncompressed audio data, but is of noticeably lower quality. • **IMA 4:1:** This codec compresses audio data to require a quarter of the disk space required for uncompressed audio data. It is not supported by a lot of software. • **Twos Complement - Little Endian PCM:** A standard uncompressed audio codec. • **Twos Complement - Big Endian PCM:** A legacy standard uncompressed audio codec. This codec may be compatible with older editing interfaces. • **(mu)-Law 2:1:** Similarly to A-Law, this codec uses logarithms to compress audio data. The resulting audio stream requires half the disk space of uncompressed audio data, but is of noticeably lower quality.

	NOTE It is recommended to leave this option to its default value, **Twos Complement - Little Endian PCM**, as it is commonly used for storing uncompressed audio. Other encoding formats are likely to sacrifice audio quality for negligible savings in disk space.
Sample rate	The sample rate at which to export your scene's audio. The only available option is **22050** Hz, as it is the sample rate used internally by Harmony.

QuickTime Sound Settings Dialog Box (Windows)

The Sound Settings dialog box allows you to set the audio compression settings when you want to export a QuickTime Movie (**.mov**) file.



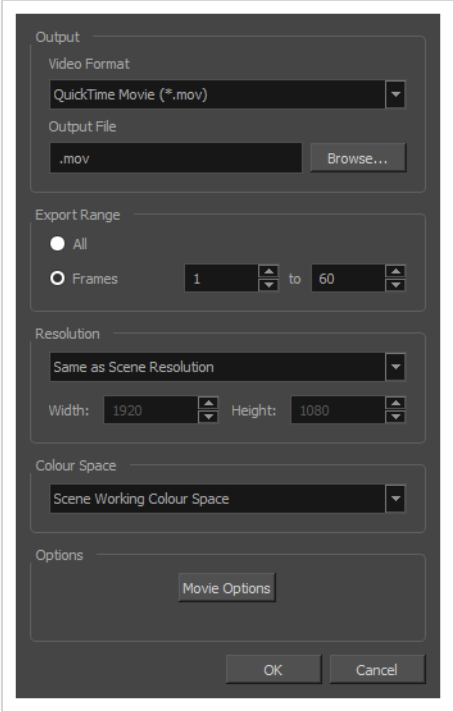
NOTES

- For tasks related to this dialog box, refer to the User Guide.
- This dialog can only be accessed on Windows and requires Apple QuickTime to be installed.

How to access the QuickTime Sound Settings dialog box

1. From the top menu, select **File > Export > Movie**.

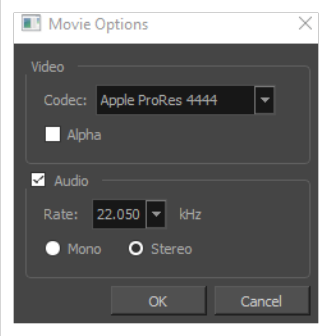
   The Export Movie dialog box appears.



2. In the **Movie Format** drop-down, select QuickTime ProRes Movie (*.mov).

3. Click on the Movie Options button.

   The QuickTime Movie Options dialog box appears.

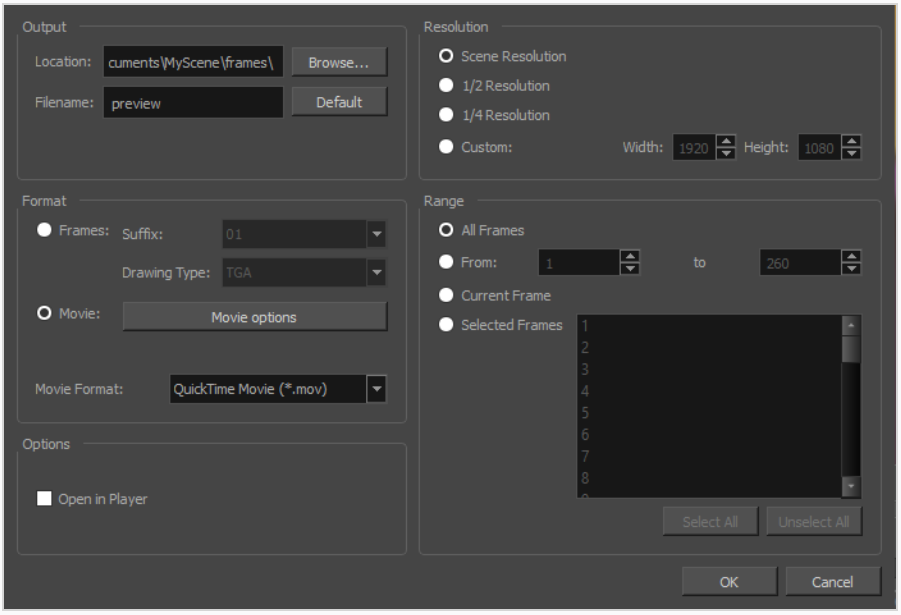


4. In the Codec drop-down, select any of the movie options.

How to access the QuickTime Sound Settings dialog box from the Export OpenGL Frames dialog

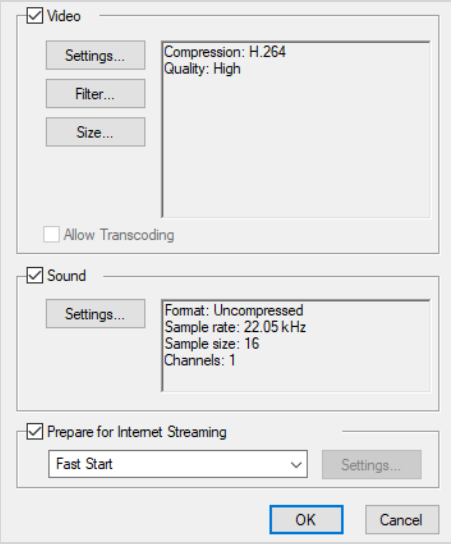
1. In the top menu, select **File > Export > OpenGL** Frames.

   The Export OpenGL Frames dialog box appears.



2. In the **Format** section, select **Movie**.
3. In the **Movie Format** drop-down, select **QuickTime Movie (*.mov)**.
4. Click on the **Movie Options** button.

The QuickTime Movie Settings dialog box appears.



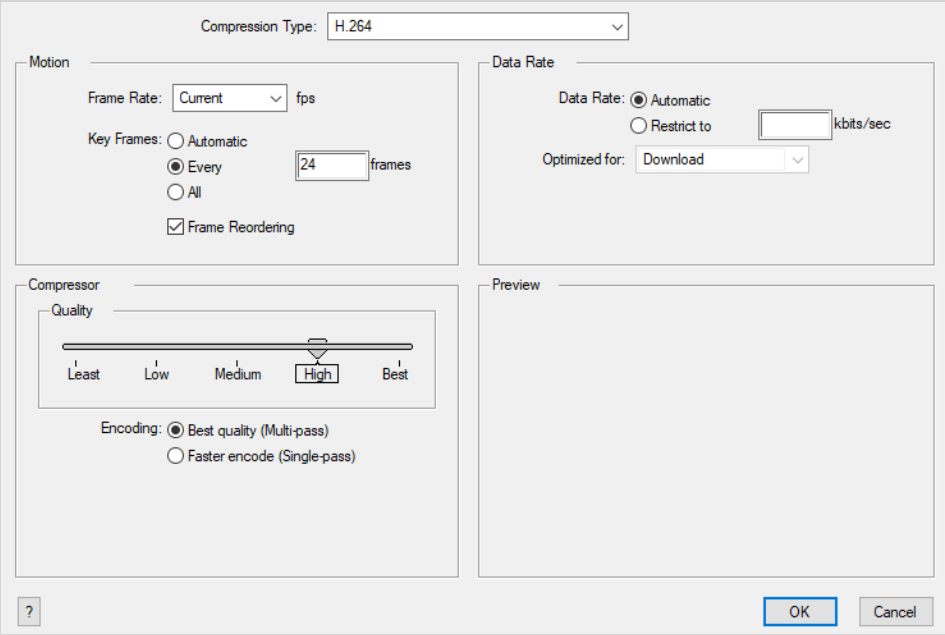
5. In the **Sound** section, click **Settings**.

Parameter	Description
Compressor	Allows you to select the compression algorithm to use the compress the movie's audio track. **NOTE** It is recommended to leave this setting to **None**, as other formats are likely to sacrifice audio quality for negligible savings in disk space.
Rate	Allows you to select the sample rate, or frequency, in which to export the audio track for the movie. **NOTE** Harmony cannot export audio at a higher sample rate than 22.050 kHz. If you select a higher sample rate, your project's audio will be upsampled, which means it will take more disc space without increasing in quality.
Size	Allows you to select the bit depth in which to encode the audio track. This determines the amount of precision to record each wavelength in the audio track.

Parameter	Description
	NOTE The standard bit depth is **16-bit**. If you choose **8-bit**, the amount of disk space the audio track of your movie file requires will be halved, but the audio quality will be significantly lower.
Use	Allows you to select whether to export the movie's audio track using the **Mono** or **Stereo** channel mode. **NOTE** Stereo sound has a separate track for the left and right speakers, whereas mono sound only has a single audio track for all speakers.

QuickTime Standard Video Compression Settings Dialog Box (Windows)

The Standard Video Compression Settings dialog box allows you to configure the video compression settings when exporting a QuickTime Movie (`.mov`) file.



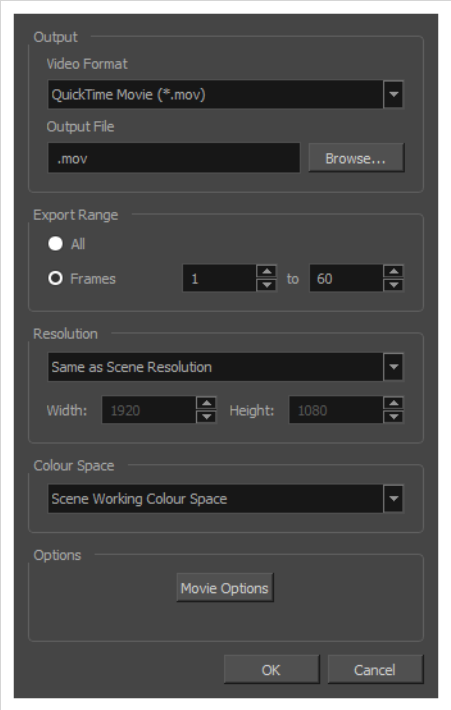
NOTES

- For tasks related to this dialog box, refer to the User Guide.
- This dialog can only be accessed on Windows and requires Apple QuickTime to be installed.

How to access the QuickTime Standard Video Compression Settings dialog box

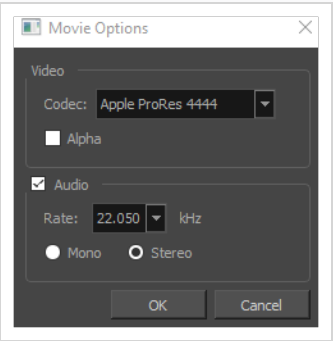
1. From the top menu, select **File > Export > Movie**.

   The Export Movie dialog box appears.



2. In the **Movie Format** drop-down, select QuickTime ProRes Movie (*.mov).
3. Click on the Movie Options button.

   The QuickTime Movie Options dialog box appears.

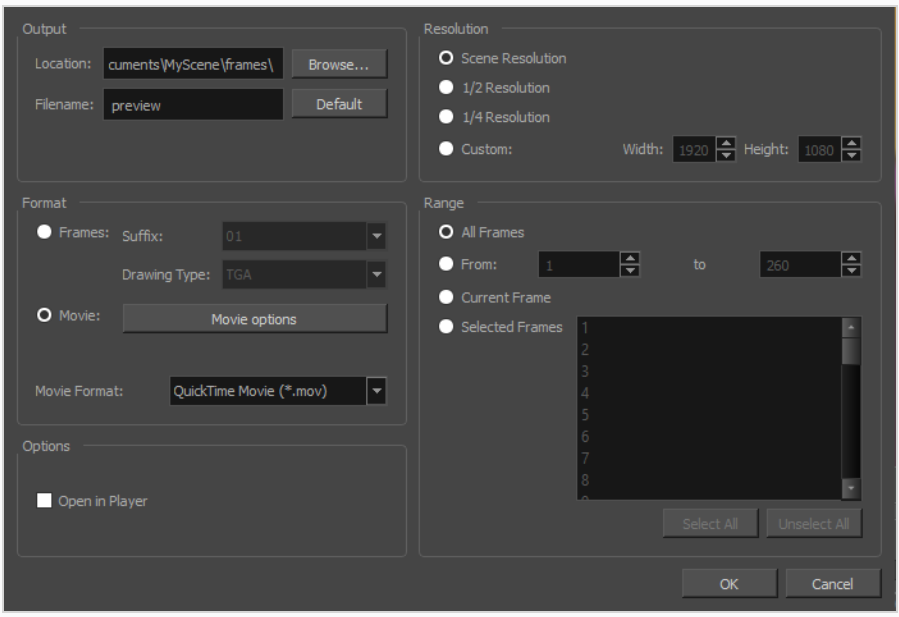


4. In the Codec drop-down, select any of the movie options.

How to access the QuickTime Standard Video Compression Settings dialog box from the Export OpenGL Frames dialog

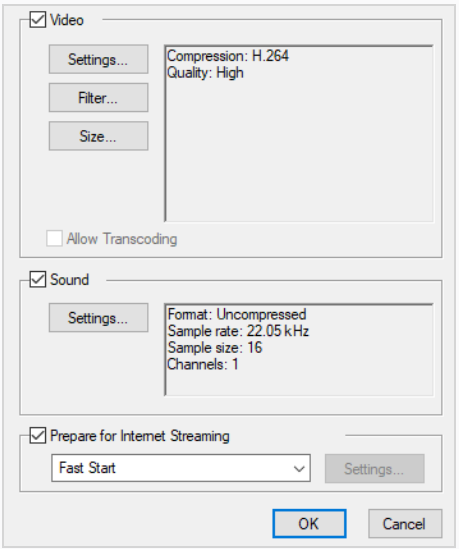
1. In the top menu, select **File > Export > OpenGL** Frames.

   The Export OpenGL Frames dialog box appears.



2. In the **Format** section, select **Movie**.
3. In the **Movie Format** drop-down, select **QuickTime Movie (*.mov)**.
4. Click on the **Movie Options** button.

   The QuickTime Movie Settings dialog box appears.



5. In the **Video** section, click **Settings**.

Parameter	Description
Compression Type	Allows you to select the codec to use to compress the video stream of your movie. It is recommended to use one of the following codecs, depending on your

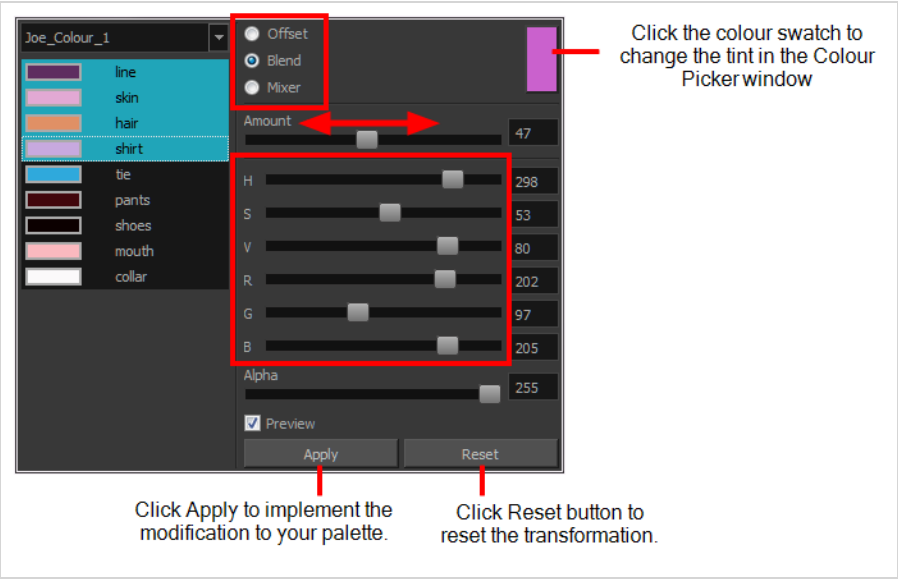
<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td></td><td>usage scenario:
H.264: A very effective lossy compression algorithm that is commonly supported by web browsers and most media players.
MPEG-4 Video: A very effective lossy compression algorithm that is commonly supported by media players, but less so by web browsers.
Animation: A high quality compression algorithm that is commonly used for media interchange and video editing.
QuickTime ProRes Movie: A codec developed by Apple designed for high-quality editing in Final Cut Pro. In Harmony, The Apple ProRes 4444 and 422 codecs are available on Windows, Linux and macOS as export formats.
NOTES
On macOS, the Apple ProRes options from previous versions are still available for compatibility with scenes created in those versions. These export formats are labelled with “Legacy” in parentheses.
ProRes 4444 XQ is not supported prior to macOS Catalina (10.15)
TIPS
You can export a video with transparency by selecting the Animation codec and setting the Depth setting to Millions of Colors+.
You can export a video with virtually lossless compression by selecting the Animation codec and setting Quality setting to Best.</td></tr>
<tr><td colspan="2">Motion</td></tr>
<tr><td>Frame Rate</td><td>The amount of frames per second for the video stream. Leave this setting to Current to use your project's frame rate.</td></tr>
<tr><td>Key Frames</td><td>Some codecs compress the video by recording a limited amount of keyframes, which are frames in which the entire picture is encoded, pixel by pixel and, in-between, recording deltas, which are frames that are only defined by their difference with the previous frame. This significantly reduces the size of the movie file. However, the less keyframes a movie has, the more it is likely to encounter decoding errors, and the harder it is for players to scrub or jump to a specific time in the video. This option allows you to decide when keyframes are inserted in the video stream.</td></tr>
</table>

Parameter	Description
	Automatic: Lets the encoder decide when keyframes should be inserted. **Every ... frames**: Allows you to set the exact interval, in frames, at which keyframes should be inserted. **All**: Encodes every frame as a keyframe. This option will significantly impact file size, but will make it easier to scrub through the video without causing any rendering error. **NOTE** If you are using the H.264 codec, you must set the Key Frames option to **All**, or you will get an error message when you confirm the compression settings.
Frame Reordering	Encodes frames in a different order than the one at which they are meant to be displayed. This allows for more efficient compression, but may not be compatible with some players.
Compressor	
Depth	Allows you to set the colour depth for your video. A lower colour depth will reduce the size of the video stream but will have significant impacts on picture quality. **TIP** Set this to **Millions of Colors+** if you want to export a video with transparency.
Quality	Lets you choose a quality setting for the video compression. A higher quality setting will increase the size of the movie file, but will look better. A lower quality setting will reduce the size of the movie file, but will cause blurriness and compression artifacts to appear in the picture.
Scan Mode / Interlaced	Allows you to choose between the following scan modes: • **Interlaced:** Frames are encoded starting with their odd-numbered scanlines, then their even-numbered scanlines. • **Progressive:** Frames are encoded whole, from the highest scanline to the lowest scanline.

Parameter	Description
	NOTE Some codecs will display a drop-down allowing you to select Interlaced or Progressive, while others will simply have an Interlaced checkbox.
Aspect Ratio	Allows you to select one of the following aspect ratios: • **4:3:** For output on standard definition displays. • **16:9:** For output to widescreen displays.
Filter	When exporting with the **PNG** compression type, this determines the algorithm with which each pixel is encoded relative to other pixels. Leaving this option to **Best** will export in the most space-efficient filter, without compromising picture quality. Picking a filter may increase rendering speed a bit, at the expense of some disk space.
Data Rate	
Automatic	Lets the encoder use the optimal bit rate for your compression settings.
Restrict To	Allows you to specify the encoding bit rate. **NOTE** This setting will override other compression settings, so that the specified bit rate is respected.
Optimized For	Optimize the encoding to be responsive depending on the intended viewing method: • **CD/DVD-ROM:** Optimizes the bit rate for a video that will be played using an optical disc player. • **Download:** Optimizes the bit rate for a file that is going to be downloaded, then viewed from the user's hard drive. • **Streaming:** Optimized the bit rate for a video that will be streamed from the web and played as the video is being downloaded.

Tint Offset/Blend Dialog Box

You can offset, blend, or mix the colours in a colour palette using the sliders and increasing the Amount value.



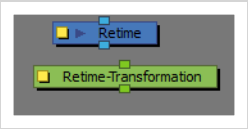
How to access the Tint Offset/Blend dialog box

1. From the Colour View menu, select **Palettes > Tint Panel** or right-click and select **Tint Panel**.

   The Blend/Offset Tint panel opens.

Parameter	Description
Offset	Offsets the selected colours by the adjustments made using the HSB and RGB sliders. Use the Amount slider to adjust the degree of offset. Use the Alpha slider to adjust the opacity of the selected colour.
Blend	Blends the selected colours with the colour swatch in the top-right corner. Use the Amount slider to adjust the degree of blend. A blend of 100% turns the selected colours into the same colour as the swatch. Adjusting the HSB and RGB sliders affect the swatch colour, which in turn affects the selected colours on the left. Use the Alpha slider to adjust the opacity of the swatch.
Mixer	Select a Base and Tint colour to form a third colour swatch. Use the slider just beneath to mix the Base and Tint colours by different amounts. This will affect the mixed swatch whether it is selected or not. Select either the Tint or Base swatch and use the HSB and RGB sliders to adjust its colour. This will affect the mixed swatch colour, which in turn affects the selected colours on the left.

Timing Node



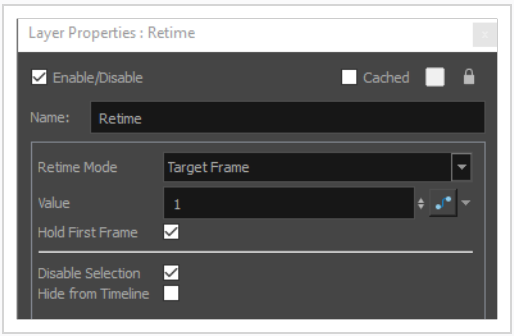
The Timing-nodes exist in a new category of nodes called “Timing” in the node-library. These nodes are used to either show a different render at the given frame, or to transform the content with a transformation from a different frame. The Timing-nodes exists as both Retime (for Images) and Retime Transformation (for transformations).

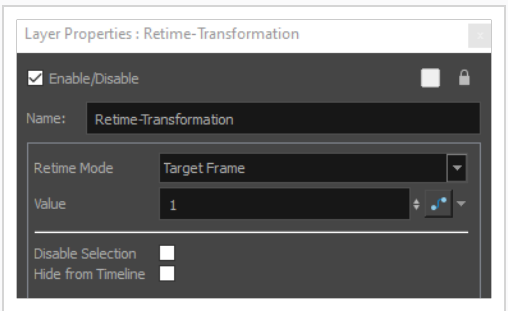
The Retime node takes an image input and output, and will provide the retimed transformation and render of that image.

The Retime Transformation node takes a transformation input and output, and will provide the retimed transformation.

How to access the Retime and Retime Transformation Timing dialog box

1. In the Node View press Enter.
2. Type in the name of the node you want to search.
3. Select the node.
4. Click the yellow box on the left to open the dialog box.

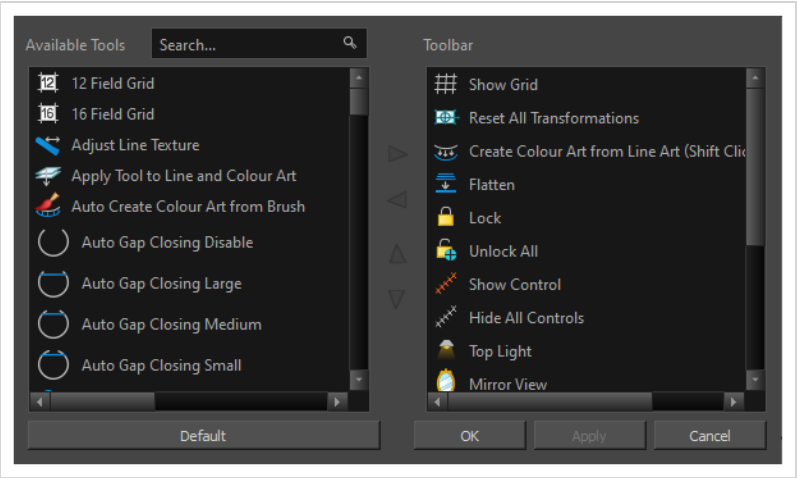




- **Retime Mode:** Defines the way in which this node calculates the target frame to output.
    - **Target Frame**: It will use the Value attribute as an exact frame and outputs the content from that frame.
    - **Frame Offset:** It will use the Value attribute as an offset to the current frame and outputs the content from that offset frame.
- **Value:** It provides the target frame or offset frame, depending on the retime mode.
- **Hold First Frame:** This defines the node's render behaviour. In the event that the retimed frame is less than 1 When enabled, the hold first frame option will cause the node to display the first frame until the Retime node hits a valid frame above 1. When disabled, the node will remain blank until a valid retimed frame is reached.
- **Disable Selection:** This option is available in all timing nodes. It is recommended to disable the timing node when modifying content, and reapply it when the content is complete.
- **Hide from Timeline:** This option will collapse all attached content above this node in the Timeline, preventing it from being selected or modified directly in the Timeline.

Toolbar Manager Dialog Box

The Toolbar Manager dialog box lets you customize the toolbar in any of the views. You can add your favourite tools to a toolbar for an efficient workflow.



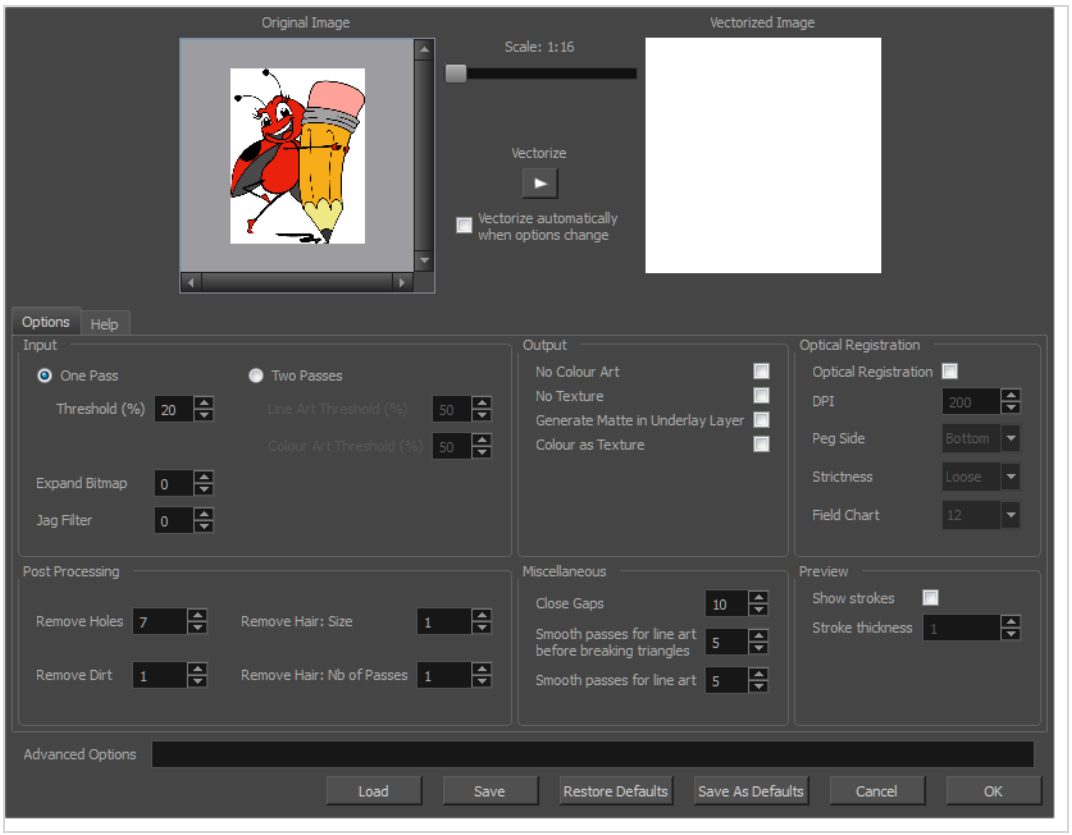
How to access the Toolbar Manager dialog box

1. Right-click on a toolbar in any view and select **Customize**. Note that the menu will not appear if you right-click on a disabled icon.

Parameter	Description
Available Tools	Displays the complete list of tools available for customizing a toolbar.
Toolbar	Displays a list of the tools currently available on the toolbar.
Default	Restores the toolbar with its default items.

Vectorization Parameters Dialog Box

The Vectorization Parameters dialog box lets you vectorize pencil drawings, along with any red, blue or green pencil marks you may have used to indicate highlights and shadows. The drawing will be vectorized into pure red, blue, green and black (RGB values), while creating colour art zones wherever lines connect. After painting in your tones and highlights, change your pure RGB colours to transparent (0 Alpha) in the Colour Picker window and watch the indicator colour zone lines disappear.

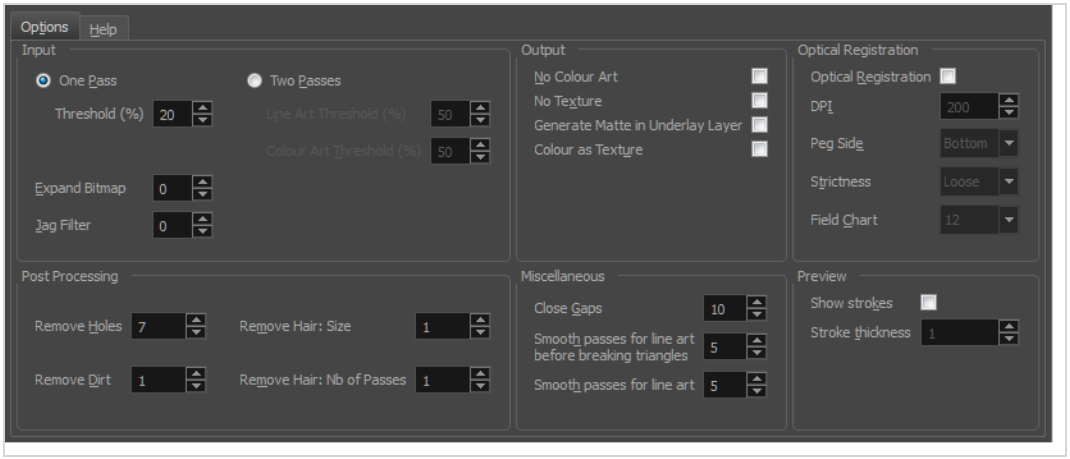


How to open the Vectorization Parameters dialog box

1. From the top menu, select **File > Import > From Scanner**.
   You can also open it from any other import option that allows you to customize the vectorization parameters (i.e. from the scanner).
2. In the Scan Drawings window, do the following:
   - In the Layer section, decide on the layer options.
   - In the Import Options section, select the **Convert to Toon Boom Vector Drawing** option
   - Click **Preview**.
3. In the Vectorization section, click the Vectorization Parameters button.

Options Tab

The Options tab contains the main vectorization settings. More settings are available in the Help tab.



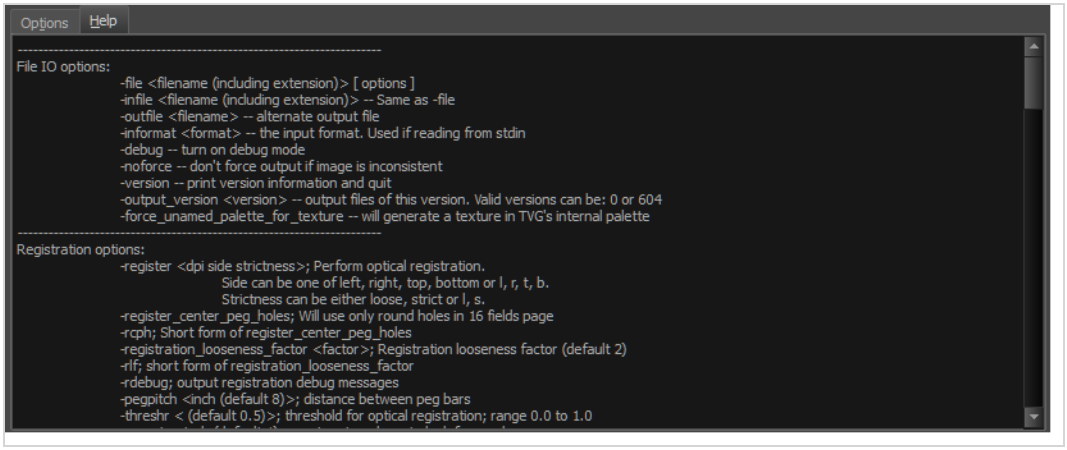
Parameter	Description
Input	The input filters are applied to the bitmap image before it is vectorized.
One Pass	One threshold value is applied to both the Line and Colour Art. For drawings with distinct vector-style lines of mattes, you only need one pass.
Two Passes	Applies a different threshold value to each layer. For greyscale drawings, you may want to perform the vectorization process twice to apply different threshold values to the Line and Colour Art layers.
Threshold	Determines which values in the scanned image are considered part of the Line and Colour Art layer and what will be eliminated from the vectorized drawing; 0% is white and 100% is black. The threshold is between these two values.
Expand Bitmap	Lets you enter a value to scale the bitmap to detect small variations in the line. Use this option if you scanned a greyscale image and want to preserve small variations in the texture to apply to the line art.
Jag Filter	Lets you enter a value to scale back the bitmap to remove some of the line's roughness. This is useless when you have a drawing that appears quite rough; the Jag filter will eliminate excess strokes in the final drawing.
Line Art Threshold (%)	Determines which values in the scanned image are considered part of the Line Art layer and what will be eliminated from the vectorized drawing; 0% is white and 100% is black. The threshold is between these two values.

Colour Art Threshold (%)	Determines which values in the scanned image are considered part of the Colour Art layer and what will be eliminated from the vectorized drawing; 0% is white and 100% is black. The threshold is between these two values.
Output	The output filters are applied during the vectorization process.
No Colour Art	Does not generate filling zones in the Colour Art layer.
No Texture	Does not generate texture in the Line Art layer in the final images. Select this option to create solid lines in the final line art.
Generate Matte in Underlay Layer	Creates an opaque zone behind your drawing's lines to avoid seeing through the layers.
Colour as Texture	Converts colour values into a texture layer.
Optical Registration	The optical registration options are used to automatically align drawings based on the position of the peg holes on the animation paper. The peg holes must appear in the scanned drawings for the optical registration to work.
DPI	Lets you enter the dots-per-inch value of your image. You must enter the same value as the DPI used to scan the image.
Peg Side	Lets you select the position of the peg holes on your drawings. Identify whether they are on the top, bottom, left or right.
Strictness	Determines how exact the location of the peg holes must be for the software to recognize them. There are two values to choose from: **Strict**: The peg holes must be in a tightly defined area to be recognized. **Loose**: The peg holes can be recognized somewhere in a larger area. This is the recommended setting.
Field Chart	Lets you indicate the size of the animation paper, 12 or 16.
Post Processing	The Post Processing filters are applied to the final vector images.
Remove Holes	Removes holes of a specified value that might make painting difficult.
Remove Dirt	Removes stray marks and dirt of a specified value. Try a value around 500.

Remove Hair Size	Removes small strokes that have no line art.
Remove Hair: Number of Passes	The number of times the drawing will be analyzed to identify hair marks.
Miscellaneous	
Close Gaps	Closes gaps in the Colour Art so you can paint it.
Smooth Passes for Line Art Before Breaking Triangles	The number of times the smoothing operation runs before creating the triangles that break lines in the drawing. If unnecessary triangles are appearing in the drawing, increase this value.
Smooth Passes for Line Art	The number of times the smoothing operation is performed after the triangles have been created. This further smooths the line art.
Preview	
Show Strokes	Shows the strokes in the Vectorized Image panel.
Stroke Thickness	Shows the size of the strokes.

Help Tab

The Help tab contains the most advanced vectorization settings which you type in the Advanced Option fields at the bottom of the Vectorization Parameters dialog box.



File IO Options

-**file** <filename (including extension)> [options]

-**infile** <filename (including extension)>; same as -file

-**outfile** <filename>; alternate output file

-**informat** <format>; the input format. Used if reading from stdin

-**debug**; turn on debug mode

-**noforce**; don't force output if image is inconsistent

-**version**; print version information and quit

-**output_version** <version>; output files of this version. Valid versions can be: 0 or 604

-**force_unamed_palette_for_texture**; will generate a texture in TVG's internal palette

Registration Options

-**register** <dpi side strictness>; perform optical registration.

- Side can be one of left, right, top, bottom or l, r, t, b.
- Strictness can be either loose, strict or l, s.

-**register_center_peg_holes**; will use only round holes in 16 fields page

-**rcph**; short form of register_center_peg_holes

-**registration_looseness_factor** <factor>; registration looseness factor (default 2.000000)

-**rlf**; short form of registration_looseness_factor

-**rdebug**; output registration debug messages

-**pegpitch** <inch (default 8.000000)>; distance between peg bars

-**threshr** < (default 0.500000)>; threshold for optical registration; range 0.0 to 1.0

-**rmargin** <inch (default 1)>; region size where to look for peg bars

-**peg_distance_from_center** <inch (default 5.25)>; peg distance from centre of the image

-**pdfc**; short form of -peg_distance_from_center

-**out_peg_position** <side (default same)>; wanted position of the peg on the drawing.

- Can be one of right, left, top, bottom (or r, l, t, b) or same.
- A rotation will be performed if it is different from the side passed to -register.

-**output_peg_matrix**; output the peg transformation matrix on standard output.

-scanner_calibrate; < (default 1.0000 1.0000) > x and y scale factors to be applied to scanner image.

Filtering Options

-**pixel** <pixel_shape (default '4x3')>; Valid values: 4x3

-**gap** <worldUnits (default 10)>; close gaps up to this big

-**pencil**; generate line art only

-**keep_dirt**; don't filter out dirt

-**thresh** <threshold (default 0.2)>; range 0.0 to 1.0

-**rmv_hairs** <worldUnits (default 1)> <passes (default 1)>

- remove hairs of size smaller than "size" in "passes" passes

-**rmv_holes** <area (default 7)>; remove holes smaller than "area"

-**rmv_dirt** <area (default 1)>; remove dirt smaller than "area"

- try values between 100 and 500 for rmv_holes and rmv_dirt. The area is in world units squared

-**rmv_triangles** <worldUnits (default 30.000000)>; remove triangles at "pixels"

- distance from each other. Use -no_break to remove all triangles

-**no_texture**; don't generate textured strokes

-**color_as_texture**; will vectorize the alpha channel and put the RGB colour in a textured colour

-**noclosegap**; disable all gap closing algorithms

-**no_break**; disable the breaking of line art

-**jag_filter** <pixels (default 0>; expand the pixels in the vectorization bitmap

-**expand_bitmap** <pixels (default 0>; expand the pixels in the vectorization bitmap

-**fit_errorc** <error (default 1.000000>; fitting error for the colour art

-**fit_errorl** <error (default 1.000000>; fitting error for the line art

-**smoothl** <passes (default 1>; number of smooth passes for line art

-**smoothc** <passes (default 1>; number of smooth passes for colour art

-**first_smooth** <passes (default 0>; number of smooth passes for line art before breaking triangles

-**first_smoothl** <passes (default 0>; number of smooth passes for line art before breaking triangles

-**first_smoothc** <passes (default 0>; number of smooth passes for line art in colour art pass (needs -2pass)

-**2pass**; specify two sets of parameters; one for line art "l", one for colour art "c"

(-thresh, -rmv_holes and -rmv_dirt will be overridden by -threshl, threshc, -rmv_holesl, -rmv_holesc, -rmv_dirtl and -rmv_dirtc)

-**threshl** <threshold for line art (default 0.5)>; range 0.0 to 1.0

-**threshc** <threshold for color art (default 0.5)>; range 0.0 to 1.0

-**jag_filterl** <pixels (default 0>; expand the pixels in the vectorization bitmap for line art

-**jag_filterc** <pixels (default 0>; expand the pixels in the vectorization bitmap for colour art

-**expand_bitmapl** <pixels (default 0>; expand the pixels in the vectorization bitmap for line art

-**expand_bitmapc** <pixels (default 0>; expand the pixels in the vectorization bitmap for colour art

-**rmv_holesl** <area (default 7)>; remove line art holes smaller than "area"

-**rmv_holesc** <area (default 7)>; remove colour art holes smaller than "area"

-**rmv_dirtl** <area (default 1)>; remove line art dirt smaller than "area"

-**rmv_dirtc** <area (default 1)>; remove colour art dirt smaller than "area"

try values between 100 and 500 for rmv_holesl, rmv_holesc, rmv_dirtl and rmv_dirtc. The values are in world units squared

-**margins** <inch (default 0.25)>; remove margin around bitmap

-**top_margin** <inch (default 0.25)>; remove margin at top of bitmap

-**bottom_margin** <inch (default 0.25)>; remove margin at bottom of bitmap

-**left_margin** <inch (default 0.25)>; remove margin at left of bitmap

-**right_margin** <inch (default 0.25)>; remove margin at right of bitmap

-**remove_peg_bars**; remove the peg bar holes

-**field_size** <fields (default 12 or use value in scan file)>; set the drawing to this field size

-**fs**; short hand for -field_size

-**peg_bar_size** <inch (default 1)>; the size of the peg bar region

-**noframe**; do not put a frame around the colour art

-**frame_fields** <default -1.000000>; put a frame of the specified dimension around the colour art

-**downscale_input** <default 1>; downscale the raw input by this integer factor

-**downscale_texture** <default 1>; downscale the output texture by this integer factor

-**buildmatte**; generate a matte on underlay for line test

-**buildmatte_colourart**; generate a matte on colour art for line test

NOTE

-buildmatte and -buildmatte_colourart are mutually exclusive

-copystrokes; copy original strokes when building matte.

Options for bitmap that has no registration information

-**pixel_margins** <inch (default 0)>; remove margin around bitmap

-**top_pixel_margin** <inch (default 0)>; remove margin at top of bitmap

-**bottom_pixel_margin** <inch (default 0)>; remove margin at bottom of bitmap

-**left_pixel_margin** <inch (default 0)>; remove margin at left of bitmap

-**right_pixel_margin** <inch (default 0)>; remove margin at right of bitmap

-**dpi** <(default -1)>; dpi information of input bitmap

RGB Keying Options

-**rgb**; generate separate zones for red, green and blue lines

-**rgb_alpha** <value (default 255)>; generate red, green and blue colour with alpha of this value

-**no_red**; ignore red colour in vectorization

-**no_green**; ignore green colour in vectorization

-**no_blue**; ignore blue colour in vectorization

-**flatten**; flatten the drawing after generating colours

-**rmv_rgb_dirt** <threshold area default 0.0>; remove red, green and blue regions smaller than area

-**expand_bitmap_rgb** <pixels (default 0>; expand the pixels in the vectorization bitmap for rgb

-**threshrgb** <value> <threshold for rgb vectorization default 0.200000>;

-**threshsv** <saturation threshold default 0.500000> <value threshold default 0.500000>; thresholds on saturation and value to consider a pixel to be grey

Colour Vectorization Options

-**color_vectorize**; perform a colour vectorization

-**file2** <colour art filename>; specify the colour art bitmap

-**penstyle** <center alpha (0.0-20.0)> <edge alpha (0.0-20.0)> <gamma (0-10)><centre pressure effect (0.0-1.0)> <edge pressure effect (0.0-1.0)><texture bitmap downscaling (0.2-20)> <texture bitmap file (valid filename or "" if no file)>; generate brush texture for the line art

-**pressure_variation** <strategy (0, 1 or 2)> <min pressure (0.0-1.0)> <max pressure (0.0-1.0)> <max variation (0.0-1.0)>; specify a pressure strategy for the centre line.

-**blur_radius** <pixels (default 0)>; blur the penstyle texture generated

-**color_contour_smooth_passes** <times (default 3)>; perform number of smooth passes on contour before computing texture

-**ccsp** <times (default 3)>; short for -color_contour_smooth_passes

-**color_rmv_holesl** <world units (default 0.000000)>; remove holes of this size when computing texture

-**color_fill_holesl** <world units (default 0.000000)>; fill holes of this size for colour line art

Bubble Usage (implemented only for colour vectorization's line art)

-**create_bubbles**; add bubbles into the LineArt. Implemented for colour vectorization only

-**bubble_gap** <value (default 3)>; max number of colour art points between 2 bubbles

-**bubble_length** <value (default 10)>; max number of circles in a bubble

-**min_radius** <value (default 1.5000)>; min radius of a circle in a bubble relative to the line thickness (must be >= 1.0)

-**max_radius** <value (default 3.5000)>; max radius of a circle in a bubble relative to the line thickness (must be >= 1.0)

-**uniform_gap**; the space between bubbles is constant

4 Colour Vectorization

-4colours [key:value] ... [key:value] ; The key value list can be empty. The list of keys is:

rgbdiff:value ; between [0.0-1.0] or [0-255]

dark:value ; between [0.0-1.0] or [0-255]

grey:value ; between [0.0-1.0] or [0-255]

white:value ; between [0.0-1.0] or [0-255]

dirt:value ; dirt area. 200 is a good value

rt:value ; between [0.0-1.0] or [0-255]

gt:value ; between [0.0-1.0] or [0-255]

bt:value ; between [0.0-1.0] or [0-255]

NOTE

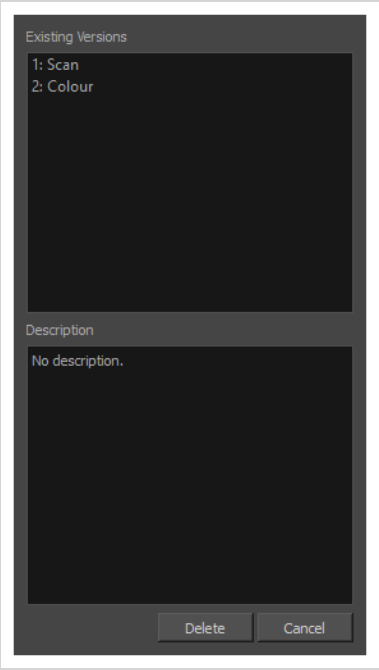
There must be no space between the colon and the key/value. For example: -4colours rgbdiff:20 dark:20 grey:120 white:250 dirt:200 rt:240 gt:240 bt:240

Versions Dialog Box

The Versions window lets you delete any unnecessary versions of scenes when working with Harmony Server. When working with multiple versions of a scene, you may to clean up the database by deleting the ones you no longer need.

How to access the Versions window

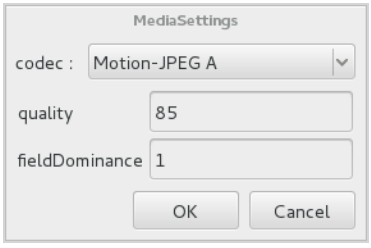
1. Make sure you have the necessary rights. If you do not, select **File > Rights to Modify Scene**.
2. Select **File > Manage Versions**.



Parameter	Description
Existing Versions	Displays the different versions of a scene that you can delete.
Description	Displays information about the selected version.
Delete	Removes the selected version of a scene. **IMPORTANT** This operation cannot be undone.

OpenQuickTime Video Options Dialog Box (GNU/Linux)

The OpenQuickTime Video Options dialog box (titled MediaSettings) allows you to configure the video compression settings when exporting a QuickTime movie on Linux.



On GNU/Linux, Harmony uses the OpenQuickTime framework to export QuickTime movies. This framework uses its own user interfaces to allow you to configure the video and audio compression settings for a movie. Because OpenQuickTime only comes bundled with non-prorprietary codecs, its compression options are limited.

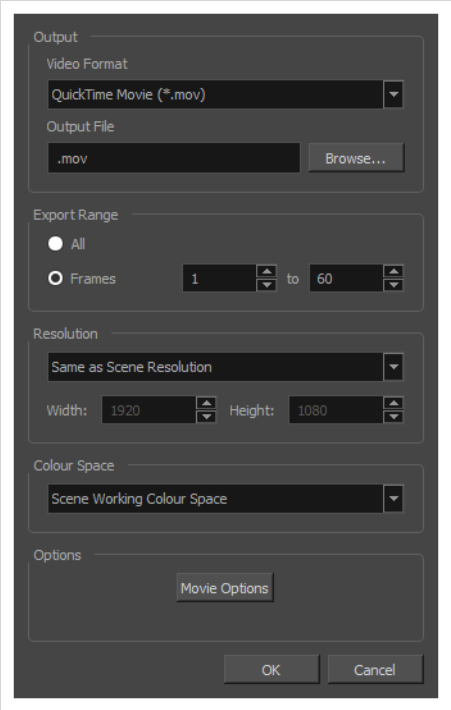
NOTES

- For tasks related to this dialog box, refer to the User Guide.
- This dialog can only be accessed on macOS.

How to access the OpenQuickTime Video Options dialog box

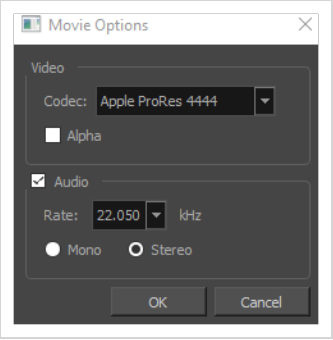
1. From the top menu, select **File > Export > Movie**.

   The Export Movie dialog box appears.



2. In the **Movie Format** drop-down, select QuickTime ProRes Movie (*.mov).
3. Click on the Movie Options button.

   The QuickTime Movie Options dialog box appears.

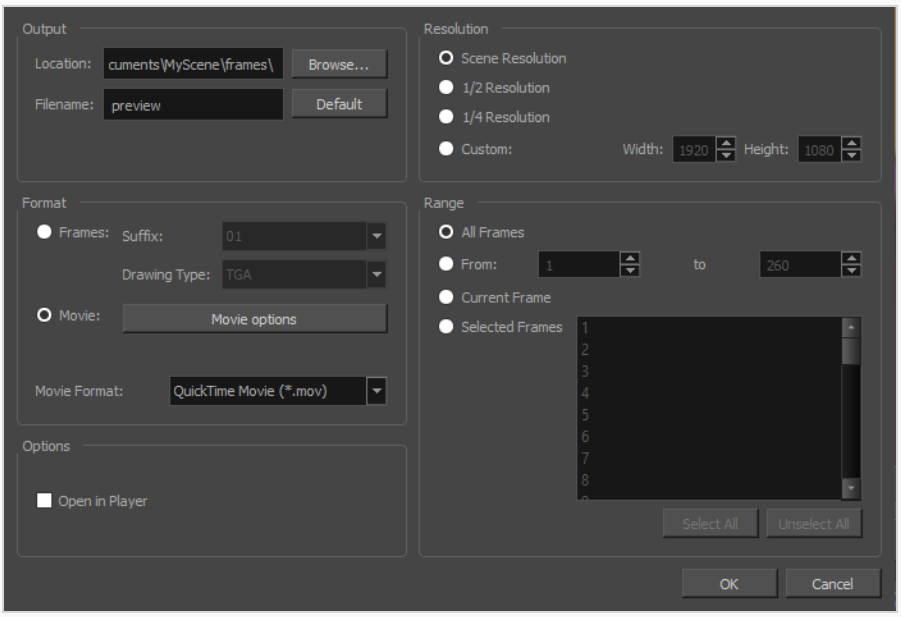


4. In the Codec drop-down, select any of the movie options.

How to access the OpenQuickTime Video Options dialog box from the Export OpenGL Frames dialog

1. In the top menu, select **File > Export > OpenGL** Frames.

   The Export OpenGL Frames dialog box appears.



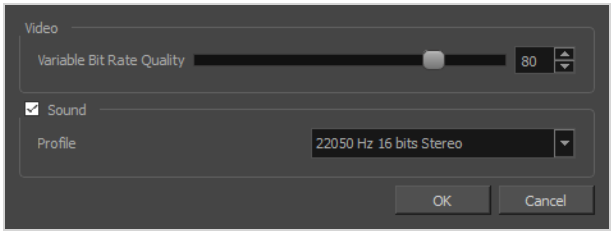
2. In the **Format** section, select **Movie**.
3. In the **Movie Format** drop-down, select **QuickTime Movie (*.mov)**.
4. Click on the **Video Options** button.

Parameter	Description
codec	Allows you to select a video compression algorithm. By default, the following codecs are available: • **Motion-JPEG A:** A very portable codec that performs lossy JPEG compression and interlaces the frames. Motion-JPEG A compression is less efficient than Photo JPEG in terms of quality and file size, but may be a more portable alternative for software that does not support Photo JPEG. • **Photo JPEG:** Encodes the movie as a sequence of JPEG images. JPEG images have lossy compression. This is the most efficient codec for file size. • **Portable Network Graphics (PNG):** Encodes the movie as a sequence of PNG images. PNG images have lossless compression. • **Tag Image File Format (TIFF):** Encodes the movie as a sequence of uncompressed TIFF images. This codec is lossless. • **Uncompressed (RGB):** Encodes the movie as uncompressed bitmap data. This codec is lossless.

	NOTE **Portable Network Graphics (PNG)** and **Photo JPEG** are the only codecs in this list that are natively supported by both Harmonyand GNOME's Totem Video Player. Other codecs may require additional software to play on GNU/Linux workstations.
quality	When using a JPEG-based codec, this allows you to set the JPEG compression quality. By default, this will be set to 85. Possible values range from 0 to 100. The higher the quality, the more disk space the resulting video file will take.
fieldDominance	For codecs with interlacing. This is set to 1 by default. If set to 1, the first field will be encoded on odd frames, and the second field will be encoded on even frames. If set to 2, the first field will be encoded on even frames, and the second field will be encoded on odd frames.
compression	The amount of lossless compression to perform when exporting in PNG format. PNG compression is lossless, but higher compression settings will take longer to encode and decode.
packbits	For movies encoded in TIFF. When enabled, this option adds extra lossless compression to the encoding.
lendian	For movies encoded in TIFF. When enabled, the video data is encoded in little endian byte order, instead of big endian.

Windows Media Video Settings Dialog Box (Windows)

The WMV Settings dialog box allows you to configure the video and audio settings when exporting a movie in Windows Media Video (`.wmv`) format.



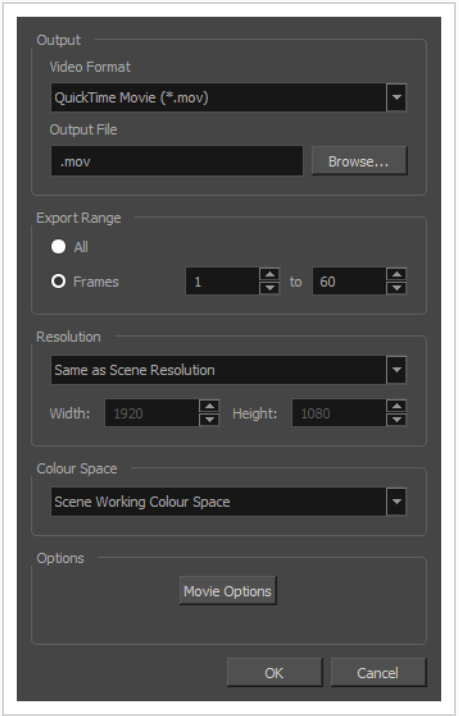
NOTES

- For tasks related to this dialog box, refer to the User Guide.
- This dialog can only be accessed on Windows.

How to access the WMV Options dialog box

1. From the top menu, select **File > Export > Movie**.

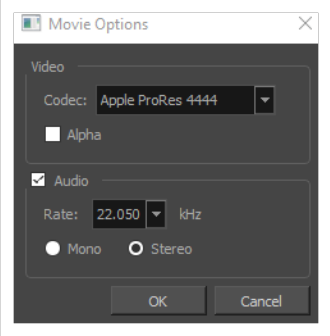
   The Export Movie dialog box appears.



2. In the **Movie Format** drop-down, select QuickTime ProRes Movie (*.mov).

3. Click on the Movie Options button.

   The QuickTime Movie Options dialog box appears.

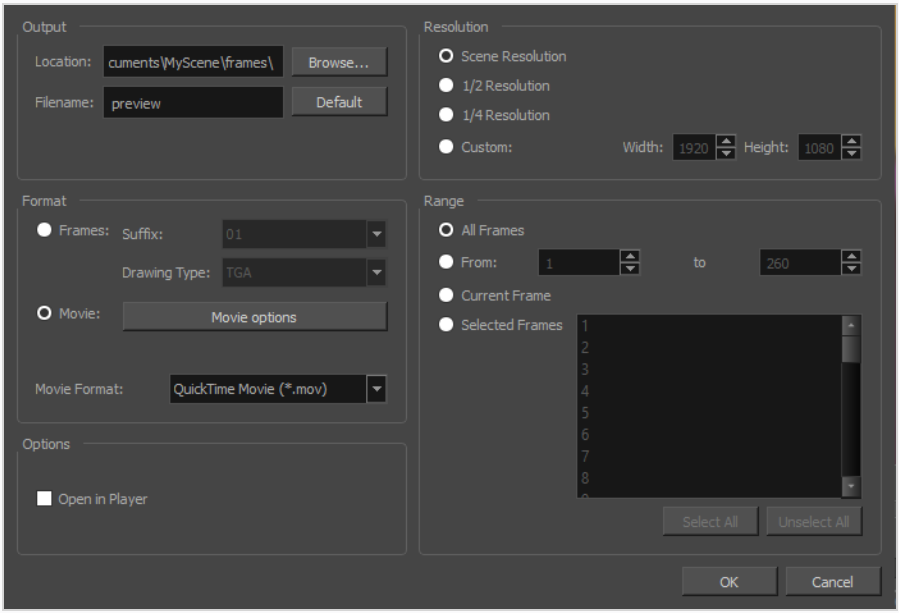


4. In the Codec drop-down, select any of the movie options.

How to access the WMV Options dialog box from the Export OpenGL Frames dialog

1. In the top menu, select **File > Export > OpenGL** Frames.

   The Export OpenGL Frames dialog box appears.



2. In the **Format** section, select **Movie**.
3. In the **Movie Format** drop-down, select **Windows Media Video (*.wmv)**.
4. Click on the **Movie Options** button.

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td colspan="2">Video</td></tr>
<tr><td>Variable Bit Rate Quality</td><td>Allows you choose a quality setting ranging from 5 to 100 for the video stream. The higher the quality of the export, the larger the resulting file.</td></tr>
<tr><td>Sound</td><td>Uncheck this checkbox if you want to export a movie without an audio track.

NOTE
The Sound section of this dialog is not available if you are exporting an EDL/AAF/XML sequence, as this type of export creates video files with no audio track and export sound clips in separate sound files.</td></tr>
<tr><td>Profile</td><td>Allows you to select one of the preset combinations of audio sample rates, sample sizes and channel modes for the audio stream:

• Sample rate: Available sample rates are 8000 Hz, 16000 Hz, 22050 Hz and 44100 Hz. The higher the sample rate, the better the audio quality.

NOTE
Harmony cannot export audio at a higher sample rate than 22.050 kHz. If you select a higher sample rate, your project's audio will be upsampled, which means it will take more disc space without increasing in quality.

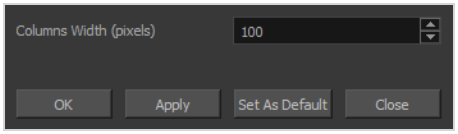
• Sample size: Also known as bit depth, this determines the amount of precision used to record each wavelength in the audio track. The standard size is 16-bit. If you choose 8-bit, the amount of disk space the audio track of your movie file requires is halved, but the audio quality will be significantly lower.

NOTE
Exporting in 8-bit audio requires Apple QuickTime to be installed.

• Channel mode: Available channel modes are Stereo and Mono. Stereo sound has a separate audio track for the left and the right speakers, whereas mono sound uses a single track for all speakers.</td></tr>
</table>

Xsheet Column Width Dialog Box

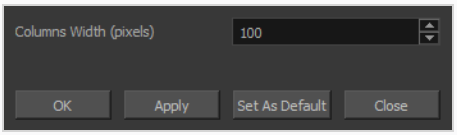
The Xsheet Column Width dialog box lets modify the width of a column in the Xsheet view and use it as the default column width.



How to access the Xsheet Column Width Dialog Box

1. In the Xsheet view, select a column.
2. From the Xsheet menu, select **View > Set Columns Width**.

   The Xsheet Column Width dialog box opens.



Parameter	Description
Columns Width (pixels)	Lets you set the width of the selected columns (in pixels).
Apply	Applies the value you entered to the selected column without closing the dialog box.
Set As Default	Uses the value you entered as the default for all columns in the Xsheet.

Chapter 2: Menus

The Menus section covers all the menu entries available in Harmony. There are several types of menus in Harmony: main menus, quick-access menus and view menus. Menus contains most of the functions available. They may also have a toolbar button or keyboard shortcut equivalent.

- Main Menus 229
  - Animation Menu 230
  - Drawing Menu 238
  - Edit Menu 247
  - File Menu 251
  - Help Menu 254
  - Insert Menu 256
  - Play Menu 258
  - Scene Menu 260
  - View Menu 262
  - Windows Menu 269
- View Menus 271
  - Camera View Menu 272
  - Colour View Menu 289
  - Drawing View Menu 292
  - Function View Menu 305
  - Library View Menu 307
  - Reference View Menu 309
  - Onion Skin View Menu 311
  - Perspective View Menu 313
  - Script Editor View Menu 319
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  - Timeline View Menu 329
  - Top View Menu 334
  - Xsheet View Menu 339

Main Menus

The top menu contains most of the commands available in Harmony. Depending on the view you're working in and the selected element, some commands are available and others not. The top menu is always located at the very top of the interface.

On macOS, there is also a Harmony Advanced category that contains the following commands: Preferences, About, and Quit.

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Drawing Menu **238**

Edit Menu **247**

File Menu **251**

Help Menu **254**

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Animation Menu

The Animation menu lets you access tools, adjust animation timing, set morphing and parameters, lock or unlock layers, and select elements in the Xsheet and Timeline views.

How to access the Animation menu

- At the top of the interface, select **Animation**.

Command	Description
Animate	
Animate Current Frame	When this option is selected, every time you use the Transform or Advanced Animation tools to manipulate an element in your scene, the position of the element will be stored in a keyframe at the current frame. This allows you to animate elements in your scene without creating keyframes manually.
Animate Onion Skin Range	When this option is selected, if you use the Transform or Advanced Animation tools to make transformations to an element in your scene, the transformations will be stored as keyframes at the beginning and at the end of the current Onion Skin range, as well as on every existing keyframe in-between. This can be useful if you want to reposition an element that you have already animated, but only during a specific range of frames, which you can define by enabling Onion Skin and setting the Onion Skin range to cover that range of frames.
Animate Off	When this option is selected, if you use the Transform or Advanced Animation tools to make transformation to an element in your scene, the transformations will affect the element throughout the whole scene. This can be useful if you want to reposition an element after you have already animated it.
Stop-Motion Keyframe	Converts the selected keyframes to stop-motion keyframes. Between a stop-motion keyframe and the next keyframe, Harmonydoes not generate any animation and the element remains static until the next keyframe.
Delete Keyframe	Deletes the selected keyframes.

Tools	
Transform	Allows you to select drawing layers and position, rotate, scale and skew them.
Translate	Lets you move the selected element along the X and Y axes.
Rotate	Turns a selected element around its pivot point.
Scale	Increases or decreases the size of a selected element. You can scale an object up to make it larger or down to make it smaller. Press Shift to scale the element while maintaining its proportions.
Skew	Slants the selected element.
Maintain Size	Keeps elements the same size aspect ratio in the Camera view as you move them towards or away from the camera.
Spline Offset	Lets you reposition the visual trajectory without offsetting or modifying your animation. By default, the trajectory is located at 0,0,0 fields. If your elements were drawn in a different location than the centre of the drawing area, it will look like the trajectory is not aligned with your drawing. Also, if you have several elements attached to one trajectory, you might want your trajectory to be at a different location to represent the group's motion better.
Cell	
Increase Exposure	Adds one more exposure to a selected cell; repeating this action adds an extra cell each time. This is an efficient way to extend a drawing's exposure and is always set in Insert mode. Increasing an exposure pushes the existing exposure forward.
Decrease Exposure	Decreases exposure of a selected cell by one; repeating this action decreases one exposure adds an extra cell each time. This is an efficient way to shorten a drawing's exposure. Decreasing an exposure pulls in the existing exposure.
Set Exposure to	Lets you set the exposure to 1, 2, 3 or a custom exposure.
Extend Exposure	Lets you enter the frame up to which you want to extend the exposure.

	You can expose the drawing in the frames and replace the drawings that were originally there or move the subsequent frames forward in time.
Add Key Exposure	Adds a key exposure to the selected cell.
Remove Key Exposure	Removes key exposures from the selected cells.
Remove Duplicate Key Exposure	When working with drawings to adjust the timing of a mouth in a lipsync, for example, and forcing the use of specific key exposures, unnecessary key exposures will be created. You can delete these duplicates without affecting the rest of the drawing. The first drawing of the selection will be used for the range. **NOTE** Duplicate key exposures may occur when pasting with the Enforce Key Exposure option selected.
Fill Empty Cells	Fills the empty frames in the selection with the exposure just before. For example, if you select a range of frame that starts with an exposed drawing and then ends with empty cells, all of the empty cells in the selection will be filled with the exposed drawing just before the empty cells.
Insert Blank Cell	Adds an empty cell between other cells.
Clear Exposure	Removes the exposure from the selected cell.
Clear Exposure and Pull	Replaces the exposure from the selected cell with exposures that follow it.
Fill Selection	Lets you fill the same value over an entire selection. The selection can be over one cell, a cell range in one column, a cell range over many columns, an entire column, or many columns. You can use numbers, words, letters, or any alphanumeric value.
Sequence Fill	Lets you create a numbered sequence over a selection. The sequence can be forward, backward, single, double or higher increment, as a cycle, and so on. The selection can be over one cell or a cell range in one column or more or an entire column or many entire columns.

Fill Cells Randomly	Lets you fill in random values over a selection. You can give a maximum and a minimum value and create a range for Harmony to choose the random values from. The selection can be over one cell or a cell range in one column or more or an entire column or many entire columns.
Hold Exposure	Lets you expose a drawing for three, four, or five cells and so on.
Morphing	
Create Morphing	Allows you to create and configure a morphing sequence, which will automatically generate the in-betweens between two drawings in the current layer.
Insert Morphing Key Drawing	Creates a morphing keyframe from a selected morphing frame.
Delete Morphing	Once a cell is selected in a morphing sequence, deletes the entire sequence between the two keyframes.
Convert Morphing to Drawing	Lets you convert your morphing inbetweens to real drawings you can edit. This is useful when manually editing a morphing sequence or if you prefer to have animation timing in double frame (on twos) instead of single frame (on ones).
Contour Hint	The Contour Hint point is used on the colour fill zone and brush lines; in other words, on Contour vectors. It allows you to control the line thickness and contour position. Also, if a contour is not animated correctly, you can use hints to correct the animation. For example, if a flag is not waving properly. When adding a Contour Hint point, make sure to place it far enough away from the contour so you can see it snap to the contour. Contour Hint points are yellow.
Zone Hint	The Zone Hint point is used on a colour zone to control the proximity rule. The Zone Hint is placed in the centre of the colour zone. Sometimes a colour zone is not associated with the corresponding one by default. For example, in a splash animation there are many water droplets that are the same colour. Harmony automatically morphs the droplet to the nearest one. This is not always the one you may have predicted. A Zone Hint will force a colour zone to morph with another one. Zone Hint points are cyan in colour.

Pencil Hint	A Pencil Hint point is used to control a pencil line, also known as *central vector*. It can be used on drawings that were done using the Pencil, Polyline, Ellipse, Line and Rectangle tools. Like the Contour Hint, the Pencil Hint snaps to the central vector. Make sure to place it far enough away from the line so you will see it snap when you move it. Pencil Hint points are magenta in colour.
Appearing Point Hint	An Appearing Point Hint is used to control the trajectory of an appearing shape. A shape will appear in the destination drawing when there is no corresponding shape in the source drawing. If you do not place an Appearing Point Hint to control the point of appearance, the shape will appear from its centre and expand outwards. Appearing Point Hint points are violet in colour.
Vanishing Point Hint	A Vanishing Point Hint is used to control the trajectory of a vanishing shape. A shape will vanish from the source drawing when there is no corresponding shape in the destination drawing. If you do not place a Vanishing Point Hint to control the point of disappearance, the shape will vanish into its centre. Vanishing Point Hint points are green in colour.
Switch Between Morphing Key Drawings	Toggles between the two key drawings in your morphing sequence. This option is useful while setting hints. You can use the default keyboard shortcut F4 to toggle between your drawings.
Go to First Frame	Goes to the first frame of your morphing sequence.
Go to Previous Frame	Goes to the previous frame of the selected frame in the morphing sequence.
Go to Next Frame	Goes to the next frame of the selected frame in the morphing sequence.
Go to Last Frame	Goes to the last frame of your morphing sequence.
Suggest Hints	Automatically sets hint points on key drawings as a help tool. If you're not sure where to set hints, you can use this option. It will set the main hints which you can then fine tune.
Hide Hints	Temporarily hides the hint points from the key drawings. Use this

	option when you have a series of hint points hiding some lines you would like to see.
Lip-Sync	
Change Mouth Shape to	Lets you change the mouth shape to one of the following: A, B, C, D, E, F, G, X.
Auto Lip-Sync Detection	Generates a sound detection for lip-sync.
Map Lip-Sync	Automatically maps drawings in an element to the mouth chart you have generated for a sound. This can save time when you are lip-synching a voice track.
Flip	
Flip Horizontal	Flips the selection horizontally.
Flip Vertical	Flips the selection vertically.
Flip Scale X	Once your drawing layer is rotated, the original horizontal and vertical axes change. The Flip Scale X and Flip Scale Y will perform a flip on your drawing layer following its original axis.Remembers the original X-axis of the layer and flips the element following it.
Flip Scale Y	Remembers the original Y-axis of the layer and flips the element following it.
Linear Motion	Switches between a linear and curved corner.
Lock in Time	Indicates whether the point is locked to a specific frame (keyframe) or only locked to a specific position and the curve can flow through it freely as other points are being added, moved, or adjusted (control point).
No Z Dragging	Keeps the Z value constant when you drag a character using the Transform or Translate tool.
Substitute Drawing Previous	Replaces the drawing or cell's symbol on the current frame by the previous drawing.

Substitute Drawing Next	Replaces the drawing or cell's symbol on the current frame by the next drawing.
Go to Previous Keyframe	Goes to the previous keyframe.
Go to Next Keyframe	Goes to the next keyframe.
Select Previous Keyframe /Point	Select the previous keyframe/point.
Select Next Keyframe /Point	Select the next keyframe/point.
Select Child	Lets you select the first element parented to the selected peg element in the Timeline view.
Select Children	Lets you select all elements parented to the selected peg element in the Timeline view.
Select Parent	Lets you select the parent of the selected element in the Timeline view.
Select Previous Sibling	Lets you select the previous element (above current element) in the Timeline view.
Select Next Sibling	Lets you select the next element (below current element) in the Timeline view.
Lock	
Lock	Locks one or a multiple selection of layers.
Unlock	Unlocks one or a multiple selection of locked layers.
Lock All	Locks all the layers in the Timeline view.
Unlock All	Unlocks all the layers in the Timeline view.
Lock All Others	Locks every layer except the selected ones.
Reset	Returns the value of the selected element to the initial value of the

	active tool. For example, if the Rotate tool is active, the transformation angle will be reset to 0 and if the Transform tool is active, all the transformation values will be reset.
Reset All	Resets all transformations on the current frame in a selected layer. Your keyframe will remain, but all the values will return to the starting value. All transformations are reset regardless of the tool you're using.
Reset All Except Z	Resets all transformations on the current frame except the Z position. This is useful when doing cut-out animation. Cut-out puppets often have a particular Z ordering for the different views of a character. You might want to reset the transformation, but not necessarily the Z position.

Drawing Menu

The Drawing menu lets you access many tools related to drawing, painting, dirt removal, optimizing strokes, and more.

How to access the Drawing menu

- At the top of the interface, select **Drawing**.

Command	Description
Drawing Tools	Allows you to select one of the drawing tools available in Harmony.
Select	Allows you to select and reposition, scale, rotate and skew brush strokes, pencil lines, shapes and other parts of your artwork.
Contour Editor	Allows you to edit the vector contours of brush strokes, pencil lines and shapes in your artwork. You can add, remove, tweak and move vector points, move the Bezier handles of the vector points as well as deform vector outlines.
Centerline Editor	Allows you to tweak and deform a brush stroke by manipulating the points at the centre of its line rather than its contour.
Pencil Editor	Allows you to adjust the thickness of a pencil line at its different points and corners, tweak the shape of its extremities and scale its texture.
Cutter	Allows you to cut a part of your artwork, then reposition, scale, rotate and skew it.
Smooth Editor	Allows you to optimize contours and lines by removing its extra points, making them easier to edit.
Perspective	Allows you to deform artwork by applying a perspective effect on it.
Envelope	Allows you to deform and warp artwork by moving points and tweaking lines in a grid.
Reposition All Drawings	Allows you to reposition, scale, rotate and skew all drawings in the current layer.

Drawing Pivot	Allows you to position the pivot on a drawing layer by clicking where you want its location to be.
Brush	A pressure-sensitive tool for creating a contour shape with a thick and thin line effect, as if created with a paint brush.
Pencil	A pressure-sensitive tool for drawing outlines. Pencil lines are made of central vector lines, making them easier to tweak and edit than brush strokes.
Text	Allows you to add text and to format it.
Eraser	A pressure-sensitive tool for erasing parts of a drawing.
Colour Eyedropper	Allows you to select a colour by clicking on a colour in your artwork.
Pencil Texture Eyedropper	Allows you to select a pencil texture by clicking on a textured pencil line.
Morphing	Allows you to create and configure a morphing sequence, which will automatically generate the in-betweens between two drawings in the current layer.
Line	Draws a straight line segment going from one point to the other.
Rectangle	Draws a rectangle.
Ellipse	Draws an ellipse.
Polyline	Allows you to draw shapes, segmented lines or complex curved lines by clicking to create each point in the sequence of line segments.
Paint	Allows you to fill colour zones with a colour or texture.
Ink	Allows you to recolour pencil lines with precision by changing the colour of one segment at a time.
Repaint Brush	Like the Brush tool, but only paints over existing brush strokes.
Close Gap	Allows you to close open shapes so that they can be filled with the Paint tool. By

	drawing a stroke near a small gap in a shape, this tool will create a small invisible stroke connecting the two closest points around the gap.
Stroke	Allows you to create invisible lines that can serve as colour zones that can be filled, or close the gaps in existing colour zones.
Edit Gradient/Texture	Allows you to adjust the position, angle and size of gradients and textures in a colour zone.
Hand	Allows you to pan the Camera and Drawing views.
Zoom	Allows you zoom in and out of the Camera and Drawing views.
Rotate View	Lets you rotate the Camera and Drawing views just like with a real animation disc.
Shift and Trace	Allows you to temporarily move drawings so you can trace over them in other drawings using Onion Skin.
Clean Up	
Remove Dirt	Opens the Remove Dirt dialog box where you can specify the number and size of dots removal from a selected drawing.
Remove Hair	Opens the Remove Hair dialog box where you can specify the number and length of hairs for removal from a selected drawing. This removes any small strokes created in the Colour Art layer from very thick lines or filled zones. Increase the value to select larger strokes for removal from the drawing.
Close Gaps	Closes small gaps in a drawing by creating small, invisible strokes between the two closest points to close the colour zone. You do not need to trace directly over the gap. You can draw it a few millimeters away. The two closest points automatically close the gap.
Remove Art Inside Selection	Removes any art inside a selection. It is recommended that you clean your Colour Art level as well. If you have a stroke accumulation in the Colour Art, it can result in large output files, especially if you work in high definition resolutions.
Remove Art Inside Selection on All Drawings	Removes any art inside all drawings selected with the Permanent Selection option in the Select tool.

Remove Art Outside Selection	Removes any art existing outside a selection. It is recommended that you clean the Colour Art level as well. If you have a stroke accumulation in the Colour Art, it can result in large output files, especially if you work in high-definition resolutions.
Remove Art Outside Selection on All Drawings	Removes any art outside all drawings selected with the Permanent Selection option in the Select tool.
Paint **NOTE** The Paint commands require you to use the Permanent Selection option in the Select tool so you can maintain a selection over multiple drawings.	
Unpaint Selection	Unpaints any art existing inside a selection.
Unpaint Selection on All Drawings	Unpaints all art contained inside a selection on all the drawings within the same layer.
Unpaint Outside Selection	Unpaints any art existing outside a selection. If no selection have been drawn using the Select tool, the entire drawing will be unpainted.
Unpaint Outside Selection on All Drawings	Unpaints all art outside a selection on all the drawings within the same layer.
Repaint Selection	Repaints any art inside a selection.
Repaint Selection on All Drawings	Repaints any art inside a selection on all the drawings contained within the same layer.
Repaint Outside Selection	Repaints any art outside a selection. If no selection has been drawn using the Select tool, the entire drawing will be repainted.
Repaint Outside Selection on All Drawings	Repaints any art outside a selection on all the drawings contained within the same layer.

Convert	
Pencil Lines to Brush Strokes	Converts the selected centreline pencil strokes into contour strokes brush lines.
Brush Strokes to Pencil Lines	Converts selected contour strokes into centreline pencil strokes. The brush stroke thickness will be lost.
Strokes to Pencil Lines	Converts the selected invisible line to a pencil line.
Break Apart Text Layers	Text is treated as a single drawing object. This separates the text so each character becomes an individual drawing object you can select and modify independently.
Optimize	
Flatten	Merges drawing objects and brush strokes into a single layer. If you draw new lines to fix a drawing or line with many brush strokes, it can be useful to flatten them all into a single shape. By default, lines are drawn one on top of each other. If you intend to repaint the lines or modify their shape, it will be easier if they are flattened.
Smooth	Smooths selected drawing strokes and removes extra points.
Create Contour Strokes	Adds a permanent invisible line around a shape that was drawn directly in Harmony. This allows you to unpaint lines with the Paint tool but maintain the shape of the lines, should you need to repaint later.
Remove Contour Strokes	Remove any permanently invisible lines that were created while scanning and vectorizing drawings or manually adding contour strokes. This is useful for removing the intersection triangles created during vectorization.
Remove Extra Strokes	Removes strokes inside painted area. This option only works after the painted drawing is flattened.
Optimize	Reduces the number of layers, such as overlapping brush strokes, in the selected drawing objects. Drawing objects will only be flattened and optimized if the selected objects do not change the appearance of the final image when they are merged.

Crop Brush Textures	Crops an unnecessarily large texture bitmap that lies unseen beneath the vector contour of a textured line. This often occurs when you cut and paste textured lines from one drawing into another. If you cut a portion from a textured line and paste it into a different drawing, Harmony pastes the entire unseen texture bitmap from the source drawing into the new one, even if you only took a small portion of the source drawing. Using the Crop Brush Texture command will crop away extraneous texture that does not touch the vector area. If there are many textured lines in your scene, this will greatly reduce the file size.
Reduce Drawing Texture Resolution	When you import and vectorize as texture (colour) a high resolution image, the size of your drawing can be heavy. You can reduce the size and resolution of the textures in a drawing.
Transform	
Flip Horizontal	Flips the current selection horizontally.
Flip Vertical	Flips the current selection vertically.
Rotate 90 CW	Rotates the current selection 90 degrees clockwise.
Rotate 90 CCW	Rotates the current selection 90 degrees counter-clockwise.
Rotate 180	Rotates the current selection 180 degrees.
Arrange	
Bring to Front	Moves the selected art to the front (on top).
Bring Forward	Moves the selected art one level forward (closer to the front).
Send Backward	Moves the selected art one level lower (behind).
Send to Back	Moves the selected art behind everything (bottom / back).
Create Empty Drawing	Creates a drawing in the selected cell, replacing any drawing that may already be exposed in that cell and the following ones until it meets another drawing, key exposure or a blank cell.
Duplicate Drawings	Creates a duplicate of the selected drawing in the layer. The duplicate drawing

	will be exposed at the selected frame instead of the original drawing. Hence, this command allows you to instantly start working on a duplicate of the current drawing and retain the original. **NOTE** When duplicating a drawing, the exposure at the selected cell is replaced with the new drawing, up until the next key exposure.
Delete Selected Drawings	Permanently removes selected drawings. Once you save your project, these drawings cannot be recovered.
Rename Drawing	Lets you give a selected drawing a new name.
Rename Drawing with Prefix	Lets you rename a drawing sequence with a prefix, which can be quite useful for cut-out puppet breakdown and deformation animation. This applies to any deformation work done in pre-Harmony 12 versions.
Rename by Frame	Lets you rename a series of drawings relative to their frame position. This is useful in hand-drawn animation.
Select Strokes with Current Colour	Lets you select drawing elements and painted areas with the same colour as the currently selected colour in your colour palette.
Distribute to Layers	Every selected stroke in the Camera view is placed on separate layers; one layer per stroke. If artwork is composed of several strokes, you must group them to put them on the same layer. This operation cannot be done in the Drawing view.
Create Colour Art from Line Art	Lets you use the outline you traced on one of the four embedded layers (line art, colour art, overlay, underlay) and create invisible strokes to paint your drawings on separate layers. This provides more inking and painting flexibility. You can also configure this option to create the invisible strokes on any of the four embedded layers.
Create Breaking Triangles	Useful for brush strokes, creates triangular breaks at natural line intersections. These intersections are the probable locations where colour line breaks may occur, such as where a sleeve meets a hand. This makes it easier to soft trace lines in different colours when there are flattened or unflattened clean brush strokes.

Generate Auto-Matte	Fills colour based on currently selected colour swatch on different drawing layers (overlay, underlay) so overlapping lines are more visible during a line test.
Adjust Line Texture Opacity	Lets you adjust the contrast and opacity of textured lines in a drawing.
Change Vector Drawing Brush Resolution	Allows you to change the pixel density of textured brush strokes in vector drawings in your scene. **NOTE** When you create a new vector drawing, its pixel density for textured brush strokes is based on the settings in the Drawing Resolution tab of the Scene Settings dialog.
Change Bitmap Drawing Resolution	Allows you to change the pixel density and canvas size of existing bitmap drawings in your scene. **NOTE** When you create a new bitmap drawing, its canvas size and pixel density are based on the settings in the Drawing Resolution tab of the Scene Settings dialog.
Previous Drawing	When a cell is selected in the Timeline view, displays the previous drawing.
Next Drawing	When a cell is selected in the Timeline view, displays the next drawing.
Previous Layer	When a cell is selected in the Timeline view, displays the previous layer.
Next Layer	Once a cell is selected in the Timeline view, you can navigate between the drawings, frames, and layers. Displays the previous drawing, next drawing, previous layer or next layer. When a cell is selected in the Timeline view, displays the next layer.
Colour Protection	
Toggle Current Colour Protection	Temporarily enables/disables the Colour Protection feature so you can quickly correct wrongly inked or painted areas under protected colour without readjusting the Current Colour Protection option.
Respect Colour	In the Colour view, you can protect a colour swatch to avoid repainting or

Protection	unpainting the zones linked to that swatch. If you using the Paint tool and this option is deselected, you will repaint or unpaint the protected colours on your drawings until you enable the option again.

Edit Menu

The Edit menu lets you repeat and undo actions, cut/copy/paste selected objects, select and manipulate objects, work with symbols, and access the Preferences dialog box.

How to access the Edit menu

- From the top menu, select **Edit**.

Command	Description
Undo	Removes the last change made to your project. Harmony supports multiple undo, so you can undo changes you made in the order you made them.
Redo	Redoes an operation you have undone. This command is active only after you use the Undo command.
Cut	Removes selected objects. You can then paste the object or its properties to another object.
Copy	Copies selected objects and properties.
Paste Drawing Object	Places an object you cut or copied into the location you select in a view.
Paste Drawing Object in Place	Pastes the copied object in the same place as the original.
Paste Special	Opens the Paste Special dialog box which lets you determine how templates and symbols are imported in the Timeline view. There are advanced paste options for drawings, timings, keyframes, layers, as well as palettes and symbols.
Paste Special Again	Pastes new drawings with the previous Paste Special settings.
Paste Cycle	Cycles a portion of an animation. You can increase or decrease the number of cycles to paste and select a type of cycle: Normal, Reverse, Forward-Reverse and Reverse-Forward.
Paste Reverse	Reverses the timing of drawings or keyframes in range of selection

	after copying.
Delete	Removes selected objects.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Invert Selection	Deselects the currently selected items and selects all other items that were not selected. For example, if some lines are selected in a drawing, this command will deselect them and select any other lines in the drawing that were not selected.
Auto-Apply	Automatically applies changes you make to a property window or dialog box. Harmony applies the modification automatically and displays the result in the Camera view. When working on a heavy scene, it is useful to turn off this option.If you want to always work in Auto-Apply mode, you can deselect the Auto-Apply option in the Preferences dialog box (General tab). Then, each time you start Harmony, the Auto-Apply mode will be off. You must click the Apply button to see any modifications.
Create Symbol	Creates a symbol from selected drawing elements in the Drawing or Camera view or a layer or cells in the Timeline view.
Open Merge Editor	Lets you bring together (merge) the layer or drawings from different versions of the same scene.
Expand Symbol	Extracts a symbol's contents and places it on the root timeline. Its contents will be copied and inserted into the root timeline. The symbol will not be removed from the Timeline view once it is expanded. The symbol's layers will be parented to it in case you created motions and transformations on the drawing layer that contain the symbol. Breaking the hierarchy could result in the loss of any scaling and animation you may have created.
Expand Selected Symbol in Groups	Expands a symbol within a group to avoid crowding the timeline with a series of layers. When you expand the symbols, the layers will be contained in a group node that you can expand to see the content.

Duplicate Selected Symbol	Creates a duplicate of a selected symbol. If other symbols are nested inside the new symbol, they are not duplicated. If you modify them, the original and other instances will also be modified.
Create Drawing from Drawing Selection	Breaks a character into its main body parts. There is no need to create any layers prior to this process. Make sure your model is well centered and sized in the Camera view.
Clone: Drawings Only	Creates a copy of the drawings in the selected layer in the Timeline view. The timing it not copied.
Clone: Drawings and Timing	Creates a copy of the drawings and their timings in the selected layer in the Timeline view.
Duplicate	Duplicates a layer to have a copy of the drawings that are independent from the original ones, as well as an independent timing (exposure). When you need the drawings to be modified independently, you will want to duplicate the layer instead of cloning it.
Merge	There are two methods of merging drawings. • You can merge selected drawings in adjacent elements. The columns and layers will be left intact, and each new merged drawing will reside in the frames of the left-most column or lower layer. • You can merge elements. All drawings will be merged. Unused columns and layers will be deleted, but the original drawing files are still accessible.
Group	
Group	Groups selected drawing objects in the Camera or Drawing view.
Ungroup	Ungroups a selected group of drawing objects in the Camera or Drawing view.
Edit Drawing Mode	When the Auto-Get Rights to Modify Drawings option is selected in the Preferences dialog box (General tab), the system automatically gets the rights to modify drawings when you select a drawing. Otherwise, you must manually get the rights to modify drawings.
Edit Palette List Mode	When the Auto-Get Rights to Modify Palette option is selected in the

	Preferences dialog box (General tab), the system automatically gets the rights to modify palettes and palette lists when you select a colour from a palette. Otherwise, you must manually get the rights to modify a palette or palette list.
Get Rights to Modify Drawing	Manually releases the rights to modify a selected drawing.
Release Rights to Modify Drawing	Manually releases rights to modify a selected drawing.
Force Release Rights to Modify Drawing	This option is always available even if the Get Rights to Modify All Scene Assets option is not selected in the Database Selector dialog box.
Preferences	Opens the Preferences dialog box where you can set your preferences for Harmony.

File Menu

The File menu lets you open, close, save, scan, print, and import and export files.

How to access the File menu

- From the top menu, select **File**.

Command	Description
New	Creates a new scene while closing any scene already open. The New Scene dialog box opens, asking for directory, name, and resolution information.
Open	Displays the Open Scene dialog box where you can browse for a scene file. You can open a new scene from the current one and the previous scene will close.
Open Recent	Displays a list of the most recently opened scenes.
Clear	Clears the list of recently opened scenes.
Close	Closes the currently opened scene, but does not close the Harmony application.
Save	Saves all changes made to the opened scene, drawings, palettes, and palette lists.
Advanced Save	Lets you do the following: • Save the scene as the current version. • Save different versions representing different stages of the production of your scene. • Save different versions representing different scene setups. • Choose specific assets that you want to save, such as drawings or palettes.
Rights to Modify Scene Version	Allows you to modify the selected version of the scene as well as to manage and overwrite other versions. Other users will not be able to open a different version of the scene until you close the scene.
Rights to Modify Scene	Allows you to modify the currently selected scene version only. Unless the **Get rights to modify the scene** option is also checked, you will not be able to change other versions of the scene. This allows other users to modify different versions of the scene while you are working on the selected version.

Read Changed Drawings	Determines which drawing files have been modified on disk since you loaded them. All updated drawings will be reloaded. **NOTE** Reloading a locked drawing will discard unsaved changes.
Manage Versions	Allows you to manage all the versions of the current scene.
Manage Local Cache	Opens the Manage Local Cache dialog, in which you can see all the Harmony Server database scenes that were cached locally, delete unused caches and check if the data in a scene's cache matches the data on the database server.
Save As	Saves the current file with a different name and at a different location. Saves the current state of a scene as another scene. The Save As window prompts you for a new name and a different location for this scene before saving it. This will create a complete scene directory for the new scene. **NOTE** The scene name **cannot** exceed 23 characters.
Save as New Version	Saves the current scene as another version. The Save Version dialog box prompts you to give a name for this new version. This will create a new .xstage file in your current project directory.
Back Up Scene	Backs up the current scene to a location you choose.
Update Database Scene	Updates your database with only the changes you made to the scene. To do this, you must enter your host name and host port in the Preferences dialog box, General tab.
Download Database Changes	If any changes were made to the scene you downloaded, you can perform an update by downloading these changes, which will be integrated into your scene.
Remove Unused Files	Removes the unused palettes from the scene list.
Import	
From Scanner	Imports drawings from a TWAIN scanner.

Images	Imports bitmap images which you can choose to vectorize.
Movie	Lets you convert a QuickTime movie to an image sequence and audio file.
Sound	Lets you import sound files into your project.
Colour Model	Lets you import TVG drawing file into your project. Once imported, it is display in the Model view for use as a colour model which you can load into any Harmony scene.
SWF, Illustrator Files to Library	Lets you import SWF files into your project.
Vector File	Opens the Import PDF dialog where you may import Adobe Illustrator (.ai) and Portable Document Files (.pdf).
Export	
Images	Exports a scene as a bitmap image sequence. If there is sound in your scene, it will not be exported with the images.
Movie	Exports animation as a QuickTime movie.
SWF	Exports a Flash movie file. Harmony supports exporting Flash movie files with a limited subset of vector and bitmap effects, the latter which can be previewed in Render View mode.
OpenGL Frames	Exports OpenGL frames (fast display mode) for a quick screen renders of a scene that contain no transparency channel. Heavier scenes containing 3D, multiple effects and camera moves can be fairly long to export.
Print	
Xsheet	Prints the exposure sheet so you can take it to your animation table, provide a copy to the animator, or create your Xsheet skeleton directly in Harmony.
Quit	Closes the application.

Help Menu

The Help menu lets you display the Harmony documentation, Welcome screen and end user license agreement, as well as access the Toon Boom website, and identify the product name and version number.

How to access the Help menu

- At the top of the interface, select **Help**.

Command	Description
Online Help	Opens the Harmony Help system, complete with instructions on how to use the system. This requires an internet connection.
Getting Started	Opens the Harmony Getting Started Guide (in PDF format) in a browser window. Requires Acrobat Reader.
Scripting Interface Documentation	Opens the Harmony Scripting Interface Documentation.
Extended Scripting Interface Documentation	Opens the Harmony Extended Scripting Interface Documentation.
Script Node Documentation	Opens the Harmony Script Node Documentation.
Python Interface Documentation	Opens the Harmony Python Scripting Documentation. See
Toon Boom on the Web	Opens the Toon Boom website, which features a Support and Community > Forum section.
Customer Experience Improvement Program	The Customer Experience Improvement Program allows Toon Boom to collect usage information. The data does not contain any personally identifiable information and cannot be used to identify you. The data will consist of a basic hardware description, a project summary and usage information. The information is used only for software improvement purposes, as well as for sharing with third parties for the same reason. This program is enabled by default but is voluntary. If you prefer not to participate, you can opt out when you first launch the software, by using a global preference, or by a command line argument.

About	Identifies the product name and version number.
Show Welcome Screen	Displays the Harmony Welcome screen.
Show End User License Agreement	Displays the End User License Agreement.
Debug Mode	When enabled, information is logged in the Message Log view about the preview generated in the Camera view, each time the preview is refreshed. In OpenGL preview mode, summary information is logged about the amount of layers to process and the time it takes to generate the preview. In Render Preview mode, detailed information about each composite and effect that is processed is logged.

Insert Menu

The Insert menu lets you create empty symbols in the Library view, different types of layers in the Timeline view, keyframes and control points.

How to access the Insert menu

- At the top of the interface, select **Insert**.

Command	Description
Create Empty Symbol in Library	Creates an empty symbol in the Library view to which you can edit (add content).
Bone	Adds a new Bone layer to the Timeline view.
Camera	Adds a new Camera layer to the Timeline view.
Colour-Card	Adds a new Colour-Card layer to the Timeline view.
Drawing	Adds a new Drawing layer to the Timeline view and a column in the Xsheet view.
Game Bone	Adds a new Game Bone layer to the Timeline view.
Kinematic Output	Adds dd a new Kinematic Output layer to the Timeline view.
Peg	Adds a new Peg layer to the Timeline view.
Quadmap	Adds a new Quadmap layer to the Timeline view.
Effects	Adds a new layer in the Timeline view with the effect you select: Blending, Blur, Blur-Gaussian, Brightness-Contrast, Colour-Override, Colour-Scale, Cutter, Glow, Highlight, Shadow, Tone, or Transparency.
Keyframe	Adds a keyframe to the selected cell in the Timeline view.
Keyframe and Duplicate Drawing	Adds a keyframe to the selected drawing layer cell in the Timeline view and creates a duplicate of the drawing, which sits on top of the original drawing.

Position Keyframe	Adds a position keyframe whereby keyframes will only be added on the X, Y and Z parameters of the selected layer. Keyframes are not added on the Angle, Scale and Skew parameters.
Control Point	Adds a control point to the trajectory of the selected element or peg in the Camera view when the element or peg is in a 3D path. Note that you must have a 3D path in the peg portion in order to add a control point.

Play Menu

The Play menu lets you play back animation and sound. Use it to scrub the sound to create your lip-sync, loop the playback, navigate through frames, and change the playback range and speed.

How to access the Play menu

- At the top of the interface, select **Play**.

Command	Description
Play	Plays the scene in the Camera or Drawing view.
Render and Play	Renders your scene's frames, then opens the rendered frames in Play for playback. This allows you to preview your scene's animation in real time, with the effects rendered and with no risk of slowdown.
Record and Play	Exports your scene as it appears in the Camera view into a movie file, then opens it in your workstation's default video player. This allows you to preview your animation without any risk of slowdown, but it does not preview the effects in your scene. However, it is much faster than Render and Play. This button automates the usage of the Export OpenGL Frames dialog see
Test SWF Movie	Quickly exports your scene as a Flash Movie **(.swf)**, then opens it in your workstation's default web browser.
Stop	Stops playback.
Mini Playback	Open the Mini Playback dialog. This dialog allows you to set the amount of frames before and after the current frame to playback when using Mini Playback, to set the speed of Mini Playback and to start Mini Playback.
Start Mini Playback	Begins Mini Playback using the last settings entered in the Mini Playback dialog. By default, Mini Playback will play 5 frames before and after the current frame, at the scene's frame rate.

Playback Speed	Opens the Set New Frame Rate dialog box where you can set the frame rate at which the playback plays.
Loop	If pressed, your scene will repeat indefinitely when playing. Otherwise, it will stop when the end is reached.
Enable Sound	Turns on sound during playback.
Enable Sound Scrubbing	Turns on sound scrubbing during playback.
Start Frame	Opens the Set Playback Start Frame dialog box , in which you can enter the frame number from which to start playback.
Stop Frame	Opens the Set Playback Stop Frame dialog box, in which you can set the frame number at which to stop playback.
First Frame	Moves the red playhead to the first frame.
Previous Frame	Moves the red playhead to the previous frame.
Next Frame	Moves the red playhead to the next frame.
Last Frame	Moves the red playhead to the last frame.
Go to Frame	Opens the Go to Frame dialog box where you can enter the frame number on which the red playhead to be positioned in the Timeline view.
Enable Playback	
Top View	Plays back your animation in the Top view.
Side View	Plays back your animation in the Side view.
Perspective View	Plays back your animation in the Perspective view.

Scene Menu

The Scene menu lets you set the scene length, add frames to the scene, view different displays of the scene, set render options, access the Scene Settings dialog box and Elements Manager window, and verify the drawing and palette files in your project.

How to access the Scene menu

- At the top of the interface, select **Scene**.

Command	Description
Scene Length	Lets you set the length of the scene in frames.
Frame	
Add Frames at Start	Adds the number of frames you specify to the beginning of the scene.
Add Frames at End	Adds the number of frames you specify to the end of the scene.
Add Frames Before Selection	Adds the number of frames you specify before or after your selection.
Add Frames After Selection	
Remove Selected Frames	Deletes the selected frames from your scene.
Camera	
Default Camera	Lets you select a camera. If you only add one camera to your scene, you will only see Default Camera in your list.
Default Display	
Display All	Shows the contents of a specific Display node, updating the contents of the Camera, Top, Side, Perspective, and Timeline views.
Display	
Scene Settings	Opens the Scene Settings dialog box where you can set the resolution, alignment, bitmap resolution and many other parameters.

Render	
Auto Render	Automatically recalculates the preview image whenever you modify a parameter. If your scene is heavy and you do not want the preview rendered automatically, deselect the Auto-Render option and do the preview update manually.Note that this will slow down Harmony as it takes resources to update every frame.
Auto Render Write	Renders a frame each time the current frame is changed. You must have a Write node in your node structure to use this command.
Cancel Preview Render	Cancels a render that was started.
Element Manager	Opens the Element Manager window where you can add, delete or modify elements (drawing folders) in your scene. If you have drawing folders that are not linked to a column in your scene, use the Element Manager to delete them if needed. See xref Reference > Windows > Element Manager.
Check Files	Verifies the integrity of the drawing and palette files in your project.

View Menu

The View menu lets you manipulate the view by zooming, panning, or rotating. You can also display the grid and change its size, use the onion skin feature to help with drawing, and set the preview resolution.

How to access the View menu

- At the top of the interface, select **View**.

Command	Description
Toggle Full Screen	Cycles through the following display modes: • **Normal Full-Screen:** The main application window becomes full screen. • **View Full-Screen:** The selected view becomes full screen and all other views are collapsed. • **Normal:** The main application window is restored to its original size and collapsed views are expanded.
Zoom In	Zooms in the view.
Zoom Out	Zooms out the view.
Rotate View CW	Rotates the Camera view 30 degrees clockwise, like an animation table.
Rotate View CCW	Rotates the Camera view 30 degrees counter-clockwise, like an animation table.
Mirror View	Temporarily flips the Camera or Drawing view horizontally, allowing you to view and edit your artwork as if it was being mirrored.
Reset Zoom	Resets the view's zoom to its default position.
Reset Rotation	Resets the view's rotation to its default position.
Reset Pan	Resets the view's pan to its default position.
Reset View	Resets the view to its default position.

Next Colour	Goes to the next colour in the Colour view.
Previous Colour	Goes to the previous colour in the Colour view.
Grid	
Show Grid	Displays the grid.
Grid Outline Only	Displays the outline of the grid only.
Underlay	Displays the grid under the drawing elements.
Overlay	Displays the grid over the drawing elements.
Square Grid	Displays a standard square grid.
12 Field Grid	Displays a 12-field size grid.
16 Field Grid	Displays a 16-field size grid.
Onion Skin	
Show Onion Skin	Lets you preview the previous and next drawings. By default, the previous drawings appear in a shade of red and the next drawings are displayed with a shade of green. You can change these colours in the Preferences dialog box.
Add to Onion Skin	Adds a series of selected elements to the onion skin preview.
Remove from Onion Skin	Removes a series of selected elements from the onion skin preview.
Remove Unselected from Onion Skin	Removes all elements except the ones selected from the onion skin preview.
Add All to Onion Skin	Adds all of the scene's elements to the onion skin preview.
Remove All from Onion Skin	Removes all of the scene's elements from the onion skin preview.

