



Harmony
Essentials

Toon Boom Harmony Essentials V15.0 Reference Book



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Reference

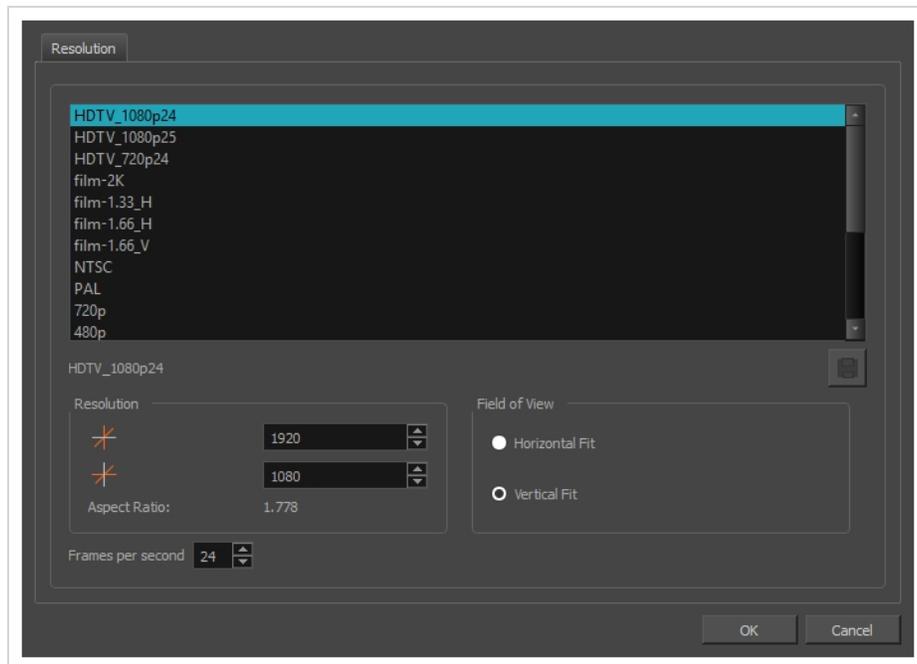
Harmony has several commands, dialog boxes, and buttons. The Reference section lists all of them along with the matching definition. To understand how to use these functions in a production context, read the User guide.

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.

How to access the Add Column dialog box

1. Do one of the following:

- In the Xsheet menu, select **Columns > 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.

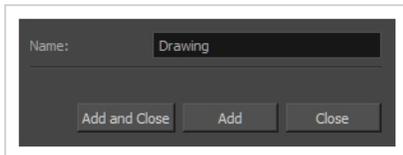
Bitmap Format	Lets you select the type of bitmap image to insert in the column. Select SCAN from the list if you are planning to scan drawings using the Toon Boom Harmony Scan module.
Scan Type	If you chose SCAN from the Bitmap Format list, select the kind of scanning you want to achieve.
Field Chart	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.



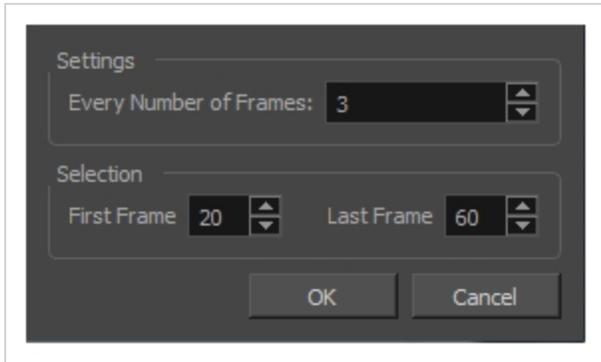
How to access the Add Drawing Layer dialog box

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.
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.

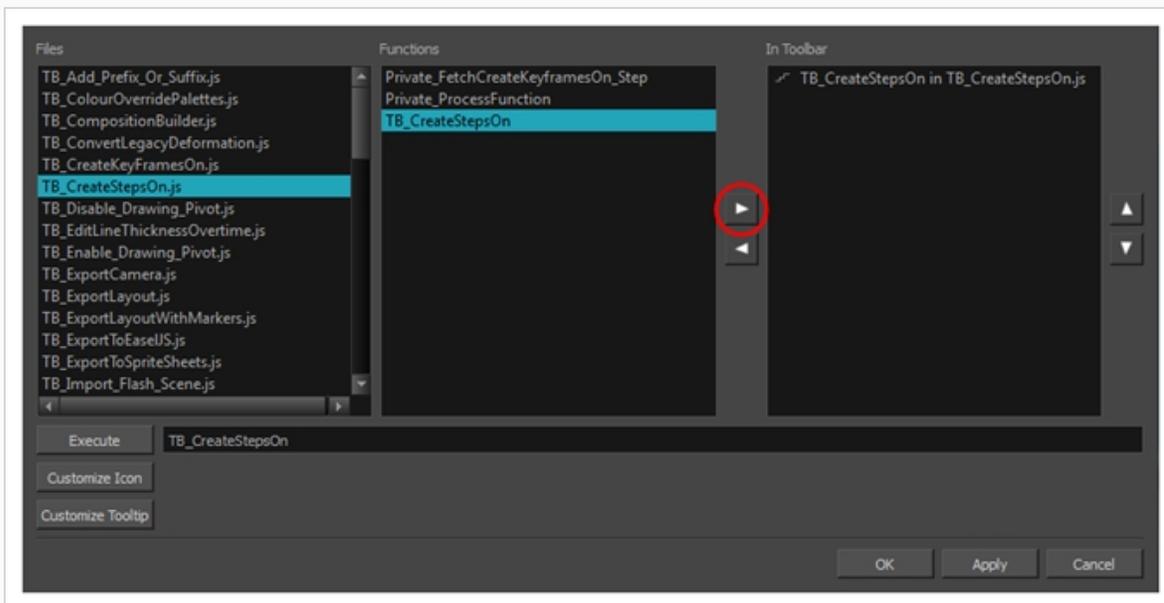
Create Function Step On Dialog Box

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.

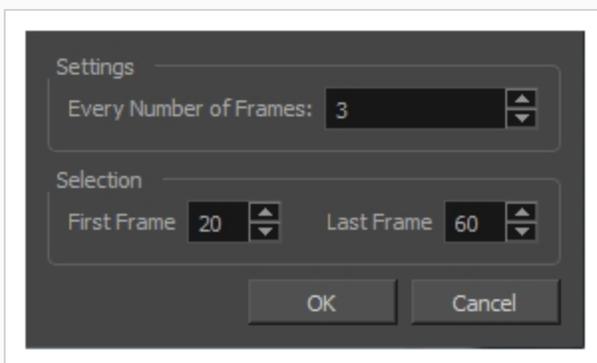


- Click on the Add script to toolbar \triangleright button.

The TB_CreateStepsOn script \checkmark button is added to the Scripting toolbar.

- Click **Apply**.
- Click **OK**.
- In the Timeline view, select the layer whose parameter values you would like to hold.
- In the Scripting toolbar, click on the TB_CreateStepsOn script \checkmark button.

The Create Function Step On dialog box appears.

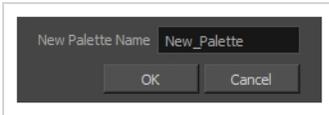


Parameter	Description
Settings	

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	Lets you enter a name for the new palette.

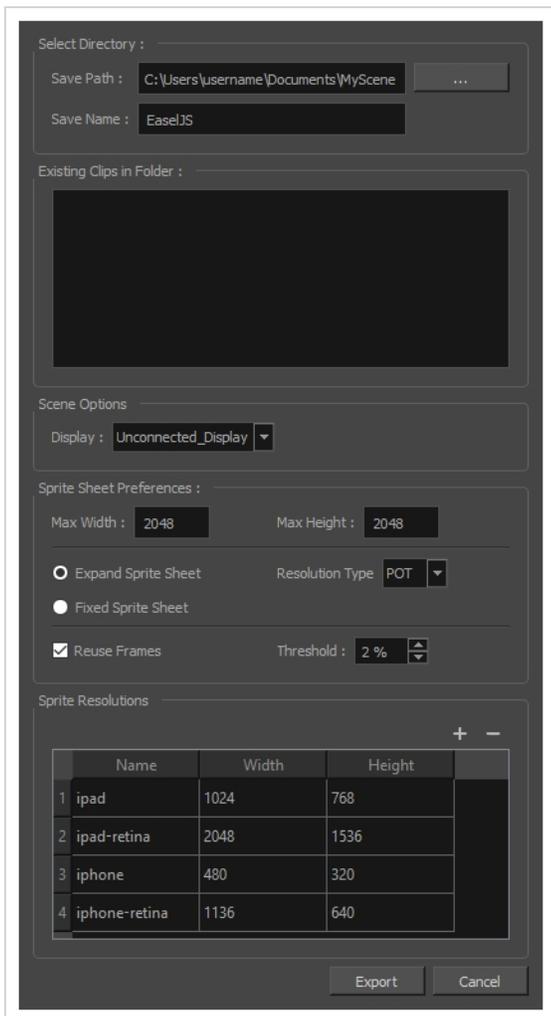
Export to Easel JS Dialog Box

The Export to Easel JS dialog allows you to export your game character as a sprite sheet, in which each animation frame in your scene is rendered as an individual sprite.

Since the Export to Easel JS dialog renders each frame in your scene, there will not be any visible difference between the way your character is rendered by Harmony and how it is rendered in your game engine.

However, the Export to Easel JS dialog has the following important limitations:

- Contrary to the Export to Sprite Sheet dialog, the Export to Easel JS only outputs a sprite sheet and an XML document delimiting each sprite in the sheet. Hence, they cannot be imported into Unity using the Harmony Game SDK package. You must program the logic to import those sprite sheets into your game engine yourself.
- The Export to Easel JS dialog does not export anchors and props.
- Fully rendered sprite sheets are much heavier in size than rigged sprite sheets, which is what the Export to Sprite Sheet dialog exports.



How to access the Export to Easel JS window

1. Do one of the following:

- In the top menu, select **Windows > Toolbars > Game**.
- Right-click on any existing toolbar and select **Game**.



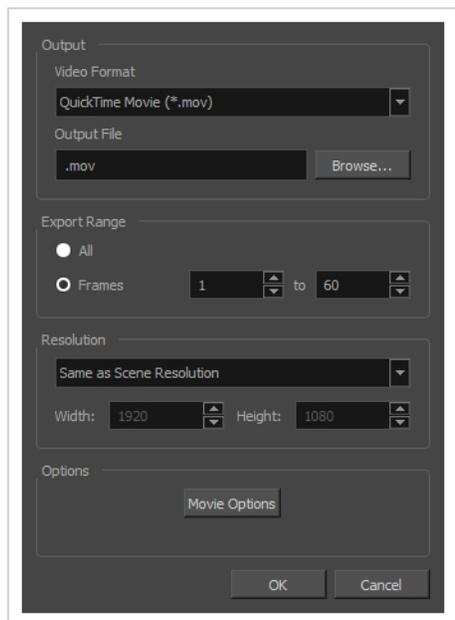
2. Click the  **Export to Easel JS** button.

Parameter	Description
Select Directory	
Save Path	The target directory in which to export your sprite sheets.
Save Name	The name of the folder in which the spritesheet and its metadata will be saved. This folder will be located inside the Save Path folder. If it does not exist, it will be created. This will also be the name of your asset in Unity.
Existing Clips in Folder	
Existing Clips List	If you already exported clips for this character, this will display the list of clips that already exist in the target directory.
Scene Options	
Display	The Display from which to render your character. If the Unconnected_Display option is selected, all of the visual information in your scene will be rendered. <div data-bbox="561 1619 1427 1759" style="border: 1px solid green; padding: 5px; margin-top: 10px;">  NOTE You can only create Displays in Harmony Premium. </div>
Sprite Sheet Preferences	

Max Width	The maximum width, in pixels, of the exported sprite sheets.
Max Height	The maximum height, in pixels, of the exported sprite sheets.
Expand Sprite Sheet	Creates sprite sheets in the smallest possible size to contain all the sprites, up until it reaches the maximum width and height.
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	<p>Allows you to choose between one of these two resolution types:</p> <ul style="list-style-type: none"> • 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	
Add Resolution	Allows you to add a resolution in which to export your sprite sheets.
Remove Resolution	Removes the selected resolution from the resolutions list.
Resolutions List	The list of resolutions in which the sprite sheet will be exported. The whole sprite sheet will be rendered once for each resolution in the list.

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**.