Onion Skinning by Frames	Selects the drawings to display in the Onion Skin by their frame number relative to the current frame. For example, if the Onion Skin is set to include 2 drawings before and after the current frame, it will include the drawings up to two frames before and up to two frames after the current frame, even if those drawings are the same as the one in the current frame. This is more useful for cut-out animation as it allows you to position a drawing relative to its position in adjacent frames. **NOTE** This option only works in the Camera view.
Onion Skinning by Drawings	Selects the drawings to display in the Onion Skin by the amount of different drawings before and after the current frame. For example, if the Onion Skin is set to include 2 drawings before and after the current frame, this will display the nearest two different drawings before and after the drawing in the current frame in the Onion Skin, even if those drawings are further than 2 frames away from the current frame. This is more useful for frame-by-frame animation. **NOTE** When this option is enabled, the handles allowing you to adjust the extent of the Onion Skin in the Timeline view are not available.
No Previous Drawing	Removes the previous drawing's onion skin and displays only the next drawing.
Previous Drawing	Displays the previous drawing.
Previous Two Drawings	Displays the previous two drawings.
Previous Three Drawings	Displays the previous three drawings.
No Next Drawing	Do not show the onion skin for all of the next drawings.
Next Drawing	Show the onion skin for the next drawing.
Next Two Drawings	Show the onion skin for the next two drawings.

Next Three Drawings	Show the onion skin for the next three drawings.
Reduce One Previous Drawing	Reduces the number of previous visible drawings by one.
Add One Previous Drawing	Adds one drawing to the number of previous visible drawings.
Reduce One Next Drawing	Reduces the number of next visible drawings by one.
Add One Next Drawing	Adds one drawing to the number of next visible drawings.
Light Table	Turns on the light table so you can see the previous and subsequent active layers in washed-out colours. It is useful for seeing the other layers when designing, animating or cleaning up your animation.
Backlight	Produces a silhouette effect by changing the drawing's coloured areas into a single dark, solid colour. Use this to verify the completeness of the ink and paint process. Any unpainted zones can be seen as the light shows through the unpainted areas of the silhouetted drawing.
Show	
Symbol Pivot	Displays a symbol's pivot. The Symbol pivot is similar to the Drawing pivot. Each symbol cell can have its own pivot and act the same as the Drawing pivot. The Symbol pivot can also be referred to as *embedded pivot*. Inside a symbol, each drawing can have its own pivot.
Safe Area	Displays the TV safety zone and the centre of the camera frame. The safe area adapts to the scene resolution, as well as the safety zone and frame's centre.
Camera Mask	Displays a black mask around the scene's frame to avoid seeing the unnecessary artwork. This option is handy when you're animating and setting up the scene. It allows you to see your scene's composition better.
Control	Displays the controls of the selected element.
Current Drawing on Top	Displays the selected drawing on top of everything while you draw. By enabling this option, each time you select a drawing tool, the selected drawing is displayed in front of everything in the Camera view. The Timeline view ordering remain unchanged.You only need to enable

	this option once, it is not necessary to do it each time you select a drawing tool.
Outline Locked Drawings	Displays drawing that are locked in the Timeline view (cannot be selected in the Camera view) as wireframes.
Show Strokes	Displays the strokes in your drawings so that the invisible lines stand out.
Show Strokes with Colour Wash	Displays strokes with washed-out colours.
Hide All Controls	Hides the controls of the selected element.
Alignment Guides	Alignment Guides
Show Alignment Guides	When enabled, alignment guides will be visible in the Camera and Drawing views. This is enabled by default. Disabling this option will hide and disable alignment guides, meaning that animation and drawing tools will not snap to them, even if the Snap to Alignment Guides option is enabled in the Tool Properties view.
Lock Alignment Guides	It is possible to reposition alignment guides in the current panel by dragging them using the Transform tool. Enabling this option will lock the alignment guides in their current position, allowing you to manipulate layers and artwork in your scene without accidentally moving alignment guides.
Clear Alignment Guides	Removes all the alignment guides from your scene.
New Horizontal Alignment Guide	Adds a horizontal alignment guide to the middle of the stage. **TIP** You can move the alignment guide from its default position using the Transforml tool or the Select tool.
New Vertical Alignment Guide	Adds a vertical alignment guide to the middle of the stage.

	TIP You can move the alignment guide from its default position using the Transforml tool or the Select tool.
Particle	
Show Particles as Dots in OpenGL	Displays the particles as dots in the OpenGL preview mode. This makes the playback speed faster for a heavy scene.
Preview Manager	Opens the Preview Manager where you can set options for the quality of previews, and clearing and updating the cache.
Preview Resolution	
Same as Scene Resolution	Lets you choose a resolution for previewing a scene.
3/4 of Scene Resolution	
1/2 of Scene Resolution	
1/3 of Scene Resolution	
1/4 of Scene Resolution	
Custom	Lets you select a resolution from a list of presets or enter X and Y values for a custom preview resolution.
Bitmap File Quality	Let's you increase or decrease the preview quality of raw bitmap images. By default, bitmap files imported in Harmony will display in a low resolution in the Camera view to avoid hindering performance. **TIP** You can change the default resolution in which bitmap files are displayed in the Camera view by changing the Small Bitmap Resolution preference located in the Camera tab of the Preferences dialog.

	NOTE This only affects the way bitmap images display in the OpenGL preview of the scene in the Camera view. The preview quality of bitmap images does not affect the final render.

Windows Menu

The Windows menu lets you customize your workspace to suit your working style, save it as a new workspace, and load it from the Workspace toolbar. You can also show or hide the different toolbars and views in Harmony.

How to access the Windows menu

- From the top menu, select **Windows**.

Command	Description
Restore Default Workspace	Returns modified workspaces to their original default layout if you do not like the current modifications or inadvertently closed some windows.
Workspace	
Workspace Manager	Opens the Workspace Manager where you can modify, create, delete, rename and reorder your workspaces.
Save Workspace	Saves the current workspace along with any modifications you made.
Save Workspace As...	Saves the workspace as a new version to avoid overwriting the current one.
Workspace	Lets you open workspaces designed specifically for animating, compositing, hand drawing, scripting and the default workspace.
Toolbars	Allows you to add or remove toolbars from your workspace. **NOTE** For information on the different toolbars in Harmony, see Toolbars.
Camera	Shows or hides the Camera view.
Colour	Shows or hides the Colour view.

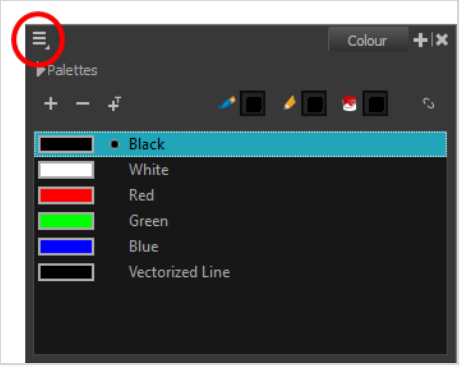
Drawing	Shows or hides the Drawing view.
Function	Shows or hides the Function view.
Layer Properties	Shows or hides the Layer Properties view.
Library	Shows or hides the Library view.
Message Log	Shows or hides the Message Log view.
Reference View	Shows or hides the Model view.
Perspective	Shows or hides the Perspective view.
Side	Shows or hides the Side view.
Timeline	Shows or hides the Timeline view.
Tool Properties	Shows or hides the Tool Properties view.
Top	Shows or hides the Top view.
Xsheet	Shows or hides the Xsheet view.
Integrated Help	Shows or hides the Integrated Help view.
Metadata Editor	Shows or Hides the Metadata Editor view.
Script Editor	Shows or hides the Script Editor view.

View Menus

A view menu contains commands specifically related to that view.

How to access a view menu

1. In the top-left corner of a view, click the Menu button.



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Camera View Menu

The Camera View menu lets you do many things in the Camera view, including selecting and editing objects in different views, changing the display, setting morphing parameters, accessing tools and many more.

How to access the Camera menu

- In the upper-left corner of the Camera view, click the menu button.

Command	Description
Edit	
Cut	Removes selected objects. You can then paste the object or its properties to another object.
Copy	Copies selected objects and properties.
Paste Drawing Object	Places an object you cut or copied into the location you select in a view.
Paste Drawing Object in Place	Pastes the copied object in the same place as the original.
Delete	Removes selected objects.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Select Strokes With Current Colour	Selects all the strokes that are filled with the colour or texture that's currently selected in the Colour view.
Select Strokes With Current Pencil Texture	Selects all the pencil lines that use the pencil line texture that's currently selected in the Colour view.
Invert Selection	Deselects the currently selected items and selects all other items that were not selected. For example, if some lines are selected in a drawing, this command will

	deselect them and select any other lines in the drawing that were not selected.
Select Child Skipping Effects	Lets you select the first element parented to the selected peg element in the Timeline view skipping effects in the hierarchy.
Select Child	Lets you select the first element parented to the selected peg element in the Timeline view.
Select Children	Lets you select all elements parented to the selected peg element in the Timeline view.
Select Parent Skipping Effects	Lets you select the parent of the selected element in the Timeline view skipping effects in the hierarchy.
Select Parent	Lets you select the parent of the selected element in the Timeline view.
Select Previous Sibling	Lets you select the previous element (above current element) in the Timeline view.
Select Next Sibling	Lets you select the next element (below current element) in the Timeline view.
Group	**Group**: Groups selected drawing objects in the Camera or Drawing view.
	Ungroup: Ungroups a selected group of drawing objects in the Camera or Drawing view.
View	
Navigation	**Zoom In**: Zooms in the view.
	Zoom Out: Zooms out the view.
	Rotate View CW: Rotates the Camera view 30 degrees clockwise, like an animation table.
	Rotate View CCW: Rotates the Camera view 30 degrees counter-clockwise, like an animation table.
	Reset Zoom: Resets the view's zoom to its default position.

	Reset Rotation: Resets the view's rotation to its default position.
	Reset Pan: Resets the view's pan to its default position.
	Reset View: Resets the view to its default position.
Switch to Colour Art	Displays the Colour Art layer. When switching art layers, you can edit the selected layer without affecting the other one.
Preview Line Art and Colour Art	Displays all Art layers.
Open GL View	Switches the Camera view to fast display, letting you see your animation play in real time. The OpenGL display requires less memory. The final look of your effects is not shown in the OpenGL View Mode. You must switch to the Render View Mode to see your effects.
Render View	Switches the Camera view to a fully rendered display showing the final image of the current frame. If a modification is done to your current frame or if you move to a different frame, click the **Update Preview** button to update the display if your preview does not update automatically.The Render View Mode display lets you see the final look of your frames including effects and antialiasing. You cannot play back your scene in Render View Mode. To see your scene fully rendered and to play it back, you must press the Render and Play button in the Playback toolbar.
Matte View	Switches the Camera view to a matte display showing the alpha channel of the elements in your scene. The transparency level ranges from 0 to 100 percent. Zero percent is completely transparent and represented by black and 100 percent is completely opaque and represented by white. Everything in between these extremes has a transparency level somewhere between 1 and 99 percent and is represented in various shades of grey.
Grid	**Show Grid**: Displays the grid.
	Grid Outline Only: Displays the outline of the grid only.
	Underlay: Displays the grid under the drawing elements.
	Overlay: Displays the grid over the drawing elements.

	Square Grid: Displays a standard square grid.
	12 Field Grid: Displays a 12-field size grid.
	16 Field Grid: Displays a 16-field size grid.
Onion Skin	**Show Onion Skin**: Lets Lets you preview the previous and next drawings. By default, the previous drawings appear in a shade of red and the next drawings are displayed with a shade of green. You can change these colours in the Preferences dialog box.
	Add to Onion Skin: Adds Adds a series of selected elements to the onion skin preview.
	Remove from Onion Skin: Removes Removes a series of selected elements from the onion skin preview.
	Remove Unselected from Onion Skin: Removes Removes all elements except the ones selected from the onion skin preview.
	Add All to Onion Skin: Adds Adds all of the scene's elements to the onion skin preview.
	Remove All from Onion Skin: Removes Removes all of the scene's elements from the onion skin preview.
	Onion Skinning by Drawing:
	No Previous Drawing:
	Previous Drawing: Displays the previous drawing.
	Previous Two Drawings: Displays the previous two drawings.
	Previous Three Drawings: Displays the previous three drawings.
	No Next Drawing: Displays no next drawing.
	Next Drawing: Displays the next drawing.

	Next Two Drawings: Displays the next two drawings.
	Next Three Drawings: Displays the next three drawings.
	Reduce One Previous Drawing: Reduces the number of previous visible drawings by one.
	Add One Previous Drawing: Adds one drawing to the number of previous visible drawings.
	Reduce One Next Drawing: Reduces the number of next visible drawings by one.
	Add One Next Drawing: Adds one drawing to the number of next visible drawings.
Light Table	Turns on the light table so you can see Turns on the light table so you can see the previous and subsequent active layers in washed-out colours. It is useful for seeing the other layers when designing, animating or cleaning up your animation.
Backlight	Produces Produces a silhouette effect by changing the drawing's coloured areas into a single dark, solid colour. Use this to verify the completeness of the ink and paint process. Any unpainted zones can be seen as the light shows through the unpainted areas of the silhouetted drawing.
Show	**Symbol Pivot**: Displays a symbol's pivot. The Symbol pivot is similar to the Drawing pivot. Each symbol cell can have its own pivot and act the same as the Drawing pivot. The Symbol pivot can also be referred to as *embedded pivot*. Inside a symbol, each drawing can have its own pivot.
	Safe Area: Displays Displays the TV safety zone and the centre of the camera frame. The safe area adapts to the scene resolution, as well as the safety zone and frame's centre.
	Camera Mask: Displays Displays a black mask around the scene's frame to avoid seeing the unnecessary artwork. This option is handy when you're animating and setting up the scene. It allows you to see your scene's composition better.
	Control: Displays the controls of the selected element.
	BBox Selection Style: Lets you change the display style of selected elements to

	a bounding box style. This removes the default overlay highlight and leaves only the bounding box around the selected element.
	Outline Locked Drawings: Drawings that are locked in the Timeline view (cannot be selected in the Camera view) are displayed as wireframes.
	Show Current Drawing on Top: Displays Displays the selected drawing on top of everything while you draw. By enabling this option, each time you select a drawing tool, the selected drawing is displayed in front of everything in the Camera view. The Timeline view ordering remain unchanged.You only need to enable this option once, it is not necessary to do it each time you select a drawing tool.
	Show Strokes: Displays the strokes in your drawings so that the invisible lines stand out.
	Show Strokes with Colour Wash: Displays strokes with washed-out colours.
	Highlight Selected Colour:
	Show Scan Information: Displays a status bar showing the scanning information at the bottom of the Drawing and Camera view.
Hide All Controls	Hides the controls of the selected element.
Render Current Frame	Renders only the current frame.
Auto Render	Automatically recalculates the preview image whenever you modify a parameter. If your scene is heavy and you do not want the preview rendered automatically, deselect the Auto-Render option and do the preview update manually.Note that this will slow down Harmony as it takes resources to update every frame.
Layer Properties	Displays the Layer Properties window of the selected layer in the Timeline view.
Preview Manager	Opens the Preview Manager where you can set options for the quality of previews, and clearing and updating the cache.
Bitmap File Quality	Let's you increase or decrease the preview quality of raw bitmap images. By default, bitmap files imported in Harmony will display in a low resolution in the Camera view to avoid hindering performance.

	TIP You can change the default resolution in which bitmap files are displayed in the Camera view by changing the Small Bitmap Resolution preference located in the Camera tab of the Preferences dialog. **NOTE** This only affects the way bitmap images display in the OpenGL preview of the scene in the Camera view. The preview quality of bitmap images does not affect the final render.
Drawing	
Clean Up	**Remove Dirt**: Opens the Remove Dirt dialog box where you can specify the number and size of dots removal from a selected drawing.
	Remove Hair: Opens the Remove Hair dialog box where you can specify the number and length of hairs for removal from a selected drawing. This removes any small strokes created in the Colour Art layer from very thick lines or filled zones. Increase the value to select larger strokes for removal from the drawing.
	Close Gaps: Closes small gaps in a drawing by creating small, invisible strokes between the two closest points to close the colour zone. You do not need to trace directly over the gap. You can draw it a few millimeters away. The two closest points automatically close the gap.
	Remove Art Inside Selection: Removes any art inside a selection. It is recommended that you clean your Colour Art level as well. If you have a stroke accumulation in the Colour Art, it can result in large output files, especially if you work in high definition resolutions.
	Remove Art Inside Selection On All Drawings: Removes any art inside all drawings selected with the Permanent Selection option in the Select tool.
	Remove Art Outside Selection: Removes any art existing outside a selection. It is recommended that you clean the Colour Art level as well. If you have a stroke accumulation in the Colour Art, it can result in large output files, especially if you work in high-definition resolutions.
	Remove Art Outside Selection On All Drawings: Removes any art outside all drawings selected with the Permanent Selection option in the Select tool.

Paint	**Unpaint Selection**: Unpaints any art existing inside a selection.
	Unpaint Selection on All Drawings: Unpaints all art contained inside a selection on all the drawings within the same layer.
	Unpaint Outside Selection: Unpaints any art existing outside a selection. If no selection have been drawn using the Select tool, the entire drawing will be unpainted.
	Unpaint Outside Selection on All Drawings: Unpaints all art outside a selection on all the drawings within the same layer.
	Repaint Selection: Repaints any art inside a selection.
	Repaint Selection on All Drawings: Repaints any art inside a selection on all the drawings contained within the same layer.
	Repaint Outside Selection: Repaints any art outside a selection. If no selection has been drawn using the Select tool, the entire drawing will be repainted.
	Repaint Outside Selection on All Drawings: Repaints any art outside a selection on all the drawings contained within the same layer.
Convert	**Pencil Lines to Brush Strokes**: Converts the selected centreline pencil strokes into contour strokes brush lines.
	Brush Strokes to Pencil Lines: Converts selected contour strokes into centreline pencil strokes. The brush stroke thickness will be lost.
	Strokes to Pencil Lines: Converts the selected invisible line to a pencil line.
	Brush Apart Text Layers: Text is treated as a single drawing object. This separates the text so each character becomes an individual drawing object you can select and modify independently.
Optimize	**Flatten**: Merges Merges drawing objects and brush strokes into a single layer. If you draw new lines to fix a drawing or line with many brush strokes, it can be useful to flatten them all into a single shape. By default, lines are drawn one on top of each other. If you intend to repaint the lines or modify their shape, it will be easier if they are flattened.

	Smooth: Smooths selected drawing strokes and removes extra points.
	Create Contour Strokes: Adds a permanent invisible line around a shape that was drawn directly in Harmony. This allows you to unpaint lines with the Paint tool but maintain the shape of the lines, should you need to repaint later.
	Remove Contour Strokes: Remove any permanently invisible lines that were created while scanning and vectorizing drawings or manually adding contour strokes. This is useful for removing the intersection triangles created during vectorization.
	Remove Extra Strokes: Removes strokes inside painted area. This option only works after the painted drawing is flattened.
	Optimize: Reduces Reduces the number of layers, such as overlapping brush strokes, in the selected drawing objects. Drawing objects will only be flattened and optimized if the selected objects do not change the appearance of the final image when they are merged.
	Crop Brush Textures: Crops Crops an unnecessarily large texture bitmap that lies unseen beneath the vector contour of a textured line. This often occurs when you cut and paste textured lines from one drawing into another. If you cut a portion from a textured line and paste it into a different drawing, Harmony pastes the entire unseen texture bitmap from the source drawing into the new one, even if you only took a small portion of the source drawing. Using the Crop Brush Texture command will crop away extraneous texture that does not touch the vector area. If there are many textured lines in your scene, this will greatly reduce the file size.
	Reduce Drawing Texture Resolution: When you import and vectorize as texture (colour) a high resolution image, the size of your drawing can be heavy. You can reduce the size and resolution of the textures in a drawing.
Arrange	**Bring to Front**: Moves the selected art to the front (on top).
	Bring Forward: Moves the selected art one level forward (closer to the front).
	Send Backward: Moves the selected art one level lower (behind).
	Send to Back: Moves the selected art behind everything (bottom / back).

Transform	**Flip Horizontal**: Flips the current selection horizontally.
	Flip Vertical: Flips the current selection vertically.
	Rotate 90 CW: Rotates the current selection 90 degrees clockwise.
	Rotate 90 CCW: Rotates the current selection 90 degrees counter-clockwise.
	Rotate 180: Rotates the current selection 180 degrees.
Create Empty Drawing	Creates Creates a drawing in the selected cell, replacing any drawing that may already be exposed in that cell and the following ones until it meets another drawing, key exposure or a blank cell.
Duplicate Drawings	Creates a duplicate of the selected drawing in the layer. The duplicate drawing will be exposed at the selected frame instead of the original drawing. Hence, this command allows you to instantly start working on a duplicate of the current drawing and retain the original. **NOTE** When duplicating a drawing, the exposure at the selected cell is replaced with the new drawing, up until the next key exposure.
Delete Selected Drawings	Permanently removes selected drawings. Once you save your project, these drawings cannot be recovered.
Rename Drawing	Lets you give a selected drawing a new name.
Create Colour Art From Line Art	Lets you use the outline you traced on one of the four embedded layers (line art, colour art, overlay, underlay) and create invisible strokes to paint your drawings on separate layers. This provides more inking and painting flexibility. You can also configure this option to create the invisible strokes on any of the four embedded layers.
Generate Auto-Matte	Automatically creates a matte from a selected drawing or all drawings on a layer. Opens the auto-Matte dialog box where you can set the radius of the lines depending on how precise or rough your line is. You can also select the source and destinatin layers from which the matte will be created.

Adjust Line Texture Opacity	Lets you adjust the contrast and opacity of textured lines in a drawing.
Change Bitmap Drawing Resolution	Lets you Lets you change the resolution of bitmap art for individual drawings. You can reduce the resolution of your bitmap file as well as increase it. Be careful because enlarging the bitmap resolution on an existing drawing will result in a loss of quality.Harmony will perform a pixel smoothing pass (resampling) and create additional pixels to avoid losing too much quality, but only to a certain extent. This feature is very useful when you need to have a full resolution of a bitmap image (such as imported bitmaps as .psd or .tga for the background) for tracing to create a matte directly in Harmony.By default, Harmony creates small thumbnail images when imported as bitmap in order to increase performance by using a small thumbnail image instead of using the original large size bitmap for animation work in Harmony. This will make difficult to view details or trace due to the low resolution (blurry). This option temporary increases the resolution of bitmaps up to their original bitmap resolution to make tracing easier.
Previous Drawing	Once a cell is selected in the Timeline view, you can navigate between the drawings, frames, and layers. Displays the previous drawing, next drawing, previous layer or next layer. Displays the previous drawing, next drawing, previous layer or next layer.
Next Drawing	
Previous Layer	
Next Layer	
Colour Protection	**Toggle Current Colour Protection**: Temporarily enables/disables the Colour Protection feature so you can quickly correct wrongly inked or painted areas under protected colour without readjusting the Current Colour Protection option.
	Respect Colour Protection: In the Colour view, you can protect a colour swatch to avoid repainting or unpainting the zones linked to that swatch. If you using the Paint tool and this option is deselected, you will repaint or unpaint the protected colours on your drawings until you enable the option again.
Drawing Tools	
Select	Allows you to select and reposition, scale, rotate and skew brush strokes, pencil lines, shapes and other parts of your artwork.
Contour Editor	Allows you to edit the vector contours of brush strokes, pencil lines and shapes in your artwork. You can add, remove, tweak and move vector points, move the Bezier handles of the vector points as well as deform vector outlines.

Centerline Editor	Allows you to tweak and deform a brush stroke by manipulating the points at the centre of its line rather than its contour.
Pencil Editor	Lets you modify the thick and thin contour of a pencil line (basically a central vector shape). Shape control points along the central spine allow you to adjust the stroke curve and position.
Cutter	Allows you to cut a part of your artwork, then reposition, scale, rotate and skew it.
Smooth Editor	Allows you to optimize contours and lines by removing its extra points, making them easier to edit.
Perspective	Allows you to deform artwork by applying a perspective effect on it.
Envelope	Allows you to deform and warp artwork by moving points and tweaking lines in a grid.
Reposition All Drawings	Allows you to reposition, scale, rotate and skew all drawings in the current layer.
Drawing Pivot	Allows you to position the pivot on a drawing layer by clicking where you want its location to be.
Brush	A pressure-sensitive tool for creating a contour shape with a thick and thin line effect, as if created with a paint brush.
Pencil	A pressure-sensitive tool for drawing outlines. Pencil lines are made of central vector lines, making them easier to tweak and edit than brush strokes.
Text	Allows you to add text and to format it.
Eraser	A pressure-sensitive tool for erasing parts of a drawing.
Colour Eyedropper	Allows you to select a colour by clicking on a colour in your artwork.
Pencil Texture Eyedropper	Allows you to select a pencil texture by clicking on a textured pencil line.
Morphing	Allows you to create and configure a morphing sequence, which will

	automatically generate the in-betweens between two drawings in the current layer.
Line	Draws a straight line segment going from one point to the other.
Rectangle	Draws a rectangle.
Ellipse	Draws an ellipse.
Polyline	Allows you to draw shapes, segmented lines or complex curved lines by clicking to create each point in the sequence of line segments.
Paint	Allows you to fill colour zones with a colour or texture.
Ink	Allows you to recolour pencil lines with precision by changing the colour of one segment at a time.
Repaint Brush	Lets you repaint existing brush strokes. The new brush strokes will be cropped to fit in existing artwork.
Close Gap	Allows you to close open shapes so that they can be filled with the Paint tool. By drawing a stroke near a small gap in a shape, this tool will create a small invisible stroke connecting the two closest points around the gap.
Stroke	Allows you to create invisible lines that can serve as colour zones that can be filled, or close the gaps in existing colour zones.
Edit Gradient/Texture	Allows you to adjust the position, angle and size of gradients and textures in a colour zone.
Hand	Allows you to pan the Camera and Drawing views.
Zoom	Allows you zoom in and out of the Camera and Drawing views.
Rotate View	Lets you rotate the Camera and Drawing views just like with a real animation disc.
Animation	

Insert Keyframe	Adds a keyframe on the selected cell in the Timeline view.
Insert Control Point	Adds a control point to a 3D path function.
Set Stop-Motion Keyframe	Converts the selected keyframes to stop-motion keyframes. Between a stop-motion keyframe and the next keyframe, Harmonydoes not generate any animation and the element remains static until the next keyframe.
Set Motion Keyframe	Converts the selected keyframes to motion keyframes. With motion keyframes, Harmony generates the interpolation between the motion keyframe and the next keyframe. This means that a value for each frame between the keyframes is calculated by Harmony to progress from the value of the previous keyframe to the value of the next keyframe.
Flip	Flips the position of an element on its axis.
Set Ease for Multiple Parameters	Lets you set the ease in and ease out on multiple functions and keyframes. This opens the Set Ease For Multiple Parameters where you can modify the Bezier or Ease curve. You can apply easing parameters to a certain type of function only, such as rotation or scale.
Linear Motion	Transforms a curved path to a linear path removing tension, bias, and continuity.
Lock in Time	Indicates Indicates whether the point is locked to a specific frame (keyframe) or only locked to a specific position and the curve can flow through it freely as other points are being added, moved, or adjusted (control point).
No Z Dragging	Keeps the Z value constant when you drag a character using the Transform or Translate tool.
Substitute Drawing Previous	Replaces the drawing or cell's symbol on the current frame by the next drawing.
Substitute Drawing Next	
Select Previous Keyframe/Point	Select the previous keyframe/point.
Select Next Keyframe/Point	

Lock	Locks a layer so it cannot be selected in the Camera view.
Reset	Returns Returns the value of the selected element to the initial value of the active tool. For example, if the Rotate tool is active, the transformation angle will be reset to 0 and if the Transform tool is active, all the transformation values will be reset.
Reset All	Resets Resets all transformations on the current frame in a selected layer. Your keyframe will remain, but all the values will return to the starting value. All transformations are reset regardless of the tool you're using.
Reset All Except Z	Resets Resets all transformations on the current frame except the Z position. This is useful when doing cut-out animation. Cut-out puppets often have a particular Z ordering for the different views of a character. You might want to reset the transformation, but not necessarily the Z position.
Animation Tools	
Transform	Allows you to select drawing layers and position, rotate, scale and skew them.
Translate	Lets you move the selected element along the X and Y axes.
Rotate	Turns a selected element around its pivot point.
Scale	Increases or decreases the size of a selected element. You can scale an object up to make it larger or down to make it smaller. Press Shift to scale the element while maintaining its proportions.
Maintain Size	Keeps elements the same size aspect ratio in the Camera view as you move them towards or away from the camera.
Skew	Slants the selected element.
Reposition Drawing	Lets you reposition, scale, rotate or skew all drawing strokes on every drawing included in a layer.
Spline Offset	Lets you Lets you reposition the visual trajectory without offsetting or modifying your animation. By default, the trajectory is located at 0,0,0 fields. If your elements were drawn in a different location than the centre of the drawing area, it will look like the trajectory is not aligned with your drawing. Also, if you have several elements attached to one trajectory, you might want your trajectory to be

	at a different location to represent the group's motion better.
Inverse Kinematic Tool	Allows you to pose a character model by pulling on its extremities, such as hands and feet, and have the other connected limbs follow. Can be used on any piece connected in a hierarchy.
IK Constraints	
Set IK Nail	Blocks the X, Y and Z positions.
Set IK Hold Orientation	Blocks the angle.
Set IK Hold X	Blocks only the X position.
Set IK Hold Y	Blocks only the Y position.
Set IK Min Angle	Sets limitations on the angle parameter to prevent the puppet from bending too far.
Set IK Max Angle	
Remove All Constraints	Removes all nails except the minimum and maximum angles.
Morphing	
Morphing	Allows you to create and configure a morphing sequence, which will automatically generate the in-betweens between two drawings in the current layer.
Contour Hint	The Contour Hint point is used on the colour fill zone and brush lines; in other words, on Contour vectors. It allows you to control the line thickness and contour position. Also, if a contour is not animated correctly, you can use hints to correct the animation. For example, if a flag is not waving properly. When adding a Contour Hint point, make sure to place it far enough away from the contour so you can see it snap to the contour. Contour Hint points are yellow.
Zone Hint	The Zone Hint point is used on a colour zone to control the proximity rule. The

	Zone Hint is placed in the centre of the colour zone. Sometimes a colour zone is not associated with the corresponding one by default. For example, in a splash animation there are many water droplets that are the same colour. Harmony automatically morphs the droplet to the nearest one. This is not always the one you may have predicted. A Zone Hint will force a colour zone to morph with another one. Zone Hint points are cyan in colour.
Pencil Hint	A Pencil Hint point is used to control a pencil line, also known as *central vector*. It can be used on drawings that were done using the Pencil, Polyline, Ellipse, Line and Rectangle tools. Like the Contour Hint, the Pencil Hint snaps to the central vector. Make sure to place it far enough away from the line so you will see it snap when you move it. Pencil Hint points are magenta in colour.
Vanishing Point Hint	A Vanishing Point Hint is used to control the trajectory of a vanishing shape. A shape will vanish from the source drawing when there is no corresponding shape in the destination drawing. If you do not place a Vanishing Point Hint to control the point of disappearance, the shape will vanish into its centre. Vanishing Point Hint points are green in colour.
Appearing Point Hint	An Appearing Point Hint is used to control the trajectory of an appearing shape. A shape will appear in the destination drawing when there is no corresponding shape in the source drawing. If you do not place an Appearing Point Hint to control the point of appearance, the shape will appear from its centre and expand outwards. Appearing Point Hint points are violet in colour.
Switch Between Morphing Key Drawings	Toggles Toggles between the two key drawings in your morphing sequence. This option is useful while setting hints. You can use the default keyboard shortcut F4 to toggle between your drawings.
Suggest HInts	Automatically sets Automatically sets hint points on key drawings as a help tool. If you're not sure where to set hints, you can use this option. It will set the main hints which you can then fine tune.
Hide Hints	Temporarily Temporarily hides the hint points from the key drawings. Use this option when you have a series of hint points hiding some lines you would like to see.

Colour View Menu

The Colour View menu lets you access commands related to the Colour view such as creating new palettes, adding new colour swatches, and displaying the Tint panel.

How to access the Colour menu

- In the upper-left corner of the Colour view, click the menu button.

Command	Description
Palettes	
New	Creates a new colour palette. By default, Toon Boom Harmony Advanced is set to the Basic mode. For simple productions, it is recommended to use the Basic mode. This setting stores the palettes automatically for you and saves them at the Scene level. When you use the Advanced Palette Lists mode, you can decide at which level you want to store your palettes: Environment, Job, Scene, or Element.
Link	Lets you access other palettes created in the project and link them to your scene.
Import	Imports a colour palette located on your hard drive.
Remove	Removes the selected palette from the palette list.
Remove and Delete on Disk	Removes the selected palette from the palette list and deletes the palette file from the disk.
Rename	Lets you five the selected colour palette a new name.
Duplicate	Creates a copy of the original palette, using the same names and colour values, but has a different ID and is independent from the original palette. This ensures that both the duplicate and original palettes are completely independent.
Clone	Creates a copy of the master palette. The colours in each palette have the same properties. The colours have the same identification number pointing to the same colour zones, but they can have different names and RGBA values.
Pencil Texture	Displays the colour palette containing the pencil line textures.

Palette	
Move Up	Moves the selected colour palette up one level.
Move Down	Moves the selected colour palette down one level.
Colour Editor	Opens the Colour Editor where you can pick and edit colour swatches.
Tint Panel	Opens the Tint panel where you can modify a series of colours to blend a tint in them or offset their RGBA values.
Current Palette Overrides	When clone palettes are present in the palette list, by default, priority is given to the palette that is the highest in the palette list to decide which colours to apply to drawings. With this option enabled, priority is given to the currently selected palette. Selecting any of the clone palettes will make drawings use colours from the selected palette instead.
Display Colour Values	Display the colour values beside their colour swatches in the palette list.
Colours	
Cut	Cuts the selected colour swatch from the palette.
Copy	Copies the selected colour swatch which you can paste in a different palette.
Copy Colour ID	Copies a colour swatch's colour ID so you can keep a reference file of colour IDs or use them with custom plug-ins. Example of a colour ID: **`075cf5b552401130`**.
Paste Colour Values	Pastes the colour value of the copied swatch over an existing colour swatch.
Paste As New Colours	Creates a new colour swatch from the colour value of the copied swatch.
Paste As Clones	Pastes a copied colour to a new palette as a clone of the original one. Both colour use the same colour ID. They have to be in different palettes.
New	Creates a new colour swatch from the colour swatch that was last selected.

Edit	Opens the Colour Picker window in which you can edit the selected colour swatch.
Delete	Deletes the selected colour swatch from the palette.
New Texture	Lets you add a bitmap colour swatch to your palette. You can load photos and textures and paint your drawings with it. The bitmap image must be a .tga or .psd file format.
Edit Texture	Opens the browser to replace the texture used in a textured colour swatch. All zones using the swatch will be updated with the new texture.
Scale Down Texture	Lets you set a new maximum texture size or scaling factor.
New Default Colour	Creates a new colour using the default colour set in the preferences.
Protect Colour	Locks a selected colour, so if you ever paint over it accidentally, the work already done will not be affected. You can also block the filling colours if you painted all of the animation in Line Art and plan to repaint the lines.
Swatch Mode	Displays the colour swatches with its corresponding name inside the swatch. When this option is not selected, the names of the colour swatches are displayed beside the swatch.
Independent Bitmap Colour	Bitmap colour selection is independent from the vector colour selection.
Bitmap Colour Sliders	
RGB	Displays the colour picking sliders as RGB (red, green, blue).
HSV	Displays the colour picking sliders as HSV (hue, saturation, value).

Drawing View Menu

The Drawing View menu lets you access tools, set morphing parameters, lock or unlock layers, and select elements in the Drawing view.

How to access the Drawing menu

- In the upper-left corner of the Drawing view, click the menu button.

Command	Description
Edit	
Cut	Removes selected objects. You can then paste the object or its properties to another object.
Copy	Copies selected objects and properties.
Paste Drawing Object	Places an object you cut or copied into the location you select in a view.
Paste Drawing Object in Place	Pastes the copied object in the same place as the original.
Delete	Removes selected objects.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Select Stroke With Current Colour	Selects all the strokes that are filled with the colour or texture that's currently selected in the Colour view.
Select Strokes With Current Pencil Texture	Selects all the pencil lines that use the pencil line texture that's currently selected in the Colour view.
Invert Selection	Deselects the currently selected items and selects all other items that were not selected. For example, if some lines are selected in a drawing, this command will

	deselect them and select any other lines in the drawing that were not selected.
View	
Zoom In	Zooms in the view.
Zoom Out	Zooms out the view.
Reset Zoom	Resets the view's zoom to its default position.
Rotate View CW	Rotates the Camera view 30 degrees clockwise, like an animation table.
Rotate View CCW	Rotates the Camera view 30 degrees counter-clockwise, like an animation table.
Reset Rotation	Resets the view's rotation to its default position.
Reset Pan	Resets the view's pan to its default position.
Reset View	Resets the view to its default position.
Switch to Colour Art	Displays the Colour Art layer. When switching art layers, you can edit the selected layer without affecting the other one.
Preview Line Art and Colour Art	Displays all Art layers.
Grid	**Show Grid**: Displays the grid.
	Grid Outline Only: Displays the outline of the grid only.
	Underlay: Displays the grid under the drawing elements.
	Overlay: Displays the grid over the drawing elements.
	Square Grid: Displays a standard square grid.
	12 Field Grid: Displays a 12-field size grid.

	16 Field Grid: Displays a 16-field size grid.
Onion Skin	**Show Onion Skin**: Lets Lets you preview the previous and next drawings. By default, the previous drawings appear in a shade of red and the next drawings are displayed with a shade of green. You can change these colours in the Preferences dialog box.
	Show Centre Line:
	No Previous Drawing: Displays no previous drawing.
	Previous Drawing: Displays the previous drawing.
	Previous Two Drawings: Displays the previous two drawings.
	Previous Three Drawings: Displays the previous three drawings.
	No Next Drawing: Displays no next drawing.
	Next Drawing: Displays the next drawing.
	Next Two Drawings: Displays the next two drawings.
	Next Three Drawings: Displays the next three drawings.
	Reduce One Previous Drawing: Reduces the number of previous visible drawings by one.
	Add One Previous Drawing: Adds one drawing to the number of previous visible drawings.
	Reduce One Next Drawing: Reduces the number of next visible drawings by one.
	Add One Next Drawing: Adds one drawing to the number of next visible drawings.
Light Table	Turns on the light table so you can see Turns on the light table so you can see the previous and subsequent active layers in washed-out colours. It is useful for seeing the other layers when designing, animating or cleaning up your animation.

Backlight	Produces Produces a silhouette effect by changing the drawing's coloured areas into a single dark, solid colour. Use this to verify the completeness of the ink and paint process. Any unpainted zones can be seen as the light shows through the unpainted areas of the silhouetted drawing.
Show	
Show Strokes	Displays the strokes in your drawings so that the invisible lines stand out.
Show Strokes with Colour Wash	Displays strokes with washed-out colours.
Highlight Selected Colour	Identify a selected colour swatch used in a drawing.
Show Morphing Key Drawing Thumbnail	When using the Morphing tools, this displays the source or destination drawing as a reference in the bottom corner of the Drawing view.
Show Scan Information	Displays a status bar showing the scanning information at the bottom of the Drawing and Camera view.
Desk	
No Thumbnail	Changes the size of the drawing desk thumbnails.
Small Thumbnail	
Medium Thumbnail	
Large Thumbnail	
Remove Selected Drawing	Clears selected drawing from drawing desk.
Remove All Drawings	Clears all drawing from drawing desk.
Drawing	
Clean Up	**Remove Dirt**: Opens the Remove Dirt dialog box where you can specify the

	number and size of dots removal from a selected drawing.
	Remove Hair: Opens the Remove Hair dialog box where you can specify the number and length of hairs for removal from a selected drawing. This removes any small strokes created in the Colour Art layer from very thick lines or filled zones. Increase the value to select larger strokes for removal from the drawing.
	Close Gaps: Closes small gaps in a drawing by creating small, invisible strokes between the two closest points to close the colour zone. You do not need to trace directly over the gap. You can draw it a few millimeters away. The two closest points automatically close the gap.
	Remove Art Inside Selection: Removes any art inside a selection. It is recommended that you clean your Colour Art level as well. If you have a stroke accumulation in the Colour Art, it can result in large output files, especially if you work in high definition resolutions.
	Remove Art Inside Selection On All Drawings: Removes any art inside all drawings selected with the Permanent Selection option in the Select tool.
	Remove Art Outside Selection: Removes any art existing outside a selection. It is recommended that you clean the Colour Art level as well. If you have a stroke accumulation in the Colour Art, it can result in large output files, especially if you work in high-definition resolutions.
	Remove Art Outside Selection On All Drawings: Removes any art outside all drawings selected with the Permanent Selection option in the Select tool.
Paint	**Unpaint Selection**: Unpaints any art existing inside a selection.
	Unpaint Selection on All Drawings: Unpaints all art contained inside a selection on all the drawings within the same layer.
	Unpaint Outside Selection: Unpaints any art existing outside a selection. If no selection have been drawn using the Select tool, the entire drawing will be unpainted.
	Unpaint Outside Selection on All Drawings: Unpaints all art outside a selection on all the drawings within the same layer.
	Repaint Selection: Repaints any art inside a selection.

	Repaint Selection on All Drawings: Repaints any art inside a selection on all the drawings contained within the same layer.
	Repaint Outside Selection: Repaints any art outside a selection. If no selection has been drawn using the Select tool, the entire drawing will be repainted.
	Repaint Outside Selection on All Drawings: Repaints any art outside a selection on all the drawings contained within the same layer.
Convert	**Pencil Lines to Brush Strokes**: Converts the selected centreline pencil strokes into contour strokes brush lines.
	Brush Strokes to Pencil Lines: Converts selected contour strokes into centreline pencil strokes. The brush stroke thickness will be lost.
	Strokes to Pencil Lines: Converts the selected invisible line to a pencil line.
	Brush Apart Text Layers: Text is treated as a single drawing object. This separates the text so each character becomes an individual drawing object you can select and modify independently.
Optimize	**Flatten**: Merges Merges drawing objects and brush strokes into a single layer. If you draw new lines to fix a drawing or line with many brush strokes, it can be useful to flatten them all into a single shape. By default, lines are drawn one on top of each other. If you intend to repaint the lines or modify their shape, it will be easier if they are flattened.
	Smooth: Smooths selected drawing strokes and removes extra points.
	Create Contour Strokes: Adds a permanent invisible line around a shape that was drawn directly in Harmony. This allows you to unpaint lines with the Paint tool but maintain the shape of the lines, should you need to repaint later.
	Remove Contour Strokes: Remove any permanently invisible lines that were created while scanning and vectorizing drawings or manually adding contour strokes. This is useful for removing the intersection triangles created during vectorization.
	Remove Extra Strokes: Removes strokes inside painted area. This option only works after the painted drawing is flattened.

	Optimize: Reduces Reduces the number of layers, such as overlapping brush strokes, in the selected drawing objects. Drawing objects will only be flattened and optimized if the selected objects do not change the appearance of the final image when they are merged.
	Crop Brush Textures: Crops Crops an unnecessarily large texture bitmap that lies unseen beneath the vector contour of a textured line. This often occurs when you cut and paste textured lines from one drawing into another. If you cut a portion from a textured line and paste it into a different drawing, Harmony pastes the entire unseen texture bitmap from the source drawing into the new one, even if you only took a small portion of the source drawing. Using the Crop Brush Texture command will crop away extraneous texture that does not touch the vector area. If there are many textured lines in your scene, this will greatly reduce the file size.
	Reduce Drawing Texture Resolution: When you import and vectorize as texture (colour) a high resolution image, the size of your drawing can be heavy. You can reduce the size and resolution of the textures in a drawing.
Arrange	**Bring to Front**: Moves the selected art to the front (on top).
	Bring Forward: Moves the selected art one level forward (closer to the front).
	Send Backward: Moves the selected art one level lower (behind).
	Send to Back: Moves the selected art behind everything (bottom / back).
Transform	**Flip Horizontal**: Flips the current selection horizontally.
	Flip Vertical: Flips the current selection vertically.
	Rotate 90 CW: Rotates the current selection 90 degrees clockwise.
	Rotate 90 CCW: Rotates the current selection 90 degrees counter-clockwise.
	Rotate 180: Rotates the current selection 180 degrees.
Create Empty Drawing	Creates Creates a drawing in the selected cell, replacing any drawing that may already be exposed in that cell and the following ones until it meets another drawing, key exposure or a blank cell.

Duplicate Drawings	Creates a duplicate of the selected drawing in the layer. The duplicate drawing will be exposed at the selected frame instead of the original drawing. Hence, this command allows you to instantly start working on a duplicate of the current drawing and retain the original. **NOTE** When duplicating a drawing, the exposure at the selected cell is replaced with the new drawing, up until the next key exposure.
Delete Selected Drawings	Permanently removes selected drawings. Once you save your project, these drawings cannot be recovered.
Rename Drawing	Lets you give a selected drawing a new name.
Create Colour Art From Line Art	Lets you use the outline you traced on one of the four embedded layers (line art, colour art, overlay, underlay) and create invisible strokes to paint your drawings on separate layers. This provides more inking and painting flexibility. You can also configure this option to create the invisible strokes on any of the four embedded layers.
Generate Auto-Matte	Automatically creates a matte from a selected drawing or all drawings on a layer. Opens the auto-Matte dialog box where you can set the radius of the lines depending on how precise or rough your line is. You can also select the source and destinatin layers from which the matte will be created.
Adjust Line Texture Opacity	Lets you adjust the contrast and opacity of textured lines in a drawing.
Change Bitmap Drawing Resolution	Lets you Lets you change the resolution of bitmap art for individual drawings. You can reduce the resolution of your bitmap file as well as increase it. Be careful because enlarging the bitmap resolution on an existing drawing will result in a loss of quality.Harmony will perform a pixel smoothing pass (resampling) and create additional pixels to avoid losing too much quality, but only to a certain extent. This feature is very useful when you need to have a full resolution of a bitmap image (such as imported bitmaps as .psd or .tga for the background) for tracing to create a matte directly in Harmony.By default, Harmony creates small thumbnail images when imported as bitmap in order to increase performance by using a small thumbnail image instead of using the original large size bitmap for animation work in Harmony. This will make difficult to view details or trace due to the low resolution (blurry). This option temporary increases the resolution of

	bitmaps up to their original bitmap resolution to make tracing easier.
Previous Drawing	Once a cell is selected in the Timeline view, you can navigate between the drawings, frames, and layers. Displays the previous drawing, next drawing, previous layer or next layer. Displays the previous drawing, next drawing, previous layer or next layer.
Next Drawing	
Previous Layer	
Next Layer	
Colour Protection	**Toggle Current Colour Protection**: Temporarily enables/disables the Colour Protection feature so you can quickly correct wrongly inked or painted areas under protected colour without readjusting the Current Colour Protection option.
	Respect Colour Protection: In the Colour view, you can protect a colour swatch to avoid repainting or unpainting the zones linked to that swatch. If you using the Paint tool and this option is deselected, you will repaint or unpaint the protected colours on your drawings until you enable the option again.
Drawing Tools	
Select	Allows you to select and reposition, scale, rotate and skew brush strokes, pencil lines, shapes and other parts of your artwork.
Contour Editor	Allows you to edit the vector contours of brush strokes, pencil lines and shapes in your artwork. You can add, remove, tweak and move vector points, move the Bezier handles of the vector points as well as deform vector outlines.
Centerline Editor	Allows you to tweak and deform a brush stroke by manipulating the points at the centre of its line rather than its contour.
Pencil Editor	Lets you modify the thick and thin contour of a pencil line (basically a central vector shape). Shape control points along the central spine allow you to adjust the stroke curve and position.
Cutter	Allows you to cut a part of your artwork, then reposition, scale, rotate and skew it.
Smooth Editor	Allows you to optimize contours and lines by removing its extra points, making them easier to edit.

Perspective	Allows you to deform artwork by applying a perspective effect on it.
Envelope	Allows you to deform and warp artwork by moving points and tweaking lines in a grid.
Reposition All Drawings	Allows you to reposition, scale, rotate and skew all drawings in the current layer.
Drawing Pivot	Allows you to position the pivot on a drawing layer by clicking where you want its location to be.
Brush	A pressure-sensitive tool for creating a contour shape with a thick and thin line effect, as if created with a paint brush.
Pencil	A pressure-sensitive tool for drawing outlines. Pencil lines are made of central vector lines, making them easier to tweak and edit than brush strokes.
Text	Allows you to add text and to format it.
Eraser	A pressure-sensitive tool for erasing parts of a drawing.
Colour Eyedropper	Allows you to select a colour by clicking on a colour in your artwork.
Pencil Texture Eyedropper	Allows you to select a pencil texture by clicking on a textured pencil line.
Morphing	Allows you to create and configure a morphing sequence, which will automatically generate the in-betweens between two drawings in the current layer.
Line	Draws a straight line segment going from one point to the other.
Rectangle	Draws a rectangle.
Ellipse	Draws an ellipse.
Polyline	Allows you to draw shapes, segmented lines or complex curved lines by clicking to create each point in the sequence of line segments.

Paint	Allows you to fill colour zones with a colour or texture.
Ink	Allows you to recolour pencil lines with precision by changing the colour of one segment at a time.
Repaint Brush	Lets you repaint existing brush strokes. The new brush strokes will be cropped to fit in existing artwork.
Close Gap	Allows you to close open shapes so that they can be filled with the Paint tool. By drawing a stroke near a small gap in a shape, this tool will create a small invisible stroke connecting the two closest points around the gap.
Stroke	Allows you to create invisible lines that can serve as colour zones that can be filled, or close the gaps in existing colour zones.
Edit Gradient/Texture	Allows you to adjust the position, angle and size of gradients and textures in a colour zone.
Hand	Allows you to pan the Camera and Drawing views.
Zoom	Allows you zoom in and out of the Camera and Drawing views.
Rotate View	Lets you rotate the Camera and Drawing views just like with a real animation disc.
Morphing	
Morphing	Allows you to create and configure a morphing sequence, which will automatically generate the in-betweens between two drawings in the current layer.
Contour Hint	The Contour Hint point is used on the colour fill zone and brush lines; in other words, on Contour vectors. It allows you to control the line thickness and contour position. Also, if a contour is not animated correctly, you can use hints to correct the animation. For example, if a flag is not waving properly. When adding a Contour Hint point, make sure to place it far enough away from the contour so you can see it snap to the contour. Contour Hint points are yellow.
Zone Hint	The Zone Hint point is used on a colour zone to control the proximity rule. The

	Zone Hint is placed in the centre of the colour zone. Sometimes a colour zone is not associated with the corresponding one by default. For example, in a splash animation there are many water droplets that are the same colour. Harmony automatically morphs the droplet to the nearest one. This is not always the one you may have predicted. A Zone Hint will force a colour zone to morph with another one. Zone Hint points are cyan in colour.
Pencil Hint	A Pencil Hint point is used to control a pencil line, also known as *central vector*. It can be used on drawings that were done using the Pencil, Polyline, Ellipse, Line and Rectangle tools. Like the Contour Hint, the Pencil Hint snaps to the central vector. Make sure to place it far enough away from the line so you will see it snap when you move it. Pencil Hint points are magenta in colour.
Vanishing Point Hint	A Vanishing Point Hint is used to control the trajectory of a vanishing shape. A shape will vanish from the source drawing when there is no corresponding shape in the destination drawing. If you do not place a Vanishing Point Hint to control the point of disappearance, the shape will vanish into its centre. Vanishing Point Hint points are green in colour.
Appearing Point Hint	An Appearing Point Hint is used to control the trajectory of an appearing shape. A shape will appear in the destination drawing when there is no corresponding shape in the source drawing. If you do not place an Appearing Point Hint to control the point of appearance, the shape will appear from its centre and expand outwards. Appearing Point Hint points are violet in colour.
Switch Between Morphing Key Drawings	Toggles Toggles between the two key drawings in your morphing sequence. This option is useful while setting hints. You can use the default keyboard shortcut F4 to toggle between your drawings.
Go to First Frame	Goes to the first frame of your morphing sequence.
Go to Previous Frame	Goes to the previous frame of the selected frame in the morphing sequence.
Go to Next Frame	Goes to the next frame of the selected frame in the morphing sequence.
Go to Last Frame	Goes to the last frame of your morphing sequence.
Suggest HInts	Automatically sets Automatically sets hint points on key drawings as a help tool.

	If you're not sure where to set hints, you can use this option. It will set the main hints which you can then fine tune.
Hide Hints	Temporarily Temporarily hides the hint points from the key drawings. Use this option when you have a series of hint points hiding some lines you would like to see.

Function View Menu

The Functions View menu lets you do many things in the Camera view, including selecting and editing objects in different views, changing the display, setting morphing parameters, accessing tools and many more.

How to access the Function menu

- In the upper-left corner of the Function view, click the menu button.

Command	Description
Edit	
Cut	Removes selected objects. You can then paste the object or its properties to another object.
Copy	Copies selected objects and properties.
Paste	Places an object you cut or copied into the location you select in a view.
Delete	Removes selected objects.
Select Next Keyframe	Selects the next keyframe.
Select Previous Keyframe	Selects the previous keyframe.
Select Left Handle	Selects the left handle of the selected keyframe.
Select Right Handle	Selects the right handle of the selected keyframe.
Select All	Selects all objects in the Function view. This helps you manage multiple objects as one.
Deselect All	Deselects all selected objects in the Function view.
View	

Show Current Frame	Displays the current frame
Toggle Grid	Enables the display of the grid.
Reset Zoom	Resets the view's zoom to its default position.
Reset Pan	Resets the view's pan to its default position.
Reset View	Resets the view to its default position.
Function List	
Auto Load Selection	Sets the Function view to automatically load the functions of layers when the node is selected in the Node View.
Clear	Will clear all functions in the Function view.
Load Selection	Loads the functions of the current node selection.
Add Selection	Adds the functions of the currently selected node.
Remove Selection	Will remove the function of the currently selected node from the Function view.
Show	**Show Motion**: Displays the function for Motion (the Pos_x and Pos_y).
	Show Rotation: Displays the function for Rotation (Angle_z).
	Show Scale: Displays the function for Scaling (Scale_x and Scale_y).
	Show Skew: Displays the function for Skew.

Library View Menu

The Library View menu lets you access commands specific to the Library view, such as opening a Library or getting the rights to modify a library folder.

How to access the Library menu

- In the upper-left corner of the Library view, click the menu button.

Command	Description
View	
List	Displays the contents of the selected folder as a list.
Thumbnails	Displays the contents of the selected folder as a thumbnails.
Details	Displays the details of the selected file.
Generate Thumbnails	Creates a thumbnail to display in the preview window.
Edit	
New Symbol	Creates a new symbol from a drawing or part of a drawing in the Drawing or Camera view, or a layer in the Timeline view. If your selection is in the Timeline , the new symbol appears in the Symbol folder. The current selection is not replaced by the new symbol. The new symbol only appears in the library. You must drag it into your scene to use it. If your selection is in the Drawing or Camera view, the new symbol appears in the Symbol folder and in the Timeline view as a new layer.
Cut	Cuts the selected file in the Library view.
Copy	Copies the selected file in the Library view.
Paste	Pastes the selected file in the Library view.
Delete	Deletes the selected file in the Library view.

Delete Thumbnails	Deletes any thumbnails that were generated for display in the preview window.
Edit Symbol	Places you inside the symbol where you can edit it. To return to the project's timeline, click the Top button in the Camera view's top-left corner, press Ctrl + Shift + E (Windows/Linux) or ⌘ + Shift + E (macOS).
Remove Unused Files	Removes any files not in use in the selected template.
Rename Template	Lets you rename a selected template.
Import Files	Imports vector files such as AI, PDF, and SWF. You requires the right to modify the library in which you want to import the files.
Folders	
New Folder	Creates a new folder in the Library view. Before you can create a new folder, you must have the right to modify the folder in which you are creating the new folder.
Refresh	Updates the view and its contents.
Open Library	Lets you open a library on your computer.
Close Library	Unlinks a library folder from your library list.

Reference View Menu

The Reference View menu lets you load models and view them in different ways, as well as access some drawing tools.

How to access the Reference menu

- In the upper-left corner of the Reference view, click the menu button.

Icon	Tool/Command	Description
	View Menu	
	Previous	Shows the previous model loaded in the Reference view.
	Next	Shows the next model loaded in the Reference view.
	Import References	Imports a TVG drawing as a model in the Reference view.
	Use Current Drawing as Reference	Loads the currently selected drawing in the scene as a model in the Reference view.
	Load Default References	Loads TVG drawings placed in a custom **`models`** folder located in the scene folder.
	Unload Current	Unloads the image from the Reference View.
	Delete Current	Deletes the image in the Reference view.
	Zoom In	Zooms in the view.
	Zoom Out	Zooms out the view.
	Reset Zoom	Resets the view's zoom to its default position.
	Reset Pan	Resets the view's pan to its default position.

	Reset View	Resets the view to its default position.
	Rotate View CW	Rotates the Camera view 30 degrees clockwise, like an animation table.
	Rotate View CCW	Rotates the Camera view 30 degrees counter-clockwise, like an animation table.
	Reset Rotation	Resets the view's rotation to its default position.
	Select	Activates the Select tool. This tools is also available on the Tools toolbar.
	Cutter Selection	Allows to cut a section of the model to paste it in your scene.
	Colour Eyedropper	Activates the Colour Eyedropper tool. This tools is also available on the Tools toolbar.
	Zoom	Activates the Zoom tool. This tools is also available on the Tools toolbar.

Onion Skin View Menu

The Onion Skin view menu contains extra options for controlling the Advanced Onion Skin. It is accessible via the Onion Skin view—see *Onion Skin View* on page 703.

How to access the Onion Skin view menu

1. In the top-left corner of the Onion Skin view, click on the View Menu button.

Command	Description
Advanced Onion Skin	Enables Advanced Onion Skin. Advanced Onion Skin allows you to select, on the fly, which drawings to include in your Onion Skin, even if those drawings are not consecutive drawings, as well as the opacity scales for the drawings before and after the current frame. The controls for selecting which drawings to display in the Onion Skin as well as their opacity sliders are only accessible when Advanced Onion Skin is enabled. Otherwise, when using regular Onion Skin, the opacity of drawings in the Onion Skin is determined by the Onion Skin settings in the Preferences dialog. The amount of drawings to include in the Onion Skin is set using the Onion Skin Add / Reduce One Previous Drawng and Onion Skin Add / Reduce One Next Drawing commands, available in the Camera and Drawing toolbars as well as in View > Onion Skin in the top menu.
Original Colors	Displays the onion skin using the actual colours of the drawings.
Coloured	Displays the onion skin using the colours selected for the previous and next drawings in the Onion Skin view.
Coloured Outlines	Displays the onion skin using the colours selected for the previous and next drawings, but only as outlines instead of filled shapes.
Onion Skin by Frames	Selects the drawings to display in the Onion Skin by the amount of different drawings before and after the current frame. For example, if the Onion Skin is set to include 2 drawings before and after the current frame, this will display the nearest two different drawings before and after the drawing in the current frame in the Onion Skin, even if those drawings are further than 2 frames away from the current frame. This is more useful for frame-by-frame animation. **NOTE** When this option is enabled, the handles allowing you to adjust the extent of the Onion Skin in the Timeline view are not available.
Onion Skin by	Selects the drawings to display in the Onion Skin by the amount of different drawings before

Command	Description
Drawings	and after the current frame. For example, if the Onion Skin is set to include 2 drawings before and after the current frame, this will display the nearest two different drawings before and after the drawing in the current frame in the Onion Skin, even if those drawings are further than 2 frames away from the current frame. This is more useful for frame-by-frame animation. **NOTE** When this option is enabled, the handles allowing you to adjust the extent of the Onion Skin in the Timeline view are not available.
Apply Colour Wash	Displays onion skins with a lighter, less saturated colour. The further away the drawing is from the current frame, the more washed its colour appears. **NOTE** The minimum and maximum colour wash values for Onion Skin can be customized in the Drawing tab of the Preferences dialog.
Enable Onion Skin for Other Elements	In the Drawing View, when the Light Table is enabled, making other layers visible alongside the current layer, this will make the Onion Skin for other visible layers appear alongside the Onion Skin for the current layer. Drawings for elements above the current layer will appear in blue, and drawings for elements below will appear in yellow. **NOTE** The drawings from other elements that get displayed in the Onion Skin are the drawings that are exposed at the same time as the drawings displayed in the current layer's Onion Skin.
Link Sliders	When enabled, the opacity sliders in the Onion Skin view will move simultaneously as you adjust one of them, so that the opacity levels for previous and next drawings progresses from the opacity level of the first drawing to the opacity level of the last drawing. When this mode is enabled, you can adjust the first and last sliders for previous or next drawings, then, optionally, adjust a single one of the sliders in-between to create a segmented progression. However, if you want to make the opacity of Onion Skin drawings to vary in any way that is more complex, you must disable this option.

Perspective View Menu

The Perspective View menu lets you select and edit elements, manipulate the view during scene setup, set parameters for animation and access animation tools.

How to access the Perspective menu

- In the upper-left corner of the Perspective view, click the menu button.

Command	Description
Edit	
Cut	Removes selected objects. You can then paste the object or its properties to another object.
Copy	Copies selected objects and properties.
Paste	Places an object you cut or copied into the location you select in a view.
Paste in Place	Pastes the copied object in the same place as the original.
Delete	Removes selected objects.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Invert Selection	Deselects the currently selected items and selects all other items that were not selected. For example, if some lines are selected in a drawing, this command will deselect them and select any other lines in the drawing that were not selected.
Select Child Skipping Effects	Lets you select the first element parented to the selected peg element in the Timeline view skipping effects in the hierarchy.
Select Child	Lets you select the first element parented to the selected peg element in the Timeline view.

Select Children	Lets you select all elements parented to the selected peg element in the Timeline view.
Select Parent Skipping Effects	Lets you select the parent of the selected element in the Timeline view skipping effects in the hierarchy.
Select Parent	Lets you select the parent of the selected element in the Timeline view.
Select Previous Sibling	Lets you select the previous element (above current element) in the Timeline view.
Select Next Sibling	Lets you select the next element (below current element) in the Timeline view.
View	
Zoom In	Zooms into the view, towards the view's pivot point, up to 80,000%.
Zoom Out	Zooms out of the view, away from the view's pivot point, up to 1%.
Move Forward	Moves infinitely forward into the view, using the direction set by the current position and angle of rotation.
Move Backward	Moves infinitely backwards out of the view, using the direction set by the current position and angle of rotation.
Reset Zoom	Resets the view’s zoom to its default position.
Reset Pan	Resets the view’s pan to its default position.
Reset View	Resets the view to its default position.
Layer Properties	Shows or hides the Layer Properties view.
Light Table	Turns on the light table so you can see Turns on the light table so you can see the previous and subsequent active layers in washed-out colours. It is useful for seeing the other layers when designing, animating or cleaning up your animation.
Camera Cone	Displays the camera cone.

Clipping Planes	Allows you to change the near and far clipping distances. The far clipping distance value specifies how far the camera can see. The near clipping distance value specifies how close the camera can see. By default, the near clipping distance is 1 and the far clipping distance is set to 1000. **NOTE** The maximum value for far clipping distance is 100,000.
Control	Displays the controls of the selected element.
Hide All Controls	Hides the controls of the selected element.
Enable Playback	Plays back your animation in the Perspective view.
Animation	
Animate Animate	
Animate Current Frame	When this option is selected, every time you use the Transform or Advanced Animation tools to manipulate an element in your scene, the position of the element will be stored in a keyframe at the current frame. This allows you to animate elements in your scene without creating keyframes manually.
Animate Onion Skin Range	When this option is selected, if you use the Transform or Advanced Animation tools to make transformations to an element in your scene, the transformations will be stored as keyframes at the beginning and at the end of the current Onion Skin range, as well as on every existing keyframe in-between. This can be useful if you want to reposition an element that you have already animated, but only during a specific range of frames, which you can define by enabling Onion Skin and setting the Onion Skin range to cover that range of frames.
Animate Off	When this option is selected, if you use the Transform or Advanced Animation tools to make transformation to an element in your scene, the transformations will affect the element throughout the whole scene. This can be useful if you want to reposition an element after you have already animated it.
Insert Keyframe	Adds a keyframe to the currently selected frame in the Timeline view.

Insert Control Point	Adds a control point to the motion path at the currently selected frame. This control point does not appear in the Timeline, but can be used to reshape the motion path. In order for this command to work, layers must be set to 3D Path.
Set Stop-Motion Keyframe	Converts the selected keyframes to stop-motion keyframes. Between a stop-motion keyframe and the next keyframe, Harmonydoes not generate any animation and the element remains static until the next keyframe.
Set Motion Keyframe	Converts the selected keyframes to motion keyframes. With motion keyframes, Harmony generates the interpolation between the motion keyframe and the next keyframe. This means that a value for each frame between the keyframes is calculated by Harmony to progress from the value of the previous keyframe to the value of the next keyframe.
Flip	**Flip Horizontal**: Flips the current selection horizontally.
	Flip Vertical: Flips the current selection vertically.
	Flip Scale X: Once your drawing layer is rotated, the original horizontal and vertical axes change. The Flip Scale X and Flip Scale Y will perform a flip on your drawing layer following its original axis.Remembers the original X-axis of the layer and flips the element following it.
	Flip Scale Y: Remembers the original Y-axis of the layer and flips the element following it.
Set Ease for Multiple Parameters	Opens the Set Ease for Multiple Parameters dialog box where you can change the velocity of selection functions.
Linear Motion	Straightens out the motion path on either sides of the selected control point.
Lock in Time	Indicates whether the point is locked to a specific frame (keyframe) or only locked to a specific position and the curve can flow through it freely as other points are being added, moved, or adjusted (control point).
No Z Dragging	Locks the Z value when you're animating in 3D space. This means you can only reposition your object along the x and y axes.
Substitute Drawing Previous	Replaces the drawing or cell's symbol on the current frame by the next drawing.

Substitute Drawing Next	
Select Previous Keyframe /Point	Select the previous keyframe/point.
Select Next Keyframe /Point	Select Next Keyframe /Point
Lock	**Lock**: Locks Locks one or a multiple selection of layers.
	Unlock: Unlocks Unlocks one or a multiple selection of locked layers.
	Lock All: Locks Locks all the layers in the Timeline view.
	Unlock All: Unlocks Unlocks all the layers in the Timeline view.
	Lock All Others: Locks Locks every layer except the selected ones.
Reset	Returns Returns the value of the selected element to the initial value of the active tool. For example, if the Rotate tool is active, the transformation angle will be reset to 0 and if the Transform tool is active, all the transformation values will be reset.
Reset All	Resets Resets all transformations on the current frame in a selected layer. Your keyframe will remain, but all the values will return to the starting value. All transformations are reset regardless of the tool you're using.
Reset All Except Z	Resets Resets all transformations on the current frame except the Z position. This is useful when doing cut-out animation. Cut-out puppets often have a particular Z ordering for the different views of a character. You might want to reset the transformation, but not necessarily the Z position.
Animation Tools	
Transform	Allows you to select drawing layers and position, rotate, scale and skew them.
Translate	Lets you move the selected element along the X and Y axes.
Rotate	Turns a selected element around its pivot point.

Scale	Increases or decreases the size of a selected element. You can scale an object up to make it larger or down to make it smaller. Press Shift to scale the element while maintaining its proportions.
Maintain Size	Keeps elements the same size aspect ratio in the Camera view as you move them towards or away from the camera.
Skew	Slants the selected element.
Spline Offset	Lets you Lets you reposition the visual trajectory without offsetting or modifying your animation. By default, the trajectory is located at 0,0,0 fields. If your elements were drawn in a different location than the centre of the drawing area, it will look like the trajectory is not aligned with your drawing. Also, if you have several elements attached to one trajectory, you might want your trajectory to be at a different location to represent the group's motion better.

Script Editor View Menu

The Script Editor view menu gives you access to all of the commands needed for editing and testing scripts in the Script Editor view—see *Script Editor View* on page 714.

How to access the Script Editor view menu

1. Add the Script Editor view to your workspace by doing one of the following:
    - In the top-right corner of an existing view, click on the ➕ Add View button and select Script Editor.
    - In the top menu, select **Windows > Script Editor**.
2. In the top-left corner of the Script Editor view, click on the ☰ Menu button.

Button	Description
File	
New Script	Creates a new script. When you click on this button, you are first prompted to type in a name for the script. Then, you will be prompted to select which location to save the script in: • **User:** Saves the script to a directory in your user preferences directory. You will be able to run and edit the script from any scene as long as you are logged in as the same user. **NOTE** If you are using Harmony Stand Alone, the script will be saved to the preferences for your account on your computer. if you are using Harmony Server, the script will be saved to the preferences for your Harmony database user. • **Global:** If you are using Harmony Server, select this option to save the script to the Harmony database's global script directory. Anyone who is logged in to the database will be able to edit and run this script. • **Environment:** If you are using Harmony Server, select this option to save the script to the current scene's environment. Anyone will be able to edit and run the script as long as they are working on a scene inside this environment. • **Job:** If you are using Harmony Server, select this option to save the script to the current scene's job. Anyone will be able to edit and run the script as long as they are working on a scene inside this job.

Button	Description
	• **Scene:** Save the script to the scene's **`scripts`** sub-folder. Anyone will be able to edit and run the script when working on this specific scene. • **System Variable:** Save the script to the directory in the **`TOONBOOM_GLOBAL_SCRIPT_LOCATION`** environment variable. This option is only available if this environment variable is set. **NOTE** For more information on script locations, see *Script list* on page 714.
Import Script	Allows you to import a script from your machine into Harmony. When you click on this button, you are prompted to browse for and select a script on your file system. Then, you are prompted to select which location to import the script in: • **User:** Saves the script to a directory in your user preferences directory. You will be able to run and edit the script from any scene as long as you are logged in as the same user. **NOTE** If you are using Harmony Stand Alone, the script will be saved to the preferences for your account on your computer. if you are using Harmony Server, the script will be saved to the preferences for your Harmony database user. • **Global:** If you are using Harmony Server, select this option to save the script to the Harmony database's global script directory. Anyone who is logged in to the database will be able to edit and run this script. • **Environment:** If you are using Harmony Server, select this option to save the script to the current scene's environment. Anyone will be able to edit and run the script as long as they are working on a scene inside this environment. • **Job:** If you are using Harmony Server, select this option to save the script to the current scene's job. Anyone will be able to edit and run the script as long as they are working on a scene inside this job. • **Scene:** Save the script to the scene's **`scripts`** sub-folder. Anyone will be able to edit and run the script when working on this specific scene. • **System Variable:** Save the script to the directory in the **`TOONBOOM_GLOBAL_SCRIPT_LOCATION`** environment variable. This option is only available if this environment variable is set.

Button	Description
	NOTES • When you import a script, any user interface (**.ui**) or icon (**.png**) file that is in the same directory and has the same filename as the script will also be imported. • For more information on script locations, see *Script Editor View* on page 714.
Delete Script	Deletes the selected script. **NOTES** • You cannot delete a script if it is in the Application Resources location, as those are scripts that are installed with Harmony. • If you delete a script that was originally in Application Resources but which you copied to another location so you could make changes to it, the original version of the script in the Application Resources folder will be restored to the list.
Refresh Script File List	Refresh the list of scripts in the Script Editor. If there are new scripts in your user preferences or your scene's scripts sub-folder, click on this button to be able to open them in the Script Editor.
Editor	
Set External Editor	Allows you to type in the path and name for your preferred text editing software. **NOTES** • On macOS, only typing the name of your preferred text editing software is enough if that application supports the AppleScript Open Document protocol. • On Windows and GNU/Linux, unless your text editor is in your system's **PATH** environment variable, you will have to type in the full path to the editor.
External Editor	Opens the selected script in the chosen external text editing software.
Play/Debug	

<table>
<tr><th>Button</th><th>Description</th></tr>
<tr><td>Set Target</td><td>Prompts you to select which script and which function to use with the Run and Debug commands.

NOTES
You can set the entire script as the target by selecting the <Nothing> function from the functions list.
You cannot link an entire script to a toolbar button. Only functions within scripts can be added as toolbar buttons. Therefore, running or debugging an entire script rather than one of its functions should be done for testing purposes only.</td></tr>
<tr><td>Run</td><td>Runs the target script and function.

NOTES
If you have not set a target script and function, you will be prompted to set one when you select this command.
You can set or change the target script and function by selecting Set Target from this menu.
If you are editing <<<Sandbox>>>, this button will simply run what you typed into the sandbox, regardless of whether another target is set.</td></tr>
<tr><td>Debug</td><td>Open the target script and function in the Qt Script Debugger, in which you can test and debug the function.

NOTES
If you have not set a target script and function, you will be prompted to set one when you select this command.
You can set or change the target script and function by selecting Set Target from this menu.
If you are editing <<<Sandbox>>>, this button will simply debug what you typed into the sandbox, regardless of whether another target is set.</td></tr>
<tr><td>Stop</td><td>If a script is currently running, this interrupts its execution.</td></tr>
<tr><td colspan="2">Help</td></tr>
<tr><td>Scripting Interface Documentation</td><td>Opens the reference documentation for the Harmony scripting interface in a web browser.</td></tr>
</table>

Button	Description
	NOTE This documentation is installed with Harmony and does not require Internet access.

Side View Menu

The Side View menu lets you position elements in 3D space, set parameters for animation and access animation tools—see *Side View* on page 719.

How to access the Side menu

- In the upper-left corner of the Side view, click the menu button.

Command	Description
Edit	
Cut	Removes selected objects. You can then paste the object or its properties to another object.
Copy	Copies selected objects and properties.
Paste	Places an object you cut or copied into the location you select in a view.
Delete	Removes selected objects.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Invert Selection	Deselects the currently selected items and selects all other items that were not selected. For example, if some lines are selected in a drawing, this command will deselect them and select any other lines in the drawing that were not selected.
Select Child Skipping Effects	Lets you select the first element parented to the selected peg element in the Timeline view skipping effects in the hierarchy.
Select Child	Lets you select the first element parented to the selected peg element in the Timeline view.
Select Children	Lets you select all elements parented to the selected peg element in the

	Timeline view.
Select Parent Skipping Effects	Lets you select the parent of the selected element in the Timeline view skipping effects in the hierarchy.
Select Parent	Lets you select the parent of the selected element in the Timeline view.
Select Previous Sibling	Lets you select the previous element (above current element) in the Timeline view.
Select Next Sibling	Lets you select the next element (below current element) in the Timeline view.
View	
Zoom In	Zooms in the view.
Zoom Out	Zooms out the view.
Reset Zoom	Resets the view's zoom to its default position.
Reset Pan	Resets the view's pan to its default position.
Reset View	Resets the view to its default position.
Layer Properties	Shows or hides the Layer Properties view.
Camera Cone	Displays the camera cone.
Control	Displays the controls of the selected element.
Hide All Controls	Hides the controls of the selected element.
Enable Playback	Plays back your animation in the Perspective view.
Animation	
Animate	

Animate Current Frame	When this option is selected, every time you use the Transform or Advanced Animation tools to manipulate an element in your scene, the position of the element will be stored in a keyframe at the current frame. This allows you to animate elements in your scene without creating keyframes manually.
Animate Onion Skin Range	When this option is selected, if you use the Transform or Advanced Animation tools to make transformations to an element in your scene, the transformations will be stored as keyframes at the beginning and at the end of the current Onion Skin range, as well as on every existing keyframe in-between. This can be useful if you want to reposition an element that you have already animated, but only during a specific range of frames, which you can define by enabling Onion Skin and setting the Onion Skin range to cover that range of frames.
Animate Off	When this option is selected, if you use the Transform or Advanced Animation tools to make transformation to an element in your scene, the transformations will affect the element throughout the whole scene. This can be useful if you want to reposition an element after you have already animated it.
Insert Keyframe	Adds a keyframe to the selected cell in the Timeline view.
Insert Control Point	
Set Stop-Motion Keyframe	Converts the selected keyframes to stop-motion keyframes. Between a stop-motion keyframe and the next keyframe, Harmonydoes not generate any animation and the element remains static until the next keyframe.
Set Motion Keyframe	Converts the selected keyframes to motion keyframes. With motion keyframes, Harmony generates the interpolation between the motion keyframe and the next keyframe. This means that a value for each frame between the keyframes is calculated by Harmony to progress from the value of the previous keyframe to the value of the next keyframe.
Flip	**Flip Horizontal**: Flips the current selection horizontally.
	Flip Vertical: Flips the current selection vertically.
	Flip Scale X: Once your drawing layer is rotated, the original horizontal and vertical axes change. The Flip Scale X and Flip Scale Y will perform a flip on your drawing layer following its original axis.Remembers the original X-axis of

	the layer and flips the element following it.
	Flip Scale Y: Remembers the original Y-axis of the layer and flips the element following it.
Set Ease for Multiple Parameters	Opens the Set Ease for Multiple Parameters dialog box where you can change the velocity of selection functions.
Linear Motion	Transforms a curved path to a linear path removing tension, bias, and continuity.
Lock in Time	Indicates Indicates whether the point is locked to a specific frame (keyframe) or only locked to a specific position and the curve can flow through it freely as other points are being added, moved, or adjusted (control point).
No Z Dragging	Keeps the Z value constant when you drag a character using the Transform or Translate tool.
Substitute Drawing Previous	Replaces the drawing or cell's symbol on the current frame by the next drawing.
Substitute Drawing Next	
Select Previous Keyframe /Point	Select the previous keyframe/point.
Select Next Keyframe /Point	Select Next Keyframe /Point
Lock	**Lock**: Locks Locks one or a multiple selection of layers.
	Unlock: Unlocks Unlocks one or a multiple selection of locked layers.
	Lock All: Locks Locks all the layers in the Timeline view.
	Unlock All: Unlocks Unlocks all the layers in the Timeline view.
	Lock All Others: Locks Locks every layer except the selected ones.

Reset	Returns Returns the value of the selected element to the initial value of the active tool. For example, if the Rotate tool is active, the transformation angle will be reset to 0 and if the Transform tool is active, all the transformation values will be reset.
Reset All	Resets Resets all transformations on the current frame in a selected layer. Your keyframe will remain, but all the values will return to the starting value. All transformations are reset regardless of the tool you're using.
Reset All Except Z	Resets Resets all transformations on the current frame except the Z position. This is useful when doing cut-out animation. Cut-out puppets often have a particular Z ordering for the different views of a character. You might want to reset the transformation, but not necessarily the Z position.
Animation Tools	
Transform	Allows you to select drawing layers and position, rotate, scale and skew them.
Translate	Lets you move the selected element along the X and Y axes.
Rotate	Turns a selected element around its pivot point.
Scale	Increases or decreases the size of a selected element. You can scale an object up to make it larger or down to make it smaller. Press Shift to scale the element while maintaining its proportions.
Maintain Size	Keeps elements the same size aspect ratio in the Camera view as you move them towards or away from the camera.
Spline Offset	Lets you Lets you reposition the visual trajectory without offsetting or modifying your animation. By default, the trajectory is located at 0,0,0 fields. If your elements were drawn in a different location than the centre of the drawing area, it will look like the trajectory is not aligned with your drawing. Also, if you have several elements attached to one trajectory, you might want your trajectory to be at a different location to represent the group's motion better.

Timeline View Menu

The Timeline View menu lets you modify layers, keyframe and timing.

How to access the Timeline menu

- In the upper-left corner of the Timeline view, click the menu button.

Parameter	Description
Import	
From Scanner	Imports drawings from a TWAIN scanner.
Images	Imports bitmap images which you can choose to vectorize.
Sounds	Lets you import sound files into your project.
Edit	
Cut cells from Xsheet	Removes selected objects. You can then paste the object or its properties to another object.
Copy cells from Xsheet	Copies selected objects and properties.
Paste	Places an object you cut or copied into the location you select in a view.
Paste Special	Lets you copy and paste selected drawings into a different layer or paste the selection in the same layer to duplicate the drawings.
Paste Special Again	Pastes new drawings with the previous Paste Special settings.
Paste Cycle	Cycles a portion of an animation. You can increase or decrease the number of cycles to paste and select a type of cycle: Normal, Reverse, Forward-Reverse and Reverse-Forward.
Paste Reverse	Reverses the timing of drawings or keyframes in range of selection after copying.

Delete	Removes selected objects.
Modify Paste Presets	Lets you modify existing presets when pasting keyframes and exposures. There are three presets you can modify: the default presets for both key frames and exposures, key frames only and exposures only.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Invert Selection	Deselects the currently selected items and selects all other items that were not selected. For example, if some lines are selected in a drawing, this command will deselect them and select any other lines in the drawing that were not selected.
Select Synced Layers	Selects all the layers synced to the selected layer. The selected layer must be a synced in order for this option to be enabled.
Select Child Skipping Effects	Lets you select the first element parented to the selected peg element in the Timeline view skipping effects in the hierarchy.
Select Child	Lets you select the first element parented to the selected peg element in the Timeline view.
Select Children	Lets you select all elements parented to the selected peg element in the Timeline view.
Select Parent Skipping Effects	Lets you select the parent of the selected element in the Timeline view skipping effects in the hierarchy.
Select Parent	Lets you select the parent of the selected element in the Timeline view.
Select Previous Sibling	Lets you select the previous element (above current element) in the Timeline view.
Select Next Sibling	Lets you select the next element (below current element) in the Timeline view.
Lock	**Lock**: Locks Locks one or a multiple selection of layers.

	Unlock: Unlocks Unlocks one or a multiple selection of locked layers.
	Lock All: Locks Locks all the layers in the Timeline view.
	Unlock All: Unlocks Unlocks all the layers in the Timeline view.
	Lock All Others: Locks Locks every layer except the selected ones.
Tag	**Timeline Tag**: You can tag elements in the Timeline or Node views to view only those elements. When you tag elements, an asterisk appears beside the item in the Timeline view. Once your elements are tagged and you have switched over to View Tagged Layers mode, the Timeline view will display only tagged elements. The red bar on the left of the layers indicates you are in this view mode.
	Timeline Untag: Untags selected layer in the Timeline view.
	Timeline Untag All: Untags all tagged elements.
	Timeline Untag All Others: Untags all elements except the selected one.
Scene Markers	**Mark Current Frame**: Places a scene marker on the current frame on which the playhead is parked. The marker appears in the frame counter area of the Timeline view. You can customize the colour of the scene marker and add text to display as a tooltip when you hover over the marker—see .
	Create Scene Marker: Creates a scene marker from a selected frame range in the frame counter area of the Timeline view.
	Edit Scene Marker: Lets you edit an existing scene marker. **NOTE**: It's important to select the entire length of the scene marker, otherwise the Timeline Scene Marker dialog box will not open for editing.
	Delete Scene Marker: Removes an existing scene marker.
Share Functions	Lets you share an existing function curve. By default, all function curves can only be used and modified using their original parameter. If you want another layer or parameter to use the same function curve, you must share it.
View	

Cycle to Next View Mode	Displays the new view mode.
Normal View Mode	Displays the Normal view mode, the default in the Timeline view. It shows everything connected to the chosen display. In this mode, anything not connected to the currently set default display will not be shown in the Timeline view. This also means that you cannot add certain elements to the Timeline view, as by default, when added they are not connected to any display or composite node. An example of such an element is a peg.
Selection Only Mode	Displays only elements currently selected in the Camera or Node view. This makes it easier to concentrate on one or a few elements at a time.
View Tagged Layers	Lets you see only elements which have been assigned a Tagged status. An item that has been tagged will appear in the Timeline view with a small asterisk beside its name. Once your elements are tagged and you have switched over to View Tagged Layers mode, the Timeline view will display only tagged elements. The red bar on the left of the layers indicates you are in this view mode. While in this mode, the asterisks are not displayed beside the tagged elements.
Show Functions	
Centre on Selection	Scrolls the layers list to the currently selected layer. This is useful if you want to select a layer in the Camera view, then manipulate its timing Timeline view.
Change Track Colour	Opens the colour picker window to modify the colour of the selected layer.
Default Track Colour	Resets the layer colour.
Collapse/Expand	Toggles between expanding and collapsing all parent layers in the Timeline view.
Collapse All	Collapses all parented layers in the Timeline view.
Expand All	Expands all parented layers in the Timeline view.
Set Tempo Marker	Lets you set a marker that synchronizes your animation with a musical score. This lets you reproduce the FPB (Frames Per Beat) and use the tempo signature as tempo markers. The Xsheet view lets you pace your animation according to the tempo or beat of the soundtrack music or to any rhythmic sound, such as the

	ticking of a clock or water leaking from a spout. See .
Layers	
Add Synced Drawing Layer	Creates a new drawing layer whose timing is synced immediately with the currently selected drawing layer.
Sync Layer With	Opens the Convert to Synced Drawing Layer dialog box. In this dialog box, every other drawing layer in the project can be selected, parented and have its timing synced to the currently selected layer.
Unsync Layer	Unsyncs the parent layer of a synced pairing, when the child layer is selected.

Top View Menu

The Top View menu lets you position elements in 3D space, set parameters for animation and access animation tools—see *Top View* on page 732.

How to access the Top menu

- In the upper-left corner of the Top view, click the menu button.

Command	Description
Edit	
Cut Drawing Object	Removes selected objects. You can then paste the object or its properties to another object.
Copy Drawing Object	Copies selected objects and properties.
Paste	Places an object you cut or copied into the location you select in a view.
Delete Drawing Object	Removes selected objects.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Invert Selection	Deselects the currently selected items and selects all other items that were not selected. For example, if some lines are selected in a drawing, this command will deselect them and select any other lines in the drawing that were not selected.
Select Child	Lets you select the first element parented to the selected peg element in the Timeline view.
Select Children	Lets you select all elements parented to the selected peg element in the Timeline view.
Select Parent	Lets you select the parent of the selected element in the Timeline view.

Select Previous Sibling	Lets you select the previous element (above current element) in the Timeline view.
Select Next Sibling	Lets you select the next element (below current element) in the Timeline view.
View	
Zoom In	Zooms in the view.
Zoom Out	Zooms out the view.
Reset Zoom	Resets the view's zoom to its default position.
Reset Pan	Resets the view's pan to its default position.
Reset View	Resets the view to its default position.
Layer Properties	Shows or hides the Layer Properties view.
Camera Cone	Displays the camera cone.
Control	Displays the controls of the selected element.
Hide All Controls	Hides the controls of the selected element.
Enable Playback	Plays back your animation in the Perspective view.
Animation	
Animate	
Animate Current Frame	When this option is selected, every time you use the Transform or Advanced Animation tools to manipulate an element in your scene, the position of the element will be stored in a keyframe at the current frame. This allows you to animate elements in your scene without creating keyframes manually.
Animate Onion Skin Range	When this option is selected, if you use the Transform or Advanced Animation tools to make transformations to an element in your

	scene, the transformations will be stored as keyframes at the beginning and at the end of the current Onion Skin range, as well as on every existing keyframe in-between. This can be useful if you want to reposition an element that you have already animated, but only during a specific range of frames, which you can define by enabling Onion Skin and setting the Onion Skin range to cover that range of frames.
Animate Off	When this option is selected, if you use the Transform or Advanced Animation tools to make transformation to an element in your scene, the transformations will affect the element throughout the whole scene. This can be useful if you want to reposition an element after you have already animated it.
Insert Keyframe	Adds a keyframe to the selected cell in the Timeline view.
Insert Control Point	
Set Stop-Motion Keyframe	Converts the selected keyframes to stop-motion keyframes. Between a stop-motion keyframe and the next keyframe, Harmonydoes not generate any animation and the element remains static until the next keyframe.
Set Motion Keyframe	Converts the selected keyframes to motion keyframes. With motion keyframes, Harmony generates the interpolation between the motion keyframe and the next keyframe. This means that a value for each frame between the keyframes is calculated by Harmony to progress from the value of the previous keyframe to the value of the next keyframe.
Flip	**Flip Horizontal**: Flips the current selection horizontally.
	Flip Vertical: Flips the current selection vertically.
	Flip Scale X: Once your drawing layer is rotated, the original horizontal and vertical axes change. The Flip Scale X and Flip Scale Y will perform a flip on your drawing layer following its original axis.Remembers the original X-axis of the layer and flips the element following it.
	Flip Scale Y: Remembers the original Y-axis of the layer and flips the element following it.
Set Ease for Multiple Parameters	Opens the Set Ease for Multiple Parameters dialog box where you can change the velocity of selection functions.

Linear Motion	
Lock in Time	Indicates Indicates whether the point is locked to a specific frame (keyframe) or only locked to a specific position and the curve can flow through it freely as other points are being added, moved, or adjusted (control point).
No Z Dragging	
Substitute Drawing Previous	Replaces the drawing or cell's symbol on the current frame by the next drawing.
Substitute Drawing Next	
Select Previous Keyframe /Point	Select the previous keyframe/point.
Select Next Keyframe /Point	Select Next Keyframe /Point
Lock	**Lock**: Locks Locks one or a multiple selection of layers.
	Unlock: Unlocks Unlocks one or a multiple selection of locked layers.
	Lock All: Locks Locks all the layers in the Timeline view.
	Unlock All: Unlocks Unlocks all the layers in the Timeline view.
	Lock All Others: Locks Locks every layer except the selected ones.
Reset	Returns Returns the value of the selected element to the initial value of the active tool. For example, if the Rotate tool is active, the transformation angle will be reset to 0 and if the Transform tool is active, all the transformation values will be reset.
Reset All	Resets Resets all transformations on the current frame in a selected layer. Your keyframe will remain, but all the values will return to the starting value. All transformations are reset regardless of the tool you're using.
Reset All Except Z	Resets Resets all transformations on the current frame except the Z position. This is useful when doing cut-out animation. Cut-out puppets often have a

	particular Z ordering for the different views of a character. You might want to reset the transformation, but not necessarily the Z position.
Animation Tools	
Transform	Allows you to select drawing layers and position, rotate, scale and skew them.
Translate	Lets you move the selected element along the X and Y axes.
Rotate	Turns a selected element around its pivot point.
Scale	Increases or decreases the size of a selected element. You can scale an object up to make it larger or down to make it smaller. Press Shift to scale the element while maintaining its proportions.
Maintain Size	Keeps elements the same size aspect ratio in the Camera view as you move them towards or away from the camera.
Spline Offset	Lets you Lets you reposition the visual trajectory without offsetting or modifying your animation. By default, the trajectory is located at 0,0,0 fields. If your elements were drawn in a different location than the centre of the drawing area, it will look like the trajectory is not aligned with your drawing. Also, if you have several elements attached to one trajectory, you might want your trajectory to be at a different location to represent the group's motion better.

Xsheet View Menu

The Xsheet View menu lets you modify columns, keyframe and timing.

How to access the Xsheet menu

- In the upper-left corner of the Xsheet view, click the menu button.

Parameter	Description
File	
Import	**Images**: Imports bitmap images which you can choose to vectorize.
	From Scanner: Imports drawings from a TWAIN scanner.
	Sounds: Lets you import sound files into your project.
Print	Prints the exposure sheet so you can take it to your animation table, provide a copy to the animator, or create your Xsheet skeleton directly in Harmony.
Edit	
Cut cells from Xsheet	Removes selected objects. You can then paste the object or its properties to another object.
Copy cells from Xsheet	Copies selected objects and properties.
Paste Cells in Xsheet	Places an object you cut or copied into the location you select in a view.
Paste Special	Lets you copy and paste selected drawings into a different layer or paste the selection in the same layer to duplicate the drawings.
Paste Special Again	Pastes new drawings with the previous Paste Special settings.
Paste Cycle	Cycles a portion of an animation. You can increase or decrease the number of cycles to paste and select a type of cycle: Normal, Reverse, Forward-Reverse and Reverse-Forward.

Paste Reverse	Reverses the timing of drawings or keyframes in range of selection after copying.
Delete	Removes selected objects.
Select All	Selects all drawing objects in the current drawing window in the Drawing, Timeline and Camera views. This helps you manage multiple objects as one when moving them.
Deselect All	Deselects all selected objects in the Drawing and Camera views.
Insert Mode	Adds a new value or a new value sequence over existing ones, the new values are inserted between the old ones. The existing timing sequence is pushed down the column. The Insert mode opposite of the Overwrite mode, which is the Xsheet default mode.
Gestural Drag Mode	Lets you drag a cell to any other frame in the same column or into another column. This feature does not apply to Annotation columns.
Send to Function View	Sends selected objects to the Function view where you can edit and adjust its function curve and parameters.
View	
Zoom In Xsheet	Zooms in the view.
Zoom Out Xsheet	Zooms out the view.
Reset Zoom	Resets the view's zoom to its default position.
Reset Pan	Resets the view's pan to its default position.
Reset View	Resets the view to its default position.
Set Tempo Marker	
Expand/Collapse	**Collapse Selection**:
	Expand Selection:

	Collapse All:
	Expand All:
Column Properties	Lets you rename a column, and enable or disable a column. To view additional properties, select **Edit > Preferences** from the top menu. In the Preferences dialog box, select the **Advanced** tab, then select the **Advanced Element Mode** option.
Show Column List	
Column Types Manager	Lets you add advanced column types to create particular animation paths. When you create these columns, they are not linked automatically to any particular drawing layer. You can create a motion path using these columns and then link or unlink several drawing or peg layers to it.
Show Thumbnails	Displays column thumbnails making it easier to identify a particular column. This option displays a small thumbnail picture of the current frame below the column header.
Show Selection	
Set Columns Width	Lets you change the column width (in pixels) and set it as the default.
All Columns to Default Width	Returns all columns to their default width of 100 pixels.
Change Columns Colour	Lets you customize the colour of the column by selecting one from the Select Colour dialog box. The colour you select is also reflected in the correspondng layer in the Timeline view.
Default Column Colour	Removes the colour you assigned to a column (if any).
Hide Selected Columns	Hides selected columns.
Unhide All Columns	Displays all columns.
Show Hidden Columns	Displays columns that were previously hidden.

Enable Playback	Plays back your animation in the Perspective view.
Columns	
Add Columns	Lets you add a column. You can specify the column name, type, and set drawing layer options in the Add Column dialog box that opens.
Delete Columns	Removes the selected column. You have the option to delete the associated drawing files and element folders.
Clone Selected Columns: Drawings Only	Creates a copy of the selected column that is linked to the original. If a drawing is modified in the original or cloned column, both will be updated. However, cloned columns can have different timings. You can clone the drawings only or both the drawings and timing.
Clone Selected Columns: Drawings and Timing	
Duplicate Selected Columns	Creates an independent copy of the selected column. This useful when you need to modify the element independently, including the timing (exposure). Changes to the original element do not propagate to the duplicate.
Merge Selected Columns	There are two methods of merging drawings. • You can merge selected drawings in adjacent elements. The columns and layers will be left intact, and each new merged drawing will reside in the frames of the left-most column or lower layer. • You can merge elements. All drawings will be merged. Unused columns and layers will be deleted, but the original drawing files are still accessible.
Frames	
Add Frames At Start	Adds the number of frames you specify to the end of the scene.
Add Frames At End	
Add Frames Before Selection	Adds the number of frames you specify before or after your selection.
Add Frames After	

Selection	
Remove Selected Frames	Deletes the selected frames from your scene.
Drawings	
Create Empty Drawing	Creates Creates a drawing in the selected cell, replacing any drawing that may already be exposed in that cell and the following ones until it meets another drawing, key exposure or a blank cell.
Duplicate Drawings	Creates a duplicate of the selected drawing in the layer. The duplicate drawing will be exposed at the selected frame instead of the original drawing. Hence, this command allows you to instantly start working on a duplicate of the current drawing and retain the original. **NOTE** When duplicating a drawing, the exposure at the selected cell is replaced with the new drawing, up until the next key exposure.
Rename Drawing	Lets you give a selected drawing a new name.
Mark Drawing As	Marks selected drawings as one of the following: Key, Breakdown, In-between, RetakeKey, RetakeBD or RetakeIB. This helps to keep the Xsheet well organized while animating. When working with several animators, directors or even other studios, the necessity for retakes will often arise. Harmony gives you the possibility to mark new drawings as either Retake Key, Retake Breakdown, or Retake In-betweens.
Substitute Drawing Previous	Replaces the drawing or cell's symbol on the current frame by the next drawing.
Substitute Drawing Next	
Exposure	
Increase	Adds Adds one more exposure to a selected cell; repeating this action adds an extra cell each time. This is an efficient way to extend a drawing's exposure and is always set in Insert mode. Increasing an exposure pushes the existing

	exposure forward.
Decrease	Decreases exposure of a selected cell by one; repeating this action decreases one exposure adds an extra cell each time. This is an efficient way to shorten a drawing's exposure. Decreasing an exposure pulls in the existing exposure.
Set Exposure to	Lets you set the exposure to 1, 2, 3 or a custom exposure.
Extend Exposure	Lets you extend the length of a selected cell.
Add Key Exposure	Adds a key exposure to the selected cell.
Remove Key Exposure	Removes key exposures from the selected cells.
Remove Duplicate Key Exposure	When working with drawings to adjust the timing of a mouth in a lipsync, for example, and forcing the use of specific key exposures, unnecessary key exposures will be created. You can delete these duplicates without affecting the rest of the drawing. The first drawing of the selection will be used for the range. **NOTE** Duplicate key exposures may occur when pasting with the Enforce Key Exposure option selected.
Fill Empty Cells	Lets you Fills the empty frames in the selection with the exposure just before. For example, if you select a range of frame that starts with an exposed drawing and then ends with empty cells, all of the empty cells in the selection will be filled with the exposed drawing just before the empty cells.
Insert Blank Cell	Adds Adds an empty cell between other cells.
Clear Exposure	Removes the exposure from the selected cell.
Clear Exposure and Pull	Replaces the exposure from the selected cell with exposures that follow it.
Fill Selection	Lets you Lets you fill the same value over an entire selection. The selection can be over one cell, a cell range in one column, a cell range over many columns, an entire column, or many columns. You can use numbers, words, letters, or any alphanumeric value.

Sequence Fill	Lets you Lets you create a numbered sequence over a selection. The sequence can be forward, backward, single, double or higher increment, as a cycle, and so on. The selection can be over one cell or a cell range in one column or more or an entire column or many entire columns.
Fill Cells Randomly	Lets you Lets you fill in random values over a selection. You can give a maximum and a minimum value and create a range for Harmony to choose the random values from. The selection can be over one cell or a cell range in one column or more or an entire column or many entire columns.
Hold Exposure	Lets you expose a drawing for three, four, or five cells and so on.
Motion	
Insert Keyframe	
Insert Keyframe and Duplicate Drawing	
Delete Keyframes	Deletes the selected keyframes.
Go to Previous Keyframe	
Go to Next Keyframe	
Set Stop-Motion Keyframe	Converts the selected keyframes to stop-motion keyframes. Between a stop-motion keyframe and the next keyframe, Harmonydoes not generate any animation and the element remains static until the next keyframe.
Set Motion Keyframe	Converts the selected keyframes to motion keyframes. With motion keyframes, Harmony generates the interpolation between the motion keyframe and the next keyframe. This means that a value for each frame between the keyframes is calculated by Harmony to progress from the value of the previous keyframe to the value of the next keyframe.
Morphing	
Create Morphing	Allows you to create and configure a morphing sequence, which will automatically generate the in-betweens between two drawings in the current layer.

Delete Morphing	Once a cell is selected in a morphing sequence, deletes the entire sequence between the two keyframes.
Insert Morphing Key Drawing	Creates a morphing keyframe from a selected morphing frame.
Convert Morphing to Drawing	Lets Lets you convert your morphing inbetweens to real drawings you can edit. This is useful when manually editing a morphing sequence or if you prefer to have animation timing in double frame (on twos) instead of single frame (on ones).
Lip-Sync	
Change Mouth Shape to	Lets you change the mouth shape to one of the following: A, B, C, D, E, F, G, X.
Auto Lip-Sync Detection	Generates a sound detection for lip-sync.
Map Lip-Sync	Automatically maps Automatically maps drawings in an element to the mouth chart you have generated for a sound. This can save time when you are lip-synching a voice track.
Sound Display	
Sound Name	Shows the name of the sound file, as well as the file format. The line running vertically through the column frames between the same file name indicates a continuity of the same sound file in these frames.
Mouth Shapes	Shows the letter (or name depending on the way you named your character's different mouth positions) in the column's frames. There is only one mouth position allotted per frame and this position should correspond to the sound file after performing a lip-sync.
Waveform	Shows a vertical display of the sound file's actual waveform. In the column header, in the field under the column name, you can type in a percentage to zoom in or zoom out on the waveform, or pass the scroll cursor over the Zoom Waveform icon.
Sound Edit	

Insert Blank Cell	Places an empty cell between other cells.
Clear Exposure and Pull	Replaces the exposure from the selected cell with exposures that follow it.
Annotation	
Import File	Lets you import an image file in an Annotation column.
Change Pen Colour	Lets you change the pen colour by selecting one from the Select Colour dialog box.
Pen Width	Lets you select a pen preset or change the pen width (in pixels).
Eraser Width	Lets you modify the width of the Eraser tool.
Erase All	Removes all text and drawn annotations. Annotations that you type in cannot be erased using this method.
Erase Selected Images	Removes images you select in the Annotation column.
Erase Selected Texts	Removes text you select in the Annotation column.
Enable Drawing	Lets you draw in the Annotation column using your mouse or pen tablet.

Chapter 3: Layers

In Harmony, everything that constitutes the different elements of a scene, including drawing layers, sound effects, visual effects and pegs is represented by a layer in the Timeline view.

At the core of the rendered picture is the drawing layer, which is used to display drawings. Those layers are rendered from bottom to top, with the bottommost layer appearing in the background, and the topmost layer appearing in the foreground.

Some layers, such as Peg, Bone or Quadmap layers, are made to offset drawing layers. They must be created as the parent of a drawing layer, or of a hierarchy of drawing layers, in order to transform the layers in the rendered image.

Other layers, such as Blur and Transparency layers, are made to transform the picture output by drawing layers. They must be created as children of drawing layers, or groups of drawing layers, in order to transform the drawings.

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Deformation Layers

Deformation layers are layers that make deformers. In Harmony, deformers are made of chains of deformation layers laid out in a hierachy. Each deformation layer represents a point in the deformation chain.

Bone Layers **351**

Deformation Composite Layer **353**

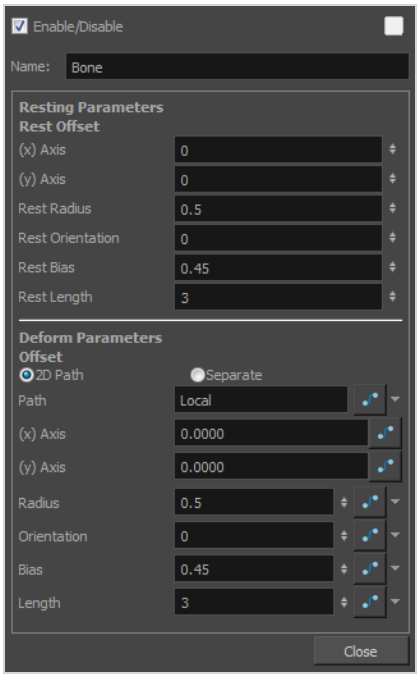
Game Bone Layer **354**

Kinematic Output Layer **356**

Bone Layers

The Bone node is one of the main nodes used to build a deformation rig. Each Bone node consists of a bone and an articulation. You can chain Bone nodes to create a skeleton chain for your character. The Rigging tool can be used to create and connect those nodes automatically.

Properties



Parameter	Descriptions
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Resting Parameters Rest Offset	
(x) Axis	This is the bone x-axis (horizontal) coordinates for the resting position.
(y) Axis	This is the bone y-axis (vertical) coordinates for the resting position.

Rest Radius	This is the articulation's radius value (articulation size) for the resting position.
Rest Orientation	This is the bone's orientation angle for the resting position.
Rest Bias	This is the articulation's bias (roundness and smoothness) for the resting position.
Rest Length	This is the bone's length for the resting position.
Deform Parameters Offset	
2D Path	When this option is enabled, the X and Y-axis parameters are controlled by the same 2D path function.
Separate	When this option is enabled, the X and Y-axis parameters are individual one from another.
Path	When using a 2D Path, this field displays the name of the function.
(x) Axis	This is the bone X-axis (horizontal) coordinates for the animation position. This parameter can be linked to a function to be animated over time.
(y) Axis	This is the bone y-axis (vertical) coordinates for the animation position. This parameter can be linked to a function to be animated over time.
Radius	This is the articulation's radius value (articulation size) for the animation position. This parameter can be linked to a function to be animated over time.
Orientation	This is the bone's orientation angle for the animation position. This parameter can be linked to a function to be animated over time.
Bias	This is the articulation's bias (roundness and smoothness) for the animation position. This parameter can be linked to a function to be animated over time.
Length	This is the bone's length for the animation position. This parameter can be linked to a function to be animated over time.

Deformation Composite Layer

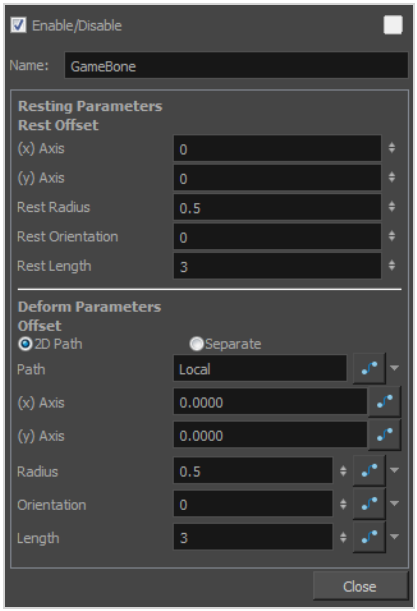
The Deformation-Composite node is automatically added to a rig when creating a split deformation chain. It is used to link the different nodes of a split deformation chain together before deforming the drawing it is linked to.

Properties

Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	Use this field to rename the node.

Game Bone Layer

The Bone node is one of the main node used to build a deformation rig. Each Bone node consists of a bone and an articulation. Chaining Bone nodes will create a skeleton chain for your character. The Rigging tool can be used to create and connect those nodes automatically.



Parameter	Descriptions
Resting Parameters Rest Offset	
(x) Axis	This is the bone X-axis (horizontal) coordinates for the resting position.
(y) Axis	This is the bone Y-axis (vertical) coordinates for the resting position.
Rest Radius	This is the articulation's radius value (articulation size) for the resting position.
Rest Orientation	This is the bone's orientation angle for the resting position.
Rest Length	This is the bone's length for the resting position.
Deform Parameters Offset	
2D Path	When this option is enabled, the X and Y axis parameters are controlled by the same 2D path function.

Separate	When this option is enabled, the X and Y axis parameters are individual from each other.
Path	When using a 2D Path, this field displays the name of the function curve.
(x) Axis	This is the bone X-axis (horizontal) coordinates for the animation position. This parameter can be linked to a function curve to be animated over time.
(y) Axis	This is the bone Y-axis (vertical) coordinates for the animation position. This parameter can be linked to a function curve to be animated over time.
Radius	This is the articulation's radius value (articulation size) for the animation position. This parameter can be linked to a function curve to be animated over time.
Orientation	This is the bone's orientation angle for the animation position. This parameter can be linked to a function curve to be animated over time.
Length	This is the bone's length for the animation position. This parameter can be linked to a function curve to be animated over time.

Kinematic Output Layer

The Kinematic Output node lets you hook a separate element that you want to be linked to the deformation chain but not be part of the deformation, such as a hand to an arm or an arm to the body. These elements will follow the movement of the chain just like a regular cut-out character hierarchy piece without being influenced by the deformation of the arm. If you don't use the Kinematic Output, the piece's pivot will not follow the deformation.

Connect a Kinematic Output node below the deformation node you want your drawing to follow.

Effect Layers

Effect layers can be connected under a layer or under a group to transform the image.

Should you need to apply the same effect to several layers combined, you must group them together so that Harmony composes those layers into a single image before applying the effect.

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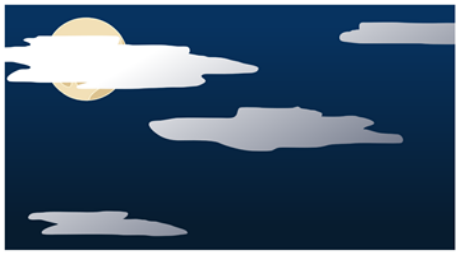
Blending Layer

T-COMP2-005-001

By default, layers are composited onto each other directly. This means that opaque pixels in front-most layers hide pixels in layers further back, and semi-transparent pixels on front-most layers are blended with pixels further back proportionally to their alpha ratio. This does the job for solid objects. However, some types of layers and effects may look better when composited into the scene using more advanced approaches. The Blending node can be used to composite an element, effect or group using one of many different algorithms that may make it look much better in the final render.



Normal composition of clouds filled with a soft transparency gradient

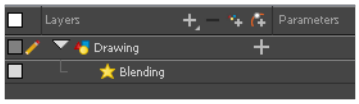
The same clouds composited into the scene with a softlight blending effect

NOTE

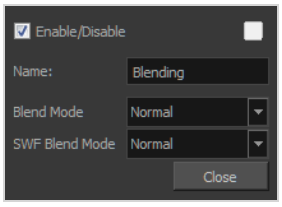
The effect of the Blending node is only visible when the Camera view is in Render Preview mode.

Connection

A Blending layer can be connected under a layer, an effect or a group to affect the way it will be composited into the scene.



Properties



Parameter	Description

Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	Allows you to change the name given to the node.
Blend Mode	Choose the blending effect mode you wish to apply to your layer. **NOTE** Some of the available blending modes have a BETA or Legacy variant to them. • A BETA blending mode is one that has been recently added in Harmony and which was made to more closely resemble results obtained in professional photo editing software such as Adobe Photoshop. • A Legacy blending mode is a blending mode that was present in older versions of Harmony. Starting from Harmony 10, these blending modes were enhanced by de-multiplying colours before compositing the image then re-multiplying them. Their legacy version remain available to ensure scenes created in older versions of Harmony do not render differently. • **Normal:** Composites the image without any specific blending effect. • **Erase:**Subtracts the overlay pixel's alpha from the underlay pixel, "cutting out" the overlay from the underlay. The overlay pixel's colour information is ignored. • **Invert:**Inverts the underlay pixel proportionally to the alpha value of the overlay pixel. The overlay image hence acts as a "matte" for an invert effect. • **Replace:**Ignores the underlay pixel completely, outputting the overlay pixel as if nothing existed behind it. This applies to all overlay pixels that have an alpha value of at least 1, so the negative space of the overlay image will not hide the underlay image. If the overlay pixel is not fully opaque, it will be mixed with black. • **Colour Burn:** Darkens each channel in the underlay pixel with the darkness value of the corresponding channel in the overlay pixel, by increasing the contrast of the underlay pixel. • **Darken:** For each channel, uses the value that is the darkest between the underlay pixel and the overlay pixel. • **Linear Burn:** Darkens each channel in the underlay pixel with the darkness value of the corresponding channel in the overlay pixel, by reducing the brightness of the underlay pixel. • **Multiply:** Multiplies the value of each channel in the underlay pixel with the value of each channel in the overlay pixel, treating those values as ratios.

	Multiplying anything with black will result in black, and multiplying anything with white will leave the colour unchanged. • **Colour Dodge:** Lightens each channel in the underlay pixel with the brightness value of the corresponding channel in the overlay pixel, by decreasing the contrast of the underlay pixel. • **Lighten:** For each channel, uses the value that is the brightest between the underlay pixel and the overlay pixel. • **Linear Dodge:** Lightens each channel in the underlay pixel with the brightness value of the corresponding channel in the overlay pixel, by increasing the brightness of the underlay pixel. • **Screen:** The reverse of multiply. Multiplies the reverse value of each channel in the underlay and overlay pixel, treating those values as ratios. Multiplying anything with white will result in white, and multiplying anything with black will leave the colour unchanged. • **Vividlight:** This colour dodges overlay pixels with a value above 50% onto underlay pixels, and colour burns overlay pixels with a value below 50% onto underlay pixels. The brighter the overlay pixel is, the more intense the colour dodging effect will be. The darker the overlay pixel is, the more intense the colour burning effect will be. • **Hardlight:** This screens overlay pixels with a value above 50% onto underlay pixels, and multiplies overlay pixels with a value below 50% onto underlay pixels. The brighter the overlay pixel is, the more intense the screen effect will be. The darker the overlay pixel is, the more intense the multiplying effect will be. Blending any colour with white or black will result in white or black, and blending a colour with plain grey will leave the colour unchanged. • **Linearlight:** This linear dodges overlay pixels with a value above 50% onto underlay pixels, and linear burns overlay pixels with a value below 50% onto underlay pixels. The brighter the overlay pixel is, the more intense the linear dodging effect will be. The darker the overlay pixel is, the more intense the linear burning effect will be. • **Overlay:** Like hardlight, exept it screens or multiplies the underlay pixel over the overlay pixel, based on the value of the underlay pixel. • **Pin Light:** For each channel, if the overlay pixel's value is above 50%, use the lightest pixel between the underlay and overlay pixels. If the overlay pixel's value is below 50%, use the darkest pixel between the underlay and overlay pixels. • **Softlight**: Each channel of the overlay pixel lightens or darkens the corresponding channel of the underlay pixel on a softer scale. The effect is proportional to how dark or bright the overlay pixel is, but inversely proportional to how dark or bright the underlay pixel is. • **Difference:** For each channel, this takes the darkest pixel among the overlay and underlay pixels, subtract it from the lightest pixel, and outputs the result.

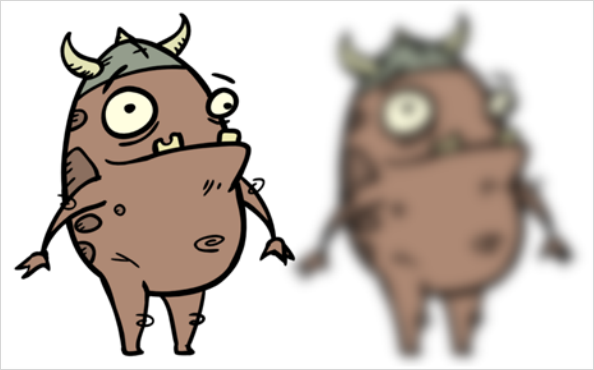
	• **Divide:** For each channel, this divides the value of the underlay pixel by the value overlay pixel. Both values are treated as ratios, so the resulting colour is brighter. A white overlay pixel will leave the underlay colour unaffected, and a black overlay pixel will always result in white. • **Exclusion:** Adds the overlay and underlay pixel, then subtracts the multiplied value of both pixels twice. This results in an effect similar to Difference, except that while the Difference mode produces consistently high contrast pixels, the contrast of the resulting pixels with the Exclusion mode is proportional to how dark or bright the overlay pixels are. • **Subtract:** For each channel, subtracts the value of the overlay pxiel from the value of the underlay pxiel. For example, if the underlay pixel is white, and the overlay pixel is dark gray, the resulting pixel will be light gray. Likewise, if the underlay pixel is yellow, and the overlay pixel is red, the resulting pixel will be green, as yellow is a mix of green and red. • **Colour:** Outputs a colour with the hue and saturation of the overlay pixel, and the luminosity of the underlay pixel. The overlay layer can hence be used to "colourize" the underlay layer. • **Hue:** Outputs a colour with the luminosity and saturation of the underlay pixel and the hue of the overlay pixel. • **Saturation:** Outputs a colour with the luminosity and hue of the underlying colour, and the saturation of the source colour. • **Luminosity:**Outputs a colour with the hue and saturation of the underlay pixel and the luminosity of the overlay pixel. This is the reverse of the Colour blending mode.
Clamping Mode	• **Apply Clamping**Will clamp the colour values to the maximum and minimum if they are outside this range. If 16-bit is selected as the Processing Bit Depth in Colour Space, the maximum value will be clamped to 32767. If 32-bit is selected as the Processing Bit Depth, the maximum value will be clamped to 1. • **No Clamping (32-bit float)**No clamping is applied. This option is only effective when Processing Bit Depth of the Colour Space is set to 32-bits per channel (float) and you do not want values to be clamped to 0 and 1. This option has no effect if the Processing Bit Depth is 16-bits per channel.
SWF Blend Mode	If you intend to export your scene in SWF format, you can use this option to choose which blend mode to use for this effect in the exported Flash movie. Since Flash does not support all the blending modes supported by Harmony, this is left as a separate option. You can ignore this option if you don't intend to export your scene in SWF format. • **Normal:** Composites the image without any specific blending effect. • **Multiply:** Multiplies the value of each channel in the underlay pixel with the

	value of each channel in the overlay pixel, treating those values as ratios. Multiplying anything with black will result in black, and multiplying anything with white will leave the colour unchanged. • **Screen:** The reverse of multiply. Multiplies the reverse value of each channel in the underlay and overlay pixel, treating those values as ratios. Multiplying anything with white will result in white, and multiplying anything with black will leave the colour unchanged. • **Lighten:** For each channel, uses the value that is the brightest between the underlay pixel and the overlay pixel. • **Darken:** For each channel, uses the value that is the darkest between the underlay pixel and the overlay pixel. • **Difference:** For each channel, this takes the darkest pixel among the overlay and underlay pixels, subtract it from the lightest pixel, and outputs the result. • **Add:** Adds the colour values of each channel in the overlay pixel and the underlay pixel. For example, adding two dark grey pixels with a value of 100 in each channel will result in a light grey pixel with a value of 200 in each channel. Likewise, if one of the pixels is red and the other is green, the resulting pixel will be yellow. • **Subtract:** For each channel, subtracts the value of the overlay pxiel from the value of the underlay pxiel. For example, if the underlay pixel is white, and the overlay pixel is dark gray, the resulting pixel will be light gray. Likewise, if the underlay pixel is yellow, and the overlay pixel is red, the resulting pixel will be green, as yellow is a mix of green and red. • **Invert:** Inverts the underlay pixel proportionally to the alpha value of the overlay pixel. The overlay image hence acts as a "matte" for an invert effect. • **Overlay:**Like hardlight, exept it screens or multiplies the underlay pixel over the overlay pixel, based on the value of the underlay pixel. • **Hardlight:** This screens overlay pixels with a value above 50% onto underlay pixels, and multiplies overlay pixels with a value below 50% onto underlay pixels. The brighter the overlay pixel is, the more intense the screen effect will be. The darker the overlay pixel is, the more intense the multiplying effect will be. Blending any colour with white or black will result in white or black, and blending a colour with plain grey will leave the colour unchanged.

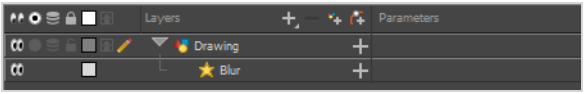
Blur Layer

T-HFND-010-007

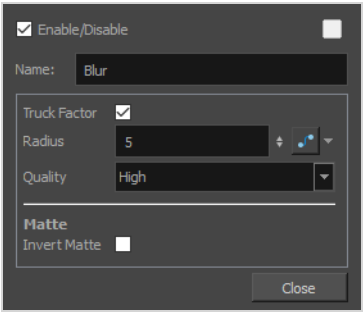
The Blur effect creates an effect that softens, fogs or obscures the image evenly in all directions. This effect is useful when you want to make cloudy images not realistically seen in detail, such as a drawing object that is farther back or in the background of your scene, usually blurry due to the laws of atmospheric perspective. Other uses include the general softening of objects such as snow, stars and shadows that do not naturally have a hard outline.



Refer to the following example to connect this effect:



Properties



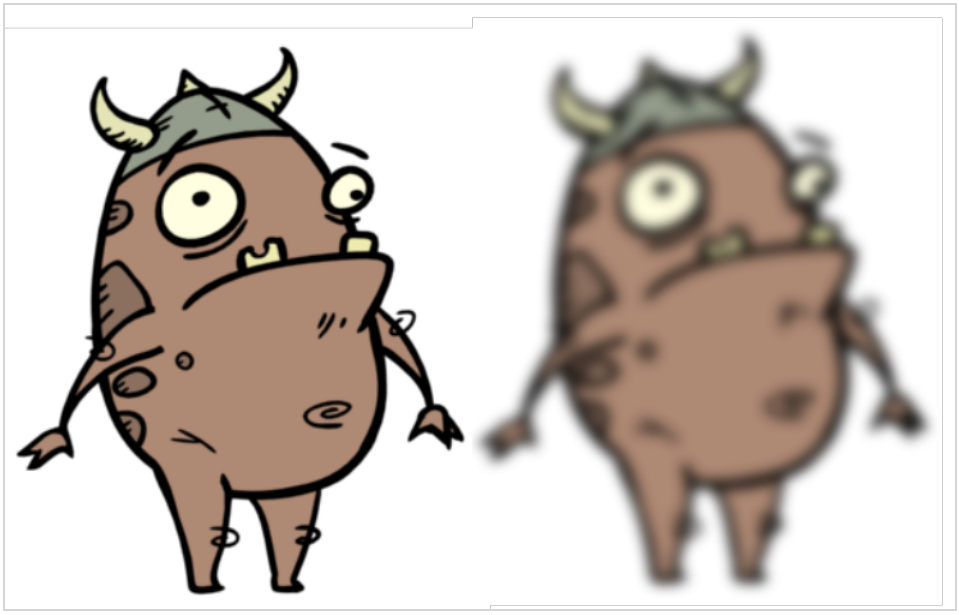
Parameter	Description
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Truck Factor	Activated by default, this option readjusts the blur when the elements undergo a change of depth or scale. When this option is deselected, the effect's values remain unchanged regardless of any depth or scale changes. This option should be deselected when multiple drawings are composited and attached to this

Parameter	Description
	effect.
Radius	Size of the blur. The larger the value, the greater the strength or reach of the blur. The blur radius is affected by the drawing scale and camera position. Click the Edit Curve button to change these values over time by adjusting the function curve.
Quality	Select High for a slow and accurate operation or Low for a faster operation with a more raw look.
Matte	
Invert Matte	Inverts the matte used to generate the effect. By default, the effect is applied to the opaque areas of the matte drawing. When this option is enabled, the effect is applied to the transparent areas of the matte instead.

Blur-Gaussian Layer

T-COMP2-003-002

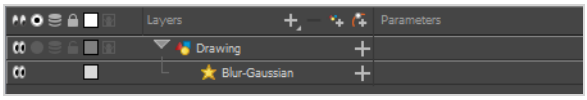
The Blur-Gaussian effect softens the image, reducing the amount of noise and detail. The look of the Gaussian blur is smooth, but does take some rendering time. This effect is useful when rendering time is less important, and quality is more important. Also, you can use a matte with this effect to isolate areas of the image.



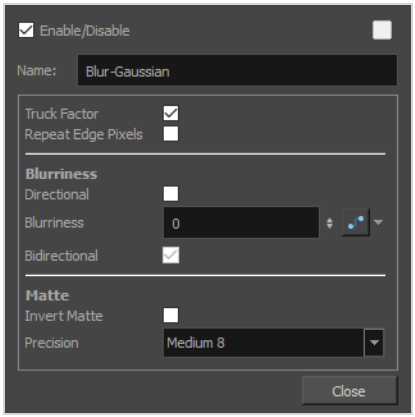
For a detailed video tutorial by Adam Phillips, see

https://www.youtube.com/watch?v=mHAnqqM2PyE

Refer to the following example to connect this effect:



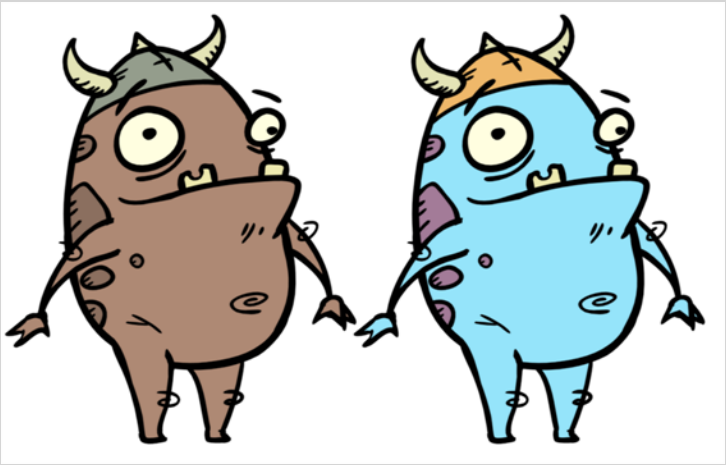
Properties



Parameter	Description
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Truck Factor	Activated by default, this option readjusts the blur when the elements undergo a change of depth or scale. When this option is deselected, the effect's values remain unchanged regardless of any depth or scale changes. This option should be deselected when multiple drawings are composited and attached to this effect.
Repeat Edge Pixels	Makes the blur algorithm operate as if the pixel values beyond the edge of the layer are the same as the values of the edge pixels. This keeps edges sharp, preventing them from darkening and becoming more transparent.
Blurriness	
Directional	Blurs according to the length, width, and angle you specify. For example, if a character is walking east, the blur may fall to the west.
Blurriness	Amount of blur applied to the layer.
Horizontal Blurriness	Length of the blur.
Vertical Blurriness	Thickness of the blur.
Angle	The direction in which the blur is applied: sideways, up, down, 90 degrees, 45 degrees, and so on.
Bidirectional	Blurs in both horizontal and vertical directions.
Matte	
Invert Matte	Inverts the matte used to generate the effect. By default, the effect is applied to the opaque areas of the matte drawing. When this option is enabled, the effect is applied to the transparent areas of the matte instead.
Precision	Blurs the image the number of times the precision indicates at different radius (between 0 and the specified radius).

Colour-Override Layer

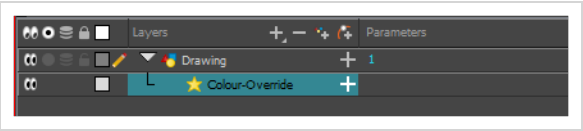
The Colour-Override effects processes the colours in a drawing layer. Using this effect, you can change colours from the palette without affecting the actual palette, swap clone palettes, or even replace a specific colour zone. The drawings in this layer must be .tvg files as the Colour-Override uses the colour palettes linked to them.



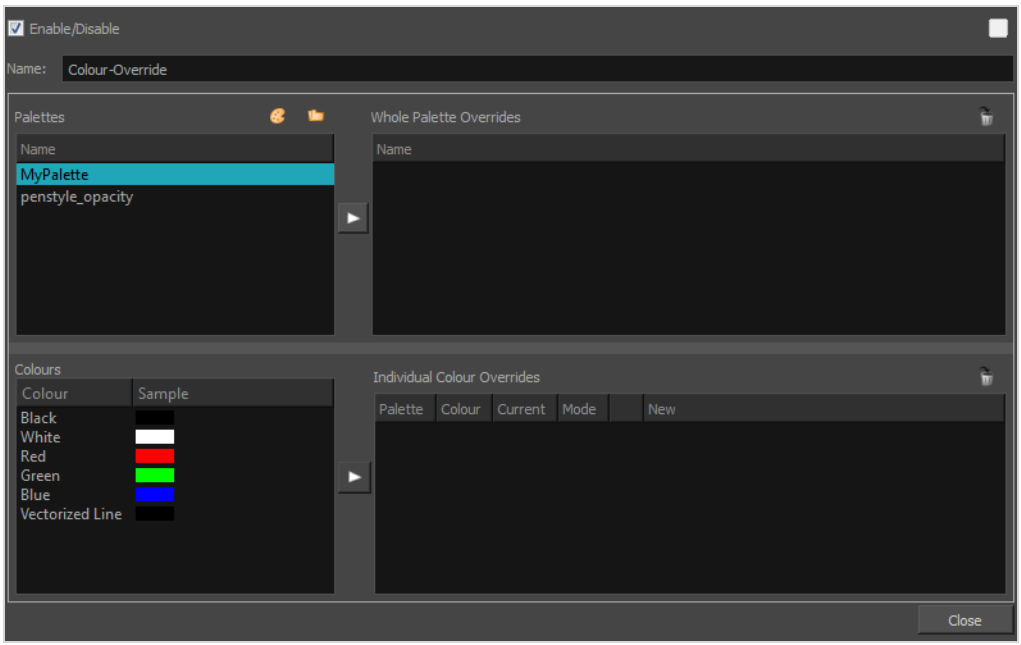
The Colour-Override effect lets you:

- Change colour values in drawings during the compositing process.
- Use colour values from a specific colour palette in the palette list.
- Establish the priority of override palettes in the palette list. For example, you may have different clones of the same palette, such as a daytime and nighttime version.
- Isolate specific areas of a drawing by selecting certain colours. For example, using specific colours to generate a matte for a glow effect.
- Hide certain colours.

Refer to the following example to connect this effect:



Interface

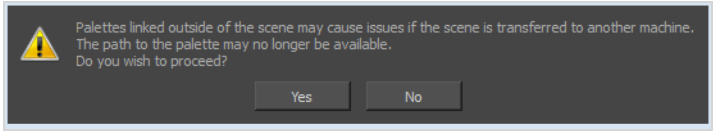


Palettes

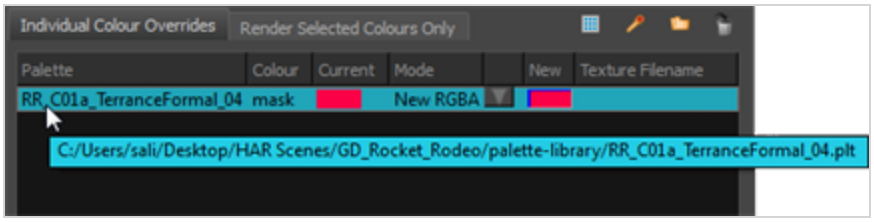
The Palettes section displays the palettes in the palette list of the selected layer. You can move these palettes into the Whole Palette Overrides section to reorder them. If you have cloned palettes, the higher one in the list will override the others. This is useful for overriding the clone palette ordering set in the scene through the Colour view.

You can load additional palettes in the palette list from either your project, by clicking on The Palette button, or your computer by clicking on the Browse button.

- The Palette button allows you to load a palette contained within the project hierarchy (Environment, Job, Scene and Elements).
- The Browse button allows you to load a palette located outside the project hierarchy, anywhere on your system or server. If you link to a palette outside of your project, you will be prompted with the following warning message:

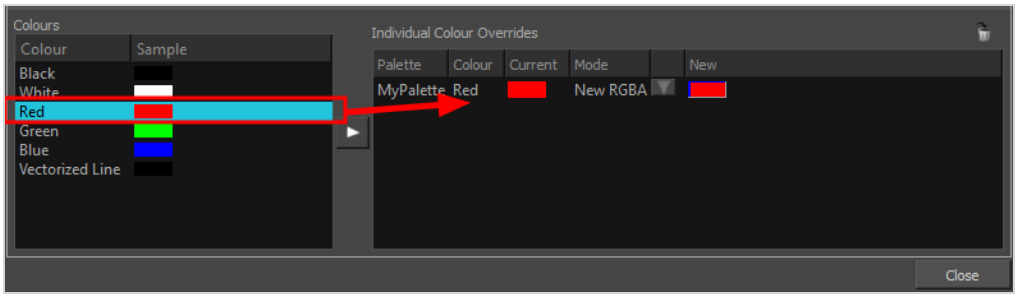


You can hover your mouse over the palette name in any of the override sections to display the path to the palette.



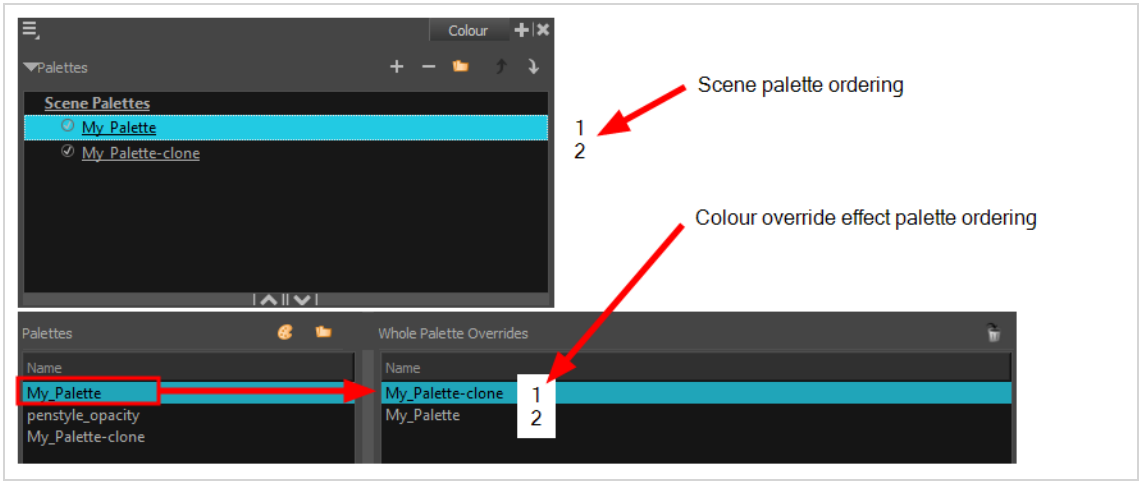
Colours

The Colours section displays the colour swatches of the selected palette. Move a swatch into the Colour-Overrides section to change its value.



Whole Palette Overrides

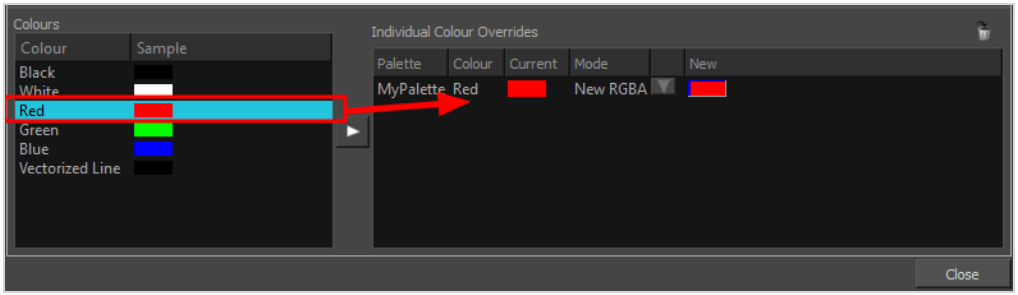
The Whole Palette Overrides section forces the use of a particular palette (clone palette) or palette list ordering during the compositing process. You must drag palettes from the Palettes section to change their order. Harmony uses the palettes in the order they appear in the palette list to find the colour values associated with the colour IDs of each colour zone. To apply a different version of a colour palette to, for example, switch from a day to a night palette, use the Override section to change the order of the colour palettes (you must be working with cloned palettes).



Individual Colour Overrides

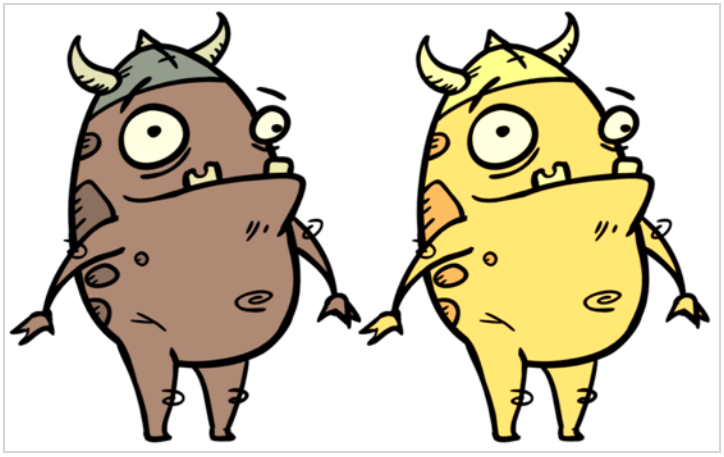
When you drag a swatch from the Colours section to this section, you can override its value. The default override mode is set to New RGBA so you can override the RGB value as well as the transparency value.

The Current column always displays the colours from the currently active palette. Selecting a clone palette in the Palettes area will not change the colours if you haven't changed the active palette in the Whole Palette Overrides section. The update will be done once you close and reopen the Colour Override Layer Properties window.

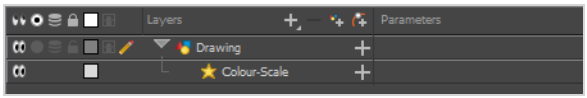


Colour-Scale Layer

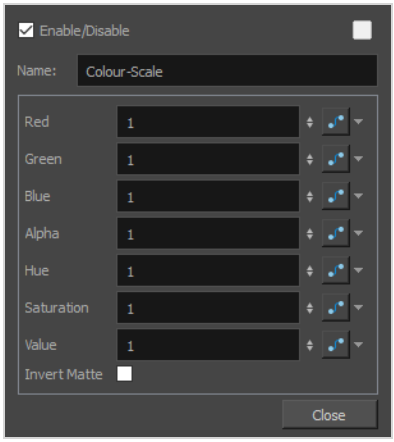
The Colour-Scale effect offsets an image's colours. This effect is useful in creating ambient transitions, such as from daytime to nighttime.



Refer to the following example to connect this effect:



Properties



Parameter	Description
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Red	The factor by which to multiply red values in the image.

Parameter	Description
Green	The factor by which to multiply green values in the image.
Blue	The factor by which to multiply blue values in the image.
Alpha	The factor by which to multiply alpha values in the image.
Hue	The colour or hue to offset the image.
Saturation	The amount of colour to offset the image.
Value	Enter the value for the colour to offset the image. The actual colour values of the image are not changed; instead, the channels are multiplied by a selected amount. For example: • A value of 1 does not change the colour values. • A value greater than 1 brings the colour channel value closer to 255 (or white). • A value less than 1 brings the colour channel value closer to zero (0 or black).
Invert Matte	Inverts the matte used to generate the effect. By default, the effect is applied to the opaque areas of the matte drawing. When this option is enabled, the effect is applied to the transparent areas of the matte instead.

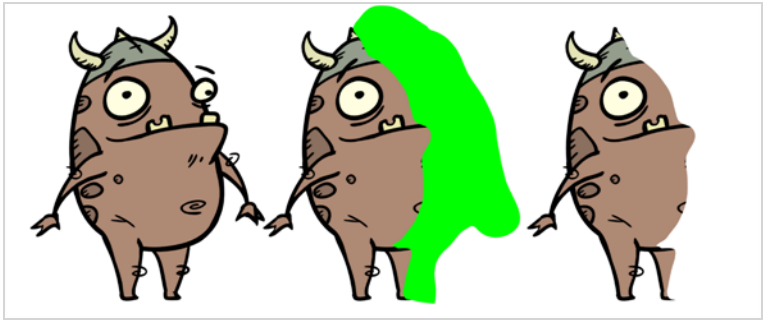
Cutter Layer

T-HFND-010-009

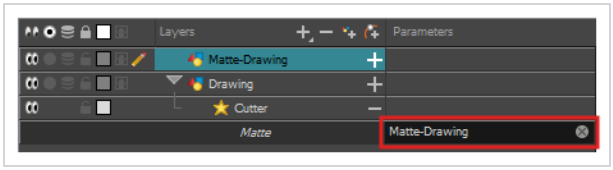
The Cutter effect cuts out a portion of an image. To do this, it needs to be connected to the drawing it is intended to cut as well as to a matte layer. The cutter will take the shape of the drawing in the matte layer and cut this shape out of the drawing layer. This is especially useful if you want to make a character disappear between a background element, or if you want to cut out a hole in the middle of a character.

Like all effects that use a matte, the Cutter's effect has an Inverted parameter, which is disabled by default. When enabled, the Cutter will have the reverse effect: Instead of cutting the matte's shape out of the drawing, it will cut everything outside of the matte's shape out of the drawing, leaving only the parts of the drawing that are covered by the matte.

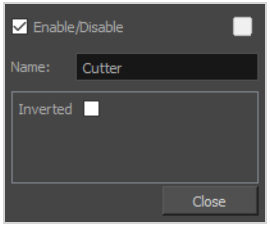
The Cutter effect can be used with 2D-3D integration. Rendered 2D drawings, integrated with 3D models, display soft, anti-aliased edges, even where the Cutter effect is applied.



Refer to the following example to connect this effect:



Properties



Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side

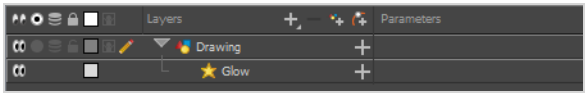
Parameter	Description
	and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	Allows you to enter a name for the node.
Inverted	When this option is enabled, the Cutter node will invert the matte shape to cut the drawing. Instead of cutting the image intersecting with the matte, it will cut any artwork outside of the matte shape.

Glow Layer

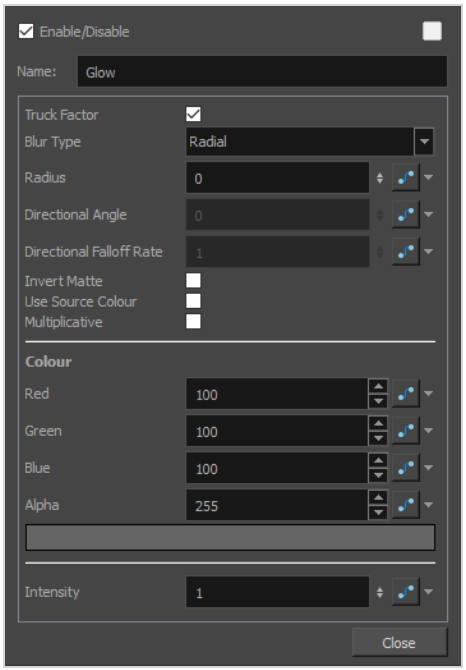
T-HFND-010-009B

The Glow effect turns your image into a glow area with a bright soft-edged light or diffuse light region around an image. The Glow effect is useful for creating a shining rim around objects, such as the sun or stars. Clone your layer to display the original image on top of the glow.

Refer to the following example to connect this effect:



Properties



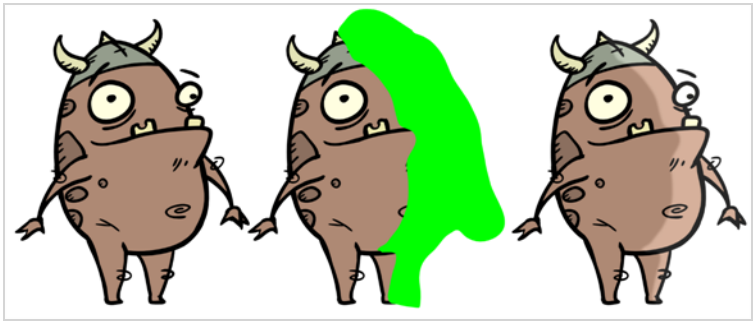
Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Truck Factor	Activated by default, this option readjusts the blur when the elements undergo a change of depth or scale. When disabled, the effect's values will remain unchanged regardless of depth or scale changes. It is recommended that this option be disabled when multiple drawings are composited and attached this effect.
Blur Type	Allows you to choose between the following blur types for the effect: • **Radial**: The edges of the matte are blurred evenly around points that make up the edge of the matte. • **Directional**: The matte is blurred in the direction configured with the Directional Angle and Directional Falloff Rate parameters.
Radius	Enter a value for the size of the blur. The larger the value, the greater the blur effect. The blur radius is affected by the drawing scale and camera position.
Directional Angle	If you set the Blur Type to Directional, this sets the angle of the blur. The value goes from 0 to 360, with 0 meaning west, and angles going counterclockwise. For example: • **0**: Blurs the image to the west. • **90**: Blurs the image to the south. • **180**: Blurs the image to the east. • **270**: Blurs the image to the north.
Directional Falloff Rate	The distance where the blur fades from the edge of the image. Select a decimal value between 0 and 1. For example: • **0**: Makes the blur fade out slowly, distributing the blur evenly from the edge of the character to the farthest edge of the blur. • **1**: Makes the blur fade out quickly. The blur is heaviest closer to the edge

Parameter	Description
	of the image.
Invert Matte	Inverts the matte used to generate the effect. By default, the effect is applied to opaque areas of the drawing. When this option is enabled, the effect is applied to transparent or empty areas of the drawing.
Use Source Colour	Instead of using the colour in the Colour parameters, this uses the colours in the source drawing to generate the effect. **NOTE** The effect of this parameter is only visible in Render View mode.
Multiplicative	Multiplies the colours of the effect with the colours of the background. This intensifies the effect.
Colour	
Red	The amount of red to add to the colour in the background image.
Green	The amount of green to add to the colour in the background image.
Blue	The amount of blue to add to the colour in the background image.
Alpha	The alpha value of the effect.
Colour Swatch	Opens the Colour Picker dialog, in which you can visually select a colour for the effect.
Intensity	Allows you to set the factor by which to multiply the intensity of the effect. This parameter can take a decimal value between 0 and 1. At 1, the effect is fully applied. At 0, the effect is not visible.

Highlight Layer

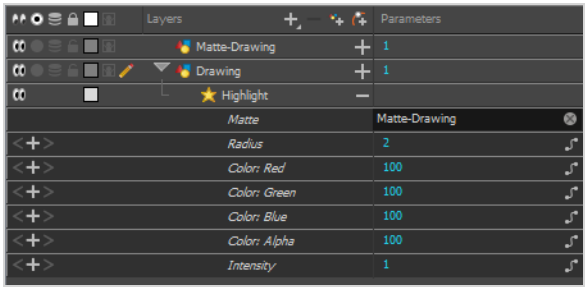
T-HFND-010-009C

The Highlight node allows you to brighten an image's area to simulate a light source. For this effect, you will need to create a matte to determine the shape and position of the highlight on a separate element, so that you can blur the edges to create a softer effect. By adjusting the Highlight properties, you can control the type and amount of blur, as well as the colour of the Highlight effect.

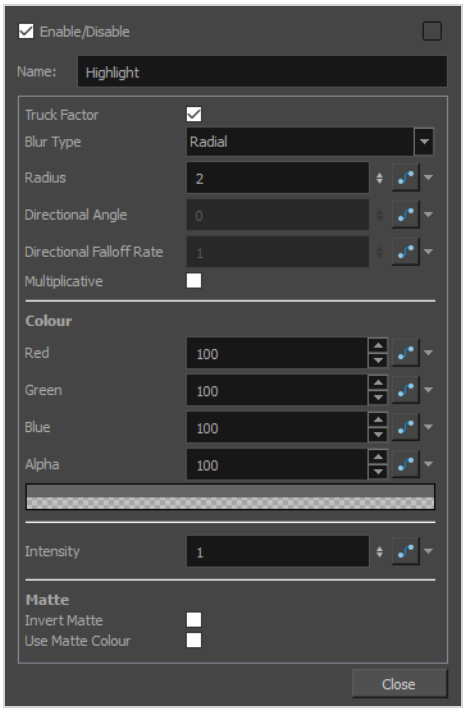


Connection

The Highlight effect layer must be connected as a child of the drawing layer or group which you want it to affect, and must have a matte drawing layer or group added to its Matte attribute. The part of its parent image that are covered by the matte drawing will have a highlight applied to it.



Layer Properties



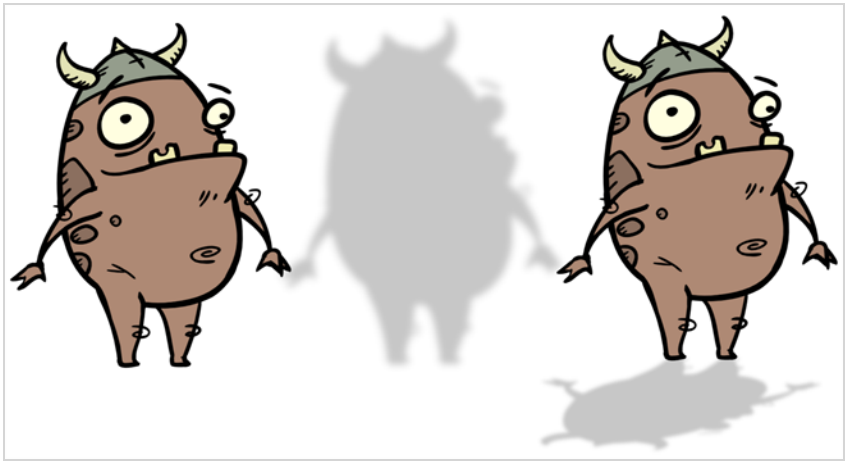
Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Truck Factor	Activated by default, this option readjusts the blur when the elements undergo a change of depth or scale. When disabled, the effect's values will remain unchanged regardless of depth or scale changes. It is recommended that this option be disabled when multiple drawings are composited and attached this effect.
Blur Type	Allows you to choose between the following blur types for the effect: • **Radial**: The edges of the matte are blurred evenly around points that make up the edge of the matte. • **Directional**: The matte is blurred in the direction configured with the Directional Angle and Directional Falloff Rate parameters.

Parameter	Description
Radius	Enter a value for the size of the blur. The larger the value, the greater the blur effect. The blur radius is affected by the drawing scale and camera position.
Directional Angle	If you set the Blur Type to Directional, this sets the angle of the blur. The value goes from 0 to 360, with 0 meaning west, and angles going counterclockwise. For example: • **0**: Blurs the image to the west. • **90**: Blurs the image to the south. • **180**: Blurs the image to the east. • **270**: Blurs the image to the north.
Directional Falloff Rate	The distance where the blur fades from the edge of the image. Select a decimal value between 0 and 1. For example: • **0**: Makes the blur fade out slowly, distributing the blur evenly from the edge of the character to the farthest edge of the blur. • **1**: Makes the blur fade out quickly. The blur is heaviest closer to the edge of the image.
Multiplicative	Multiplies the RGB values contained in the underlying image by the RGB values contained in the effect that is linked to the matte port of the underlying image. The values being multiplied can be positive (highlight) or negative (tone). **TIP** • A positive value will react visually as a divide blend mode. • A negative value will react visually as a multiply blend mode.
Colour	
Red	The amount of red to add to the colour of the source image.
Green	The amount of green to add to the colour of the source image.
Blue	The amount of blue to add to the colour of the source image.
Alpha	The alpha value of the effect.

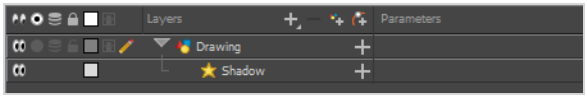
Parameter	Description
Colour Swatch	Opens the Colour Picker dialog, in which you can visually select a colour for the effect.
Intensity	Allows you to set the factor by which to multiply the intensity of the effect. This parameter can take a decimal value between 0 and 1. At 1, the effect is fully applied. At 0, the effect is not visible.
Matte	
Invert Matte	Inverts the matte used to generate the effect. By default, the affect is applied to opaque areas of the matte and transparent areas of the matte are ignored. When this option is enabled, the effect is applied to transparent areas of the matte and opaque areas of the matte are ignored.
Use Matte Colour	Instead of using the colour in the Colour parameters, this uses the colours in the matte drawing to generate the effect. **NOTE** The effect of this parameter is only visible in Render View mode.

Shadow Layer

With the Shadow effect, you can turn a drawing into a shadow. It doesn't matter if the drawing layer is a fully coloured character. The Shadow effect will render it into a grey, semitransparent, slightly blurry silhouette. You must clone your layer to see the original image displayed on top of the shadow.



Refer to the following example to connect this effect:



Properties

Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Truck Factor	Activated by default, this option readjusts the blur when the elements undergo a change of depth or scale. When disabled, the effect's values will remain unchanged regardless of depth or scale changes. It is recommended that this option be disabled when multiple drawings are composited and attached this effect.
Blur Type	Allows you to choose between the following blur types for the effect:

Parameter	Description
	• **Radial**: The edges of the matte are blurred evenly around points that make up the edge of the matte. • **Directional**: The matte is blurred in the direction configured with the Directional Angle and Directional Falloff Rate parameters.
Radius	Enter a value for the size of the blur. The larger the value, the greater the blur effect. The blur radius is affected by the drawing scale and camera position.
Directional Angle	If you set the Blur Type to Directional, this sets the angle of the blur. The value goes from 0 to 360, with 0 meaning west, and angles going counterclockwise. For example: • **0**: Blurs the image to the west. • **90**: Blurs the image to the south. • **180**: Blurs the image to the east. • **270**: Blurs the image to the north.
Directional Falloff Rate	The distance where the blur fades from the edge of the image. Select a decimal value between 0 and 1. For example: • **0**: Makes the blur fade out slowly, distributing the blur evenly from the edge of the character to the farthest edge of the blur. • **1**: Makes the blur fade out quickly. The blur is heaviest closer to the edge of the image.
Invert Matte	Inverts the matte used to generate the effect. By default, the effect is applied to opaque areas of the drawing. When this option is enabled, the effect is applied to transparent or empty areas of the drawing.
Use Source Colour	Instead of using the colour in the Colour parameters, this uses the colours in the source drawing to generate the effect. **NOTE** The effect of this parameter is only visible in Render View mode.
Multiplicative	Multiplies the colours of the effect with the colours of the background. This intensifies the effect.

Parameter	Description
Colour	
Red	The amount of red to subtract from the colour in the background image. To obtain a shadow effect, this value must be negative.
Green	The amount of green to subtract from the colour in the background image. To obtain a shadow effect, this value must be negative.
Blue	The amount of blue to subtract from the colour in the background image. To obtain a shadow effect, this value must be negative.
Alpha	The alpha value of the effect.
Colour Swatch	Opens the Colour Picker dialog, in which you can visually select a colour for the effect.
Intensity	Allows you to set the factor by which to multiply the intensity of the effect. This parameter can take a decimal value between 0 and 1. At 1, the effect is fully applied. At 0, the effect is not visible.

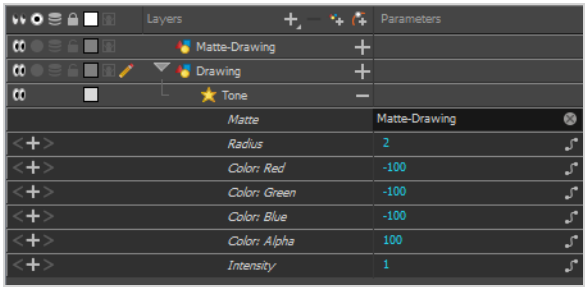
Tone Layer

T-COMP2-004-004

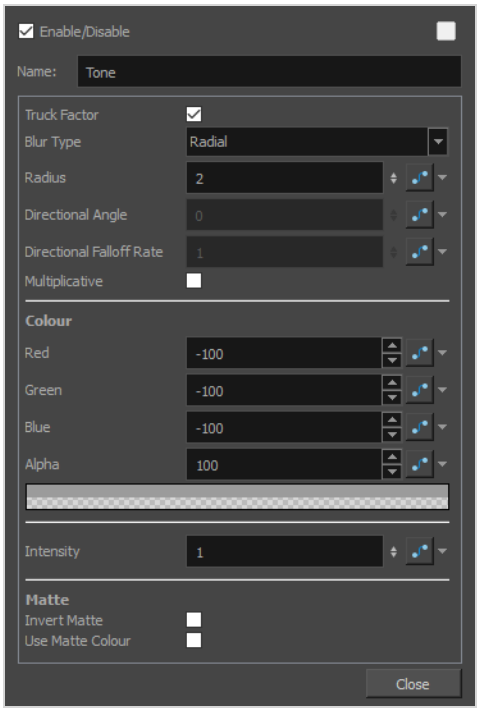
The Tone effect allows you to add a dark-coloured region to your drawing and simulate the shaded area away from a light source. To produce the tone effect, create a drawing to control where the tone will appear. The Tone effect uses a matte to determine the shape and position of the tone on your drawing and can be blurred at the edges to create a softer effect.

Connection

The Tone effect layer must be connected as a child of the drawing layer or group which you want it to affect, and must have a matte drawing layer or group added to its Matte attribute. The part of its parent image that are covered by the matte drawing will have a tone applied to it.



Layer Properties



Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Truck Factor	Activated by default, this option readjusts the blur when the elements undergo a change of depth or scale. When disabled, the effect's values will remain unchanged regardless of depth or scale changes. It is recommended that this option be disabled when multiple drawings are composited and attached this effect.
Blur Type	Allows you to choose between the following blur types for the effect: • **Radial**: The edges of the matte are blurred evenly around points that make up the edge of the matte. • **Directional**: The matte is blurred in the direction configured with the Directional Angle and Directional Falloff Rate parameters.

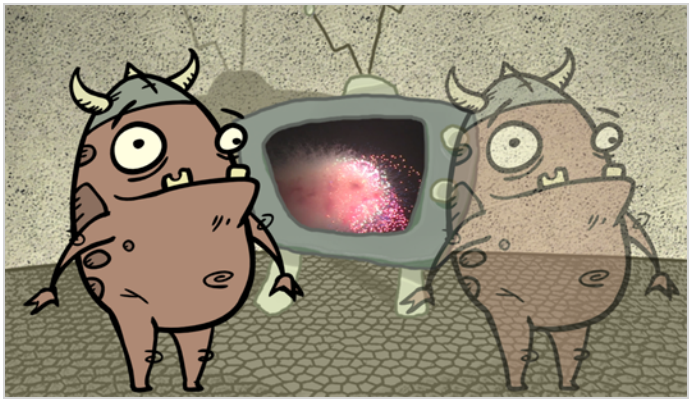
Parameter	Description
Radius	Enter a value for the size of the blur. The larger the value, the greater the blur effect. The blur radius is affected by the drawing scale and camera position.
Directional Angle	If you set the Blur Type to Directional, this sets the angle of the blur. The value goes from 0 to 360, with 0 meaning west, and angles going counterclockwise. For example: • **0**: Blurs the image to the west. • **90**: Blurs the image to the south. • **180**: Blurs the image to the east. • **270**: Blurs the image to the north.
Directional Falloff Rate	The distance where the blur fades from the edge of the image. Select a decimal value between 0 and 1. For example: • **0**: Makes the blur fade out slowly, distributing the blur evenly from the edge of the character to the farthest edge of the blur. • **1**: Makes the blur fade out quickly. The blur is heaviest closer to the edge of the image.
Multiplicative	Multiplies the RGB values contained in the underlying image by the RGB values contained in the effect that is linked to the matte port of the underlying image. The values being multiplied can be positive (highlight) or negative (tone). **TIP** • A positive value will react visually as a divide blend mode. • A negative value will react visually as a multiply blend mode.
Colour	
Red	The amount of red to add to the colour of the source image. To obtain a shadow effect, the value added will be negative.
Green	The amount of green to add to the colour of the source image. To obtain a shadow effect, the value added will be negative.
Blue	The amount of blue to add to the colour of the source image. To obtain a shadow effect, the value added will be negative.

Parameter	Description
Alpha	The alpha value of the effect.
Colour Swatch	Opens the Colour Picker dialog, in which you can visually select a colour for the effect.
Intensity	Allows you to set the factor by which to multiply the intensity of the effect. This parameter can take a decimal value between 0 and 1. At 1, the effect is fully applied. At 0, the effect is not visible.
Matte	
Invert Matte	Inverts the matte used to generate the effect. By default, the affect is applied to opaque areas of the matte and transparent areas of the matte are ignored. When this option is enabled, the effect is applied to transparent areas of the matte and opaque areas of the matte are ignored.
Use Matte Colour	Instead of using the colour in the Colour parameters, this uses the colours in the matte drawing to generate the effect. **NOTE** The effect of this parameter is only visible in Render View mode.

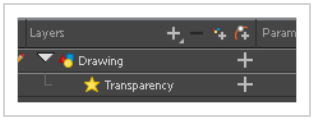
Transparency Layer

T-HFND-010-008

The Transparency effect is used to make an image partially transparent. The Transparency effect is useful when fading images in and out, such as a phantom or to make something partially see-through, such as a window.

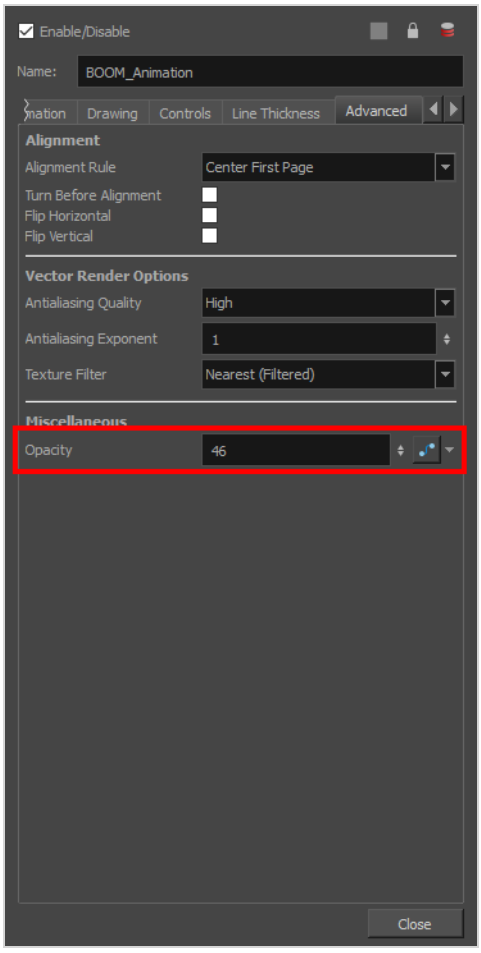


Refer to the following example to connect this effect:

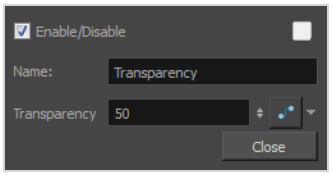


You can enter a value in the Transparency field or change the transparency value over time by linking it to a function curve. Entering a value of 100 in the Transparency field will make the element 100% transparent, in other words, invisible. Entering a value of 0 will render the element completely opaque.

It is also possible to adjust a drawing layer's transparency directly in the Layer Properties window without using the Transparency layer. In the layer's properties, go to the Drawing tab and adjust the Opacity parameter. This parameter is visible in OpenGL mode.



Properties



Parameter	Description
Name	Allows you to enter a name for the node.
Transparency	Lets you set the opacity of an element. Values range from 0 to 100. A value of 100 will make the element 100% transparent and a value of 0 will render the element completely opaque.

Image Layers

Image layers generate an image that display in your scene's render. The drawing layer, which is the main type of layer used in Harmony, generates an image based on the drawings in its element which are exposed at the current frame. The Colour-Card simply fills the render area with a solid colour.

Colour-Card Layer **392**

Drawing Layer **394**

Colour-Card Layer

T-ANIMPA-012-001

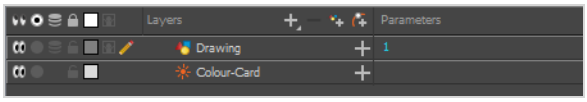
The Colour Card allows you to fill the scene's background with a solid colour when there is no background image. If no drawing or colour-card is present to cover the scene's background, the scene will be rendered on a pitch black canvas.

NOTE

By default, the Colour Card has a Z ordering value of **12 Backward**. This puts the Colour card behind all elements that have a value lower than **12 Backward**. Most of the time, the Colour card will appear automatically behind all the scene elements as they are all set to **0 Backward**, unless you have changed the Z ordering of the scene components. If so, the Colour Card will be in front of the elements that are pushed back to more than 12 fields backward.

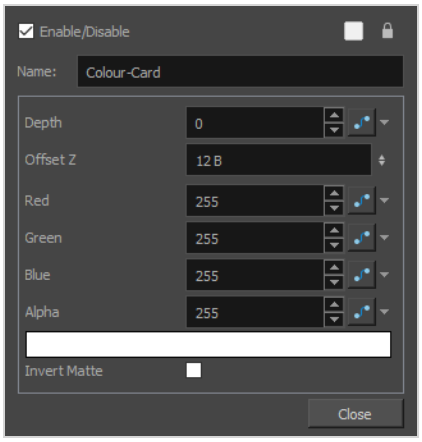
Connection

The Colour Card does not need to be connected to anything in your scene. It simply needs to be added to it alongside your drawing layers and groups.



Because a Colour Card has a default position on the z-axis of 12 Backward, it will appear behind all the layers in your scene regardless of whether or not it has layers underneath it.

Layer Properties

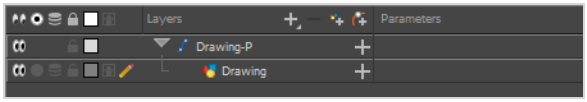


Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Perspective, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	The name of the node as it appears in the Node View and the Timeline view. Each node must have a name that is unique to its containing group.
Depth	This parameter can be used to determine whether the colour card displays behind or in front of elements with the same position on the z-axis.
Offset Z	The position of the Colour Card on the Z-axis. By default, this is set to 12 B to ensure the Colour Card appears behind other elements in the scene. You can set this to 0 F to make the Colour Card respect the order of the layers in the Timeline view.
Colour	The colour and transparency of the Colour Card. You can also attach these parameters to function columns to change their values over time. Click the colour swatch to open the Colour Picker window and select a colour.
Colour Swatch	Opens the Colour Picker window in which you can specify the colour.
Invert Matte	If an image is connected to the Colour Card's matte port, by default, the colour is only applied on the opaque areas of the matte. If this parameter is enabled, the colour is applied to the transparent areas of the matte instead.

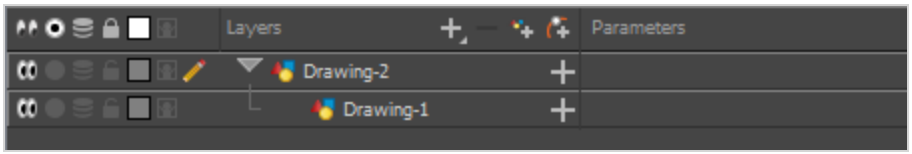
Drawing Layer

The Drawing layer is at the core of a scene's structure. A drawing layer is linked to an element, which contains a series of drawing, and its Xsheet column, which indicates when and for how long each drawing is exposed. The layer is what connects the element and its exposure to the rendered image. It indicates the position of the drawings relative to other elements and to the stage, as well as the drawing's connections with pegs, groups and effects, if any.

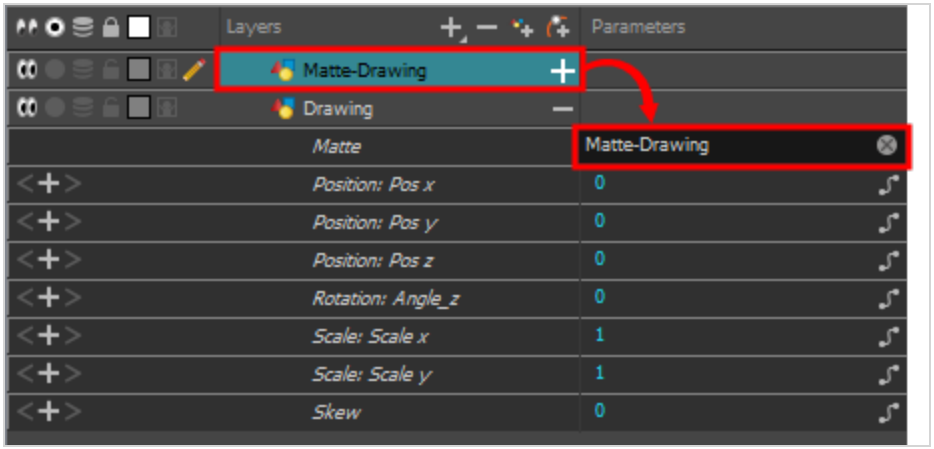
Although drawing layers can be transformed and animated on their own, it is typical to connect them under a parent peg. This allows you to keep the position and animation information of the element in the peg, making it easier to manipulate the exposure and the transformations separately. This is especially useful in digital cut-out animation where manipulating and transforming layers is often the main method of simulating movement, and changing drawings is the secondary method.



You can also connect a drawing layer as a child of another drawing layer. Just like with pegs, any transformation done to the parent layer, whether on itself or through one of its parents, will also be applied to the child layer.



Optionally, you can connect a matte drawing to a drawing layer. When a drawing layer has a matte drawing, only the parts of the drawings that intersect with the opaque areas of the matte drawing will be rendered. This allows you to accomplish the same effect as connecting the drawing layer to a cutter effect.



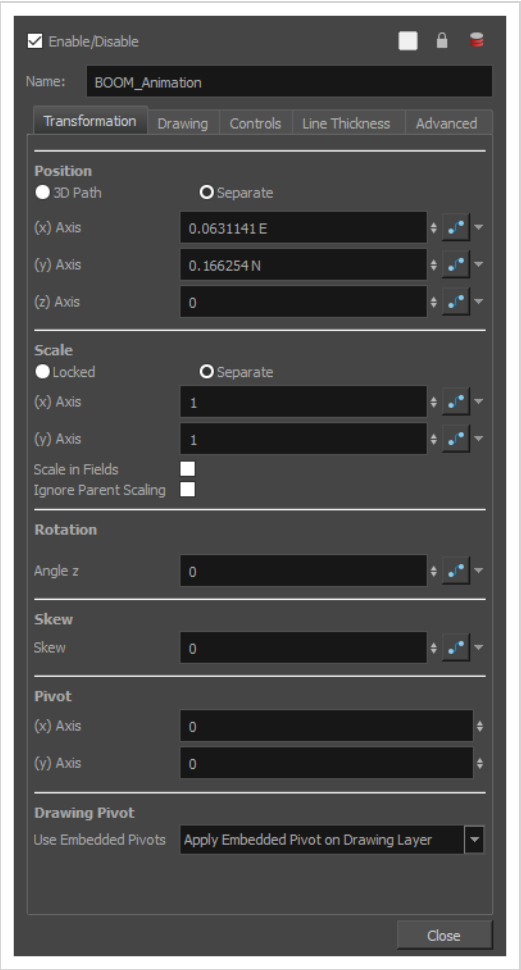
Layer Properties

The drawing layer's properties are organized in the following tabs:

- Transformation Tab
- Drawing Tab
- Controls Tab
- Line Thickness
- Advanced Tab

Transformation Tab

The Transformation tab contains parameters for adjusting the position, scale, rotation, skew and pivots of an element.



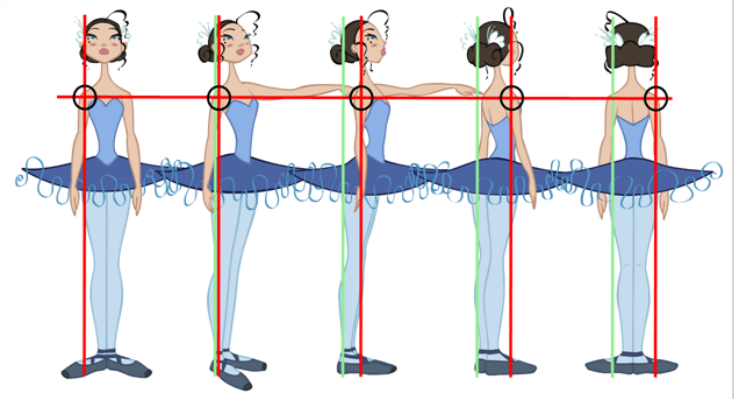
Parameter	Description
Position	**3D Path**: Use a 3D path to position the element. A 3D path uses a single function to define the position on the X, Y and Z axes. This function is made of control points linked by a curvilinear path, making the movement follow a natural curve. The pace and ease of the movement is determined by a single velocity function.

	Separate: Positions the element using separate functions for the X, Y and Z axes. This allows to control the direction and pace of the movement across all three axes separately. Unless ease is applied to the axes, the trajectory of the element will follow straight lines going between each keyframe.
	Path: If the 3D Path option is selected, this field allows you to create or select the 3D Path function used to position the element. **Path (x) Axis**: The position of the element on the East-West axis, in fields. **Path (y) Axis**: The position of the element on the South-North axis, in fields. **Path (z) Axis**: The position of the element in the Back-Front axis, in fields. **Velocity:** If the 3D Path option is selected, this function is used to control the pace at which the element moves towards each control point in the 3D Path function, on all three axes simultaneously.
Scale	**Locked**: Uses a single scale parameter to scale the element, preserving its proportions. **Separate**: Uses a separate parameter to scale the element on the X and Y axis, allowing to stretch or squash the element.
	(x) Axis: The horizontal scale factor. The default value is 1. **(y) Axis:** The vertical scale factor. The default value is 1. **Scale in Fields**: With this option enabled, the scale factor is based on the amount of fields in the scene. For example, to shrink one of the dimensions of an element to half its original size, the scale factor would normally bet set to 0.5. If this option is enabled and the amount of fields in the scene is 12, then the scale factor to shrink the element by half would be 6. **Ignore Parent Scaling**: When this option is enabled, scaling factors applied to a parent layer will not be applied to the current layer. This can be handy in cut-out rigs when you need to scale an arm without affecting the forearm.
Rotation	**Angle z**: The angle at which the element is rotated, based on the 360 degrees scale. Values below 0 or above 360 degrees will cause the rotation to cycle.
Skew	**Skew**: The angle at which the element is skewed. This value can range from -90 to 90 degrees.
Pivot	**(x) Axis**: The horizontal position of the pivot point of the element relative to the pivot point of the drawing, in fields. **(y) Axis**: The vertical position of the pivot point of the element relative to the pivot point of the drawing, in fields.

	NOTE These parameters can be changed visually by clicking and dragging the pivot point when using on of the tools in the Advanced Animation toolbar.
Drawing Pivot	An element layer has two pivots: • The pivot of the element, which is set by the Pivot parameters above. • The pivot of the currently exposed drawing, which is set using the Drawing Pivot tool. This preference is used to determine what to do with the pivot point of the currently exposed drawing: • **Don't Use Embedded Pivot:** Ignores the pivot point of the exposed drawing. The pivot point of the element is positioned using the Pivot parameters above, relative to the centre of the drawing. • **Apply Embedded Pivot on Parent Peg:** Use the pivot point of the exposed drawing to determine the position of the pivot point of the parent peg of the drawing layer. This is useful when making a character rig where each element has a parent peg, and those parent pegs are intended to be used for animation. The pivot point of these parent pegs will be based on the pivot point set for the exposed drawing. • **Apply Embedded Pivot on Drawing Layer:** Use the pivot point of the drawing to determine the pivot point of the element. This means the pivot point is positioned using the Pivot parameters above, but relative to the pivot point of the drawing.

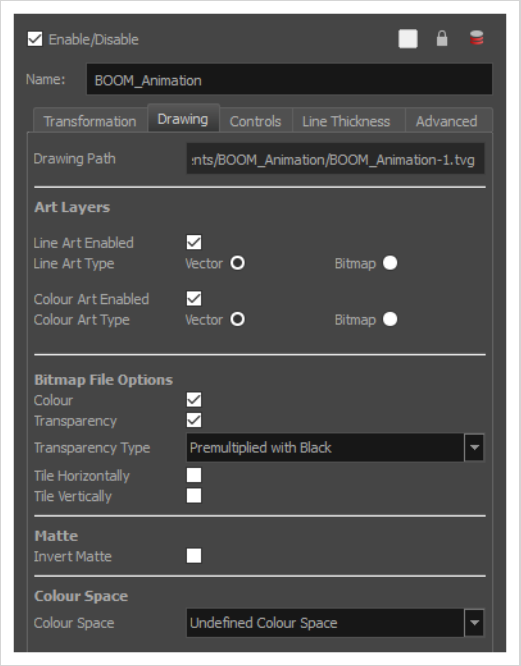
TIP

The two latter options are useful when making a character rig where a layer can represent a body part from different angles. Since each angle is represented by a drawing, and each angle is liable to have a different pivot point, you can set the pivot point of each angle by using the Drawing Pivot tool on each drawing. Then, if you want to animate the drawing layers directly, you can set this parameter to the **Apply Embedded Pivot on Drawing Layer** option, and if you want to animate using the parent pegs of the drawing layers, you can set this parameter to the **Apply Embedded Pivot on Parent Peg** option, so that these pivots are used when animating the different parts of the rigs.



Drawing Tab

The Drawing tab contains parameters for the art layers, bitmap images and the element's matte drawing.



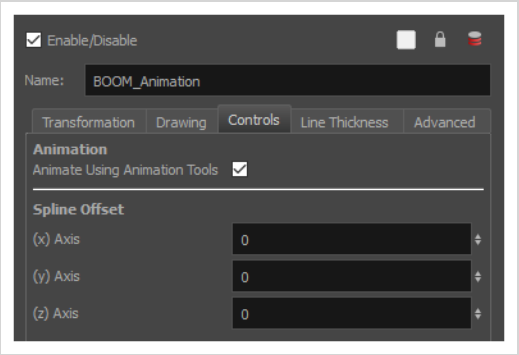
Parameter	Description
Element Columns	**Drawing Path**: Displays the full path to the current drawing.
Art Layers	These parameters allow you to set whether each art layer in the drawing layer is enabled, and whether they should contain vector or bitmap artwork. By default, options for the Line Art and Colour Art layers will be available. If the Enable Overlay and Underlay Arts preference is enabled, options for the Overlay Art and Underlay Art layers will also be available. **Enabled:** Determines whether the art layer is displayed. **Vector:** Makes the art layer enabled for vector artwork, Vector drawing tools will be used to draw in this art layer, and vector artwork information will be preserved. **Bitmap:** Makes the art layer enabled for bitmap artwork. Only bitmap-compatible drawing tools will be enabled when drawing on this layer, and all artwork will be rasterized into a bitmap image.
Bitmap File Options	**Colour**: Determines whether or not the colours in the image is processed. If unchecked, the image will be solid black. **Transparency**: Determines whether or not the transparency in the image is processed. If unchecked, the image will be fully opaque.
	Transparency Type: If the layer contains bitmap images with a transparency channel, there are several approaches to rendering the image's transparency. You may need to select the proper transparency type to make sure Harmony renders the image as intended. • **Premultiplied with Black:** Semi-transparent pixels in the original image are blended with black. • **Premultiplied with White:** Semi-transparent pixels in the original image are blended with white. • **Straight:** Semi-transparent pixels in the original image are left as is (unmatted). • **Clamp Colour to Alpha:** Semi-transparent pixels in the original image are blended with black. On import, each of the RGB channels is clamped so that a color value never exceed the alpha value for a given pixel. When the RGB values are multiplied with the alpha value, that is to say, if you have a pixel of value R=247, G=188, B=29 and the alpha is 50% or the image has a 50% transparency, then the actual RGB values output would be half of the amounts listed above.
	Tile Horizontally: Repeats the bitmap image infinitely to the left and to the right

	of the layer. This can be useful for making looping backgrounds. **Tile Vertically:** Repeats the bitmap image infinitely to over and underneath the layer. This can be useful for making looping backgrounds. **NOTE** When both the **Tile Horizontally** and **Tile Vertically** options are used together, the bitmap image is tiled all over the scene.
Matte	**Invert Matte:**If a drawing, group or effect is added to the drawing's Matte attribute, the part of the drawing that intersect with the matte's opaque areas will be cut out by default. If this parameter is enabled, the part of the drawing that intersect with the matte's transparent areas will be cut out instead.
Colour Space	**Colour Space:** The colour space in which the element's colours should be interpreted. If the element's colour space is different from the project colour space, then the element's colours will be converted from the element's colour space to the project's colour space as they are processed, before being composited together with the scene's special effects. • **Undefined Colour Space:** No colour space is defined for the drawing. The drawing's colours will be interpreted as if they were the same colour space the one selected in the **Colour Space** tab of the **Scene Settings** dialog. • **ACES2065-1**: An ACES linear colour space that uses the AP0 colour primaries and is intended for image file interchange. • **ACEScg**: An ACES linear colour space that uses the AP1 colour primaries and is intended for CGI rendering and compositing. • **Linear Rec.709 (sRGB):** The colour space that uses the same primaries and white point as sRGB and Rec. 709, but with no gamma transfer curve applied to the colour values. • **Linear Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Linear P3-D65:** The same as Display P3, except with no gamma transfer curve. This colour space is useful for compositing intermediary images that are meant to be rendered in Display P3. • **Display P3:** A colour space commonly used for digital projection. It has the same primaries as DCI-P3, the same white point as sRGB and the same gamma transfer curve as sRGB. • **Rec. 709:** The colour space used for HDTV. It has the same primaries and white point as sRGB, but has a different gamma transfer curve.

	• **Rec. 709 2.4:** The same colour space as Rec. 709 or sRGB, except with a gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 709. • **Rec. 2020:**A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Rec. 2020 2.4:** The same colour space as Rec. 2020, except with a simple gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 2020. • **sRGB:** A colour space typically used for standard computer monitors. It has the same primaries and white point as Rec. 709, but has a different gamma transfer curve. **NOTE** In the OpenGL View mode of the Camera view, the colour space of drawing layers is ignored and only the colour space of original bitmap files is taken in account. To test the colours of your drawing in their selected colour space, you must activate Render View mode.

Controls Tab

The Controls tab contains animation control options.

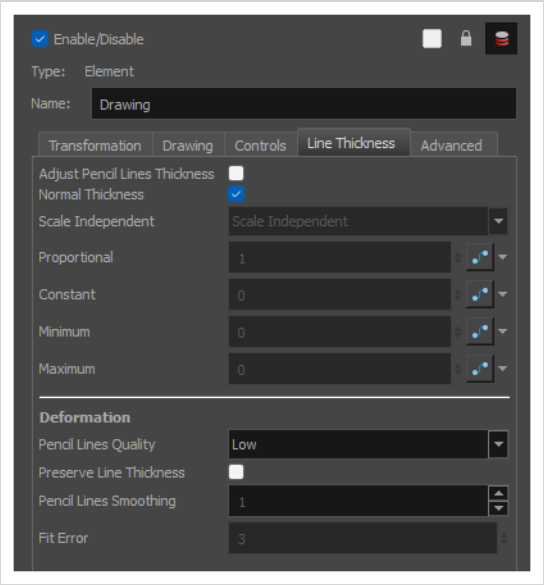


Parameter	Description
Animation	**Animate Using Animation Tools**: By default, a drawing layer can be animated directly, as if it was its own peg. If you disable this option, it will only be possible to animate the layer using its parent peg. If the layer has no parent peg, it will be immutable.

	This can be useful if you want to create cut-out character rigs that should only be animated using pegs, which can help separate the drawing exposure from the transformations on the drawings. If every drawing layer in a character rig has this option disabled, only layers that have a parent peg will be animatable, and the animator will only be able to animate on the pegs. This also rules out the possibility of accidentally animating an element directly and using its parent peg concurrently. When this option is disabled, clicking on the drawing layer in the Camera view with the Transform tool will automatically select the layer's parent peg.
Spline Offset	If the layer's controls are displayed, you can see its animation trajectory in the Camera view. This is referred to as the *spline*. By default, the position of each point in the spline is based on the element's pivot point. However, you can use the spline offset to give it a more fitting position if desired. You can do this by using the Spline Offset tool of the Advanced Animation toolbar, or by manually entering the offset values in the Spline Offset fields. **(x) Axis:** The horizontal offset of the spline, in fields. **(y) Axis:** The vertical offset of the spline, in fields. **(z) Axis:** The depth offset of the spline, in fields. **TIP** To display the animation trajectory of the layer in the Camera view, select the layer, then do one of the following: • In the Camera toolbar, click on Show Control . • From the top menu, select **View > Show > Control**. • Press Shift + F11 (Windows/Linux) or ⌘ + F11 (macOS).

Line Thickness

The Line Thickness tab contains options regarding the way pencil lines in the element are rendered. These options can be very useful to enhance the quality of line art without having to work on it.



Parameter	Description
Line Thickness	**Adjust Pencil Lines Thickness:** Enables the options below to adjust the line thickness in the rendered image. **Normal Thickness:** This setting makes the line thickness adjustments take one of two very different behaviors: • **Enabled:** The line thickness settings are applied to pencil lines in all art layers in the element. This setting should be used if you want to adjust the line thickness of pencil lines. • **Disabled:** The line thickness settings are applied to all art, whether brush strokes or pencil lines, in the line art layer, so that it fits the desired thickness pattern around art in the colour art layer. This setting should be used for drawings that have their line art on the line art layer and their colour art on the colour art layer, which is typical of traditional and paperless animation productions. **NOTE** When this option is disabled, all artwork in the line art layer that does not surround artwork in the colour art layer will be cropped out.
	Scale Independent: • **Scale Dependent:** The line thickness will vary based on the scale of drawing elements as well as the camera position. • **Scale Independent:** Line thickness will not be effected by the scale of the drawing element or the position of the camera

<table>
<tr><td></td><td>

- **Scale Independent (Legacy):** The line thickness will not be effected by the scale of the drawing elements or the position of the camera. Changing resolution changes the visual thickness when rendering

</td></tr>
<tr><td></td><td>

Proportional: The factor by which to adjust line thickness. The original line thickness in the drawing will be multiplied by this value. A value between 0 and 1 can be used to make pencil lines thinner.

Constant: The offset by which to adjust line thickness. This value will be added to the original line thickness in the drawing. A negative number can be entered to make pencil lines thinner.

Minimum: The minimum pencil line thickness allowed. Line thickness will not go below this value.

Maximum: The maximum pencil line thickness allowed. Line thickness will not go above this value. Set it to 0 to disable maximum line thickness.

</td></tr>
<tr><td>Deformation</td><td>

Pencil Lines Quality: The quality of the rendered pencil lines when deformed by deformation chains. Increasing this parameter is unlikely to wield noticeable result unless rendering in very high resolutions.

Preserve Line Thickness: If this option is checked, the thickness of pencil lines will not be affected by deformations. Only their directions will be affected. Also, if a pencil line is textured, it will not be stretched or squashed by deformations.

NOTE

This setting must be enabled for the Pencil Lines Smoothing and Fit Error parameters to be available.

Pencil Lines Smoothing: The smoothing factor applied to pencil lines when rendering. This value can range from 0 to 10. The higher it is, the more corners and points will appear smoothed out.

Fit Error: When this parameter is increased, pencil lines in the rendered image will have less vector points and the curves between the remaining vector points will be adjusted to fit the original shape. This setting can be increased if the amount of details and points in the pencil lines creates problems around deformation articulations and corners. Its value can range from 1 to 100.

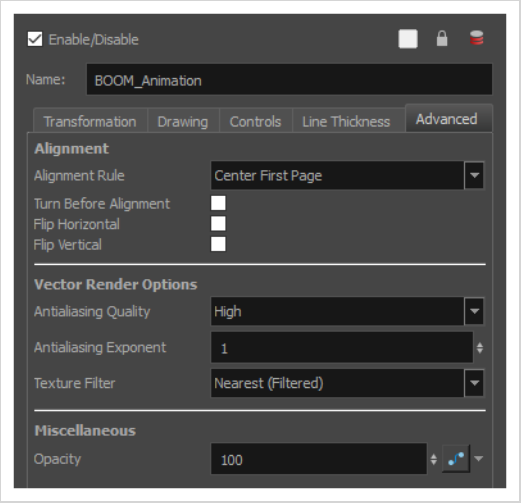
NOTE

The Fit Error parameter will have no effect if the Pencil Lines Smoothing parameter is set to 0.

</td></tr>
</table>

Advanced Tab

The Advanced tab contains options for setting the alignment of drawings, line thickness, vector render options, and more.



Parameter	Description
Alignment	**Alignment Rule**: The alignment rule selections are intended to deal with drawings that were created on paper of a different size or orientation from the default alignment rule (set up in the Scene Settings dialog box) or imported bitmap images. The drawings are then scaled to match the Harmony alignment rectangle. Note that alignment rules are not based on the camera frame, but on the scene frame. Refer to the Fundamentals Guide to learn more about scene alignment and scene settings. • **Left**: The default alignment for drawings; aligns the drawings to the left side of the scene's alignment rectangle. Harmony scales the drawings to match their height to the alignment rectangle of the scene. • **Right**: Aligns the drawings to the right side of the alignment rectangle. Harmony scales the drawings to match their height to the height of the alignment rectangle of the scene. • **Top**: Aligns the drawings to the top of the alignment rectangle. Harmony scales the drawings to match their widths to the width of the alignment rectangle of the scene. • **Bottom**: Aligns the drawings to the bottom of the alignment rectangle. Harmony scales the drawings to match their widths to the width of the alignment rectangle of the scene. • **Centre Fit**: Centers the drawings. • **Centre Fill**: Centers the drawings and then scales them so the width or height fills the available space.

	• **Centre LR**: Aligns the drawings in the left-right centre of the alignment rectangle. Harmony scales the drawings to match their height to the height of the alignment rectangle of the scene. • **Centre TB**: Aligns the drawings in the top-bottom centre of the alignment rectangle. Harmony scales the drawings to match their widths to the width of the alignment rectangle of the scene. • **Stretch**: Scales the drawings so they fit within the alignment rectangle of the scene. This is particularly useful for images that you will manipulate with a Quadmap node. If the drawings in the Quadmap node do not have the same aspect ratio as the alignment rectangle of the scene (from the Scene Settings dialog box), the handles on the quadmap will not appear on the corners of the image, making it difficult to manipulate the quadmap. In this case, you would set the drawing layer of the quadmap images to Stretch to make the handles appear on the corner of the image. This can have the effect of distorting the images, but it is not an issue with images that will be distorted through the Quadmap node anyways. • **As Is**: Leaves the drawings aligned as they are. • **Centre First Page**: Aligns the centre of the first part of a standard pan cel with the centre of the field chart.
	Turn Before Alignment: Rotates the drawings in the selected element 90 degrees to the left before scaling and aligning them according to the alignment rule, and before performing any offset, rotation or scaling for the element or peg. This and the Alignment Rule are intended for drawings that were created on paper of a different size or orientation than the other paper in the scene, and requires alignment so they are treated accurately.
	Flip Horizontal: Flips the drawing on the horizontal axis.
	Flip Vertical: Flips the drawing on the vertical axis.
Vector Render Options	**Antialiasing Quality**: The smoothness (antialiasing) setting used to make the crisp vector contours appear smooth. • **None - No Transparency:** Dsables antialiasing, renders semi-transparent pixels either fully opaque or fully transparent, and fills single-pixel gaps with an opaque pixel to avoid generating out-of-place gaps when lines intersect each other. • **Low:** Disables antialiasing, but renders transparency. • **Medium Low:** Renders vector artwork with basic antialiasing. • **Medium:** Renders vector shapes with improved antialiasing. Bitmap texture fills will appear blurred.

	• **High:** Renders vector shapes with improved antialiasing, without blurring bitmap texture fills. **TIP** It is recommended to leave this setting to **High** unless you are working on a pencil test, or another type of scene where rendering speed is more important than rendering quality. **TIP** If the production requires exporting line art without antialiasing to colour them in a third-party software, it is recommended to use the **None - No Transparency** setting. This setting automatically fills one-pixel gaps created by crisp lines intersecting each other, which would otherwise need to be filled manually in the third-party software. **Antialiasing Exponent**: Determines how much the artwork is scaled up to apply antialiasing onto it. A higher value will results in sharper edges, and a lower value will result in softer edges. Typical values range between 0 and 3. Higher values may be attempted but may result in overly crisp outlines. Negative values will cause the outlines to appear blurry. **Texture Filter:** This setting determines how textures in the element are resampled when rendering: • **Bilinear:** This option takes the four pixels around each point and makes a bilinear interpolation between them, which may make them look blurry. • **Nearest:** When sampling the texture up, this option generates extra pixels by using the colour of the nearest defined pixel. When sampling the texture down, this option simply removes pixels from the texture. • **Nearest (Filtered)**: This option is similar to **Nearest**, but it adds an extra layer of resampling to make all pixels look like they are the same size.
Miscellaneous	**Opacity**: Lets you quickly change the transparency of the selected element. Opacity settings here will be reflected in both **OpenGL** preview, and full render.

Move Layers

Move layers are used to animate layers as well as camera motions.

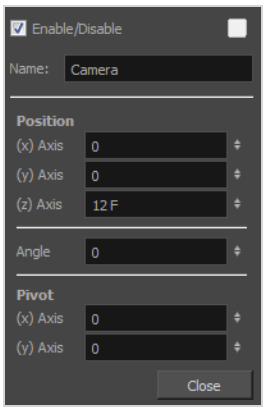
Camera Layer **409**

Peg Layer **410**

Quadmap Layer **412**

Camera Layer

You can setup the camera position by entering coordinates and values in the Layer Properties view.



Parameter	Description
Enable/Disable	Turns the camera layer on or off.
Change Track Colour	The Change Track Colour button lets you change the colour of the exposed frames; this helps you to quickly locate a layer in the Timeline view. Click the Change Track Colour button to open the Select Colour window and choose a new colour. You can modify the colour for any type of layer, such as group, peg, drawing, and effects.
Name	Displays the current layer name. You can rename the layer by typing in a new layer name.
Position	Displays the current position of the camera layer using X-axis (East/West), Y-axis (North/South) and Z-axis (Forward/Backward) coordinates. To reposition your camera frame, type in the new values corresponding to the desired position coordinates. You can also use the up and down arrows to set the value of each field.
Angle	Displays the current rotation value. To set a new rotation position, type in a new angle value. You can also use the up and down arrows to set the new angle value.
Pivot	Displays the current position of the rotation pivot of the camera layer. The camera will perform a rotation taking the position of the pivot as its angle centre. By default, the pivot is set at the centre of the camera frame. To reposition the pivot point, enter new X and Y coordinates values in the appropriate field. To see the pivot's position, the Rotate tool must be selected.

Peg Layer

Find below a description of all the Peg node parameters.

Transformation Tab

Parameter	Description
Position	**3D Path**: Use a 3D path to position the element. A 3D path uses a single function to define the position on the X, Y and Z axes. This function is made of control points linked by a curvilinear path, making the movement follow a natural curve. The pace and ease of the movement is determined by a single velocity function. **Separate**: Positions the element using separate functions for the X, Y and Z axes. This allows to control the direction and pace of the movement across all three axes separately. Unless ease is applied to the axes, the trajectory of the element will follow straight lines going between each keyframe. **Path:** If the 3D Path option is selected, this field allows you to create or select the 3D Path function used to position the element. **Path (x) Axis**: The position of the element on the East-West axis, in fields. **Path (y) Axis**: The position of the element on the South-North axis, in fields. **Path (z) Axis**: The position of the element in the Back-Front axis, in fields. **Velocity:** If the 3D Path option is selected, this function is used to control the pace at which the element moves towards each control point in the 3D Path function, on all three axes simultaneously.
Scale	**Locked**: Uses a single scale parameter to scale the element, preserving its proportions. **Separate**: Uses a separate parameter to scale the element on the X and Y axis, allowing to stretch or squash the element. **(x) Axis:** The horizontal scale factor. The default value is 1. **(y) Axis:** The vertical scale factor. The default value is 1. **Scale in Fields**: With this option enabled, the scale factor is based on the amount of fields in the scene. For example, to shrink one of the dimensions of an element to half its original size, the scale factor would normally bet set to 0.5. If this option is enabled and the amount of fields in the scene is 12, then the scale factor to shrink the element by half would be 6. **Ignore Parent Scaling**: When this option is enabled, any scaling value applied to a parent layer is ignored in the current layer. This can be handy in cut-out rigs when you need to scale an arm without affecting the forearm.
Rotation	**Angle z**: Lets you type in a degree value for the rotation angle. Note that you can

	enter values greater than 360 and -360 degrees. If you enter 720, the object will rotate twice.
Skew	**Skew**: Lets you type in a degree value between -90 to 90 for the skew angle.
Pivot	**(x) Axis**: The horizontal position of the pivot point of the element relative to the pivot point of the drawing, in fields. **(y) Axis**: The vertical position of the pivot point of the element relative to the pivot point of the drawing, in fields.

Quadmap Layer

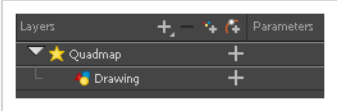
T-COMP2-010-001

The Quadmap transformation layer lets you deform the shape of an element. For example, you can use it to create a drop-shadow effect on an element.

You can edit the Quadmap visually in the Camera view.

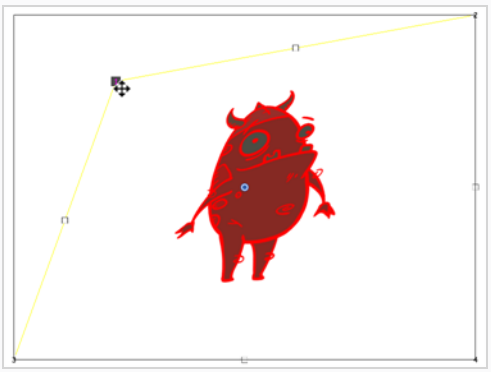
How to edit the Quadmap in the Camera view

1. In the Timeline view, click the Add Layer button and select **Quadmap**.
2. Connect the drawing you want to deformto the Quadmap.



3. In the Tools toolbar, disable the Animate mode to change the value for the Quadmap over the entire duration of the element.
4. In the Timeline view, click on the Quadmap layer to select it.
5. From the top menu, select **View > Show > Control** or pressShift + F11.

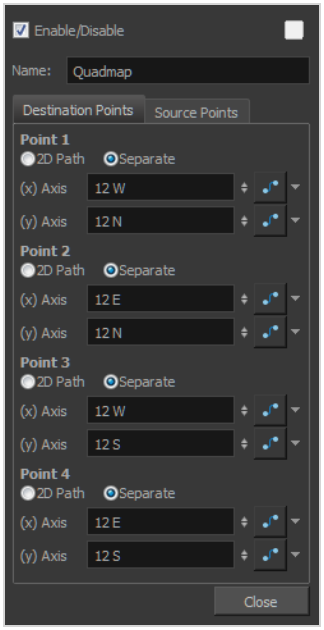
   The quadmap handles appear around the element in the window. There is also a pivot point at the centre of the quadmap frame that you can reposition.
6. In the Camera view window, use the Transform tool to move the points on the quadmap. Shift + click to select multiple points.



TIP

The position of the points can be animated. To do this, open the Quadmap layer layer properties and create functions for each of the coordinates.

Properties

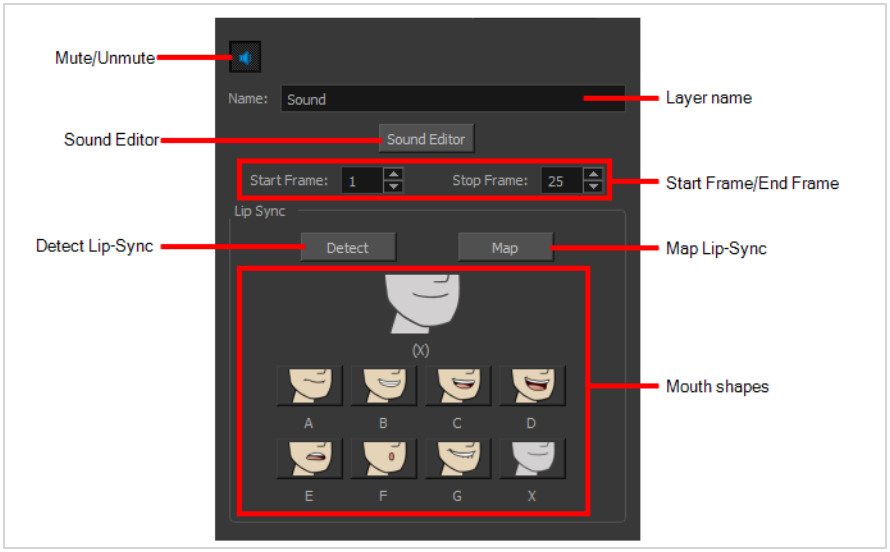


Parameter	Description
Name	Allows you to change the name given to the node.
2D Path	Changes the X and Y values simultaneously and control the velocity of the change.

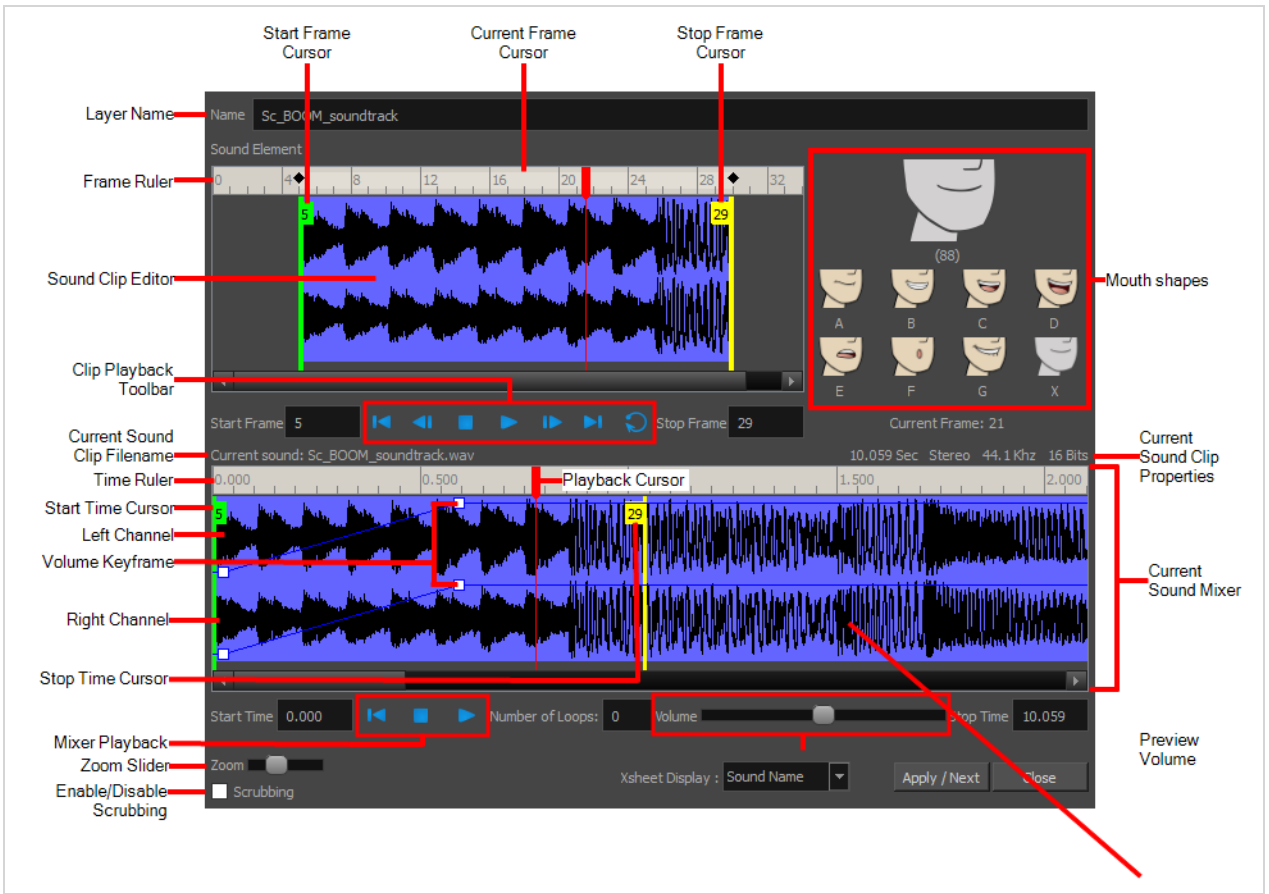
Separate	Changes the X and Y values separately. Each one can be attached to separate function curves.