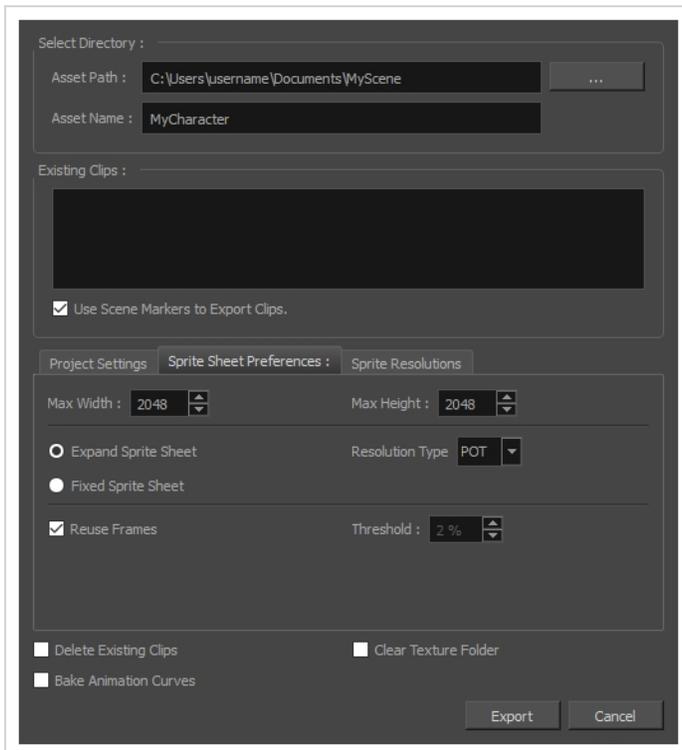
Parameter	Description
Output	
Video Format	<p>Choose among the following output formats:</p> <ul style="list-style-type: none"> • Quick Time Movie (*.mov): Available on Windows, macOS and GNU/Linux. • Windows Media Video (*.wmv): Available on Windows only. <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p> NOTE On Windows and macOS, Apple QuickTime must be installed in order to export QuickTime movies. On GNU/Linux, Harmony uses a more limited, open source QuickTime-compatible library which does not require additional software.</p> </div>

Output file	The full path and file name of the movie file to export.
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	Lets you 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	<p>Lets you specify a resolution to export in relative to your scene's actual resolution:</p> <ul style="list-style-type: none"> • 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: Lets you specify the preferred resolution of your exported video file in the Width and Height fields below.
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.
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—see QuickTime Movie Settings Dialog Box and Windows Media Video Settings Dialog Box .

Export to Sprite Sheet Dialog Box

The Export to Sprite Sheets dialog allows you to export your rig into a sprite sheet and its animation into animation metadata, in a package that can be directly imported into Unity using the Harmony package for Unity.

To export all the clips for your character, you will need to start by exporting the sprite sheet from your base scene, then open each scene version and export their animation clip one by one.



How to access the Export to Sprite Sheets window

1. Do one of the following:

- In the top menu, select **Windows > Toolbars > Game**.
- Right-click on any existing toolbar and select **Game**.



2. Click the  **Export to Sprite Sheets** button.

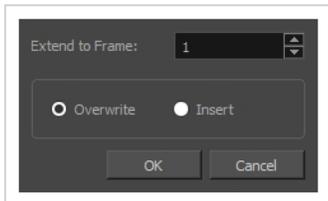
Parameter	Description
Select Directory	
Asset Path	The target directory in which to export your sprite sheets.
Asset Name	The name of the folder in which the spritesheet and its metadata will be saved. This folder will be located inside the Save Path folder. If it does not exist, it will be created. This will also be the name of your asset in Unity.
Existing Clips	
Existing Clips List	If you already exported clips for this character, this will display the list of clips that already exist in the target directory.
Use Scene Markers to Export Clips	<p>Uses scene markers to define the export range, instead of exporting the entire scene.</p> <div style="border: 1px solid #c8e6c9; padding: 10px; margin-top: 10px;">  NOTE Scene markers are not supported in Harmony Essentials. They are supported in Harmony Advanced and Harmony Premium. </div>
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 Preferences	
Max Width	The maximum width, in pixels, of the exported sprite sheets.
Max Height	The maximum height, in pixels, of the exported sprite sheets.
Expand Sprite Sheet	Creates sprite sheets in the smallest possible size to contain all the sprites, up

Parameter	Description
	until it reaches the maximum width and height.
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	<p>Allows you to choose between one of these two resolution types:</p> <ul style="list-style-type: none"> • 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	
Add Resolution	Allows you to add a resolution in which to export your sprite sheets.
Remove Resolution	Removes the selected resolution from the resolutions list.
Resolutions List	The list of resolutions in which the sprite sheet will be exported. The whole sprite sheet will be rendered once for each resolution in the list.
Delete Existing Clips	Select this option to delete clips that you already exported in the export directory.
Bake Animation Curves	Instead of saving your character's animation as interpolations, this bakes them into frame-by-frame geometric transformations. This can help increase performance in your game, as your game engine will not have to interpolate your

Parameter	Description
	character's animations on its own. It will however create a heavier package.
Clear Texture Folder	When creating the sprite sheet, Harmony creates temporary files in a folder named texture inside the scene directory. Check this option to automatically delete this folder after exporting your sprite sheets.

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.

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.

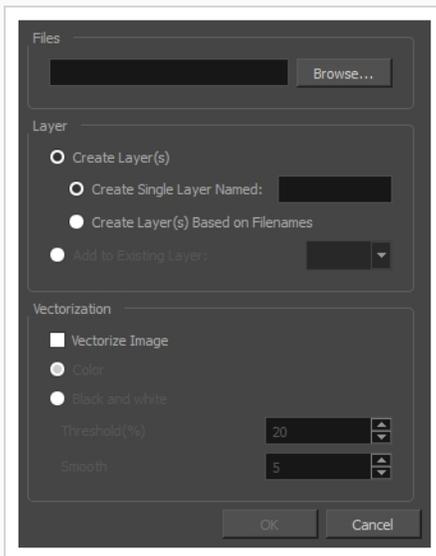
Also, you can choose to import bitmap images on bitmap or vector layers depending on your project..

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.

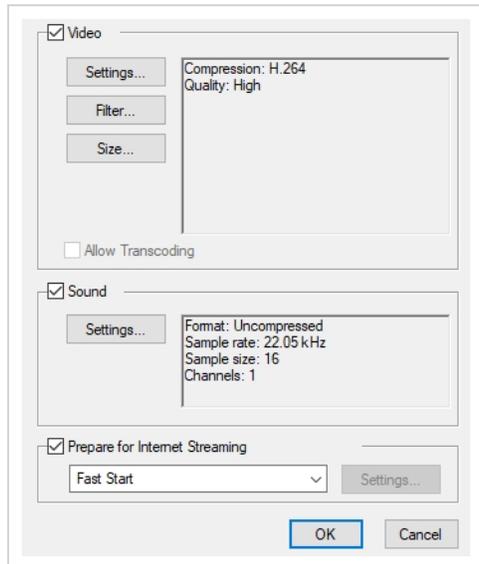


Parameter	Description
Files	
Browse	Lets you find and select images on your computer.
Layer	

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.
Vectorization	
Vectorize Image	Imports a drawing and converts it to a Toon Boom vector drawing.
Colour	Imports bitmaps as vector objects with their image as a bitmap texture. The resulting drawing can be drawn or erased over, but not repainted or tweaked.
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.
Threshold	Determines what values in the scanned image will be considered as part of the drawing, and what will be ignored and eliminated in the vectorized drawing. The lower the value, the darker the image and vice versa.
Smooth	Determines how smooth the lines will be. The lower the value, the more detail will be retained. The higher the value, the more polished and easy to edit the lines will be.

QuickTime Movie Settings Dialog Box

The Movie Settings dialog box lets you set the compression settings for the movie you will export.



NOTE

On Windows, [Apple QuickTime](#) must be installed to be able to export QuickTime Movie (.mov) files.

How to access the Movie Settings dialog box

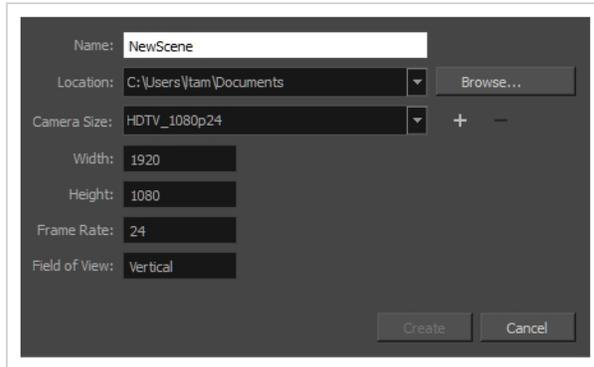
1. From the top menu, select **File > Export > Movie**.
The Export Movie dialog box opens.
2. Set Movie Format to **QuickTime Movie (*.mov)**.
3. Click on the **Movie Settings** button.

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 on page 56 .
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 on page 54.
Prepare for Internet Streaming	<p>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.</p> <ul style="list-style-type: none">• 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

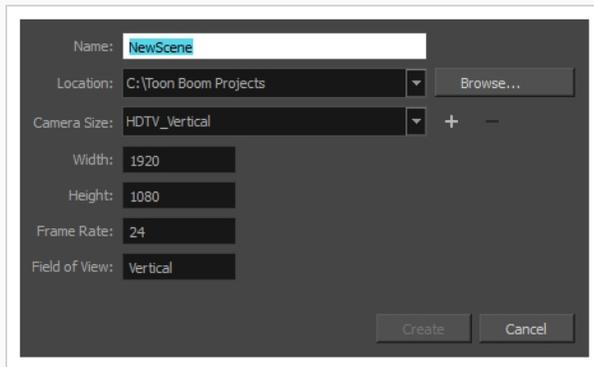
The New Scene window lets you create a new scene.



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.

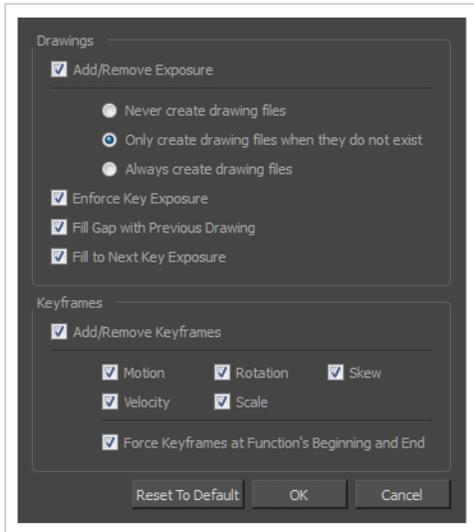


Parameter	Description
Name	Lets you type in a name for the new scene.
Location	Lists the locations you used most frequently for storing scenes.
Browse	Opens a browser in which you can specify a location for the new scene that

	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.

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	Fills selected area till the next key exposure.

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.

Paste Special Dialog Box

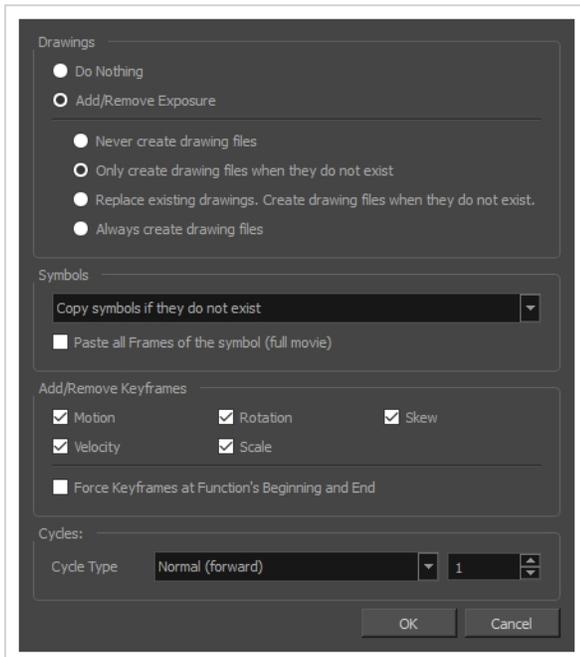
The Paste Special dialog box lets you determine how templates and symbols are imported in the Timeline view.

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.
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.	
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.
Cycles	
Cycle Type	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.
Number of Cycles	Lets you set the number of cycles.