Sound Layer

When you select a sound layer in the Timeline view, the options related to that layer appear in the Layer Properties view.

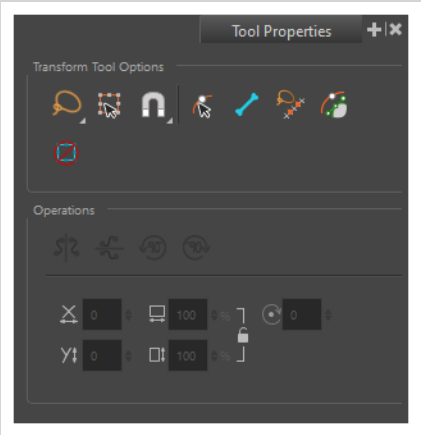


If you double-click on a sound layer in the Timeline view, or in a sound column in the Xsheet view, the Sound Element Editor dialog will open. This dialog allows you to fine-tune the sound track's lip sync, start time, stop time and volume.



Chapter 4: Tools Properties

Harmony has a wide variety of drawing and manipulation tools and each one of them has a series of options and modes available in the Tool Properties view. This section covers these options.



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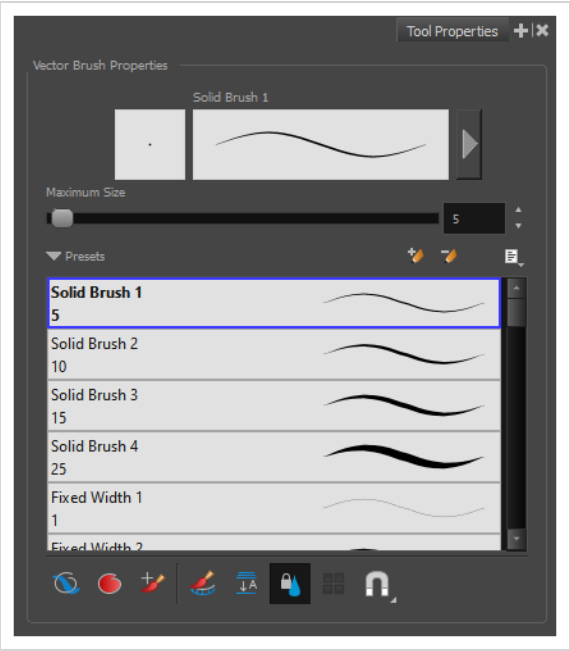
Brush Tool Properties

The Brush tool allows you to draw by creating shapes based on your drawing strokes and filling them with colour or textures. When used with a tablet, it is pressure sensitive, just like a real life brush.

How to access the Brush tool properties

1. In the Tools toolbar, select the Brush tool.

   The tool's properties are displayed in the Tool Properties view.



Brush Properties

The following properties affect the brush's size, smoothing and other properties for the drawing style of your brush. Those properties can be saved into brush presets for later use.

Property	Description
Preview Area	The Preview area lets you see a preview of the stroke your drawing tool will make.
Brush Properties Dialog	The arrow button right of the preview area opens the Brush Properties dialog.

Property	Description
	 While the Tool Properties view only gives you access to a few of the brush properties, a list of brush presets and other drawing options, the Brush Properties dialog gives you access to all the available options for your brush's tip and texture. For more information on the Brush Properties dialog, see the Brush Properties Dialog section below.
Maximum Size	Defines the maximum width of brush strokes. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Flow	Allows you to set the opacity for each instance of the brush tip that gets printed into your canvas. Contrary to the Opacity parameter, the flow parameter has a cumulative effect. This means that a lower flow will make your brush strokes more transparent towards its extremities and more opaque in its center. Your stroke's flow will also accumulate if you draw over it. By default, your brush's flow varies with the amount of pressure you put on your tablet pen. **NOTE** This option is only displayed in the Tool Properties view when drawing on a bitmap layer.
Opacity	The Opacity parameter are where Lets you set the opacity of your brush strokes. Contrary to the Flow parameter, the Opacity parameter is non-cumulative. Your whole brush stroke's opacity will not exceed the Opacity parameter. By default, the Opacity parameter varies depending on the amount of pressure you put on your tablet pen. **NOTE** This option is only displayed in the Tool Properties view when drawing on a bitmap layer.

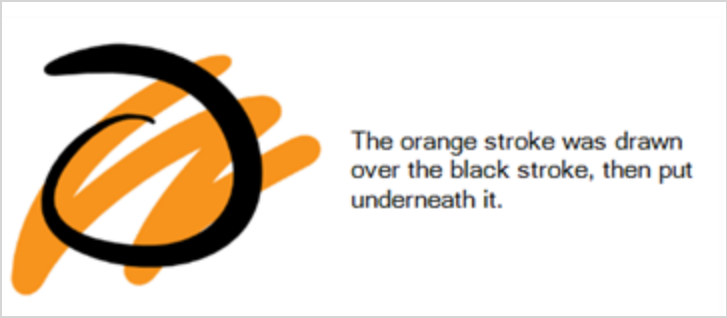
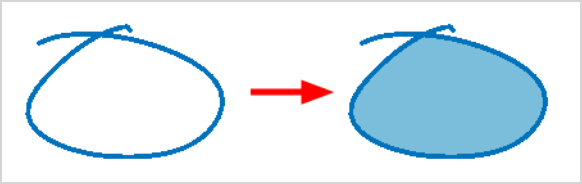
Brush Presets

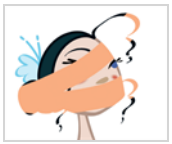
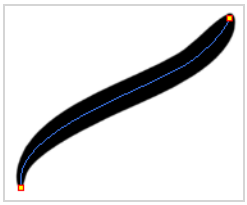
These options allow you to select, create and manage brush presets.

Icon	Property	Description
	Presets list	By default, Harmony has preloaded brush presets. You can also create your own brush presets by configuring your brush, then saving its properties into a new preset. It is also possible to export and import brush presets.
	New Brush Preset	Creates a new preset based on the current tool properties.
	Delete Brush	Deletes the currently selected preset.
	Brush Presets Menu	Open a menu that contains the following options: • **New Brush Preset:** Creates a new preset based on the current tool properties. • **Delete Brush:** Deletes the currently selected preset. • **Rename Brush:** Allows you to rename the currently selected preset. • **Import Brushes:** Allows you to import brush presets exported from Harmony. • **Export Brushes:** Allows you to export your brush presets into an `.xml` file. • **Small Thumbnail:** Displays presets in a grid of small thumbnails with a preview of their tip. • **Large Thumbnail:** Displays presets in a grid of big thumbnails, with their name and a preview of their tip. • **Stroke View:** Displays presets in a list, with their name and a preview of a stroke done with each preset.

Drawing Options

These options affect the way your drawing strokes are added to your artwork.

Icon	Property	Description
	Draw Behind	When enabled, your brush strokes will appear behind the existing artwork.  **NOTE** Your brush stroke will temporarily appear over your artwork as you draw it, until you release the mouse cursor or tablet pen.
	Auto Fill	When enabled, drawing a closed shape will automatically fill it with the currently selected Paint colour.  **TIP** By default the pencil line and its fill will be the same colour. To select different colours for the line and its fill, do the following: 1. In the Colour view, click the Unlock Three Colours button. 2. Click on the Set Current Brush Colour swatch. Then, in the colour list, select the desired colour swatch for your outline. 3. Click on the Set Current Paint Colour swatch. Then, in the colour list, select the desired colour swatch for the fill.
	Repaint Brush	When enabled, your brush strokes will only repaint existing artwork and

		will not add colour to empty areas. If you repaint semi-transparent artwork, your artwork will not become more opaque than it already is. 
	Automatically Create Colour Art	As you draw in the Line Art layer, the Automatically Create Colour Art option instantly creates the corresponding strokes in the Colour Art layer.  **NOTE** This option is only available when drawing on a vector layer.
	Auto-Flatten Mode	By default, when drawing on a vector layer, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork. **NOTE** This option is only available when drawing on a vector layer. When drawing on a bitmap layer, artwork is always flattened.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping mode: • **Snap to Alignment Guides:** While drawing, the drawing tool will snap against nearby alignment guides.

	Respect Protected Colour	In the Colour view, it is possible to make some of the colours in your palettes protected from change. When enabled, the Respect Protected Colour option will prevent the brush tool from drawing over areas filled with a protected colour. **NOTE** This option is only available when drawing on a vector layer. When drawing on a bitmap layer, colour is not linked to your palettes and cannot be protected.
	Use Stored Colour Gradient	The Use Stored Colour Gradient option can be used when painting with a gradient colour to always position the gradient in the same way it was stored, making it consistent across brush strokes. You can store a gradient by selecting a zone painted with a gradient with the Select tool, then clicking on Store Colour Gradient in the Tool Properties view. **NOTE** This option is only available when drawing on a vector layer.

Brush Properties Dialog

Brushes have an extensive set of options and properties that are not displayed in the Tool Properties view, but rather, in a dialog you can access from it. To open the Brush Properties dialog, click on the arrow button right of the stroke display area.

The Brush Properties dialog has five different tabs, minus the Smoothing tab if you are working on a bitmap layers. Below is detailed information about the options available in each tab:

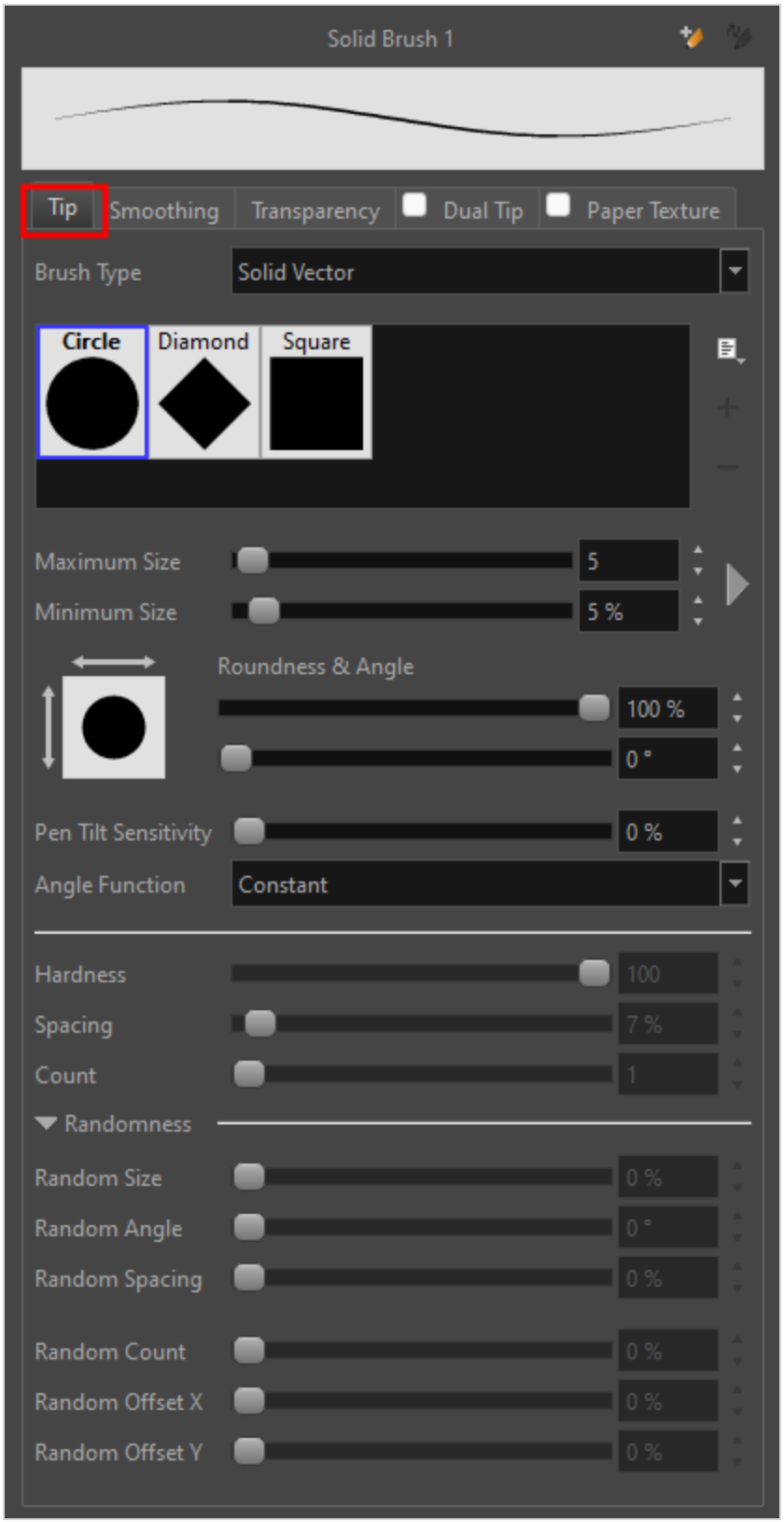
- *Tip Tab* on page 423
- *Smoothing Tab* on page 433
- *Transparency Tab* on page 434
- *Dual Tip Tab* on page 437
- *Paper Texture Tab* on page 441

Tip Tab

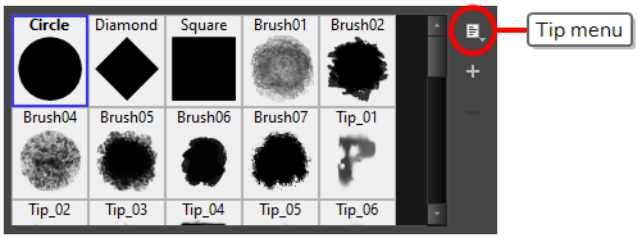
The Tip tab allows you to configure the shape, size, hardness and spacing of your brush tip.

NOTE

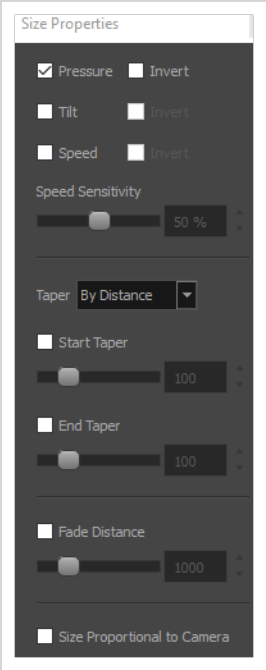
The "Size Proportional to Camera" option has been moved to the new Size Properties window.



Property	Description

Brush Type	Allows you to select between one of the following brush types: • **Solid Vector Brush:** Creates vector shapes filled with a solid colour. Makes artwork lightweight, scalable and easy to tweak. Since this kind of brush can only create solid colour shapes, solid vector brushes have a limited set of options including size, roundness, angle, centerline smoothing and contour smoothing. • **Textured Vector Brush:** Creates vector shapes filled with a texture. This gives you access to bitmap brush tips, paper textures, transparency and several other options. **NOTE** This option is not available when working on a bitmap layer. With bitmap layers, brushes are always textured, and textured brush options are always available.
Brush Tip Library	 This is where you select the shape of the brush tip. By default it is round. Note that some tips are designed to have semitransparent areas, even when the maximum brush opacity is set to 100%. To create a custom brush tip, you must prepare the file ahead of time, either in Harmony or in a third-party software, such as Adobe Photoshop. Colour is not supported and transparency is not supported in the traditional sense. Black appears as 100% opaque, white appears as 100% transparent and all the shades of grey in between appear as varying degrees of semitransparency. A range of file formats are supported—.jpeg, .png, .tif, .psd, .tga to name a few. Alpha channels are disregarded on import. It is recommended that your file be between 100 x 100 pixels and 400 x 400 pixels. You can also import brush tips that you exported from Harmony, so you can share them with colleagues.
Minimum and Maximum Size	The minimum and maximum sizes of your drawing tool produce the thick and thin effect on your stroke. This works with the pressure sensitivity of a pen tablet. • **Maximum Size:** Defines the maximum width of the stroke. • **Minimum Size:** Defines the minimum width of the stroke in relation to and as a percentage of the maximum size.

You can control the size properties by clicking on the arrow button on right and the dialog box will appear as shown below.



- **Pressure:** Allows you to apply more pressure and increases the size of the brush. You can check the box to invert this behaviour.
- **Tilt:** Allows you to tilt the pen closer to tablet for a bigger stroke. You can check the box to invert this behaviour.
- **Speed:** Allows you to reduce the size of the stroke by drawing at a fast speed. You can check the box to invert this behaviour.
- **Speed Sensitivity:** A slider is used to control how fast must the stroke be drawn to reach the minimum value.
- **Taper:** Allows you to reduce the value of a property at the start or the end of each stroke. The value can be expressed using two options: **Distance and Percentage**. Distance is selected by default. For example: A taper of 200 will be the same length as the width (diameter) of a stroke that has its size set at 200.

You can enable Start and End Tapering option individually.

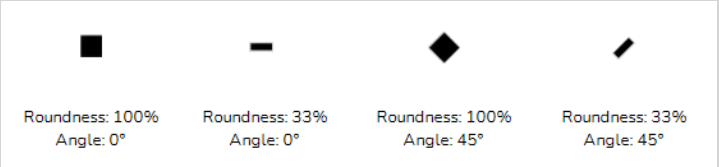
- **Start Taper:** When distance is selected as a Taper value, the effect of start taper can be visualized as the stroke is drawn.
- **End Taper:** When distance or percentage is selected as a Taper value, the effect of end taper can be visualized once the stroke is complete and

<table>
<tr>
<td></td>
<td>
vectorized as the length is unknown until the stroke is complete.

Fade Distance: Allows you to fade the value of property over a given distance. It uses the same units as the size and is applied as the stroke is drawn.
Size Proportional to Camera: If you check this option, the size of the will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the will be proportionally bigger.

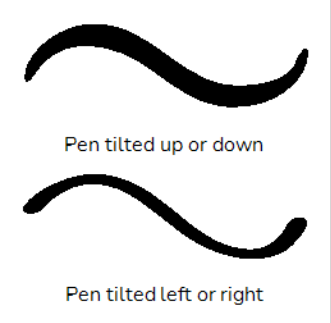
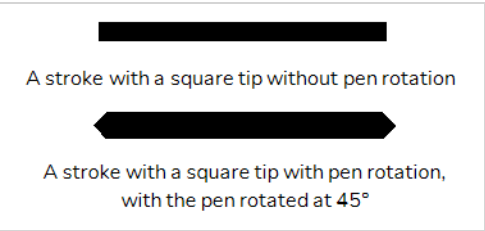
NOTE
Setting the Minimum Size value to 100% eliminates the possibility of creating width variation on your stroke. In other words, you would be forcing a uniform line width using the Maximum Size value.
</td>
</tr>
<tr>
<td>Roundness and Angle</td>
<td>
The Roundness and Angle parameters allow you to change the shape and orientation of the tip.

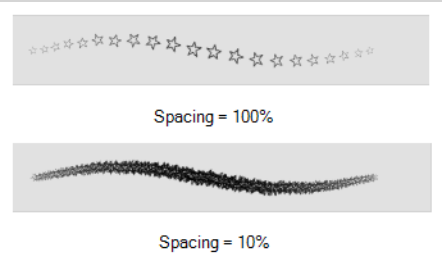
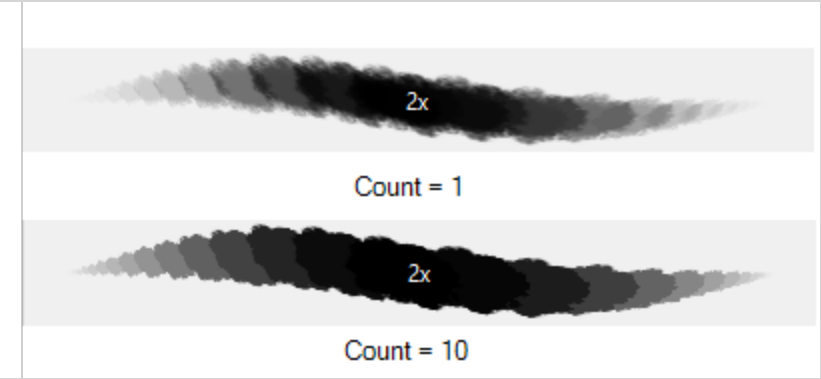
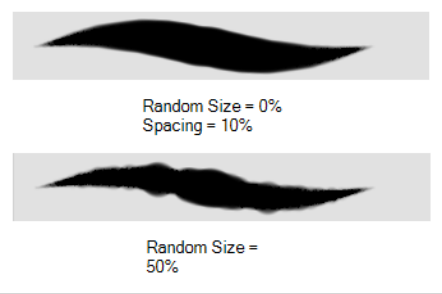
Roundness: The vertical scaling to apply to the tip. Reducing this setting squashes the tip vertically, allowing you to turn round or square tips into flat tips.
Angle: The angle at which to rotate the brush tip, counterclockwise.

NOTE
The squashing is not relative to the angle—if the tip is rotated, the squashing will still be done relative to the tip's original orientation.


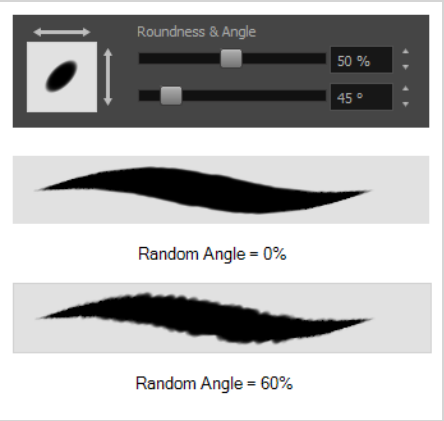
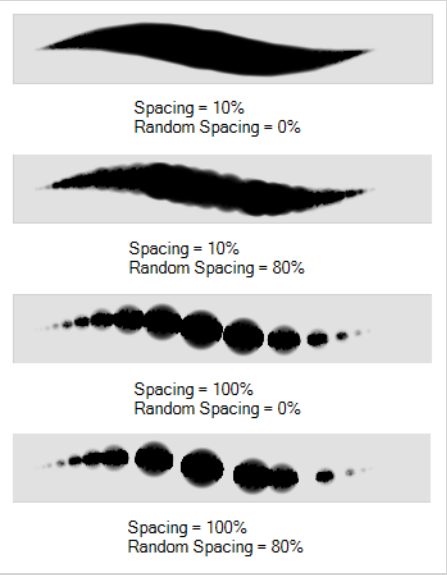
</td>
</tr>
<tr>
<td>Pen Tilt Sensitivity</td>
<td>
If your pen and tablet support tilt sensitivity, this option allows you to set whether your brush takes your pen's tilt angle into account, and how much.

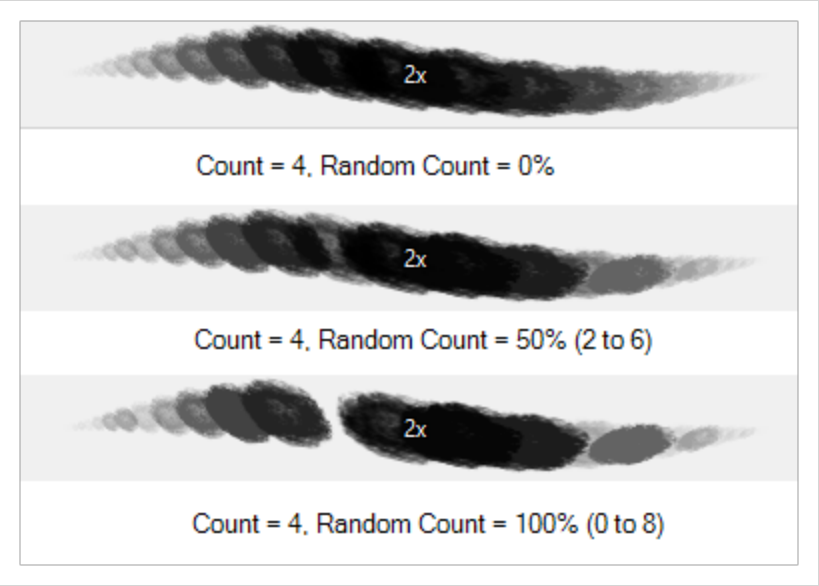
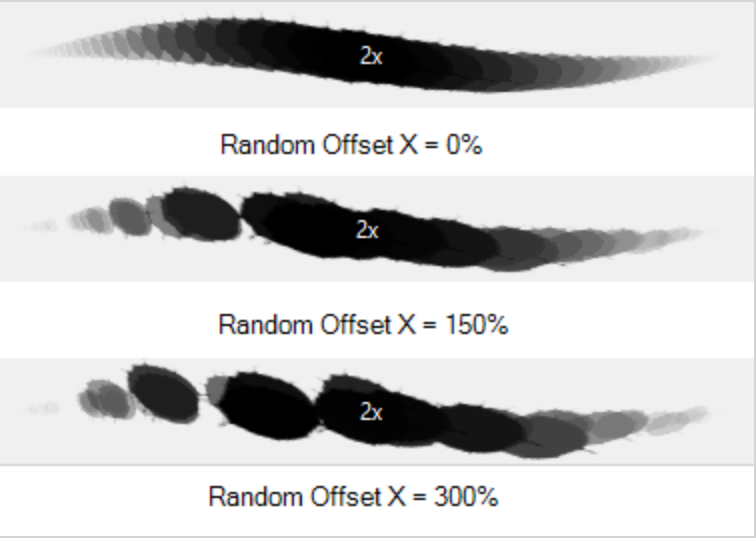
When your pen is fully tilted, your brush tip will be stretched by the percentage you set in this parameter, in the angle in which you tilt it. For example, if you set the Pen Tilt Sensitivity to 50%, and you tilt your pen all the way up or down, your brush tip will be stretched vertically by 50%. With the same setting, if you tilt your pen all the way left or right, your brush tip will be stretched horizontally by 50%.
</td>
</tr>
</table>

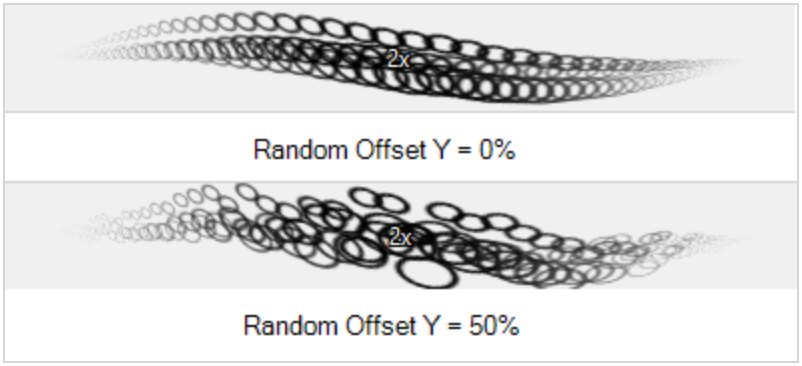
	
Angle Function	If enabled, your brush tip will rotate with the angle of your pen tip. You can select one of the following options: • **Constant:** The static orientation of the brush tip expressed in degrees. • **Heading:** The orientation of the brush tip is determined by the direction in which the stroke is drawn. It changes dynamically as the stroke is drawn. • **Azimuth:** When the pen is tilted, it uses the direction in which the pen eraser is facing. • **Twist (if supported by pen):** It uses the twist angle of the stylus and is only available with Wacom Art Pen. 
Hardness	The hardness value corresponds to the softness of the brush tip's edges. The lower the value, the softer the tip edge. The higher the value, the sharper the tip edge. Be aware that some brush tips are not 100% opaque, so they will always appear somewhat soft, even at 100% hardness.
Spacing	Defines the amount of space between each stamp of the brush. A value of 100% sets the stamp marks edge to edge, if there is no white space around the shape. The larger the value, the greater the space between marks. A really large value can make the brush stroke appear as a string of individual marks. Conversely, a small spacing value will give the appearance of a fluid brush stroke. Spacing is only evident when making a continuous stroke.

<table>
<tr><td></td><td> 
</td></tr>
<tr><td>Count</td><td>Defines the number of stamps for each space in the brush stroke. This will create the appearance of thicker stamps in the brush stroke.
 
</td></tr>
<tr><td>Random Size</td><td>You can create variation between the thick and thin of your brush stroke just by setting the Maximum and Minimum Size values. If you add randomness to the mix, pressure sensitivity from your drawing tablet will still be applied. Light pressure will create random values around the minimum, while heavy pressure will create random values closer to the maximum. The larger the percentage, the larger the range of random variation.
 

NOTE
Setting the Minimum Size to 100% eliminates the possibility of creating width variation on your stroke, whether you are applying randomness or not. Therefore, you would be forcing a uniform line width using the Maximum Size value.</td></tr>
</table>

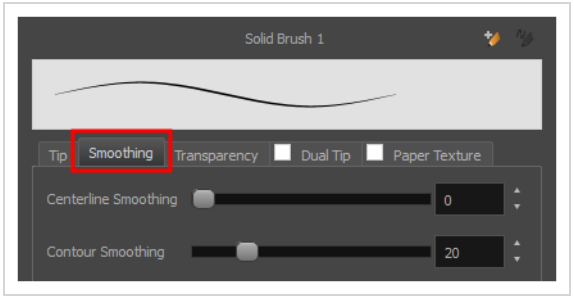
Random Angle	Sets the range for random rotation around the set Angle value. For example, if the Angle is set to 45° and the Random Angle set to 10°, the software will choose values between 40°–50° (plus or minus 5 degrees, equaling a total of 10 degrees). 
Random Spacing	Sets the range for random spacing around the set Spacing value. For example, if the Spacing is set to 50% and the Random Spacing is set to 10%, then Harmony will choose values between 45%–55% (plus or minus 5 percent, equaling a total of 10 percent). 
Random Count	Sets a varying number of stamps at each step in the textured brush stroke. The randomization is based on an entered percentage. The range in number of stamps depends on what is entered in Count. For example, if 4 is entered, and the Random Count percentage is set to 50%, then the range will be from 50% less than 4 to 50% more than four (2 to 6). The range will be 2 (50% less than 4) to 6 (50% more than 4).

	If 4 is entered, and the Random Count percentage is set to 100%, then the range will be from 100% less than 4 to 100% more than four (0 to 8). The range will be 0 (100% less than 4) to 8 (100% more than 4). 
Random Offset X	Sets a randomized variation in horizontal distance between the applied stamp and the previous stamp in the brush stroke. You may enter between the percentage values of 0% and 300%. 
Random Offset Y	Sets a stamp to be applied with a randomized vertical placement. As a result, the brush stroke will have the appearance of being thicker. You may enter between the percentage values of 0% and 300%.

Smoothing Tab

The Smoothing tab contains options to configure how Harmony should automatically smooth your brush strokes as you paint.



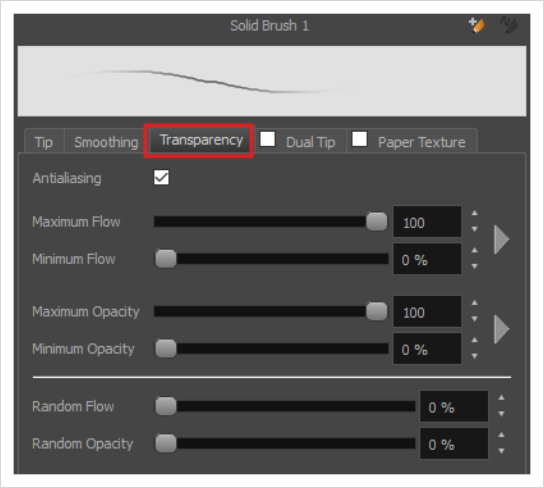
NOTE

The Smoothing tab is only available when working on a vector layer, as bitmap layers do not support smoothing.

Property	Description
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on the central line of the brush stroke. A higher setting will prevent your line from being shaky, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on the outer contour of the brush stroke. A higher setting will round sharp corners and reduce the amount of control points for the resulting vector shape.

Transparency Tab

The Transparency tab allows you to decide if your brush has antialiasing as well as to set its flow and opacity settings.



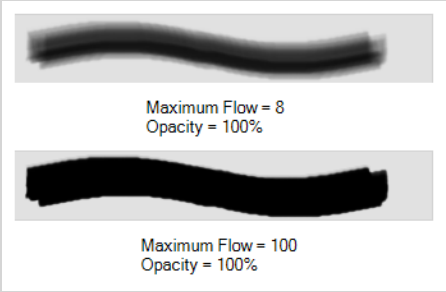
NOTE

The Transparency tab's options are only available on vector layers if the **Brush Type** option of the Tip tab is set to **Textured Vector Brush**. On bitmap layers, those options are always available.

Property	Description
Antialiasing	Enabled by default. This option causes the contours of the brush strokes to blend with the surrounding colours, to create an illusion of smoothness otherwise not possible due to the picture resolution. If antialiasing is disabled, the brush's texture will only render fully transparent or fully opaque pixels. Disabling this option can be useful if you need your outlines to be very crisp, if you want to make pixel art or if you need your brush strokes to render in solid colors with no variation, which makes them easier to repaint or process in third party software. **NOTE** When disabled, all other options in the Transparency tab are disabled.
Maximum and Minimum Flow	The Maximum and Minimum Flow parameters let you set the range for the rate at which paint flows from your brush. The analogy works better with a pen. The greater the flow, the more ink comes out, hence the more consistent the colour and texture of the line. If the flow is light, then the colour and texture of the line may look spotty. This feature works with the pressure sensitivity of a pen tablet.

<table>
<tr>
<td></td>
<td>

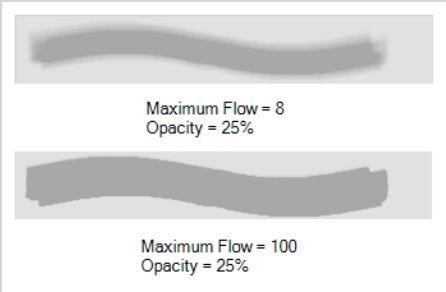
Maximum Flow: Sets the maximum rate at which colour and texture are applied as you create a fluid stroke.
Minimum Flow: Sets the minimum rate at which colour and texture are applied as you create a fluid stroke. It is defined as a percentage of the Maximum Flow value. If the Minimum Flow value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The flow will be set to the constant rate of the Maximum Flow value.



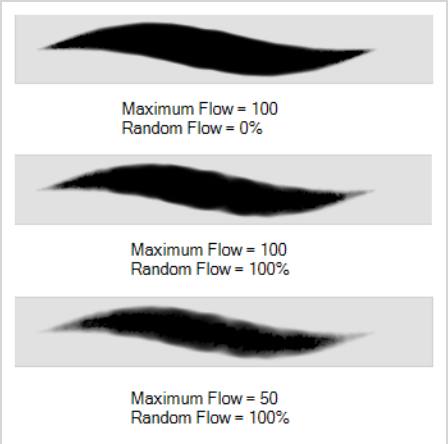
You can control the flow properties by clicking on the arrow button on right and the dialog box will appear same as shown for size properties above. Minimum and Maximum Size on page 426.

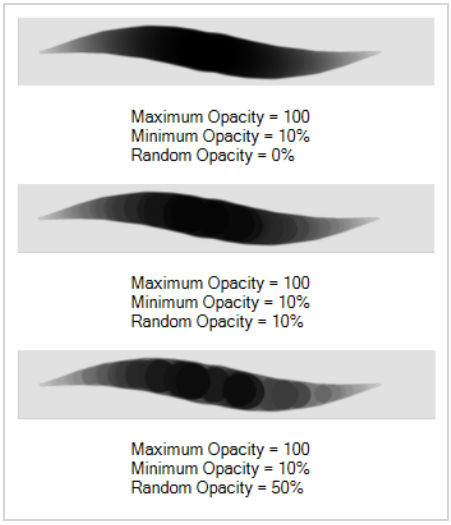
</td>
</tr>
<tr>
<td>Maximum Opacity and Minimum Opacity</td>
<td>
The Maximum and Minimum Opacity parameters are where you set the opacity range for a brush mark. This works with the pressure sensitivity of a pen tablet.

Maximum Opacity: Sets the transparency limit of the brush mark when the pressure is heavy.
Minimum Opacity: Sets the transparency limit of the brush mark when the pressure is very light. It is defined as a percentage of the Maximum Opacity value. If the Minimum Opacity value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The opacity will be set to the constant rate of the Maximum Opacity value.



You can control the opacity properties by clicking on the arrow button on right and the dialog box will appear same as shown for size properties above. Please refer Minimum and Maximum Size on page 426
</td>
</tr>
</table>

Randomness	Th Randomness parameter lets you set the range for the randomness of the flow and opacity. This works with the pressure sensitivity of a pen tablet.
Randomness Flow	You can create variation in the flow of your brush stroke just by setting the Maximum and Minimum Flow values. If you add randomness to the mix, pressure sensitivity from your drawing tablet will still be applied. Light pressure will create random values around the minimum, while heavy pressure will create random values closer to the maximum. The larger the percentage, the larger the range of random variation.  **NOTE** Setting the Minimum Flow value to 100% eliminates the possibility of creating flow variation on your stroke, whether you are applying randomness or not. That is, you would be forcing a uniform flow using the Maximum Flow value.
Random Opacity	You can create variation in the opacity of your brush stroke just by setting the Maximum and Minimum Opacity values. If you add randomness to the mix, pressure sensitivity from your drawing tablet will still be applied. Light pressure will create random values around the minimum, while heavy pressure will create random values closer to the maximum. The larger the percentage, the larger the range of random variation.



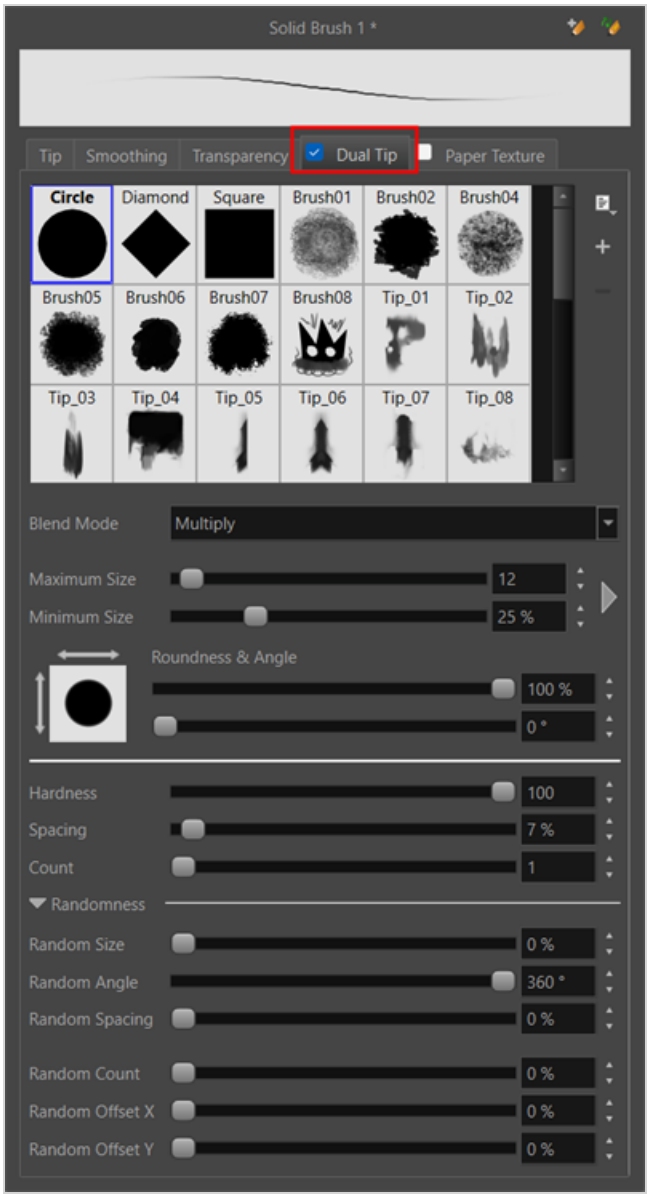
NOTE

Setting the Minimum Opacity value to 100% eliminates the possibility of creating opacity variation on your stroke, whether you are applying randomness or not. That is, you would be forcing a uniform opacity using the Maximum Opacity value.

Dual Tip Tab

The Dual Tip tab lets you set the parameters for creating a dual tip brush. The primary bitmap brush tip and the dual tip always work together. You can set the parameters for the primary tip in the Tip tab and those for the dual tip in the Dual Tip tab. The Blend mode you select determines how the tips are combined.

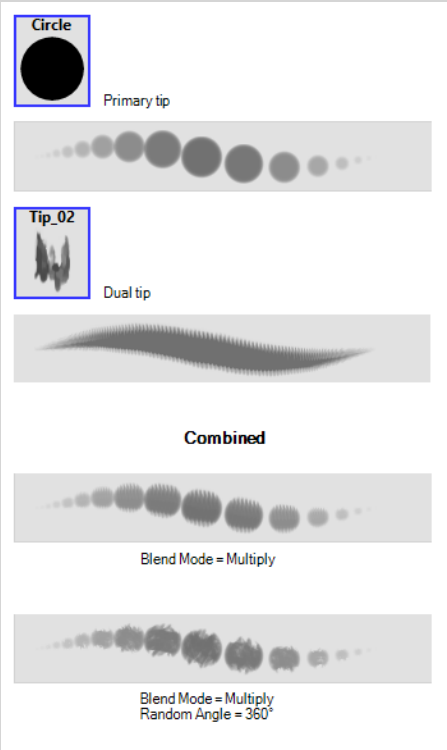
By default, the Blend Mode is set to Multiply and the Random Angle to 360°.

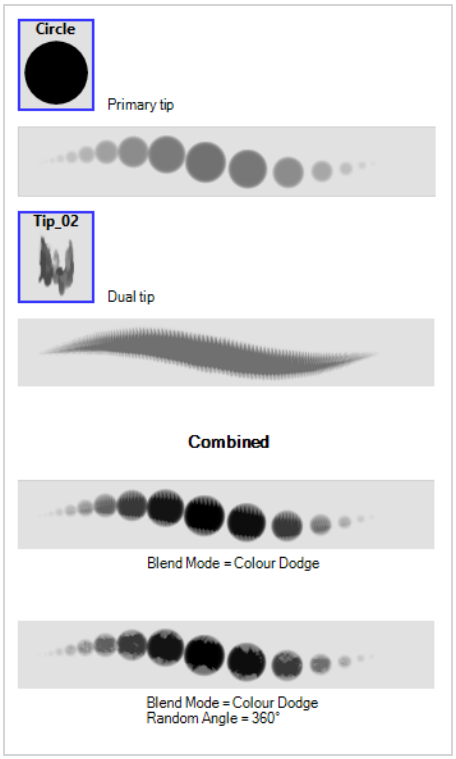


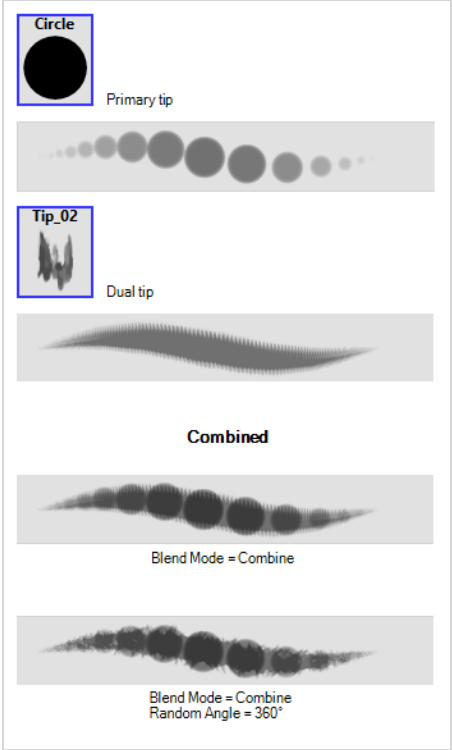
NOTE

To use a Dual Tip, you must enable option by checking the checkbox inside the **Dual Tip** tab. Additionally, if you are working on a vector layer, the **Brush Type** option of the Tip tab must be set to **Textured Vector Brush**.

Property	Description
Enable/Disable	The checkbox inside the tab allows you to decide whether or not your brush uses a dual tip. If this checkbox is unchecked, the options in the Dual Tip tab will be disabled.

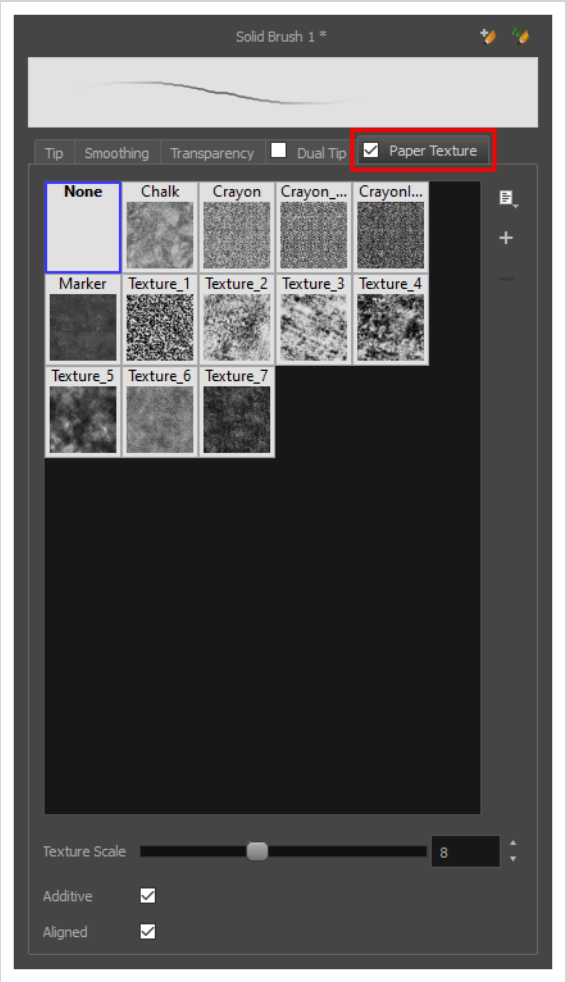
Property	Description
Blend Mode	The Blend modes let you decide how the primary tip and the dual tip are combined.
Multiply	This is the default blend mode. When the two brush tips are combined in this mode, they essentially cut each other out in overlapping areas, where one or both tips have an area of 100% transparency. The less opaque the brush tips are, the lighter their combination. 
Colour Dodge	In this mode, the primary tip cuts out the shape of the dual tip. Where the tip shapes overlap, within the boundaries of the primary shape, the colour and opacity appear darker.

Property	Description
	
Combine	This mode treats the two tips as two different and separate brushes that have the same colour and follow the same path.

Property	Description
	

Paper Texture Tab

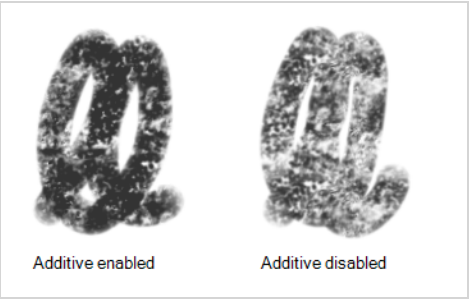
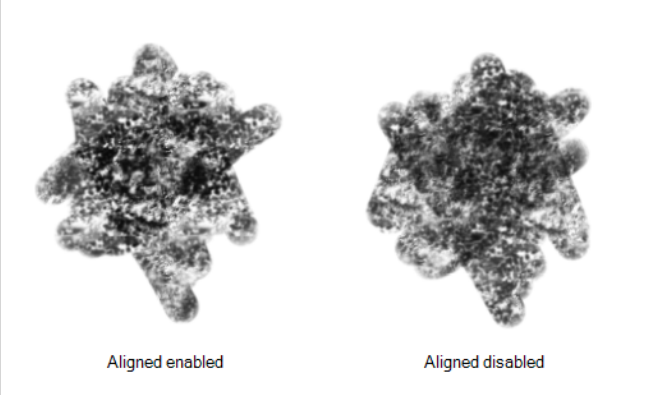
The Paper Texture tab lets you configure a paper-like texture for your brush. You can also add textures by importing image files, or import paper textures that were previously exported from Harmony.



NOTE

To use a Paper Texture, you must enable option by checking the checkbox inside the **Paper Texture** tab. Additionally, if you are working on a vector layer, the **Brush Type** option of the Tip tab must be set to **Textured Vector Brush**.

Property	Description
Enable/Disable	The checkbox inside the tab allows you to decide whether or not your brush uses a paper texture. If this checkbox is unchecked, the options in the Paper Texture tab will be disabled.
Texture Scale	Increase or decreases the size of the paper texture.
Additive	This option layers the texture on top of itself as you scribble overlapping lines in one continuous stroke. If this option is turned off, areas of overlapping lines from a single, continuous stroke will appear the same, in terms of darkness and texture, as non-

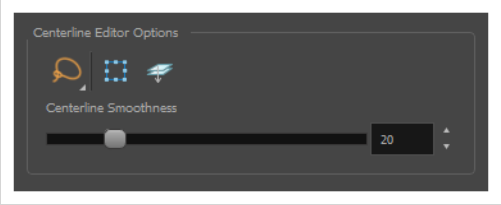
Property	Description
	overlapping areas. 
Aligned	This option defines the way separate, overlapping strokes behave. If this option is enabled, the paper texture's position does not change with each sweep of the brush. If this option is disabled, each sweep of the brush produces a different texture position. The texture orientation always stays the same. 

Centerline Editor Tool Properties

The Centerline Editor tool allows you to edit brush strokes by their centreline rather than by their contour. This makes it easier to tweak the tips, curves and corners of brush strokes. The purpose of this tool is to make it as easy to edit brush strokes as it is to edit pencil lines with the Contour Editor tool.

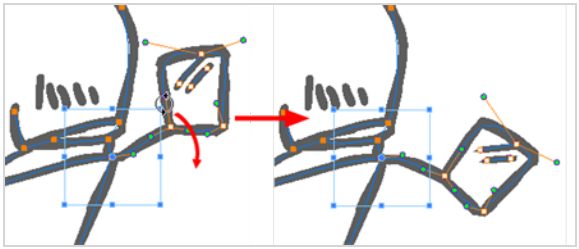
How to access the Centerline Editor tool properties

1. In the Tools toolbar, select the Centerline Editor tool.
2. The tool's properties are displayed in the Tool Properties view.



Tool Options

Icon	Property	Description
	Selection Mode	Allows you to choose the method to visually select multiple elements: • **Lasso:** Allows you to select multiple elements by drawing an irregular closed shape around them with your mouse. • **Marquee:** Allows you to select multiple elements by drawing a rectangle around them. This is faster, as you only need to drag your mouse from one corner of the rectangle to its opposite corner, but it may not be as precise as you want. **TIP** You can press and hold the Alt key to temporarily use the other selection mode.
	Show Centerline Editor Controls	When enabled, selecting several control points will make a manipulator bounding box appear. You can use this manipulator to scale and rotate the selection of points.

Icon	Property	Description
		
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.
	Centerline Smoothness	Allows you to adjust the amount of control points on the centreline that is generated from the selected stroke. A lower value will create a centreline with less points, which makes it easier to manipulate large lengths of the stroke, and a higher value will generate a centreline with more points, allowing you to tweak details.

Close Gap Tool Properties

The paint tool requires the area you attempt to fill to be closed in order to know exactly what area of your artwork must be filled. However, it is common for artists to accidentally leave small gaps in their artwork.

The Close Gap tool allows you to quickly close small gaps in a shape by creating an invisible stroke connecting two extremities of the gap. You can then fill the area using the Paint tool, as this invisible stroke will be taken in account to determine the outline of the shape to fill.

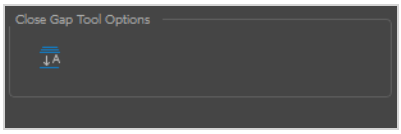
TIP

You do not need to use the Close Gap tool with precision. If you draw a crude stroke near the gap you want to close, the tool will automatically detect the two closest line extremities and will draw an invisible straight line connecting them. closing the gap between them.

How to access the Close Gap tool properties

1. In the Tools toolbar, select the Close Gap tool.

   The tool's properties are displayed in the Tool Properties view.



Tool Options

Icon	Property	Description
	Auto Flatten	The Close Gap tool creates an invisible drawing stroke to close the shape. Enabling this option will merge the stroke into the artwork instead of adding the stroke on top of it. **NOTE** The area you close with the Close Gap tool will be fillable regardless of whether or not this option is enabled.

Colour Eyedropper Tool Properties

The Colour Eyedropper tool allows you to pick a colour from your drawing without going to the Colour view.

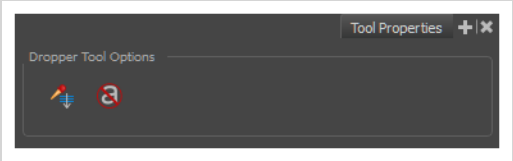
NOTE

The following options will only have an effect when picking colours from a bitmap layer, as they affect the colour that gets picked. When working on a vector layer, you can only pick colours that are available in one of the palettes in your scene. Therefore, the colour you pick will always be exactly the colour that was used to fill the shape or stroke you clicked on.

How to access the Colour Eyedropper tool properties

1. In the Tools toolbar, select the Colour Eyedropper tool.

   The tool's properties are displayed in the Tool Properties view.

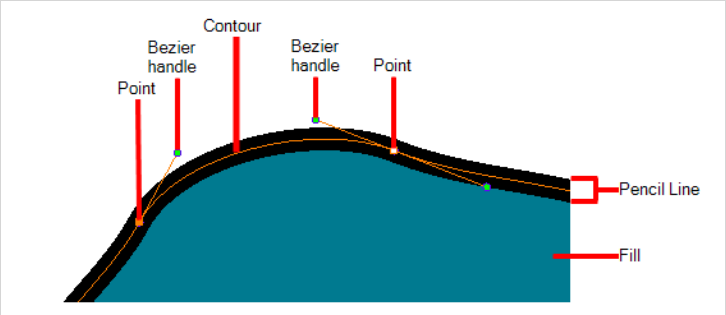


Icon	Property	Description
	Sample All Layers	By default, the Colour Eyedropper tool picks the colour from the active drawing layer only. This means that if the colour is semi-transparent, it will still only take the colour from the active layer, along with its transparency, and ignore the colours from layers behind it. With this option enabled, the Colour Eyedropper tool will pick the colour as it appears on the screen instead, allowing you to pick colours that are the result of several layers composited together.
	Do Not Pick Transparency	By default, the Colour Eyedroppertool picks the colour's alpha value as well as its colour values. When enabled, the colour picked will always have an alpha value of 255.

Contour Editor Tool Properties

The Contour Editor lets you reshape vector shapes, brush strokes and lines in your drawings.

Artwork in Harmony is made of vector shapes. Vector shapes are defined by points, the lines joining the points together (contours) and the curve vectors, represented by Bezier handles, which make the curve of said lines.

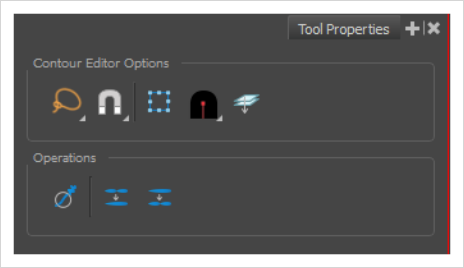


The Contour Editor tool allows you to select a contour or point, and change the position of points, add and remove points from the shape, rotate, lengthen and shorten curve handles to influence the curve of contours between those points, or drag contours between points to change their curve directly.

How to access the Contour Editor tool properties

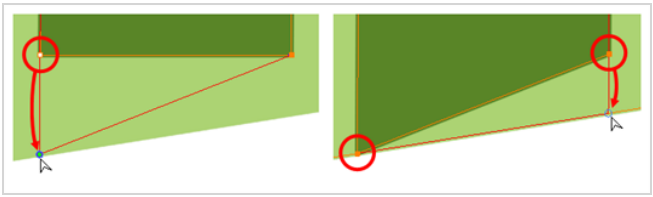
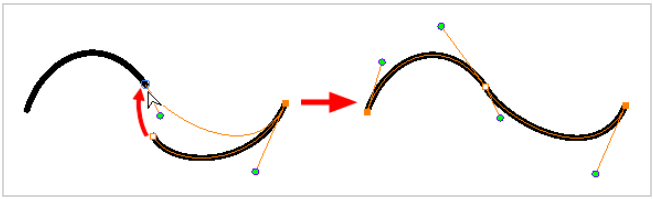
1. In the Tools toolbar, select the Contour Editor tool.

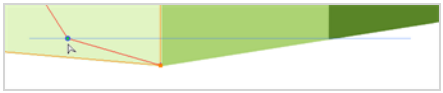
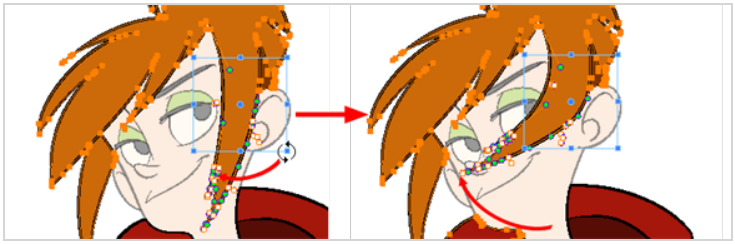
   The tool's properties are displayed in the Tool Properties view.

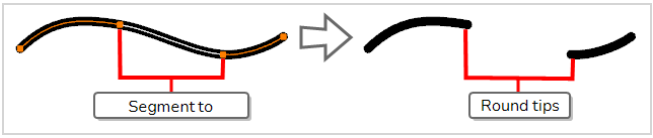
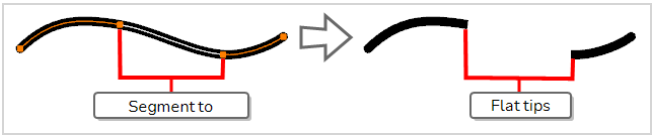


Tool Modes

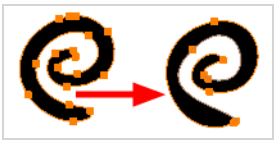
Icon	Property	Description
	Selection Mode	Allows you to choose the method to visually select multiple elements: • **Lasso:** Allows you to select multiple elements by drawing an irregular closed shape around them with your mouse. • **Marquee:** Allows you to select multiple elements by

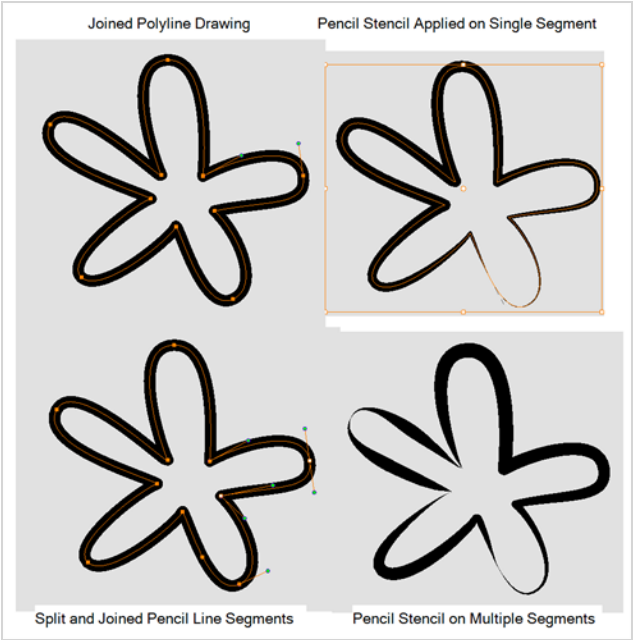
Icon	Property	Description
		drawing a rectangle around them. This is faster, as you only need to drag your mouse from one corner of the rectangle to its opposite corner, but it may not be as precise as you want. **TIP** You can press and hold the Alt key to temporarily use the other selection mode.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Contour:** When enabled, moving the control point in a contour near another contour will snap that control point against that contour. This will lock the point and the contour together, and moving the control point will deform the contour. This option can be especially useful if you need to makes the edges of two shapes snap together, like so:  You can also use this option to make a control point snap against another control point, allowing you to join lines together. 

Icon	Property	Description
		NOTE When a control point is snapped against a contour or another control point in your drawing, the Contour Editor will manipulate them together. However, even if you make a point in one drawing stroke snap against another drawing stroke, they will remain separate drawing strokes unless they are flattened together, and you will still be able to manipulate them individually with the Select tool. • **Snap to Alignment Guides:** While moving the selection or one of its control points, it will snap against nearby alignment guides. • **Snap and Align:** Snaps the selected anchor point to any existing line while displaying temporary rulers as a guide that you can also snap your anchor point to.  • **Snap to Grid:** While moving the selection, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '.
	Show Contour Editor Controls	When enabled, selecting several control points will make a manipulator bounding box appear. You can use this manipulator to scale and rotate the selection of points. 
	Tip Style	If you select and remove part of a pencil line, this option allows you to choose which kind of line tip the removed segment should leave behind:

Icon	Property	Description
		• **Tip Style: Round:** Leaves rounded tips at the extremities of the deleted line segment.  • **Tip Style: Flat:** Leaves flat tips at the extremities of the deleted line segment. 
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.

Operations

Icon	Property	Description
	Smooth Selection	The Smooth operation lets you smooth out selected drawing strokes and remove extra points.  **TIP** You can also smooth the selection by selecting **Drawing> Optimize > Smooth** from the top menu or by pressing Alt + Shift + S.

Icon	Property	Description
 	Split Pencil Line Join Pencil Lines	When drawing with the Polyline tool, your drawing has an even line thickness. You can use the Pencil Editor to adjust the thickness point by point, but if you want to adjust it quicker, you can use the Split Pencil Line and Point Pencil Lines options to create segments and apply a pencil stencil to your drawing. Note that if you did not join the pencil lines on your polyline stroke, the segments between the points will act as separated segments. 

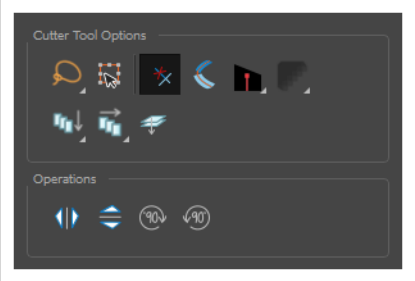
Cutter Tool Properties

The Cutter tool lets you cut out part of a drawing so that you can transform it, copy it or delete it. It also allows you to trim overshot lines.

How to access the Cutter tool properties

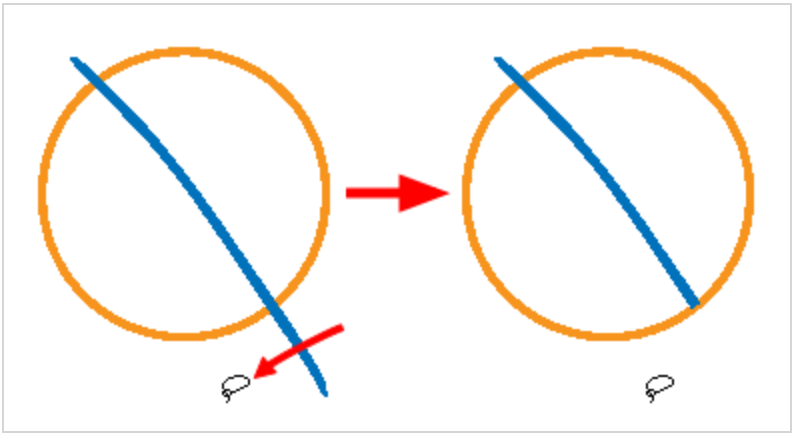
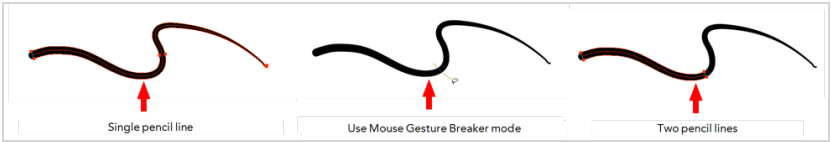
1. In the Tools toolbar, click and hold on the Select tool to display the menu beneath and select the Cutter tool.

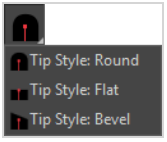
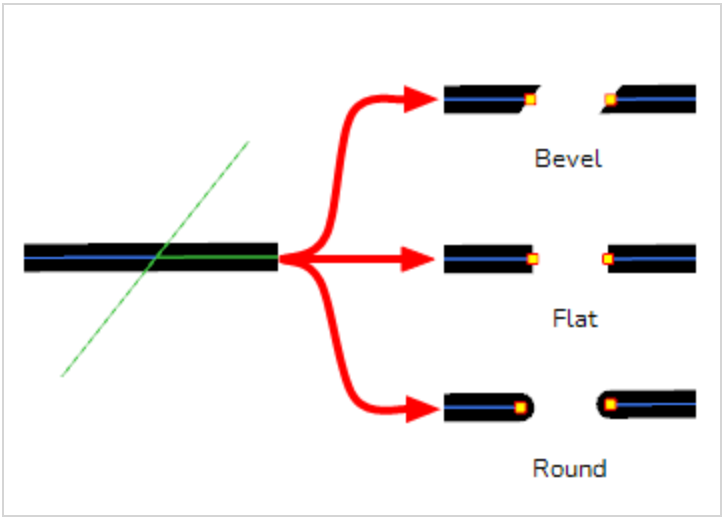
   The tool's properties are displayed in the Tool Properties view.



Tool Options

Icon	Property	Description
	Selection Mode	Allows you to choose the method to visually select multiple elements: • **Lasso:** Allows you to select multiple elements by drawing an irregular closed shape around them with your mouse. • **Marquee:** Allows you to select multiple elements by drawing a rectangle around them. This is faster, as you only need to drag your mouse from one corner of the rectangle to its opposite corner, but it may not be as precise as you want. **TIP** You can press and hold the Alt key to temporarily use the other selection mode.
	Easy Drag	When enabled, you can drag the selection by clicking anywhere inside its bounding box. By default, you must click on the artwork in the selection to be able to drag it.

Icon	Property	Description
	Use Mouse Gesture	When this option is enabled along with the Lasso selection type, quickly drawing a line with the Cutter tool over a line segment in your artwork will instantly delete it. This can be useful if you want to use the Cutter tool to quickly clean up your artwork.  It allows you to cut in two modes as follows: • **Single Line Cutting Gesture:** It deletes first line segment over which a straight gesture is drawn with the cutter. • **Multiple Lines Cutting Gesture:** It deletes all line segments over which a straight gesture is drawn with the cutter. **NOTE** This option will only work when using the Cutter tool on separate brush or pencil strokes. Hence, it is important not to flatten your artwork if you intend to use this option to clean up your drawings. This option has no effect on bitmap layers as the artwork in bitmap layers is always flattened.
	Use Mouse Gesture Breaker Mode	When using the Lasso selection type, the Use Mouse Gesture Breaker Mode option lets you draw an invisible stroke on a pencil line to cut it in two individual objects. Once a pencil line is cut with this option, you will be able to select the two portions independently with either the Cutter tool, Pencil Editor tool or Select tool. 

Icon	Property	Description
		NOTE This option only works with pencil lines.
	Tip Style	When cutting through pencil lines, this option decides what kind of pencil line tips to put at the extremities of the remaining pencil line segments, where they were cut.  By default, this is set to Bevel , which will leave the tip of the pencil line cut at the same angle as your cutter stroke. If you prefer, you can make pencil lines that you split with the Cutter tool have Flat or Round tips instead. 
	Antialiasing	When working on bitmap artwork, enabling this will smooth the edges of the artwork you cut out, so that they do not appear pixelated. **NOTE** This option is only available with bitmap layers.
	Apply to Visible Drawing Layers	This option allows you to select which layers the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button.

Icon	Property	Description
		• **Off:** When this button is toggled off, the tool only works on the currently selected layers. If several layers are selected, the tool will work on all these layers simultaneously. • **On** When this button is toggled on, the tool will work on all the visible layers. • **Apply to Visible Drawing Layers:** The tool will work on all the visible layers in the Camera view. • **Apply to Synced Drawing Layers**: If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer. **NOTE** This option only works in the Camera view.
	Apply to All Frames	This option allows you to determine which drawings in the current layer the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button. • **Off:** When this button is toggled off, the tool only works on the drawing in the current frame. • **Apply to All Frames:** The tool will work on every exposed drawing in the selected layer simultaneously. • **Apply to Onion Skin Range:** The tool will work on every drawing displayed in the Onion Skin. Onion Skin must be enabled for this option to work.
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.

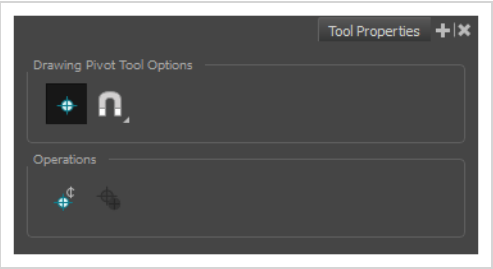
Operations

Icon	Property	Description

	Flip Horizontal	Flips the current selection horizontally.
	Flip Vertical	Flips the current selection vertically.
	Rotate 90 Degrees CW	Rotates the current selection 90 degrees clockwise.
	Rotate 90 Degrees CCW	Rotates the current selection 90 degrees counter-clockwise.

Drawing Pivot Tool Properties

The Drawing Pivot tool lets you set the pivots on your character. You can set the drawing pivots on drawings and symbols.



Tool Options

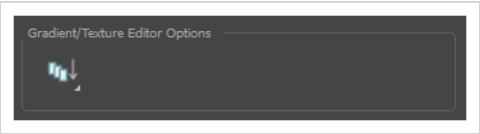
Icon	Property	Description
	Setting the Drawing Pivot for Symbols on All Frames	The Set the Pivot for Symbol on All Frames option is enabled by default. When you set a drawing pivot on a symbol, all of its cells use the same drawing pivot. This means you do not have to set a drawing pivot on all frames. Once you set it, it is done. If you prefer to set a different drawing pivot for a series of cells, you can deselect the option and set your pivots on each cell or cell range. **NOTE** If you have already set several different pivots on your symbol's cells and selected the Set the Pivot for Symbol on All Frames option, once you set a new pivot on the same symbol, all of its pivots will be reset and will use your new pivot.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it

Icon	Property	Description
		on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes : • **Snap to Contour:** When moving the pivot, it will snap against the nearby points and contours of your artwork. • **Snap to Alignment Guides:** When moving the pivot, it will snap against nearby alignment guides. • **Snap and Align:** When moving the pivot, it will align with the edges of elements in the drawing. • **Snap to Grid:** When moving the pivot, it will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '.
	Reset Pivot	When you click the Reset Pivot option, the drawing pivot of the selected drawing or symbol is reset to the centre of the Camera view.
	Copying Pivot on Parent Symbol	When you import new extra drawings, such as hands and mouths, you can use the drawing pivot that was set on your drawings and report them to the symbol's cells. Use the Copy Pivot to Parent Symbol command for this.

Icon	Property	Description
		NOTE When you copy drawing pivots to the parent symbol, there is no link between the drawings' pivots and the symbol's pivots. If you modify the drawing pivot later, it will not link to the symbol. You would need to perform the operation again. If you need to modify the symbol's pivots, you can do it directly on the symbol's cells.

Edit Gradient/Texture Tool Properties

The Edit/Gradient Texture tool allows you to move, rotate and scale a gradient or texture fill within the shape it fills, without modifying the shape itself.



How to access the Edit Gradient/Texture tool properties

1. In the Tools toolbar, select the Edit Gradient/Texture tool.

   The tool's properties are displayed in the Tool Properties view.

Tool Options

Icon	Property	Description
	Apply to Visible Drawing Layers	This option allows you to select which layers the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button. • **Off:** When this button is toggled off, the tool only works on the currently selected layers. If several layers are selected, the tool will work on all these layers simultaneously. • **On** When this button is toggled on, the tool will work on all the visible layers. • **Apply to Visible Drawing Layers:** The tool will work on all the visible layers in the Camera view. • **Apply to Synced Drawing Layers**: If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer. **NOTE** This option only works in the Camera view.

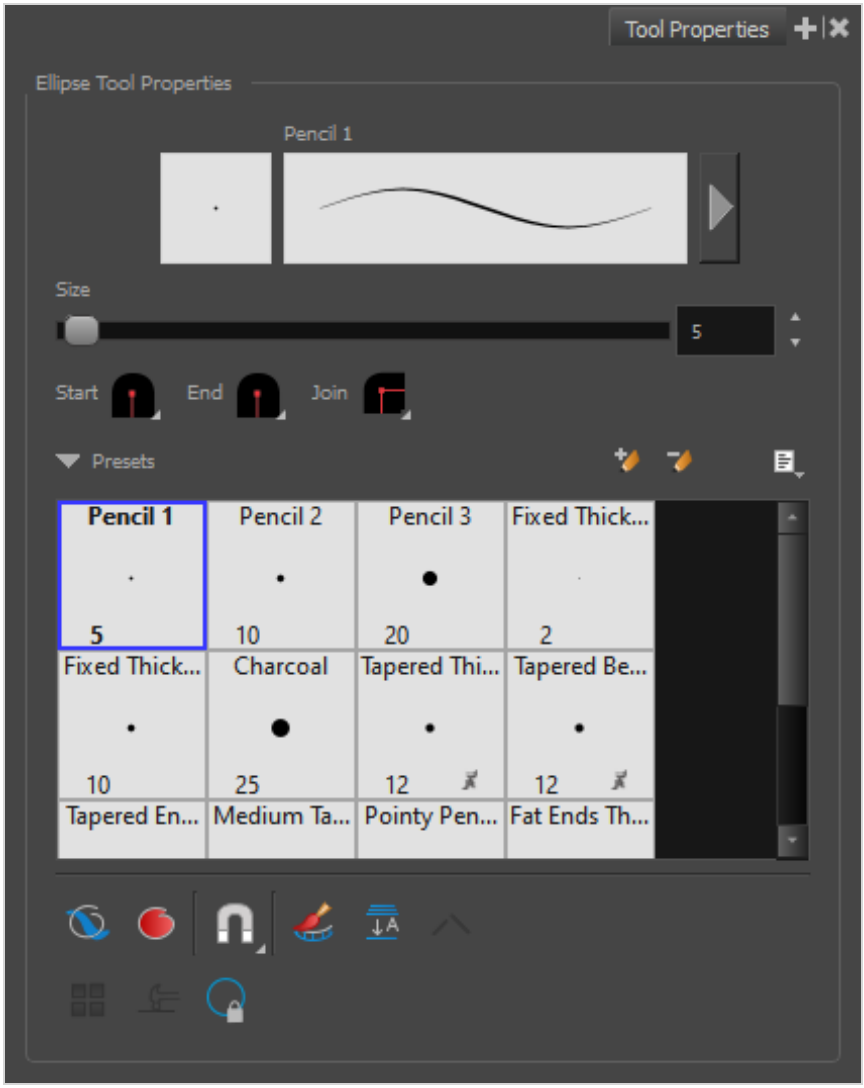
Ellipse Tool Properties

The Ellipse tool allows you to quickly draw an ellipse or a circle.

How to access the Ellipse tool properties

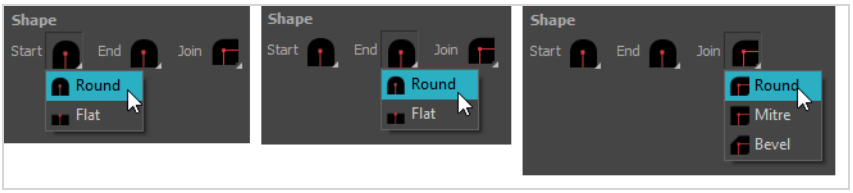
1. In the Tools toolbar, select the Ellipse tool.

   The tool's properties are displayed in the Tool Properties view.



Pencil Properties

Just like other shape tools, this tool creates pencil lines. Hence, its tool properties are similar to the ones of the Pencil tool and it can be used with pencil presets.

Property	Description
Preview Area	The Preview area lets you see a preview of the stroke your drawing tool will make.
Pencil Properties Dialog	The arrow button right of the preview area opens the Pencil Properties dialog. While the Tool Properties view only gives you access to a few of the pencil properties, a list of pencil presets and other drawing options, the Pencil Properties dialog gives you access to all the available options for your pencil's shape and texture. For more information on the Pencil Properties dialog, see the *Pencil Properties Dialog* on page 467 section below.
Size	Defines the width of the pencil line used to draw the shape.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.

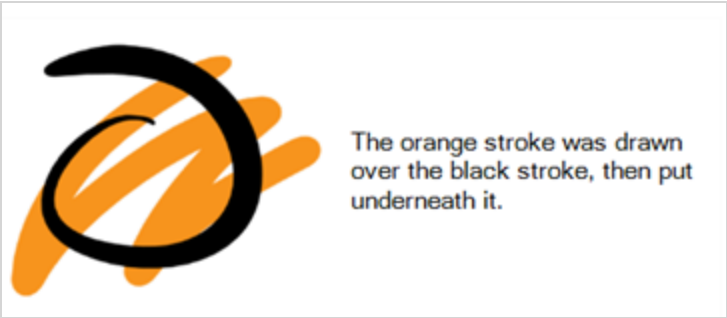
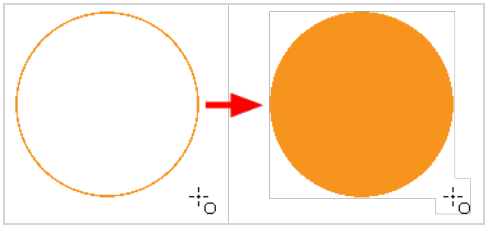
Pencil Presets

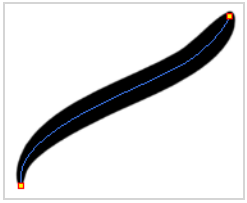
These options allow you to select, create and manage pencil presets.

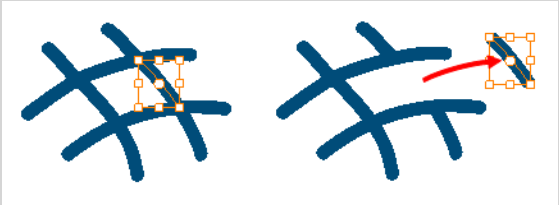
Icon	Property	Description
	Presets list	Harmony provides a variety of pencil presets and thickness stencils and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw for efficiency and consistency. A thickness stencil saves the thickness information across the length of the line. When drawing with a thickness stencil, the pressure sensitivity of the tablet is discarded. A thickness stencil can be used while drawing, or applied afterwards. You also have the possibility to apply different textures to your lines by either using the default presets or to import your own. You can export the pencil presets that you have created and import those that others have created. This is a good way for you and project collaborators to keep a consistent look for the project.
	New Brush Preset	Creates a new preset based on the current tool properties.
	Delete Brush Preset	Deletes the currently selected preset.
	Brush Presets Menu	Open a menu that contains the following options: • **New Brush Preset:** Creates a new preset based on the current tool properties. • **Delete Brush:** Deletes the currently selected preset. • **Rename Brush:** Allows you to rename the currently selected preset. • **Import Brushes:** Allows you to import brush presets exported from Harmony. • **Export Brushes:** Allows you to export your brush presets into an `.xml` file. • **Small Thumbnail:** Displays presets in a grid of small thumbnails with a preview of their tip. • **Large Thumbnail:** Displays presets in a grid of big thumbnails, with their name and a preview of their tip. • **Stroke View:** Displays presets in a list, with their name and a preview of a stroke done with each preset.

Drawing Options

These options affect the way your shape is added to your artwork.

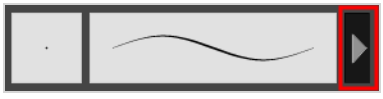
Icon	Property	Description
	Draw Behind	When enabled, your brush strokes will appear behind the existing artwork.  **NOTE** Your brush stroke will temporarily appear over your artwork as you draw it, until you release the mouse cursor or tablet pen.
	Auto Fill	When enabled, the shape you draw is automatically filled with the selected colour. By default, drawing a shape only creates its outlines.  **TIP** By default the pencil line and its fill will be the same colour. To select different colours for the line and its fill, do the following: 1. In the Colour view, click the Unlock Three Colours button. 2. Click on the Set Current Pencil Colour swatch. Then, in the colour list, select the desired colour swatch for your outline. 3. Click on the Set Current Paint Colour swatch. Then, in the colour list, select the desired colour swatch for the fill.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled.

Icon	Property	Description
		If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Contour:** When enabled, while you're drawing, the mouse cursor will snap to the nearby contours of the artwork in your drawing. • **Snap to Alignment Guides:** While drawing, the drawing tool will snap against nearby alignment guides. • **Snap and Align:** When enabled, while you're drawing, the mouse cursor will automatically align to the rectangular bounding boxes of other strokes and shapes in your drawing. • **Snap to Grid:** While moving the selection, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '.
	Automatically Create Colour Art	As you draw in the Line Art layer, the Automatically Create Colour Art option instantly creates the corresponding strokes in the Colour Art layer. 
	Auto Flatten Mode	By default, when drawing on a vector layer, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.

Icon	Property	Description
		 **NOTE** Using the Select tool, you can use select and remove a segment of flattened pencil lines. Overlapping pencil lines drawn with the Auto-Flatten mode are essentially cut into segments by the overlap and can be treated as individual lines.
	Use Stored Colour Gradient	The Use Stored Colour Gradient option can be used when painting with a gradient colour to always position the gradient in the same way it was stored, making it consistent across brush strokes. You can store a gradient by selecting a zone painted with a gradient with the Select tool, then clicking on Store Colour Gradient in the Tool Properties view.
	Draw Circle	When enabled, the ellipsis tool will always draw an ellipsis of equal width and height, making it a perfect circle. **TIP** You can also draw a perfect circle by holding the Shift key while drawing.

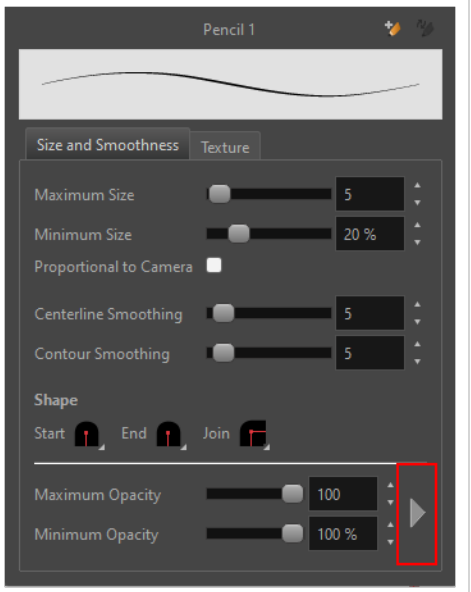
Pencil Properties Dialog

The Ellipse tool draws the same type of line as the Pencil tool. Hence, you can configure the Ellipse tool's lines using the Pencil Properties dialog, which you can open by clicking on the arrow button right of the stroke display area in the Tool Properties view.

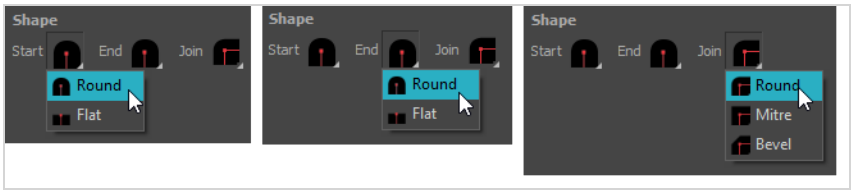
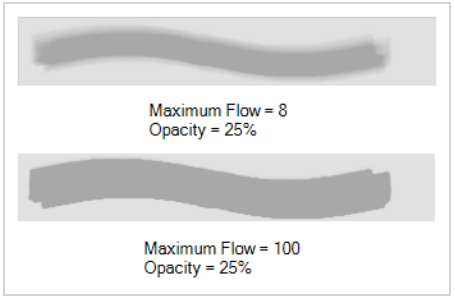


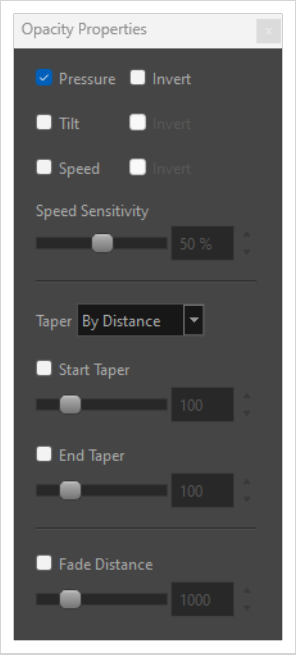
Size and Smoothness Tab

The Size and Smoothness tab allows you to select your pencil's size, its smoothing parameters as well as the shape of its tips and corners.



Property	Description
Maximum Size	Defines the maximum size of the pencil line. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Minimum Size	Defines the minimum size of your stroke as a percentage of the maximum size. If you do not have pressure sensitivity from a pen table, the minimum size value will be ignored.
Proportional to Camera	If you check this option, the size of the pencil will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the pencil will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the pencil will be proportionally bigger.
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on the central line of the pencil stroke. A higher setting will prevent your line from being shaky and will reduce the amount of control points it has, making it easier to tweak, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on the outer contour of the pencil stroke. A pencil line is defined by its centreline and its variations in thickness, rather than its apparent shape. When drawing a pencil line with a mouse, its thickness is uniform. Therefore, its outer contour does not have any control point, except at its extremities, and no smoothing is required for its contour.

Property	Description
	However, when drawing a pencil line with a pressure sensitive tablet, its contour will have control points and Bezier curves to define the line's variations in thickness, and thus smoothing must be performed on its contour. An increased contour smoothing will reduce the amount of control points on the line's thickness and smoothen its curves, but may affect the precision of the variations in line thickness.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.
Maximum and Minimum Opacity	The Maximum and Minimum Opacity parameters are where you set the opacity range for a pencil line. This works with the pressure sensitivity of a pen tablet. • **Maximum Opacity:** Sets the transparency limit of the pencil line when the pressure is heavy. • **Minimum Opacity:** Sets the transparency limit of the pencil line when the pressure is very light. It is defined as a percentage of the Maximum Opacity value. If the Minimum Opacity value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The opacity will be set to the constant rate of the Maximum Opacity value.  You can control the opacity properties by clicking on the arrow button on right and the dialog box will appear same as shown for size properties above. Please refer

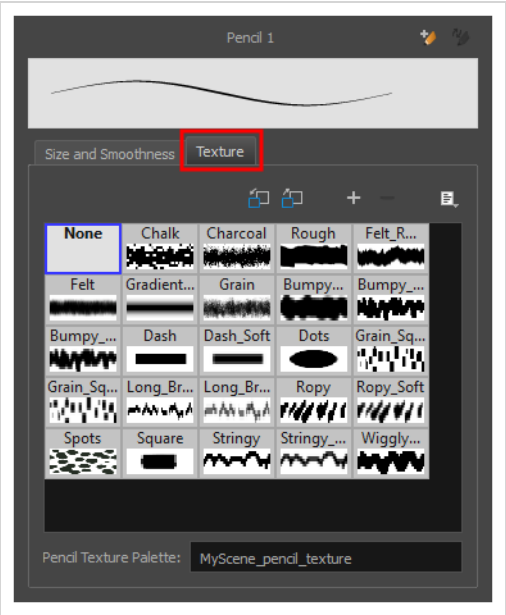
Property	Description
	Ellipse Tool Properties on page 462  **Pressure:** Allows you to apply more pressure and increases the size of the pencil. You can check the box to invert this behaviour. • **Tilt:** Allows you to tilt the pen closer to tablet for a bigger stroke. You can check the box to invert this behaviour. • **Speed:** Allows you to reduce the size of the stroke by drawing at a fast speed. You can check the box to invert this behaviour. • **Speed Sensitivity:** A slider is used to control how fast must the stroke be drawn to reach the minimum value. • **Taper:** Allows you to reduce the value of a property at the start or the end of each stroke. The value can be expressed using two options: **Distance and Percentage**. Distance is selected by default. For example: A taper of 200 will be the same length as the width (diameter) of a stroke that has its size set at 200. You can enable Start and End Tapering option individually. • **Start Taper:** When distance is selected as a Taper value, the effect of start taper can be visualized as the stroke is drawn. • **End Taper:** When distance or percentage is selected as a Taper value, the

Property	Description
	effect of end taper can be visualized once the stroke is complete and vectorized as the length is unknown until the stroke is complete. • **Fade Distance:** Allows you to fade the value of property over a given distance. It uses the same units as the size and is applied as the stroke is drawn.

Texture Tab

In the Pencil Properties view, the Texture tab allows you to select a pencil texture from the currently selected pencil texture palette to use with the Pencil tool. You can also add, remove or rename textures, save the current pencil texture palette as the default one, or import the pencil texture palette into your scene.

The pencil texture palette used in the Texture tab of the Pencil Properties dialog is the one selected in the Colour view. You can select a pencil texture palette by selecting it from the pencil texture palette list in the Colour view.

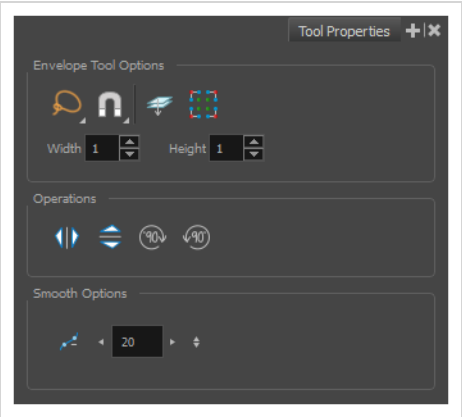


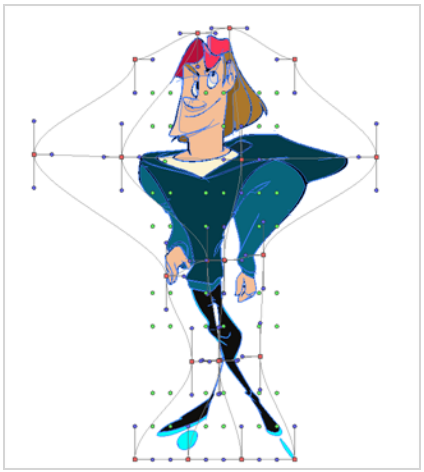
Icon	Property	Description
	Use as Default Pencil Texture Palette	This option is available from the menu button. Sets the currently selected pencil texture palette as the default pencil texture palette in your user preferences. The default pencil texture palette is added to every scene you create in Harmony. The palette is copied in your preferences, so it will be added to your new scenes in the exact state it is when you make it the default pencil texture palette.

Icon	Property	Description
	Reload Default Texture Palette	Imports the default pencil texture palette as a new pencil texture palette into your scene's palette list, and selects it as the current pencil texture palette.
	New Texture	Allows you to import an image file into a new pencil texture swatch in the current pencil texture palette. The pencil texture's effect on your pencil line will be based on the image's transparency channel, and will follow your pencil lines on its horizontal axis. This option is also available from the menu button.
	Delete Texture	Deletes a pencil texture swatch from the current pencil texture palette. This option is also available from the menu button.
	Rename Texture	Renames the selected pencil texture swatch in the current pencil texture palette. This option is also available from the menu button.
	Pencil Texture Display	Displays the pencil textures in the current pencil texture palette and allows you to select one to use with the Pencil tool.
	Pencil Texture Palette	Displays the name of the currently selected pencil texture palette, for reference. To select a different pencil texture palette, you must select it in the Colour view.

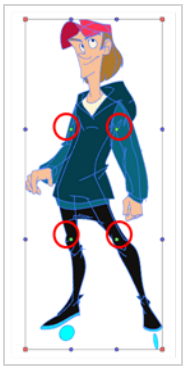
Envelope Tool Properties

Selecting the Envelope tool displays its properties and options in the Tool Properties view.



Icon	Tool Name	Description
	Width and Height	Increase the width and height values to add more columns and rows to the deformation grids. 
	Lasso	Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them. **TIP** When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.
	Marquee	Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.

Icon	Tool Name	Description
		TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Contour:** While moving the selection or one of its control points, it will snap against the nearby points and contours of your artwork, allowing you to snap parts of your artwork together. • **Snap to Alignment Guides:** While moving the selection or one of its control points, it will snap against nearby alignment guides. • **Snap and Align:** When enabled, while moving a selection, the rectangular bounding box of the selection will snap to the rectangular bounding box of any other drawing stroke in the drawing, allowing you to align drawing strokes laterally. • **Snap to Grid:** While moving the selection, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '. • **Allow Snapping on all Drawing Layers:** If toggled on, the selections can be snapped to all bounding boxes, nearby points, and contours of artwork on any layer.
	Show Advanced Controls	To display more controls,you can click on the Show Advanced Controls button.

Icon	Tool Name	Description
		
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.
	Flip Horizontal	Flips the current selection horizontally.
	Flip Vertical	Flips the current selection vertically.
	Rotate 90 Degrees CW	Rotates the current selection 90 degrees clockwise.
	Rotate 90 Degrees CCW	Rotates the current selection 90 degrees counter-clockwise.
	Smooth	You can modify the central line smoothness of your line using this option. This parameter smooths the deformed lines. Increasing the value will result in a smoother line with fewer control points. The more you increase the value, the less details and curves you will get. Use the left and right arrows to increment the value by one full unit. Use the Up - Down slider to quickly increment the value.

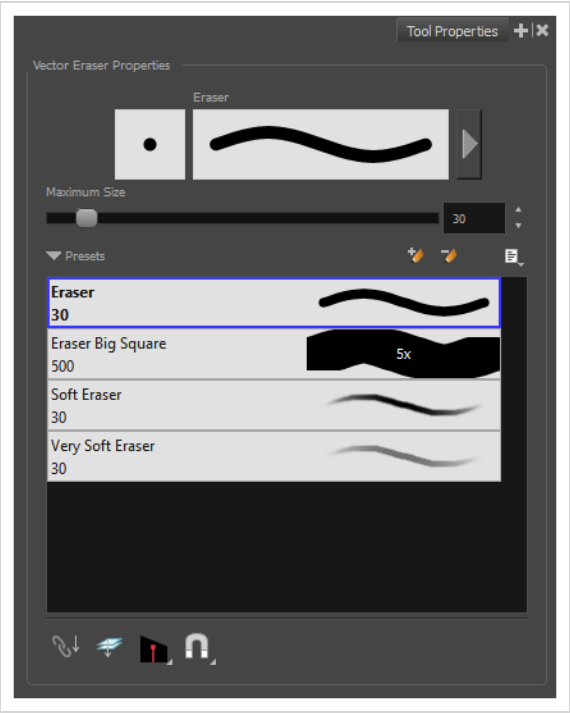
Eraser Tool Properties

The Eraser tool allows you to erase artwork by drawing eraser strokes over it. When using the Eraser tool with a tablet, it is pressure sensitive, like with the Brush and Pencil tool.

How to access the Eraser tool properties

1. In the Tools toolbar, select the Eraser tool.

   The tool's properties are displayed in the Tool Properties view.



Eraser Properties

The way the Eraser tool is configured is almost identical to the way the Brush tool is configured.

Property	Description
Stroke Preview Area	The Preview area lets you see a preview of the stroke your drawing tool will make.
Eraser Properties Dialog	The arrow button right of the display area opens the Eraser Properties dialog, which gives you access to all the parameters and options for your eraser. The Tool Properties

Property	Description
	view only gives you access to a few of the eraser properties, a list of eraser presets and options for the Eraser tool that are not related to the eraser properties. For more information on the Eraser Properties dialog, see the Eraser Properties Dialog section below.
Maximum Size	Defines the maximum size of the eraser. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Flow	Lets you set the opacity for each instance of the eraser tip that gets erased from your artwork. Contrary to the Opacity parameter, the flow parameter has a cumulative effect. This means that a lower flow will make your eraser strokes less effective towards its extremities and more effective in its center. Your stroke's flow will also accumulate if you draw over it. By default, your eraser's flow varies with the amount of pressure you put on your tablet pen. **NOTE** This option is only displayed in the Tool Properties view when drawing on a bitmap layer.
Opacity	The Opacity parameter are where Lets you set the opacity of your brush strokes. Contrary to the Flow parameter, the Opacity parameter is non-cumulative. Your whole brush stroke's opacity will not exceed the Opacity parameter. By default, the Opacity parameter varies depending on the amount of pressure you put on your tablet pen. **NOTE** This option is only displayed in the Tool Properties view when drawing on a bitmap layer.

Eraser Presets

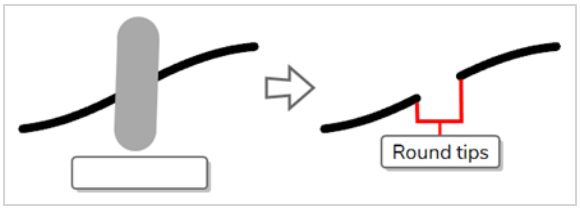
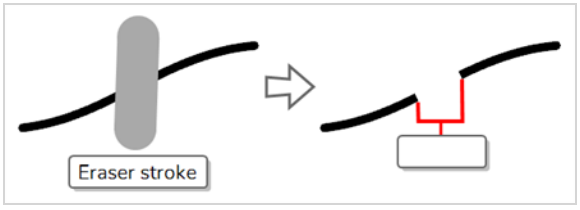
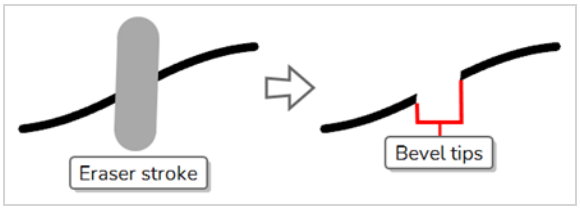
These options allow you to select, create and manage eraser presets.

Icon	Property	Description
	Presets list	By default, Harmony has preloaded eraser presets. You can also create your own eraser presets by configuring your eraser, then saving its properties into a new preset. It is also possible to export and import eraser presets.
	New Brush Preset	Creates a new preset based on the current tool properties.
	Delete Brush	Deletes the currently selected preset.
	Rename Brush	Allows you to rename the currently selected preset.
	Import Brushes	Allows you to import brush presets exported from Harmony.
	Export Brushes	Allows you to export your brush presets into an `.xml` file.
	Small Thumbnail	Displays presets in a grid of small thumbnails with a preview of their tip.
	Large Thumbnail	Displays presets in a grid of big thumbnails, with their name and a preview of their tip.
	Stroke View	Displays presets in a list, with their name and a preview of a stroke done with each preset.

Erasing Options

These options affect the way your eraser strokes are applied to your artwork.

Icon	Property	Description
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.

Icon	Property	Description
	Tip Style	When you erase part of a pencil line, this option determines the shape of the extremity of the pencil line where you erased: • **Round:** Leaves a round tip at the extremities of the pencil line you erased.  • **Flat:** Leaves a flat tip at the extremities of the pencil line you erased. A flat tip is always perpendicular to the angle of the centreline of the pencil line, so it may not match the angle of your eraser stroke.  • **Bevel:** Leaves a bevel tip at the extremities of the pencil line you erased. A bevel tip is flat, but its angle matches the angle of your eraser stroke. 
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping mode: • **Snap to Alignment Guides:** While erasing, the eraser will snap

Icon	Property	Description
		against nearby alignment guides.
	Apply to Synced Drawing Layers	If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer.