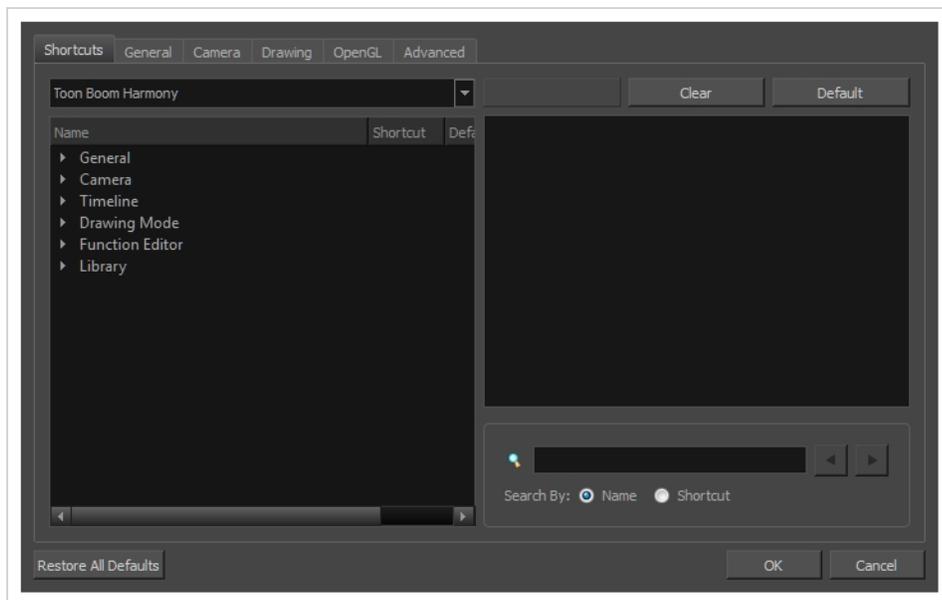
Preferences Dialog Box

The Preferences dialog box lets you adjust preferences to suit your work style, allowing you to work more efficiently.



NOTE

To learn more about the individual preferences, refer to the Preferences guide.



NOTE

Some preferences require you to exit and restart the application, or close a view and reopen it.

How to access the Preferences dialog box

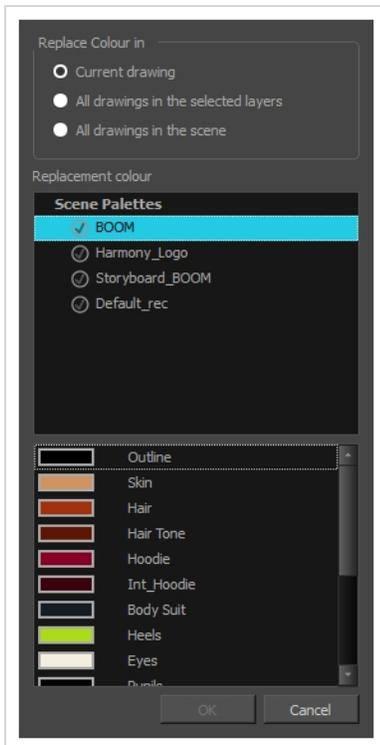
Do one of the following:

- Select **Edit > Preferences** (Windows/Linux) or **Harmony Essentials > Preferences** (macOS).
- Press **Ctrl + U** (Windows/Linux) or **⌘ + U** (macOS).

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 Dropper  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	<p>Allows you to select which drawings will be affected by the colour replacement:</p> <ul style="list-style-type: none"> • 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 Timeline or Xsheet view. <div data-bbox="643 793 1430 932" style="border: 1px solid #c8e6c9; padding: 10px; margin: 10px 0;">  NOTE This option can work with several drawing layers selected. </div> <ul style="list-style-type: none"> • All drawings in the scene: Replaces the selected colour in every drawing in the current scene.
Replacement Colour	<p>Allows you to select the palette and colour or texture swatch to replace the selected colour or texture with.</p>

Scene Settings Dialog Box

The Scene Settings dialog box lets you select settings for the resolution of your scene.

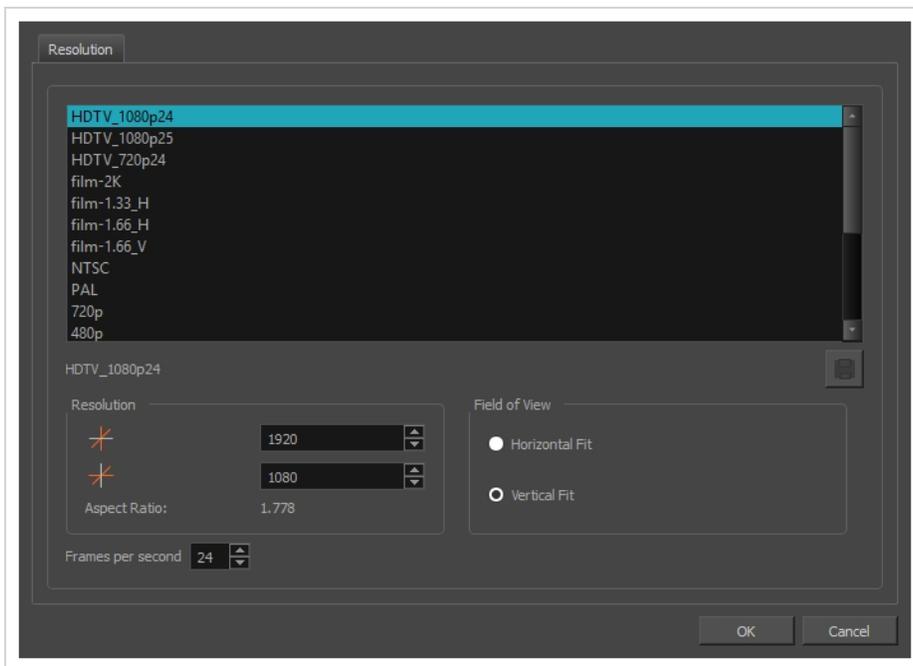
You are already required to select resolution settings when creating a scene, but those settings can also be modified later using the Scene Settings dialog box.

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.

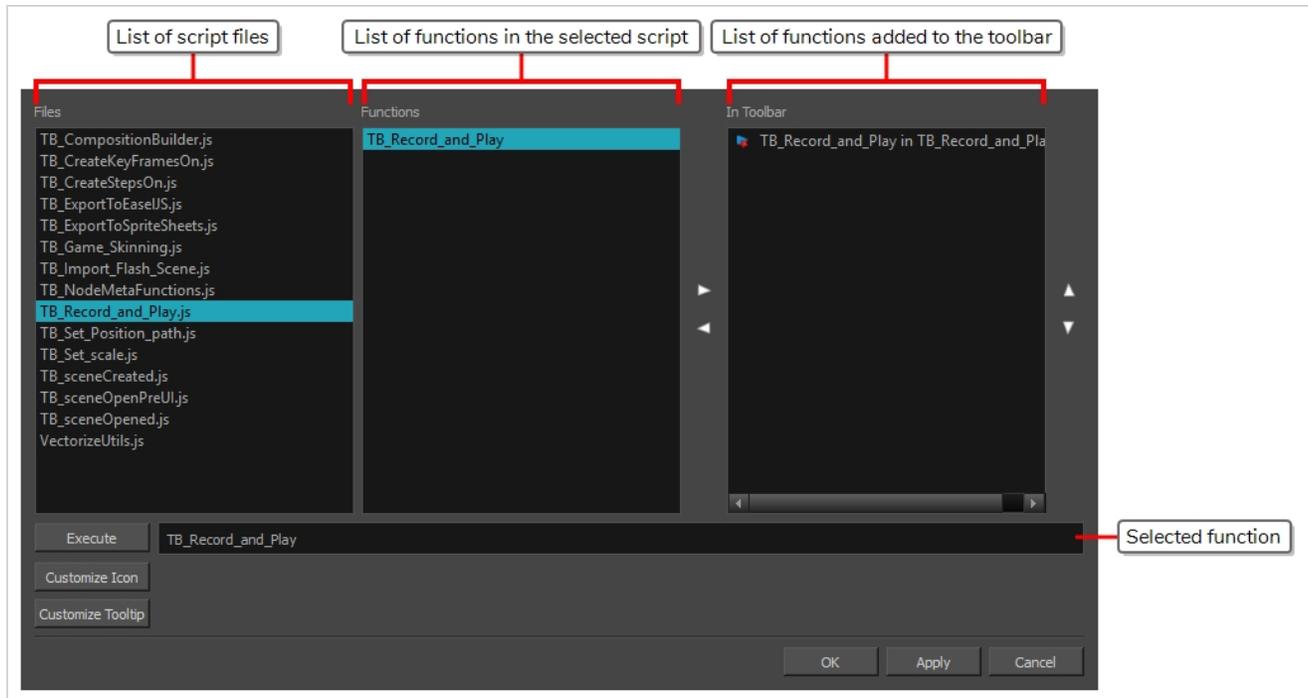
Icon	Parameter	Description
	Resolution Presets	<p>You can select your project's resolution (camera frame size) from this preset list.</p> <ul style="list-style-type: none"> • HDTV_1080p24: The standard definition for high definition television at 24 frames per second, mostly used in the Americas and some Asian countries that used the NTSC standard for analogue television.

		<ul style="list-style-type: none"> • 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_720p24: The former standard high definition resolution at 24 frames per second. • film-2K: A standard HD 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. • 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. • 720p-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. • 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

		<p>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.</p>
	Resolution	<p>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.</p>
	Scene Width	<p>The width of the resolution for the scene, in pixels.</p>
	Scene Height	<p>The width of the resolution for the scene, in pixels.</p>
	Aspect Ratio	<p>Displays the ratio between the horizontal and vertical dimensions of the scene. For example, if the scene width and height are the same value, this ratio equals 1. The standard aspect ratio for widescreen televisions is 1.777. For legacy displays, it is 1.333.</p>
	Frame per second	<p>The amount of frames in your scene that should play out every second. The standard framerate for film production is 24 fps. However, televisions in some countries play at 25 fps.</p>
	Field of View	<p>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.</p> <ul style="list-style-type: none"> • 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. <div style="border: 1px solid green; padding: 10px; margin-top: 10px;"> <p> NOTE</p> <p>Objects in Harmony are positioned in fields, based on a traditional animation grid which extends to 12 fields from the center in each direction, and which has 4:3 proportions by default. In a scene with 4:3 proportions, this grid fits the camera field perfectly. However, since most scenes have an aspect ratio of 16:9, the grid does not fit the camera field perfectly. If the field of view is Horizontal Fit, the grid's width will match the scene's width, but will extend beyond its vertical edges. If the field of view is Vertical Fit, the grid's height will match the scene's height, will not extends to its horizontal edges.</p> </div>

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. In the Scripting toolbar, click on the  Manage Scripts button.

The Scripts Manager dialog box opens.

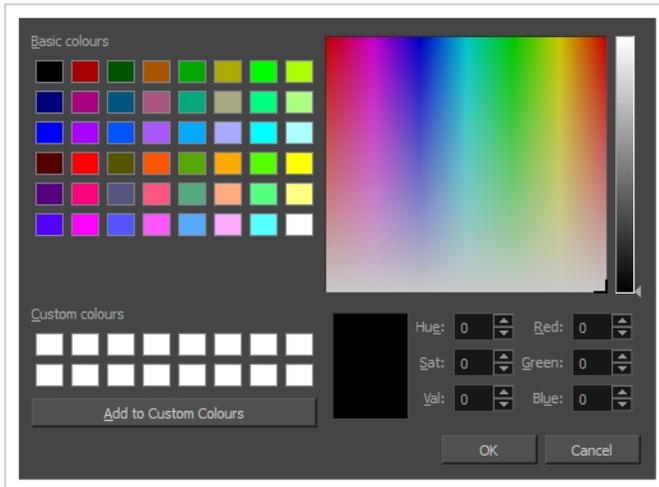
Parameter	Description
Files	A list of the available JavaScript files.
Functions	A list of the available functions for the selected script.
In Toolbar	The list of script functions already added to the Scripting toolbar.

Execute	<p>Runs the selected function.</p> <div data-bbox="565 247 1430 386" style="border: 1px solid #00a0e3; padding: 5px;">  <p>TIP Press Esc to interrupt the execution of the script.</p> </div>
Customize Icon	<p>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.</p>
Customize Tooltip	<p>Allows you to type in a custom tooltip for the toolbar button.</p>

Select Colour Dialog Box

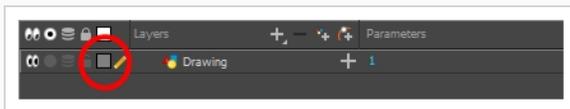
The Select Colour dialog box lets you set the colour of layers and columns. Using colours for layers and columns helps to differentiate them visually, making them easy to identify.

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**.

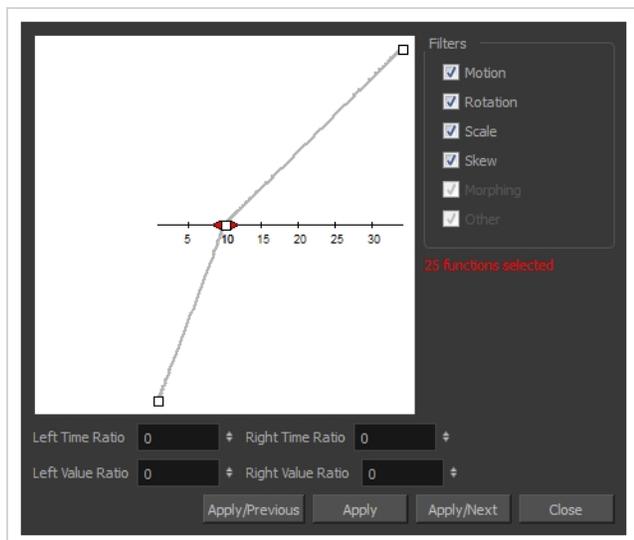
The Select Colour dialog box opens.

Parameter	Description
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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..
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.

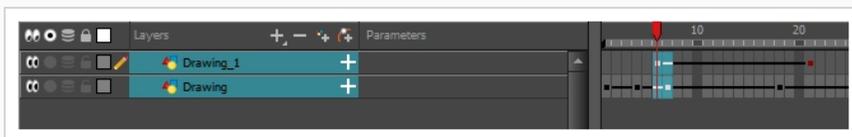
Set Ease for Multiple Parameters Dialog Box

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.

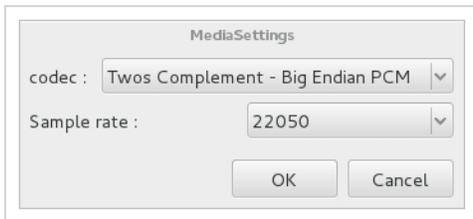
The Set Ease For Multiple Parameters dialog box opens.

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

	<p>Rotation: Applies the easing parameters to the selected Angle functions.</p>
	<p>Scale: Applies the easing parameters to the selected Scale functions.</p>
	<p>Skew: Applies the easing parameters to the selected Skew functions.</p>
	<p>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.</p>
	<p>Other: Applies the easing parameters to all the other the selected functions, such as all functions created to animate effect parameters.</p>
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.

OpenQuickTime Sound Options Dialog Box

The OpenQuickTime Video Options dialog box is used to configure the audio compression settings when exporting a QuickTime movie file on Linux.



On Windows and macOS, Harmony uses Apple QuickTime to export QuickTime movies, and hence uses QuickTime's interface to configure video and audio compression settings for exporting movies. Since QuickTime is not supported on GNU/Linux, Harmony uses the OpenQuickTime library to create QuickTime-compatible movie files, which have a more limited set of compression settings.

How to access the OpenQuickTime Sound Options dialog box

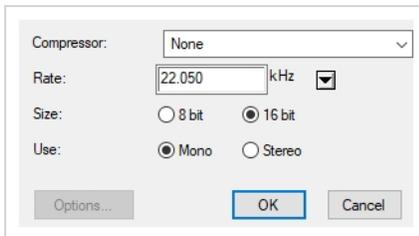
1. From the top menu, select **File > Export > Movie**.
The Export Movie dialog box opens.
2. Set Movie Format to **QuickTime Movie (*.mov)**.
3. Click on the **Sound Options** button.

Parameter	Description
Codec	<p>Lets you select a codec. By default, the following codecs will be available:</p> <ul style="list-style-type: none"> • 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.

Sample rate	The sample rate at which to export your scene's audio. The only available option is 22050 Hz.
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QuickTime Sound Settings Dialog Box

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



NOTE

On Windows, [Apple QuickTime](#) must be installed to be able to export QuickTime Movie (.mov) files.

How to access the Sound Settings Dialog Box

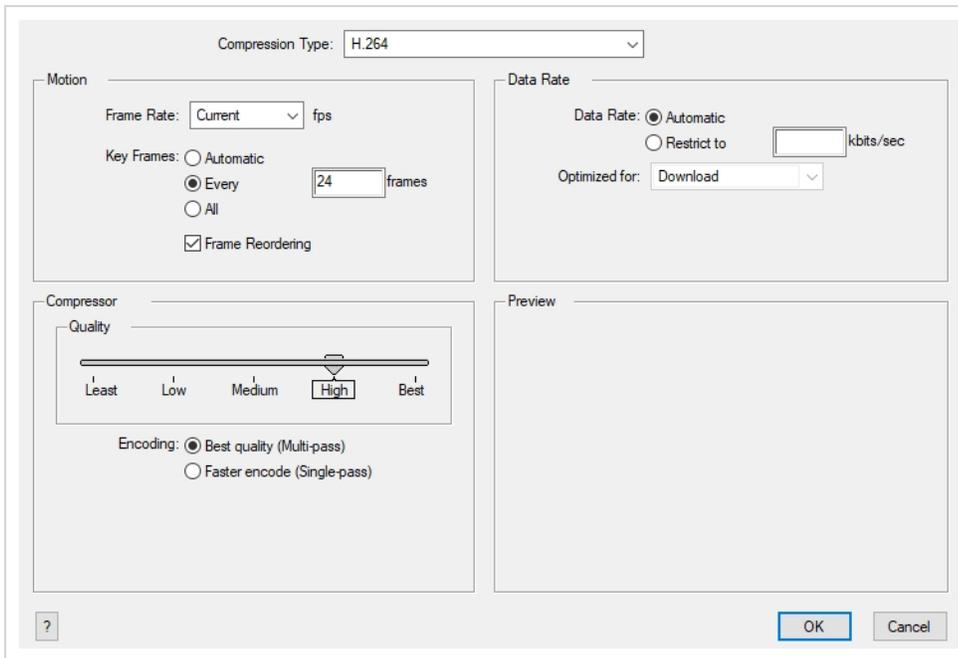
1. From the top menu, select **File > Export > Movie**.
The Export Movie dialog box opens.
2. Set Movie Format to **QuickTime Movie (*.mov)**.
3. Click on the **Movie Settings** button.
4. In the Movie Setting dialog box that opens, click **Settings** in the Sound section.

Parameter	Description
Compressor	Lets you select a compression type. The default setting is None . This exports your audio as is without performing any lossy compression or conversion, preserving its fidelity. Other compressors can be used if you need your movie's audio track to be exported in a specific format, or if disk space or download speed is critical, but they may impact the quality of your movie's soundtrack negatively.
Rate	Lets you select the audio rate at which to export. It is best to export your audio at a rate that matches the rate of your original sound files. For example, if your file has an audio sample rate of 48 kHz and you choose a conversion rate of 22.05 kHz, the sound will play at the same speed, but higher frequencies will be missing, making it sound muffled. For reference, the standard sound quality is 48 kHz for broadcasting and DVD. Lower rates are liable to impact the quality of your movie's soundtrack negatively, but they can be useful if disk space or download speed is critical.

Parameter	Description
Size	Lets you select the encoding size. Also known as <i>Bit Depth</i> , this determines the amount of precision used to record each wavelength in the soundtrack. The standard size is 16-bit . If you choose 8-bit , the amount of disk space your sound track requires is halved, but the audio will sound muffled.
Use	Lets you decide whether to use the Mono or Stereo channel mode. Stereo sound has a separate sound track for the left and the right speakers, allowing to make the origin of each sound realistically match the origin of their corresponding action. If you choose Mono, your sound track may use less disk space, but both the left and right channels will be merged into a single track.

QuickTime Standard Video Compression Settings Dialog Box

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



NOTE

On Windows, [Apple QuickTime](#) must be installed to be able to export QuickTime Movie (.mov) files.

How to access the Standard Video Compression Settings Dialog Box

1. From the top menu, select **File > Export > Movie**.
The Export Movie dialog box opens.
2. Set Movie Format to **QuickTime Movie (*.mov)**.
3. Click on the **Movie Settings** button.
4. In the Movie Setting dialog box that opens, click **Settings** in the Video section.

Parameter	Description
Compression Type	Allows you to select the codec to use for the video stream of your movie file. The availability of codecs may vary between machines. If you are unsure of which codec is best fit for you, it is recommended to use H.264 for maximum portability, and to use Animation if quality is more important.

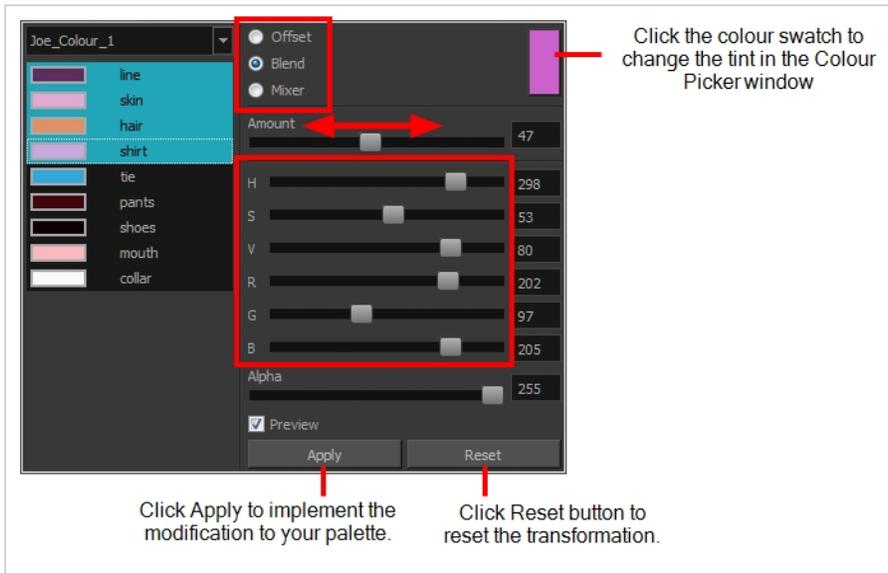
Parameter	Description
	<div data-bbox="565 285 1430 457" style="border: 1px solid #c8e6c9; padding: 10px;">  NOTE The Animation codec, among a few others, allows you to set the colour depth to Millions of Colors+, which supports transparency. </div>
Motion	
Frame Rate	The amount of frames per second for the video stream. Leave this setting to Current to use your project's frame rate.
Key Frames	<p>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.</p> <p>Automatic: Lets the encoder decide when keyframes should be inserted.</p> <p>Every ... frames: Allows you to set the exact interval, in frames, at which keyframes should be inserted.</p> <p>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.</p> <div data-bbox="565 1314 1430 1520" style="border: 1px solid #c8e6c9; padding: 10px;">  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. </div>
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

Parameter	Description
	<p>quality.</p> <div data-bbox="565 342 1430 516" style="border: 1px solid #add8e6; padding: 10px;">  TIP Set this to Millions of Colors+ if you want to export a video with transparency. </div>
Quality	<p>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.</p>
Scan Mode / Interlaced	<p>Allows you to choose between the following scan modes:</p> <ul style="list-style-type: none"> • 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. <div data-bbox="565 1014 1430 1182" style="border: 1px solid #90ee90; padding: 10px;">  NOTE Some codecs will display a drop-down allowing you to select Interlaced or Progressive, while others will simply have an Interlaced checkbox. </div>
Aspect Ratio	<p>Allows you to select one of the following aspect ratios:</p> <ul style="list-style-type: none"> • 4:3: For output on standard definition displays. • 16:9: For output to widescreen displays.
Filter	<p>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.</p>
Data Rate	
Automatic	<p>Lets the encoder use the optimal bit rate for your compression settings.</p>
Restrict To	<p>Allows you to specify the encoding bit rate.</p>

Parameter	Description
	<div style="border: 1px solid #c8e6c9; padding: 10px;">  <p>NOTE This setting will override other compression settings, so that the specified bit rate is respected.</p> </div>
<p>Optimized For</p>	<p>Optimize the encoding to be responsive depending on the intended viewing method:</p> <ul style="list-style-type: none"> • 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**.