Eraser Properties Dialog

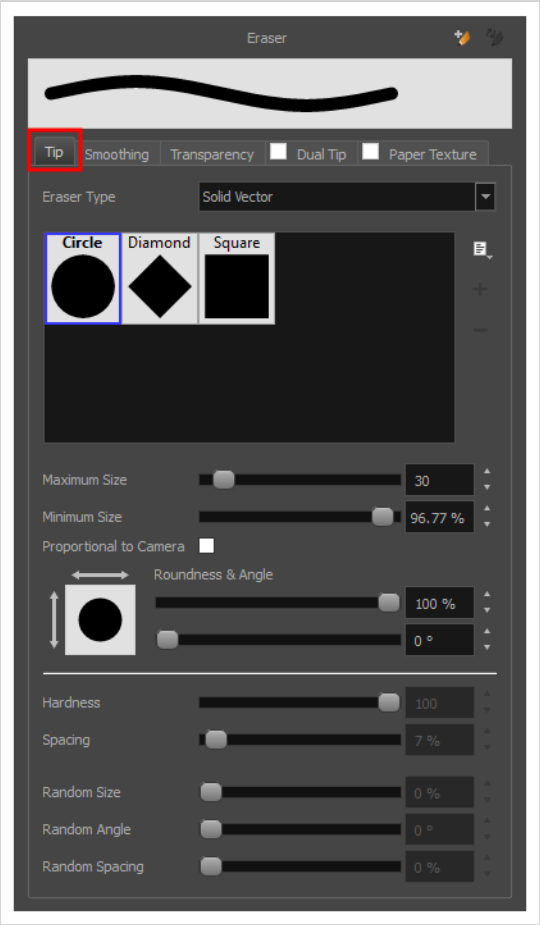
Erasers have an extensive set of options and properties that are not displayed in the Tool Properties view, but rather, in a dialog you can access from it. To open the Eraser Properties dialog, click on the arrow button right of the stroke display area.

The Eraser Properties dialog has five different tabs, minus the Smoothing tab if you are working on a bitmap layers. Below is detailed information about the options available in each tab:

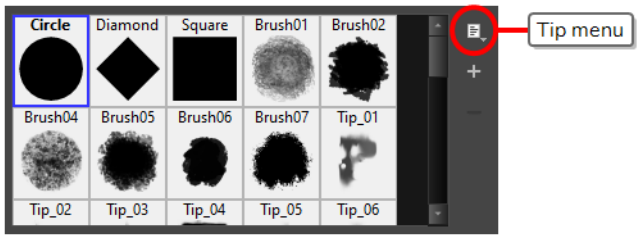
- *Tip Tab* on page 480
- *Smoothing Tab* on page 487
- *Transparency Tab* on page 488
- *Dual Tip Tab* on page 491
- *Paper Texture Tab* on page 495

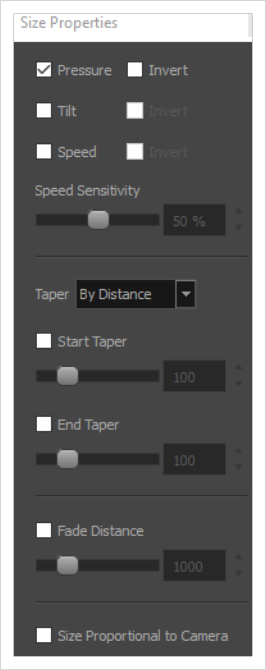
Tip Tab

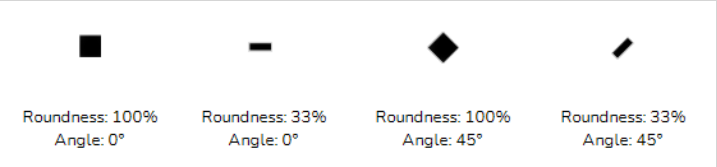
The Tip tab allows you to configure the shape, size, hardness and spacing of your eraser tip.

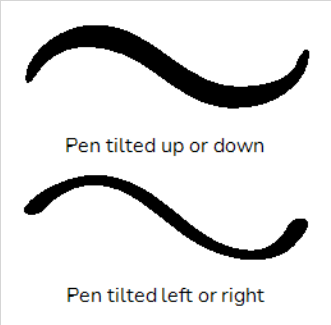
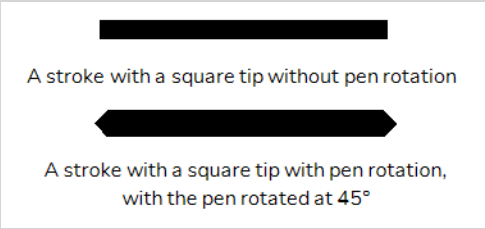
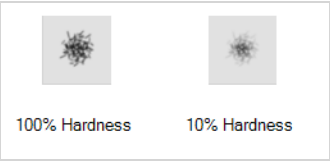


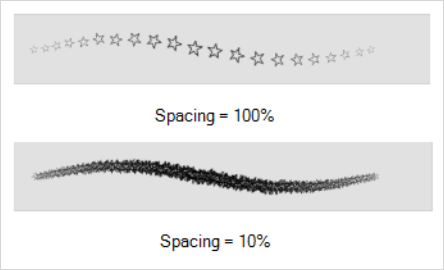
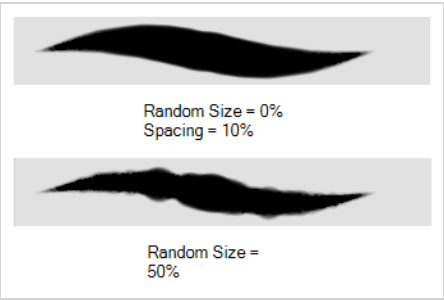
Property	Description
Eraser Type	Allows you to select between one of the following eraser types: • **Solid Vector:** Simply cuts out the eraser stroke's shape from the vector artwork. A solid vector eraser always completely erase the artworks leaving hard seams. • **Textured Eraser:** Allows to configure the eraser with the same options as with a textured brush. A textured eraser will decrease the opacity of bitmap textures in textured brush strokes if it doesn't completely erase it. If it completely erases a brush stroke, it will cut out the erased part from the vector artwork. • **Textured, Preserve Vector:** Like a Textured Eraser, except that it will not cut out from the vector shapes, even if it fully erases pixels in a textured brush stroke's texture. **NOTE** Textured erasers only work as expected on textured brush strokes. Using a Textured eraser on a solid vector brush stroke or on a pencil line will only cut the eraser stroke's shape out of it. If you use a Textured, Preserve Vector type eraser on a solid vector shape or on a pencil line, the eraser will not erase anything.

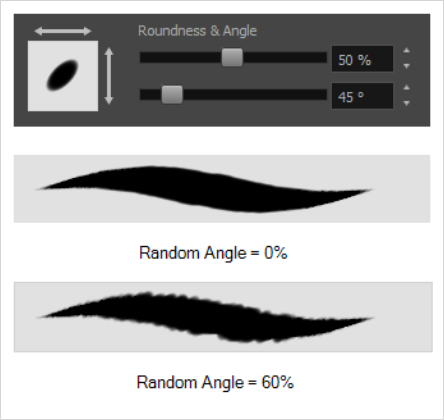
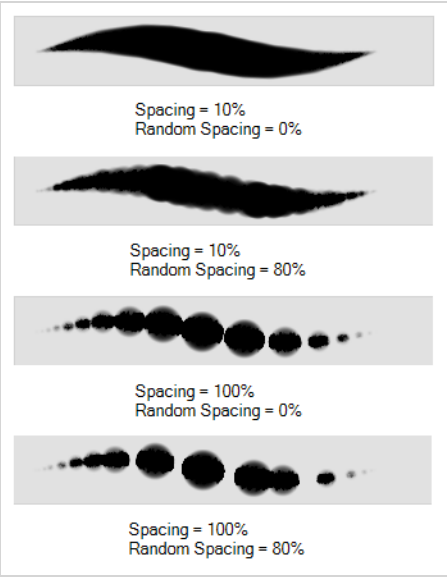
Property	Description
	NOTE This option is not available when working on a bitmap layer. With bitmap layers, erasers are always textured, and textured eraser options are always available.
Eraser Tip Library	 This is where you select the shape of the eraser tip. By default, it is round. Note that some tips are designed to have semitransparent areas, even when the maximum eraser opacity is set to 100%. To create a custom eraser tip, you must prepare the file ahead of time, either in Harmony or in a third-party software, such as Adobe Photoshop. Colour is not supported and transparency is not supported in the traditional sense. Black appears as 100% opaque, white appears as 100% transparent and all the shades of grey in between appear as varying degrees of semitransparency. A range of file formats are supported—.jpeg, .png, .tif, .psd, .tga to name a few. Alpha channels are disregarded on import. It is recommended that your file be between 100 x 100 pixels and 400 x 400 pixels. You can also import eraser tips that you exported from Harmony, so you can share them with colleagues.
Minimum and Maximum Size	The minimum and maximum sizes of your drawing tool produce the thick and thin effect on your stroke. This works with the pressure sensitivity of a pen tablet. • **Maximum Size:** Defines the maximum width of the stroke. • **Minimum Size:** Defines the minimum width of the stroke in relation to and as a percentage of the maximum size. You can control the size properties by clicking on the arrow button on right and the dialog box will appear as shown below.

Property	Description
	 • **Pressure:** Allows you to apply more pressure and increases the size of the brush. You can check the box to invert this behaviour. • **Tilt:** Allows you to tilt the pen closer to tablet for a bigger stroke. You can check the box to invert this behaviour. • **Speed:** Allows you to reduce the size of the stroke by drawing at a fast speed. You can check the box to invert this behaviour. • **Speed Sensitivity:** A slider is used to control how fast must the stroke be drawn to reach the minimum value. • **Taper:** Allows you to reduce the value of a property at the start or the end of each stroke. The value can be expressed using two options: **Distance and Percentage**. Distance is selected by default. For example: A taper of 200 will be the same length as the width (diameter) of a stroke that has its size set at 200. You can enable Start and End Tapering option individually. • **Start Taper:** When distance is selected as a Taper value, the effect of start taper can be visualized as the stroke is drawn. • **End Taper:** When distance or percentage is selected as a Taper value, the effect of end taper can be visualized once the stroke is complete and vectorized as the length is unknown until the stroke is complete. • **Fade Distance:** Allows you to fade the value of property over a given distance. It uses the same units as the size and is applied as the stroke is drawn.

Property	Description
	• **Size Proportional to Camera:** If you check this option, the size of the will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the will be proportionally bigger. **NOTE** Setting the Minimum Size value to 100% eliminates the possibility of creating width variation on your stroke. In other words, you would be forcing a uniform line width using the Maximum Size value.
Proportional to Camera	If you check this option, the size of the eraser will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the eraser will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the eraser will be proportionally bigger.
Roundness and Angle	The Roundness and Angle parameters allow you to change the shape and orientation of the tip. • **Roundness:** The vertical scaling to apply to the tip. Reducing this setting squashes the tip vertically, allowing you to turn round or square tips into flat tips. • **Angle:** The angle at which to rotate the brush tip, counterclockwise. **NOTE** The squashing is not relative to the angle—if the tip is rotated, the squashing will still be done relative to the tip's original orientation. 
Pen Tilt Sensitivity	If your pen and tablet support tilt sensitivity, this option allows you to set whether your eraser takes your pen's tilt angle in account, and how much. When your pen is fully tilted, your eraser tip will be stretched by the percentage you set in this parameter, in the angle in which you tilt it. For example, if you set the Pen Tilt Sensitivity to 50%, and you tilt your pen all the way up or down, your eraser tip will be stretched vertically by 50%. With the same setting, if you tilt your pen all the way left or right, your eraser tip will be stretched horizontally by 50%.

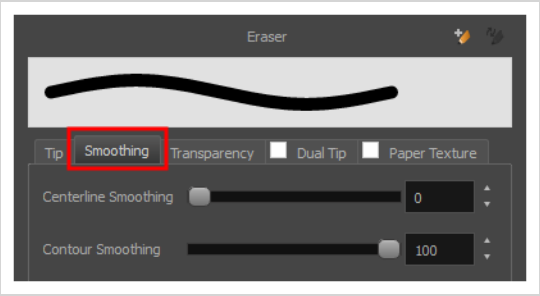
Property	Description
	
Use Pen Rotation	If enabled, and if your pen and tablet support tip rotation, your eraser tip will rotate with the angle of your pen tip. 
Hardness	The Hardness and Spacing parameters allow you to change the softness and spacing of the marks made by the eraser tip. You can preview the hardness and spacing at the top of the Eraser Properties window, stroke preview area. The hardness value corresponds to the softness of the eraser tip's edges. The lower the value, the softer the tip edge. The higher the value, the sharper the tip edge. Be aware that some eraser tips are not 100% opaque, so they will always appear somewhat soft, even at 100% hardness. 
Spacing	Defines the amount of space between each stamp of the eraser. A value of 100% sets the stamp marks edge to edge, if there is no white space around the shape. The larger the value, the greater the space between marks. A really large value can make the eraser stroke appear as a string of individual marks. Conversely, a small spacing value will give the appearance of a fluid brush stroke. Spacing is only evident when making a continuous stroke.

Property	Description
	
Randomness	The Randomness parameters let you create a varied bitmap eraser stroke. Refining these options can give your stroke a lovely, non-mechanical look.
Random Size	You can create variation between the thick and thin of your eraser stroke just by setting the Maximum and Minimum Size values. If you add randomness to the mix, pressure sensitivity from your drawing tablet will still be applied. Light pressure will create random values around the minimum, while heavy pressure will create random values closer to the maximum. The larger the percentage, the larger the range of random variation.  **NOTE** Setting the Minimum Size to 100% eliminates the possibility of creating width variation on your stroke, whether you are applying randomness or not. Therefore, you would be forcing a uniform line width using the Maximum Size value.
Random Angle	Sets the range for random rotation around the set Angle value. For example, if the Angle is set to 45° and the Random Angle set to 10°, the software will choose values between 40°–50° (plus or minus 5 degrees, equaling a total of 10 degrees).

Property	Description
	
Random Spacing	Sets the range for random spacing around the set Spacing value. For example, if the Spacing is set to 50% and the Random Spacing is set to 10%, then Harmony will choose values between 45%–55% (plus or minus 5 percent, equaling a total of 10 percent). 

Smoothing Tab

The Smoothing tab contains options to configure how Harmony should automatically smooth your eraser strokes as you paint.



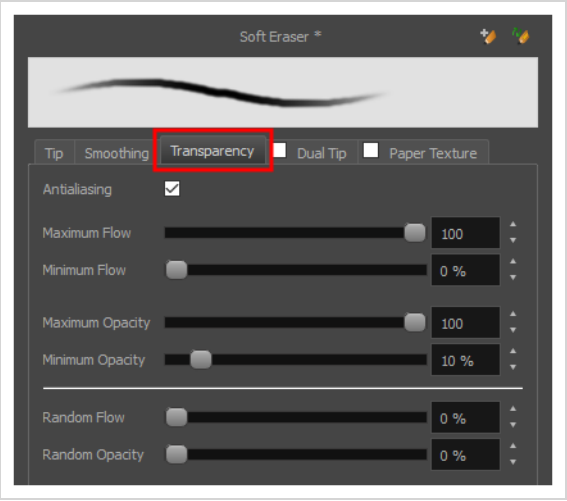
NOTE

The Smoothing tab is only available when working on a vector layer, as bitmap layers do not support smoothing.

Property	Description
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on your eraser stroke's direction, curves and corners. A higher setting will prevent your line from being shaky, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on outer contour of the eraser stroke. A higher setting will round sharp corners and reduce the amount of control points for the resulting vector shape.

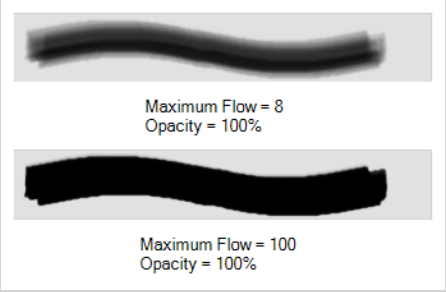
Transparency Tab

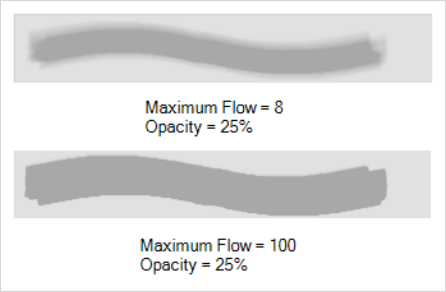
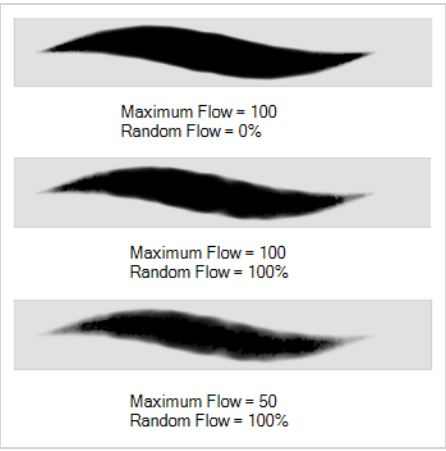
The Transparency tab allows you to decide if your eraser has antialiasing as well as to set its flow and opacity settings.

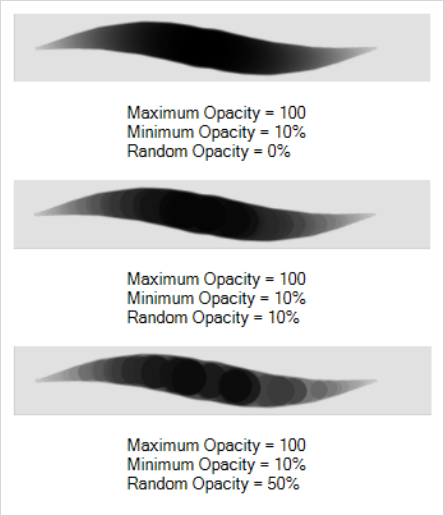


NOTE

The Transparency tab's options are only available on vector layers if the **Eraser Type** option of the Tip tab is set to **Textured Vector** or **Textured, Preserve Vector**.. On bitmap layers, those options are always available.

Property	Description
Antialiasing	Enabled by default. This option causes the contours of the eraser strokes to blend with the surrounding colours, to create an illusion of smoothness otherwise not possible due to the picture resolution. If antialiasing is disabled, the eraser will either fully erase pixels or leave them intact. **NOTE** When disabled, all other options in the Transparency tab are disabled.
Maximum and Minimum Flow	The Maximum and Minimum Flow parameters let you set the range for the rate at which your eraser's effect flows. The greater the flow, the more consistent the effect is. If the flow is light, then the effect may look spotty. This feature works with the pressure sensitivity of a pen tablet. • **Maximum Flow:** Sets the maximum rate at which colour and texture are applied as you create a fluid stroke. • **Minimum Flow:** Sets the minimum rate at which colour and texture are applied as you create a fluid stroke. It is defined as a percentage of the Maximum Flow value. If the Minimum Flow value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The flow will be set to the constant rate of the Maximum Flow value. 
Maximum Opacity and Minimum Opacity	The Maximum and Minimum Opacity parameters are where you set the opacity range for a eraser mark. This works with the pressure sensitivity of a pen tablet. • **Maximum Opacity:** Sets the transparency limit of the eraser mark when the pressure is heavy.

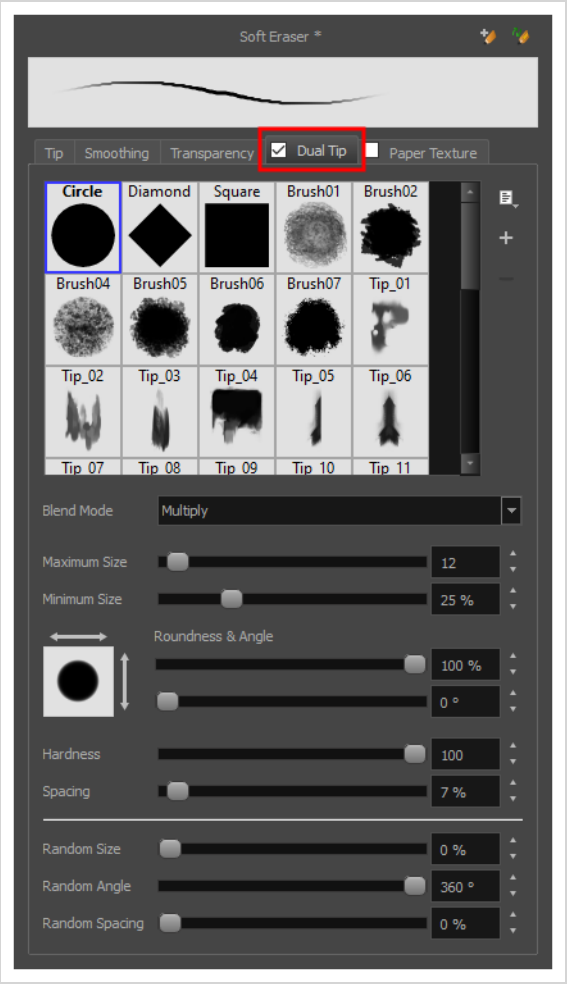
Property	Description
	• **Minimum Opacity:** Sets the transparency limit of the eraser mark when the pressure is very light. It is defined as a percentage of the Maximum Opacity value. If the Minimum Opacity value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The opacity will be set to the constant rate of the Maximum Opacity value. 
Randomness	Th Randomness parameter lets you set the range for the randomness of the flow and opacity. This works with the pressure sensitivity of a pen tablet.
Randomness Flow	You can create variation in the flow of your eraser stroke just by setting the Maximum and Minimum Flow values. If you add randomness to the mix, pressure sensitivity from your drawing tablet will still be applied. Light pressure will create random values around the minimum, while heavy pressure will create random values closer to the maximum. The larger the percentage, the larger the range of random variation.  **NOTE** Setting the Minimum Flow value to 100% eliminates the possibility of creating flow variation on your stroke, whether you are applying randomness or not. That is, you would be forcing a uniform flow using the Maximum Flow value.

Property	Description
Random Opacity	You can create variation in the opacity of your eraser stroke just by setting the Maximum and Minimum Opacity values. If you add randomness to the mix, pressure sensitivity from your drawing tablet will still be applied. Light pressure will create random values around the minimum, while heavy pressure will create random values closer to the maximum. The larger the percentage, the larger the range of random variation.  **NOTE** Setting the Minimum Opacity value to 100% eliminates the possibility of creating opacity variation on your stroke, whether you are applying randomness or not. That is, you would be forcing a uniform opacity using the Maximum Opacity value.

Dual Tip Tab

The Dual Tip tab lets you set the parameters for creating a dual tip eraser. The primary bitmap eraser tip and the dual tip always work together. You can set the parameters for the primary tip in the Tip tab and those for the dual tip in the Dual Tip tab. The Blend mode you select determines how the tips are combined.

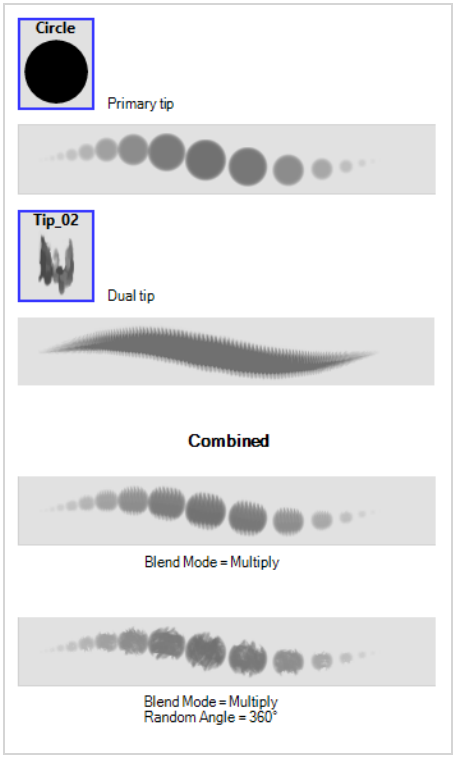
By default, the Blend Mode is set to Multiply and the Random Angle to 360°.

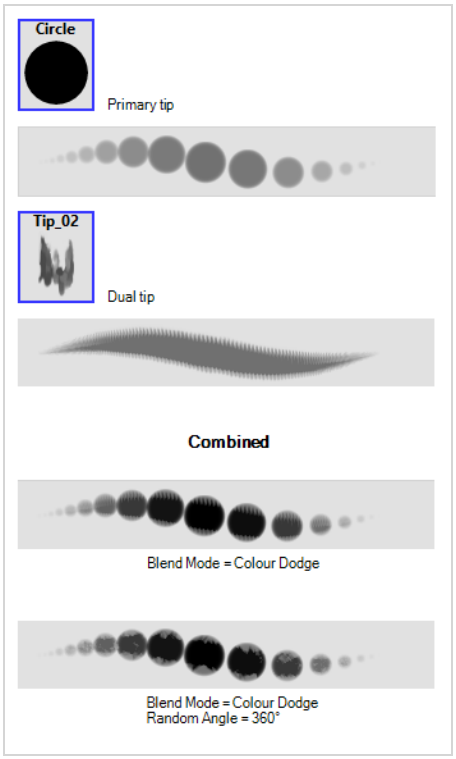


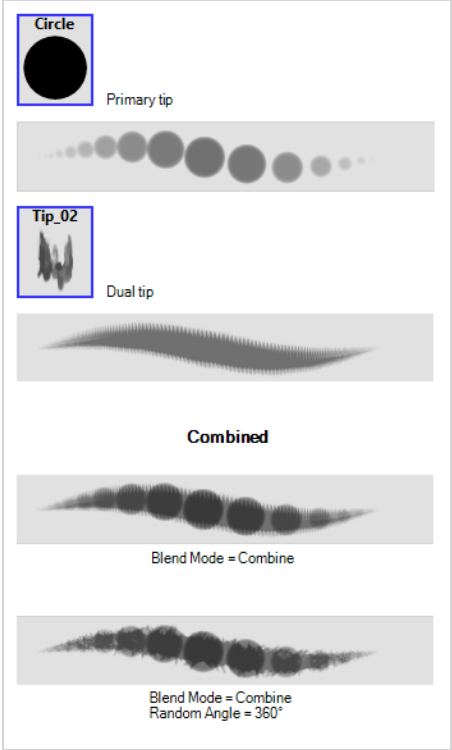
NOTE

To use a Dual Tip, you must enable option by checking the checkbox inside the **Dual Tip** tab. Additionally, if you are working on a vector layer, the **Eraser Type** option of the Tip tab must be set to **Textured Vector** or **Textured, Preserve Vector**.

Tool Name	Description
Enable/Disable	The checkbox inside the tab allows you to decide whether or not your eraser uses a dual tip. If this checkbox is unchecked, the options in the Dual Tip tab will be disabled.
Blend Mode	The Blend modes let you decide how the primary tip and the dual tip are combined.
Multiply	This is the default blend mode. When the two eraser tips are combined in this mode, they essentially cut each other out in overlapping areas, where one or both tips have an area of 100% transparency. The less opaque the eraser tips are, the lighter their

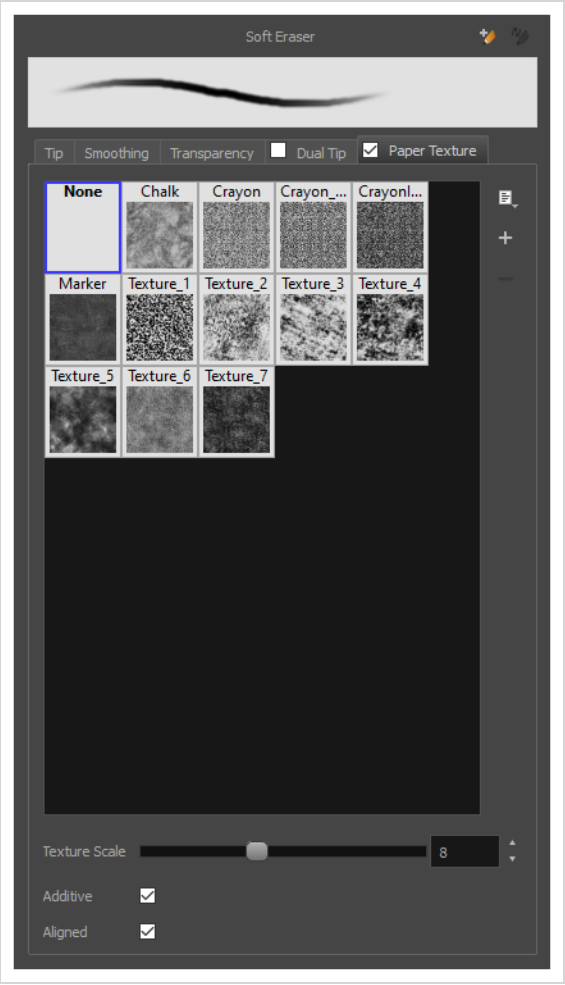
Tool Name	Description
	combination. 
Colour Dodge	In this mode, the primary tip cuts out the shape of the dual tip. Where the tip shapes overlap, within the boundaries of the primary shape, the colour and opacity appear darker.

Tool Name	Description
	
Combine	This mode treats the two tips as two different and separate erasers that have the same colour and follow the same path.

Tool Name	Description
	

Paper Texture Tab

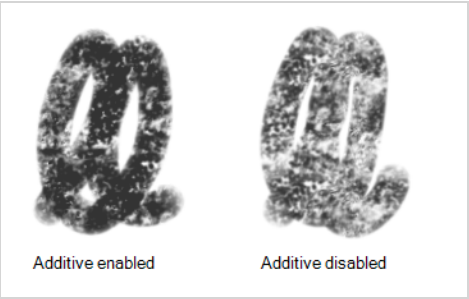
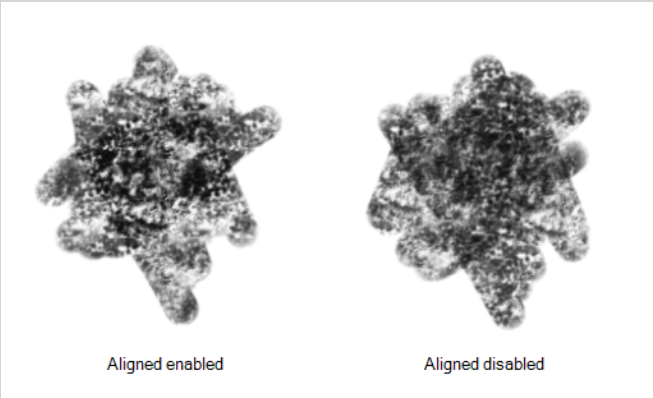
The Paper Texture tab lets you configure a paper-like texture for your eraser. You can also add textures by importing image files, or import paper textures that were previously exported from Harmony.



NOTE

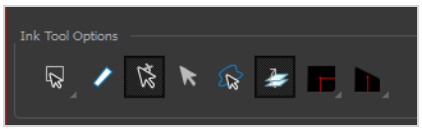
To use a Paper Texture, you must enable option by checking the checkbox inside the **Paper Texture** tab. Additionally, if you are working on a vector layer, the **Eraser Type** option of the Tip tab must be set to **Textured Vector** or **Textured, Preserve Vector**.

Property	Description
Enable/Disable	The checkbox inside the tab allows you to decide whether or not your eraser uses a paper texture. If this checkbox is unchecked, the options in the Paper Texture tab will be disabled.
Texture Scale	Increase or decreases the size of the paper texture.
Additive	This option layers the texture on top of itself as you scribble overlapping lines in one continuous stroke. If this option is turned off, areas of overlapping lines from a single, continuous stroke will appear the same, in terms of darkness and texture, as non-

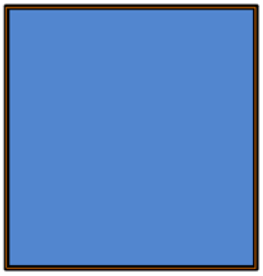
Property	Description
	overlapping areas. 
Aligned	This option defines the way separate, overlapping strokes behave. If this option is enabled, the paper texture's position does not change with each sweep of the eraser. If this option is disabled, each sweep of the eraser produces a different texture position. The texture orientation always stays the same. 

Ink Tool Properties

When you select the Ink tool, its properties and options appear in the Tool Properties view.



Icon	Tool Name	Tool
	Lasso	Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them. **TIP** When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.
	Marquee	Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them. **TIP** When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.
	Show Inkable Lines	Highlights all pencil lines (no brush strokes) on the selected layer. Pencil line segments that are already inked with the selected swatch colour from the colour palette are also not highlighted.
	Be Smart on Connecting Lines	As you hover and move the cursor across intersecting pencil lines, the path that you create will be highlighted. When you click on your mouse or stylus the highlighted segments are inked. With this option disabled, all the intersecting segments that your cursor comes near will be highlighted and become part of the selection, even if they were not situated in the direction of the chosen path.

		NOTE This option only works if the Ink tool is in Hover mode.
	Select Mode	Use this mode instead of the Hover Mode. In the Hover Mode, any potentially inkable pencil line will have its central vector line highlighted as the Ink tool's cursor hovers over it. Use Ctrl (Windows/Linux) or ⌘ (macOS) to toggle between the two modes.
	Select Newly Painted, Repainted, and Unpainted Contours/Lines	In the Paint tool properties, this option keeps a selection highlighted around the latest painted zone after using the Paint, Repaint, Unpaint, or Paint Unpainted tool. 
	Raise	As you ink the pencil line, the segment will be moved on top of the other intersecting strokes. Disable this option for the line to be sent behind. Hold down the Alt key to perform the opposite operation as you ink.
	Mitre	As you hover over two perpendicular or nearly perpendicular segments, a highlighted path with a corner is created. Clicking on these highlighted segments inks both segments and makes them appear as a single stroke with a corner or bend. Options include: As Is, Round, Miter, and Bevel.
	Tip Style	Lets you customize the edge of the Ink tool. Options include: Round, Flat, and Bevel.

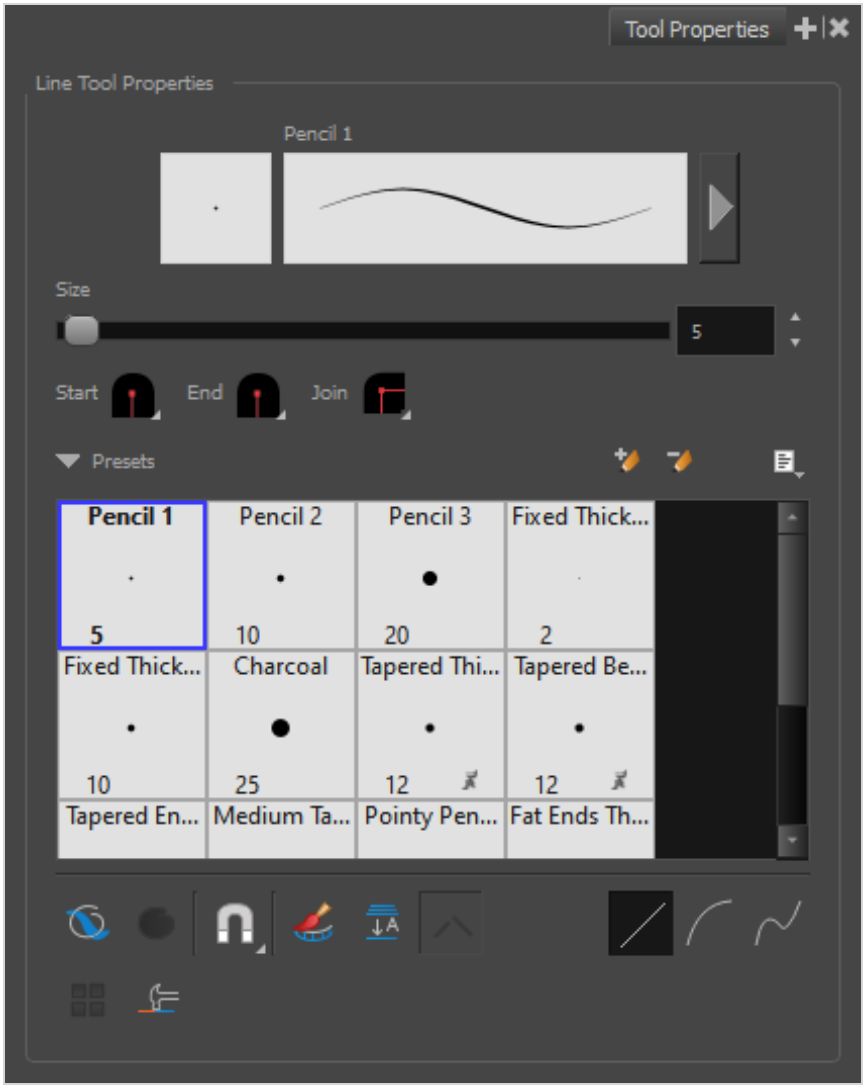
Line Tool Properties

The Line tool allows you to quickly draw a line segment by dragging the mouse from its starting point to its end point.

How to access the Line tool properties

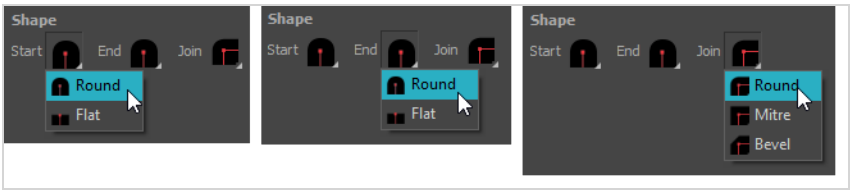
1. In the Tools toolbar, select the Line tool.

   The tool's properties are displayed in the Tool Properties view.



Pencil Properties

Just like other shape tools, this tool creates pencil lines. Hence, its tool properties are similar to the ones of the Pencil tool and it can be used with pencil presets.

Tool Name	Description
Preview Area	The Preview area lets you see a preview of the stroke your drawing tool will make.
Pencil Properties Dialog	The arrow button right of the preview area opens the Pencil Properties dialog. While the Tool Properties view only gives you access to a few of the pencil properties, a list of pencil presets and other drawing options, the Pencil Properties dialog gives you access to all the available options for your pencil's shape and texture. For more information on the Pencil Properties dialog, see the Pencil Properties Dialog section below.
Size	Defines the width of the pencil line used to draw the line.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.

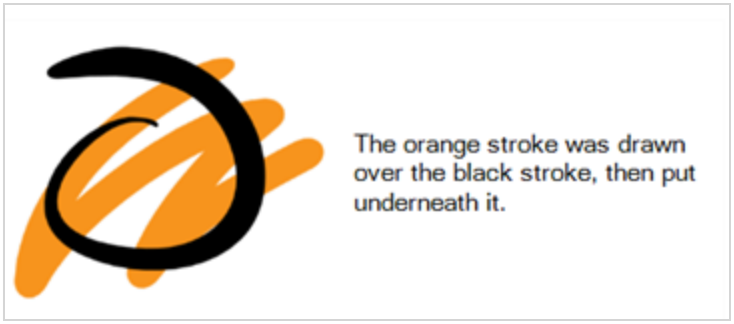
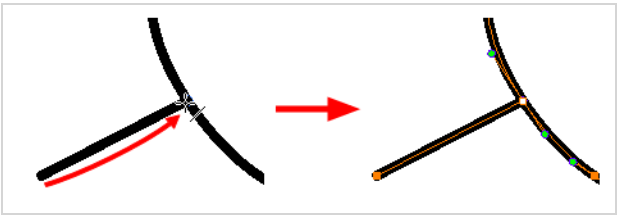
Pencil Presets

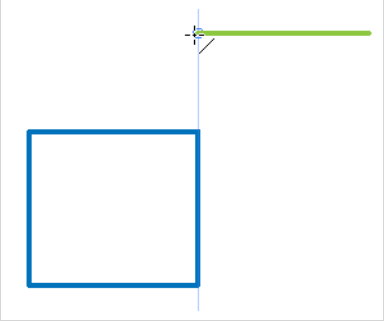
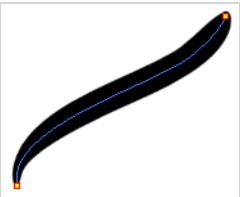
These options allow you to select, create and manage pencil presets.

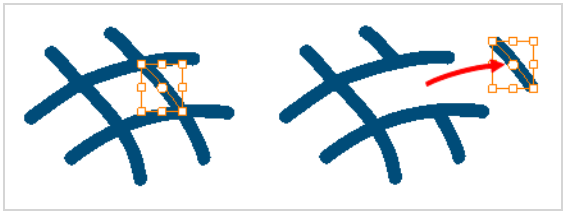
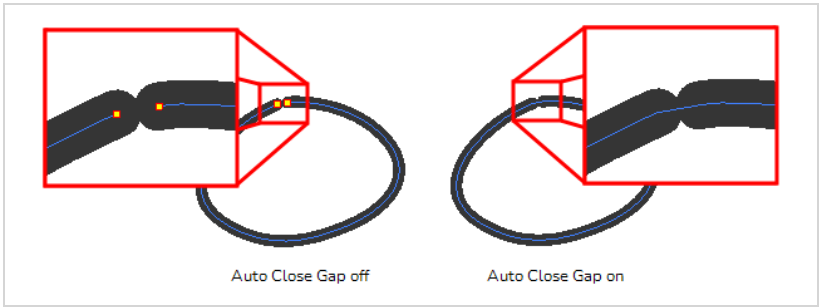
Icon	Property	Description
	Presets list	Harmony provides a variety of pencil presets and thickness stencils and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw for efficiency and consistency. A thickness stencil saves the thickness information across the length of the line. When drawing with a thickness stencil, the pressure sensitivity of the tablet is discarded. A thickness stencil can be used while drawing, or applied afterwards. You also have the possibility to apply different textures to your lines by either using the default presets or to import your own. You can export the pencil presets that you have created and import those that others have created. This is a good way for you and project collaborators to keep a consistent look for the project.
	New Brush Preset	Creates a new preset based on the current tool properties.
	Delete Brush Preset	Deletes the currently selected preset.
	Brush Presets Menu	Open a menu that contains the following options: • **New Brush Preset:** Creates a new preset based on the current tool properties. • **Delete Brush:** Deletes the currently selected preset. • **Rename Brush:** Allows you to rename the currently selected preset. • **Import Brushes:** Allows you to import brush presets exported from Harmony. • **Export Brushes:** Allows you to export your brush presets into an `.xml` file. • **Small Thumbnail:** Displays presets in a grid of small thumbnails with a preview of their tip. • **Large Thumbnail:** Displays presets in a grid of big thumbnails, with their name and a preview of their tip. • **Stroke View:** Displays presets in a list, with their name and a preview of a stroke done with each preset.

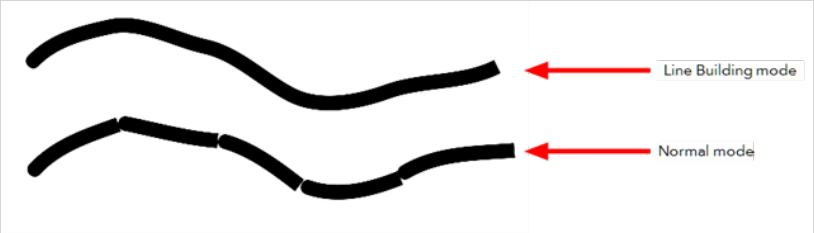
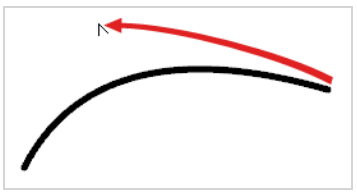
Drawing Options

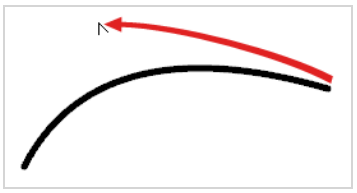
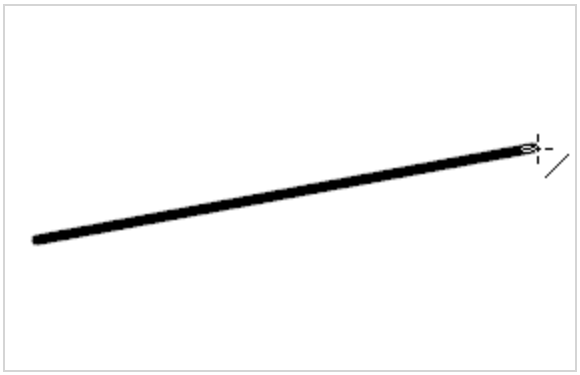
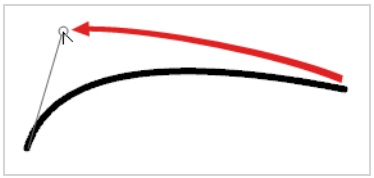
These options affect the way your drawing strokes are added to your artwork.

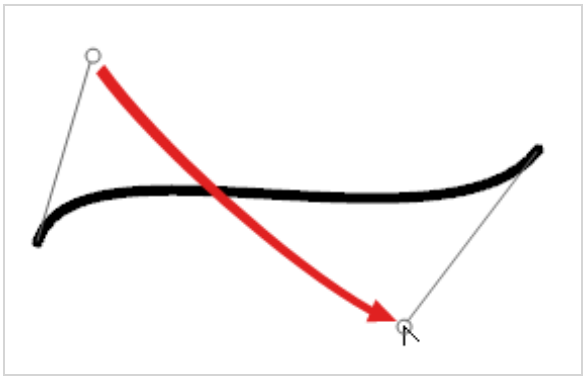
Icon	Tool Name	Description
	Draw Behind	When enabled, your brush strokes will appear behind the existing artwork.  **NOTE** Your brush stroke will temporarily appear over your artwork as you draw it, until you release the mouse cursor or tablet pen.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Contour:** When enabled, while you're drawing, the mouse cursor will automatically snap to the nearby contours of existing artwork, allowing you to draw shapes that connect with other parts of your drawing. 

Icon	Tool Name	Description
		NOTE If you draw a line with the Line tool and make its tip snap to a contour or another control point in your artwork, they will be locked together. You can then manipulate both simultaneously using the Contour Editor tool. You can also separate two drawing strokes that have been snapped together by selecting one of them with the Select tool and moving it away. • **Snap to Alignment Guides:** While drawing, the drawing tool will snap against nearby alignment guides. • **Snap and Align:** When enabled, while you're drawing, the mouse cursor will automatically align with the edges of strokes and shapes in your artwork, allowing you to draw shapes that align with parts of your drawing.  • When enabled, while you're drawing, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '.
	Automatically Create Colour Art	As you draw in the Line Art layer, the Automatically Create Colour Art option instantly creates the corresponding strokes in the Colour Art layer. 

Icon	Tool Name	Description
	Auto-Flatten Mode	By default, when drawing on a vector layer, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.  **NOTE** Using the Select tool, you can use select and remove a segment of flattened pencil lines. Overlapping pencil lines drawn with the Auto-Flatten mode are essentially cut into segments by the overlap and can be treated as individual lines.
	Auto-Close Gap	When enabled, small gaps between the pencil lines you draw will be closed by an invisible stroke to make sure your shapes are closed and that they can be filled with the Paint tool. When drawing contours with pencil lines, the centreline is used to determine whether or not the contour is closed, but the visible tips of the pencil line will extend a bit beyond the tips of its centreline, making it possible to have shapes that appear closed, but are not really. This can prevent the shape from being filled with the Paint tool. Enabling this option when drawing with the Pencil or Line tool will prevent you from leaving invisible gaps in your contours.  Auto Close Gap off Auto Close Gap on
	Line Building Mode	The Line Building mode is very useful when drawing long lines and curves in small increments with pencil lines or the Line tool. As the pencil lines are central vector lines, it may be difficult to align the line tips perfectly to create a uniform stroke and close all gaps.

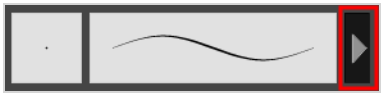
Icon	Tool Name	Description
		In this mode, you can draw lines in small increments and the tips are merge into one single stroke.  **NOTE** This mode only works with pencil lines or the line tool.
	Use Stored Colour Gradient	The Use Stored Colour Gradient option can be used when painting with a gradient colour to always position the gradient in the same way it was stored, making it consistent across brush strokes. You can store a gradient by selecting a zone painted with a gradient with the Select tool, then clicking on Store Colour Gradient in the Tool Properties view.
	Straight Line Mode	Draws a straight line. In this mode, you can draw curved lines with the following method: 1. Draw the line by clicking and dragging from the start point to the end point of the line, but don't release the mouse button or pen yet. 2. While holding the mouse button or pen down, press and hold the Ctrl (Windows/Linux) or ⌘ (macOS) and move the mouse or pen to define the line's curve.  3. Once the line's curve looks right, release the mouse button or pen.

Icon	Tool Name	Description
	Curve Line Mode	This mode allows you to draws a simple curved (quadratic Bezier) line in two clicks: 1. Draw the line by clicking and dragging from the start point to the end point of the line. 2. Move the mouse or pen to define the curve of the line and click. 
	S Curve Line Mode	Draws an S-shaped (cubic Bezier) line. This mode allows you to draw lines with finely tuned or even S-shaped curves with three clicks: 1. Draw the line by clicking and dragging from the start point to the end point of the line.  2. Move the mouse or pen to define the Bezier position of the beginning of the line and click.  3. Move the mouse or pen to define the Bezier position of the end of the line and click.

Icon	Tool Name	Description
		

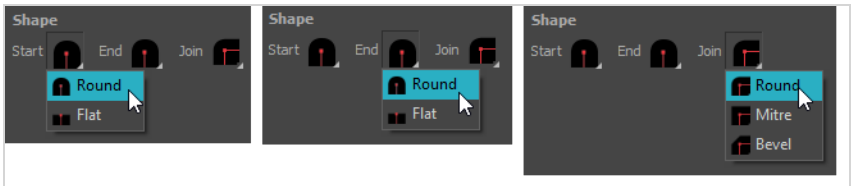
Pencil Properties Dialog

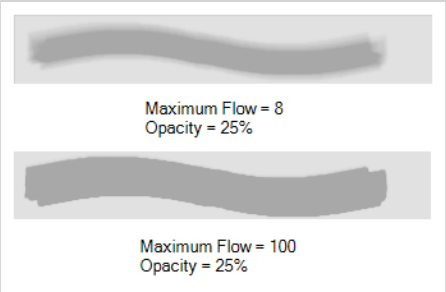
Since the Line tool draws pencil lines, you can use the Pencil Properties dialog to customize the type of lines it draws. To open the Pencil Properties dialog, click on the arrow button right of the stroke display area.

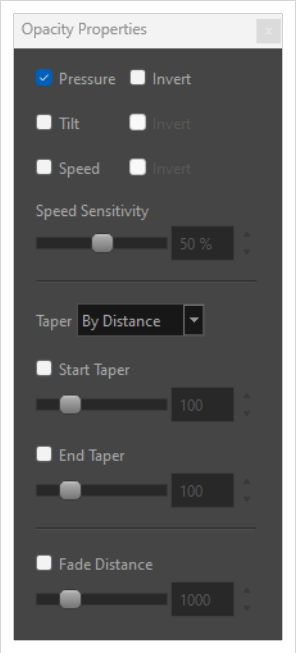


Size and Smoothness Tab

The Size and Smoothness tab allows you to select your pencil's size, its smoothing parameters as well as the shape of its tips and corners.

Property	Description
Maximum Size	Defines the maximum size of the pencil line. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Minimum Size	Defines the minimum size of your stroke as a percentage of the maximum size. If you do not have pressure sensitivity from a pen table, the minimum size value will be ignored.
Proportional to Camera	If you check this option, the size of the pencil will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the pencil will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the pencil will be proportionally bigger.
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on the central line of the pencil stroke. A higher setting will prevent your line from being shaky and will reduce the amount of control points it has, making it easier to tweak, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on the outer contour of the pencil stroke. A pencil line is defined by its centreline and its variations in thickness, rather than its apparent shape. When drawing a pencil line with a mouse, its thickness is uniform. Therefore, its outer contour does not have any control point, except at its extremities, and no smoothing is required for its contour. However, when drawing a pencil line with a pressure sensitive tablet, its contour will have control points and Bezier curves to define the line's variations in thickness, and thus smoothing must be performed on its contour. An increased contour smoothing will reduce the amount of control points on the line's thickness and smoothen its curves, but may affect the precision of the variations in line thickness.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew.

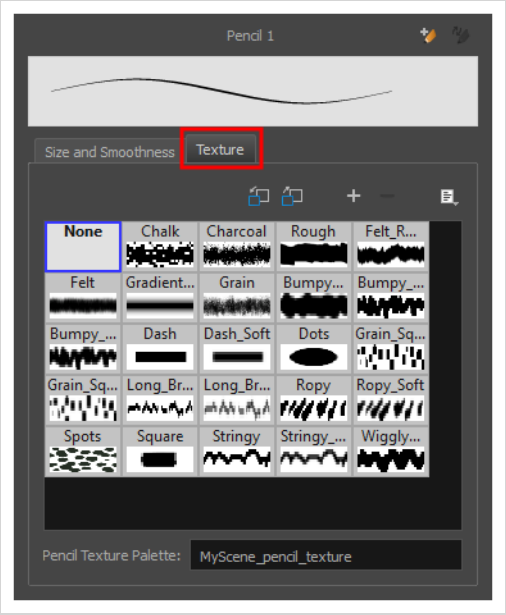
Property	Description
	You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.
Maximum and Minimum Opacity	The Maximum and Minimum Opacity parameters are where you set the opacity range for a pencil line. This works with the pressure sensitivity of a pen tablet. • **Maximum Opacity:** Sets the transparency limit of the pencil line when the pressure is heavy. • **Minimum Opacity:** Sets the transparency limit of the pencil line when the pressure is very light. It is defined as a percentage of the Maximum Opacity value. If the Minimum Opacity value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The opacity will be set to the constant rate of the Maximum Opacity value.  You can control the opacity properties by clicking on the arrow button on right and the dialog box will appear same as shown for size properties above. Please refer *Line Tool Properties* on page 500

Property	Description
	 **Pressure:** Allows you to apply more pressure and increases the size of the pencil. You can check the box to invert this behaviour. • **Tilt:** Allows you to tilt the pen closer to tablet for a bigger stroke. You can check the box to invert this behaviour. • **Speed:** Allows you to reduce the size of the stroke by drawing at a fast speed. You can check the box to invert this behaviour. • **Speed Sensitivity:** A slider is used to control how fast must the stroke be drawn to reach the minimum value. • **Taper:** Allows you to reduce the value of a property at the start or the end of each stroke. The value can be expressed using two options: **Distance and Percentage**. Distance is selected by default. For example: A taper of 200 will be the same length as the width (diameter) of a stroke that has its size set at 200. You can enable Start and End Tapering option individually. • **Start Taper:** When distance is selected as a Taper value, the effect of start taper can be visualized as the stroke is drawn. • **End Taper:** When distance or percentage is selected as a Taper value, the effect of end taper can be visualized once the stroke is complete and vectorized as the length is unknown until the stroke is complete. • **Fade Distance:** Allows you to fade the value of property over a given distance. It uses the same units as the size and is applied as the stroke is drawn.

Texture Tab

In the Pencil Properties view, the Texture tab allows you to select a pencil texture from the currently selected pencil texture palette to use with the Pencil tool. You can also add, remove or rename textures, save the current pencil texture palette as the default one, or import the pencil texture palette into your scene.

The pencil texture palette used in the Texture tab of the Pencil Properties dialog is the one selected in the Colour view. You can select a pencil texture palette by selecting it from the pencil texture palette list in the Colour view.

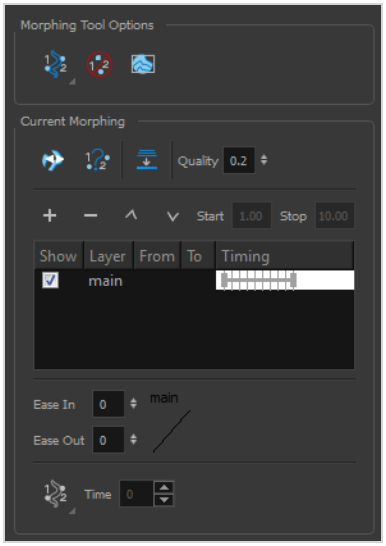


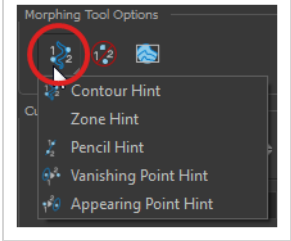
Icon	Property	Description
	Use as Default Pencil Texture Palette	This option is available from the menu button. Sets the currently selected pencil texture palette as the default pencil texture palette in your user preferences. The default pencil texture palette is added to every scene you create in Harmony. The palette is copied in your preferences, so it will be added to your new scenes in the exact state it is when you make it the default pencil texture palette.
	Reload Default Texture Palette	Imports the default pencil texture palette as a new pencil texture palette into your scene's palette list, and selects it as the current pencil texture palette.
	New Texture	Allows you to import an image file into a new pencil texture swatch in the current pencil texture palette. The pencil texture's effect on your pencil line will be based on the image's transparency channel, and will follow your pencil lines on its horizontal axis. This option is also available from the menu button.

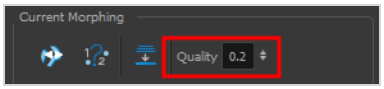
Icon	Property	Description
	Delete Texture	Deletes a pencil texture swatch from the current pencil texture palette. This option is also available from the menu button.
	Rename Texture	Renames the selected pencil texture swatch in the current pencil texture palette. This option is also available from the menu button.
	Pencil Texture Display	Displays the pencil textures in the current pencil texture palette and allows you to select one to use with the Pencil tool.
	Pencil Texture Palette	Displays the name of the currently selected pencil texture palette, for reference. To select a different pencil texture palette, you must select it in the Colour view.

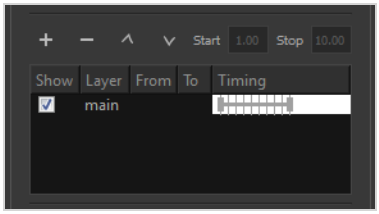
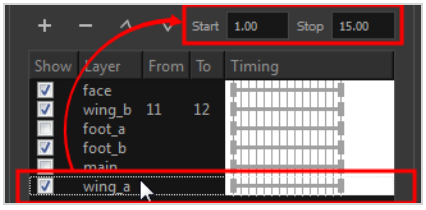
Morphing Tool Properties

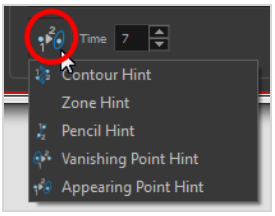
As you create and adjust your morphing sequences, you will often use the Tool Properties view. Using this view allows you to do things such as toggle between your key drawings, adjust the easing or select a hint type.



Icon	Tool Name	Description
	Hint Type	The Hint Type drop-down menu allows you to select the correct hint to remedy any problem areas in your drawing.  You can have more than one hint type in your drawings. You can mix all of the hint types in your morphing sequence.
	Do not Pick Transparency	The Hide Hints button temporarily Temporarily hides the hint points from the key drawings. Use this option when you have a series of hint points hiding some lines you would like to see.

	Show Morphing in Place	The Show Morphing In Place option is used with morphing layers. Enabling this option prevents the currently selected morphing layer from being shown on top of the others and maintains the correct layer ordering.
	Suggest Hints	The Suggest Hints option is used to automatically set Automatically sets hint points on key drawings as a help tool. If you're not sure where to set hints, you can use this option. It will set the main hints which you can then fine tune.
	Switch Between Drawings	The Switch Between Drawings button is used to toggle Toggles between the two key drawings in your morphing sequence. This option is useful while setting hints. You can use the default keyboard shortcut F4 to toggle between your drawings.
	Flatten	The Flatten option is used when you have to morph a sequence with a semi-transparent or transparent colour in it.
	Quality	The Quality setting is used to make the lines of the morphed drawings smoother. Adjust this parameter when you are doing an extreme close up of your animation. 
	Morphing Layers	The Morphing Layers option is used when working with morphing layers. You can add, remove and manage your different morphing layers in this space.

		 To create new drawings, double-click on the blank area under the **From** section to create the source drawing and the **To** section for the destination drawing and type a different value than the ones used for the main layer.
+	Add Layer	Adds a new Morphing layer.
−	Delete Layer	Deletes the selected Morphing layer.
^	Move Up	Moves the new layer up in the stack.
v	Move Down	Moves the new lower up in the stack.
	Start	Indicates the start frame of the selected Morphing layer. 
	Stop	Indicates the end frame of the selected Morphing layer.
	Ease in and Ease out	The Easing option is used to adjust the starting and ending velocity of your morphing sequence so that the motion is smooth and not mechanical. You can adjust the Ease In and Ease Out value by dragging your cursor up and down or typing a new value. The values go from -1.0 to 1.0.

	Convert Hints	The Convert Hints option is used to switch the type of the selected hint points. This option is useful when you position hints and then realize they are not the right type. You can select them and convert them to the correct type instead of deleting them and setting new ones.  Use the Morphing tool to select the hints and then convert them by going to the Tool Properties view and selecting the new hint type from the Convert Hints drop-down menu.
	Time	The Time field is used to set the timing on Appearing Point and Vanishing Point hints. These hints are used to set the trajectory of appearing and vanishing objects, With the Time field, select your Appearing Point or Vanishing Point hint and type the frame number on which the object will start its appearing or vanishing animation.

Paint Tool Properties

The Paint tool allows you to fill closed areas of your drawing with the selected colour.

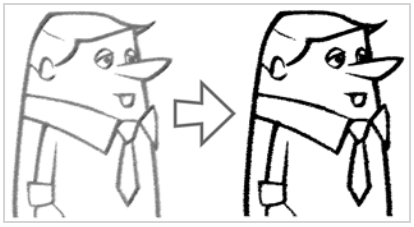
How to access the Paint tool properties

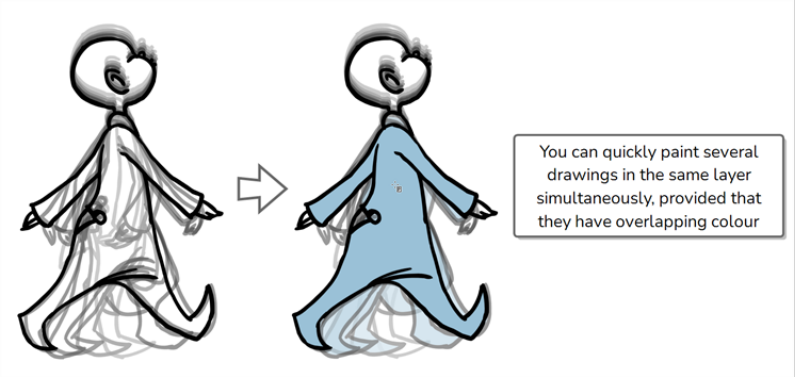
1. In the Tools toolbar, select the Paint , Paint Unpainted , Repaint or Unpaint tool.

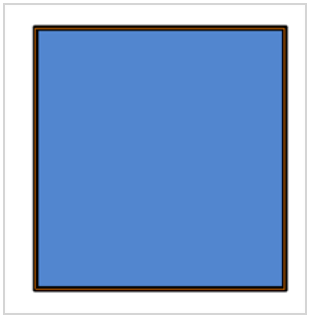
   The tool's properties are displayed in the Tool Properties view.

Paint Tool Options

Icon	Property	Description
	Selection Mode	Allows you to choose the method to visually select multiple elements: • **Lasso:** Allows you to select multiple elements by drawing an irregular closed shape around them with your mouse. • **Marquee:** Allows you to select multiple elements by drawing a rectangle around them. This is faster, as you only need to drag your mouse from one corner of the rectangle to its opposite corner, but it may not be as precise as you want. **TIP** You can press and hold the Alt key to temporarily use the other selection mode.

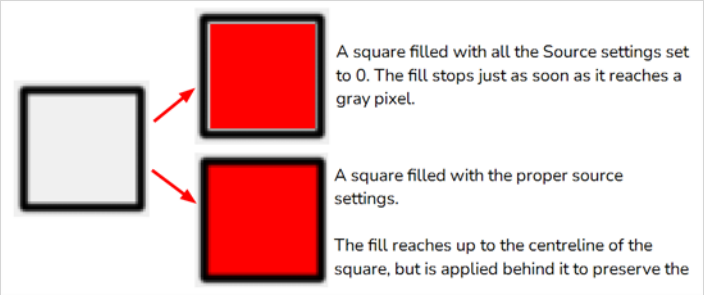
Icon	Property	Description
	Paint Mode	The Paint tool has four different modes: • **Paint:** Paints or repaints selected zones, whether or not they are already filled. • **Paint Unpainted:** Only paints empty zones, and does not repaint zones that are already filled with colour. • **Repaint:** Only paints zones that are already filled with colour, and does not fill empty zones. • **Unpaint:** Removes colour from the selected zone, replacing it with transparency.
	Paint and Remove Textures	The Paint and Remove Texture option is used when you vectorized images as greyscale texture style. An image vectorized as texture is a mix of bitmap filling encapsulated in a vector-based frame. Painting a textured zones with the Paint tool will change the tint of the textured lines. Painting the textured zones using the Paint and Remove Texture option transforms the bitmap filling into a 100% vector based zone and fills it with a solid colour. 
	Apply to Visible Drawing Layers	This option allows you to select which layers the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button. • **Off:** When this button is toggled off, the tool only works on the currently selected layers. If several layers are selected, the tool will work on all these layers simultaneously. • **On** When this button is toggled on, the tool will work on all the visible layers. • **Apply to Visible Drawing Layers:** The tool will work on all the visible layers in the Camera view. • **Apply to Synced Drawing Layers**: If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer.

Icon	Property	Description
		NOTE This option only works in the Camera view.
	Apply to All Frames	This option allows you to determine which drawings in the current layer the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button. • **Off:** When this button is toggled off, the tool only works on the drawing in the current frame. • **Apply to All Frames:** The tool will work on every exposed drawing in the selected layer simultaneously. • **Apply to Onion Skin Range:** The tool will work on every drawing displayed in the Onion Skin. Onion Skin must be enabled for this option to work. 
	Respect Protected Colour	The Respect Protected Colour option is enabled by default. In your Colour view, you can protect some colour swatches to avoid repainting or unpainting the zones linked to that swatch. If you disable this option the Paint tool will not follow the protect colour rule and will repaint or unpaint the protected colours on your drawings until you enable the option again.
	Use Stored Colour Gradient	When you paint a zone with a gradient or textured colour swatch, the gradient or texture's position is set relative to the size of the zone you are painting. If you want the Paint tool to use a particular size and position, you must first store your desired position and size using the Select tool and then enable the Use Stored Colour Gradient option in the Paint tool properties.

Icon	Property	Description
	Select Newly Painted, Repainted, and Unpainted Contours/Lines	In the Paint tool properties, this option keeps a selection highlighted around the latest painted zone after using the Paint, Repaint, Unpaint, or Paint Unpainted tool. 
	Close Gap	By default, if you attempt to fill a shape that has a small gap in its contour, the Paint tool will not be able to fill the shape. This option allows you to make the Paint tool automatically add a stroke to close the shape when it detects a small gap between two strokes in the shape. The Close Gap setting can be set to a value between 0 and 10. This determines the maximum size of a gap to close, in pixels. You can also use one of the following presets: • **No Close Gap:** Sets the Close Gap setting to 0, disabling the feature. • **Close Small Gap:** Sets the Close Gap setting to 2, making the Paint tool close gaps that are barely visible. • **Close Medium Gap:** Sets the Close Gap setting to 4, making the Paint tool close gaps that are somewhat visible. • **Close Large Gap:** Sets the Close Gap setting to 8, making the Paint tool close gaps that are easy to notice.

Bitmap Options

Since bitmap drawings are made of pixels instead of shapes, and that the outlines of shapes in bitmap drawings are often feathered, it can be complicated to figure out exactly the area the Paint tool must fill when trying to fill a zone in a bitmap drawing. For example, if the Paint tool only replaces pixels with the exact same colour as the one you click on with the selected colour, it will leave a small gap near the outlines of the shape.



The following settings determine how the Paint tool figures out the area it must fill. When any of these settings are increased, the Paint tool's tolerance for colour or alpha differences increases and it will a bigger area that it otherwise would.

Icon	Property	Description
	Source	Allows you to select which art layer to use in order to determine the fillable zone. By default, this is set to Current Art, which means the layer you are filling will be used to determine the fillable zone. However, if you want to keep your colour art on the Colour Art layer and the line art on the Line Art layer, you can set the Source to Line Art, and then use the Paint tool on the Colour Art layer. The Paint tool will use the artwork in the Line Art layer to determine the area to fill with colour, but will still add this colour to the Colour Art layer. This property has the following options: • **Current Art:** Bases the zone to fill on the current art layer. • **Line Art:** Bases the zone to fill on the Line Art layer, regardless of which layer you are painting on. • **Colour Art:** Bases the zone to fill on the Colour Art layer, regardless of which layer you are painting on.
--	Alpha	The alpha threshold that separates opaque and transparent zones. When filling a "transparent" zone, the paint tool will apply the colour under semi-transparent pixels, making them opaque. Then filling an "opaque" zone, the paint tool will replace the colour of semi-transparent pixels without affecting their transparency. If you want to repaint lineart or shapes that have no outlines, you can do so by decreasing this setting completely. This will make it fill any

Icon	Property	Description
		pixel that isn't 100% transparent, so it will paint your outlines completely. However, if you're using this method to repaint outlines, they must not be filled yet for this method to work. If you want to paint transparent zones that have dirt or semi-transparent spots, you can increase this setting to make the Paint tool paint behind them instead of around them. **NOTE** Raising this setting too high may cause the paint tool to ignore outlines that are not 100% opaque, which can cause it to think the shape is not closed. Hence, it might fail to find a zone to fill and not do anything.
--	Colour Tolerance	The amount of tolerance the paint tool has for changes in colour when filling an area. Raising this setting will allow the paint tool to fill over areas that have some variations in colour, but may cause it to fill beyond the areas you meant to paint.
--	Maximum Overlap	The maximum amount of pixels beyond the fillable zone that the Paint tool can fill. When this setting is set to any value above zero, the paint tool will fill the zone until it finds a pixel that is a different colour, value or transparency as the one you clicked on. Then, it will start filling pixels beyond that point, up until it filled the amount of pixels in the Maximum Overlap setting. If it lands outside of a fillable zone before it reached the maximum overlap, it will stop filling at that point. However, if it lands into another fillable zone before reaching its maximum overlap, it will fill that zone as well. Therefore, if you're filling shapes inside other shapes, you have to set this setting to the approximate width of your outlines. Setting it higher will make the colour spill beyond the zone you clicked on and fill the zone outside of it, and setting it lower is liable to leave a small gap between the fill and the outlines.

Icon	Property	Description
		NOTE When you fill a zone with overlap, Harmony tries to detect and preserve the outlines of your shape. This is easy to do when filling a transparent shape, or when repainting a shape made of solid outlines and a solid fill. However, if you are trying to repaint an already painted zone, it may fail to detect your outlines and may repaint over them if the colour of your outlines or inside the shape isn't consistent. Therefore, it is highly recommended to avoid repainting painted zones as much as possible when working with bitmap layers.
	Antialiasing	When enabled, the outlines of the fill will be smoothed so that they do not look pixelated. **NOTE** The effect of this setting will not be visible if you fill all the way to the outlines, as the Paint tool will preserve the antialiasing of existing outlines when filling up to them.

Pencil Tool Properties

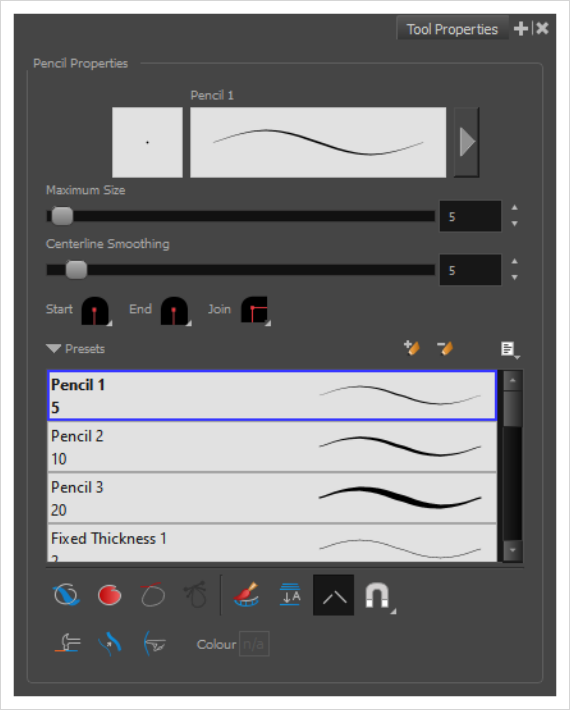
The Pencil tool allows you to draw simple contour lines that are defined by their centerline and their thickness.

When you select the Pencil tool, the Tool Properties view displays the different Pencil modes that control how the pencil line is drawn.

How to access the Pencil tool properties

1. In the Tools toolbar, select the Pencil tool.

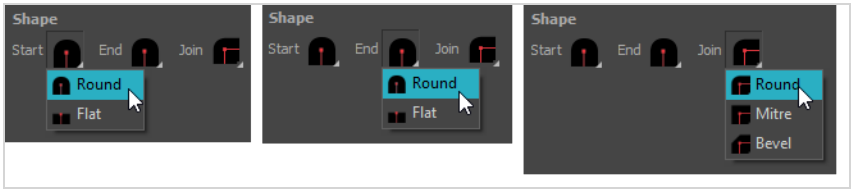
   The tool's properties are displayed in the Tool Properties view.



Pencil Properties

The following properties affect the pencil's size, smoothing, shape and other properties for the drawing style of your pencil. Those properties can be saved into pencil presets for later use.

Property	Description
Preview Area	The Preview area lets you see a preview of the stroke your drawing tool will make.

Property	Description
Pencil Properties Dialog	The arrow button right of the preview area opens the Pencil Properties dialog. While the Tool Properties view only gives you access to a few of the pencil properties, a list of pencil presets and other drawing options, the Pencil Properties dialog gives you access to all the available options for your pencil's shape and texture. For more information on the Pencil Properties dialog, see the Pencil Properties Dialog section below.
Maximum Size	Defines the maximum width of the pencil line. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Centerline Smoothing	Defines the number of control points added to the centre line. The fewer the control points the smoother (but less faithful) the line.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.

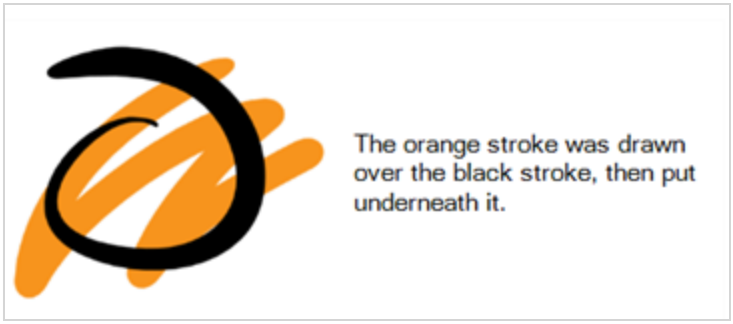
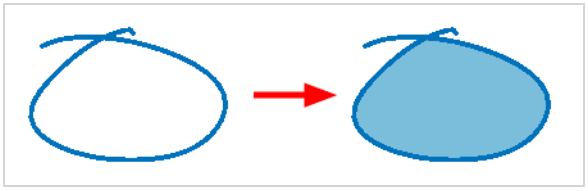
Pencil Presets

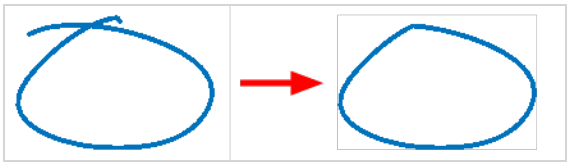
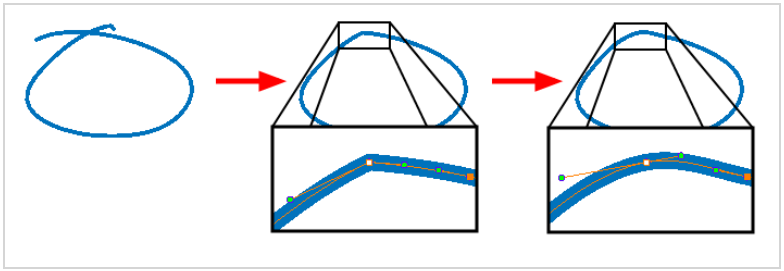
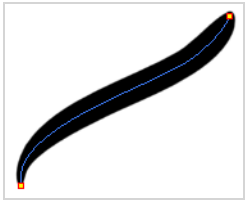
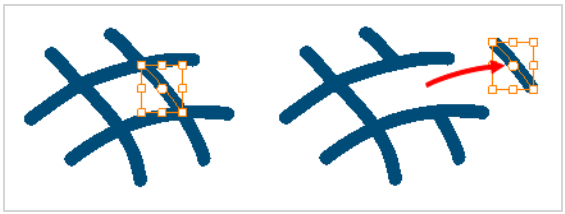
These options allow you to select, create and manage pencil presets.

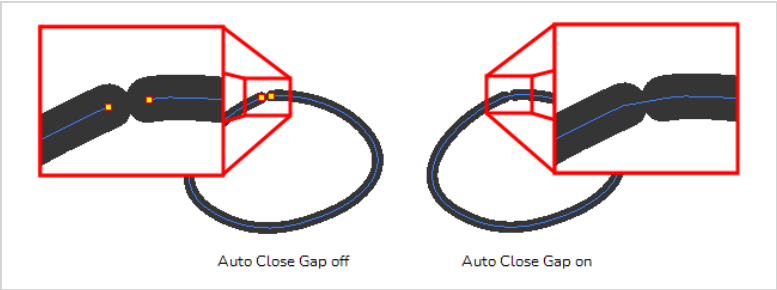
Icon	Property	Description
	Presets list	Harmony provides a variety of pencil presets and thickness stencils and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw for efficiency and consistency. A thickness stencil saves the thickness information across the length of the line. When drawing with a thickness stencil, the pressure sensitivity of the tablet is discarded. A thickness stencil can be used while drawing, or applied afterwards. You also have the possibility to apply different textures to your lines by either using the default presets or to import your own. You can export the pencil presets that you have created and import those that others have created. This is a good way for you and project collaborators to keep a consistent look for the project.
	New Brush Preset	Creates a new preset based on the current tool properties.
	Delete Brush Preset	Deletes the currently selected preset.
	Brush Presets Menu	Open a menu that contains the following options: • **New Brush Preset:** Creates a new preset based on the current tool properties. • **Delete Brush:** Deletes the currently selected preset. • **Rename Brush:** Allows you to rename the currently selected preset. • **Import Brushes:** Allows you to import brush presets exported from Harmony. • **Export Brushes:** Allows you to export your brush presets into an `.xml` file. • **Small Thumbnail:** Displays presets in a grid of small thumbnails with a preview of their tip. • **Large Thumbnail:** Displays presets in a grid of big thumbnails, with their name and a preview of their tip. • **Stroke View:** Displays presets in a list, with their name and a preview of a stroke done with each preset.

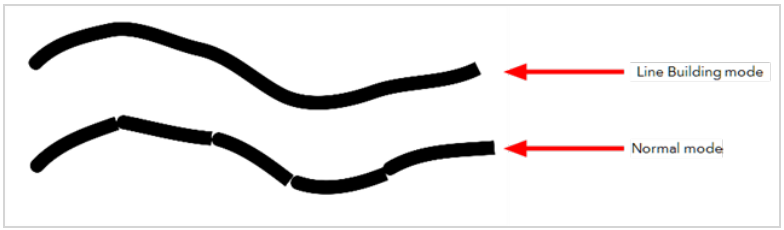
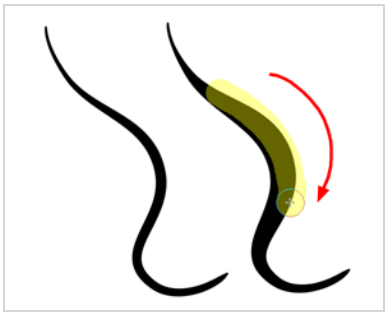
Drawing Options

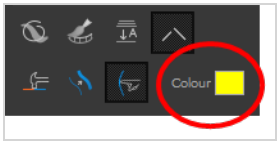
These options affect the way your drawing strokes are added to your artwork.

Icon	Property	Description
	Draw Behind	When enabled, your brush strokes will appear behind the existing artwork.  **NOTE** Your brush stroke will temporarily appear over your artwork as you draw it, until you release the mouse cursor or tablet pen.
	Auto Fill	When enabled, drawing a closed shape will automatically fill it with the currently selected Paint colour.  **TIP** By default the pencil line and its fill will be the same colour. To select different colours for the line and its fill, do the following: 1. In the Colour view, click the Unlock Three Colours button. 2. Click on the Set Current Pencil Colour swatch. Then, in the colour list, select the desired colour swatch for your outline. 3. Click on the Set Current Paint Colour swatch. Then, in the colour list, select the desired colour swatch for the fill.
	Trim Extra Lines	When enabled, drawing a closed shape will automatically remove the outstanding lines.

Icon	Property	Description
		
	Align Handles After Trim	When the Trim Extra Lines option is enabled, enable this option to make the point where the beginning and end of the stroke meet into a smooth curve rather than a hard corner. 
	Automatically Create Colour Art	As you draw in the Line Art layer, the Automatically Create Colour Art option instantly creates the corresponding strokes in the Colour Art layer. 
	Auto Flatten	By default, when drawing on a vector layer, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork. 

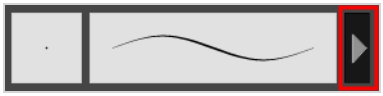
Icon	Property	Description
		NOTE Using the Select tool, you can select and remove a segment of flattened pencil lines. Overlapping pencil lines drawn with the Auto-Flatten mode are essentially cut into segments by the overlap and can be treated as individual lines.
	Auto-Close Gap	When enabled, small gaps between the pencil lines you draw will be closed by an invisible stroke to make sure your shapes are closed and that they can be filled with the Paint tool. When drawing contours with pencil lines, the centreline is used to determine whether or not the contour is closed, but the visible tips of the pencil line will extend a bit beyond the tips of its centreline, making it possible to have shapes that appear closed, but are not really. This can prevent the shape from being filled with the Paint tool. Enabling this option when drawing with the Pencil or Line tool will prevent you from leaving invisible gaps in your contours.  Auto Close Gap off Auto Close Gap on
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping mode: • **Snap to Alignment Guides:** While drawing, the drawing tool will snap against nearby alignment guides.

Icon	Property	Description
	Line Building Mode	The Line Building mode is very useful when drawing long lines and curves in small increments with pencil lines or the Line tool. As the pencil lines are central vector lines, it may be difficult to align the line tips perfectly to create a uniform stroke and close all gaps. In this mode, you can draw lines in small increments and the tips are merge into one single stroke.  **NOTE** This mode only works with pencil lines or the line tool.
	Auto Adjust Thickness	The Auto Adjust Thickness tool is useful when you want to render a portion of a line thicker. When tracing a drawing on paper, you will often go back to a section of a curve to make it thicker to add dynamism to the line. Using the Auto Adjust Thickness tool, you can draw highlight strokes over the section to make thicker. Once you release the pen or mouse, the line becomes thicker following the shape and curve of the original stroke. This way is much faster and smoother than using the Pencil Editor tool. You do not have to add extra points and adjust the position and Bezier handles.  The default overlay colour is light yellow. If this colour is difficult to see because of the background or drawing colour, you can adjust the colour.
	Line Pushing Mode	The Line Pushing Mode option lets you draw highlight strokes over existing pencil lines. You can reshape the curves. Depending how you draw the pushing stroke over your line, the highlighted section will be

Icon	Property	Description
		reshaped in one direction or the other. The default overlay colour is light yellow. If this colour is difficult to see because of the background or drawing colour, you can adjust the colour.
	Colour	You can change the colour of the temporary strokes that appear in the drawing space when using the Line Pushing Mode or the Auto Adjust Thickness option by clicking on the Colour swatch and selecting a new colour in the Colour Picker dialog. 

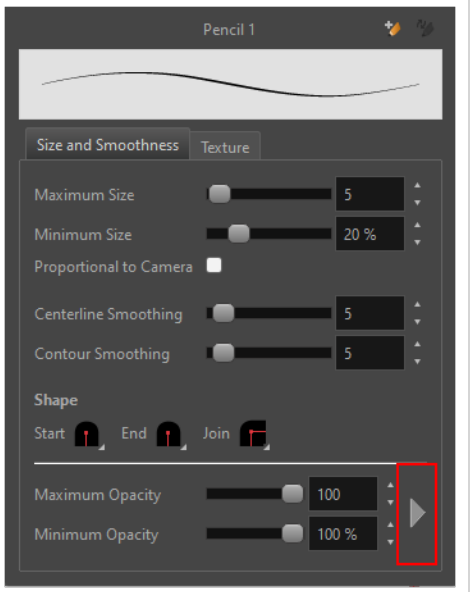
Pencil Properties Dialog

Pencils have extra parameters which are not accessible from the Tool Properties view. To open the Pencil Properties dialog, click on the arrow button right of the stroke display area.

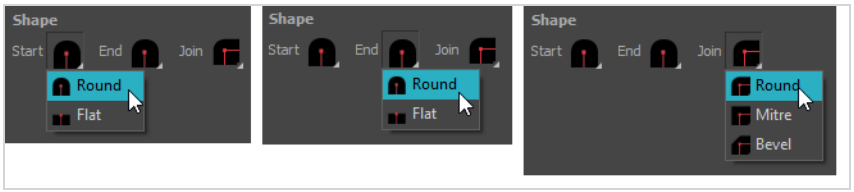
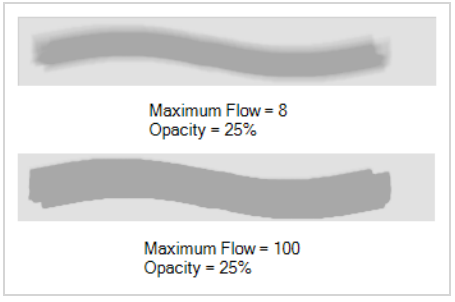


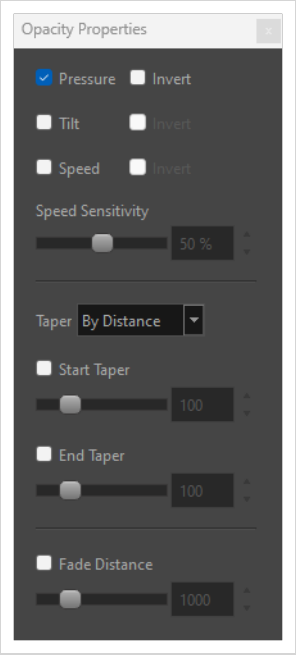
Size and Smoothness Tab

The Size and Smoothness tab allows you to select your pencil's size, its smoothing parameters as well as the shape of its tips and corners.



Property	Description
Maximum Size	Defines the maximum size of the pencil line. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Minimum Size	Defines the minimum size of your stroke as a percentage of the maximum size. If you do not have pressure sensitivity from a pen table, the minimum size value will be ignored.
Proportional to Camera	If you check this option, the size of the pencil will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the pencil will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the pencil will be proportionally bigger.
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on the central line of the pencil stroke. A higher setting will prevent your line from being shaky and will reduce the amount of control points it has, making it easier to tweak, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on the outer contour of the pencil stroke. A pencil line is defined by its centreline and its variations in thickness, rather than its apparent shape. When drawing a pencil line with a mouse, its thickness is uniform. Therefore, its outer contour does not have any control point, except at its extremities, and no smoothing is required for its contour.

Property	Description
	However, when drawing a pencil line with a pressure sensitive tablet, its contour will have control points and Bezier curves to define the line's variations in thickness, and thus smoothing must be performed on its contour. An increased contour smoothing will reduce the amount of control points on the line's thickness and smoothen its curves, but may affect the precision of the variations in line thickness.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.
Maximum and Minimum Opacity	The Maximum and Minimum Opacity parameters are where you set the opacity range for a pencil line. This works with the pressure sensitivity of a pen tablet. • **Maximum Opacity:** Sets the transparency limit of the pencil line when the pressure is heavy. • **Minimum Opacity:** Sets the transparency limit of the pencil line when the pressure is very light. It is defined as a percentage of the Maximum Opacity value. If the Minimum Opacity value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The opacity will be set to the constant rate of the Maximum Opacity value.  You can control the opacity properties by clicking on the arrow button on right and the dialog box will appear same as shown for size properties above. Please refer

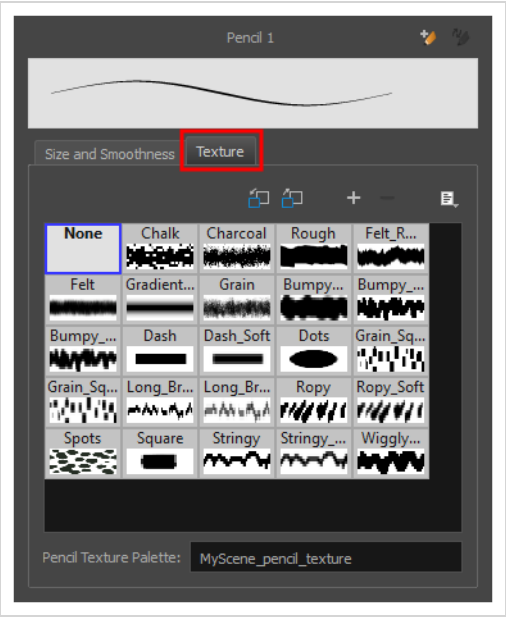
Property	Description
	Pencil Tool Properties on page 525  **Pressure:** Allows you to apply more pressure and increases the size of the pencil. You can check the box to invert this behaviour. • **Tilt:** Allows you to tilt the pen closer to tablet for a bigger stroke. You can check the box to invert this behaviour. • **Speed:** Allows you to reduce the size of the stroke by drawing at a fast speed. You can check the box to invert this behaviour. • **Speed Sensitivity:** A slider is used to control how fast must the stroke be drawn to reach the minimum value. • **Taper:** Allows you to reduce the value of a property at the start or the end of each stroke. The value can be expressed using two options: **Distance and Percentage**. Distance is selected by default. For example: A taper of 200 will be the same length as the width (diameter) of a stroke that has its size set at 200. You can enable Start and End Tapering option individually. • **Start Taper:** When distance is selected as a Taper value, the effect of start taper can be visualized as the stroke is drawn. • **End Taper:** When distance or percentage is selected as a Taper value, the

Property	Description
	effect of end taper can be visualized once the stroke is complete and vectorized as the length is unknown until the stroke is complete. • **Fade Distance:** Allows you to fade the value of property over a given distance. It uses the same units as the size and is applied as the stroke is drawn.

Texture Tab

In the Pencil Properties view, the Texture tab allows you to select a pencil texture from the currently selected pencil texture palette to use with the Pencil tool. You can also add, remove or rename textures, save the current pencil texture palette as the default one, or import the pencil texture palette into your scene.

The pencil texture palette used in the Texture tab of the Pencil Properties dialog is the one selected in the Colour view. You can select a pencil texture palette by selecting it from the pencil texture palette list in the Colour view.

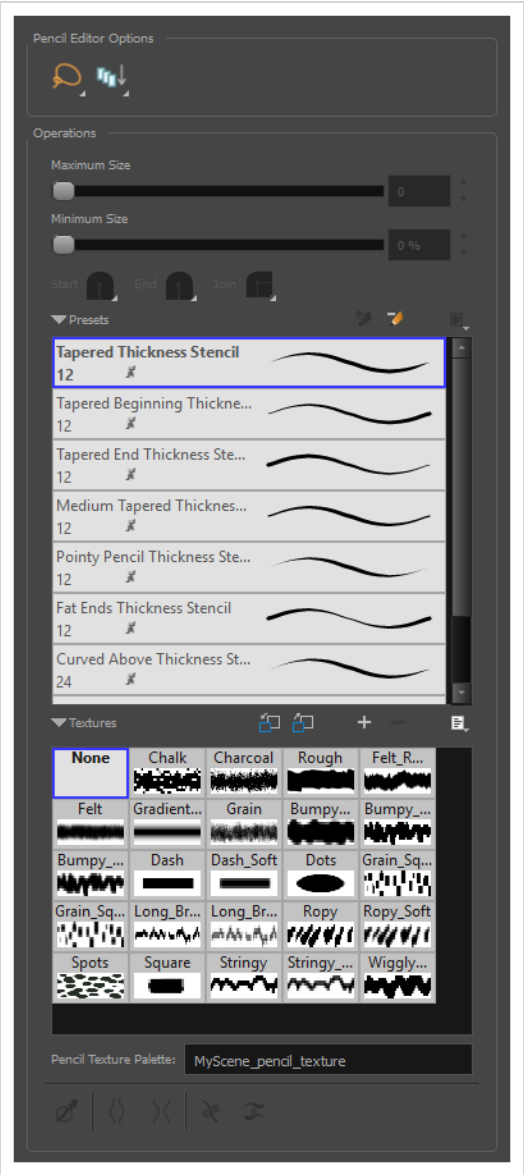


Icon	Property	Description
	Use as Default Pencil Texture Palette	This option is available from the menu button. Sets the currently selected pencil texture palette as the default pencil texture palette in your user preferences. The default pencil texture palette is added to every scene you create in Harmony. The palette is copied in your preferences, so it will be added to your new scenes in the exact state it is when you make it the default pencil texture palette.

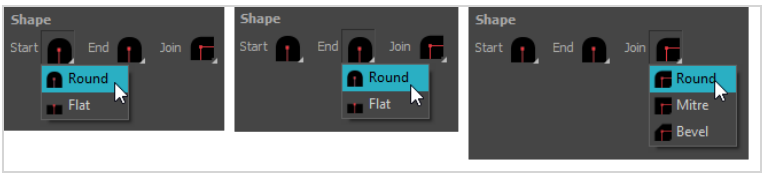
Icon	Property	Description
	Reload Default Texture Palette	Imports the default pencil texture palette as a new pencil texture palette into your scene's palette list, and selects it as the current pencil texture palette.
	New Texture	Allows you to import an image file into a new pencil texture swatch in the current pencil texture palette. The pencil texture's effect on your pencil line will be based on the image's transparency channel, and will follow your pencil lines on its horizontal axis. This option is also available from the menu button.
	Delete Texture	Deletes a pencil texture swatch from the current pencil texture palette. This option is also available from the menu button.
	Rename Texture	Renames the selected pencil texture swatch in the current pencil texture palette. This option is also available from the menu button.
	Pencil Texture Display	Displays the pencil textures in the current pencil texture palette and allows you to select one to use with the Pencil tool.
	Pencil Texture Palette	Displays the name of the currently selected pencil texture palette, for reference. To select a different pencil texture palette, you must select it in the Colour view.

Pencil Editor Tool Properties

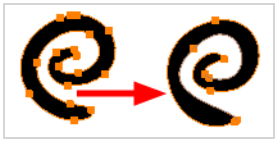
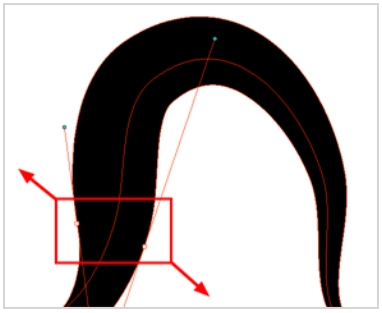
When you select the Pencil Editor tool, its properties and options appear in the Tool Properties view.

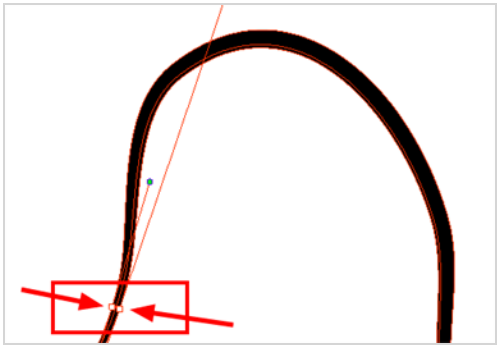
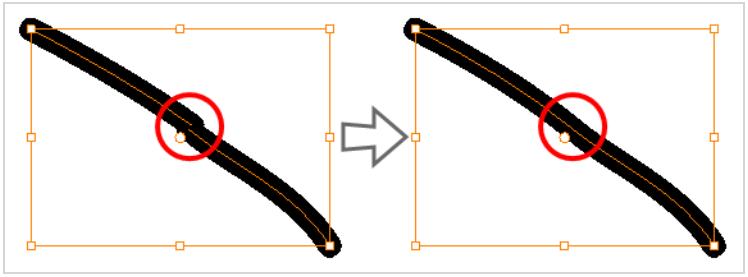
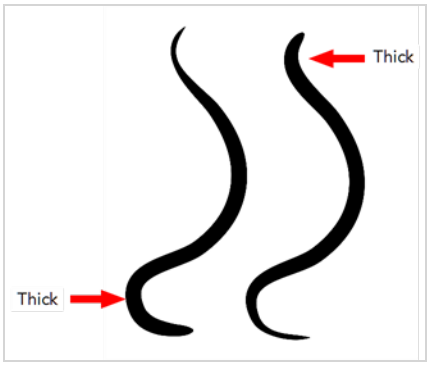


Icon	Tool Name	Description
	Selection Mode	Allows you to choose the method to visually select multiple elements: • **Lasso:** Allows you to select multiple elements by drawing an irregular closed shape around them with your mouse. • **Marquee:** Allows you to select multiple elements by drawing a rectangle around them. This is faster, as you only need to drag your mouse from one corner of the rectangle to its opposite corner, but it may not be as precise as you want.

		TIP You can press and hold the Alt key to temporarily use the other selection mode.
	Apply to Visible Drawing Layers	This option allows you to select which layers the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button. • **Off:** When this button is toggled off, the tool only works on the currently selected layers. If several layers are selected, the tool will work on all these layers simultaneously. • **On** When this button is toggled on, the tool will work on all the visible layers. • **Apply to Visible Drawing Layers:** The tool will work on all the visible layers in the Camera view. • **Apply to Synced Drawing Layers**: If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer. **NOTE** This option only works in the Camera view.
	Maximum Size	Defines the maximum width of the pencil line. If the pencil line has a constant size, this will define the width of the pencil line all over. If the pencil line has a varying size, this will define the width of its larger areas. Areas that are in-between the maximum and minimum size will be resized proportionally.
	Minimum Size	Defines the minimum width of the pencil line. If the pencil line has a varying size, this will define the width of its smaller areas. Areas that are in-betwen the maximum and minimum size will be resized proportionally.
	Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first

		tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.
	Presets	Harmony provides a variety of pencil presets and thickness stencils and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw for efficiency and consistency. A thickness stencil saves the thickness information across the length of the line. When drawing with a thickness stencil, the pressure sensitivity of the tablet is discarded. A thickness stencil can be used while drawing, or applied afterwards. You also have the possibility to apply different textures to your lines by either using the default presets or to import your own. You can export the pencil presets that you have created and import those that others have created. This is a good way for you and project collaborators to keep a consistent look for the project.
	New Brush	Allows to create a new preset from the selected pencil line.
	Delete Brush	Deletes the currently selected preset.
	Rename Brush	Allows you to rename the currently selected preset.
	Small Thumbnail, Large Thumbnail, and Stroke View	Allows you to display the presets as small square thumbnails, large square thumbnails or a list of stroke preview.
	Use as Default Pencil Texture Palette	This option is available from the menu button. Sets the currently selected pencil texture palette as the default pencil texture palette in your user preferences. The default pencil texture palette is added to every scene you create in Harmony. The palette is copied in your preferences, so it will be added to your new scenes in the exact state it is when you make it the default pencil texture palette.
	Reload Default Texture Palette	Imports the default pencil texture palette as a new pencil texture palette into your scene's palette list, and selects it as the current pencil

		texture palette.
	New Texture	Adds a new custom pencil texture to the list.
	Delete Texture	Deletes a texture preset from the list.
	Rename Texture	Renames the selected texture to keep the list organized.
	Presets	Harmony provides a variety of pencil texture presets and also lets you create and save your own.
	Pencil Texture Palette	Displays the colour palette assigned to hold the pencil textures. Use the Colour View menu to assign a new palette.
	Smooth Selection	The Smooth operation lets you smooth out selected drawing strokes and remove extra points.  **TIP** You can also smooth the selection by selecting **Drawing> Optimize > Smooth** from the top menu or by pressing Alt + Shift + S.
	Pump Pencil Pressure	The Pump Pencil Pressure option is used to increase the line thickness of a selected area on a pencil line. 
	Deflate Pencil Pressure	The Deflate Pencil Pressure option is used to decrease the line thickness of a selected area on a pencil line.

		
	Merge Pencil Lines	Because pencil lines are defined by their centre lines, two pencil lines that brush against each other may not actually make a closed shape, even if they appear closed. If you select several pencil lines that are close together, you can use this button to close the small gaps between these pencil lines and make them into a single pencil line. 
	Reverse Pencil Thickness	The Reverse Pencil Thickness option inverts the thick and thin section on a selected pencil line. This option will take the thickest size on the line and apply it to the thinnest, and it will apply the thinnest to the thickest. 

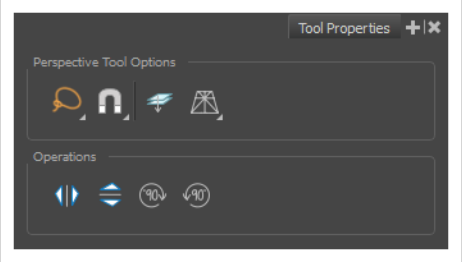
Perspective Tool Properties

The perspective tool allows you to deform artwork by creating a rectangular bounding box around it and allowing you to manipulate any of the four corners. The selected artwork will be deformed to fit the shape you make by simulating a perspective effect.

How to access the Perspective tool properties

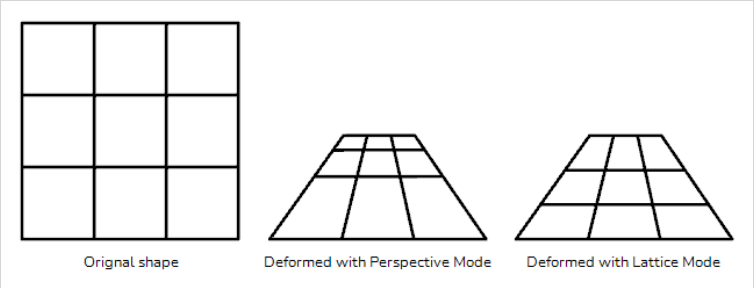
1. In the Tools toolbar, select the Perspective tool.

   The tool's properties are displayed in the Tool Properties view.



Icon	Tool Name	Description
Perspective Tool Options		
	Selection Mode	Allows you to choose the method to visually select multiple elements: • **Lasso:** Allows you to select multiple elements by drawing an irregular closed shape around them with your mouse. • **Marquee:** Allows you to select multiple elements by drawing a rectangle around them. This is faster, as you only need to drag your mouse from one corner of the rectangle to its opposite corner, but it may not be as precise as you want. **TIP** You can press and hold the Alt key to temporarily use the other selection mode.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also

Icon	Tool Name	Description
		click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Contour:** While moving the selection or one of its control points, it will snap against the nearby points and contours of your artwork, allowing you to snap parts of your artwork together. • **Snap to Alignment Guides:** While moving the selection or one of its control points, it will snap against nearby alignment guides. • **Snap and Align:** When enabled, while moving a selection, the rectangular bounding box of the selection will snap to the rectangular bounding box of any other drawing stroke in the drawing, allowing you to align drawing strokes laterally. • **Snap to Grid:** While moving the selection, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '.
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.
	Deformation Mode	Allows you to select between one of the two following deformation modes: • **Perspective:** Deforms the selection by simulating a perspective effect. • **Lattice:** Deforms the selection by simply making the artwork fit the bounding box, without applying a perspective effect. The difference between both modes becomes easier to understand if

Icon	Tool Name	Description
		you apply a transformation to a drawing of a grid to make it look like it's laid down on a surface: 
Operations		
	Flip Horizontal	Flips the selection horizontally.
	Flip Vertical	Flips the selection vertically.
	Rotate 90 CW	Rotates the selection 90° clockwise.
	Rotate 90 CCW	Rotates the selection 90° counterclockwise.

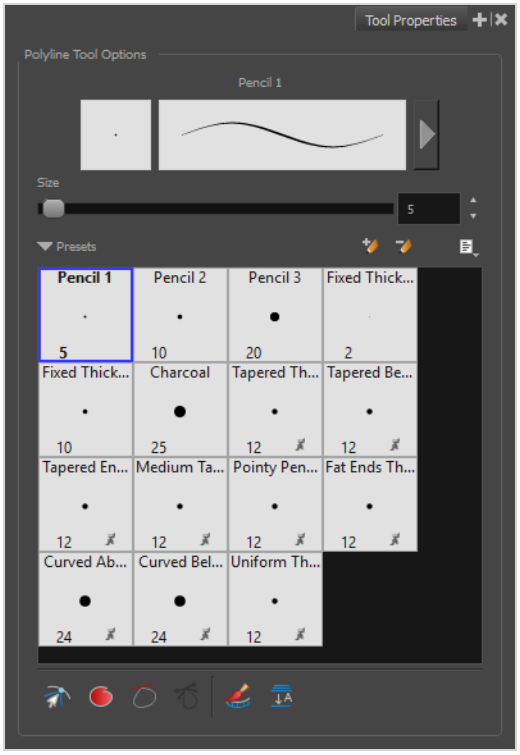
Polyline Tool Properties

The Polyline tool allows you to draw complex lines or shapes by defining each point and their Bezier handles one by one.

How to access the Polyline tool properties

1. In the Tools toolbar, select the Polyline tool.

   The tool's properties are displayed in the Tool Properties view.



Pencil Properties

Just like other shape tools, this tool creates pencil lines. Hence, its tool properties are similar to the ones of the Pencil tool and it can be used with pencil presets.

Icon	Property	Description
	Preview Area	The Preview area lets you see a preview of the stroke your drawing tool will make.

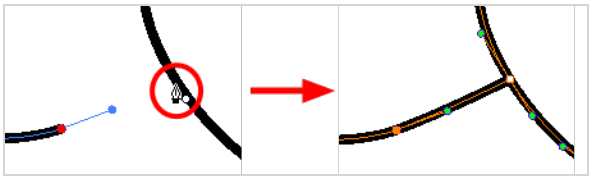
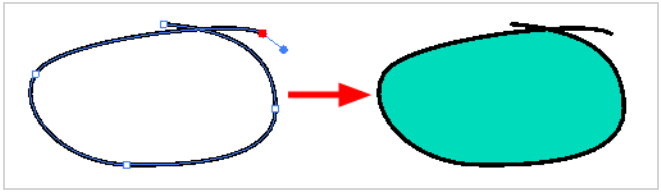
	Pencil Properties Dialog	The arrow button right of the preview area opens the Pencil Properties dialog. While the Tool Properties view only gives you access to the pencil size, a list of pencil presets and other drawing options, the Pencil Properties dialog gives you access to all the available options for your pencil's shape and texture. For more information on the Pencil Properties dialog, see the Polyline Tool Properties section below.
	Size	Defines the width of the pencil line used to draw the shape.

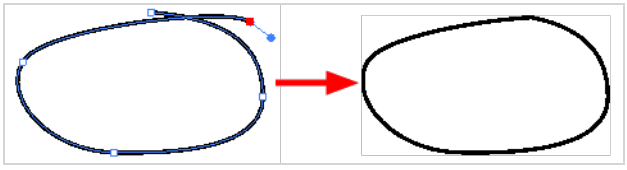
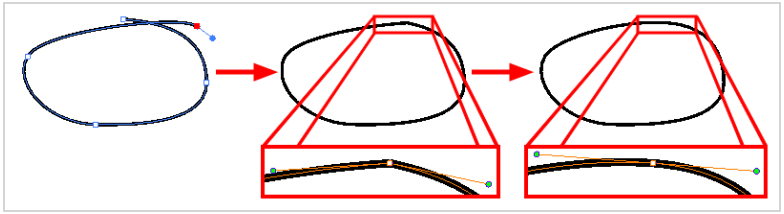
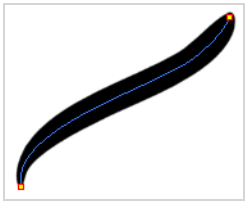
Pencil Presets

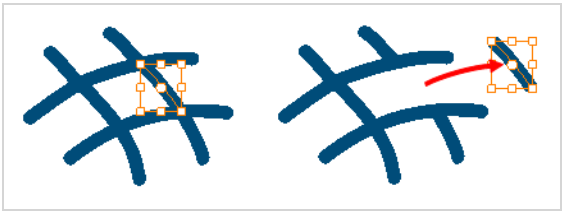
Icon	Property	Description
	Presets list	Harmony provides a variety of presets and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw and design for efficiency and consistency. All tools using pencil lines share the same preset list. Therefore, the Polyline, Line, Rectangle, Ellipse, and Pencil tools share the same preset list.
	New Preset	Creates a new preset based on the current tool properties.
	Delete Preset	Deletes the currently selected preset.
	Presets Menu	Gives access to more options for managing presets.
	Rename Brush	Allows you to rename the currently selected preset.
	Import Brushes	Allows you to import brush presets exported from Harmony.
	Export Brushes	Allows you to export your brush presets into an `.xml` file.
	Small Thumbnail	Displays presets in a grid of small thumbnails with a preview of their tip.

	Large Thumbnail	Displays presets in a grid of big thumbnails, with their name and a preview of their tip.
	Stroke View	Displays presets in a list, with their name and a preview of a stroke done with each preset.

Drawing Options

Icon	Property	Description
	Snap to Contour	When this option is enabled, clicking close to a contour in your drawing will add the point to that contour. The line you are building will be linked to that contour.  If this option is disabled, attempting to click on existing contours will always create a point very close to that contour, but not exactly on it. Therefore, it is necessary to enable this mode if you want to create lines that branch from into existing contours in your drawing. **NOTE** If you draw a line with the Line tool and make its tip snap to a contour or another control point in your artwork, they will be locked together. You can then manipulate both simultaneously using the Contour Editor tool. You can also separate two drawing strokes that have been snapped together by selecting one of them with the Select tool and moving it away.
	Auto Fill	When enabled, drawing a closed shape will automatically fill it with the currently selected Paint colour. 

		TIP By default the pencil line and its fill will be the same colour. To select different colours for the line and its fill, do the following: 1. In the Colour view, click the Unlock Three Colours button. 2. Click on the Set Current Pencil Colour swatch. Then, in the colour list, select the desired colour swatch for your outline. 3. Click on the Set Current Paint Colour swatch. Then, in the colour list, select the desired colour swatch for the fill.
	Trim Extra Lines	When enabled, drawing a closed shape will automatically remove the outstanding lines. 
	Align Handles After Trim	When the Trim Extra Lines option is enabled, enable this option to make the point where the beginning and end of the stroke meet into a smooth curve rather than a hard corner. 
	Automatically Create Colour Art	As you draw in the Line Art layer, the Automatically Create Colour Art option instantly creates the corresponding strokes in the Colour Art layer. 
	Auto-Flatten Mode	By default, when drawing on a vector layer, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.

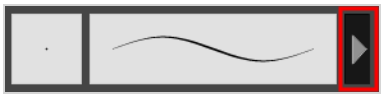


NOTE

Using the Select tool, you can use select and remove a segment of flattened pencil lines. Overlapping pencil lines drawn with the Auto-Flatten mode are essentially cut into segments by the overlap and can be treated as individual lines.

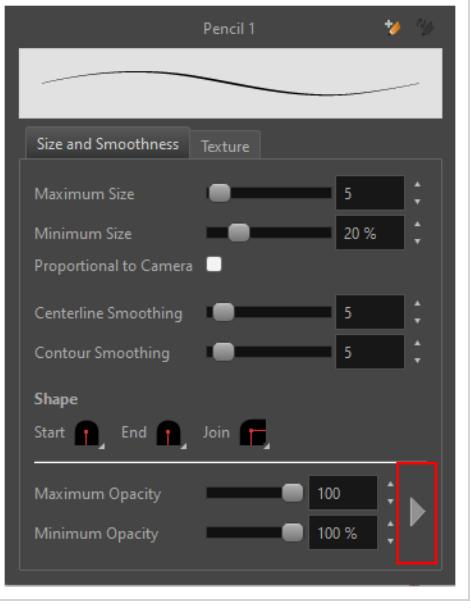
Pencil Properties Dialog

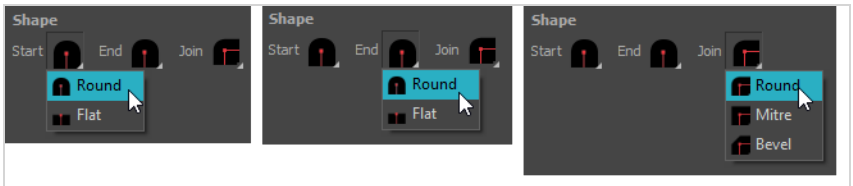
The Polyline tool draws the same type of line as the Pencil tool. Hence, you can configure the Polyline tool's lines using the Pencil Properties dialog, which you can open by clicking on the arrow button right of the stroke display area in the Tool Properties view.

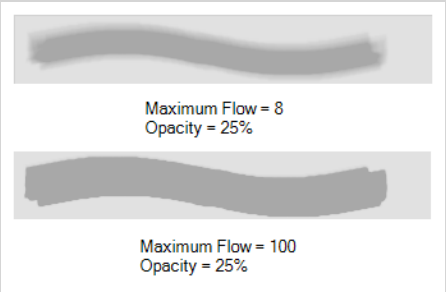


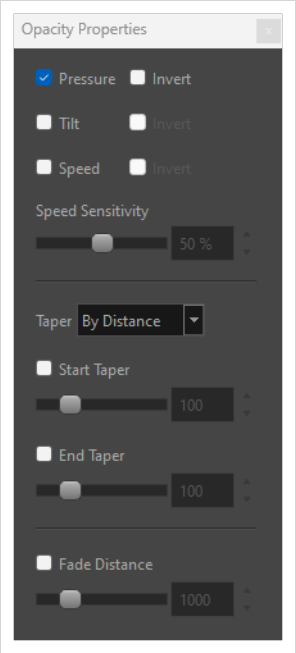
Size and Smoothness Tab

The Size and Smoothness tab allows you to select your pencil's size, its smoothing parameters as well as the shape of its tips and corners.



Property	Description
Maximum Size	Defines the maximum size of the pencil line. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Minimum Size	Defines the minimum size of your stroke as a percentage of the maximum size. If you do not have pressure sensitivity from a pen table, the minimum size value will be ignored.
Proportional to Camera	If you check this option, the size of the pencil will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the pencil will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the pencil will be proportionally bigger.
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on the central line of the pencil stroke. A higher setting will prevent your line from being shaky and will reduce the amount of control points it has, making it easier to tweak, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on the outer contour of the pencil stroke. A pencil line is defined by its centreline and its variations in thickness, rather than its apparent shape. When drawing a pencil line with a mouse, its thickness is uniform. Therefore, its outer contour does not have any control point, except at its extremities, and no smoothing is required for its contour. However, when drawing a pencil line with a pressure sensitive tablet, its contour will have control points and Bezier curves to define the line's variations in thickness, and thus smoothing must be performed on its contour. An increased contour smoothing will reduce the amount of control points on the line's thickness and smoothen its curves, but may affect the precision of the variations in line thickness.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew.

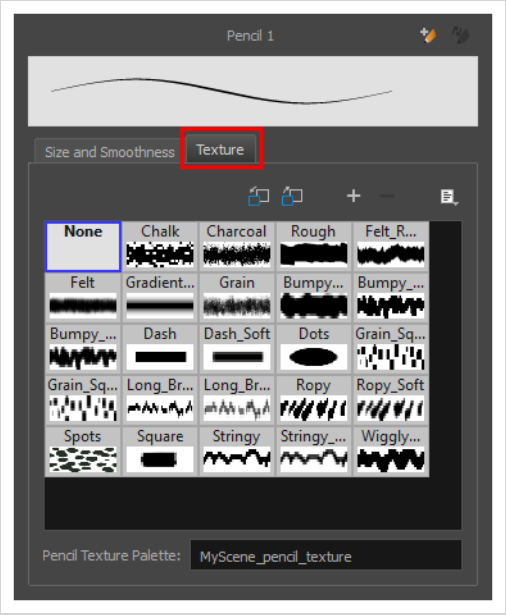
Property	Description
	You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.
Maximum and Minimum Opacity	The Maximum and Minimum Opacity parameters are where you set the opacity range for a pencil line. This works with the pressure sensitivity of a pen tablet. • **Maximum Opacity:** Sets the transparency limit of the pencil line when the pressure is heavy. • **Minimum Opacity:** Sets the transparency limit of the pencil line when the pressure is very light. It is defined as a percentage of the Maximum Opacity value. If the Minimum Opacity value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The opacity will be set to the constant rate of the Maximum Opacity value.  You can control the opacity properties by clicking on the arrow button on right and the dialog box will appear same as shown for size properties above. Please refer *Polyline Tool Properties* on page 546

Property	Description
	 **Pressure:** Allows you to apply more pressure and increases the size of the pencil. You can check the box to invert this behaviour. • **Tilt:** Allows you to tilt the pen closer to tablet for a bigger stroke. You can check the box to invert this behaviour. • **Speed:** Allows you to reduce the size of the stroke by drawing at a fast speed. You can check the box to invert this behaviour. • **Speed Sensitivity:** A slider is used to control how fast must the stroke be drawn to reach the minimum value. • **Taper:** Allows you to reduce the value of a property at the start or the end of each stroke. The value can be expressed using two options: **Distance and Percentage**. Distance is selected by default. For example: A taper of 200 will be the same length as the width (diameter) of a stroke that has its size set at 200. You can enable Start and End Tapering option individually. • **Start Taper:** When distance is selected as a Taper value, the effect of start taper can be visualized as the stroke is drawn. • **End Taper:** When distance or percentage is selected as a Taper value, the effect of end taper can be visualized once the stroke is complete and vectorized as the length is unknown until the stroke is complete. • **Fade Distance:** Allows you to fade the value of property over a given distance. It uses the same units as the size and is applied as the stroke is drawn.

Texture Tab

In the Pencil Properties view, the Texture tab allows you to select a pencil texture from the currently selected pencil texture palette to use with the Pencil tool. You can also add, remove or rename textures, save the current pencil texture palette as the default one, or import the pencil texture palette into your scene.

The pencil texture palette used in the Texture tab of the Pencil Properties dialog is the one selected in the Colour view. You can select a pencil texture palette by selecting it from the pencil texture palette list in the Colour view.



Icon	Property	Description
	Use as Default Pencil Texture Palette	This option is available from the menu button. Sets the currently selected pencil texture palette as the default pencil texture palette in your user preferences. The default pencil texture palette is added to every scene you create in Harmony. The palette is copied in your preferences, so it will be added to your new scenes in the exact state it is when you make it the default pencil texture palette.
	Reload Default Texture Palette	Imports the default pencil texture palette as a new pencil texture palette into your scene's palette list, and selects it as the current pencil texture palette.
	New Texture	Allows you to import an image file into a new pencil texture swatch in the current pencil texture palette. The pencil texture's effect on your pencil line will be based on the image's transparency channel, and will follow your pencil lines on its horizontal axis. This option is also available from the menu button.

Icon	Property	Description
	Delete Texture	Deletes a pencil texture swatch from the current pencil texture palette. This option is also available from the menu button.
	Rename Texture	Renames the selected pencil texture swatch in the current pencil texture palette. This option is also available from the menu button.
	Pencil Texture Display	Displays the pencil textures in the current pencil texture palette and allows you to select one to use with the Pencil tool.
	Pencil Texture Palette	Displays the name of the currently selected pencil texture palette, for reference. To select a different pencil texture palette, you must select it in the Colour view.

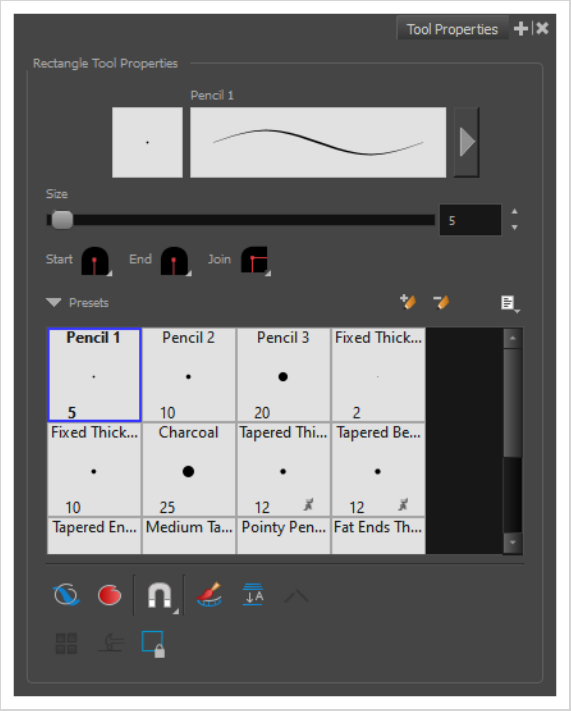
Rectangle Tool Properties

The Rectangle tool allows you to quickly draw a rectangle or a square.

How to access the Rectangle tool properties

1. In the Tools toolbar, select the Rectangle tool.

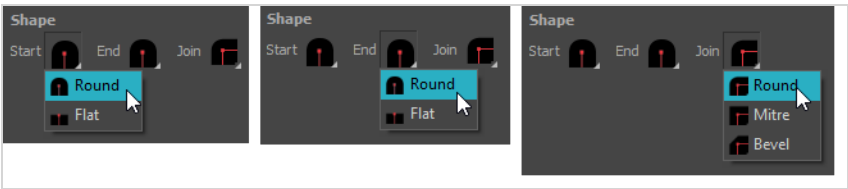
   The tool's properties are displayed in the Tool Properties view.



Pencil Properties

Just like other shape tools, this tool creates pencil lines. Hence, its tool properties are similar to the ones of the Pencil tool and it can be used with pencil presets.

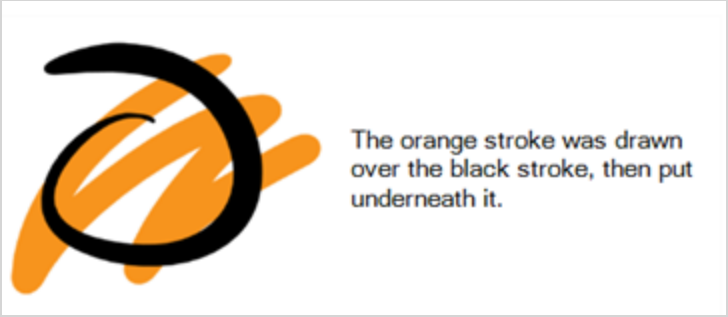
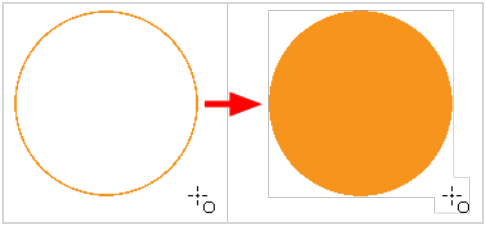
Property	Description
Preview Area	The Preview area lets you see a preview of the stroke your drawing tool will make.
Pencil Properties Dialog	The arrow button right of the preview area opens the Pencil Properties dialog.

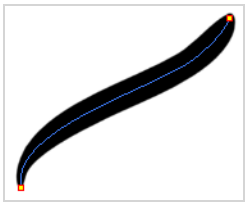
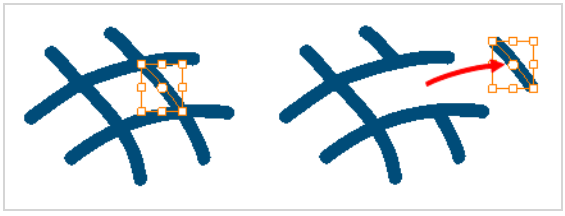
Property	Description
	 While the Tool Properties view only gives you access to a few of the pencil properties, a list of pencil presets and other drawing options, the Pencil Properties dialog gives you access to all the available options for your pencil's shape and texture. For more information on the Pencil Properties dialog, see the *Pencil Properties Dialog* on page 561 section below.
Size	Defines the width of the pencil line used to draw the shape.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.

Drawing Options

These options affect the way your shape is added to your artwork.

Icon	Property	Description
	Draw Behind	When enabled, your brush strokes will appear behind the existing artwork.

Icon	Property	Description
		 **NOTE** Your brush stroke will temporarily appear over your artwork as you draw it, until you release the mouse cursor or tablet pen.
	Auto Fill	When enabled, the shape you draw is automatically filled with the selected colour. By default, drawing a shape only creates its outlines.  **TIP** By default the pencil line and its fill will be the same colour. To select different colours for the line and its fill, do the following: 1. In the Colour view, click the Unlock Three Colours button. 2. Click on the Set Current Pencil Colour swatch. Then, in the colour list, select the desired colour swatch for your outline. 3. Click on the Set Current Paint Colour swatch. Then, in the colour list, select the desired colour swatch for the fill.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping

Icon	Property	Description
		modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Contour:** When enabled, while you're drawing, the mouse cursor will snap to the nearby contours of the artwork in your drawing. • **Snap to Alignment Guides:** While drawing, the drawing tool will snap against nearby alignment guides. • **Snap and Align:** When enabled, while you're drawing, the mouse cursor will automatically align to the rectangular bounding boxes of other strokes and shapes in your drawing. • When enabled, while you're drawing, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '.
	Automatically Create Colour Art	As you draw in the Line Art layer, the Automatically Create Colour Art option instantly creates the corresponding strokes in the Colour Art layer. 
	Auto Flatten Mode	By default, when drawing on a vector layer, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork. 

Icon	Property	Description
		NOTE Using the Select tool, you can use select and remove a segment of flattened pencil lines. Overlapping pencil lines drawn with the Auto-Flatten mode are essentially cut into segments by the overlap and can be treated as individual lines.
	Use Stored Colour Gradient	The Use Stored Colour Gradient option can be used when painting with a gradient colour to always position the gradient in the same way it was stored, making it consistent across brush strokes. You can store a gradient by selecting a zone painted with a gradient with the Select tool, then clicking on Store Colour Gradient in the Tool Properties view.
	Draw Square	When enabled, the rectangle tool will always draw a rectangle of equal width and height, making it a perfect square. **TIP** You can also draw a perfect square by holding the Shift key while drawing.

Pencil Presets

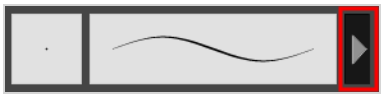
These options allow you to select, create and manage pencil presets.

Icon	Property	Description
	Presets list	Harmony provides a variety of pencil presets and thickness stencils and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw for efficiency and consistency. A thickness stencil saves the thickness information across the length of the line. When drawing with a thickness stencil, the pressure sensitivity of the tablet is discarded. A thickness stencil can be used while drawing, or applied afterwards. You also have the possibility to apply different textures to your lines by either using the default presets or to import your own. You can export the pencil presets that you have created and import those that others have created. This is a good way for you and project collaborators to keep a consistent look for the project.

Icon	Property	Description
	New Brush Preset	Creates a new preset based on the current tool properties.
	Delete Brush Preset	Deletes the currently selected preset.
	Brush Presets Menu	Open a menu that contains the following options: • **New Brush Preset:** Creates a new preset based on the current tool properties. • **Delete Brush:** Deletes the currently selected preset. • **Rename Brush:** Allows you to rename the currently selected preset. • **Import Brushes:** Allows you to import brush presets exported from Harmony. • **Export Brushes:** Allows you to export your brush presets into an `.xml` file. • **Small Thumbnail:** Displays presets in a grid of small thumbnails with a preview of their tip. • **Large Thumbnail:** Displays presets in a grid of big thumbnails, with their name and a preview of their tip. • **Stroke View:** Displays presets in a list, with their name and a preview of a stroke done with each preset.

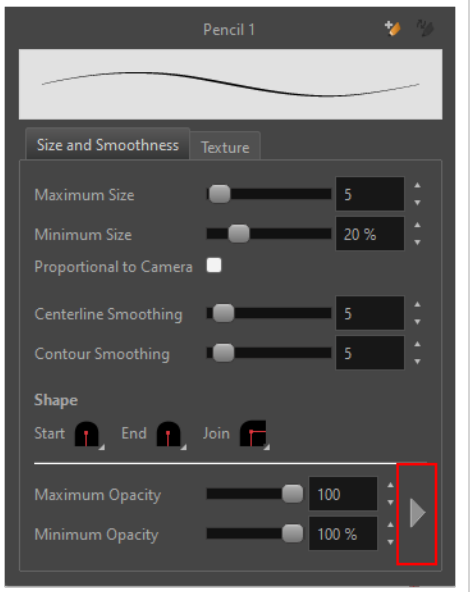
Pencil Properties Dialog

The Rectangle tool draws the same type of line as the Pencil tool. Hence, you can configure the Rectangle tool's lines using the Pencil Properties dialog, which you can open by clicking on the arrow button right of the stroke display area in the Tool Properties view.

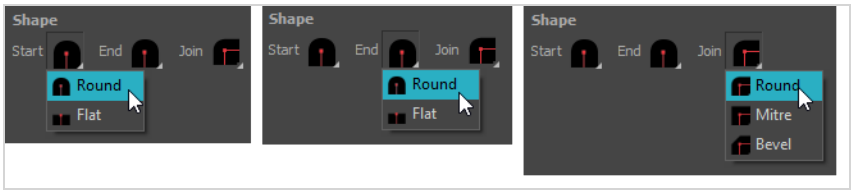
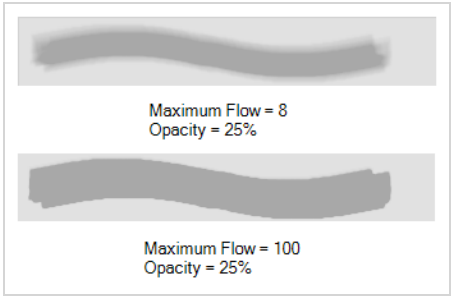


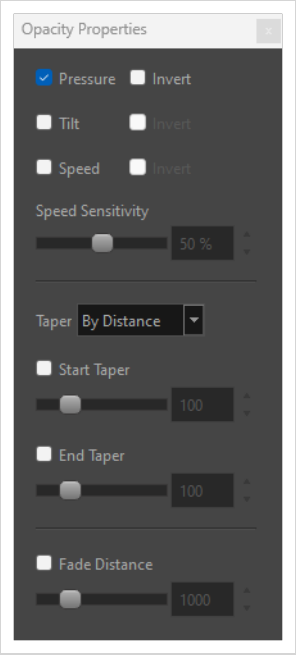
Size and Smoothness Tab

The Size and Smoothness tab allows you to select your pencil's size, its smoothing parameters as well as the shape of its tips and corners.



Property	Description
Maximum Size	Defines the maximum size of the pencil line. If the tool is used with a pressure sensitive pen tablet, the width of the stroke will vary between its maximum size and minimum size depending on the amount of pressure used. If used with a mouse, the width of the stroke will always be its maximum size.
Minimum Size	Defines the minimum size of your stroke as a percentage of the maximum size. If you do not have pressure sensitivity from a pen table, the minimum size value will be ignored.
Proportional to Camera	If you check this option, the size of the pencil will be adjusted to the position of the camera on the z-axis. This means that if the camera is zoomed in on the scene, the pencil will be proportionally smaller so that it appears the same size in the rendered image. Likewise, if the camera is zoomed out, the pencil will be proportionally bigger.
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on the central line of the pencil stroke. A higher setting will prevent your line from being shaky and will reduce the amount of control points it has, making it easier to tweak, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on the outer contour of the pencil stroke. A pencil line is defined by its centreline and its variations in thickness, rather than its apparent shape. When drawing a pencil line with a mouse, its thickness is uniform. Therefore, its outer contour does not have any control point, except at its extremities, and no smoothing is required for its contour.

Property	Description
	However, when drawing a pencil line with a pressure sensitive tablet, its contour will have control points and Bezier curves to define the line's variations in thickness, and thus smoothing must be performed on its contour. An increased contour smoothing will reduce the amount of control points on the line's thickness and smoothen its curves, but may affect the precision of the variations in line thickness.
Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.
Maximum and Minimum Opacity	The Maximum and Minimum Opacity parameters are where you set the opacity range for a pencil line. This works with the pressure sensitivity of a pen tablet. • **Maximum Opacity:** Sets the transparency limit of the pencil line when the pressure is heavy. • **Minimum Opacity:** Sets the transparency limit of the pencil line when the pressure is very light. It is defined as a percentage of the Maximum Opacity value. If the Minimum Opacity value is set to 100%, then tablet pressure sensitivity will no longer be applicable. The opacity will be set to the constant rate of the Maximum Opacity value.  You can control the opacity properties by clicking on the arrow button on right and the dialog box will appear same as shown for size properties above. Please refer

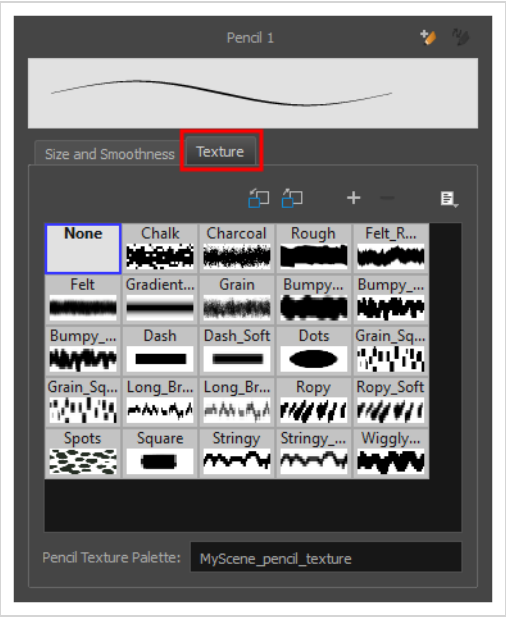
Property	Description
	Rectangle Tool Properties on page 556  **Pressure:** Allows you to apply more pressure and increases the size of the pencil. You can check the box to invert this behaviour. • **Tilt:** Allows you to tilt the pen closer to tablet for a bigger stroke. You can check the box to invert this behaviour. • **Speed:** Allows you to reduce the size of the stroke by drawing at a fast speed. You can check the box to invert this behaviour. • **Speed Sensitivity:** A slider is used to control how fast must the stroke be drawn to reach the minimum value. • **Taper:** Allows you to reduce the value of a property at the start or the end of each stroke. The value can be expressed using two options: **Distance and Percentage**. Distance is selected by default. For example: A taper of 200 will be the same length as the width (diameter) of a stroke that has its size set at 200. You can enable Start and End Tapering option individually. • **Start Taper:** When distance is selected as a Taper value, the effect of start taper can be visualized as the stroke is drawn. • **End Taper:** When distance or percentage is selected as a Taper value, the

Property	Description
	effect of end taper can be visualized once the stroke is complete and vectorized as the length is unknown until the stroke is complete. • **Fade Distance:** Allows you to fade the value of property over a given distance. It uses the same units as the size and is applied as the stroke is drawn.

Texture Tab

In the Pencil Properties view, the Texture tab allows you to select a pencil texture from the currently selected pencil texture palette to use with the Pencil tool. You can also add, remove or rename textures, save the current pencil texture palette as the default one, or import the pencil texture palette into your scene.

The pencil texture palette used in the Texture tab of the Pencil Properties dialog is the one selected in the Colour view. You can select a pencil texture palette by selecting it from the pencil texture palette list in the Colour view.

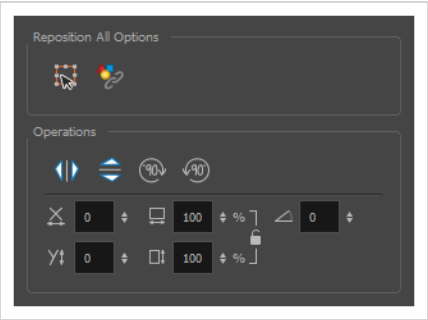


Icon	Property	Description
	Use as Default Pencil Texture Palette	This option is available from the menu button. Sets the currently selected pencil texture palette as the default pencil texture palette in your user preferences. The default pencil texture palette is added to every scene you create in Harmony. The palette is copied in your preferences, so it will be added to your new scenes in the exact state it is when you make it the default pencil texture palette.

Icon	Property	Description
	Reload Default Texture Palette	Imports the default pencil texture palette as a new pencil texture palette into your scene's palette list, and selects it as the current pencil texture palette.
	New Texture	Allows you to import an image file into a new pencil texture swatch in the current pencil texture palette. The pencil texture's effect on your pencil line will be based on the image's transparency channel, and will follow your pencil lines on its horizontal axis. This option is also available from the menu button.
	Delete Texture	Deletes a pencil texture swatch from the current pencil texture palette. This option is also available from the menu button.
	Rename Texture	Renames the selected pencil texture swatch in the current pencil texture palette. This option is also available from the menu button.
	Pencil Texture Display	Displays the pencil textures in the current pencil texture palette and allows you to select one to use with the Pencil tool.
	Pencil Texture Palette	Displays the name of the currently selected pencil texture palette, for reference. To select a different pencil texture palette, you must select it in the Colour view.

Reposition All Drawings Tool Properties

When you use the Reposition All Drawings tool, its properties and options appear in the Tool Properties view.

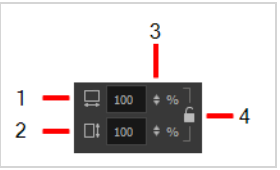
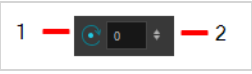


Tool Options

Icon	Option	Description
	Easy Drag	When enabled, you can drag the selection by clicking anywhere inside its bounding box. By default, you must click on the artwork in the selection to be able to drag it.
	Apply to Synced Drawing Layers	If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer.

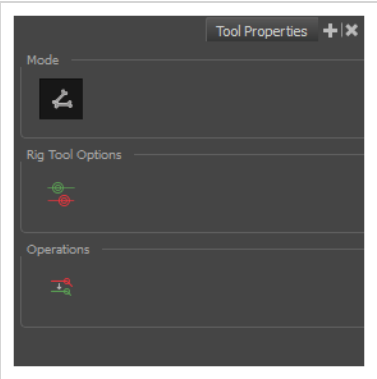
Operations

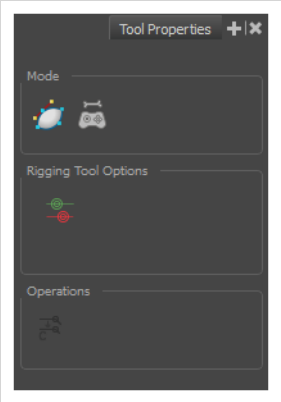
Icon	Option	Description
	Flip Horizontal	Flips the current selection horizontally.
	Flip Vertical	Flips the current selection vertically.
	Rotate 90 Degrees CW	Rotates the current selection 90 degrees clockwise.
	Rotate 90 Degrees CCW	Rotates the current selection 90 degrees counter-clockwise.
	Offset X and Y	Use the Offset X and Offset Y operation fields to enter specific values and precisely reposition the selected shape.

Icon	Option	Description
		 1. **X**: Type a value in this field to reposition your selection along the X-axis. 2. **Y**: Type a value in this field to reposition your selection along the Y-axis. 3. **Up/Down arrows:** Use the up and down arrows to modify the value in the X or Y value field.
	Width and Height	Use the Width and Height operation fields to enter specific values to resize the selected shape with precision.  1. **Width**: Type a value in this field to resize the width of your selection. 2. **Height**: Type a value in this field to resize the height of your selection. 3. **Up/Down arrows:** Use the up and down arrows to modify the value in the Width or Height fields. 4. **Lock icon**: Click the lock icon to lock or unlock the ratio between the Width and Height values.
	Angle	The Angle operation lets you to enter specific values and accurately rotate the selected shape.  1. **Angle**: Type a degree value in this field to rotate your selection. 2. **Up/Down arrows:** Use the up and down arrows to modify the value in the Angle value field.

Rigging Tool Properties

In the Tool Properties view, you can customize not only the behaviour of the tool but also the settings of the deformers that you will create.





Mode

Button	Name	Description
	Bone Mode	Sets the Rigging tool to create Bone deformations.
	Game Bone Mode	Sets the Rigging tool to create Game Bone deformations.

Options

Button	Parameter	Description
	Show All Manipulators	Lets you immediately see the resting position in red (Setup) and the animated position in green.

Operations

Button	Name	Description
	Reset Deform (Reset Current Keyframe)	Copies the resting position of the deformation skeleton to the current frame.

Select Tool Properties

The Select tool lets you select strokes and apply basic transformations such as repositioning, rotating, scaling or skewing, using the different handles of the bounding box.

If you have text or pencil lines selected with the Select tool, their properties will display in the Tool Properties view, allowing you to make changes to your selection.

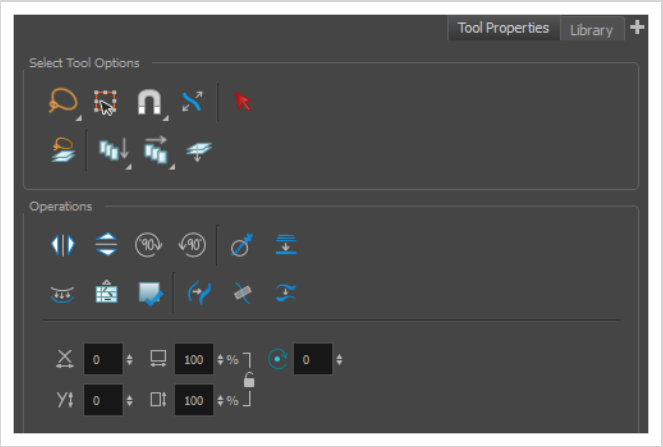
How to access the Select tool properties

1. In the Tools toolbar, select either the Select tool or the Select by Colour tool.

   The tool's properties are displayed in the Tool Properties view.

NOTE

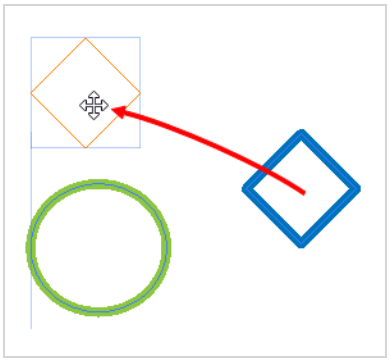
Selecting the Select by Colour tool from the Tools toolbar activates the Select tool, with the Select by Colour option enabled. Hence, this topic covers the tool properties for both the Select and Select by Colour tools.

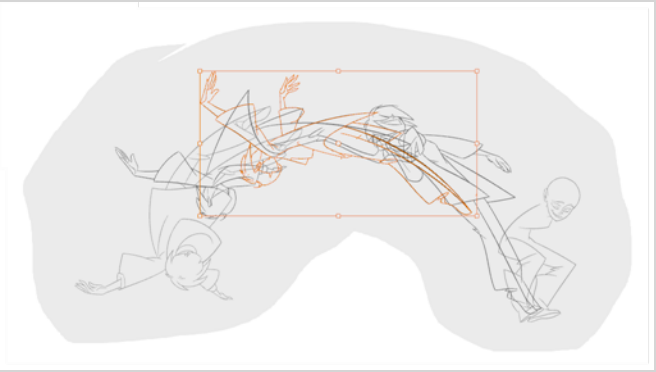


Tool Options

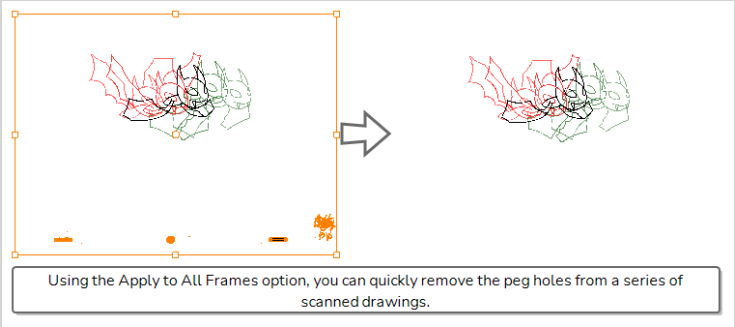
Icon	Property	Description
	Selection Mode	Allows you to choose the method to visually select multiple elements: • **Lasso:** Allows you to select multiple elements by drawing an irregular closed shape around them with your mouse. • **Marquee:** Allows you to select multiple elements by

Icon	Property	Description
		drawing a rectangle around them. This is faster, as you only need to drag your mouse from one corner of the rectangle to its opposite corner, but it may not be as precise as you want. **TIP** You can press and hold the Alt key to temporarily use the other selection mode.
	Easy Drag	When enabled, you can drag the selection by clicking anywhere inside its bounding box. By default, you must click on the artwork in the selection to be able to drag it.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Contour:** While moving the selection or one of its control points, it will snap against the nearby points and contours of your artwork, allowing you to snap parts of your artwork together. • **Snap to Alignment Guides:** While moving the selection or one of its control points, it will snap against nearby alignment guides. • **Snap and Align:** While moving the selection, the rectangular bounding box of the selection will align with the rectangular bounding boxes of other strokes and shapes in your artwork. If you move one of your selection's control points, it will also align with the bounding boxes of other strokes and shapes in your artwork.

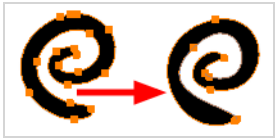
Icon	Property	Description
		 • **Snap to Grid:** While moving the selection, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '. • **Allow Snapping on all Drawing Layers:** If toggled on, the selections can be snapped to all bounding boxes, nearby points, and contours of artwork on any layer.
	Scale Pencil Line Thickness	When enabled, the width of pencil lines will be adjusted when scaling them with the Select tool. **TIP** You can quickly enable this mode by selecting the Scale Pencil Line Thickness tool, in the Select tool's properties dialog.
	Select by Colour	When enabled, clicking on a coloured zone in your artwork will instantly select all the zones that are filled with the same colour. Select by Colour can also be accessed from the Tools toolbar.

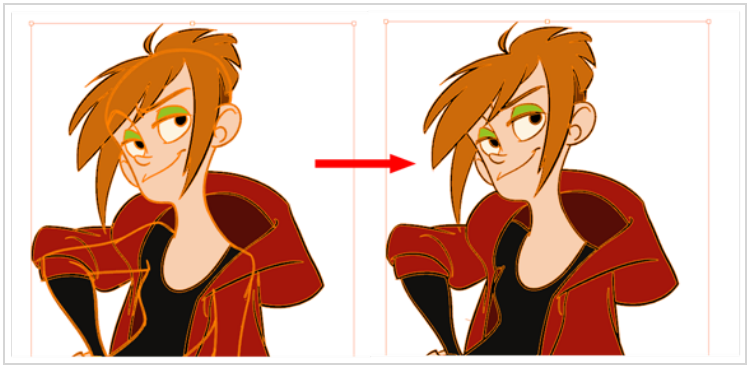
Icon	Property	Description
		  NOTE Only the zones painted with the **same colour swatch** in your palette will be selected. If another zone is coloured with the exact same colour, but not the same colour swatch, it will not be selected.
	Permanent Selection	Allows you maintain a selection while editing multiple drawings. Once this option is enabled, the selection zone made using the Select tool will remain as you navigate through drawings of the same layer and drawings from other drawing layers. 
	Apply to Visible Drawing Layers	This option allows you to select which layers the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button. • **Off:** When this button is toggled off, the tool only works on the currently selected layers. If several layers are selected, the tool will work on all these layers simultaneously. • **On** When this button is toggled on, the tool will work on all

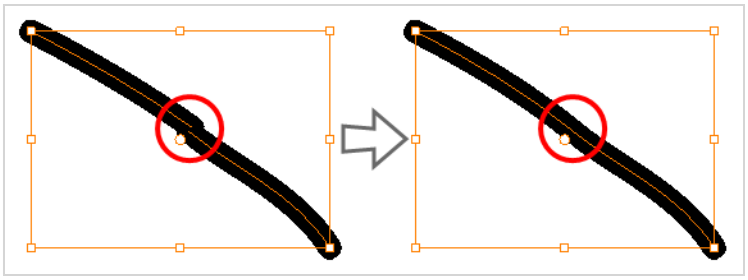
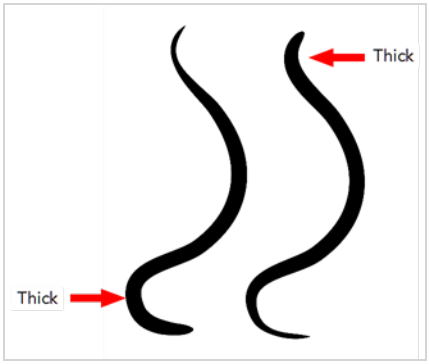
Icon	Property	Description
		the visible layers. • **Apply to Visible Drawing Layers:** The tool will work on all the visible layers in the Camera view. • **Apply to Synced Drawing Layers**: If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer. **NOTE** This option only works in the Camera view.
	Apply to All Frames	This option allows you to determine which drawings in the current layer the tool should affect. It can be toggled on or off. When toggled on, it has two different modes. You can select a mode by clicking and holding on the button. • **Off:** When this button is toggled off, the tool only works on the drawing in the current frame. • **Apply to All Frames:** The tool will work on every exposed drawing in the selected layer simultaneously. • **Apply to Onion Skin Range:** The tool will work on every drawing displayed in the Onion Skin. Onion Skin must be enabled for this option to work.

Icon	Property	Description
		 Using the Apply to All Frames option, you can quickly remove the peg holes from a series of scanned drawings.
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.

Operations

Icon	Property	Description
	Flip Horizontal	Flips the current selection horizontally.
	Flip Vertical	Flips the current selection vertically.
	Rotate 90 Degrees CW	Rotates the current selection 90 degrees clockwise.
	Rotate 90 Degrees CCW	Rotates the current selection 90 degrees counter-clockwise.
	Smooth	Smooth out selected drawing strokes and remove extra points. 

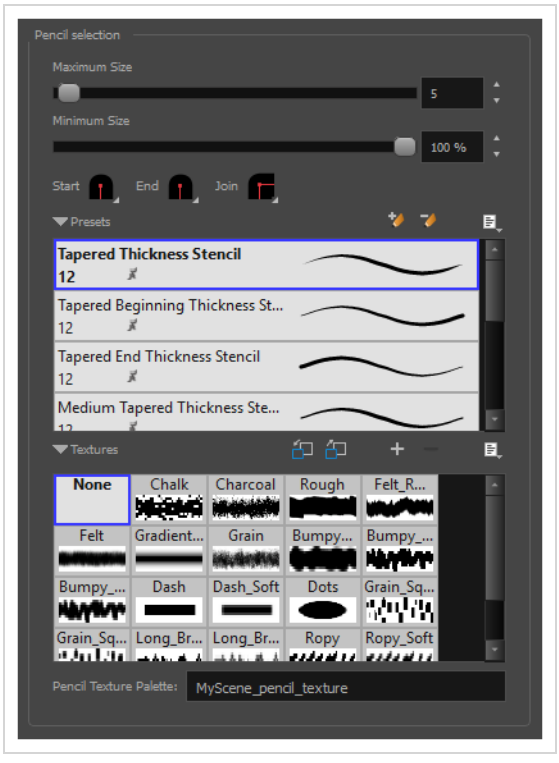
Icon	Property	Description
	Flatten	Merges drawing objects and brush strokes into a single layer. If you draw new lines to fix a drawing or line with many brush strokes, it can be useful to flatten them all into a single shape. By default, lines are drawn one on top of each other. If you intend to repaint the lines or modify their shape, it will be easier if they are flattened. 
	Create Colour Art from Line Art	Lets you use the outline you traced on one of the four embedded layers (line art, colour art, overlay, underlay) and create invisible strokes to paint your drawings on separate layers. This provides more inking and painting flexibility. You can also configure this option to create the invisible strokes on any of the four embedded layers.
	Distribute to Layers	The Distribute to Layers option is used to separate the selected art strokes and send them to new drawing layers. In the Camera view, once you have drawn your artwork, you can select the strokes you want to distribute using the Select tool and click on the Distribute to Layers button; you can also select **Drawing > Distribute to Layers**. It will automatically take every stroke from the drawing selection made in the Camera view and separate them into a different layer for each. If an artwork is composed of several strokes, you must group them using **Edit > Group > Group** before using the Distribute to Layers option. This option cannot be done from the Drawing view.
	Store Colour Gradient	Use the Store Colour Gradient operation to record the selected gradient's position. This reuses the stored position of the gradient when drawing new brush lines or painting colour zones. Enable the Use Stored Colour Gradient option in the Paint or Brush Tool Properties view to do this.
	Pencil to Brush	Converts the selected centre line pencil strokes into contour strokes brush lines.

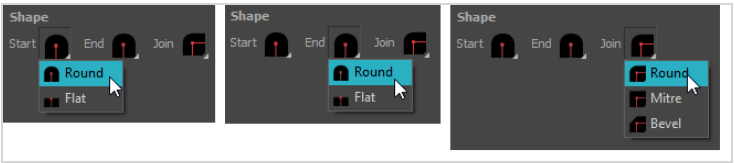
Icon	Property	Description
	Merge Pencil Lines	Because pencil lines are defined by their centre lines, two pencil lines that brush against each other may not actually make a closed shape, even if they appear closed. If you select several pencil lines that are close together, you can use this button to close the small gaps between these pencil lines and make them into a single pencil line.  **NOTE** Points must be close enough to be merged. If there is a large gap between the lines, they will not be merged.
	Reverse Pencil Thickness	The Reverse Pencil Thickness option inverts the thick and thin section on a selected pencil line. This option will take the thickest size on the line and apply it to the thinnest, and it will apply the thinnest to the thickest. 

Icon	Property	Description
	Offset X	Lets you enter a value to reposition the selection along the X-axis.
	Offset Y	Lets you enter a value to reposition the selection along the Y-axis.
	Width	Lets you enter a value to resize the width of the selection.
	Height	Lets you enter a value to resize the height of the selection.
	Lock	Locks or unlocks the ratio between the Width and Height values.
	Angle	Lets you enter specific values to rotate the selection. A positive value rotates the selection counter clockwise and a negative value rotates the selection clockwise.

Pencil Selection

If the selection contains pencil lines, the Pencil Selection section appears at the bottom of the Tool Properties view, allowing you to adjust the properties of those pencil lines.

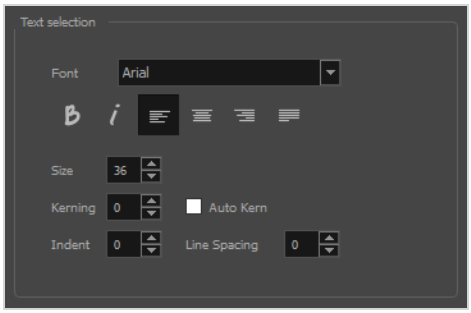


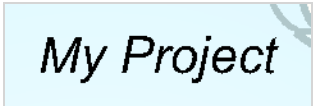
Icon	Property	Description
	Maximum Size	Adjusts the size of the parts of the pencil lines that are the thickest. Parts of the pencil lines that are between the minimum and maximum sizes will be adjusted proportionally.
	Minimum Size	Adjusts the size of the parts of the pencil lines that are the thinnest. Parts of the pencil lines that are between the minimum and maximum sizes will be adjusted proportionally.
	Pencil Line Shape	You can adjust the start, end, and join style of a pencil line.  • **Start**: Lets you select the style of the start tip, which is the first tip you drew. You can choose between Round or Flat style. • **End**: Lets you select the style of the end tip, which is the last tip you drew. You can choose between Round or Flat style. • **Join:** Lets you select the joint style. The joints are where the line curves abruptly. You could also define the Join style as the corner style. You can choose between Round, Mitre and Bevel style.
	Pencil Stencils	Allows you to apply one of the available line thickness stencils to the selected pencil lines. Stencils set the width of a pencil lines all along its length. You can use one of the preloaded presets, or create your own pencil stencils.
	Adding Texture to a Pencil Line	Pencil lines support texture. Once a pencil line is drawn, you can apply a preset texture or load your own. Textures are independent from pencil stencils.

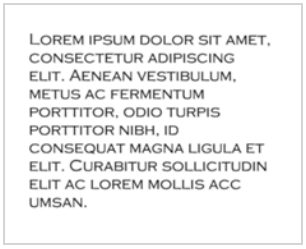
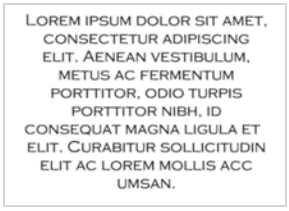
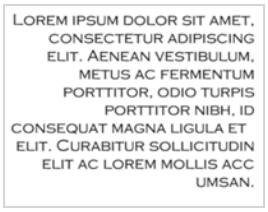
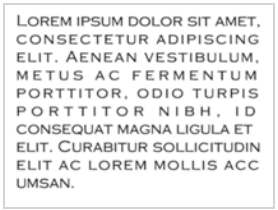
Text Selection

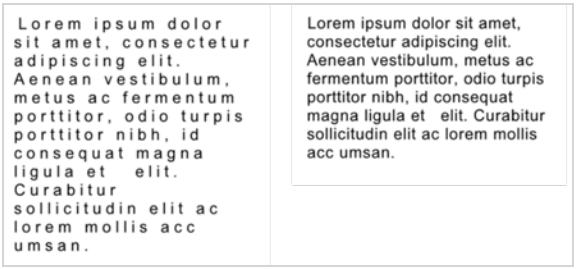
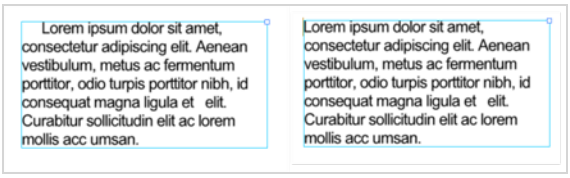
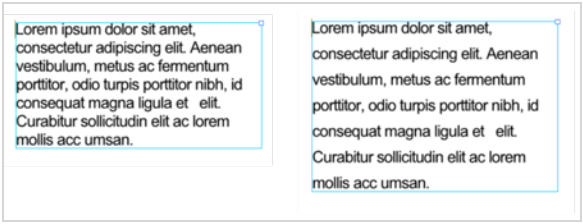
If your selection include text boxes created with the Text tool, a Text Selection section will appear at the bottom of the Tool Properties view, allowing you to adjust the formatting of the whole text box.

> **TIP**
> You can also adjust the formatting of parts of the text in the text box using the Text tool.



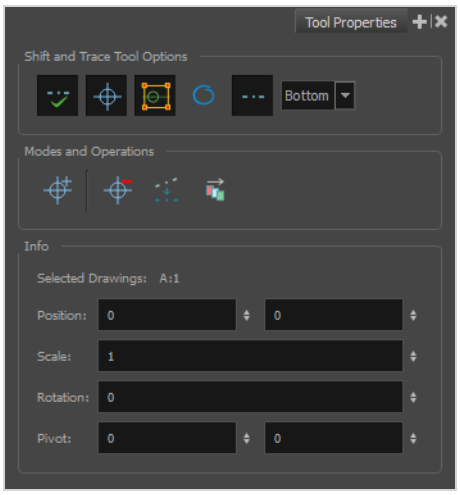
Icon	Property	Description
	Font	Lets you select the font in which to display the text.
	Bold	Makes the selected text bold.
	Italic	Makes the selected text italic. 
	Align Left	Aligns the text in the selected text box to the left.

Icon	Property	Description
		
	Align Center	Aligns the text in the selected text box to the centre. 
	Align Right	Aligns the text in the selected text box to the right. 
	Justify	Makes the text in the selected text box take all the horizontal space by adjusting the spacing between each word. Text that use a single line and text in the last line of a paragraph is aligned to the left. 
	Size	Allows you to set the size of the selected text.

Icon	Property	Description
	Kerning	Allows you to increase or decrease the spacing between each character. 
	Auto Kern	Sets the kerning automatically based on the font's predefined standard.
	Indent	Allows you to increase or decrease the indentation of the first line of text in each paragraph. 
	Line Spacing	Increases or decreases the space between each line of text. 

Shift and Trace Tool Properties

The Shift and Trace tool allows you to temporarily move, rotate and scale drawings, then trace over them in other drawings, using Onion Skin to keep the outlines of the shifted drawings in your drawing space. Contrary to Shift and Trace with the Drawing Desk, you can use the Shift and Trace tool in the Camera view.



How to access the Shift and Trace Tool Properties

1. Do one of the following:
   - In the Tools toolbar, double-click on the Hand tool and select Shift and Trace in the pop-up menu.
   - In the top menu, select **Drawing > Drawing Tools > Shift and Trace**.

   The Shift and Trace tool properties appear in the Tool Properties view.

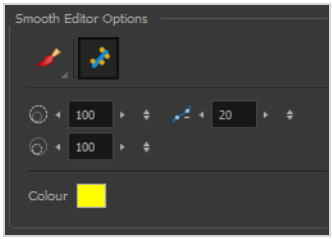
Icon	Tool Name	Description
Shift and Trace Tool Options		
	Enable/Disable Shift and Trace	Enabled by default. When disabled, drawings that were repositioned, rotated or scaled with the Shift and Trace tool appear in their original position.
	Display Cross Hair	Enabled by default. When disabled, cross hairs added with the Shift and Trace tool are invisible.
	Show manipulators for shift and trace	Enabled by default. This displays the manipulator allowing you to rotate and scale drawings for Shift and Trace, as well as to re-position their pivot

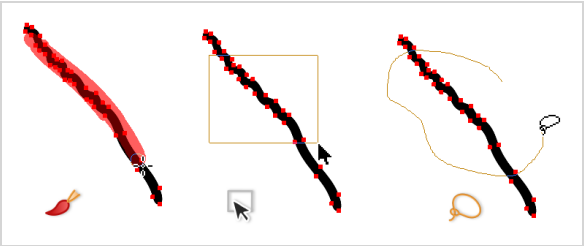
Icon	Tool Name	Description
		point. When hidden, you can only shift drawings laterally.
	Show the outline of the selected shift and trace drawing	When enabled, the contours of each brush stroke for the current drawing will appear highlighted in cyan.
	Show/Hide Pegs	Enabled by default. When using the Shift and Trace tool, peg holes are displayed at the bottom of every drawing to help keep track of how offset drawings are from their original position and from each other. You can also click and drag on the left or right peg hole of a drawing to rotate it around the centre peg hole. When disabled, those peg holes are hidden.
	Peg Position	Allows you to select on which edge of the drawings to display peg holes. By default, they are displayed at the bottom of the drawings.
Modes and Operations		
	Set Add Cross Hair Mode	When selected, clicking on the drawing will add a cross hair where you click. Cross hairs are marks that appear on the same location on every drawing in the current layer and which move when you offset a drawing with the Shift and Trace tool, and they appear in the Onion Skin rendition of neighbouring drawings as well. This allows you to keep track of how offset each drawing is.
	Remove All Cross Hair	Removes all the cross hairs created for shift and trace.
	Reset Selected Drawings Shift Position	Undoes all transformations done with the Shift and Trace tool on the selected drawings, resetting them to their original position, angle and scale.
	Reset All Drawings Shift Position	Undoes all transformations done with the Shift and Trace tool on all drawings, resetting them to their original position, angle and scale.
Info		
Selected Drawings		The element name and drawing name of the currently selected drawing.
Position		The offset of the current drawing from its original position on the x and y

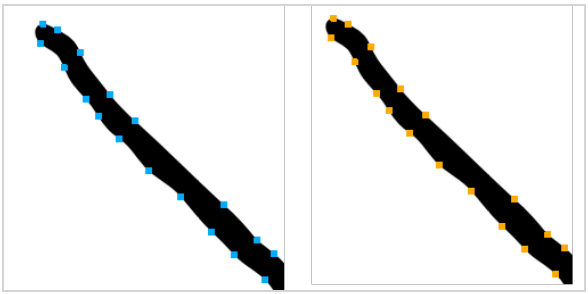
Icon	Tool Name	Description
		axes, in fields, when moved with the Shift and Trace tool.
Scale		The Shift and Trace scale factor of the currently selected drawing, when scaled with the Shift and Trace tool.
Rotation		The Shift and Trace rotation angle of the currently selected drawing, in degrees, counterclockwise, when rotated with the Shift and Trace tool.
Pivot		The offset, in fields, of the current drawing's pivot point from its centre, on the x and y axes. The pivot point is the point from which drawings are rotated and scaled.

Smooth Editor Tool Properties

When you select the Smooth Editor tool, its properties and options appear in the Tool Properties view.



Icon	Tool Name	Description
	Smoothing Style	The Smoothing Style options allow you to smooth a portion of your drawing by tracing a smoothing stroke over the zone to optimize or by selecting an area of the drawing with the Marquee or Lasso. Note that by default, the Smooth Editor tool colour is yellow, it was changed to orange for screen grab clarity. 
	Show Control Points	The Show Control Points option allows you to show or hide the Bezier points around lines. When the Bezier points are displayed, you can see the result of your smoothing and the number of points left on the curve. When it is turned off, only the original artwork is displayed.
	Minimum Size and Maximum Size	This is where you set the minimum and maximum sizes of your drawing tool which will produce the thick and thin effect on your stroke. This works with the pressure sensitivity of a pen tablet. This options is available while using the Brush Smoothing style. • **Maximum and Minimum Size:** Defines the maximum and minimum width of the stroke.

		• **Up/Down arrows:** Use the up and down arrows to set the minimum and maximum size value.
	Smoothness	The Smoothness impacts the strength of the smoothing result. The higher the value, the more points are removed and the smoother the curve. The Smoothness range is from 0 to 100; the default value is 20.
	Colour	You can modify the colour of the control points displayed on the artwork while working with the Smooth Editor tool by double-clicking on the colour swatch. 

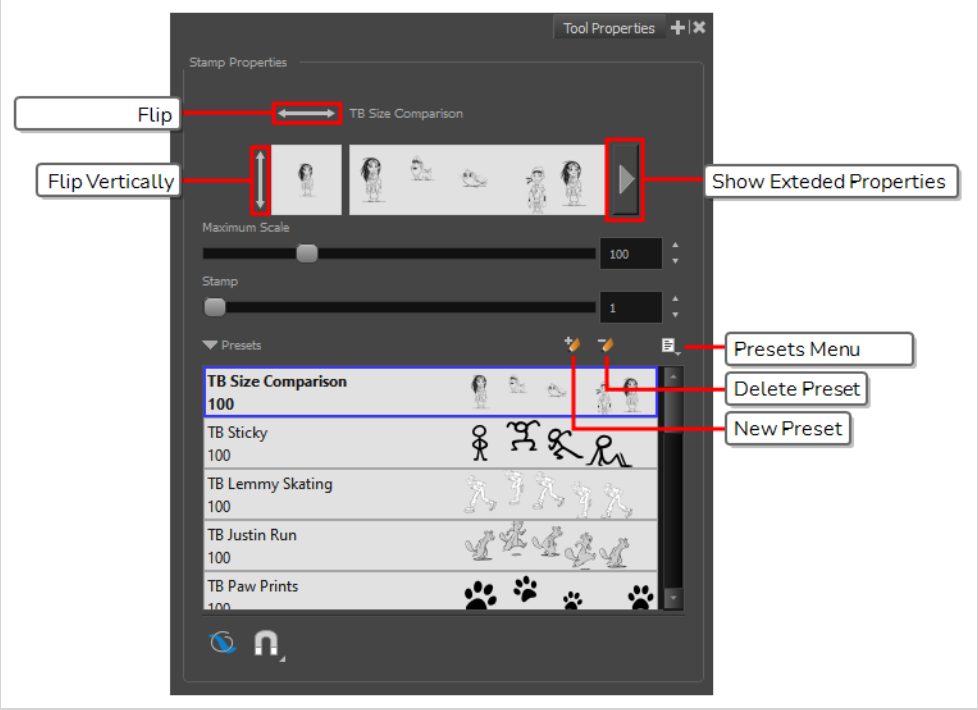
Stamp Tool Properties

The Stamp tool allows you to create and use stamps, which can contain one or several drawings that can be stamped individually or in sequence onto your artwork.

How to access the Stamp tool properties

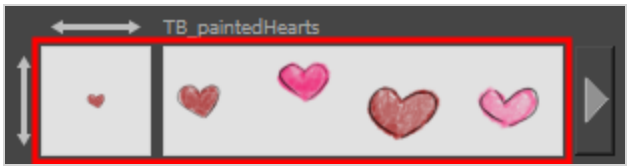
1. In the Tools toolbar, select the Stamp tool.

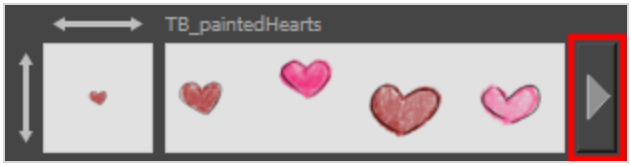
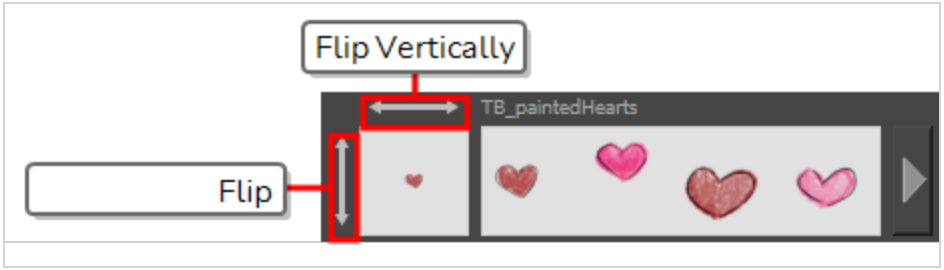
   The tool's properties are displayed in the Tool Properties view.



Stamp Properties

The following options allow you, among other things, to preview your stamp, to change the size of your stamp as well as to flip it horizontally and vertically.

Property	Description
Preview Area	The Preview area lets you see a preview of what will appear if you draw a stroke with the Stamp tool. 

Property	Description
Stamp Properties Dialog	The arrow button right of the preview area opens the Stamp Properties dialog.  While the Tool Properties view only gives you access to a few of the stamp properties and a list of stamp presets, the Stamp Properties dialog gives you access to all the available options for the way your stamp will be applied. For more information on the Stamp Properties dialog, see the *Stamp Properties Dialog* on page 593 section below.
Flip Horizontally / Flip Vertically	The two-ended arrows to the left and over the Stamp thumbnail allow you to flip the stamp horizontally or vertically. 
Maximum Scale	The maximum scaling factor to apply to the stamp before stamping it onto the drawing. This setting is a percentage, which is relative to the size of the original drawing that was used to create the stamp. This means that, at 100%, the drawing will be stamped into your artwork in its original size. **NOTE** If the tool is used with a pressure sensitive tablet, the scale of the stamp can be made to be relative to the amount of pressure you put on your pen. To do this, you must reducing the Minimum Scale property of your stamp in the Stamp Properties dialog. If the Minimum Scale setting is left at its default value, which is 100%, the size of the stamp will not vary.
Stamp	When using a multi-drawing stamp, this is the number of the drawing in the series that will be stamped on the next time you use the Stamp tool. For example, if your stamp has 3 drawings and this is set to 2, the next drawing that will be stamped on is the second drawing in the series. If your stamp's **Cycle** setting is set to **Hold**, then you have to use this slider to select which

Property	Description
	drawing to stamp with the Stamp tool. If your stamp's **Reset Cycle for Each Stroke** option is enabled, then you can use this slider to select which drawing to start each stroke with. Otherwise, when you draw a stroke with the Stamp tool, the Stamp slider will automatically update to the next drawing in the sequence. **TIP** You can also cycle through the drawings in your stamp by using the Left Arrow and Right Arrow keys. **NOTE** The **Cycle** and **Reset Cycle for Each Stroke**e options are available in the Stamp Properties dialog.

Stamp Presets

These options allow you to select, create and manage stamp presets.

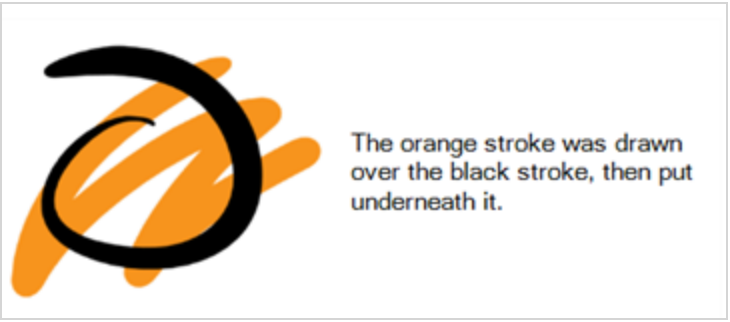
Contrary to the Brush and Pencil tools, creating a Stamp preset is required to use the Stamp tool, as this preset will contain the drawings to stamp onto your artwork. A Stamp preset is created by selecting one or several layers, then adding a preset to the Stamp Presets list. If several layers are selected, the Stamp will contain a series of drawings, which it will stamp onto your artwork in a sequence as you draw strokes with the Stamp tool.

Icon	Property	Description
	Presets list	The list of Stamp presets. Click on one of the presets to select it and use it in your drawing.
	New Brush Preset	Creates a new Stamp preset based on the selected artwork. The artwork can either be a selection made with the Select tool, or by selecting a layer. If several layers are selected, this will create a multi-drawing Stamp. As you draw a stroke with the Stamp tool using a multi-drawing stamp, each drawing in the stamp will be applied onto your artwork, one after the other.

	Delete Brush	Deletes the currently selected preset.
	Brush Presets Menu	Open a menu that contains all of the previous options, along with all of the following options: • **New Brush Preset:** Creates a new stamp based on the selected artwork. • **Rename Preset:**Allows you to rename the currently selected preset. • **Import Brushes:**Allows you to import brush presets exported from Harmony. • **Export Brushes:**Allows you to export your brush presets into an `.xml` file. • **Small Thumbnail:** Displays presets in a grid of small thumbnails with a preview of their tip. • **Large Thumbnail:** Displays presets in a grid of big thumbnails, with their name and a preview of their tip. • **Stroke View:** Displays presets in a list, with their name and a preview of a stroke done with each preset.

Drawing Options

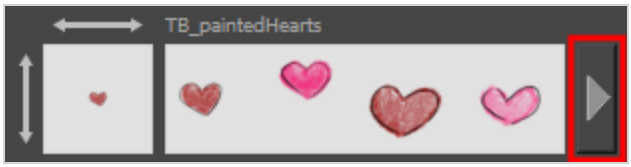
These options affect the way your drawing strokes are added to your artwork

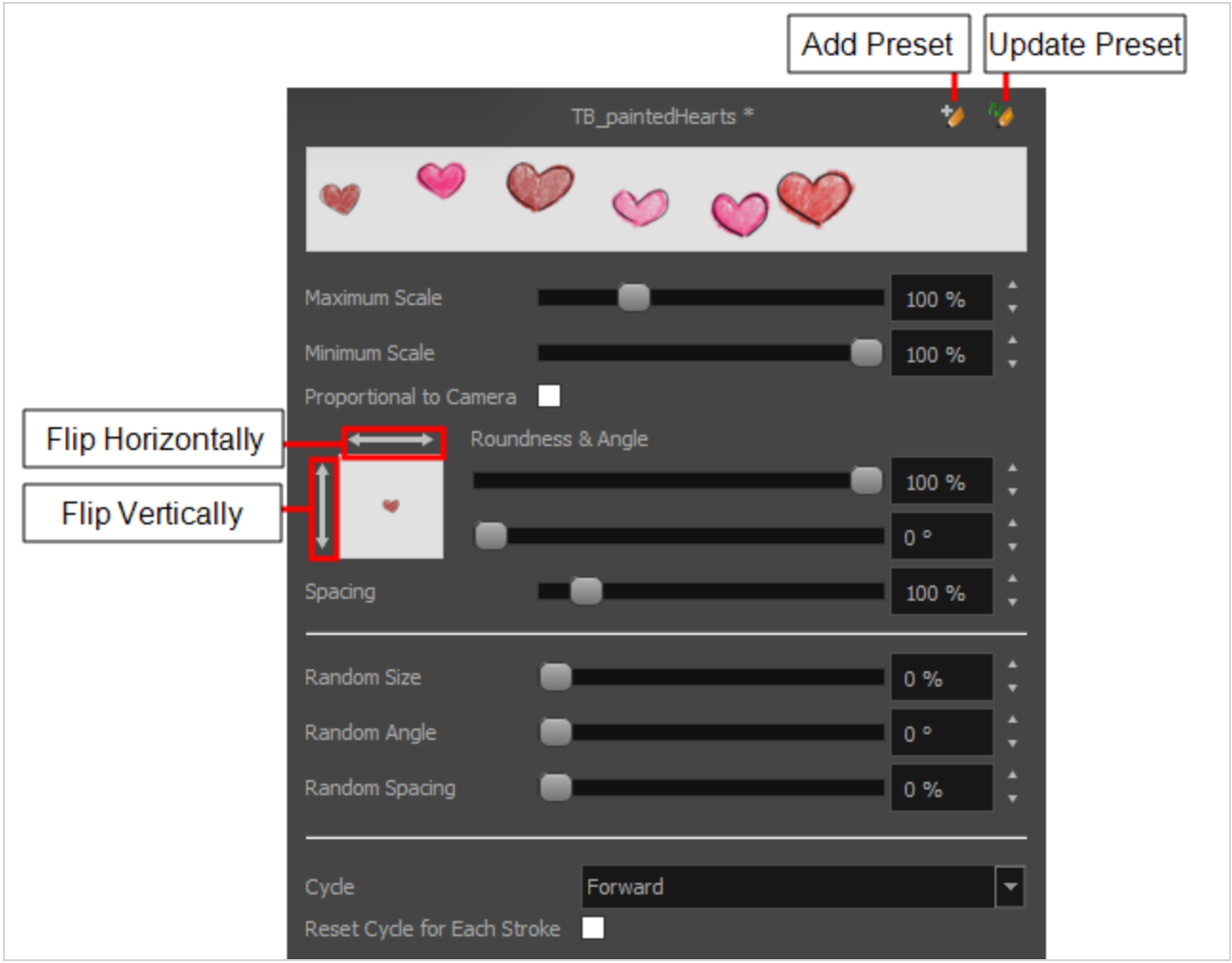
Icon	Property	Description
	Draw Behind	When enabled, your brush strokes will appear behind the existing artwork.  **NOTE** Your brush stroke will temporarily appear over your artwork as you draw it, until you release the mouse cursor or tablet pen.

	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping mode: • **Snap to Alignment Guides:** While drawing, the drawing tool will snap against nearby alignment guides.

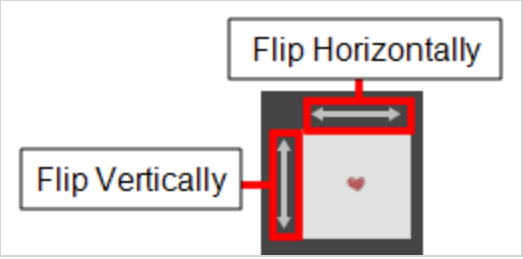
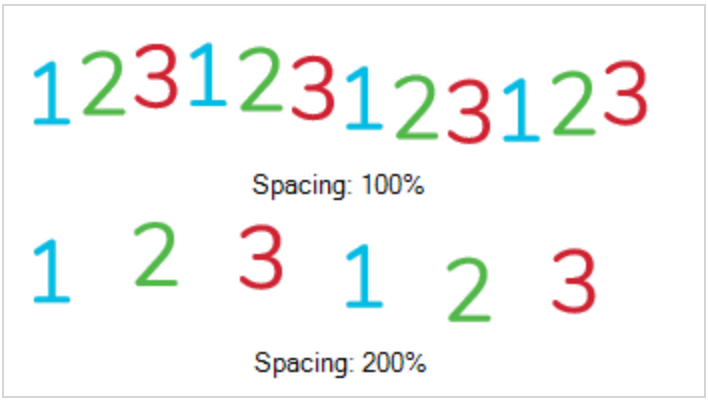
Stamp Properties Dialog

The Stamp Properties dialog allows you to set more specific settings for your stamp, such as pressure sensitivity, spacing, angle, randomness and, for multi-drawing stamps, how to cycle through each drawing in the stamp. To open the Stamp Properties dialog, click on the arrow button right of the stroke display area.





Property	Description
Maximum Scale	The maximum scaling factor to apply to the stamp before stamping it onto the drawing. This setting is a percentage, which is relative to the size of the original drawing that was used to create the stamp. This means that, at 100%, the drawing will be stamped into your artwork in its original size.
Minimum Scale	The minimum scaling factor to apply to the stamp before stamping it onto your drawing. When using the Stamp tool with a pressure-sensitive pen tablet, the size of the stamps applied onto your artwork will vary between its Minimum Scale and Maximum Scale properties, relative to the amount of pressure you apply to the pen. This setting is relative to the Maximum Scale property. This means that if the Maximum Scale is set to 50% and the Minimum Scale is set to 50%, the actual scaling factor applied to the stamp will vary between 25% and 50%. This setting is also used with the Random Size setting.

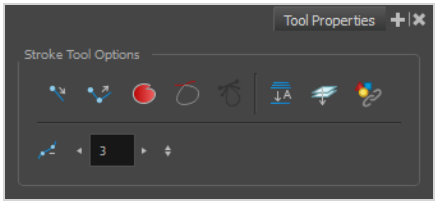
Property	Description
Flip Horizontally / Flip Vertically	The two-ended arrows to the left and over the Stamp thumbnail allow you to flip the stamp horizontally or vertically. 
Roundness & Angle	The Roundness and Angle parameters allow you to change the shape and orientation of the stamp. • **Roundness:** The vertical scaling to apply to the stamp. Reducing this setting squashes the stamp vertically, allowing you to turn round or square stamps into flat stamps. • **Angle:** The angle at which to rotate the brush tip, counterclockwise. **NOTE** The squashing is not relative to the angle—if the stamp is rotated, the squashing will still be done relative to the stamp's original orientation.
Spacing	Defines the amount of space between each stamp that is applied onto the artwork. The larger the value, the greater the space between each stamp. 

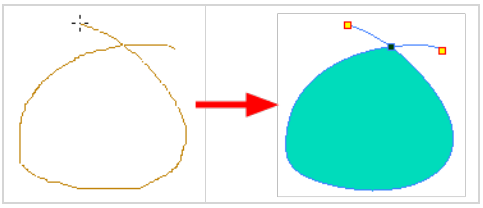
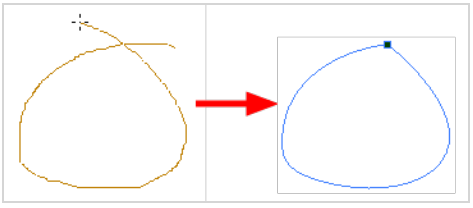
Property	Description
Random Size	The percentage of randomness to apply to the size of the stamp. This makes the size of the stamp randomly vary between its Maximum Scale and Minimum Scale settings each time it is applied to your artwork. The greater the value of the Random Size property, the closer to its Minimum Scale the size of each stamp can get. For example, if the Random Size setting is set to 50% and the Minimum Scale is set to 50%, the size of the stamp will randomly vary between 75% and 100% of its Maximum Scale.
Random Angle	The maximum value of randomness to apply to the angle of the stamp. This makes the angle of the stamp randomly vary within the range of degrees in this setting, in either direction, each time it is applied to your artwork. For example, if the stamp's Angle is set to 0°, and the Random Angle is set to 180°, each instance of the stamp will be at a random angle varying between -90° and 90°.
Random Spacing	The maximum amount of randomness to apply to the spacing of the stamp. Increasing this setting makes the distance between each instance of the stamp vary randomly as you draw a stroke. At 100%, this makes the distance between each stroke vary between 0% and 200% of its Spacing property.
Cycle	For multi-drawing stamps, this decides the logic with which to cycle through the sequence of drawings in the stamp as you draw a stroke. • **Forward:** Starts by applying the first drawing in the sequence, then the next one, and so on until it reaches the last drawing in the sequence, then cycles back to the first one.

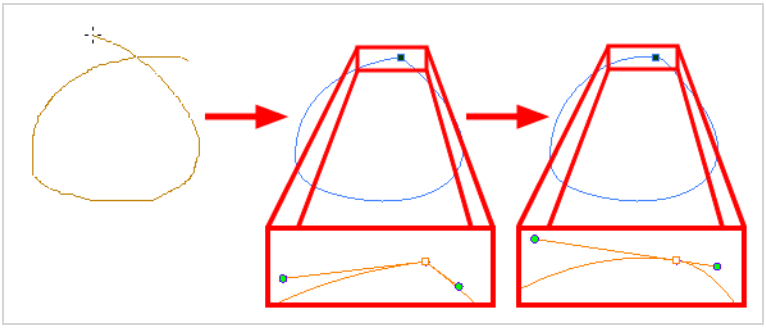
Property	Description
	• **Reverse:** Starts by applying the last drawing in the sequence, then the previous one, and so on until it reaches the first drawing in the sequence, then cycles back to the last one. • **Forward->Reverse:** Starts by cycling forward through the sequence until it reaches the last drawing, then cycles backward to the first drawing, and so on. • **Reverse->Forward:** Starts by cycling backward through the sequence until it reaches the first drawing, then cycles back to the last drawing, and so on. • **Random:** Applies a random drawing in the sequence each time the stamp is applied. • **Hold:** Applies a single one of the drawings in the sequence over and over again. **TIP** When this option is set to **Hold**, you can select which one of the drawings is stamped on by changing the **Stamp** setting in the Tool Properties view.
Reset Cycle for Each Stroke	For multi-drawing stamps. This makes it so each stroke you draw with the stamp too always starts with the first drawing in the cycle, which is decided by the **Stamp** option in the Tool Properties view. When disabled, the Stamp tool keeps track of which drawing it was going to stamp next when you finish drawing a stroke by storing the number of that drawing in the Stamp setting. When this option is enabled, it simply stops updating the Stamp setting. Hence, your strokes always start at the drawing selected with that setting. Likewise, you can manually decide which drawing to start your strokes with by adjusting the Stamp setting.

Stroke Tool Properties

When you select the Stroke tool, its properties and options appears in the Tool Properties view.



Icon	Tool Name	Description
	Draw Stroke as Straight Lines	Enable the Draw Stroke as Straight Lines option if you want the new strokes you draw to be a perfect straight line. Disable the option if you want the stroke to follow the mouse gesture.
	Connect Line Ends	Enable the Connect Line Ends option if you want the start or end point of your new stroke to connect to your existing strokes to make sure no gaps are left in your drawing.
	Auto Fill	When enabled, drawing a closed shape will automatically fill it with the currently selected Paint colour. 
	Trim Extra Lines	When enabled, drawing a closed shape will automatically remove the outstanding lines. 
	Align Handles After Trim	When the Trim Extra Lines option is enabled, enable this option to make the point where the beginning and end of the stroke meet into a smooth curve rather than a hard corner.

		
	Auto-Flatten Mode	By default, when drawing on a vector layer, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.
	Apply to Line and Colour Art	Allows you to perform drawing operations on both the Line Art and Colour Art layers of your drawing simultaneously. **NOTE** If you have Overlay and Underlay Art layers enabled, they will also be affected when this option is enabled.
	Apply to Synced Drawing Layers	If the currently selected layer is synced with another layer, the tool will work on both the current layer and its synced layer.
	Smoothness	You can modify the central line smoothness of your line using this option. This parameter smooths the initial movement of your line. Increasing the value will result in a smoother line with fewer control points. Use the left and right arrows to increment the value by one full unit. Use the Up - Down slider to quickly increment the value.

Text Tool Properties

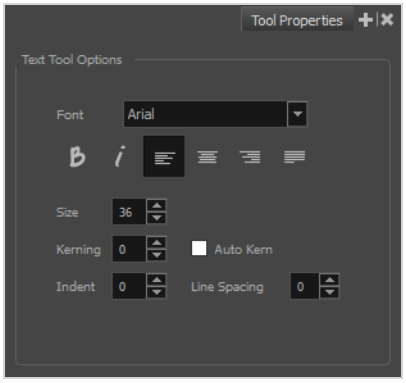
The Text tool lets you add text fields to your project, in which you can type text, then adjust its formatting using various fonts and text attributes.

With the Text tool selected, you can select text within text boxes you created and change the formatting of the selection. You can also select and manipulate text boxes using the Select tool, and change the formatting of the entire text box in the Select tool properties.

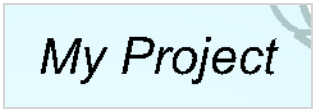
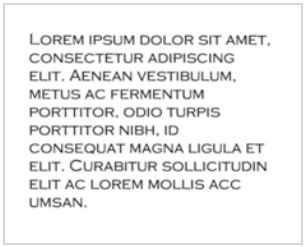
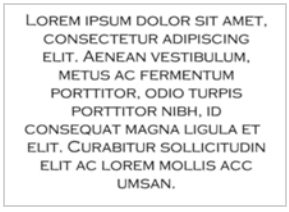
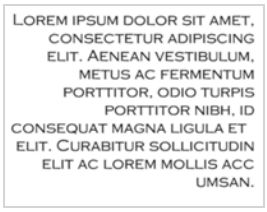
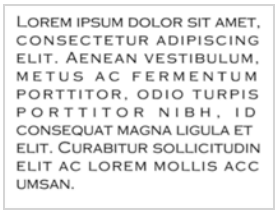
How to access the Text tool properties

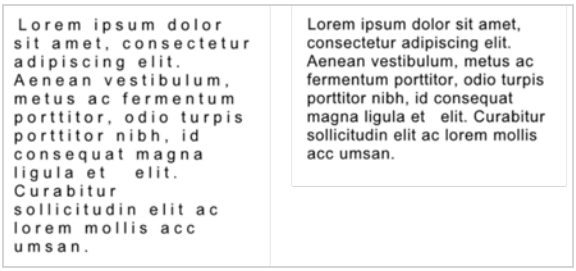
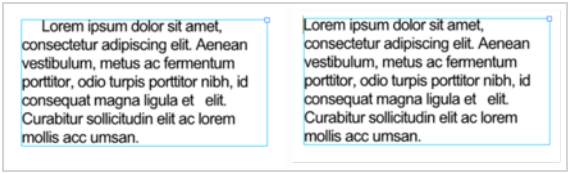
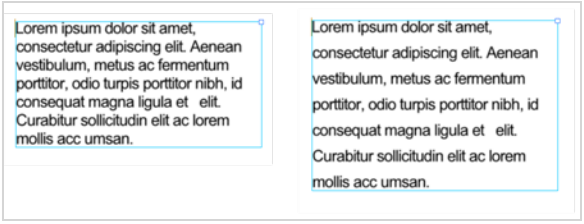
- In the Tools toolbar, select the Text T tool.

  The tool's properties are displayed in the Tool Properties view.



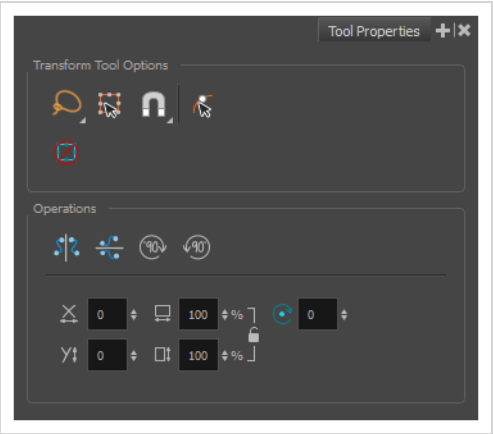
Icon	Property	Description
	Font	Lets you select the font in which to display the text.
	Bold	Makes the selected text bold.
	Italic	Makes the selected text italic.

Icon	Property	Description
		
	Align Left	Aligns the text in the selected text box to the left. 
	Align Center	Aligns the text in the selected text box to the centre. 
	Align Right	Aligns the text in the selected text box to the right. 
	Justify	Makes the text in the selected text box take all the horizontal space by adjusting the spacing between each word. Text that use a single line and text in the last line of a paragraph is aligned to the left. 

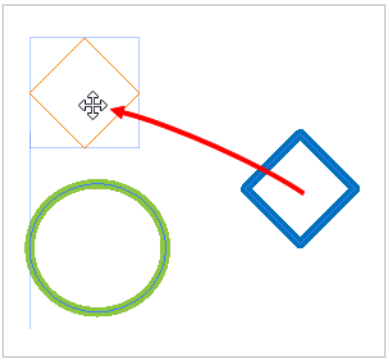
Icon	Property	Description
	Size	Allows you to set the size of the selected text.
	Kerning	Allows you to increase or decrease the spacing between each character. 
	Auto Kern	Sets the kerning automatically based on the font's predefined standard.
	Indent	Allows you to increase or decrease the indentation of the first line of text in each paragraph. 
	Line Spacing	Increases or decreases the space between each line of text. 

Transform Tool Properties

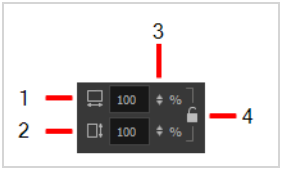
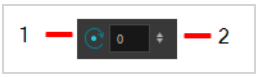
When selecting the Transform tool, several options are available in the Tool Properties view.



Icon	Tool Name	Description
	Lasso	Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them. **TIP** When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.
	Marquee	Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them. **TIP** When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.
	Easy Drag	When enabled, you can drag the selection by clicking anywhere inside its bounding box. By default, you must click on the artwork in the selection to be able to drag it.
	Snapping	Allows you to enable or disable snapping for this tool and all other animation and drawing tools that support snapping, as well as to select which types of snapping are enabled. If you double-click or long-click on this button, it will open a pop-up menu in which you can toggle different snapping modes. You

		can also click on this button to toggle it off, which will disable all snapping modes, and click on it again and toggle it on to re-enable the snapping modes which were previously enabled. This tool supports the following snapping modes: • **Snap to Alignment Guides:** While moving the selection or one of its control points, it will snap against nearby alignment guides. • **Snap and Align:** While moving the selection, the rectangular bounding box of the selection will align with the rectangular bounding boxes of other elements in your scene. If you move one of your selection's control points, it will also align with the bounding boxes of other elements.  • **Snap to Grid:** While moving the selection, the mouse cursor will snap against the intersecting points of the grid. **TIP** To display the grid, select **View > Grid > Show Grid** from the top menu or press Ctrl + '.
	Peg Selection Mode	In the Camera view, the Peg Selection Mode limits the selection to peg layers instead of drawing layers. This mode is useful when you have created a character rig using peg layers for each drawing. That way, you do not accidentally select the drawing layer when you want to animate on the peg. When disabled, the Transform tool selects the drawing layers.
	Bone Selection Mode	When enabled, all bones that exist in a 3D model will be displayed. The displayed bones will appear in blue.

		NOTE If the 3D model does not contain any bones, nothing will appear when this mode is enabled.
	Mixed Manipulation Mode	Allows the selection and manipulation of different types of interfaces, such as pegs and curves, together in the same operation. When enabled, certain deformation controls and extra controls will be able to be selected and manipulated with the Transform Tool. This will extend the bounding box used by the tool to encompass the selected controls. These controls can then be transformed at the same time with other selected pegs, drawings and compatible controls.
	Hide Manipulator Controls	The Hide Manipulator Controls button lets you hide the bounding box and manipulator controls from the Camera view when an element is selected.
	Flip Horizontal	Flips the current selection horizontally. You can also select **Animation > Flip > Flip Horizontal** from the top menu or press 4 or 5.
	Flip Vertical	Flips the current selection vertically. You can also select **Animation > Flip > Flip Vertical** from the top menu or press 4 or 5.
	Rotate 90 Degrees CW	Rotates the current selection 90 degrees clockwise.
	Rotate 90 Degrees CCW	Rotates the current selection 90 degrees counter-clockwise.
	Offset X ad Y	Use the Offset X and Offset Y operation fields to enter specific values and precisely reposition the selected shape. 1. **X**: Type a value in this field to reposition your selection along the X-axis. 2. **Y**: Type a value in this field to reposition your selection

		along the Y-axis. 3. **Up/Down arrows:** Use the up and down arrows to modify the value in the X or Y value field.
	Width and Height	Use the Width and Height operation fields to enter specific values to resize the selected shape with precision.  1. **Width**: Type a value in this field to resize the width of your selection. 2. **Height**: Type a value in this field to resize the height of your selection. 3. **Up/Down arrows:** Use the up and down arrows to modify the value in the Width or Height fields. 4. **Lock icon**: Click the lock icon to lock or unlock the ratio between the Width and Height values.
	Angle	The Angle operation lets you to enter specific values and accurately rotate the selected shape.  1. **Angle**: Type a degree value in this field to rotate your selection. 2. **Up/Down arrows:** Use the up and down arrows to modify the value in the Angle value field.

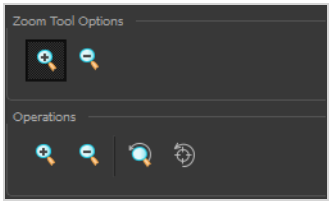
Zoom Tool Properties

The Zoom tool lets you zoom in and out of the Camera, Drawing, Side and Top views. You can also use it to reset the zoom level.

How to access the Zoom tool properties

1. In the Tools toolbar, select the Zoom tool.

   The tool's properties are displayed in the Tool Properties view.



Tool Options

Icon	Parameter	Description
	Zoom In Mode	Use the mouse cursor to zoom in to the Camera or Drawing view.
	Zoom Out Mode	Use the mouse cursor to zoom out of the Camera or Drawing view.

Operations

Icon	Parameter	Description
	Perform Zoom In	Zoom in the Camera or Drawing view. The keyboard shortcut is 2.
	Perform Zoom Out	Zoom out the Camera or Drawing view. The keyboard shortcut is 1.
	Reset Zoom	Restores the current zoom level to 100%.
	Reset View	Restores the original display by resetting any pan, rotation or zoom actions.

Chapter 5: Toolbars

Harmony contains toolbars which, by default, are located at the top of the interface. Some views also have a toolbar which you can reposition to suit your work style. You can show or hide toolbars, as well as customize it with the tools you use most often and hide the ones you don't.

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  - Advanced Animation Toolbar 611
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Workspace Toolbars

Harmony has a series of toolbars that are added by default at the top of the interface. These toolbars can be moved on the sides of the interface as well as within specific views.

All top toolbars can be added by selecting **Windows > Toolbars** in the top menu.

Advanced Animation Toolbar **611**

Art Layer Toolbar **612**

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Display Toolbar **617**

Easy Flipping Toolbar **618**

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Workspace Toolbar **644**

Advanced Animation Toolbar

The Advanced Animation toolbar contains tools to position and animate layers. The Scale, Translate and Rotate tools can be used to reposition the permanent pivot position of a layer. Unlike the Transform tool, each tool in the Advanced Animation toolbar performs a single operation, either rotate, scale, translate or scale in relation to the camera distance.

How to access the Advance Animation toolbar

1. Select **Windows > Toolbars > Advanced Animation**.

Icon	Tool Name	Description
	Translate	Lets you move the selected element along the X and Y axes.
	Rotate	Turns a selected element around its pivot point.
	Scale	Increases or decreases the size of a selected element. You can scale an object up to make it larger or down to make it smaller. Press Shift to scale the element while maintaining its proportions.
	Skew	Slants the selected element.
	Maintain Size	Keeps elements the same size aspect ratio in the Camera view as you move them towards or away from the camera.
	Spline Offset	Lets you reposition the visual trajectory without offsetting or modifying your animation. By default, the trajectory is located at 0,0,0 fields. If your elements were drawn in a different location than the centre of the drawing area, it will look like the trajectory is not aligned with your drawing. Also, if you have several elements attached to one trajectory, you might want your trajectory to be at a different location to represent the group's motion better.

Art Layer Toolbar

The Art Layer toolbar lets you access the art layers. By default, only the Line Art and Colour Art are displayed. A drawing is composed of two layers, a line layer and a colour layer. The colour layer is always placed under the line layer. These layers are accessible in the Drawing or Camera view (using drawing tools). When you view the final drawing, you will see the final composition of the lines and colours, not two separate layers.

You can draw and paint in all layers. If you prefer to work in a single layer, everything can be done in the Line Art layer.

You can change your preferences to enable the advanced use of layers and have access to four layers instead of two:

- Overlay
- Line Art
- Colour Art
- Underlay

How to access the Art Layer toolbar

1. Select **Windows > Toolbars > Art Layer**.

How to enable the Support Overlay and Underlay Arts option

1. Select **Edit > Preferences** (Windows/Linux) or **Harmony Advanced > Preferences** (macOS).
2. In the Preferences dialog box, select the **Advanced** tab.
3. In the Advanced Options section, select the **Support Overlay and Underlay Arts** option.
4. Click **OK**.

Icon	Tool Name	Description
	Preview Line Art and Colour Art	Displays all Art layers.
	Overlay Art	Makes the Overlay Art layer current.

	Line Art	Makes the Line Art layer current.
	Colour Art	Makes the Colour Art layer current.
	Underlay Art	Makes the Underlay Art layer current.

Deformation Toolbar

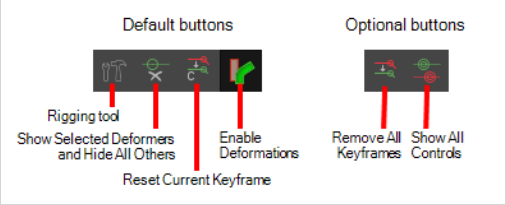
T-RIG-007-009

The Deformation toolbar contains the various tools and options used to create a deformation rig. This toolbar is displayed in the default interface.

By default, the Deformation toolbar only contains the essential options. If you right-click on the toolbar and select **Customize**, you can add additional buttons.

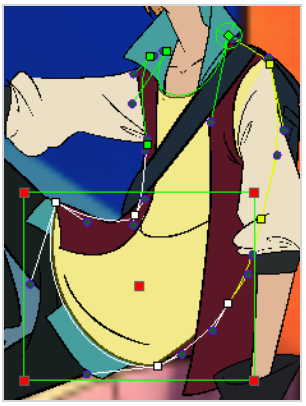
NOTE

The Customize option is only available if a toolbar is right-clicked in the space above the Camera view. To move the toolbar to the space above the Camera view, either click and drag the toolbar directly to the space above, or right-click in the space above and select the toolbar you wish to add.