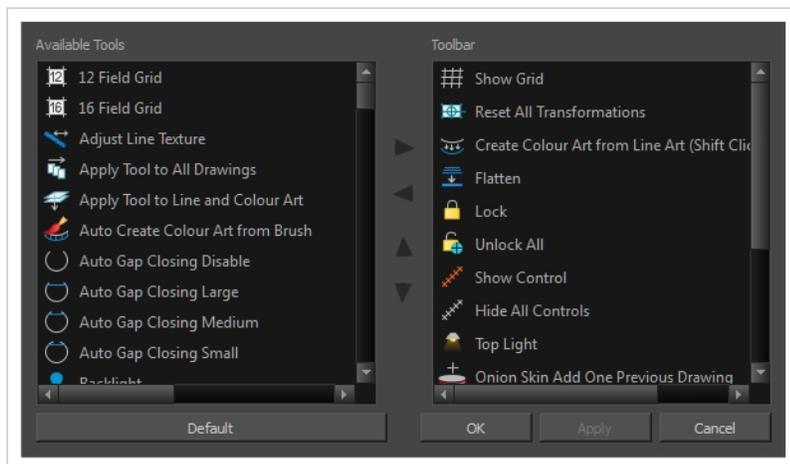
The Blend/Offset Tint panel opens.

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.
--	--

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.



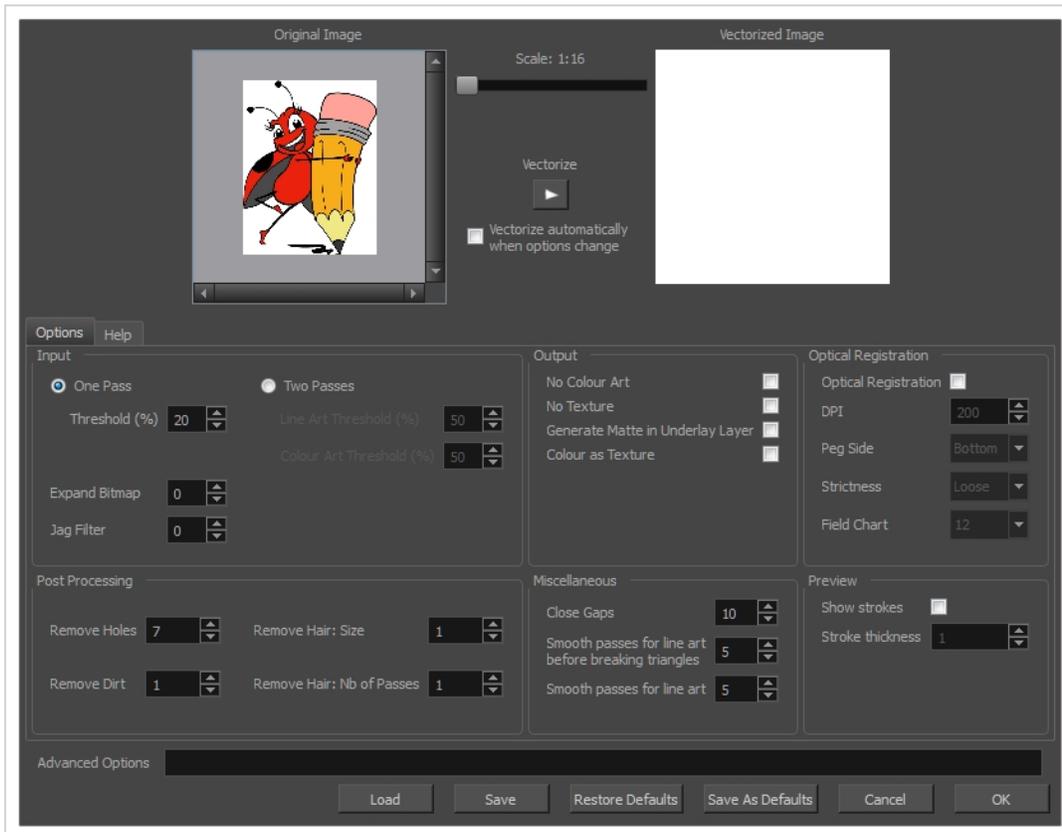
How to access the Toolbar Manager dialog box

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.



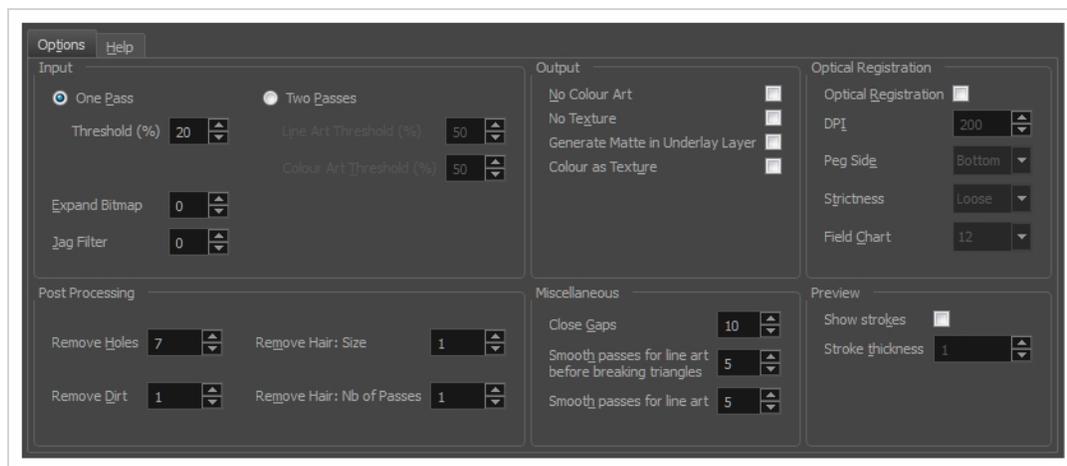
How to open the Vectorization Parameters dialog box

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**.

- 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.

```
Options Help
-----
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_unnamed_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)
-rlf; short form of registration_looseness_factor
-rdebug; output registration debug messages
-pegpitch <inch (default 8)>; distance between peg bars
-threshr <(default 0.5)>; threshold for optical registration; range 0.0 to 1.0
```

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_unnamed_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
- thresrgb** <value> <threshold for rgb vectorization default 0.200000>;
- thres sv** <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]

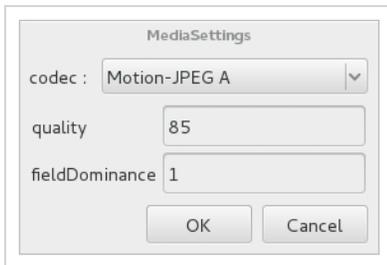
bt:value ; between [0.0-1.0] or [0-255]

**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

OpenQuickTime Video Options Dialog Box

The OpenQuickTime Video Options dialog box is used to configure the video compression settings when exporting a QuickTime movie file on Linux.



On Windows and macOS, Harmony uses Apple QuickTime to export QuickTime movies, and hence uses QuickTime's interface to configure video and audio compression settings for exporting movies. Since QuickTime is not supported on GNU/Linux, Harmony uses the OpenQuickTime library to create QuickTime-compatible movie files, which have a more limited set of compression settings.

How to access the OpenQuickTime Video Options dialog box

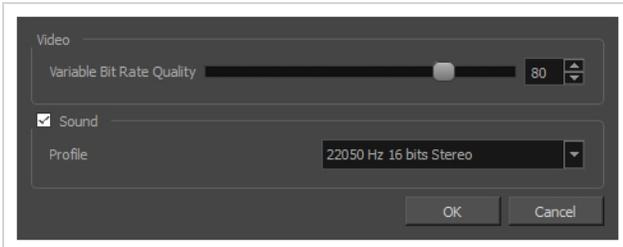
1. From the top menu, select **File > Export > Movie**.
The Export Movie dialog box opens.
2. Set Movie Format to **QuickTime Movie (*.mov)**.
3. Click on the **Video Options** button.

Parameter	Description
Codec	<p>Lets you select a codec. By default, the following codecs will be available:</p> <ul style="list-style-type: none"> • 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.
Quality	For JPEG-type codecs, lets you 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 TIFF movies, this option adds extra lossless compression to the encoding.
lendian	Encodes data in little endian byte order, instead of big endian.

Windows Media Video Settings Dialog Box

The WMV Settings dialog box lets you set the video and audio settings when exporting a Windows Media Video (.wmv) movie.



NOTE

The option to export to Windows Media Video is only available on Windows.

How to access the WMV Settings dialog box

1. From the top menu, select **File > Export > Movie**.
The Export Movie dialog box opens.
2. Set Movie Format to **Windows Media Video (*.wmv)**.
3. Click on the **Movie Settings** button.

Parameter	Description
Video	
Variable Bit Rate Quality	Lets 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.
Sound	
Profile	<p>Lets you choose among preset combinations of audio sample rates, sample sizes and channel modes for the audio stream:</p> <ul style="list-style-type: none"> • Sample rate: Available sample rates are 8000 Hz, 16000 Hz, 22050 Hz and 44100 Hz. The default setting is 22050 Hz. It is best to export your audio at a rate that matches the rate of your original sound files. For example, if your file has an audio sample rate of 48000 Hz and you choose a sample rate of 22050 Hz, the sound will play at the same speed, but

higher frequencies will be missing, making it sound muffled. For reference, the standard sound quality is **44000 kHz** for films, and **48000 kHz** for DVD. Lower rates are liable to impact the quality of your movie's soundtrack negatively, but they can be useful if disk space or download speed is critical.

- **Sample size:** Also known as Bit Depth, this determines the amount of precision used to record each wavelength in the soundtrack. The standard size is **16-bit**. If you choose **8-bit**, the amount of disk space your sound track requires is halved, but the audio will sound muffled.
- **Channel mode:** Stereo sound has a separate sound track for the left and the right speakers, allowing to make the origin of each sound realistically match the origin of their corresponding action. If you choose Mono, your sound track may use less disk space, but both the left and right channels will be merged into a single track.

**NOTE**

Exporting in 8-bit audio requires [Apple QuickTime](#) to be installed.

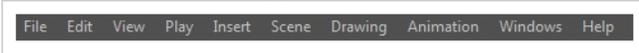
Chapter 2: Menus

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.

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Main Menus

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



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

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Animation Menu

The Animation menu lets you access tools, adjust animation timing, set 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	Enables the Animate mode which records the position, rotation, scale, skew, etc. of objects as keyframes in the Timeline view. Turn off the Animate mode to reposition objects for the entire scene. When the Animate mode is disabled, keyframes are not created when an object's parameters change.
Stop-Motion Keyframe	Sets a stop-motion keyframe which there is no computer-generated motion between two keyframes. The segment is constant or flat. The drawing remains still until the playback reaches the next keyframe, then the drawing pops to its new location.
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.

<p>Spline Offset</p>	<p>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.</p>
<p>Cell</p>	
<p>Increase Exposure</p>	<p>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.</p>
<p>Decrease Exposure</p>	<p>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.</p>
<p>Set Exposure to</p>	<p>Lets you set the exposure to 1, 2, 3 or a custom exposure.</p>
<p>Extend Exposure</p>	<p>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.</p>
<p>Add Key Exposure</p>	<p>Adds a key exposure to the selected cell.</p>
<p>Remove Key Exposure</p>	<p>Removes only the key exposure (key frames) not all the exposures. The existing key exposure is replaced by the preceding exposure.</p>
<p>Remove Duplicate Key Exposure</p>	<p>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.</p> <div data-bbox="678 1696 1429 1864" style="border: 1px solid green; padding: 10px;"> <p> NOTE Duplicate key exposures may occur when pasting with the Enforce Key Exposure option selected.</p> </div>

Fill Empty Cells	Lets you fill empty cells to extend the exposure of single frame drawings to fill the range of empty cells after each one. When creating drawings on cells that are not side-by-side, the exposure of the first drawing no longer fills automatically. You must select the frame range where you want your drawings to hold their exposure up to the next drawing and use the Fill Empty Cells command.
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.
Lip-Sync	
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.
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).
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 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.
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.

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.
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.
Dropper	Allows you to select a colour by clicking on a colour in your artwork.
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.
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.
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.
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.
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	Lets you duplicate the drawing and work on a copy of it. This lets you modify an existing drawing but retain the original. When duplicating a drawing, the selected cell is replaced with the new drawing. The exposure of the original drawing that was on the current cell is removed. The original drawing is not deleted from the project folder or other cells in which it is exposed.
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.
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.
Previous Drawing	When a cell is selected in the Timeline or Xsheet view, displays the previous drawing.

<p>Next Drawing</p>	<p>When a cell is selected in the Timeline or Xsheet view, displays the next drawing.</p>
<p>Previous Layer</p>	<p>When a cell is selected in the Timeline or Xsheet view, displays the previous layer.</p>
<p>Next Layer</p>	<p>Once a cell is selected in the Timeline or Xsheet view, you can navigate between the drawings, frames, and layers. Displays the previous drawing, next drawing, previous layer or next layer.</p> <p>When a cell is selected in the Timeline or Xsheet view, displays the next layer.</p>

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	Places an object you cut or copied into the location you select in a view.
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.
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.
Create Symbol	Creates a symbol from selected drawing elements in the Drawing or Camera view or a layer or cells in the Timeline view.
Expand Symbol	<p>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.</p> <p>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.</p>
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.
Clone: Drawings Only	Creates a copy of the drawings in the selected layer in the Timeline view or column in the Xsheet view. The timing is not copied.
Clone: Drawings and Timing	Creates a copy of the drawings and their timings in the selected layer in the Timeline view or column in the Xsheet 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	Combines all drawings. 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: <ul style="list-style-type: none"> • 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	<p>Determines which drawing files have been modified on disk since you loaded them. All updated drawings will be reloaded.</p> <div data-bbox="678 520 1429 657" style="border: 1px solid green; padding: 5px;">  NOTE Reloading a locked drawing will discard unsaved changes. </div>
Manage Versions	Allows you to manage all the versions of the current scene.
Save As	<p>Saves the current file with a different name and at a different location.</p> <p>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.</p> <div data-bbox="678 1031 1429 1167" style="border: 1px solid green; padding: 5px;">  NOTE The scene name cannot exceed 23 characters. </div>
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.
Acquire	
From TWAIN	Opens the Acquire from Scanner window from which you can set parameters before scanning.
Import	
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.
SWF, Illustrator Files to Library	Lets you import SWF files into your project.
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.
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.
Toon Boom on the Web	Opens the Toon Boom website, which features a Support and Community > Forum section.
Customer Experience Improvement Program	<p>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.</p> <p>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.</p>
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.

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: Blur, Brightness-Contrast, Colour-Scale, Cutter, Glow, Shadow, 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.

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.
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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	<p>Renders your scene's frames, then opens the rendered frames in Harmony Play for playback.</p> <p>This allows you to preview your scene's animation in real time, with the effects rendered and with no risk of slowdown.</p>
Record and Play	<p>Exports your scene as it appears in the Camera view into a movie file, then opens it in your workstation's default video player.</p> <p>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.</p> <p>This button automates the usage of the Export OpenGL Frames dialog see</p>
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.
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.
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.
Cancel Preview Render	Cancels a render that was started.

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	<p>Cycles through the following display modes:</p> <ul style="list-style-type: none"> • 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.
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.
Grid	

Show Grid	Displays the grid.
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 Drawing	In Camera view, the onion skin by default is per frame, this option lets you set it by drawing so you don't see any exposure's onion skin from the same drawing.
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.
Show	
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.
Show Strokes	Displays the strokes in your drawings so that the invisible lines stand out.
Hide All Controls	Hides the controls of the selected element.
Preview Resolution	

Same as Scene Resolution	<p>Lets you choose a resolution for previewing a scene.</p>
3/4 of Scene Resolution	
1/2 of Scene Resolution	
1/3 of Scene Resolution	
1/4 of Scene Resolution	
Custom	<p>Lets you select a resolution from a list of presets or enter X and Y values for a custom preview resolution.</p>
Bitmap File Quality	<p>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.</p> <div data-bbox="678 905 1429 1136" style="border: 1px solid #add8e6; padding: 10px; margin-bottom: 10px;">  <p>TIP</p> <p>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.</p> </div> <div data-bbox="678 1163 1429 1394" style="border: 1px solid #90ee90; padding: 10px;">  <p>NOTE</p> <p>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.</p> </div>

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.
Workspace	Lets you open workspaces designed specifically for animating, compositing, hand drawing, scripting and the default workspace.
Toolbars	Lets you show or hide these toolbars: Playback, File, Edit, Advanced Animation, Scripting, Tools, Workspace, Deformation, Camera View, Xsheet View and Timeline View.
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.

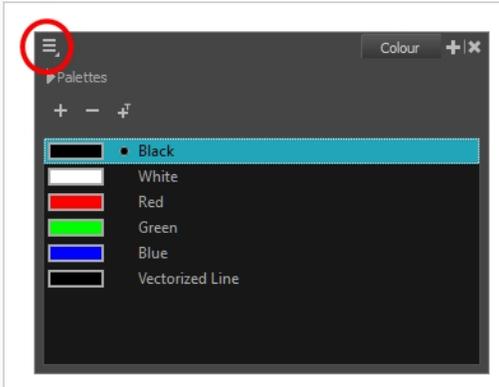
Side	Shows or hides the Side view.
Timeline	Shows or hides the Timeline view.
Tool Properties	Shows or hides the Tool Properties view.
Top	Shows or hides the Top view.
Xsheet	Shows or hides the Xsheet view.
Integrated Help	Shows or hides the Integrated Help view.
Metadata Editor	Shows or Hides the Metadata 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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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 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.
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 give 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.
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.
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).

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	
Clear	
Load Selection	
Add Selection	
Remove Selection	
Show	Show Motion:
	Show Rotation:
	Show Scale:
	Show Skew:
	Show Other:

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	<p>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.</p> <p>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.</p> <p>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.</p>
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.

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 282](#).

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	<p>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:</p> <ul style="list-style-type: none"> • User: Saves the script to your user preferences. You will be able to run and edit the script from any scene as long as you are logged in as the same user. • 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. <div style="border: 1px solid green; padding: 5px; margin-top: 10px;">  NOTE For more information on script locations, see Script Editor View. </div>
Import Script	<p>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:</p> <ul style="list-style-type: none"> • User: Saves the script to your user preferences. You will be able to run and edit the script from any scene as long as you are logged in as the same user. • 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.

Button	Description
	<div style="border: 1px solid #c8e6c9; padding: 10px;">  NOTE For more information on script locations, see Script Editor View. </div>
Delete Script	Deletes the selected script. <div style="border: 1px solid #c8e6c9; padding: 10px; margin-top: 10px;">  NOTES <ul style="list-style-type: none"> 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. </div>
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. <div style="border: 1px solid #c8e6c9; padding: 10px; margin-top: 10px;">  NOTES <ul style="list-style-type: none"> 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, unless your text editor is in your system's PATH environment variable, you will have to type in the full path to the editor. </div>
External Editor	Opens the selected script in the chosen external text editing software.
Play/Debug	
Set Target	Prompts you to select which script and which function to use with the Run and Debug commands.

Button	Description
Run	<p>Runs the target script and function.</p> <div data-bbox="496 344 1429 682" style="border: 1px solid #c8e6c9; padding: 10px;"> <p> NOTES</p> <ul style="list-style-type: none"> • 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. </div>
Debug	<p>Open the target script and function in the Qt Script Debugger, in which you can test and debug the function.</p> <div data-bbox="496 840 1429 1178" style="border: 1px solid #c8e6c9; padding: 10px;"> <p> NOTES</p> <ul style="list-style-type: none"> • 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. </div>
Stop	<p>If a script is currently running, this interrupts its execution.</p>
Help	
Scripting Interface Documentation	<p>Opens the reference documentation for the Harmony scripting interface in a web browser.</p> <div data-bbox="496 1518 1429 1686" style="border: 1px solid #c8e6c9; padding: 10px;"> <p> NOTE</p> <p>This documentation is installed with Harmony and does not require Internet access.</p> </div>

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

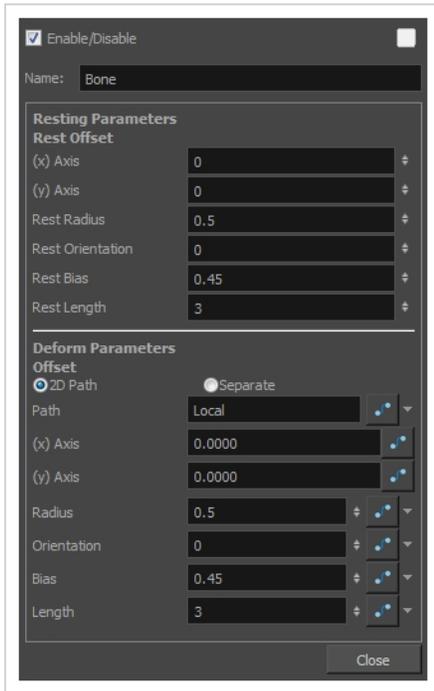
Deformation layers are layers that make deformers. In Harmony, deformers are made of chains of deformation layers laid out in a hierarchy. Each deformation layer represents a point in the deformation chain.

Bone Layers	123
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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, Side 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.
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

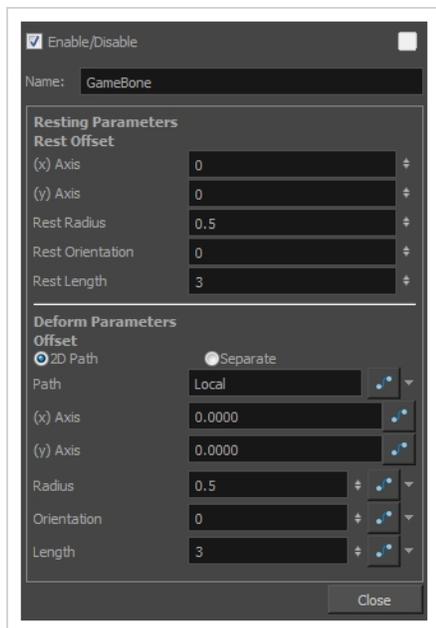
The Deformation-Composite node is automatically added to a rig when creating a split deformation chain. It is used to link the different nodes of a split deformation chain together before deforming the drawing it is linked to.

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, 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.

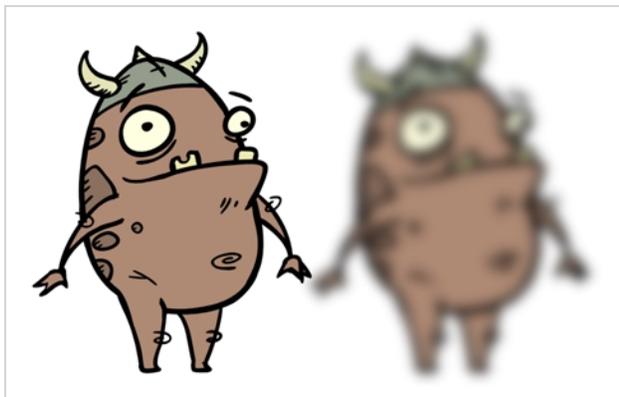
Should you need to apply the same effect to several layers combined, you must group them together so that Harmony composes those layers into a single image before applying the effect.

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Blur Layer

T-HFND-010-007

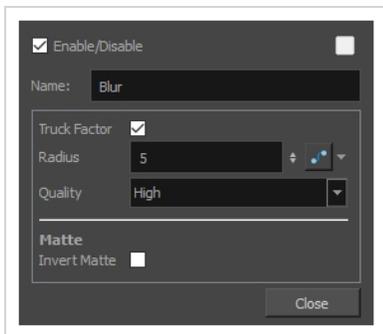
The Blur effect creates an effect that softens, fogs or obscures the image evenly in all directions. This effect is useful when you want to make cloudy images not realistically seen in detail, such as a drawing object that is farther back or in the background of your scene, usually blurry due to the 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

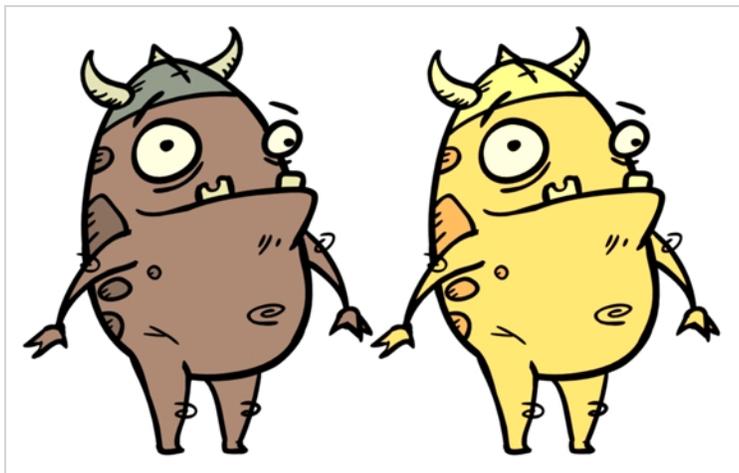


Parameter	Description
Name	Allows you to enter a name for the node.
Truck Factor	Activated by default, this option readjusts the blur when the elements undergo a change of depth or scale. When this option is deselected, the effect's values

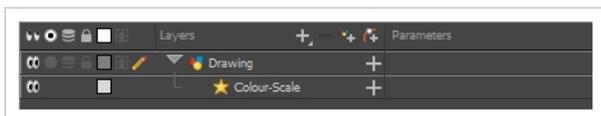
Parameter	Description
	remain unchanged regardless of any depth or scale changes. This option should be deselected when multiple drawings are composited and attached to this effect.
Radius	Size of the blur. The larger the value, the greater the strength or reach of the blur. The blur radius is affected 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.