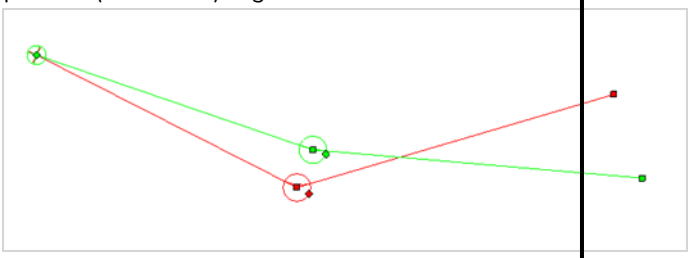


Default Buttons

Icon	Tool Name	Description
	Rigging Tool	The Rigging tool is used to create a Bone deformation chain. You also use it to set up the resting position. To learn more about the Rigging tool's properties, see *Rigging Tool Properties* on page 569.
	Show Selected Deformation Chain and Hide All Others	Displays the deformation controls for the selected element and all of its children in the Camera view, and hides the deformation controls for any other element in your scene.
	Show Selected Deformers	Displays the deformation controls for the selected element and all of its children in the Camera view. If deformation controls for other elements are currently visible, they will remain visible as well.
	Show Deformation Mesh	Overlay the deformation mesh as a wireframe over the drawings.

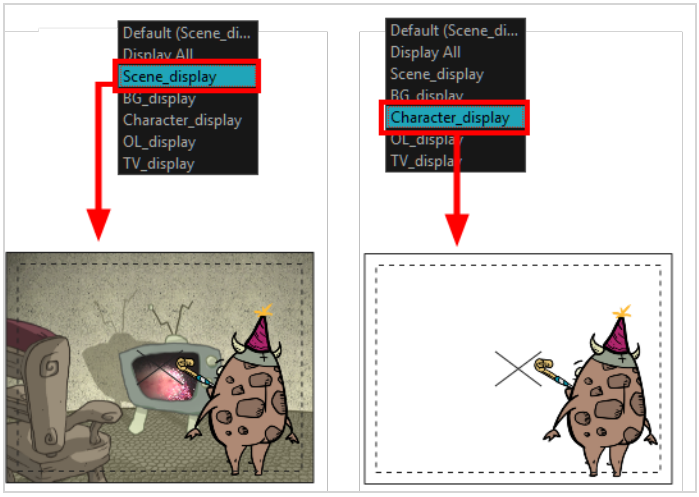
	Show Manipulator	When several points from a curve or envelope deformation chain are selected, this displays a manipulator bounding box around them. Using this manipulator, you can move, rotate and scale the selected points together. 
	Reset Current Keyframe	The Reset Current Keyframe copies the resting position, the original setup of your skeleton before undergoing any deformation, to your current frame. Once you have created a deformation chain, you can use the Rigging tool to adjust the position and appearance of the rig to fit the element. When the skeleton is in place, you can use the Reset Current Keyframe button to reset the current frame position to the resting position.
	Enable Deformations	The Enable Deformations button allows you to display your drawings in their original state or with deformations while creating additional drawings. Depending on the artwork you need to create, you might need to refer to the other images either deformed or in their original position. **NOTE** Disabling deformations is only a display mode. Although drawings will not appear deformed in the Camera view, even in Render View mode, they will still be deformed in the rendered images.

Optional Buttons

Icon	Tool Name	Description
	Remove All Keyframes	The Remove All Keyframes option removes all keyframes on the selected deformation chain.
	Show All Controls	The Show All Controls button lets you visualize the resting position in red (Setup mode) and the active position (Animation) in green at the same time 

Display Toolbar

The Display toolbar lets you select the different Display nodes available in the node system.



Harmony Advanced doesn't allow you to add Display nodes. The display selection feature is only available for the possible scenario that you need to use a specific Display node created by a Harmony Premium user.

When your scene does not have a Display node, it is automatically set to Display All which uses the Timeline view ordering and shows floating nodes from the Node view. You can also set your scene to use Display All using the Display toolbar.

NOTE

If you try to add a peg or other transformation layer in the Timeline view without having a layer selected, an error message will display. Make sure to change to Display All. The peg layer will be floating in the Node view and will not be visible in the Timeline view. The Timeline view shows only layers that are connected to the Composite node.

If you switch to Display All, you run the risk of not realizing when you have floating nodes that are not connected to your composite. For this reason, it is not recommended to work in Display All mode.

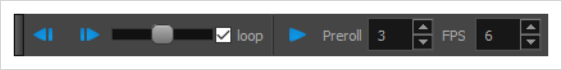
How to access the Display toolbar

1. Select **Windows > Toolbars > Display**.

Easy Flipping Toolbar

T-LAY-003-007

The Easy Flipping toolbar lets you rapidly flip through drawings in the Drawing view as is done with paper drawings. In order for the features in this toolbar to work, you must be in the Drawing view.



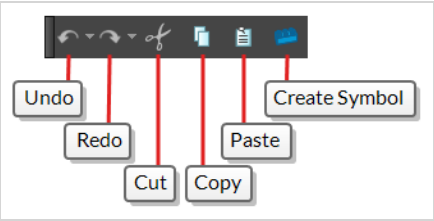
How to access the Easy Flipping toolbar

1. Select **Windows > Toolbars > Easy Flipping**.

Icon	Tool Name	Description
	Previous Drawing	Displays the previous drawing of your animation.
	Next Drawing	Displays the next drawing of your animation.
	Slider	Lets you flip forwards or backwards through your drawings by moving the slider.
	Loop	Displays drawings in the first frame after you reach the last frame of your animation.
	Easy Flip	Automatically flips through the drawings based on the FPS.
	Preroll	Sets the number of drawings to be flipped through before the starting drawing. The starting drawing is determined by the position of the red playhead in the Timeline view.
	FPS	Sets the speed of playback in the units of frames per second.

Edit Toolbar

The Edit toolbar contains common operations such as Undo, Redo, Cut, Copy and Paste. These commands can also be found in the Edit top menu.



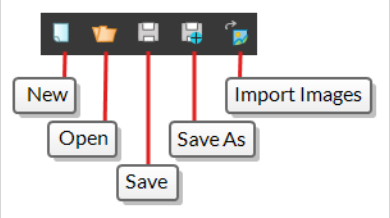
How to access the Edit toolbar

1. Select **Windows > Toolbars > Edit**.

Icon	Tool Name	Description
	Undo	Removes the last change made to your project. Harmony supports multiple undo, so you can undo changes you made in the order you made them.
	Redo	Redoes an operation you have undone. This command is active only after you use the Undo command.
	Cut	Removes selected objects. You can then paste the object or its properties to another object.
	Copy	Copies selected objects and properties.
	Paste	Places an object you cut or copied into the location you select in a view.
	Create Symbol	Creates a symbol from selected drawing elements in the Drawing or Camera view or a layer or cells in the Timeline view.

File Toolbar

The File toolbar contains buttons for common file operations such as New, Save and Open. These commands can also be found in the File top menu.



NOTE

The New, and Save As buttons are only available in Harmony Stand Alone. With Harmony Server, Control Center must be used to create scenes.

How to access the File toolbar

1. Select **Windows > Toolbars > File**.

Icon	Tool Name	Description
	New (Harmony Stand Alone)	Creates a new scene while closing any scene already open. The New Scene dialog box opens, asking for directory, name, and resolution information.
	Open	Displays the Open Scene dialog box where you can browse for a scene file. You can open a new scene from the current one and the previous scene will close.
	Save	Saves all changes made to the opened scene, drawings, palettes, and palette lists.
	Save As	Saves the current file with a different name and at a different location. Saves the current state of a scene as another scene. The Save As window prompts you for a new name and a different location for this scene before saving it. This will create a complete scene directory for the new scene.

Icon	Tool Name	Description
		NOTE The scene name **cannot** exceed 23 characters.
	Import Images	Imports bitmap images which you can choose to vectorize.

Flip Toolbar

The Flip toolbar lets you determine the type of drawing to include in your flipping selection. You can flip through the key, breakdown or in-between drawings individually, or view a combination.

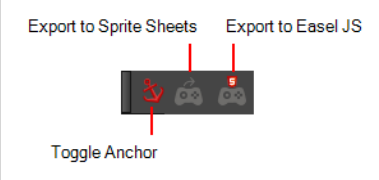
How to access the Easy Flipping toolbar

1. Select **Windows > Toolbars > Easy Flipping**.

Icon	Tool Name	Description
	Show Key Drawings	Displays key drawings when flipping through drawings.
	Show Breakdown Drawings	Displays breakdown drawings when flipping through drawings.
	Show In-between Drawings	Displays in-between drawings when flipping through drawings.
	Show Retake Key Drawings	Displays retake key drawings when flipping through drawings.
	Show Retake Breakdown Drawings	Displays breakdown retake drawings when flipping through drawings.
	Show Retake In-between Drawings	Displays retake in-between drawings when flipping through drawings.

Game Toolbar

The Game toolbar contains tools for setting anchors and props, as well as exporting to sprite sheets and Easel JS.



How to access the Game toolbar

1. Select **Windows > Toolbars > Game**.

Icon	Tool Name	Description
	Toggle Anchor	Adds the Anchor parameter to the selected layer.
	Toggle Prop	Adds the Prop parameter to the selected layer.
	Export to Sprite Sheets	Opens the Export to Sprite Sheets window where you can export your animation as sprite sheets .
	Export to Easel JS	Opens the Export to Easel JS window where you can export your animation as Easel JS.

Mark Drawing Toolbar

The Mark Drawing toolbar lets you identify drawings such as key, breakdown and in-between. The drawing Identification feature can help the animator stay well organized and save time when identifying key, breakdown or in-between drawings in the Xsheet and Timeline views.

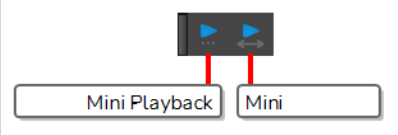
How to access the Mark Drawing toolbar

1. Select **Windows > Toolbars > Mark Drawings**.

Icon	Tool Name	Description
	Mark as Key Drawing	Identifies the selected drawing as a key drawing.
	Mark as Breakdown Drawing	Identifies the selected drawing as a breakdown drawing.
	Mark as In-between Drawing	Identifies the selected drawing as an in-between drawing.
	Mark as Retake Key Drawing	Identifies the selected drawing as a key retake drawing.
	Mark as Retake Breakdown Drawing	Identifies the selected drawing as a breakdown retake drawing.
	Mark as Retake In-between Drawing	Identifies the selected drawing as a in-between retake drawing.

Mini Playback Toolbar

The Mini Playback toolbar allows you to quickly preview a short span of animation starting a few frames before the current frame and ending a few frames after the current frame, at a customizable frame rate.



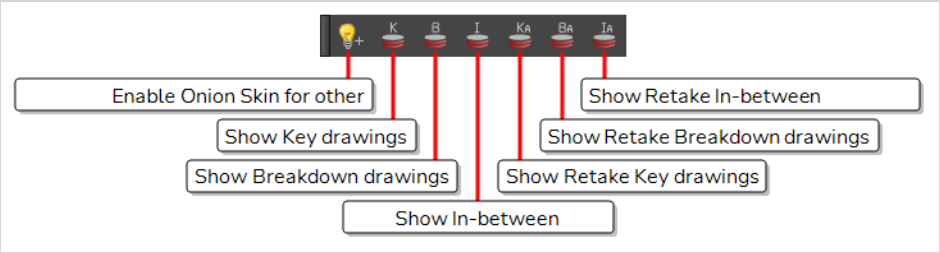
How to add the Mini Playback toolbar to your workspace

1. Do one of the following:
    - In the top menu, select **Windows > Toolbars > Mini Playback**.
    - Right-click on any existing toolbar and select **Mini Playback**.

Icon	Tool Name	Description
	Mini Playback Dialog	Open the Mini Playback dialog. This dialog allows you to set the amount of frames before and after the current frame to playback when using Mini Playback, to set the speed of Mini Playback and to start Mini Playback.
	Mini Playback	Begins Mini Playback using the last settings entered in the Mini Playback dialog. By default, Mini Playback will play 5 frames before and after the current frame, at the scene's frame rate.

Onion Skin Toolbar

The Onion Skin toolbar contains a few options that can be used with Onion Skin. Specifically, you can use it to quickly toggle the Enable Onion Skin for other elements option, as well as to only display drawings with specific markers in the Onion Skin.



How to access the Onion Skin toolbar

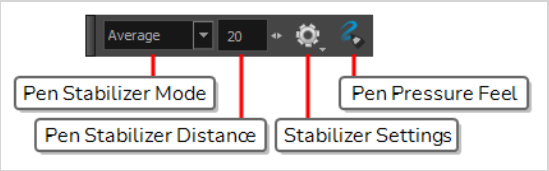
1. Select **Windows > Toolbars > Onion Skin**.

Icon	Tool Name	Description
	Enable Onion Skin in Other Elements	In the Drawing View, when the Light Table is enabled, making other layers visible alongside the current layer, this will make the Onion Skin for other visible layers appear alongside the Onion Skin for the current layer. Drawings for elements above the current layer will appear in blue, and drawings for elements below will appear in yellow. **NOTE** The drawings from other elements that get displayed in the Onion Skin are the drawings that are exposed at the same time as the drawings displayed in the current layer's Onion Skin.
	Show Key Drawings	Only displays drawings marked as key drawings in the Onion Skin.
	Show Breakdown Drawings	Only displays drawings marked as breakdowns in the Onion Skin.
	Show In-between Drawings	Only displays drawings with no marker in the Onion Skin. Drawings with no marker are considered in-betweens.
	Show Retake Key Drawings	Only displays drawings marked as retake key drawings in the Onion Skin.

Icon	Tool Name	Description
	Show Retake Breakdown Drawings	Only displays drawings marked as retake breakdowns in the Onion Skin.
	Show Retake In-between Drawings	Only displays drawings marked as retake in-betweens in the Onion Skin.

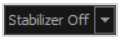
Pen Settings Toolbar

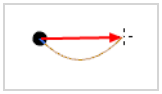
The Pen Settings toolbar provides options for enabling and configuring the Pen Stabilizer, which can help you draw smooth lines with precision and minutia. It also allows you to access the Pen Pressure Feel dialog, which allows you to configure how the pressure you apply to your tablet pen is processed by Harmony to affect the size of your drawing strokes.



NOTE

For information on how to use the Pen Settings toolbar, refer to the User Guide.

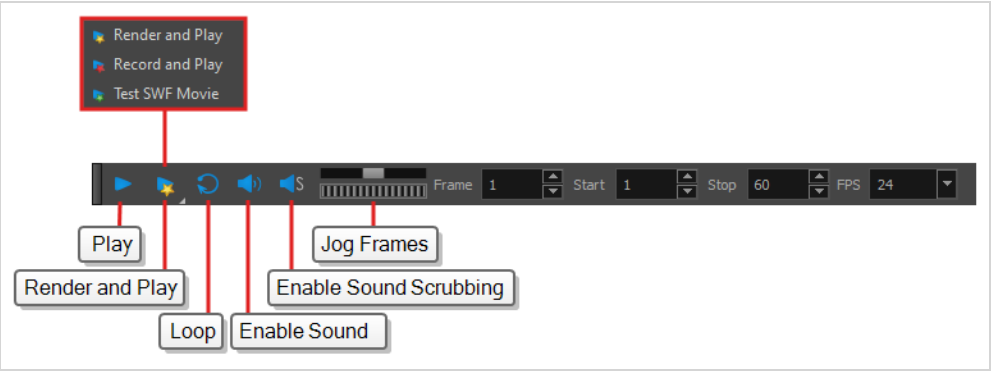
Icon	Parameter	Description
	Pen Stabilizer Mode	Allows you to select a method for Harmony to stabilize your drawing strokes. Stabilization is a process by which Harmony uses the general direction of your drawing strokes to create smooth, stable curves and avoid jittering and sharp corners. Harmony accomplishes this by his by letting you draw a stroke of a certain length without generating artwork right away. After your stroke has reached that length, Harmony starts generating an drawing stroke that keeps trailing behind your mouse cursor or tablet pen as you draw. Harmony uses the buffer between your mouse cursor or pen tablet and the actual drawing stroke to generate smooth curves and ignore jittering and small mistakes. The way Harmony does this depends on the stabilization method you choose: • **Stabilizer Off:** No stabilization is performed. When you draw a stroke, artwork for it is generated immediately. • **Average**: Harmony calculates the average direction of all of your mouse or pen gestures between the end of the actual drawing stroke and the current position of your mouse cursor or pen tip, and extends the stroke in this average direction, effectively evening out jitter and rounding sharp turns. • **Pulled String:** When you start drawing a stroke, Harmony positions the drawing tool where your stroke starts. As you move the mouse or tablet pen, the drawing tool remains in that position, but a "string" appears,

Icon	Parameter	Description
		linking your drawing tool to your mouse cursor or pen tip.  This string has a certain maximum length. Once that length is reached, the string pulls the drawing tool in the direction of your mouse cursor or tablet pen. **NOTE** The distance between your mouse cursor or tablet pen and the stroke can be adjusted. For the purpose of demonstration, these images were done using the largest supported distance.
	Pen Stabilizer Distance	This parameter determines how far your drawing strokes trail behind your mouse cursor or tablet pen as you draw. In the case of the Average technique Harmony lets you draw an invisible stroke of a certain length before it starts generating the artwork based on the average direction of that invisible stroke. This parameter determines the invisible stroke's length. In the case of the Pulling String, Harmony binds your drawing tool to your mouse cursor or tablet pen with a virtual string of a given length. This parameter sets the length of that string.
	Pen Stabilizer Settings	Allows you to enable or disable the following options: • **Catch Up:** When using stabilization, your drawing strokes trail behind your mouse cursor or tablet pen. With this option enabled, when you stop moving your pen and just leave it pressed against your tablet, the brush stroke will progressively catch up to the position of your pen. **NOTES** • This option only works if you are drawing with a pen tablet. • This option only works with the Average stabilization method. • **Show String:** When using the **Pulled String** method, the virtual string binding your drawing tool to your mouse cursor or tablet pen will be

Icon	Parameter	Description
		displayed as you draw, allowing you to visualize how the brush stroke trails behind your mouse cursor or tablet pen. • **Eraser:** If enabled, strokes with the Eraser tool will also be stabilized. By default, the stabilizer works with the Brush, Pencil and Stroke tools.
	Pen Pressure Feel	Opens the Pen Pressure Feel dialog, which allows you to configure how Harmony processes the pressure you put on your tablet pen before applying it to the thickness of your drawing strokes—see Pen Pressure Feel Dialog Box.

Playback Toolbar

The Playback toolbar allows you to play your animation as well as to set some playback options such as looping, audio playback, playback range and playback speed.



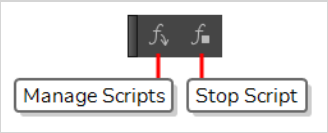
Name	Button	Description
Play		Plays the scene in the Camera or Drawing view. You can also select **Play > Play** or **Stop** from the top menu.
Render and Play		Renders your scene's frames, then opens the rendered frames in Play for playback. This allows you to preview your scene's animation in real time, with the effects rendered and with no risk of slowdown. You can click and hold this button to switch its mode to **Record and Play** or **Test SWF Movie**.
Record and Play		Exports your scene as it appears in the Camera view into a movie file, then opens it in your workstation's default video player. This allows you to preview your animation without any risk of slowdown, but it does not preview the effects in your scene. However, it is much faster than Render and Play.
Test SWF Movie		Quickly exports your scene as a Flash Movie **(.swf)**, then opens it in your workstation's default web browser.

Enable Loop		If pressed, your scene will repeat indefinitely when playing. Otherwise, it will stop when the end is reached. You can also select **Play > Loop** from the top menu.
Enable Sound		When pressed, your scene's soundtrack will play during playback. You can also select **Play > Enable Sound** from the top menu.
Enable Sound Scrubbing		When pressed, you will hear a sample of your scene's soundtrack at the current frame when moving your scene's playhead in the Timeline view. This allows you to easily situate where the action is relative to the sound track. You can also select **Play > Enable Sound Scrubbing.**
Jog Frames		Allows you to quickly play your scene forward or backward to preview your animation. Moving the handle towards the right will play your scene forward, while moving it towards the left will play your scene backward. The closer to the edge you move the handle, the faster the playback will be, allowing you to dose the speed at which your scene is played. When the handle is at the edge, your scene will play at its actual framerate. Once the head is released, it returns to the middle and playback stops.
Frame		Lets you manually enter the current frame number, setting the playhead's position.
Start		Let's you manually enter the number of the first frame to play during playback.

		TIP You can also click on **Start** (just left of the input field) to quickly set the Start frame to the current frame.
Stop		Let's you manually enter the number of the first frame to play during playback. **TIP** You can also click on **Stop** (just left of the input field) to quickly set the Stop frame to the current frame.
FPS (Frames per second)		Lets you set the amount of frames that should be played during every second of playback, which is how the playback speed is determined. **NOTE** This does not change the frames per second setting in your scene's resolution settings.

Scripting Toolbar

The scripting toolbar allows you to create buttons that run functions in your scripts. You can add one button for each function you want to be able to run, and clicking on the button will instantly run the script function your linked it to.



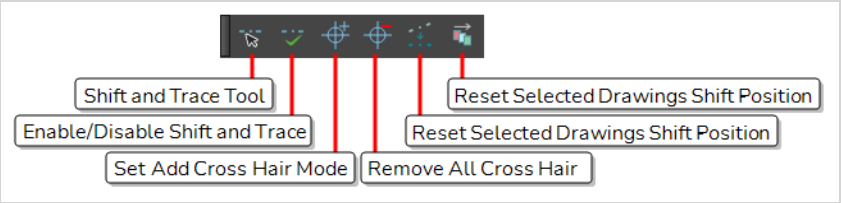
How to add the Scripting toolbar to your workspace

1. Do one of the following:
    - In the top menu, select **Windows > Toolbars > Scripting**.
    - Right-click on any existing toolbar and select **Scripting**.

Icon	Tool Name	Description
	Manage Scripts	Opens the Scripts Manager dialog box where you can add scripts and functions to your Scripting toolbar.
	Stop Script	Stops the execution of a script launched from the Scripting toolbar.

Shift and Trace Toolbar

The Shift and Trace toolbar allows you to temporarily move, rotate and scale drawings, then trace over them in other drawings using Onion Skin. Contrary to Shift and Trace with the Drawing Desk, you can use the Shift and Trace toolbar in the Camera view.



How to access the Shift and Trace toolbar

1. Do one of the following:
    - In the top menu, select **Windows > Toolbar > Shift and Trace**.
    - Right-click on any existing toolbar and select **Shift and Trace**.

NOTE

You can also select the Shift and Trace tool from the Tools toolbar, under the pop-up menu of the Hand tool. When the Shift and Trace tool is active, all the commands in the Shift and Trace toolbar are available in the Tool Properties view.

Icon	Tool Name	Description
	Shift and Trace Tool	Enables the Shift and Trace tool, with which you can temporarily offset, rotate and scale drawings. The transformations done on drawings with the Shift and Trace tool are only meant to allow you to trace these drawings, and can be undone at any time to reset the drawings back to their intended position. Selecting the Shift and Trace tool also enables Shift and Trace and Onion Skin.
	Enable/Disable Shift and Trace	Enabled by default. When disabled, drawings that were repositioned, rotated or scaled with the Shift and Trace tool appear in their original position.
	Set Add Cross Hair Mode	When selected, clicking on the drawing will add a cross hair where you click. Cross hairs are marks that appear on the same location on every

Icon	Tool Name	Description
		drawing in the current layer and which move when you offset a drawing with the Shift and Trace tool, and they appear in the Onion Skin rendition of neighbouring drawings as well. This allows you to keep track of how offset each drawing is.
	Remove All Cross Hair	Removes all the cross hairs created for shift and trace.
	Reset Selected Drawings Shift Position	Undoes all transformations done with the Shift and Trace tool on the selected drawings, resetting them to their original position, angle and scale.
	Reset All Drawings Shift Position	Undoes all transformations done with the Shift and Trace tool on all drawings, resetting them to their original position, angle and scale.

Tool Presets Toolbar

The Tool Presets toolbar lets you create new tool presets and manage them.

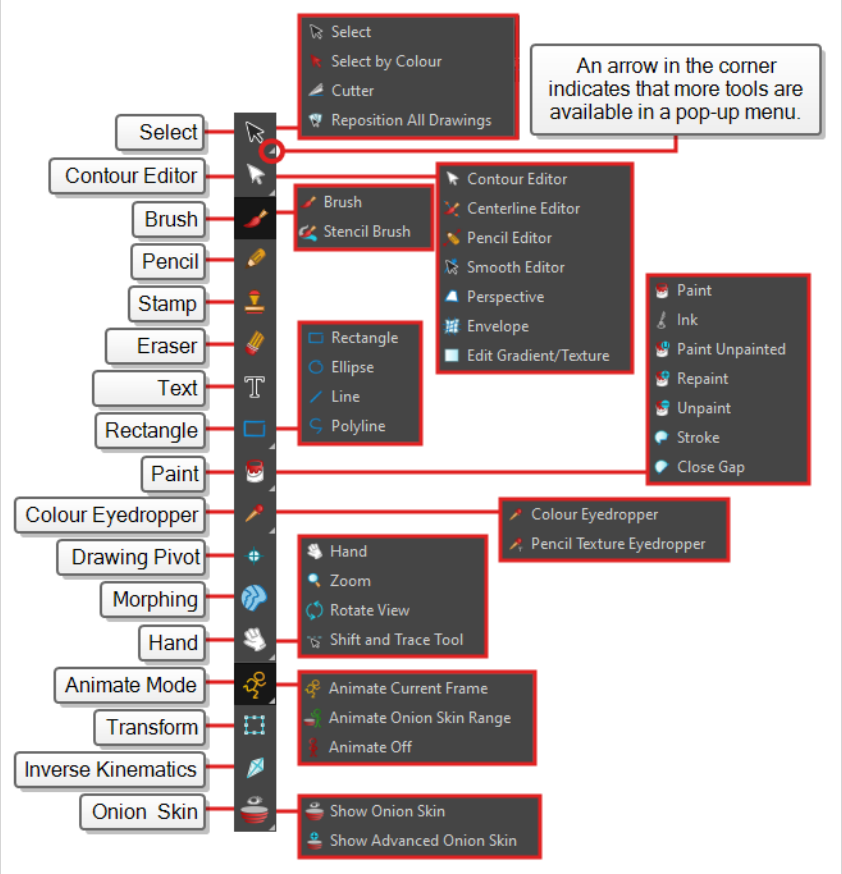
How to access the Tool Presets toolbar

1. Select **Windows > Toolbars > Tool Presets**.

Icon	Tool Name	Description
	New Tool Preset	Creates a new tool preset from the current tool settings.
	Manage Presets	Opens the Manage Tool Preset dialog box where you can update, organize, and delete existing presets.

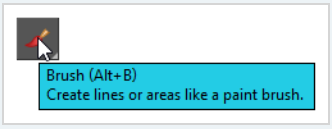
Tools Toolbar

The Tools toolbar contains the main tools you need to work in Harmony. In the default workspace, this toolbar located on the left edge of the application window.

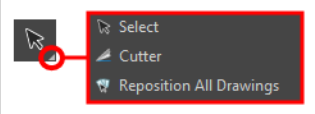


TIP

Many toolbar buttons have a keyboard shortcut associated to them. You can check which keyboard shortcut is associated to a button by leaving your mouse cursor over the button for a second. If the button has a keyboard shortcut, it will be indicated in the tooltip that appears.



By default, the Tools toolbar hides some of its tools inside pop-up menus. For example, to select the Cutter tool, you must double-click or long-click the Select tool button, and select **Cutter** in the pop-up menu.



However, it is possible to make the Tools toolbar display each tool as a separate button by enabling the **Flat Tools Toolbar** preference. This makes the selection of tools quicker.

How to make every tool in the Tools toolbar display in buttons rather than pop-up menus

1. Do one of the following to open the Preferences dialog:
    - **Windows or GNU/Linux:**
        - In the top menu, select **Edit > Preferences**.
        - Press Ctrl + U.
    - **macOS:**
        - In the top menu, select **Harmony Advanced > Preferences**.
        - Press ⌘ + U.
2. Select the **General** tab.
3. In the **Options** section, check the **Flat Tool Toolbar** option.
4. Click **OK**.
5. Close and relaunch Harmony.

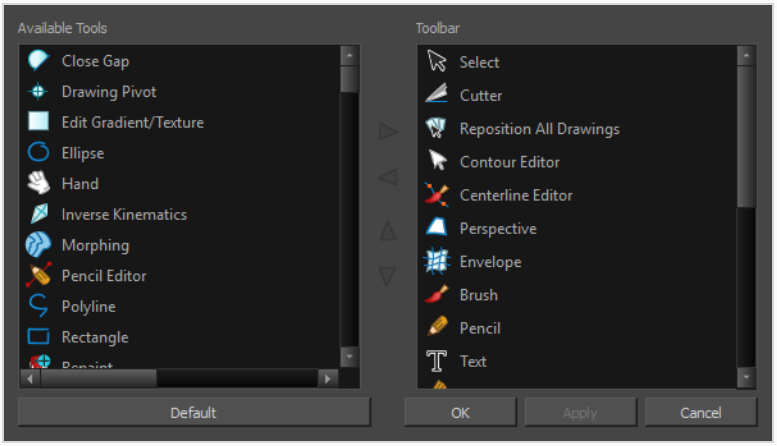
NOTE

In Flat Tools Toolbar mode, some tools are hidden from the Tools toolbar by default. To customize which tools are displayed in the Tools toolbar, and the order in which they are displayed, right-click on the Tools toolbar and select **Customize**.

How to customize which tools are displayed in the Tools toolbar when it is in Flat mode

1. Right-click on the Tools toolbar and select **Customize**.

   The Toolbar Manager dialog appears.



2. In the Available Tools list, select each tool that you want to add to the Tools toolbar, then click on the Add the selected tool to the toolbar ▷ button.
3. In the Toolbar list, select each tool that you want to remove from the Tools toolbar, then click on the Remove the selected tool from the toolbar ◁ button.

Tool Name	Icon	Description
Select		Allows you to select and reposition, scale, rotate and skew brush strokes, pencil lines, shapes and other parts of your artwork.
Cutter		Allows you to cut a part of your artwork, then reposition, scale, rotate and skew it.
Reposition All Drawings		Allows you to reposition, scale, rotate and skew all drawings in the current layer.
Contour Editor		Allows you to edit the vector contours of brush strokes, pencil lines and shapes in your artwork. You can add, remove, tweak and move vector points, move the Bezier handles of the vector points as well as deform vector outlines.
Centerline Editor		Allows you to tweak and deform a brush stroke by manipulating the points at the centre of its line rather than its contour.
Pencil Editor		Allows you to adjust the thickness of a pencil line at its different points and corners, tweak the shape of its extremities and scale its texture.

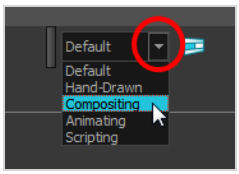
Smooth Editor		Allows you to optimize contours and lines by removing its extra points, making them easier to edit.
Perspective		Allows you to deform artwork by applying a perspective effect on it.
Envelope		Allows you to deform and warp artwork by moving points and tweaking lines in a grid.
Edit Gradient/Texture		Allows you to adjust the position, angle and size of gradients and textures in a colour zone.
Brush		A pressure-sensitive tool for creating a contour shape with a thick and thin line effect, as if created with a paint brush.
Stencil Brush		Allows you to paint over existing artwork within the boundaries of that artwork or the boundaries set by selecting the artwork of different layers.
Overlay Brush Mode		In Overlay Brush Mode, the existing artwork is used as a mask to generate new brush strokes which are added on top, leaving the existing artwork untouched.
Repaint Brush Mode		In Repaint Brush Mode, the existing artwork is replaced and repainted, ignoring empty zones.
Pencil		A pressure-sensitive tool for drawing outlines. Pencil lines are made of central vector lines, making them easier to tweak and edit than brush strokes.
Text		Allows you to add text and to format it.
Eraser		A pressure-sensitive tool for erasing parts of a drawing.
Paint		Allows you to fill colour zones with a colour or texture.
Ink		Allows you to recolour pencil lines with precision by changing the colour of one segment at a time.

Paint Unpainted		Allows you to quickly fill empty zones in your artwork with a colour or texture, leaving filled zones unchanged.
Repaint		Allows you to quickly repaint painted zones in your artwork. Empty zones will remain empty.
Unpaint		Allows you to empty filled colour zones of their colour and texture.
Stroke		Allows you to create invisible lines that can serve as colour zones that can be filled, or close the gaps in existing colour zones.
Close Gap		Allows you to close open shapes so that they can be filled with the Paint tool. By drawing a stroke near a small gap in a shape, this tool will create a small invisible stroke connecting the two closest points around the gap.
Line		Draws a straight line segment going from one point to the other.
Rectangle		Draws a rectangle.
Ellipse		Draws an ellipse.
Polyline		Allows you to draw shapes, segmented lines or complex curved lines by clicking to create each point in the sequence of line segments.
Colour Eyedropper		Allows you to select a colour by clicking on a colour in your artwork.
Pencil Texture Eyedropper		Allows you to select a pencil texture by clicking on a textured pencil line.
Drawing Pivot		Allows you to position the pivot on a drawing layer by clicking where you want its location to be.
Morphing		Allows you to create and configure a morphing sequence, which will automatically generate the in-betweens between two drawings in the current layer.

Hand		Allows you to pan the Camera and Drawing views.
Zoom		Allows you zoom in and out of the Camera and Drawing views.
Rotate View		Lets you rotate the Camera and Drawing views just like with a real animation disc.
Shift and Trace		Allows you to temporarily move drawings so you can trace over them in other drawings using Onion Skin.
Animate Current Frame		When this option is selected, every time you use the Transform or Advanced Animation tools to manipulate an element in your scene, the position of the element will be stored in a keyframe at the current frame. This allows you to animate elements in your scene without creating keyframes manually.
Animate Onion Skin Range		When this option is selected, if you use the Transform or Advanced Animation tools to make transformations to an element in your scene, the transformations will be stored as keyframes at the beginning and at the end of the current Onion Skin range, as well as on every existing keyframe in-between. This can be useful if you want to reposition an element that you have already animated, but only during a specific range of frames, which you can define by enabling Onion Skin and setting the Onion Skin range to cover that range of frames.
Animate Off		When this option is selected, if you use the Transform or Advanced Animation tools to make transformation to an element in your scene, the transformations will affect the element throughout the whole scene. This can be useful if you want to reposition an element after you have already animated it.
Transform		Allows you to select drawing layers and position, rotate, scale and skew them.
Onion Skin		Displays the previous and next frames of an animation. Useful when animating cut-out characters.
Advanced Onion Skin		Enables Advanced Onion Skin, a more flexible kind of Onion Skin that can be easily configured using the Onion Skin view.

Workspace Toolbar

The Workspace toolbar lets you load other workspaces. The first time you start Harmony, the default workspace is loaded. Other workspaces are available such as the Hand-Drawn Animation and Compositing workspaces; these display different views and toolbars. You can access these workspaces and any you create, from the Windows menu and the Workspace toolbar.



How to access the Workspace toolbar

1. Select **Windows > Toolbars > Workspace**.

Icon	Tool Name	Description
	Workspace List	Allows you to select an existing workspace.
	Workspace Manager	Opens the Workspace Manager where you can organize, display, and remove workspace from your list.
	Save Workspace	When the Automatically Save Workspace preference is disabled, the Save Workspace button becomes available. This allows you to manually save your new workspace configuration.

View Toolbars

Harmony has a series of view specific toolbars that are only available in a given view. These toolbars can be moved only within their view.

All view toolbars can be added, as long as the view is visible, through the top menu **Windows > Toolbars > *desired toolbar***.

Camera View Toolbar **646**

Drawing View Toolbar **648**

Library View Toolbar **649**

Reference View Toolbar **650**

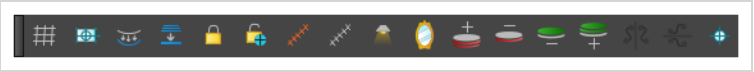
Port Names Toolbar **651**

Script Editor Toolbar **652**

Timeline View Toolbar **656**

Xsheet View Toolbar **661**

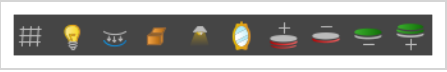
Camera View Toolbar



Icon	Button	Description
	Show Grid	Displays a grid to align or use for camera moves.
	Reset All Transformations	Resets all parameters to their default values. For example, position x = 0, scale = 1, rotation = 0.
	Create Colour Art from Line Art	Creates invisible strokes allowing you to paint your drawings on separate layers.
	Flatten	The Flatten operation is used to merge drawing objects and brush strokes into a single layer. See Flattening Drawings.
	Lock	Locks the layer so that you cannot select it in Camera view.
	Unlock All	Unlocks all layers of the scene so that you can select any one of them.
	Show Controls	Display 3D/separate paths for peg or drawing layers. Can also show manipulators for different effects (e.g. quadmap).
	Hide All Controls	Hides all manipulators for peg or drawing paths and effects.
	Top Light	Allows you to change how much you see in the previous/next drawings in onion skin and other layers in the Light table mode.
	Mirror View	Temporarily flips a drawing space horizontally, whether in the Camera or Drawing view. See Mirror View.

	Onion Skin Add One Previous Drawing	Displays one extra previous drawing to the current drawing in Onion Skin.
	Onion Skin Reduce One Previous Drawing	Displays one less previous drawing to the current drawing in Onion Skin.
	Onion Skin Reduce One Next Drawing	Displays one less following drawing to the current drawing in Onion Skin.
	Onion Skin Add One Next Drawing	Displays one extra following drawing to the current drawing in Onion Skin
	Flip Horizontal-Animation	Horizontally flip selected layers and create a keyframe with opposite value in Scale X parameter.
	Flip Vertical-Animation	Vertically flip selected layers and create a keyframe with opposite value in Scale Y parameter.
	Drawing Pivot	The Drawing Pivot tool lets you set the pivots on your character.

Drawing View Toolbar

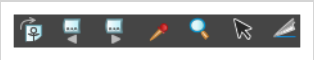


Icon	Button	Description
	Show Grid	Displays a grid to align or use for camera moves.
	Show Light Table	Turns on the light table so you can see the previous and subsequent active layers in washed-out colours. It is useful for seeing the other layers when designing, animating or cleaning up your animation. For more information, see Using the Light Table.
	Create Colour Art from Line Art	Creates invisible strokes allowing you to paint your drawings on separate layers.
	Group	Groups and ungroups selected drawing objects and strokes
	Top Light	Allows you to change how much you see in the previous/next drawings in onion skin and other layers in the Light table mode.
	Mirror View	Temporarily flips a drawing space horizontally, whether in the Camera or Drawing view. See Mirror View.
	Onion Skin Add One Previous Drawing	Displays one extra previous drawing to the current drawing in Onion Skin.
	Onion Skin Reduce One Previous Drawing	Displays one less previous drawing to the current drawing in Onion Skin.
	Onion Skin Reduce One Next Drawing	Displays one less following drawing to the current drawing in Onion Skin.
	Onion Skin Add One Next Drawing	Displays one extra following drawing to the current drawing in Onion Skin

Library View Toolbar

Icon	Button	Description
	Open Library	Lets you open a library on your computer.
	Close Library	Unlinks a library folder from your library list.
	New Folder	Creates a new folder in the Library view. Before you can create a new folder, you must have the right to modify the folder in which you are creating the new folder.
	Refresh	Updates the view and its contents.
	View List	Displays the contents of the selected folder as a list.
	View Details	Displays the details of the selected file.
	View Thumbnails	Displays the contents of the selected folder as a thumbnails.

Reference View Toolbar



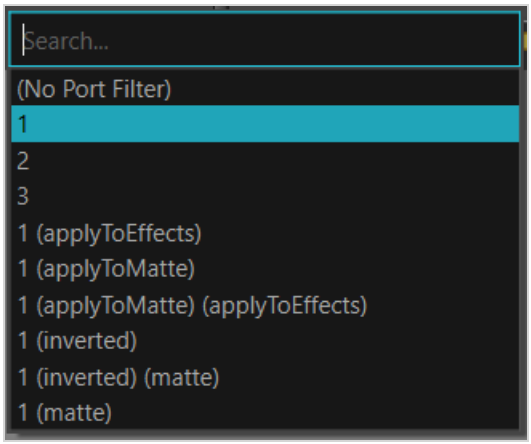
Icon	Button	Description
	Import References	Imports a TVG drawing as a model in the Reference view.
	Previous	Shows the previous model loaded in the Reference view.
	Next	Shows the next model loaded in the Reference view.
	Colour Eyedropper	Activates the Colour Eyedropper tool. This tools is also available on the Tools toolbar.
	Zoom	Activates the Zoom tool. This tools is also available on the Tools toolbar.
	Select	Activates the Select tool. This tools is also available on the Tools toolbar.
	Cutter Selection	Allows to cut a section of the model to paste it in your scene.

Port Names Toolbar

The Port Names Toolbar allows you to view a list of Port Names that can be inserted or selected that will affect the Port Filter of the current display.

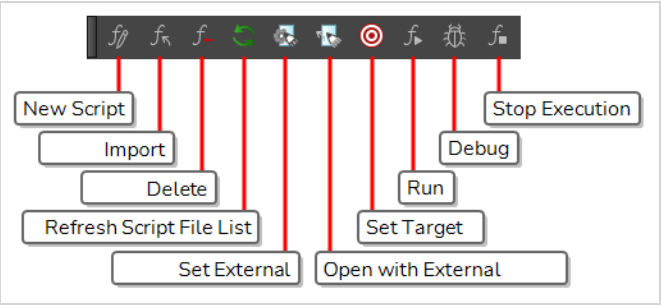
NOTE

The Port Names Toolbar will remember up to ten Port Names at a time.



Script Editor Toolbar

The Script Editor toolbar gives you quick access to some commonly used commands for editing and testing scripts in the Script Editor view—see *Script Editor View* on page 714.



How to access the Script Editor toolbar

1. Add the Script Editor view to your workspace by doing one of the following:
   - In the top-right corner of an existing view, click on the ➕ Add View button and select Script Editor.
   - In the top menu, select **Windows > Script Editor**.
2. Click on the Script Editor view to set the focus on it.
3. In the top menu, select **Windows > Toolbars > Script Editor**.

Icon	Button	Description
	New Script	Creates a new script. When you click on this button, you are first prompted to type in a name for the script. Then, you will be prompted to select which location to save the script in: • **User:** Saves the script to a directory in your user preferences directory. You will be able to run and edit the script from any scene as long as you are logged in as the same user. **NOTE** If you are using Harmony Stand Alone, the script will be saved to the preferences for your account on your computer. if you are using Harmony Server, the script will be saved to the preferences for your Harmony database user. • **Global:** If you are using Harmony Server, select this option to save the script to the Harmony database's global script directory. Anyone who is logged in to the database will be able to edit and run this script.

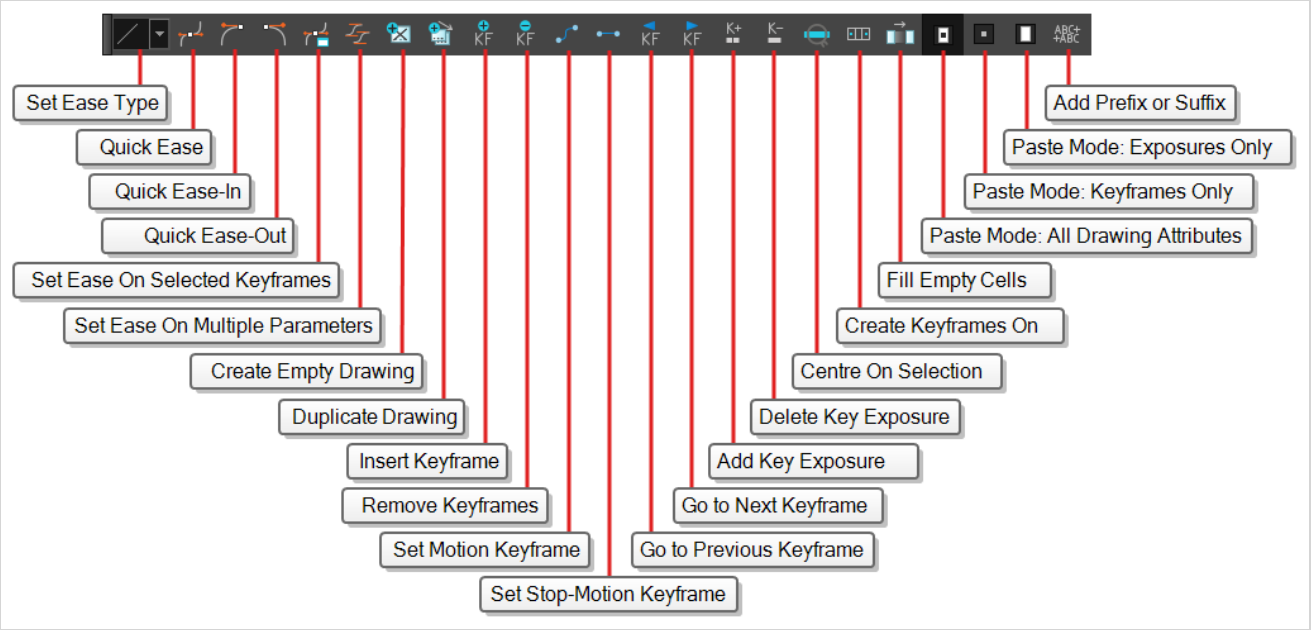
Icon	Button	Description
		• **Environment:** If you are using Harmony Server, select this option to save the script to the current scene's environment. Anyone will be able to edit and run the script as long as they are working on a scene inside this environment. • **Job:** If you are using Harmony Server, select this option to save the script to the current scene's job. Anyone will be able to edit and run the script as long as they are working on a scene inside this job. • **Scene:** Save the script to the scene's **`scripts`** sub-folder. Anyone will be able to edit and run the script when working on this specific scene. • **System Variable:** Save the script to the directory in the **`TOONBOOM_GLOBAL_SCRIPT_LOCATION`** environment variable. This option is only available if this environment variable is set. **NOTE** For more information on script locations, see *Script list* on page 714.
	Import Script	Allows you to import a script from your machine into Harmony. When you click on this button, you are prompted to browse for and select a script on your file system. Then, you are prompted to select which location to import the script in: • **User:** Saves the script to a directory in your user preferences directory. You will be able to run and edit the script from any scene as long as you are logged in as the same user. **NOTE** If you are using Harmony Stand Alone, the script will be saved to the preferences for your account on your computer. if you are using Harmony Server, the script will be saved to the preferences for your Harmony database user. • **Global:** If you are using Harmony Server, select this option to save the script to the Harmony database's global script directory. Anyone who is logged in to the database will be able to edit and run this script. • **Environment:** If you are using Harmony Server, select this option to save the script to the current scene's environment. Anyone will be able to edit and run the script as long as they are working on a scene inside this environment. • **Job:** If you are using Harmony Server, select this option to save the script to the current scene's job. Anyone will be able to edit and run the script as long as they are working on a scene inside this job.

Icon	Button	Description
		• **Scene:** Save the script to the scene's **`scripts`** sub-folder. Anyone will be able to edit and run the script when working on this specific scene. • **System Variable:** Save the script to the directory in the **`TOONBOOM_GLOBAL_SCRIPT_LOCATION`** environment variable. This option is only available if this environment variable is set. **NOTES** • When you import a script, any user interface (**`.ui`**) or icon (**`.png`**) file that is in the same directory and has the same filename as the script will also be imported. • For more information on script locations, see *Script Editor View* on page 714.
	Delete Script	Deletes the selected script. **NOTES** • You cannot delete a script if it is in the Application Resources location, as those are scripts that are installed with Harmony. • If you delete a script that was originally in Application Resources but which you copied to another location so you could make changes to it, the original version of the script in the Application Resources folder will be restored to the list.
	Refresh Script File List	Refresh the list of scripts in the Script Editor. If there are new scripts in your user preferences or your scene's scripts sub-folder, click on this button to be able to open them in the Script Editor.
	Set External Editor	Allows you to type in the path and name for your preferred text editing software. **NOTES** • On macOS, only typing the name of your preferred text editing software is enough if that application supports the AppleScript Open Document protocol. • On Windows and GNU/Linux, unless your text editor is in your system's **`PATH`** environment variable, you will have to type in the full path to the editor.

Icon	Button	Description
	Open with External Editor	Opens the selected script in the chosen external text editing software.
	Set Target	Prompts you to select which script and which function to use with the Run and Debug buttons. **NOTES** • You can set the entire script as the target by selecting the **<Nothing>** function from the functions list. • You cannot link an entire script to a toolbar button. Only functions within scripts can be added as toolbar buttons. Therefore, running or debugging an entire script rather than one of its functions should be done for testing purposes only.
	Run	Runs the target script and function. **NOTES** • If you have not set a target script and function, you will be prompted to set one when you click on this button. • You can set or change the target script and function by clicking on the Set Target button. • If you are editing **<<<Sandbox>>>**, this button will simply run what you typed into the sandbox, regardless of whether another target is set.
	Debug	Open the target script and function in the Qt Script Debugger, in which you can test and debug the function. **NOTES** • If you have not set a target script and function, you will be prompted to set one when click on this button. • You can set or change the target script and function by clicking on the Set Target button. • If you are editing **<<<Sandbox>>>**, this button will simply debug what you typed into the sandbox, regardless of whether another target is set.
	Stop Execution	If a script is currently running, this interrupts its execution.

Timeline View Toolbar

The 3D Graph toolbar works in conjunction with the elements in the 3D Graph view.



How to access the Timeline view toolbar

1. Do one of the following:
    - In the top menu, select **Windows > Toolbars > Timeline View**.
    - Right-click on the space at the top of the Timeline view and, in the context menu, select **Timeline View**.

Icon	Name	Description
	Set Ease Type	Allows you to quickly apply an ease to the selected animation keyframes in the camera view. To set the ease of an animation, simply select the first keyframe in the animation, then select the ease type in this drop-down. The ease-in will be applied to the selected keyframe, and the ease-out will be applied to the next keyframe in the timeline. The following presets are available:

<table>
<tr><th>Icon</th><th>Name</th><th>Description</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Icon</th><th>Preset</th><th>Ease-In (Selected Keyframe)</th><th>Ease-Out (Next keyframe)</th></tr>
<tr><td></td><td>Linear</td><td>0%</td><td>0%</td></tr>
<tr><td></td><td>Slow ease-in</td><td>25%</td><td>0%</td></tr>
<tr><td></td><td>Medium ease-in</td><td>50%</td><td>0%</td></tr>
<tr><td></td><td>Fast ease-in</td><td>75%</td><td>0</td></tr>
<tr><td></td><td>Fast ease-in / ease-out</td><td>75%</td><td>75%</td></tr>
<tr><td></td><td>Medium ease-in / ease-out</td><td>50%</td><td>50%</td></tr>
<tr><td></td><td>Slow ease-in / ease-out</td><td>25%</td><td>25%</td></tr>
<tr><td></td><td>Slow ease-out</td><td>0%</td><td>25%</td></tr>
<tr><td></td><td>Medium ease-out</td><td>0%</td><td>50%</td></tr>
<tr><td></td><td>Fast ease-out</td><td>0%</td><td>75%</td></tr>
</table>
</td></tr>
<tr><td> </td><td>Quick Ease</td><td>Sets the ease before and after the selected keyframe to 33%.</td></tr>
<tr><td> </td><td>Quick Ease In</td><td>Sets the ease before the selected keyframe to 33%.</td></tr>
<tr><td> </td><td>Quick Ease Out</td><td>Sets the ease after the selected keyframe to 33%.</td></tr>
</table>

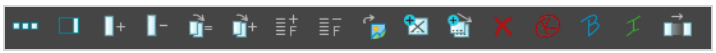
Icon	Name	Description
	Set Ease on Selected Keyframes	Opens the Set Ease on Keyframes dialog. In this dialog, you can set the ease-in (before) and the ease-out (after) on the selected keyframes to a custom percentage.
	Set Ease for Multiple Parameters	Opens the Set Ease for Multiple Parameters dialog. This dialog allows you to adjust the Bezier handles on all the selected animation keyframes in the Timeline.
	Create Empty Drawing	Creates a drawing in the selected cell, replacing any drawing that may already be exposed in that cell and the following ones until it meets another drawing, key exposure or a blank cell.
	Duplicate Drawing	Creates a duplicate of the selected drawing in the layer. The duplicate drawing will be exposed at the selected frame instead of the original drawing. Hence, this command allows you to instantly start working on a duplicate of the current drawing and retain the original. **NOTE** When duplicating a drawing, the exposure at the selected cell is replaced with the new drawing, up until the next key exposure.
	Insert Keyframe	Adds a keyframe on the selected cell in the Timeline view.
	Delete Keyframes	Deletes the selected keyframes.
	Set Motion Keyframe	Converts the selected keyframes to motion keyframes. With motion keyframes, Harmony generates the interpolation between the motion keyframe and the next keyframe. This means that a value for each frame between the keyframes is calculated by Harmony to progress from the value of the previous keyframe to the value of the next keyframe.
	Set Stop-Motion Keyframe	Converts the selected keyframes to stop-motion keyframes. Between a stop-motion keyframe and the next keyframe, Harmonydoes not generate any animation and the element remains static until the next keyframe.
	Go to Previous Keyframe	Goes to the previous keyframe.

Icon	Name	Description
	Go to Next Keyframe	Goes to the next keyframe.
	Add Key Exposure	Adds a key exposure to the selected cell.
	Delete Key Exposure	Removes key exposures from the selected cells.
	Centre On Selection	Scrolls the layers list to the currently selected layer. This is useful if you want to select a layer in the Camera view, then manipulate its timing Timeline view.
	Create Keyframes On	Opens the Create Keyframes On dialog box, in which you can create keyframes at every set number of frames within a given range of frames.
	Fill Empty Cells	Fills the empty frames in the selection with the exposure just before. For example, if you select a range of frame that starts with an exposed drawing and then ends with empty cells, all of the empty cells in the selection will be filled with the exposed drawing just before the empty cells.
	Paste Mode: All Drawing Attributes	Sets the Paste Mode to All Drawing Attributes. In this mode, when you cut or copy and paste frames in the Timeline view, both the animation keyframes and the exposed drawings will be pasted. Likewise, if you drag and drop frames in the Timeline view, both the animation keyframes and the exposed drawings will be moved.
	Paste Mode: Keyframes Only	Sets the Paste Mode to Keyframes Only. In this mode, when you cut or copy and paste frames in the Timeline view, only the animation keyframes will be pasted. The exposed drawings will not be pasted. Likewise, if you drag and drop frames in the Timeline view, only the animation keyframes will be moved. The exposed drawings will not be affected.
	Paste Mode: Exposures Only	Sets the Paste Mode to Exposures Only. In this mode, when you cut or copy and paste frames in the Timeline view, only the exposed drawings will be pasted. The animation keyframes will not be pasted. Likewise, if you drag and drop frames in the Timeline view, only the exposed drawings will be moved. The animation keyframes will not be affected.

Icon	Name	Description
	Add Prefix or Suffix	Opens the Add Prefix or Suffix dialog. This dialog allows you to instantly rename all the selected layers by adding a prefix or a suffix to their name.

Xsheet View Toolbar

The Xsheet toolbar contains the common timing operations such as Add Column, Delete Column, Clone Column, and so on. These options can also be found in the top menu.



Chapter 6: Views

The Harmony interface is composed of different views, each one designed for a specific purpose. You can modify the location of the views by adding a new view as a tab or as a window. You can also swap the location of a view.

When a view is active, a red rectangle appears around the view. Keyboard shortcuts and top menu options are associated with the active view. If a menu option is greyed out, it means it does not apply to the layer, drawing or other type of selection or the option does not apply to the active view.

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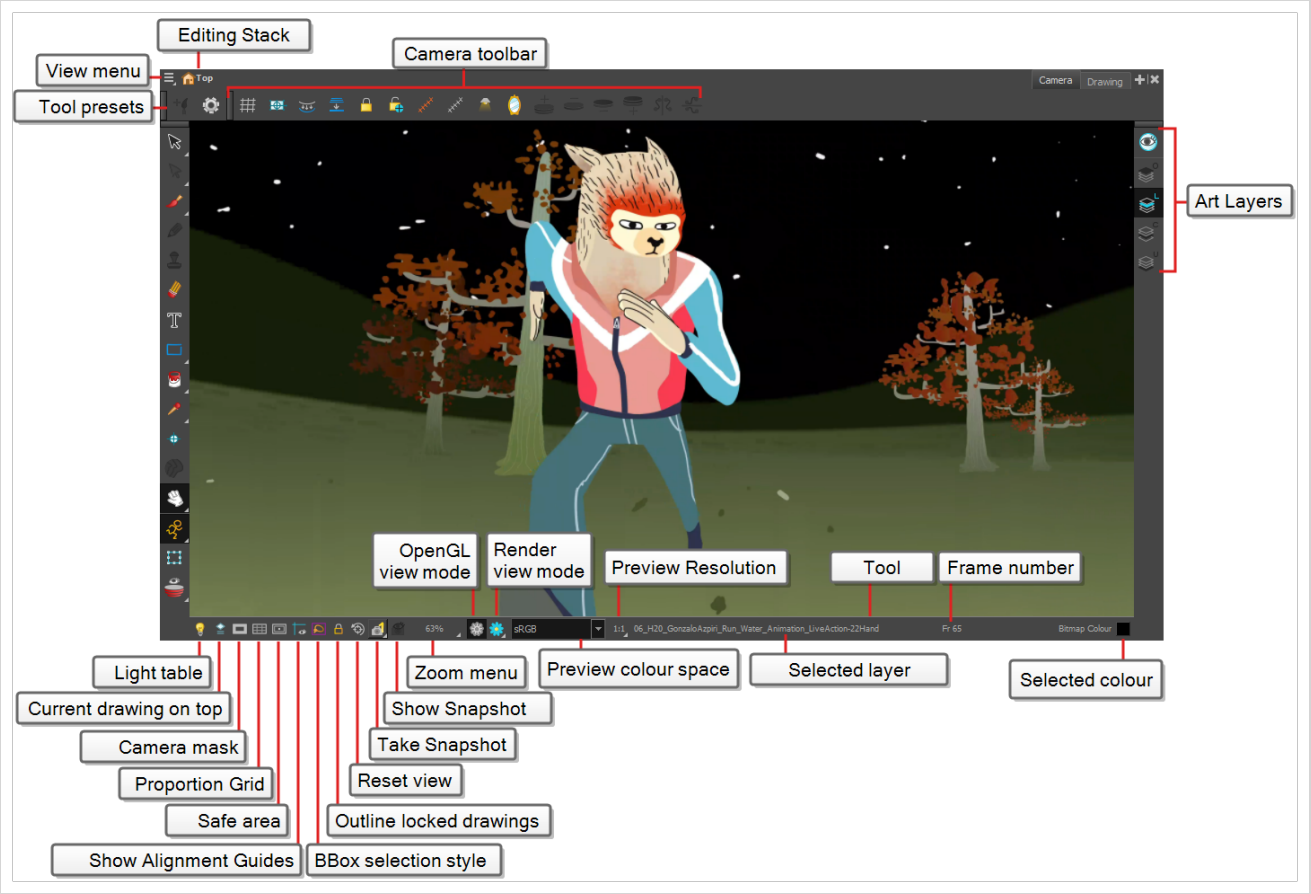
Camera View

The Camera view is the centre of operations in Harmony. In this view, you can draw, paint, animate, set up your scene, manipulate objects, open symbols and preview your animation.

The Camera view also has a top and bottom toolbar that you can use to navigate in the view, change the display mode or go up your symbol hierarchy.



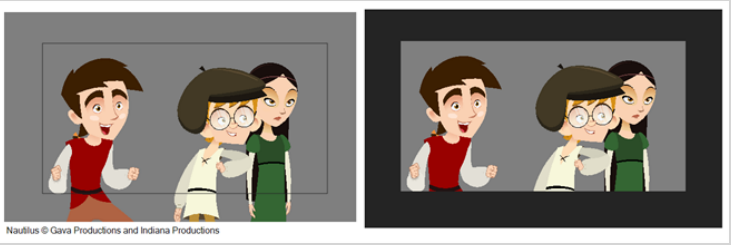
How to access the Camera view

Do one of the following:

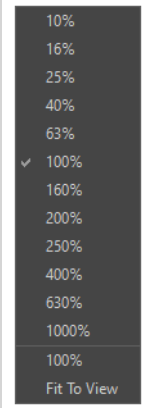
- From the top menu, select **Windows > Camera**.
- From any of the other views, click the Add View ➕ button and select **Camera**.

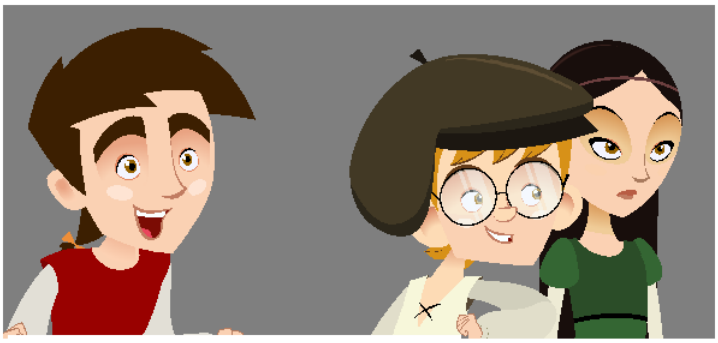
Icon	Section	Description
	View Menu	The View menu contains all the tools and options that you can use in the Camera view to draw, animate or set up the scene.

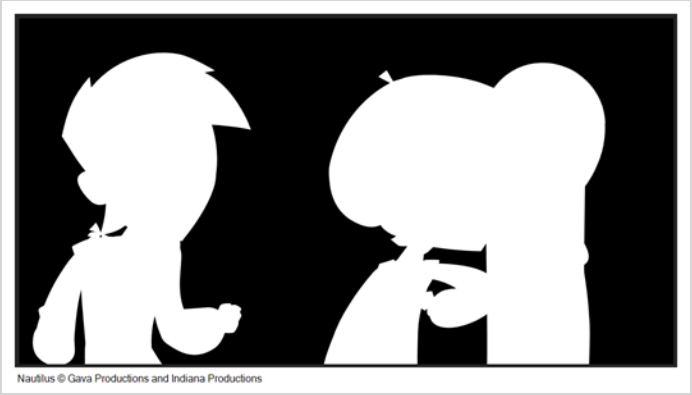
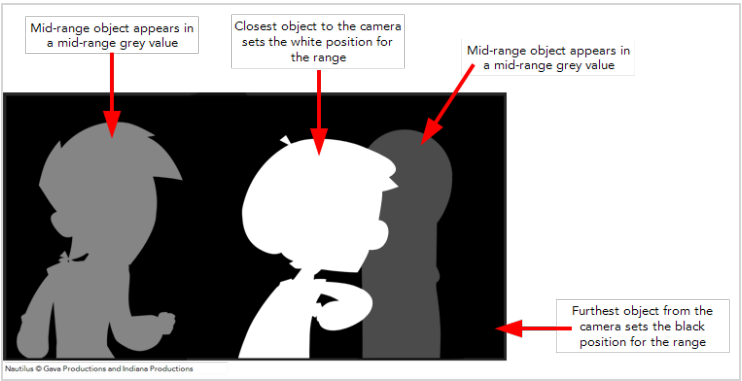
Icon	Section	Description
	Editing Stack	The Editing Stack menu displays the names of the symbols and their hierarchy when you are editing a symbol. You can click on the different names to go back up to the different parent symbols or the top/current project.
	Camera View Toolbar	The Camera View toolbar contains all the tools and options you can use in the Camera view to draw, animate or set up the scene. The toolbar can be displayed or hidden by right-clicking on it and selecting or deselecting the Camera View toolbar.
	Light Table	When you have a drawing layer or drawing selected, the Light Table button button allows you to fade the colours of the other layers so you can see the current artwork better as you edit with a drawing tool. Note that the light table does not work when using a layer editing tool, such as the Transform tool.
	Current Drawing on Top	When this button is enabled, the drawing that you are currently editing with a drawing tool is temporarily displayed in front of all the other elements. The actual scene is not modified.
	Camera Mask	The Camera Mask button shows or hides Displays a black mask around the scene's frame to avoid seeing the unnecessary artwork. This option is handy when you're animating and setting up the scene. It allows you to see your scene's composition better.

Icon	Section	Description
		You can also access this from the top menu by selecting **View > Show > Camera Mask**. 
	Proportion Grid	The proportion grid is displayed in the camera view to help with proportions and balancing the composition of an image. The grid follows the camera frame, similar to camera mask and safe area. The number of divisions in the proportion grid can be defined by the user in the **Preferences > Camera > Proportion Grid > Horizontal Divisions > Vertical Divisions.** The default is 3 division on each axis to create a rule of third grid. **TIP** You can access the Proportion Grid button in the Camera View toolbar.
	Safe Area	The Safe Area button shows or hides Displays the TV safety zone and the centre of the camera frame. The safe area adapts to the scene resolution, as well as the safety zone and frame's centre. You can also access this feature from the top menu by selecting **View > Show > Safe Area**.

Icon	Section	Description
	Show Alignment Guides	When enabled, alignment guides will be visible in the Camera and Drawing views. This is enabled by default. Disabling this option will hide and disable alignment guides, meaning that animation and drawing tools will not snap to them, even if the Snap to Alignment Guides option is enabled in the Tool Properties view.
	BBox Selection Style	When you select an object in the Camera view with the Transform tool, a bounding box always appears around the object and the artwork is tinted in fuchsia, red or yellow. Enabling this option will only keep the bounding box and remove the colour tint.
	Outline Locked Drawings	Drawings that are locked in the Timeline view (cannot be selected in the Camera view) are displayed as wireframes.
	Reset View	The Reset View button resets any panning, zooming or rotation done in the Camera view and returns the display to the initial settings. You can also press Shift + M.
	Take Snapshot	Saves the preview image of the Camera view in memory as a snapshot. Harmony stores five snapshots and have a drop down list with five available slots. So if any snapshot was in memory when taking a snapshot, it will be overwritten by the new snapshot.

Icon	Section	Description
		NOTES • Snapshots are not saved to the scene and are discarded when the scene is closed.
	Show Snapshot	Displays the snapshot currently in memory. To display the snapshot, you must click and hold the button. Releasing it will restore the Camera view preview. **NOTE** The snapshot is displayed as it was taken, regardless of the preview mode of the Camera view. For example, if you took a screenshot in Render View mode, and display it while in OpenGL View mode, the snapshot will display as it was taken in Render View mode.
	Zoom Menu	The Zoom menu lets you enlarge or reduce the Camera or Drawing view display. To make the camera frame size always match the size of your view, select the **Fit to View** option. Click the drop-down arrow and select a zoom level or press 1 and 2. 
	OpenGL View Mode	The OpenGL View Mode button switches the Camera view to fast display, letting you see your animation play in real time. The OpenGL display requires less memory. The final look of your effects is not shown in the OpenGL View Mode. You must switch to the Render View Mode to see your effects.

Icon	Section	Description
		
	Render View Mode	The Render View Mode button switches the Camera view to a fully rendered display showing the final image of the current frame. If a modification is done to your current frame or if you move to a different frame, click the **Update Preview** button to update the display if your preview does not update automatically.The Render View Mode display lets you see the final look of your frames including effects and antialiasing. You cannot play back your scene in Render View Mode. To see your scene fully rendered and to play it back, you must press the Render and Play button in the Playback toolbar.
	Matte View Mode	The Matte View Mode button switches the Camera view to a matte display showing the alpha channel of the elements in your scene. The transparency level ranges from 0 to 100 percent. Zero percent is completely transparent and represented by black and 100 percent is completely opaque and represented by white. Everything in between these extremes has a transparency level somewhere between 1 and 99 percent and is represented in various shades of grey. • To access the Matte View mode, click on the Render View button and select Matte View from the drop-down menu.

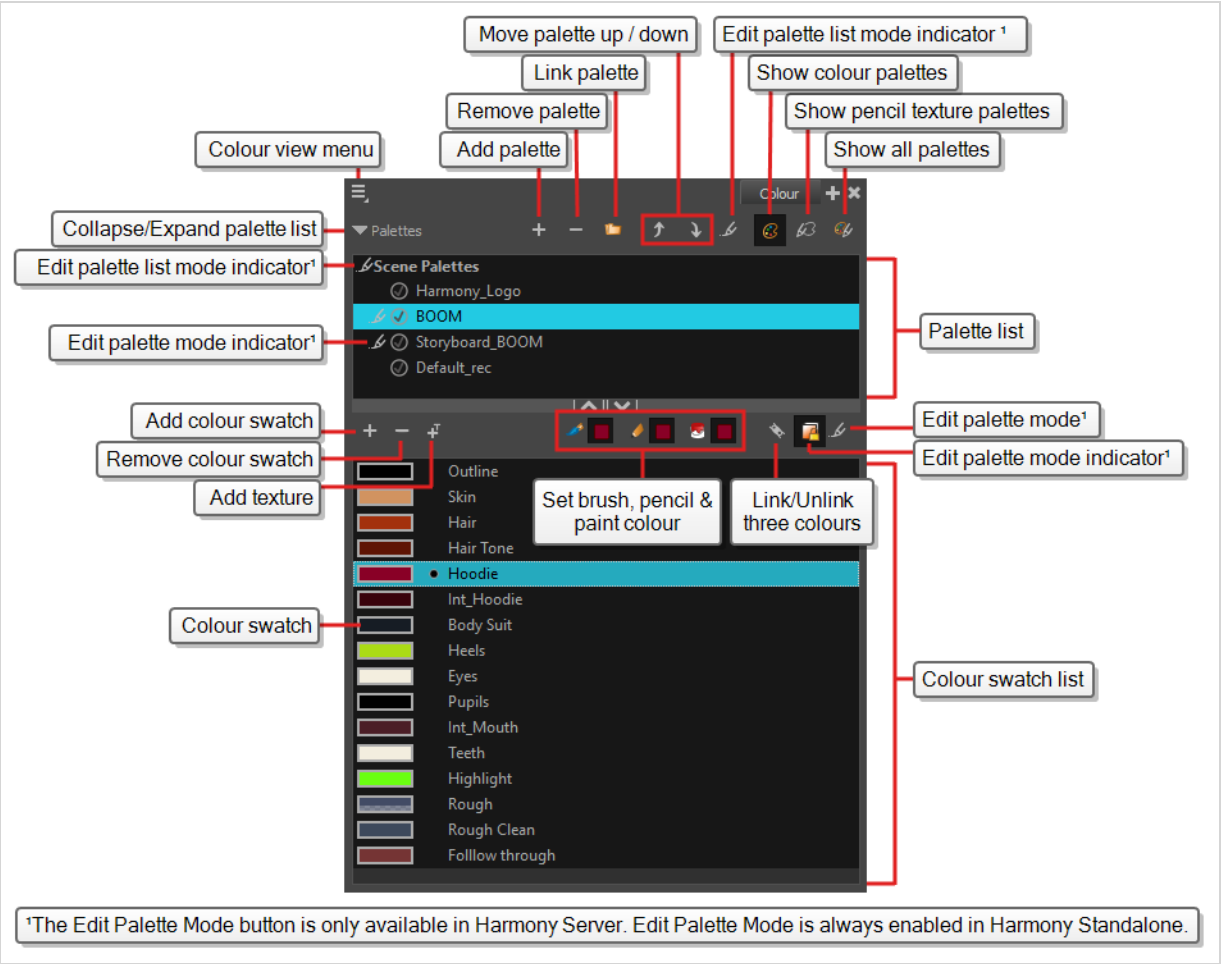
Icon	Section	Description
		
	Depth View Mode	The Depth View mode displays images in a relative white to black gradient scale. The object(s) closest to the camera are displayed in white and the object(s) furthest from the camera are displayed in black. If the position of the last object changes along the z-axis, that object will still remain black, so long as it retains its position as the object the farthest back. It does not matter where that object is in 3D space, it just matters what its position is relative to the other object in the same space. The objects closest and farthest from the camera set the range of the white to black scale. All the other objects fall somewhere in between.  • To access the Depth View mode, click on the Render View button and select Depth View from the drop-down menu.
	Preview Colour Space	The colour space in which to display the preview image when in Render Preview mode. You can set this to any colour space supported by Harmony. It is recommended to set this to the colour space intended for rendering your frames, unless that colour space is not supported by your monitor. In the latter case, it's recommended to set this to the closest colour space available that your monitor can display.

Icon	Section	Description
		The following colour spaces are available: • **sRGB:** A colour space typically used for standard computer monitors. It has the same primaries and white point as Rec. 709, but has a different gamma transfer curve. • **Display P3:** A colour space commonly used for digital projection. It has the same primaries as DCI-P3, the same white point as sRGB and the same gamma transfer curve as sRGB. • **P3-D65 PQ:** A high-dynamic-range (HDR) colour space that uses P3-D65 primaries and perceptual quantization (PQ) as the transfer function. This colour space supports higher brightness. You have the option to remap 1000, 2000, or 4000 nits colours to the P3 limited dynamic range. **Tone mapping** reduces the tone values of high-dynamic-range (HDR) images to make it more suitable for digital displays. For no tone mapping, select **Un-tone-mapped**. • **Rec. 709:** The colour space used for HDTV. It has the same primaries and white point as sRGB, but has a different gamma transfer curve. • **Rec. 709 2.4:** The same colour space as Rec. 709 or sRGB, except with a gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 709. • **Rec. 2020:** A colour space used for Ultra High Definition TV (UHDTV). It has a complex gamma transfer curve and primaries that cover more of the human-perceivable colour space than other colour spaces, especially in the area of human-perceivable greens. • **Rec. 2020 2.4:** The same colour space as Rec. 2020, except with a simple gamma transfer curve of 2.4 (per ITU-R BT.1886). This colour space exists because some editing systems use a gamma transfer curve of 2.4 instead of the standard gamma curve for Rec. 2020. • **Rec.2100 PQ**:An HDR colour space that uses Rec.2020 primaries and perceptual quantization (PQ) as the transfer function. An additional transform could be selected for 1000, 2000, or 4000 nits. For no tone mapping, select **Un-tone-mapped**.

Icon	Section	Description
		NOTE You can only select the display colour space in Render View mode. In OpenGL View mode, the preview image is generated in the colour space selected in the **Display Colour Space** drop-down in the **Camera** tab of the Preferences dialog. **TIP** You can have multiple Camera views in your workspace, each set to their own colour space. Hence, you can preview your scene on multiple monitors with different colour spaces by having a Camera view on each monitor.
	Drawing Name	The Drawing Name field displays the name of the selected drawing, as well as the layer containing it. If the cell does not contain any drawing, an **`Empty Cell`** text is shown in the field.
	Preview Resolution	The Preview Resolution button sets the resolution of the render preview. A lower preview resolution will result in a faster loading time when previewing an effect.
	Tool Name	The Tool Name field displays the name of the selected tool. If you temporarily override a drawing tool using a keyboard shortcut, the tool's name will be highlighted in red. You can temporarily override a tool by holding its keyboard shortcut without the Alt key. For example, the Select tool shortcut is Alt + S. If you hold down the S key, you will switch to the Select tool. When you release the key, you will return to the tool you were using.
	Frame Number	The Frame Number field displays the number of the current frame.
	Selected Colour	The colour swatch displays the currently selected colour in the Colour view.

Colour View

The Colour view is where you create colours and palettes and import existing palettes into your project. The Colour view is also necessary for drawing, painting and creating colour styling.



How to access the Colour view

Do one of the following:

- From the top menu, select **Windows > Colour**.
- From any of the other views, click the Add View + button and select **Colour**.

Palette List Panel

Icon	Option	Description
	View Menu	The View menu contains all the commands and options that you can use in the Colour view to manage colours and palettes.

	Collapse/Expand Palette List	Allows you to show or hide your palette list and its options. By default, the palette list is displayed, but you may want to hide it if you are working with a single palette and want to allow more vertical space for the colour swatch list.
	Add Palette	Allows you to create a new palette.
	Remove Palette	Deletes the currently selected palette. If the colour swatch is used in your project, zones painted with colour swatches which have been deleted will turn red, easily identifying them so you can repaint them with another colour swatch.
	Link Palette	Allows you to add a palette from a different location, be it in a scene, job, environment or even an element to your palette list. The palette will be linked to its original location rather than copied to your scene's folder. Hence, if you make changes to the original palette, it will affect the colour of elements in your scene. If you want to import a palette as a copy into your scene's palette library, right-click on your palette list and select **Import**. You can also link to a palette in any location on your machine or network by selecting **Link to External**.
	Order Palette List	Moves palettes further up or down the palette list. If a palette has been cloned, the highest palette among the original palette and its clone(s) will be used by Harmony.
	Edit Palette List Mode Indicator	In Harmony Server, this icon appears when you have the modifying rights on your scene's palette list. While several users can work on a scene at the same time, only one user may have the right to modify a palette list at any given time.

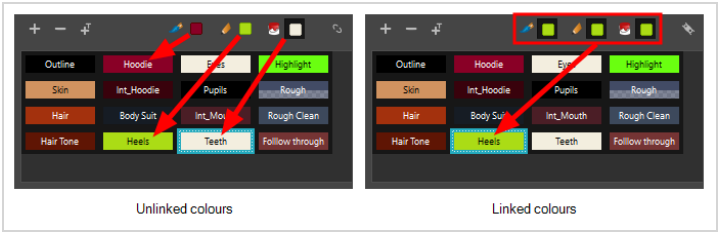
		NOTE In Harmony Stand Alone, you can always modify your scene's palette list. On Harmony Server, you must unlock your palette list before making modifications to it.
	Show Colour Palettes	Shows only colour palettes in the palette list. This is the default option.
	Show Pencil Texture Palettes	Shows only pencil texture palettes in the palette list.
	Show All Palettes	Shows both colour and pencil texture palettes in the palette list.

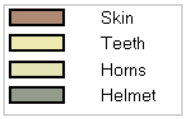
Palette List

Icon	Description
	In Harmony Server, this indicates that you have the rights to modify the palette.
	Indicates that the palette is stored at the same level as its palette list. For example, a palette that is stored in the scene's palette library and which is listed in the scene's palette list, or a palette that is stored in an element's palette library and which is listed in that same element's palette list.
	Indicates that the palette file is stored in an external location, such as a different scene, an element in a different scene, a job other than the scene's job, or an environment other than the scene's environment. This means the palette is liable to be missing if it is moved from its original location, or if the scene is exported from the database into an offline scene or to a different database.
	This indicates that the palette is stored at a higher level than its palette list, making it a shared palette. For example, a palette in your scene's palette list that is stored in the palette library of the scene's job or environment, or a palette in an element's palette list that is stored in the palette library of the scene.
	Indicates a potentially dangerous situation. For example, a palette file that is stored in one of the scene's element folders, but which is added to your scene's palette list. The whole scene can use the palette, but since it's stored inside an element, deleting that element will make your whole scene lose access to that palette.

Colour Swatch List Panel

Icon	Option	Description
	Add Colour	Adds a new colour swatch to the bottom of your colour list.
	Remove Colour	The Remove Colour button lets you delete the currently selected colour swatches. If the colour swatch is used in your project, and confirmation dialog will appear prompting you to confirm that you want to delete the colour. Zones painted with colour swatches which have been deleted will turn red, easily identifying them so you can repaint them with another colour swatch.
	Add Texture	Allows you to import a bitmap image as a texture, which can be painted with just like a colour. When used with the Brush or Paint tools, bitmap textures are tiled inside the shape they fill. The scaling and position of the texture inside their shape can be tweaked with the Edit Gradient/Texture tool. When used with the Pencil tool or one of the Shape tools, a bitmap texture will follow the pencil line's direction.

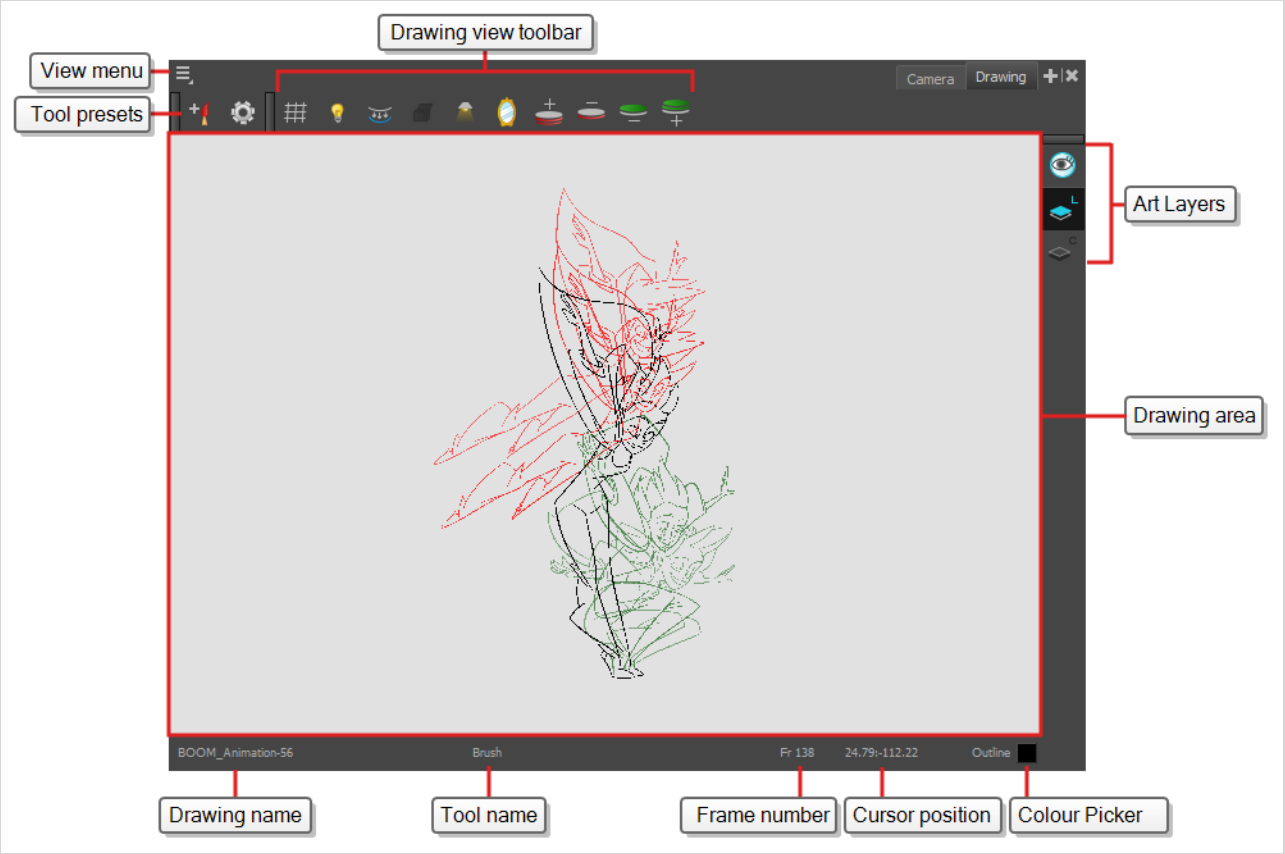
	Set Current Brush Colour	When enabled, the colour you select in the colour view will be selected for the Brush tool.
	Set Current Pencil Colour	When enabled, the colour you select in the colour view will be selected for the Pencil tool, as well as other tools that create pencil lines, such as the Line, Rectangle, Ellipse and Polyline tools.
	Set Current Paint Colour	When enabled, the colour you select in the colour view will be selected for the Paint tool.
	Link/Unlink Three Colours	When enabled, the colour you select will be selected for all drawing tools. When disabled, you can select individual colours for the Brush, Pencil and Paint tools. 
	Edit Palette Mode	In Harmony Server, this allows you to get the modifying rights to the selected palettes. Since several people can work on any given scene at the same time, and a palette can be shared between scenes, palettes may be loaded in read-only mode when opening a scene on a Harmony database. Then, an user would only be able to edit a palette by first activating Edit Palette Mode. This prevents several users from making changes on the palette at the same time, since a user cannot activate Edit Palette Mode on a palette that is already being edited by someone else. This also prevents users from accidentally making modifications on important palettes.
	Edit Palette Mode Indicator	In Harmony Server, this icon appears when you have the modifying rights on the currently selected palette. **NOTE** In Harmony Stand Alone, you can always modify your palettes.
	Colour Swatch Name	Each colour swatch available in the Colour view can have its own name, making it easy to identify which colour is used to paint what

		part of your character or background.  **NOTE** Two colours can have the same name. Harmony identifies colours by an identification number.
	Colour Swatch	Also referred to as *colour pots*, the colour swatch is the actual colour information for a colour in your palette. It is represented by a rectangle displaying the colour in the list.

Drawing View

In Harmony, you can draw in both the Drawing or Camera views. Although the two views are similar, there are some differences when it comes to drawing.

Only the selected drawing is displayed by default in the Drawing view. You can use features, such as the light table to display the current drawing of all the enabled layers of your scene in washed-out colours, or the Onion Skin to display the previous and next drawings of the currently selected drawing layer.

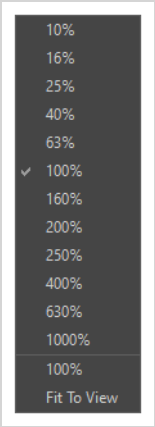


How to access the Drawing view

Do one of the following:

- From the top menu, select **Windows > Drawing** .
- From any of the other views, click the Add View ➕ button and select **Drawing**.

Icon	Section	Description
☰	View Menu	The View menu contains all the tools and options that you can use in the Drawing view to draw, animate and paint.

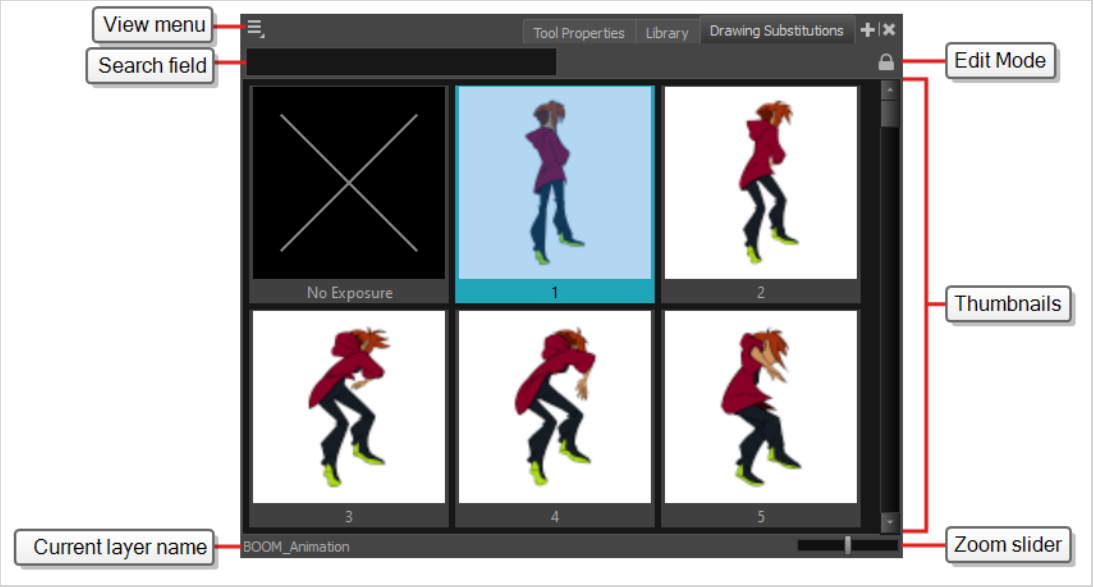
	Drawing Area	This is the main space in the Drawing view. It is where you draw and where the drawings are displayed.
	Zoom Menu	The Zoom menu lets you enlarge or reduce the Camera or Drawing view display. To make the camera frame size always match the size of your view, select the **Fit to View** option. Click the drop-down arrow and select a zoom level or press 1 and 2. 
	Drawing Name	The Drawing Name field displays the name of the selected drawing, as well as the layer containing it. If the cell does not contain any drawing, an **`Empty Cell`** text is shown in the field.
	Tool Name	The Tool Name field displays the name of the selected tool. If you temporarily override a drawing tool using a keyboard shortcut, the tool's name will be highlighted in red. You can temporarily override a tool by holding its keyboard shortcut without the Alt key. For example, the Select tool shortcut is Alt + S. If you hold down the S key, you will switch to the Select tool. When you release the key, you will return to the tool you were using.
	Frame Number	This field displays the current frame of the animation you are working on.
	Cursor Coordinates	This indicates the position of the your pointer in the drawing area.

	Colour Picker	The Colour Picker allows you to select a colour for drawing.

Drawing Substitutions View

T-H16NEW-002-001

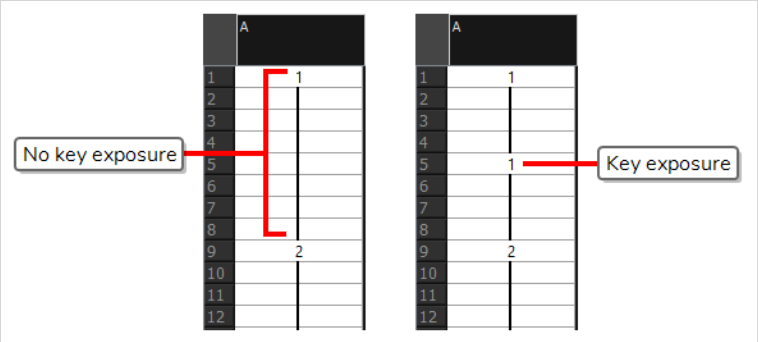
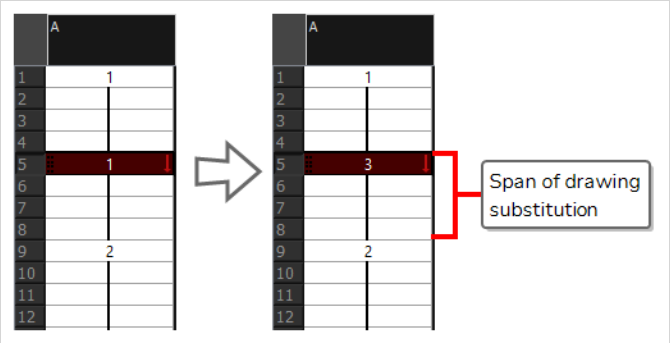
The Drawing Substitutions view allows you to view all the drawings in the selected layer in a list of thumbnails, as well as to quickly select which drawing should be exposed at the current frame.



How to access the Drawing Substitutions view

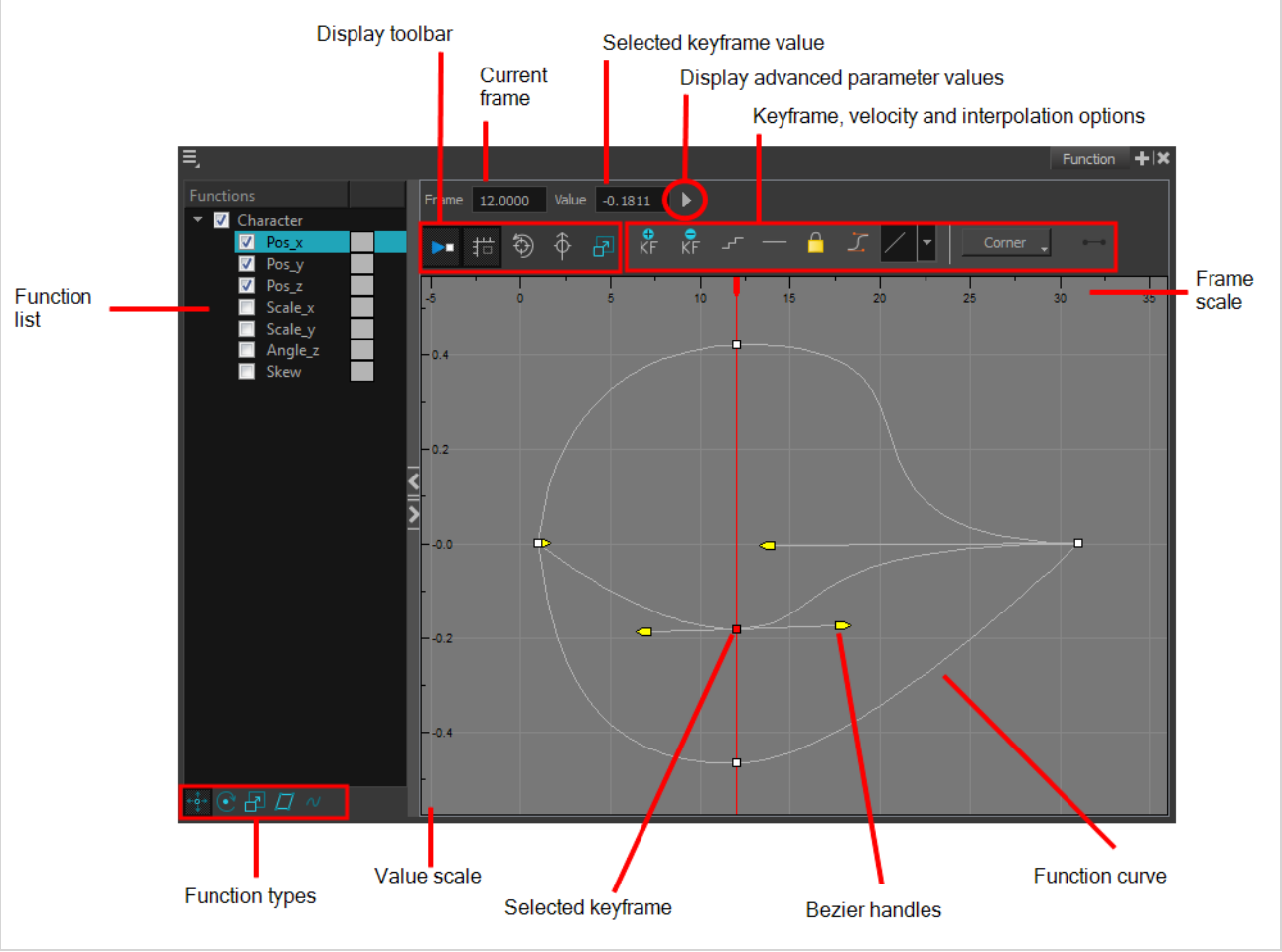
1. Do one of the following
    - From the top menu, select **Windows > Drawing Substitutions**.
    - In the top-right corner of any view, click on the ➕ Add View button and select **Drawing Substitutions**.

Section	Description
View Menu	Opens a menu with the **Create Key Exposure** option. This option can be enabled or disabled. It determines what happens when you set the drawing in the current frame to the same drawing as the drawing in the previous frame. • When enabled, the exposure of the drawing at the current frame will be separated from the drawing in the previous frame with a key exposure. • When disabled, the exposure of the current frame will be merged with the exposure of the previous frame.

Section	Description
	
Thumbnails	Allows you to select the drawing to be exposed at the current frame. This will also replace the drawing for all subsequent frames during which the current drawing is exposed. 
Current layer name	The name of the currently selected layer. The drawings in the thumbnails list are the drawings currently stored in this layer.
Zoom slider	Allows you to change the size of the thumbnails.

Function View

The Function view lets you edit function curves and parameters. It contains a visual graph for adding, removing, and editing keyframes, as well as adjusting the velocity. The Function view allows you to display multiple functions in the background as a reference.



How to access the Function view

Do one of the following:

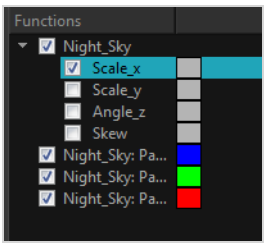
- From the top menu, select **Windows > Function**.
- From any of the other views, click the Add View ➕ button and select **Function**.

How to display functions in the Function view

1. Open the Function view.

   The Function view is blank until you select the layer containing the functions you want to display.

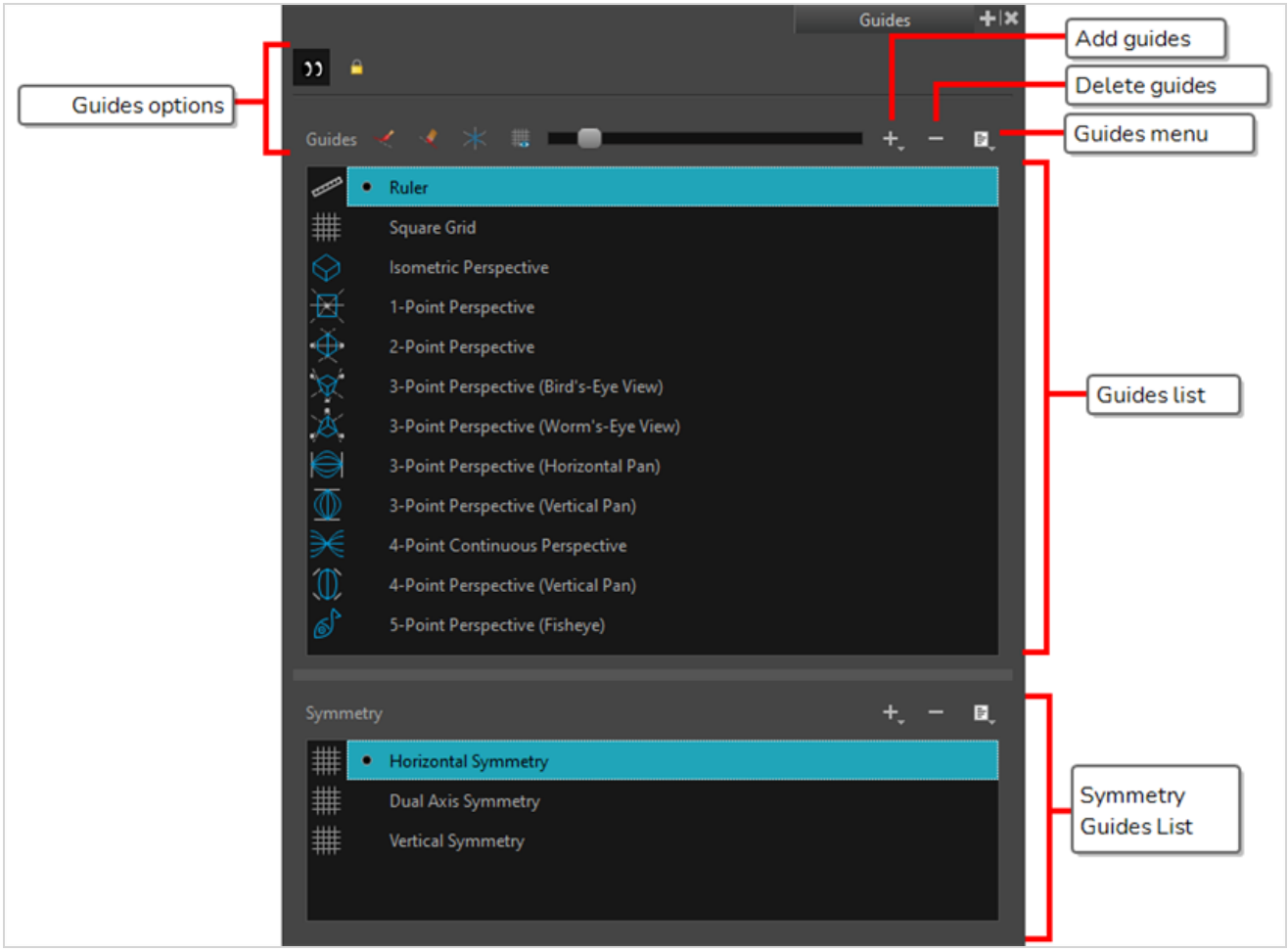
2. To display a function in the Function view, click on the layer containing the functions to adjust in the Timeline view.
3. To select the functions you want to edit, select them in the Function list.

Parameter	Description
Function List	 When selecting a layer in the Timeline view, all the corresponding functions are displayed (if any). Select the functions you want to see and edit, and hide the ones you don't.
Display Toolbar	Allows you to modify how the editing area is displayed. You can hide the grid, disable the synchronization with the current frame, reset the zoom level and normalize the function display by stacking them one over the other to compare them regardless of their value range.
Current Frame	Displays the current scene frame.
Selected Keyframe Value	Displays the value of the selected keyframe.
Display Advanced Parameter Values	 Displays the Projection, Bias, Tension and Continuity parameters to adjust the curve around the selected keyframe.
Keyframe, Velocity and Interpolation Options	This toolbar lets you add and delete keyframes, adjust the velocity curve, adjust the segments to motion or stop-motion keyframes and set the velocity to create steps instead of a constant progression.
Function Types	This toolbar lets you click on the different function types to enable or disable all the listed functions of that type.
Value Scale	Displays the value range for the displayed editing area. It can be referenced to know the value of a keyframe.

Selected Keyframe	The selected keyframe is displayed in red. When selected, the keyframe values are displayed in the corresponding fields.
Bezier Handles	The Bezier handles let you adjust the ease in and ease out of each keyframe. The more the handle is pulled out horizontally, the slower the animation will be. The more the handle is pulled out vertically, the faster the animation will be.
Function Curve	The thin line going from keyframe to keyframe is the actual curve. The section of a curve located between two keyframes is called a segment.
Frame Scale	The Frame Scale displays the frame range for the displayed editing area. It can be referenced to know the current frame of a keyframe.