Colour-Scale Layer

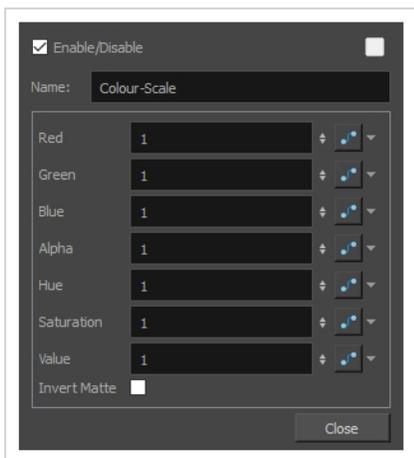
The Colour-Scale effect offsets an image's colours. This effect is useful in creating ambient transitions, such as from daytime to nighttime.



Refer to the following example to connect this effect:



Properties



Parameter	Description
Name	Allows you to enter a name for the node.
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	<p>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:</p> <ul style="list-style-type: none">• 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. This can be useful if, for example, you want to draw shadows or highlights for a character, but you don't want to have to worry about them bleeding beyond your character's outline. You can simply connect your shadow or highlight to an inverted cutter, and use a clone of your character as the matte, and your effect will not display outside of your character's outlines.

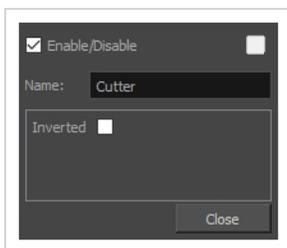
The Cutter effect can be used with 2D-3D integration. Rendered 2D drawings, integrated with 3D models, display soft, anti-aliased edges, even where the Cutter effect is applied.



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, Side 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.

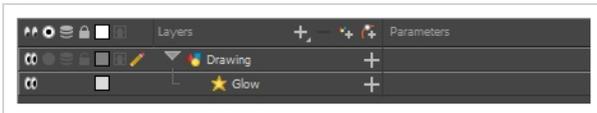
Glow Layer

T-HFND-010-009B

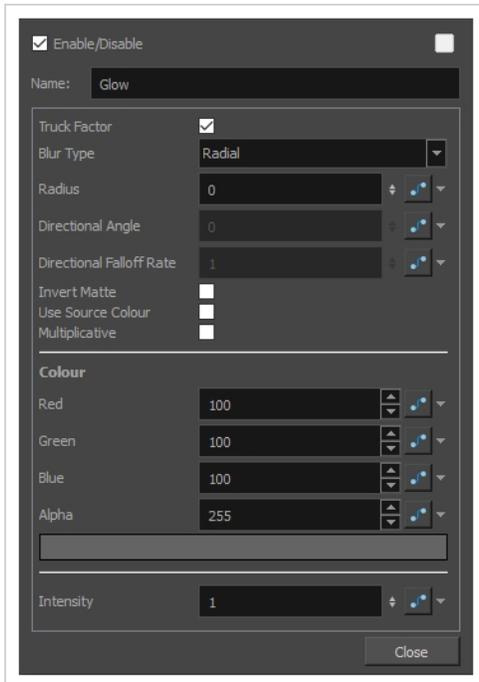
The Glow effect turns your image into a glow area with a bright soft-edged light or diffuse light region around an image. The Glow effect is useful for creating a shining rim around objects, such as the sun or stars. Clone your layer to display the original image on top of the glow.



Refer to the following example to connect this effect:



Properties



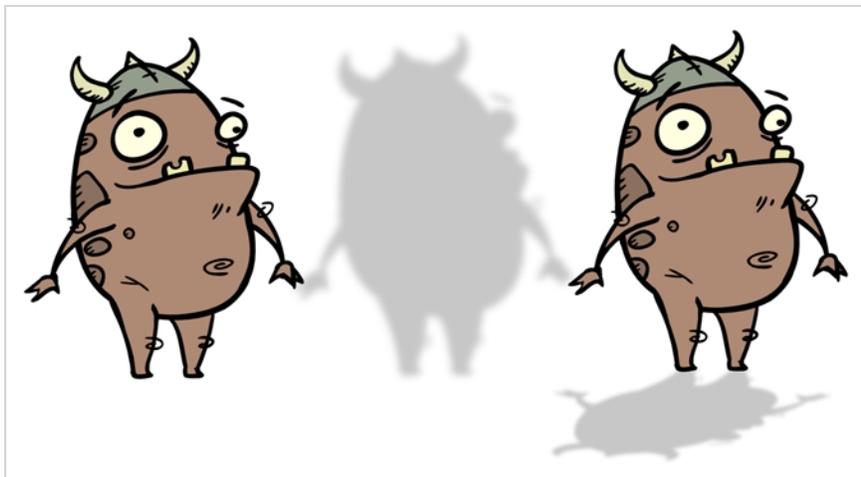
Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	Allows you to enter a name for the node.
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: <ul style="list-style-type: none"> • 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	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>The distance where the blur fades from the edge of the image. Select a decimal value between 0 and 1. For example:</p> <ul style="list-style-type: none"> • 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	<p>Instead of using the colour in the Colour parameters, this uses the colours in the source drawing to generate the effect.</p> <div style="border: 1px solid green; padding: 10px; margin-top: 10px;"> <p> NOTE The effect of this parameter is only visible in Render View  mode.</p> </div>
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.

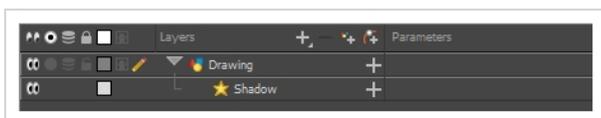
Parameter	Description
Blue	The amount of blue to add to the colour in the background image.
Alpha	The alpha value of the effect.
Colour Swatch	Opens the Colour Picker dialog, in which you can visually select a colour for the effect.
Intensity	Allows you to set the factor by which to multiply the intensity 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.

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, Side 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.
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.

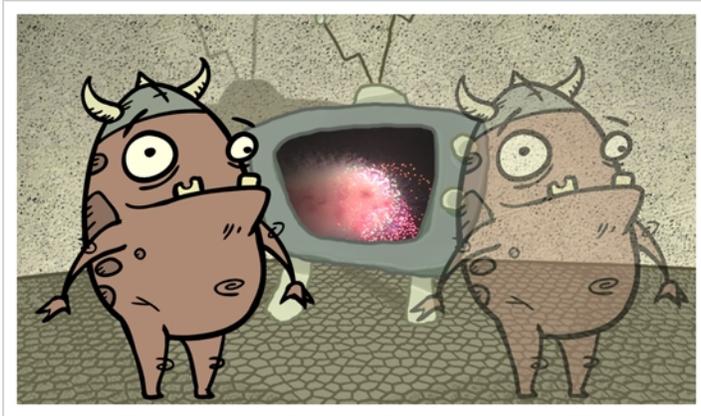
Parameter	Description
Blur Type	<p>Allows you to choose between the following blur types for the effect:</p> <ul style="list-style-type: none"> • Radial: The edges of the matte are blurred evenly around points that make up the edge of the matte. • Directional: The matte is blurred in the direction configured with the Directional Angle and Directional Falloff Rate parameters.
Radius	<p>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.</p>
Directional Angle	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>The distance where the blur fades from the edge of the image. Select a decimal value between 0 and 1. For example:</p> <ul style="list-style-type: none"> • 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	<p>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.</p>
Use Source Colour	<p>Instead of using the colour in the Colour parameters, this uses the colours in the source drawing to generate the effect.</p> <div data-bbox="565 1625 1430 1766" style="border: 1px solid #c8e6c9; padding: 10px; margin-top: 10px;"> <p> NOTE The effect of this parameter is only visible in Render View  mode.</p> </div>
Multiplicative	<p>Multiplies the colours of the effect with the colours of the background. This intensifies the effect.</p>

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.

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.

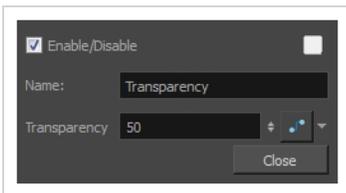


Refer to the following example to connect this effect:



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.

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	145
Drawing Layer	147

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.

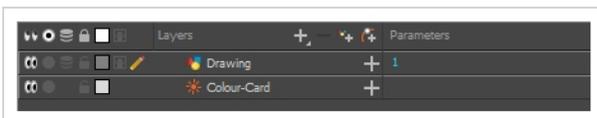


NOTE

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.

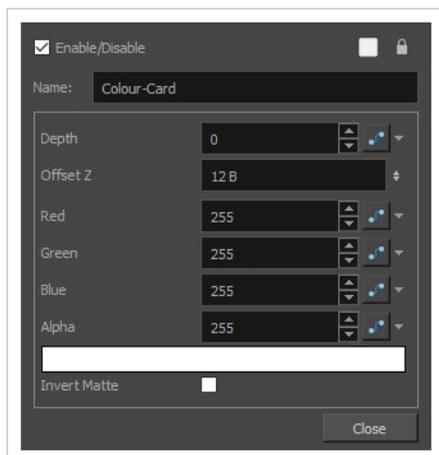
Connection

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

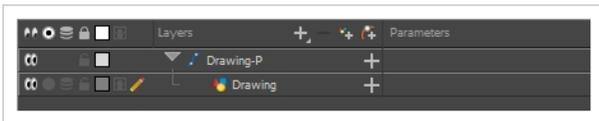


Parameter	Description
Enable/Disable	Allows you to enable or disable the layer. When disabled, a layer has no visible effect on the rendered image, nor on the preview in the Camera, Side and Top views.
Colour Swatch	Sets the colour of the layer in the Timeline view.
Name	Allows you to enter a name for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

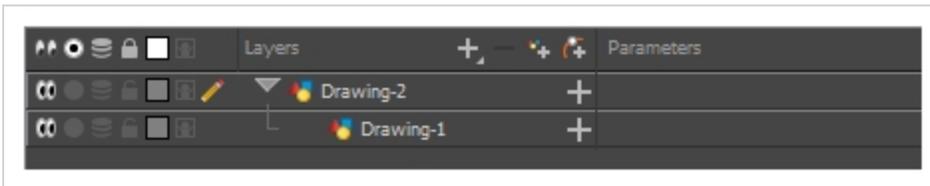
Drawing Layer

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.

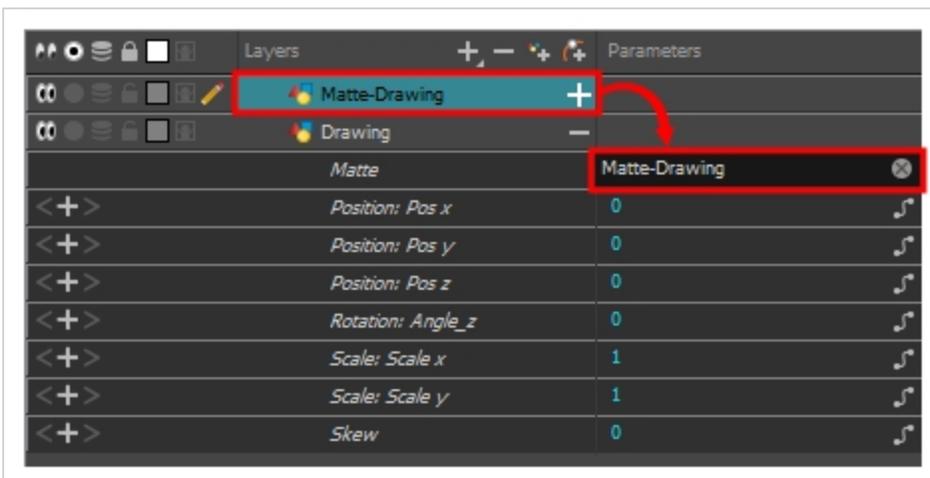
Although drawing layers can be transformed and animated on their own, it is typical to connect them under a parent peg. This allows you to keep the position and animation information of the element in the peg, making it easier to manipulate the exposure and the transformations separately. This is especially 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](#)

Transformation Tab

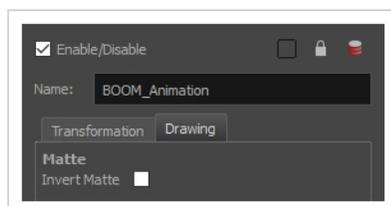
The Transformation tab contains parameters for adjusting the position, scale, rotation, skew and pivots of an element.