Guides View

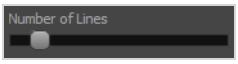
The Guides view allows you to add drawing guides to the current scene, to select which guide to use, to manage existing guides, to export and import guides and to enable or disable drawing guides as well as their various options.



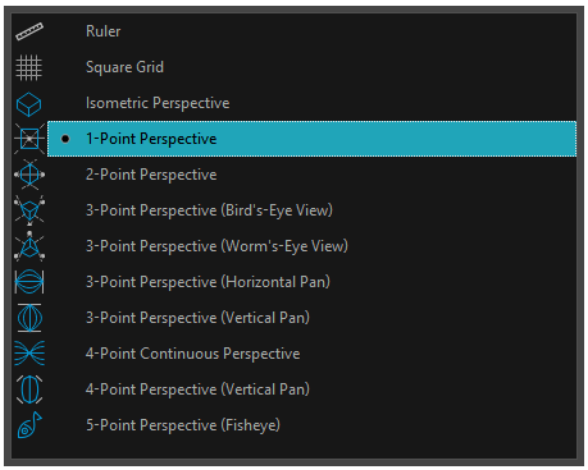
NOTE

For more information on each type of guide and how to use them, refer to the User Guide.

Icon	Name	Description
Options		
	Enable Guide	Enables or disables drawing guides. When guides are disabled, they are not visible and you cannot edit them or use them with drawing tools.

Icon	Name	Description
	Align with Guide	When enabled, when drawing with the Brush, Pencil, Stroke and Line tools tool, the cursor is automatically locked against the axis of the currently selected guide that most closely matches the angle of your stroke, as if you were drawing against a rule. When disabled, the drawing tools are not constrained by the axes of the guide, allowing you to draw freely. The guide's axes act as a visual aids only.
	Lock Guide	When enabled, you cannot do modifications on the currently selected guide. This prevents making unwanted modifications to the guide when drawing.
	Enable Guide with Eraser	Allows you to use the Eraser tool with drawing guides.
	Full Cursor Display	When enabled, the guide's axes that go through the mouse cursor in the drawing space go throughout the entire drawing space and display even when you're drawing. When disabled, the guide's axes that go through the mouse cursor only display over a short distance from the mouse cursor. Also, the guide's axes disappear when drawing a stroke.
	Show Reference Lines	When enabled, semi-transparent reference lines for each of the currently selected guide's axes appear all over your drawing space.
	Number of Lines	Adjusts the amount of reference lines to display in your drawing space. 
Guides List		
	New Guide	Allows you to add a guide to the scene's guides list. You can add a guide of one of the following types: • Ruler • Square Grid • Isometric Perspective • 1-Point Perspective

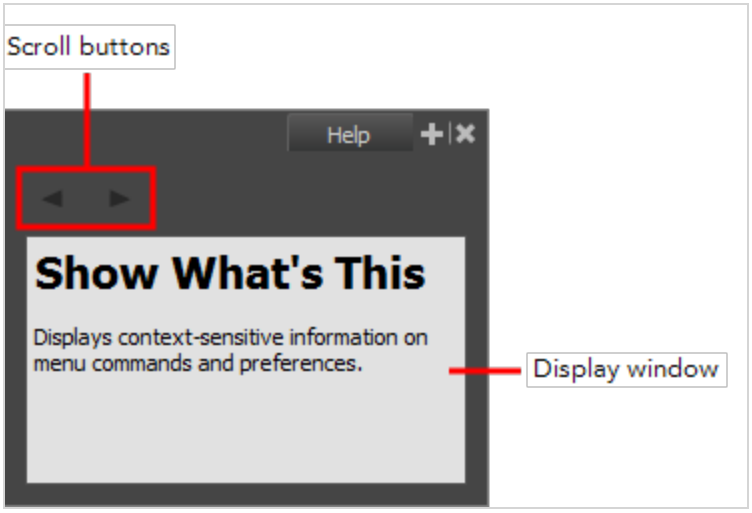
Icon	Name	Description
		• 2-Point Perspective • 3-Point Perspective (Bird's-Eye View) • 3-Point Perspective (Worm's-Eye View) • 3-Point Perspective (Horizontal Pan) • 3-Point Perspective (Vertical Pan) • 4-Point Continuous Perspective • 4-Point Perspective (Vertical Pan) • 5-Point Perspective (Fisheye) **NOTE** For more information on each type of guide and how to use them, refer to the User Guide.
	New Symmetry Guide	Allows you to add a guide to the symmetry guides list. You can add a guide of one of the following types: • Vertical • Horizontal • Dual Axis
	Delete Guide	Deletes the selected drawing guides from the scene's guides list.
	Guides View Menu	Opens a menu with the following commands:
	Rename Guide	Renames the selected drawing guide.
	Cut	Cuts the selected drawing guides from the list and adds them to the clipboard.
	Copy	Copies the selected drawing guides to the clipboard.
	Paste	Pastes drawing guides from the clipboard to the current scene's guides list. Pasted guides are inserted under the selected guide.

Icon	Name	Description
	Import Guides	Imports drawing guides that were previously exported to a file and inserts them at the bottom of the scene's guides list. Duplicate guides are filtered out to avoid cluttering the list.
	Export Selected Guides	Exports the selected drawing guides into a file.
	Drawing Guides List	Displays the scene's list of guides and allows you to select which guide to display, edit and use. 

Integrated Help View

Use the Integrated Help when you are unsure about what a certain menu item is or the function of a specific preference in the Preferences panel.

If you keep the Integrated Help window open for the entire duration of your work session, then you can use the forward and backward arrows to scroll through a history of the help information that you called up during your session.



How to access the Integrated Help view

1. Do one of the following:

- From the top menu, select **Windows > Integrated Help**.
- From any of the other views, click the Add View ➕ button and select **Integrated Help**.

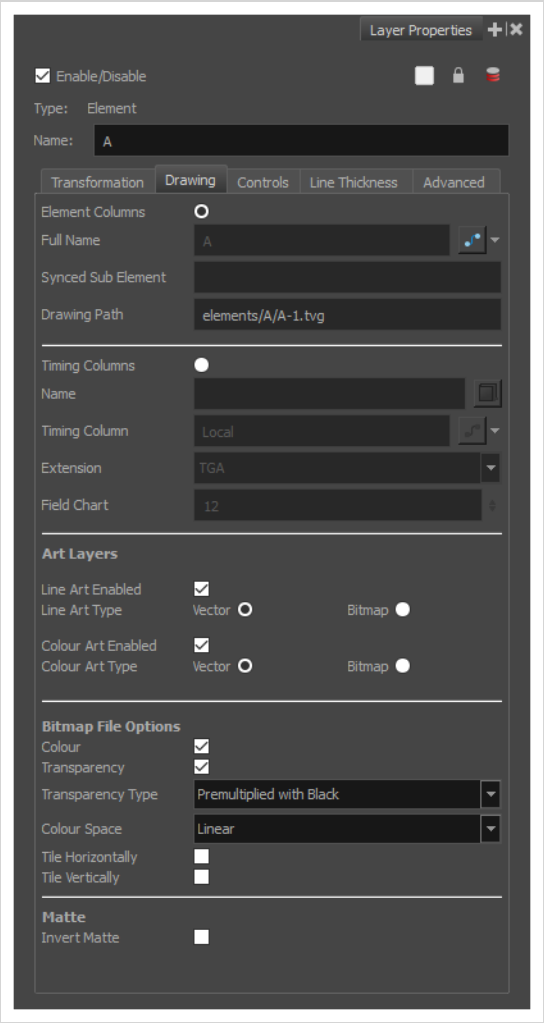
Layer Properties View

The Layer Properties editor or view lets you adjust the properties of a layer in the Timeline view The Layer Properties can be viewed as a floating window or as a view (docked).

Each layer has its own set of properties that can be modified, including effect and peg layers. Display the Layer Properties editor or view if you want to modify some of the layer's properties, such as the name or the antialiasing quality.

NOTE

To know more about the parameters displayed in the Layer Properties view, see *Layers* on page 348.



How to access the Layer Properties view

Do one of the following:

- From the top menu, select **Windows > Layer Properties**.
- From any of the other views, click the Add View ➕ button and select **Layer Properties**.

How to access the Layer Properties editor

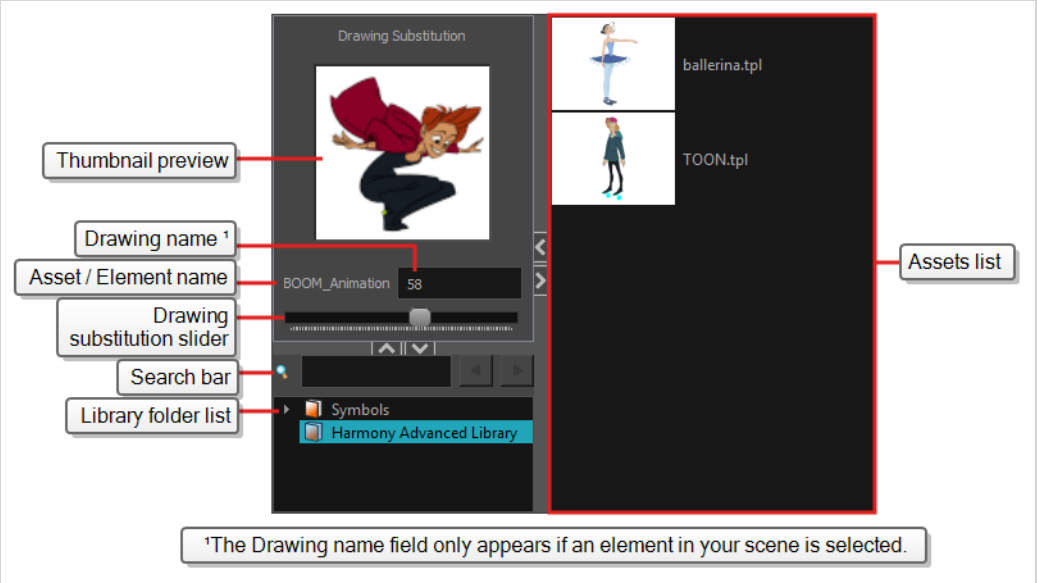
- Double-click on a layer in the Timeline view
- Right-click on a layer in the Timeline view and select **Layer Properties**.
- Select a layer in the Timeline view and press Shift + E.

Library View

The Library view is used to store elements such as animation, drawings, backgrounds and character models so as to reuse in different scenes and projects. You can also use the Library view to create and store symbols, as well as to store and import images and sound files.

To reuse elements from a scene in other scenes, you must create a template so that you can import it into different scenes. Templates can contain anything from a single drawing to a whole scene structure. You can create a template by creating it in a scene, then copying the elements you want in your template into a library. The resulting template is structured like a mini-scene that contains only the elements you copied into it. A template does not have any dependencies on the scene it was originally created in. Hence, it can safely be imported in any other scene.

Additionally, the Library view's Drawing Substitutions panel allows you to quickly change the current frame's exposure to one of the existing drawings in a layer. This is especially useful for animating a cut-out character's mouths, hands, eyelids and other such body parts which typically contain several drawings to choose from.

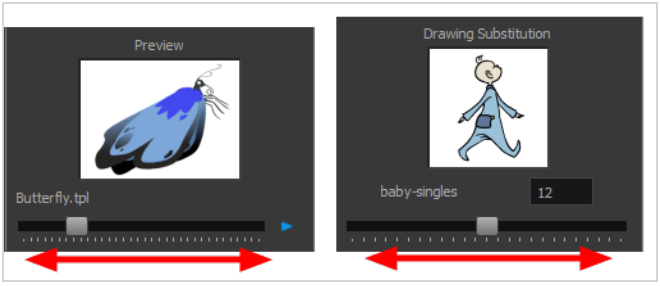
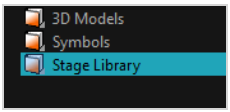
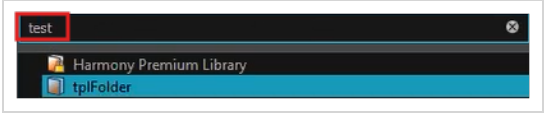


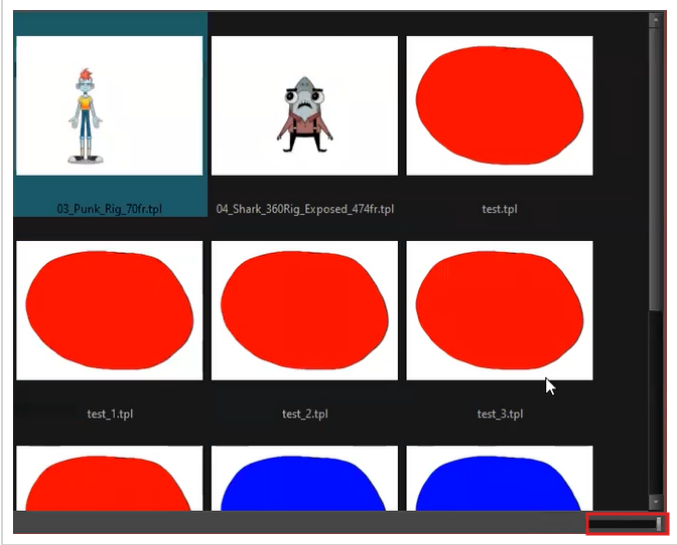
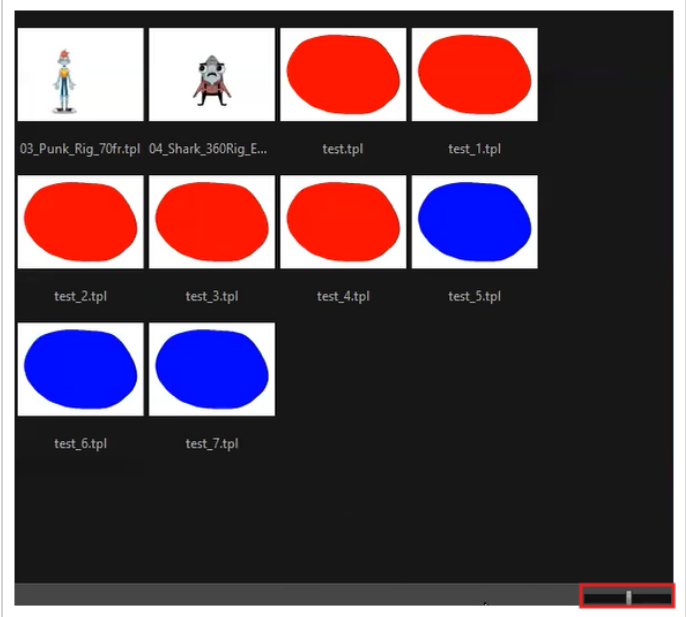
How to access the Library view

Do one of the following:

- From the top menu, select **Windows > Library**.
- From any of the other views, click the Add View ➕ button and select **Library**.

Icon	Section	Description
	View Menu	The Library menu lets you access commands related to the Library view, importing .swf movies and Illustrator files, add a new folder, and

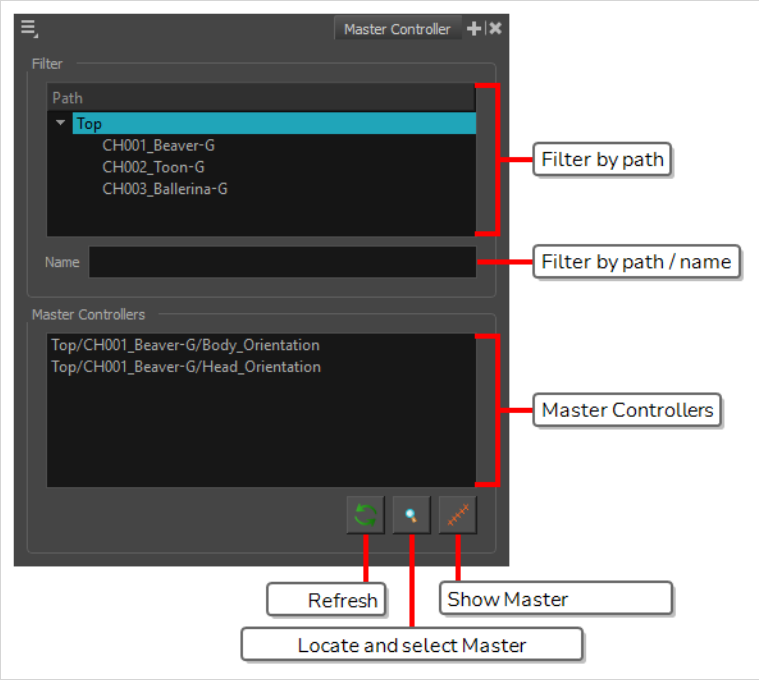
Icon	Section	Description
		refresh the library's content.
	Preview Window	The Preview window lets you see the content of the currently selected template or symbol in the Template/Symbol list. 
	Preview Playback	The Preview Playback button lets you play back the content of the selected template or symbol if it contains more than one frame. Press the Play button to play back the preview.
	Library Folder List	The Library Folder List displays all the folders linked to the Library view.  There are two default folders: • **Symbols:** This folder is the only folder containing symbols. You can organize it by adding subfolders inside. • **Harmony Advanced Library:** This is a default folder found on the hard drive in your user documents. This folder can contain templates, but no symbols. You can link new library folders to the Library view and organize them with subfolders.
	Library Search tool	When working on a movie or series, you will probably end up with many templates and symbols in your library. Using the Search tool, you can quickly find the templates and symbols in your folders. 

Icon	Section	Description
	Template/Symbol List	The Template/Symbol list displays the templates or symbols contained in the selected library folder. You can display the templates by right-clicking the symbols' thumbnails and selecting **View > Thumbnails**.
	Slider	A slider could be used to adjust the display size of thumbnails in the Library view.  

Master Controller View

T-RIG3-008-008

The Master Controller view allows you to quickly find, select and display Master Controllers in the current scene.



How to add the Master Controller view to your workspace

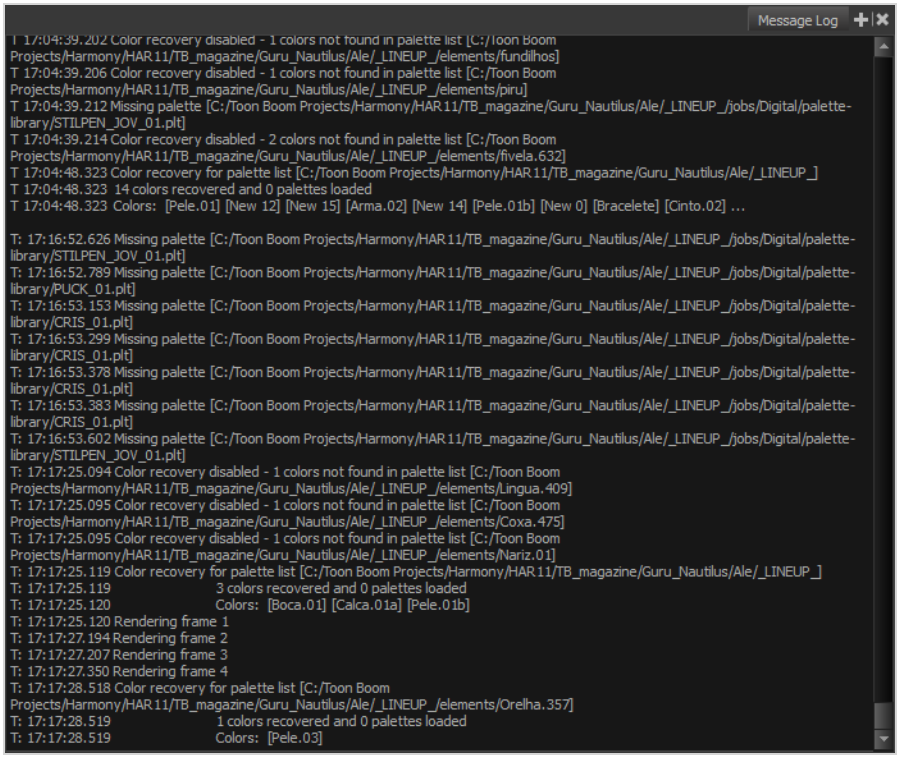
1. Do one of the following:
    - In the top-right corner of an existing view, click on + Add View and select **Master Controller**.
    - In the top menu, select **Windows > Master Controller**.

Icon	Section	Description
Filter		
	Path	Allows you to select a group in the current scene. When a group is selected, only the Master Controllers within that group will be listed in the Master Controllers list. This can be useful if you have several characters and only want the list of Master Controllers for a specific character.

Icon	Section	Description
	Name	Allows you to filter the Master Controllers in the Master Controllers list by their path or name. When you type something in this field, only the Master Controllers that contain the text you typed in their full path including their name will be listed in the Master Controllers list.
Master Controllers		
	Master Controllers	Allows you to select one of the Master Controllers in your scene. This list displays the Master Controllers in your scene with their full path in the group hierarchy. Groups in the hierarchy are separated by forward slashes (/). If a group is selected in the Path list, only the Master Controllers within this group will appear in the list. If anything is typed in the Name field, only Master Controllers with this text in their full path including their name will appear in the list. Otherwise, all the Master Controllers in your scene are listed.
	Refresh List	Refreshes the Path list if there are any changes in the name or hierarchy of groups in your scene, as well as the Master Controllers list if there are any changes in the Master Controllers in your scene.
	Locate and Select Master Controller	If a Master Controller is selected in the Master Controllers list, clicking on this button will select the actual Master Controller node. It will also make the Node View navigate instantly to and focus on that Master Controller node.
	Show Master Controller	If a Master Controller is selected in the Master Controllers list, clicking on this button will display its widget in the Camera view.

Message Log View

The Message log view displays information gathered during a render task, such as which frames and at what time they were each rendered. The view also contains a list of the colour recovery operations.

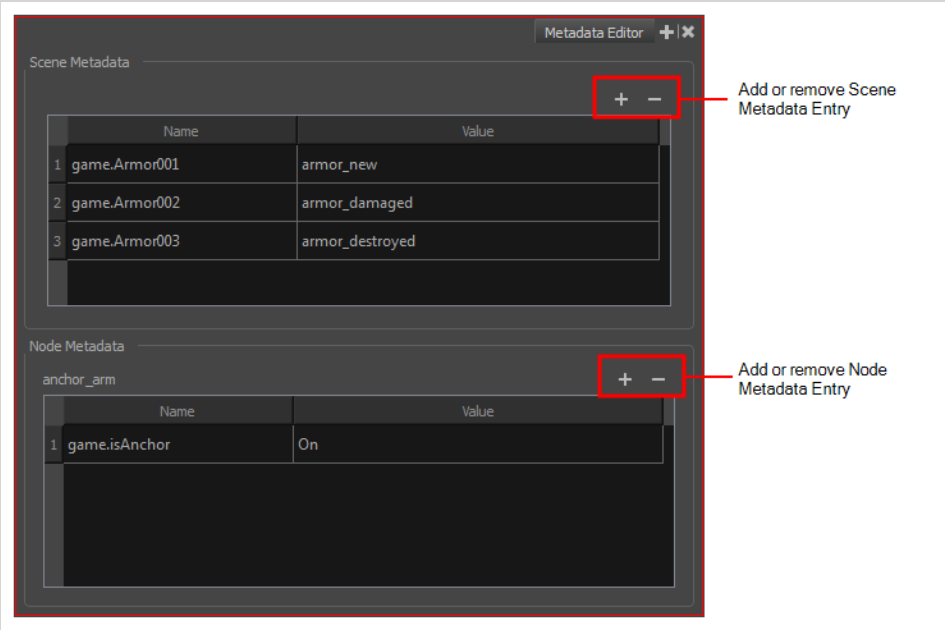


How to access the Message Log view

Do one of the following:

- From the top menu, select **Windows > Message Log**.
- From any of the other views, click the Add View ➕ button and select **Message Log**.

Metadata Editor View



The Metadata Editor view lets you access the information of the props and anchors to be exported to Unity.

NOTE

Because the Unity game engine does not support Unicode characters, it is recommended to avoid using it in scenes intended for games.

How to access the Metadata Editor view

- In the top-right corner of a view, click the Add View + button and select **Metadata Editor**.
- In the top menu, select **Windows > Metadata Editor**.

Parameter	Description
Scene Metadata	This is a list of optional parameters you can create in a scene project to be exported to Unity. It will not have any incentive towards your scene assets, but can help developers know what to do with the assets contained in your Harmony scene. Once in Unity, scene Metadata will appear in Inspector view > Metadata when the Asset is selected in the Hierarchy view.
	Name: Name of the Scene entry. (e.g. game.Armor001)

	Value: This can be anything that describes the state of an object. You could, for example, have three different stages of armour: new, damaged and destroyed.
Node Metadata	Displays only the props and anchors held inside your selection. If nothing is selected, no information will display. Name and value appear in this box as well. Name will show you the associated .tvg name and value will be set as either On or Off, depending on whether you want the connection to be set as active or not. Once in Unity, scene Metadata will appear in the Hierarchy view.
	Name: Name of the selected anchor or prop. (e.g. game.isAnchor). Notice that it differs from the drawing layer name on the top-left corner of the Node Metadata section.
	Value: Can be set to be active (On) or inactive (Off).

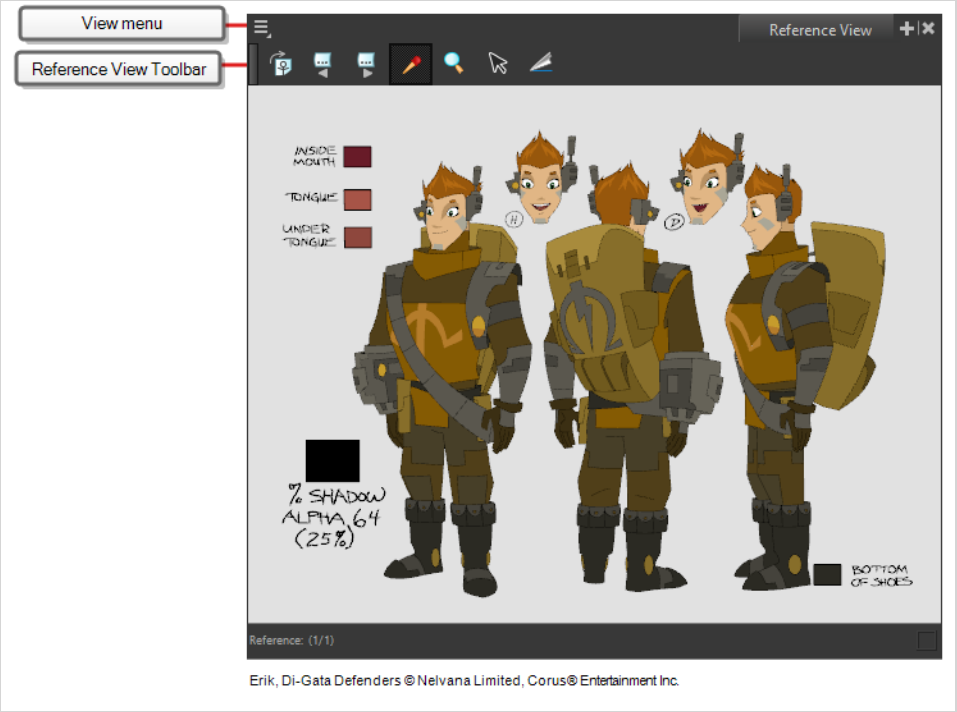
NOTE

For any anchor or prop information created within the Metadata Editor, the naming convention must always use the prefix "game.". The term "game." is recognized automatically by Unity as a metadata information. For example: *game.Armor001*.

Reference View

When you are drawing, you can use a fully-painted drawing or bitmap image as a reference and load it in the Reference view. This drawing or bitmap image can be used and loaded in any of your Harmony scenes.

Once imported, your references will be saved in the scene, and you will not need to re-import them. To load your previously used references in the scene, right-click the Reference View Toolbar and select Load Default References.



Erik, Di-Gata Defenders © Nelvana Limited, Corus® Entertainment Inc.

How to access the Reference View

Do one of the following:

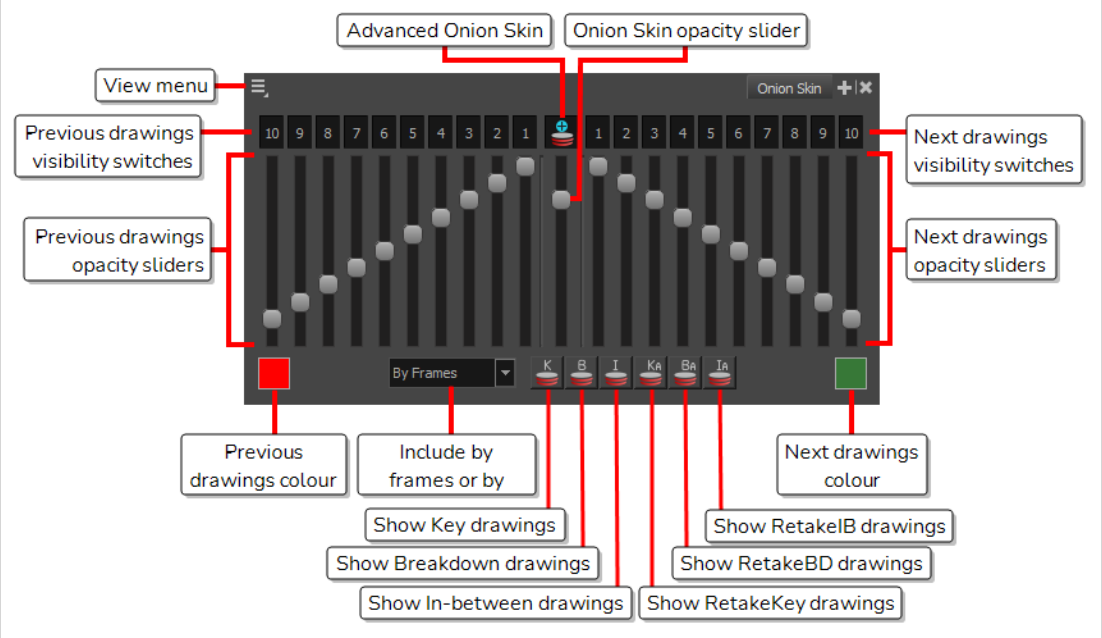
- From the top menu, select **Windows > Reference View**.
- From any of the other views, click the Add View ➕ button and select **Reference View**.

Tool/Menu Item	Icon	Description
	View Menu	The View menu contains all the tools and options that you can use to manage references.
	Reference View Toolbar	The Reference View toolbar contains all the tools and options you can use in the Reference view to navigate through and manage references.

Colour Eyedropper		Allows you to select a colour by clicking on a colour in your artwork.

Onion Skin View

The Onion Skin view allows you to quickly configure onion skin. Using this view, you can choose the colour of previous and next drawings, which kind of marked drawings to display and whether to measure the span of onion skin per frame or per drawing. When using Advanced Onion Skin, you can also use this view to pick which drawings are included in the Onion Skin, as well as the opacity of the drawings relative to how far they are from the current frame.

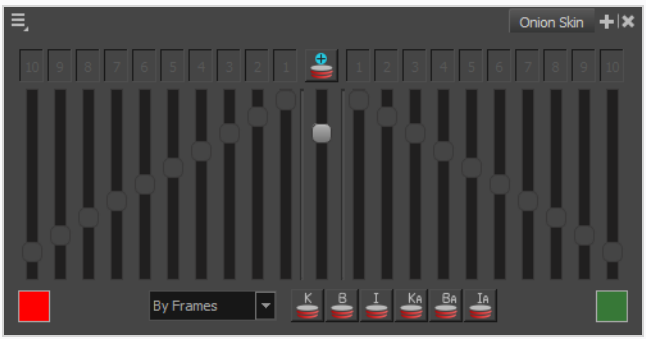


How to access the Onion Skin view

1. Do one of the following:

    - In the top-right corner of a view, click on the + Add View button and select **Onion Skin**.
    - In the top menu, select **Windows > Onion Skin**.

    The Onion Skin view is added to your workspace.

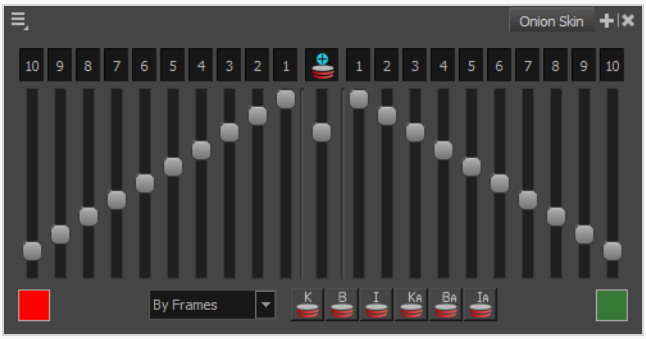


A lot of the controls in the Onion Skin view are only accessible when using Advanced Onion Skin.

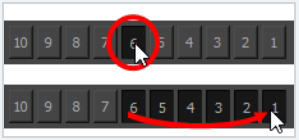
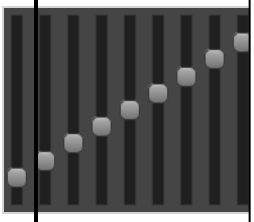
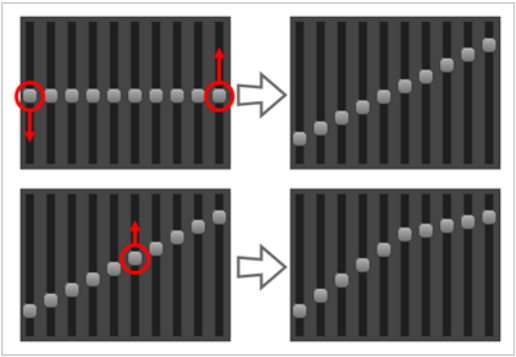
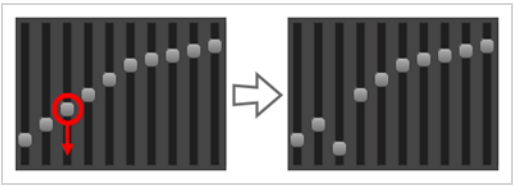
How to enable Advanced Onion Skin

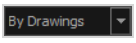
1. Do one of the following:
    - In the Tools toolbar, click and hold Onion Skin and select **Advanced Onion Skin**.
    - In the Onion Skin view, click on the Advanced Onion Skin button.
    - In the top-left corner of the Onion Skin view, open the View Menu and select **Advanced Onion Skin**.

    The controls for the Advanced Onion Skin are now accessible in the Onion Skin view.



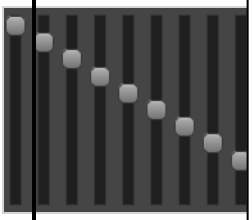
User Interface	Section	Description
	View Menu	Open the Onion Skin view menu, which contains extra options for Advanced Onion Skin—see *Onion Skin View Menu* on page 311.
Previous Drawings Settings		
1 2 3 4 5 6 7 8 9	Previous drawings visibility switches	Allows you to select which drawings before the current frame to include in the Onion Skin. A drawing that is toggled on will be visible in the Onion Skin, and a drawing that is toggled up will be excluded from it. You can select a range of drawings, or include and exclude specific drawings individually.

User Interface	Section	Description
		TIP You can quickly select or deselect a range of drawings by clicking and holding on one drawing, then dragging the mouse cursor over the other drawings you want to toggle. 
	Previous drawings opacity sliders	Allows you to adjust the opacity scale of drawings before the current frame. Each slider represents the opacity of one drawing. By default, moving one of these sliders will move the other sliders so that the opacity remain on a gradated scale. In this case, you can start by adjusting the opacity on one end, the opacity on another end and then, if you want, adjust one of the sliders in-between to make a segmented progression.  You can disable this behaviour by unchecking the **Link Sliders** option in the View Menu in the top-left corner of the Onion Skin view. This option is enabled by default. When disabled, you can adjust the opacity of each drawing independently. 
	Previous drawings colour	Allows you to select the colour in which to display the drawings before the current frame.

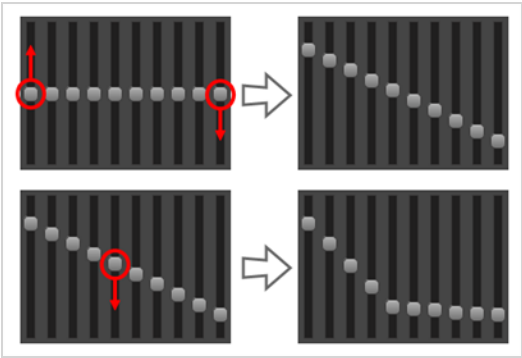
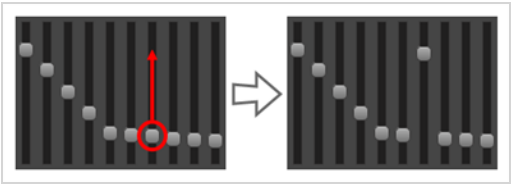
User Interface	Section	Description
Onion Skin Settings		
	Advanced Onion Skin	Enables Advanced Onion Skin. Advanced Onion Skin allows you to select, on the fly, which drawings to include in your Onion Skin, even if those drawings are not consecutive drawings, as well as the opacity scales for the drawings before and after the current frame. The controls for selecting which drawings to display in the Onion Skin as well as their opacity sliders are only accessible when Advanced Onion Skin is enabled. Otherwise, when using regular Onion Skin, the opacity of drawings in the Onion Skin is determined by the Onion Skin settings in the Preferences dialog. The amount of drawings to include in the Onion Skin is set using the Onion Skin Add / Reduce One Previous Drawng and Onion Skin Add / Reduce One Next Drawing commands, available in the Camera and Drawing toolbars as well as in View > Onion Skin in the top menu.
	Onion skin opacity slider	Allows you to set the overall opacity of all the drawings in the Onion Skin.
	Include by frames or by drawings	Allows you to select whether the drawings to include in the Onion Skin are selected by frame or by drawing. • **By Frames:** Selects the drawings to display in the Onion Skin by their frame number relative to the current frame. For example, if the Onion Skin is set to include 2 drawings before and after the current frame, it will include the drawings up to two frames before and up to two frames after the current frame, even if those drawings are the same as the one in the current frame. This is more useful for cut-out animation as it allows you to position a drawing relative to its position in adjacent frames. **NOTE** This option only works in the Camera view. • **By Drawings:** Selects the drawings to display in the Onion Skin by the amount of different drawings before and after the current frame. For example, if the Onion Skin is set to include 2 drawings before and after the current frame, this will display the nearest two

<table>
<tr><th>User Interface</th><th>Section</th><th>Description</th></tr>
<tr><td></td><td></td><td>different drawings before and after the drawing in the current frame in the Onion Skin, even if those drawings are further than 2 frames away from the current frame. This is more useful for frame-by-frame animation.

NOTE
When this option is enabled, the handles allowing you to adjust the extent of the Onion Skin in the Timeline view are not available.</td></tr>
<tr><td colspan="3">Next Drawings Settings</td></tr>
<tr><td> </td><td>Next drawings visibility switches</td><td>Allows you to select which drawings after the current frame to include in the Onion Skin. A drawing that is toggled on will be visible in the Onion Skin, and a drawing that is toggled up will be excluded from it. You can select a range of drawings, or include and exclude specific drawings individually.

TIP
You can quickly select or deselect a range of drawings by clicking and holding on one drawing, then dragging the mouse cursor over the other drawings you want to toggle.
 </td></tr>
<tr><td>  </td><td>Next drawings opacity sliders</td><td>Allows you to adjust the opacity scale of drawings after the current frame. Each slider represents the opacity of one drawing.

By default, moving one of these sliders will move the other sliders so that the opacity remain on a gradated scale. In this case, you can start by adjusting the opacity on one end, the opacity on another end and then, if you want, adjust one of the sliders in-between to make a segmented progression.</td></tr>
</table>

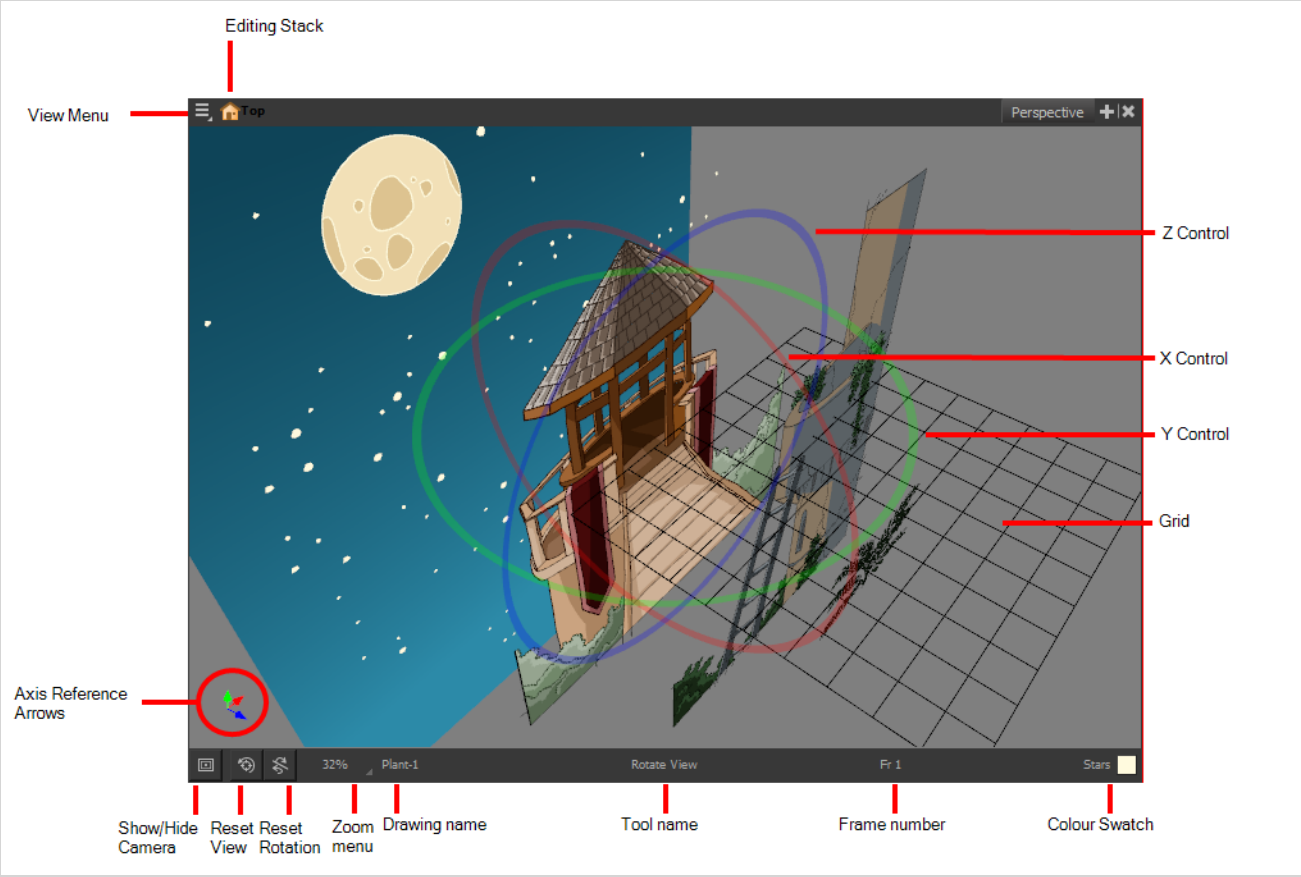
User Interface	Section	Description
		 You can disable this behaviour by unchecking the **Link Sliders** option in the View Menu in the top-left corner of the Onion Skin view. This option is enabled by default. When disabled, you can adjust the opacity of each drawing independently. 
	Next drawings colour	Allows you to select the colour in which to display the drawings after the current frame.
Marked Drawings Settings		
	Show Key drawings in Onion Skin	Only displays drawings marked as key drawings in the Onion Skin.
	Show Breakdown drawings in Onion Skin	Only displays drawings marked as breakdowns in the Onion Skin.
	Show In-between drawings in Onion Skin	Only displays drawings with no marker in the Onion Skin. Drawings with no marker are considered in-betweens.

User Interface	Section	Description
	Show RetakeKey drawings in Onion Skin	Only displays drawings marked as retake key drawings in the Onion Skin.
	Show RetakeBD drawings in Onion Skin	Only displays drawings marked as retake breakdowns in the Onion Skin.
	Show RetakeIB drawings in Onion Skin	Only displays drawings marked as retake in-betweens in the Onion Skin.

Perspective View

T-HFND-008-016

The Perspective view is used during scene setup. It allows you to see a multiplane scene's orientation. The Perspective view is similar to a 3D display, as it lets you rotate the scene through all possible angles to understand the spacing between the elements. You can also position and rotate your layers and the camera inside the 3D display to achieve some 3D setup and camera moves.

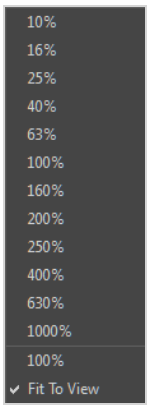


How to access the Perspective view

Do one of the following:

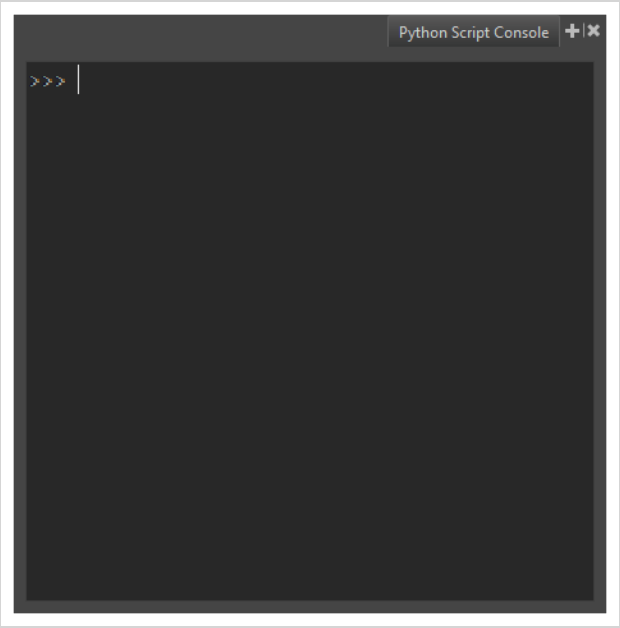
- From the top menu, select **Windows > Perspective**.
- From any of the other views, click the Add View ➕ button and select **Perspective**.

Icon	Section	Description
☰	View Menu	The View menu contains all the tools and options that you can use to work in the Perspective view.

	Editing Stack	The Editing Stack menu displays the names of the symbols and their hierarchy when you are editing a symbol. You can click on the different names to go back up to the different parent symbols or the top/current project.
	X Control	The red circle rotates the view on its X axis.
	Y Control	The green circle rotates the view on its Y axis.
	Z Control	The blue circle rotates the view on its Z axis.
	Grid	This is a perspective (3D) grid reference.
	Axis Reference Arrows	The axis reference arrows let you maintain your orientation when navigating in the Perspective view.
	Show/Hide Camera	Shows or hides camera frame in the Perspective view.
	Reset View	Resets the pan, rotation, and zoom of the Perspective view.
	Reset Rotation	Resets the rotation of the Perspective view.
	Zoom Menu	This field displays the current zoom level in the Perspective view. You can use the Zoom level drop-down menu to select a specific zoom level from the list. Zoom levels from 2.5% to 6400% are available; you can also select Fit To View to automatically use a zoom level that lets you see all your scene layers and information in the Perspective view at once. 

	Layer Name	This field displays the currently selected layer and drawing name.
	Tool Name	This field displays the currently selected tool.
	Frame Number	This field displays the currently selected frame of your animation.
	Colour Swatch	This field displays the currently selected colour in the palette.

Python Script Console View



The Python Script Console View provides a Python representation of Harmony and its loaded project. This allows for custom tools and automation tasks both within Harmony's GUI and external to Harmony from a Python Interpreter.

How to access the Python Script Console view

Do one of the following:

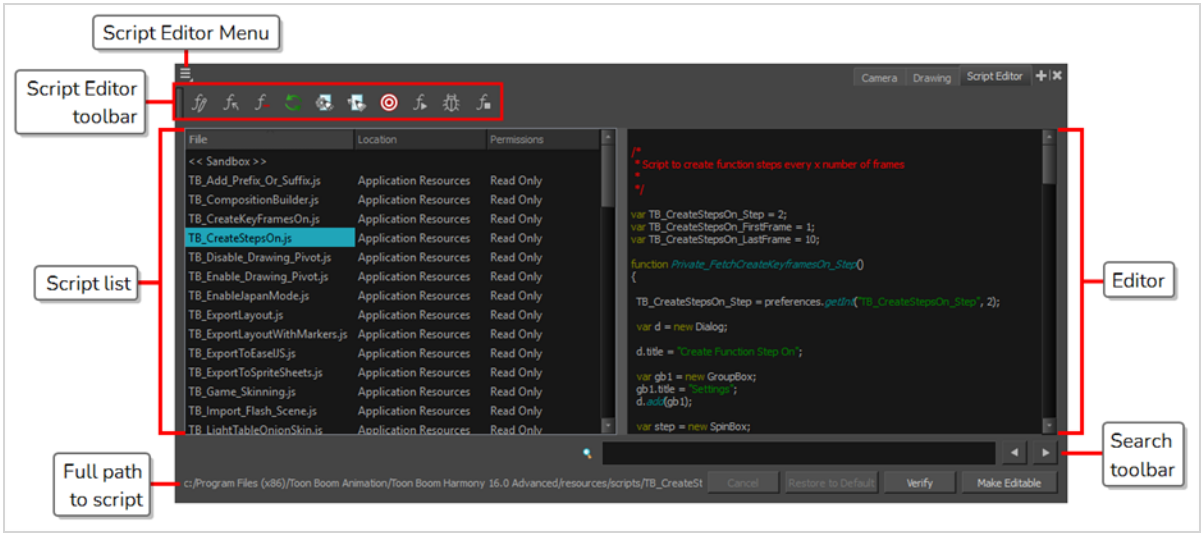
- From the top menu, select **Windows > Python Script Console**.
- From any of the other views, click the Add View ➕ button and select **Python Script Console**.

NOTE

In order to use the Python Script Console, you will need to have Python 3.9.X installed. Please make sure it is installed and available on the system environment PATH.

Script Editor View

The Scripting view allows you to edit scripts to run in Harmony directly from the application. It displays a list of available scripts, from which you can select an existing script, edit it, test it and save it. The Script Editor will highlight the syntax of your script for easy reading.



How to access the Script Editor view

Do one of the following:

- From the top menu, select **Windows > Script Editor**.
- From any of the other views, click the Add View ➕ button and select **Script Editor**.

Parameter	Description
Script Editor menu	The menu for this view—see *Script Editor View Menu* on page 319.
Script Editor toolbar	The toolbar for this view—see *Script Editor Toolbar* on page 652.
Script list	The list of script files available as well as their location and their read and write permissions. Selecting a script in this list will open it in the editor. **NOTE** The **<< Sandbox >>** item at the top of the list does not correspond to an actual script file. It is a temporary container to type and test code, and its content cannot be saved.

The file list has three columns: **File**, **Location** and **Permissions**.

- The **File** column indicates the filename of each script.

  NOTE

  The **<< Sandbox >>** item at the top of the list does not correspond to an actual script file. It is a temporary container to type and test code, and its content cannot be saved.

- The **Location** of the script can be one of the following:

  - **Application Folder:** Scripts that are packaged and installed with Harmony. By default, you cannot edit these scripts until you select them and click on Make Editable, at which point you are prompted to copy the script to a location from which you can edit them.

    Scripts in the Application Resources folder are in the following location:

    - **Windows:** `C:\Program Files (x86)\Toon Boom Animation\Toon Boom Harmony 24 Advanced\resources\scripts`
    - **macOS:** `/Applications/Toon Boom Harmony 24 Advanced/Harmony Advanced.app/Contents/tba/resources/scripts`
    - **GNU/Linux** `:/usr/local/ToonBoomAnimation/harmonyAdvanced_24/resources/scripts`

  - **User:** Scripts that are saved in your user preferences. Those scripts can be edited and executed from any scene, provided that you are logged in as the same user.

    In Harmony Stand Alone, scripts in the User folder are in the following location:

    - **Windows:** `C:\Users\[username]\AppData\Roaming\Toon Boom Animation\Toon Boom Harmony Advanced\2400-scripts`
    - **macOS:** `/Users/[username]/Library/Preferences/Toon Boom Animation/Toon Boom Harmony Advanced/2400-scripts`
    - **GNU/Linux:**`/home/[username]/Toon Boom Animation/Toon Boom Harmony Advanced/2400-scripts`

    In Harmony Server, scripts in the User folder are in the following location:

    `/USA_DB/users/[username]/HarmonyAdvanced/2400-scripts`

  - **Scene:** Scripts in the **`scripts`** sub-folder of the currently open scene. These scripts can only be edited and executed when the current scene is open.
  - **Job (Harmony Server only):** When using Harmony Server, these are the scripts saved in the directory of the current scene's jon. These scripts can be edited and executed by any user when any scene that is part of this job is open.

Scripts in the Job folder can be found in the following location:

`/USA_DB/jobs/[job name]`

- **Environment (Harmony Server only):** When using Harmony Server, these are scripts saved in the directory of the current scene's environment. These scripts can be edited and executed by any user when any scene that is part of this environment is open.

  Scripts in the Environment folder can be found in the following location:

  `/USA_DB/environments/[environment name]`

- **Global (Harmony Server only):** Scripts in the Harmony database's scripts directory. These scripts can be edited by any user when any scene in the database is open.

  Scripts in the Global folder can be found in the following location:

  /USA_DB/scripts

- **System Variable:** Scripts inside the directory set in the **`TOONBOOM_GLOBAL_SCRIPT_LOCATION`** environment variable, if this variable is set. These scripts can be edited and executed by anyone on your workstation.

NOTE

When two or more scripts with the same file name exist in different locations, Harmony will give priority to a single one of these scripts. The script given priority will be the one listed in the Script Editor and the one executed if it is associated to a toolbar button.

Which script is prioritized is determined by the order of priority of script locations. From highest priority to lowest priority, the order goes as follows:

User > Scene > System Variable > Job > Environment > Global > Application Resources

An exception to this rule is if you have a script with the same name in both the scene folder and your user preferences. In this case, both versions of the script will be listed and you will be able to edit both.

- The **Permissions** of the script can be one of the following:
  - **Read Only:** You cannot edit the script in the Script Editor and save your changes.

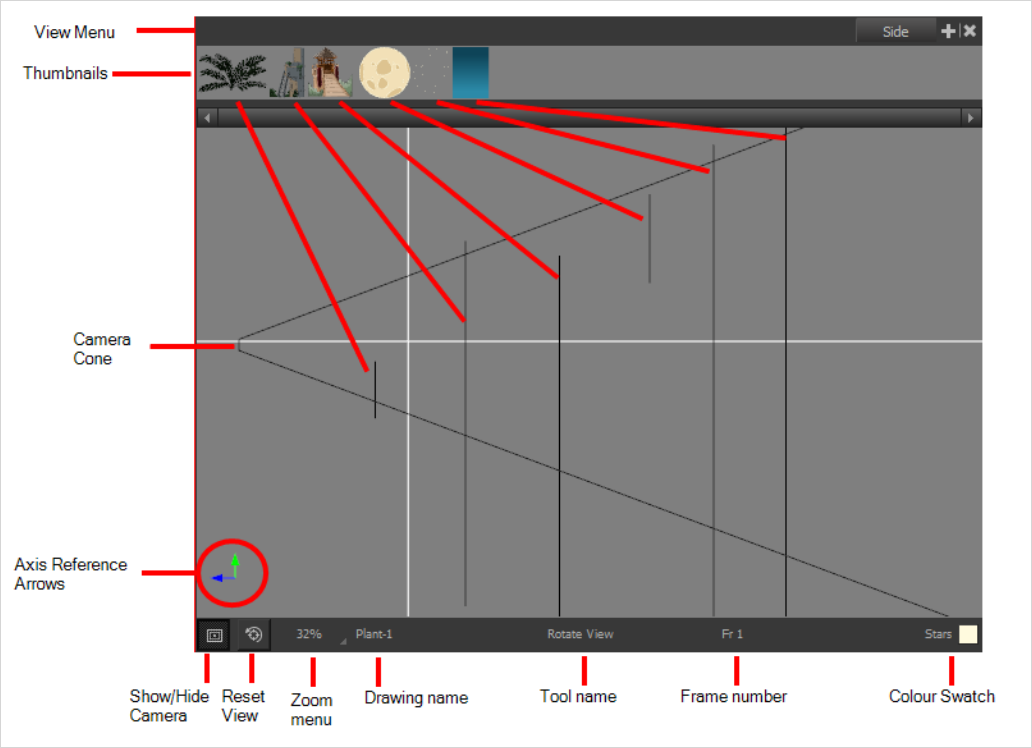
	NOTES • If the script's location is the Application Resources folder, it will always be Read Only to prevent you from making changes to scripts packaged with Harmony. However, you can click on the **Make Editable** button below the script editor to make a copy of the script in your user preferences folder, after which you can make changes to this copy. • If the script is in any other location and is Read Only, then it is likely that a network administrator made the script or the folder containing the script read-only to prevent other users from making unwanted changes to it. • **Read/Write:** You can edit the script in the Script Editor and save your changes.
Editor	A text field in which you can edit the selected script. **NOTE** If the selected script is in the Application Resources folder, you will not be able to edit it until you click on the **Make Editable** button.
Search toolbar	Allows you to type in a keyword and search for this keyword within the script. You can use the ▶ Next button to go to the next instance of the keyword and the ◀ Previous button to go to the previous instance.
Cancel	If you have made any changes to your script that you have not yet saved, this discards those changes and reloads the saved version.
Restore to Default	If the selected script is a script that was packaged with Harmony, and which you copied to your User folder, to the Scene folder or to the Job, Environment or Global folder to make changes to it, you can click on this button to delete this copy of this script and resume using the original version of the script that is packaged with Harmony instead. **IMPORTANT** This will permanently delete your version of the script and any changes you have made to it.
Verify	Verifies that the script has no syntax error.
Make Editable	If the currently selected script is in the Application Resources folder, you cannot edit it. By clicking on this button, the script can be copied to a location where you can edit it.

	When you click on this button, you are prompted to choose whether to copy in either of these locations: • **User:** Saves the script to a directory in your user preferences directory. You will be able to run and edit the script from any scene as long as you are logged in as the same user. **NOTE** If you are using Harmony Stand Alone, the script will be saved to the preferences for your account on your computer. if you are using Harmony Server, the script will be saved to the preferences for your Harmony database user. • **Global:** If you are using Harmony Server, select this option to save the script to the Harmony database's global script directory. Anyone who is logged in to the database will be able to edit and run this script. • **Environment:** If you are using Harmony Server, select this option to save the script to the current scene's environment. Anyone will be able to edit and run the script as long as they are working on a scene inside this environment. • **Job:** If you are using Harmony Server, select this option to save the script to the current scene's job. Anyone will be able to edit and run the script as long as they are working on a scene inside this job. • **Scene:** Save the script to the scene's **`scripts`** sub-folder. Anyone will be able to edit and run the script when working on this specific scene. • **System Variable:** Save the script to the directory in the **`TOONBOOM_GLOBAL_SCRIPT_LOCATION`** environment variable. This option is only available if this environment variable is set. **NOTE** This button will be greyed out if the script is in any location other than Application Resources and is read only.
Save	Saves the modifications you made to the script. This button replaces the Make Editable button after you have used the Make Editable button to copy the script to a location from which you can edit it.

Side View

T-HFND-008-015

The Side view is used mainly for multiplane scenes and to position elements in 3D space. It allows you to see a scene's stage from the side. This lets the camera cone and spacing between the elements to be seen.

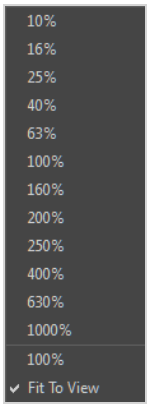


How to access the Side view

Do one of the following:

- From the top menu, select **Windows > Side**.
- From any of the other views, click the Add View ➕ button and select **Side**.

Icon	Section	Description
	View Menu	The View menu contains all the tools and options that you can use to work in the Side view.
	Thumbnails	A thumbnail of each drawing layer in the scene. The order of the thumbnail images is based on each element's FB position in the scene space. You can see a representation of the FB position of each layer in the

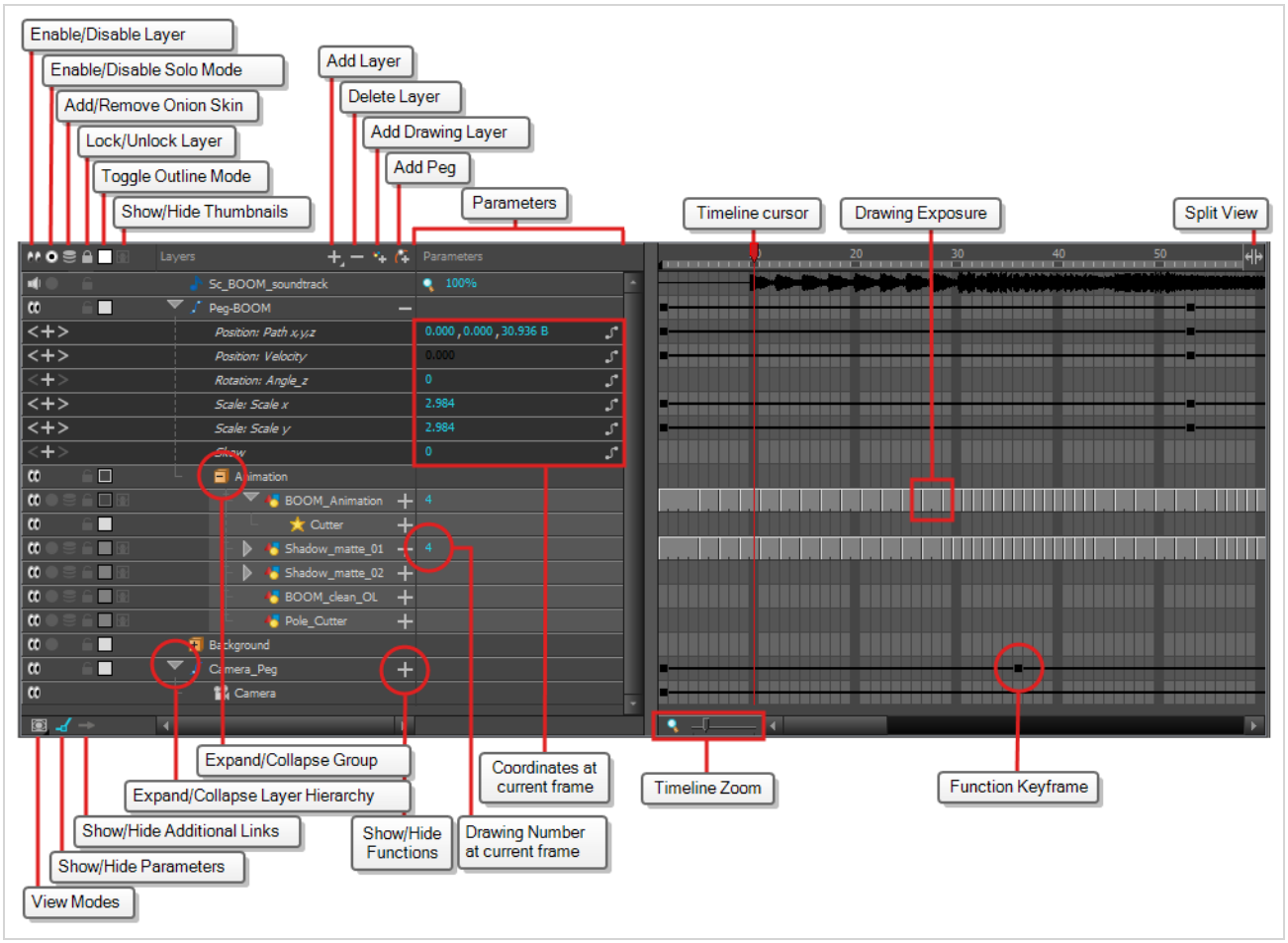
		camera cone.
	Camera Cone	The camera cone represents the camera's position and field-of-view (FOV).
	Axis Reference Arrows	The axis reference arrows let you maintain your orientation when navigating in the view.
	Show/Hide Camera	Shows or hides camera frame in the Perspective view.
	Reset View	Resets the pan, rotation, and zoom of the Perspective view.
	Zoom Menu	This field displays the current zoom level in the Perspective view. You can use the Zoom level drop-down menu to select a specific zoom level from the list. Zoom levels from 2.5% to 6400% are available; you can also select Fit To View to automatically use a zoom level that lets you see all your scene layers and information in the Perspective view at once. 
	Layer Name	This field displays the currently selected layer and drawing name.
	Tool Name	This field displays the currently selected tool.
	Frame Number	This field displays the currently selected frame of your animation.
	Colour Swatch	This field displays the currently selected colour in the palette.

Timeline View

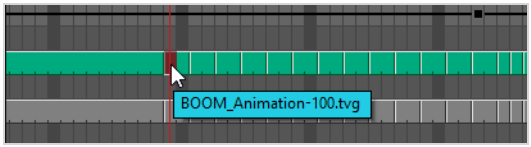
T-HFND-006-002

To set your animation timing, you will mostly work with the Timeline and Xsheet views. It's extremely useful to become familiar with the Timeline view, how it works, and its interface.

The Timeline view is the main view used when adjusting the timing of drawings, adding keyframes and ordering layers. The Timeline view displays layers, effects, sounds, keyframe values, scene length, layer names, drawings, keyframes, timing, and frames.



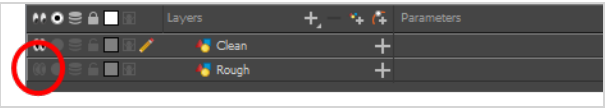
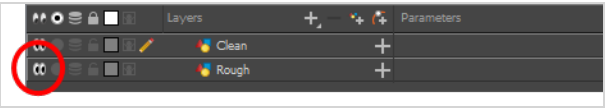
The Timeline view allows you to read your timing from left to right. It represents the scene's elements in their simplest form. You can also see the layers and their names, as well as the drawing's exposure. The drawing name is displayed when you place your pointer over the drawing's exposure.

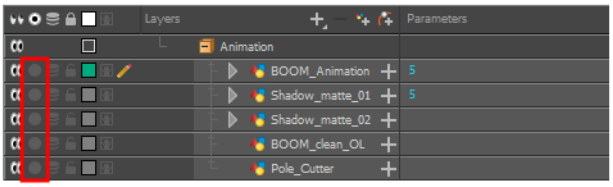
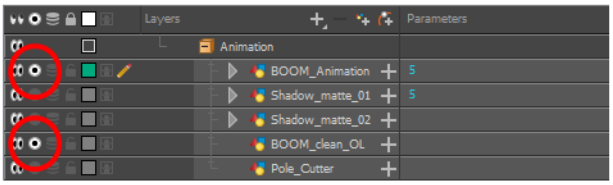
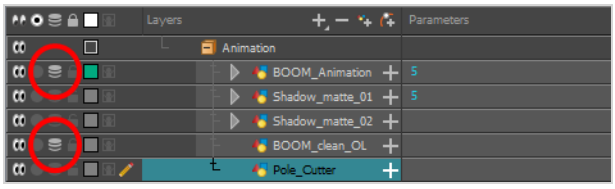


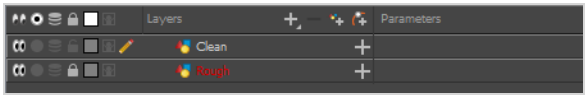
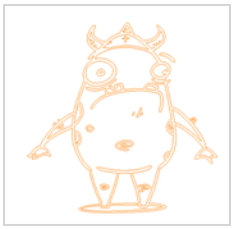
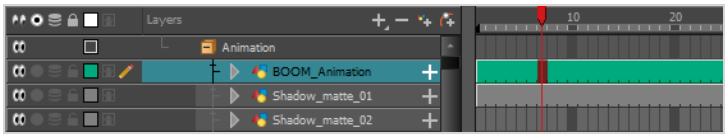
How to access the Timeline view

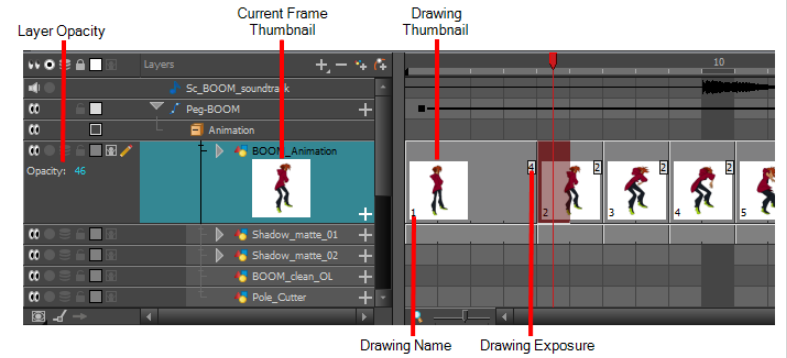
Do one of the following:

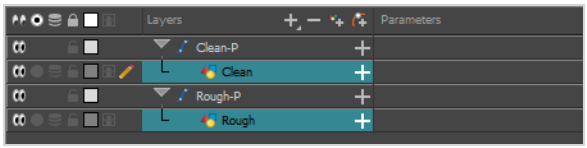
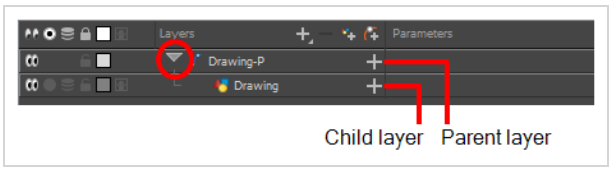
- From the top menu, select **Windows > Timeline**.
- From any of the other views, click the Add View ➕ button and select **Timeline**.

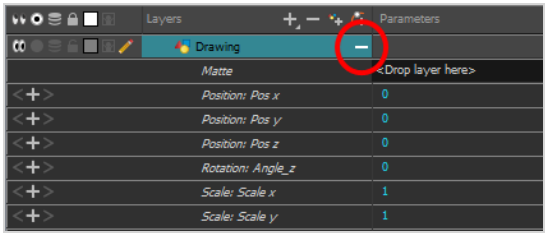
Icon	Section	Description
	View Menu	The View menu contains all the tools and options that you can use to manage models.
👀	Enable/Disable Layer	The Enable/Disable All button lets you enable or disable layers. Disabling a layer makes the scene behave as if it didn't exist, including when rendering the scene. For example: • A disabled drawing layer will be invisible. • A disabled sound layer will be mute. • A disabled peg layer will not affect the position of its child layers. To disable a layer, click the layer's Enable/Disable button or press D.  To enable a layer, click the layer's Enable/Disable button or press A.  **NOTE** Next to sound layers, the Enable/Disable layer button will look like this: 🔊. **TIP** You can enable or disable all layers by clicking on the Enable or disable all layers 👀 button in the top row.
	Enable/Disable Solo Mode	Solo mode allows you to only view specific layers in the Camera view and hide all others. When solo mode is enabled on one layer, only this layer

		will be visible. If solo mode is enabled on several layers, and only these layers will be visible. If solo mode is not enabled on any layer, all enabled layers will be visible. You can also use solo mode on sound tracks. If solo mode is enabled on any sound tracks, only those sound tracks will play during playback.  All layers are visible in the Camera view  Only layers with the Solo icon activated are currently visible in the Camera view. **TIP** When some layers are in solo mode, you can disable or re-enable solo mode on all layers that have it enabled by clicking on the Toggle solo mode on or off button in the top row.
	Add to/Remove from Onion Skin	For when the Onion Skin option is enabled, this allows you to enable or disable Onion Skin on specific layers.  **TIP** To activate the general Onion Skin preview, in the Tools toolbar, click the Onion Skin button
	Lock/Unlock Layer	The Lock/Unlock Layer button lets you prevent the selection or editing of a layer in the Camera view. To select some of the layers without selecting others, in the Timeline view, lock the layers you do not want to select. When a layer is locked, its name is displayed in red.

		 In the top menu, there is a series of locking options. Select **Animation > Lock >** *select one of the following*: • **Lock**: Locks the currently selected element. • **Unlock**: Unlocks the currently selected element. • **Lock All**: Locks all the elements in the Camera view. • **Unlock All**: Unlocks all the elements in the Camera view. • **Lock All Others**: Locks all the elements in the Camera view except the currently selected one.
	Toggle Outline Mode / Change Track Colour	Each drawing layer has a little colour swatch that has two functionalities: • **Single-clicking** a layer's colour swatch toggles Outline mode on or off. Outline mode makes the layer display as nothing but the outlines of its vector shapes in the Camera view, allowing you to see the drawing's shape without it blocking the view of layers behind it.  • **Double-clicking** the layer's colour swatch opens a colour picker dialog that allows you to change the layer's track colour. The track colour displays in the layer's track in the Timeline view, allowing you to give special visibility to specific layers. It also determines the colour of the layer's outlines if it's in outline mode. 
	Show/Hide Thumbnails	Expands the layer to display a thumbnail of the drawing in the current frame, as well as for each drawing in the timeline.

		NOTE By default, the timeline's zoom level does not allow enough horizontal space to fully display the thumbnails of drawings exposed for one or two frames only. To see the thumbnails for drawings with short exposure, you must increase the timeline's zoom level—see *Timeline Zoom* on page 730.  When a drawing layer is in Show Thumbnails mode: • An exposure indicator appears at the right of each exposed drawing in the timeline, indicating the amount of frames the drawing spans over. • An Opacity parameter appears to the left of the layer, allowing you to set the layer's opacity level. **TIP** You can show or hide thumbnails for all drawing layers by clicking on the Show/Hide All Thumbnails button in the top row.
	Opacity	Allows you to set the opacity level of the layer. Click and drag the value left or right to decrease or increase the layer's opacity. **NOTE** This parameter only displays for drawing layers that are in Show Thumbnails mode.
	Active Drawing Layer Indicator	This icon appears next to the active drawing layer, which is the layer you draw on when using drawing tools.

		NOTE The active drawing layer is not always the selected layer. For example, if you select a drawing layer, then a peg layer, the peg layer will be the selected layer, but the active drawing layer will remain the last drawing layer you selected, until you select another drawing layer.
	Add Layer	The Add Layers button lets you add new layers to the Timeline view. When you click the Add Layers button, a menu appears displaying the available layer types.
	Delete	The Delete Layers button lets you delete the currently selected layers in the Timeline view.
	Add Drawing Layer	The Add Drawing Layer button lets you automatically add a new drawing layer to the Timeline view. By default, the layer is named **`Drawing`**.
	Add Peg	The Add Peg button lets you add a peg layer to the timeline. If several layers are selected, a peg is added and parented to each layer. 
	Expand/Collapse	The Expand/Collapse button is used to display the children layers of a parent layer. Once a layer is parented to another layer, it is indented to the right and the Collapse/Expand Children button appears on the parent layer allowing you to show or hide the child layer. 
	Show/Hide Functions	The Show/Hide Functions button lets you display the functions embedded in each layer. The functions are the different coordinates and values used to record a layer's parameters at each frame. This information is stored on the function curves using keyframes. If the layer can be connected to another layer, for example to use a drawing layer as a matte, expanding a layer's functions will also list its possible connections. You can connect layers by dragging and dropping a layer onto another layer's connection.

		
	Add/Remove Keyframe	Adds a keyframe at the current frame of the selected function or removes the keyframe at the current frame of the selected function, if there is one already. **NOTE** This button only displays for function layers.
	Previous Keyframe	Moves the timeline cursor to the previous keyframe on the selected function. **NOTE** This button only displays for function layers.
	Next Keyframe	Moves the timeline cursor to the next keyframe on the selected function. **NOTE** This button only displays for function layers.
	Function Menu	Displays the Function menu, which allows you to create a new function for the function layer, or to link it to an existing shared function. **NOTE** This button only displays for functions layers, in the Parameters column—see *Show/Hide Parameters* on page 729.
	Function Keyframe	A frame where the value for one or more of the layer's functions is preset. The position of each layers in key poses for digital animation is recorded in function keyframes. You can grab and move function keyframes as well as copy, cut, paste and delete them.

<table>
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<td>
TIP
If you have a keyframe and a drawing selected simultaneously, and you wish to delete the keyframe without deleting the drawing's exposure by doing one of the following:

In the Timeline toolbar, click on the Delete Keyframe KF button.
Press F7.
From the top menu, select Animation > Delete Keyframe

NOTE
If a collapsed layer has children that have function keyframes, you will see a white square instead.
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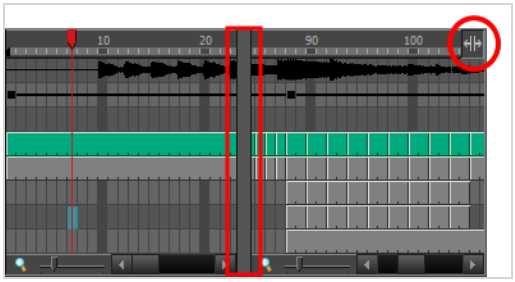
<tr>
<td></td>
<td>Split</td>
<td>
The Split button lets you split the Timeline view in two sections, allowing you to see two different portions of the Timeline view. This can be useful if you need to often switch between two specific points of a lengthy scene.


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<tr>
<td></td>
<td>Drawing Exposure</td>
<td>
In the Timeline view, when a drawing is exposed, it is represented by a grey block that extends from the first frame it is exposed to the last frame it is exposed.

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<tr>
<td></td>
<td>View Modes</td>
<td>
Lets you choose between different view modes allowing you to decide which layers are listed in the Timeline view. This can be useful if you're working on a scene with a lot of layers, and you only want layers you will be working on to appear in the Timeline view so as to declutter it. The following view modes are available:

Normal View Mode will show all the layers in your scene.
Selection Only Mode will hide all the layers that are not currently selected, leaving only the currently selected layers in the Timeline view.

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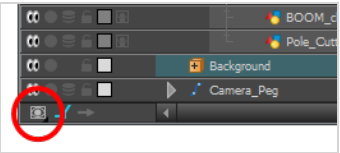
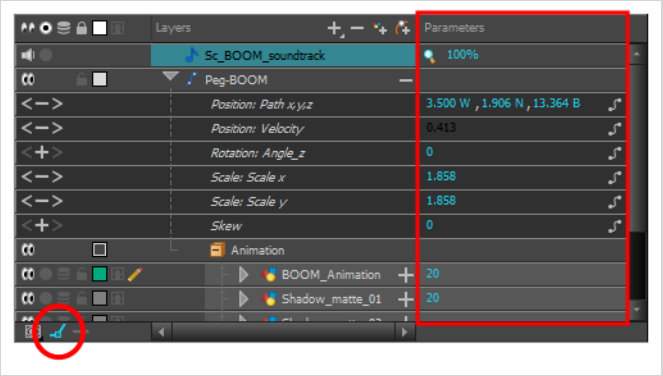
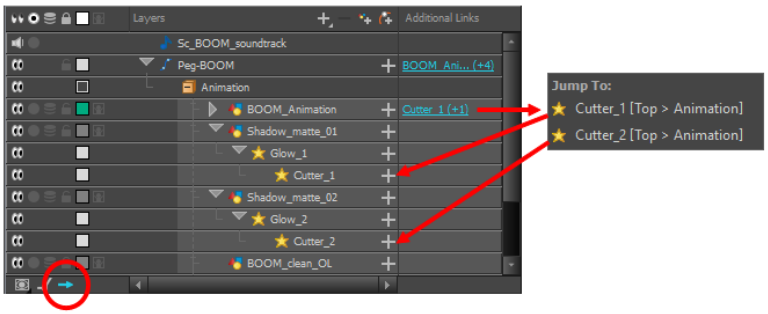
</table>

		• View Tagged Layers will only show layers which you have tagged.  **TIP** You can tag a layer by doing one of the following: • Right click on the layer and select **Tag > Timeline Tag**. • Open the Timeline view menu and select **Edit > Tag > Timeline Tag**.
	Show/Hide Parameters	Shows or hides the Parameters column, right of the Layers column. The Parameters column displays information on the layer at the current frame, depending on the type of layer it is: • If the layer is a drawing, it displays the name of the drawing at the current frame. • If the layer is a function, it displays the value of the function at the current frame. • If the layer is a sound track, it displays the sound track's volume.  Using the mouse, you can drag the parameter left and right to change its value. This is especially useful for quickly changing a drawing's exposure at the current frame.
	Show/Hide Additional Links	Shows or hides the Additional Links column. The Additional Links column displays layers that are connected under the layer, but for other purposes than being the parent of those layers. For example, if a layer is used as the matte of an effect, the effect will be displayed in that layer's Additional Links.

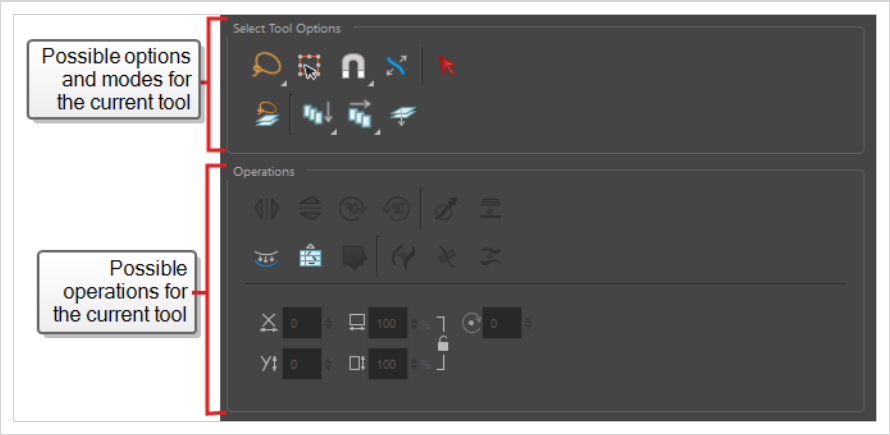
		If more than one layers are in a layer's Additional Links, only the first of these layers will be displayed, followed by the amount of extra linked layers there are. By clicking on the Additional Links, you can open a menu listing the linked layers, and click on one of these layers to navigate to it. In the following example, the BOOM_Animation layer is used as the matte of Cutter_1 and Cutter_2: 
	Timeline Zoom	Reduces or increases the width of frames in the Timeline view. Move the slider right to increase the width or left to reduce it. You can also press 2 to zoom in and 1 to zoom out when the Timeline view is focused on. If you want to reset the Timeline view's zoom, click on the Timeline Zoon icon left of the slider.

Tool Properties View

T-HFND-004-002

The Tool Properties view contains the most common options and operations related to the currently selected tool. When you select a tool from the Tools toolbar, the Tool Properties view updates.

For example, if you choose the Select tool, the Tool Properties view will display the options and operations related to it, such as Snap to Contour, Apply to All Drawings, Flip Horizontal, and Flatten.



NOTE

To learn more about the options appearing in the Tool Properties view, see *Tools Properties* on page 416.

How to access the Tool Properties view

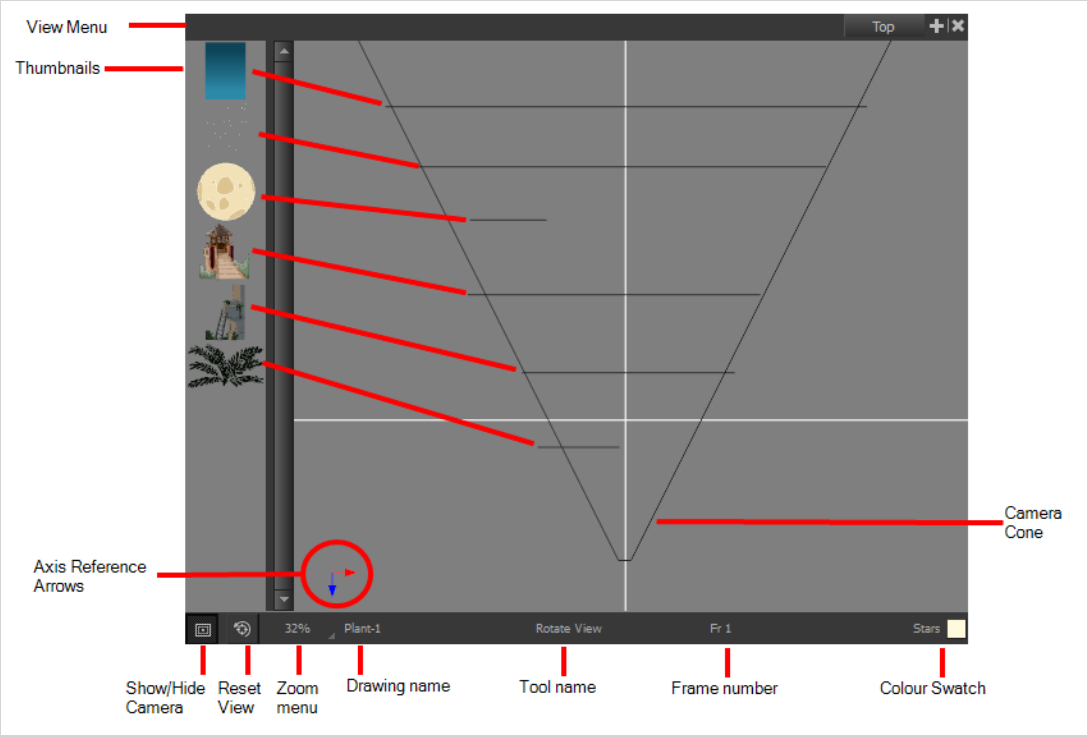
Do one of the following:

- From the top menu, select **Windows > Tool Properties**.
- From any of the other views, click the Add View ➕ button and select **Tool Properties**.

Top View

T-HFND-008-014

The Top view is used mainly for multiplane scenes and to position elements in 3D space. It allows you to see the scene's stage from above. This lets the camera cone and the spacing between the elements be seen.

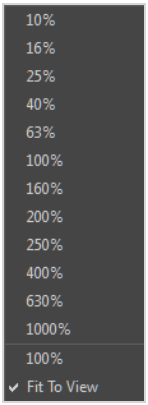


How to access the Top view

Do one of the following:

- From the top menu, select **Windows > Top**.
- From any of the other views, click the Add View ➕ button and select **Top**.

Icon	Section	Description
	View Menu	The View menu contains all the tools and options that you can use to work in the Side view.
	Thumbnails	A thumbnail of each drawing layer in the scene. The order of the thumbnail images is based on each element's FB position in the scene space. You can see a representation of the FB position of each layer in the camera cone.

	Camera Cone	The camera cone represents the camera's position and field-of-view (FOV).
	Axis Reference Arrows	The axis reference arrows let you maintain your orientation when navigating in the view.
	Show/Hide Camera	Shows or hides camera frame in the Perspective view.
	Reset View	Resets the pan, rotation, and zoom of the Perspective view.
	Zoom Menu	This field displays the current zoom level in the Perspective view. You can use the Zoom level drop-down menu to select a specific zoom level from the list. Zoom levels from 2.5% to 6400% are available; you can also select Fit To View to automatically use a zoom level that lets you see all your scene layers and information in the Perspective view at once. 
	Layer Name	This field displays the currently selected layer and drawing name.
	Tool Name	This field displays the currently selected tool.
	Frame Number	This field displays the currently selected frame of your animation.
	Colour Swatch	This field displays the currently selected colour in the palette.

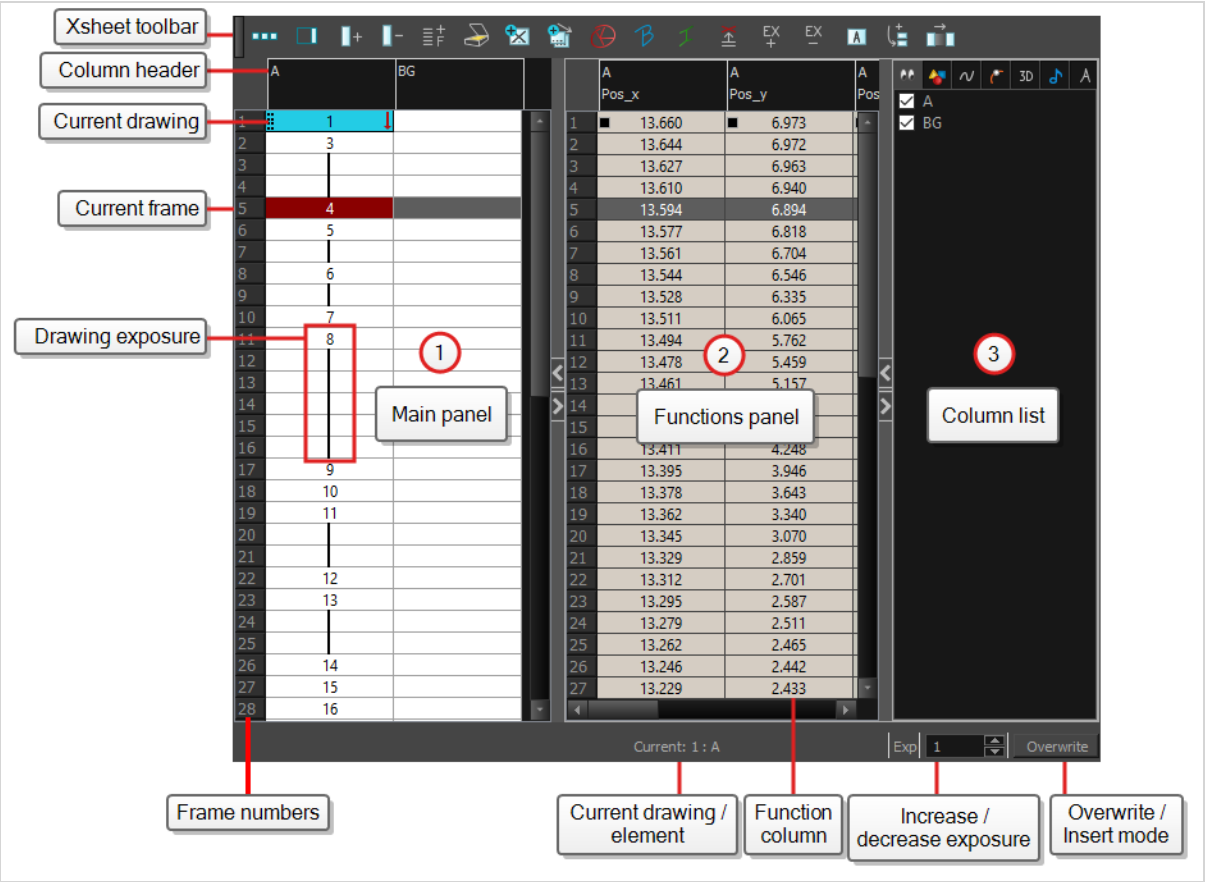
Xsheet View

T-HFND-006-003

The Xsheet view lets you read the timing vertically by displaying it in a grid, with each drawing layer represented by a column, each frame of your scene represented by a row, and each exposed drawing displayed by its name in the cells. It is meant to work like a traditional animation exposure sheet.

Using the functions panel, you can also view the functions and keyframes of the motion paths for the selected column, with the value of those functions for each frame listed in the cells.

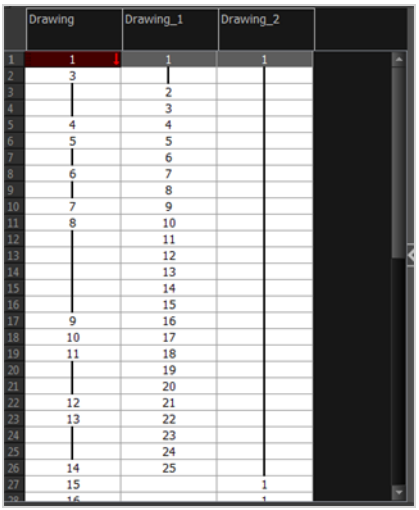
Contrary to the Timeline view, the Xsheet view does not display pegs, effects or layer hierarchy. Hence, it is optimized for traditional and paperless animation, whereas the Timeline view is optimized for digital or *cut-out* animation.

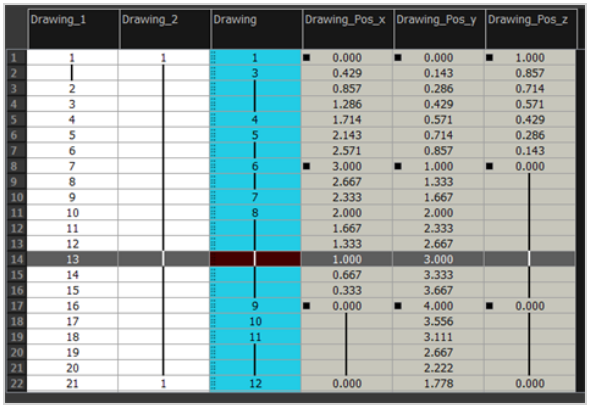
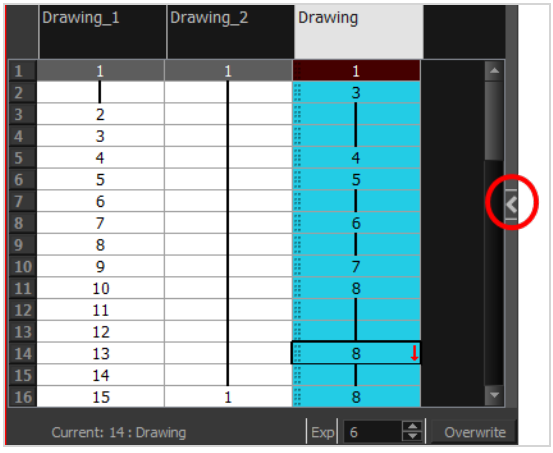


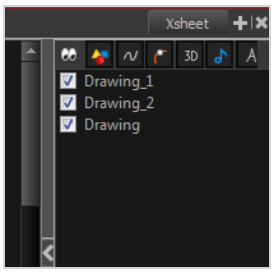
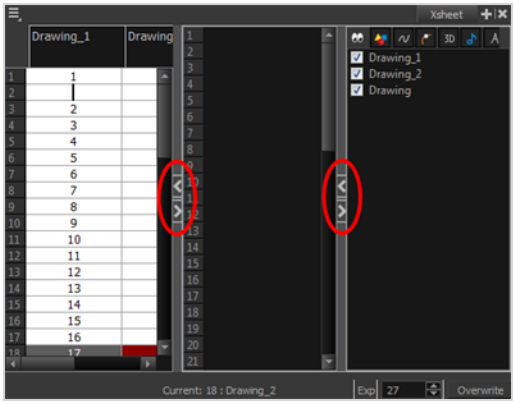
How to access the Xsheet view

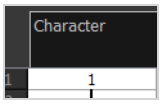
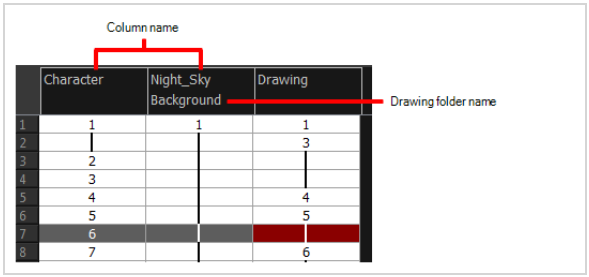
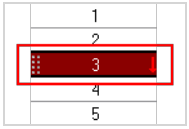
Do one of the following:

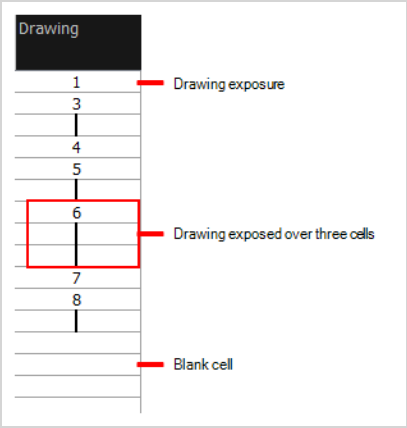
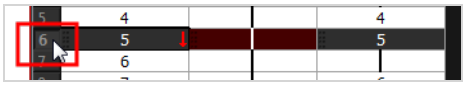
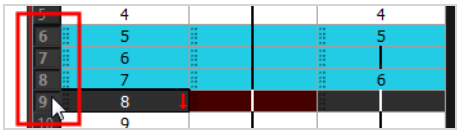
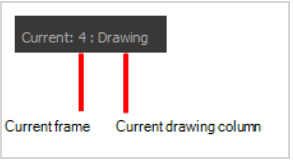
- From the top menu, select **Windows > Xsheet**.
- From any of the other views, click the Add View ➕ button and select **Xsheet**.

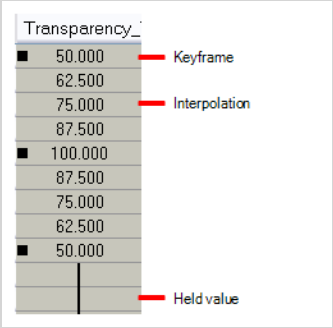
Icon	Section	Description
	View Menu	The View menu contains all the tools and options that you can use to manage columns and timing.
	View Toolbar	The view toolbar contains all the tools and options you can use in the Xsheet view to manage columns and timing.
	Xsheet Main Section	The Xsheet view has three sections. By default, only the main section is visible. It displays the drawing layers, also known as *drawing columns*.  When using advanced compositing and animation techniques, unconnected functions (motion paths) also appear in the main section. Unconnected functions mean that some motion paths are not attached to any particular layer. When you reconnect functions to a layer, they are still visible in the main section.

		
	Functions Section	The Functions section is used for more advanced techniques. This section displays the functions (paths) related to the selected layer in the Timeline view. By default, the Functions section is hidden. In the Xsheet view, click the Expand button located on the right side of the main section. Click on the same button to collapse it. You can also use the Show Column List button in the Xsheet View toolbar. If you select a drawing column in the main section of the Xsheet view, the function columns will not be displayed. You must select the layer from the Timeline view. 
	Column List Section	The Column List section allows you to show and hide columns in the Xsheet view. When you hide a layer in the Xsheet view, it is also disabled in the Timeline view.

		 You can use the Column List to hide individual columns or hide an entire column type (drawing or function) from the Xsheet view. By default, the Functions section is hidden. In the Xsheet view, click the Expand button on the right side of the main section to show the Functions section. Click on the same button to collapse it. You can also use the Show Column List button in the Xsheet toolbar. Go to the Xsheet view menu and select **View > Show Column List**. Click the Expand button on the right side of the Functions section to display the Column List section. 
	Column Header	Each column available in the Xsheet view has a header displaying the column's name. The column's name is the same as the corresponding timeline layer. If you rename one or the other, they will both be renamed. A quick access menu is available when you right-click. This menu contains the command affecting an entire column such as renaming, changing the default colour, or deleting a column. The tooltip that appears when you hover at the top of each Xsheet column shows the folder path to the

		source drawings for that column.  In Harmony, the column header shows the layer's name and the name of the drawing folder to which it is linked. If the name of the layer is the same as the drawing folder, the drawing folder's name will not be displayed. To modify the name of the element folder independently from the column and layer name, you must select the Advanced Element Mode option preference in the Advanced tab of the Preferences dialog box. 
	Current Drawing	A drawing selected in dark red indicates that the drawing is currently displayed in the Drawing and Camera views. The current drawing selection is not linked to the drawing displayed in the Camera view since drawings from each visible layer are displayed at once. 
	Current Frame	The darker frame appearing in the Xsheet view represents the current frame.
	Drawing Exposure	In the drawing columns, you can see the drawing names and their exposure. You can use any alphanumeric symbol to name your drawing. When a drawing is exposed over more than one cell, a vertical black line is displayed to indicate the continuity of the exposure. When there is no drawing in a cell, the cell

		will be blank. 
	Frame Numbers	On the left side of the Xsheet view, the frame numbers are shown indicating where you are. These read vertically instead of being displayed horizontally as they are in the Timeline view. • To go to a particular frame, click the frame number.  • To select an entire range of frames, click and drag a selection downwards. 
	Current Frame Display	At the bottom-right of the Xsheet view, you can see the current frame number, as well as the column containing the drawing currently displayed in the Drawing view. 
	Functions Column	The functions columns are displayed in the Functions section of the Xsheet view. They represent the motion and rotation you applied to a drawing layer.

		A function column can also be related to an effect. Selecting the effect layer shows you the corresponding function column in the Xsheet view. The function columns display the position value or effect value on each cell. If there is a keyframe on a cell, a black square is displayed. Holding the same value for several frames displays a vertical black line. 
	Increase/Decrease Exposure	You can quickly increase or decrease the exposure of the selected cell by clicking on the up and down arrows in the Increase/Decrease Exposure field.
	Overwrite/Insert Modes	The Overwrite/Insert button allows you to decide the way the values are inserted into the Xsheet.