Parameter	Description
Position	<p>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.</p> <p>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.</p>

	<p>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.</p> <p>Path (x) Axis: The position of the element on the East-West axis, in fields.</p> <p>Path (y) Axis: The position of the element on the South-North axis, in fields.</p> <p>Path (z) Axis: The position of the element in the Back-Front axis, in fields.</p> <p>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.</p>
Scale	<p>Locked: Uses a single scale parameter to scale the element, preserving its proportions.</p> <p>Separate: Uses a separate parameter to scale the element on the X and Y axis, allowing to stretch or squash the element.</p>
	<p>(x) Axis: The horizontal scale factor. The default value is 1.</p> <p>(y) Axis: The vertical scale factor. The default value is 1.</p>
Rotation	<p>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.</p>
Skew	<p>Skew: The angle at which the element is skewed. This value can range from -90 to 90 degrees.</p>
Pivot	<p>(x) Axis: The horizontal position of the pivot point of the element relative to the pivot point of the drawing, in fields.</p> <p>(y) Axis: The vertical position of the pivot point of the element relative to the pivot point of the drawing, in fields.</p> <div style="border: 1px solid green; padding: 10px; margin-top: 10px;"> <p> NOTE These parameters can be changed visually by clicking and dragging the pivot point when using one of the tools in the Advanced Animation toolbar.</p> </div>

Drawing Tab



Parameter	Description
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.

Move Layers

Move layers are used to animate layers as well as camera motions.

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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	<p>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.</p> <p>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.</p> <p>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.</p> <p>Path (x) Axis: The position of the element on the East-West axis, in fields.</p> <p>Path (y) Axis: The position of the element on the South-North axis, in fields.</p> <p>Path (z) Axis: The position of the element in the Back-Front axis, in fields.</p> <p>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.</p>
Scale	<p>Locked: Uses a single scale parameter to scale the element, preserving its proportions.</p> <p>Separate: Uses a separate parameter to scale the element on the X and Y axis, allowing to stretch or squash the element.</p> <p>(x) Axis: The horizontal scale factor. The default value is 1.</p> <p>(y) Axis: The vertical scale factor. The default value is 1.</p>
Rotation	<p>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.</p>
Skew	<p>Skew: Lets you type in a degree value between -90 to 90 for the skew angle.</p>
Pivot	<p>(x) Axis: The horizontal position of the pivot point of the element relative to the pivot point of the drawing, in fields.</p>

	<p>(y) Axis: The vertical position of the pivot point of the element relative to the pivot point of the drawing, in fields.</p>
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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

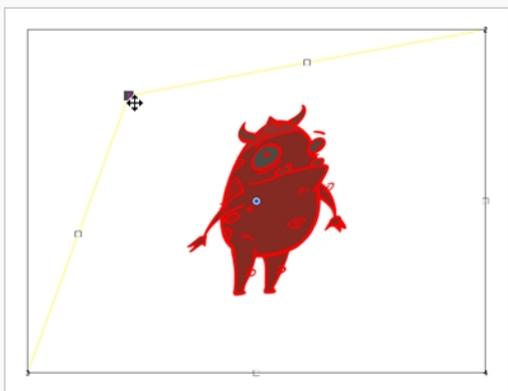
1. In the Timeline view, click the Add Layer **+** button and select **Quadmap**.
2. Connect the drawing you want to deform to the Quadmap.



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 press Shift + F11.

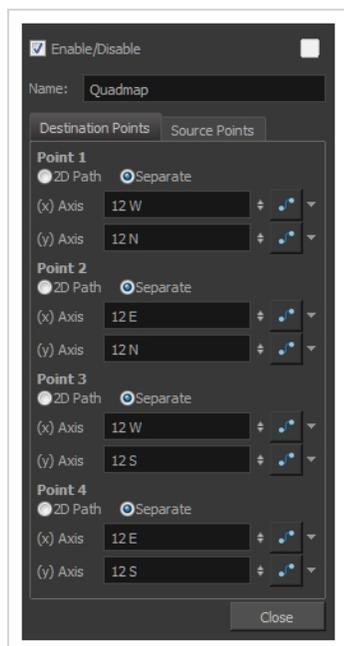
The quadmap handles appear around the element in the window. There is also a pivot point at the centre of the quadmap frame that you can reposition.

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 properties and create functions for each of the coordinates.

Properties

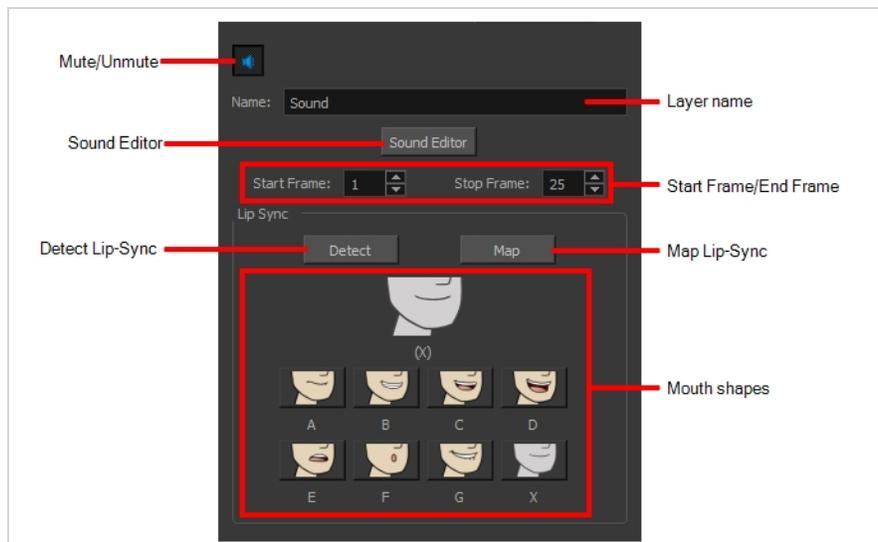


Parameter	Description
Name	Lets you rename the node.
2D Path	Changes the X and Y values simultaneously and control the velocity of the change.

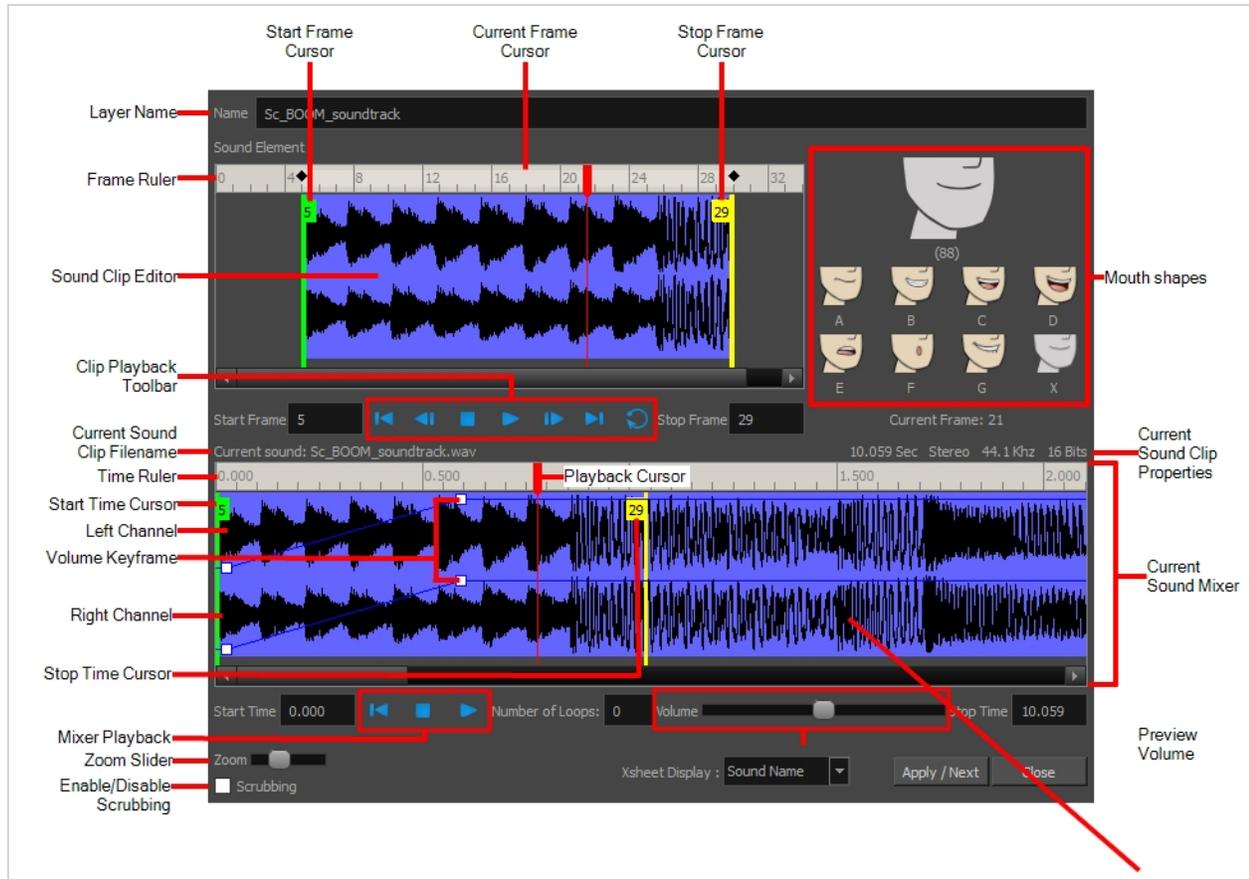
Separate	Changes the X and Y values separately. Each one can be attached to separate function curves.
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Sound Layer

When you select a sound layer in the Timeline view, the options related to that layer appear in the Layer Properties view.

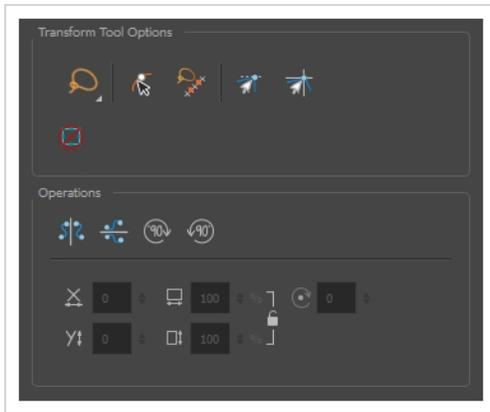


If you double-click on a sound layer in the Timeline view, or in a sound column in the Xsheet view, the Sound Element Editor dialog will open. This dialog allows you to fine-tune the sound track's lip sync, start time, stop time and volume.



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.

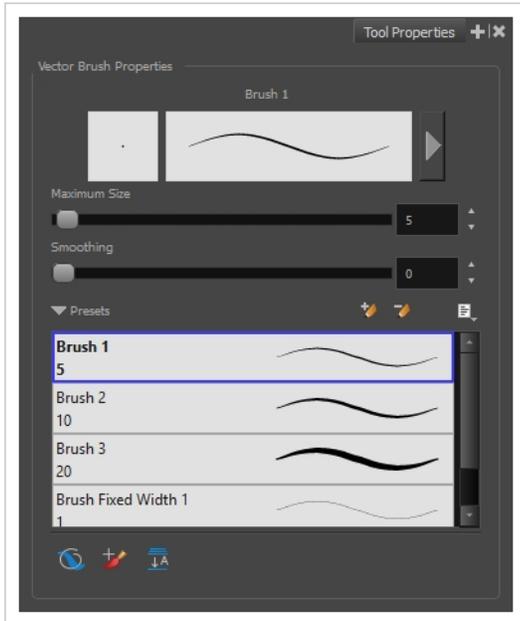


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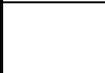
Brush Tool Properties

When you select the Brush  tool, its properties and options appears in the Tool Properties view.



Brush Properties

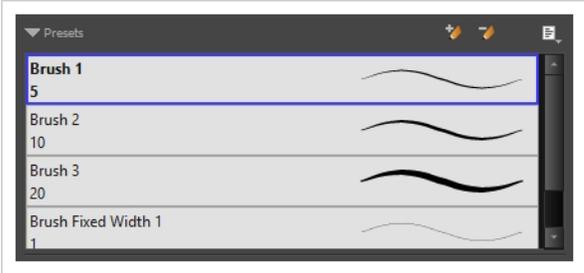
The following properties affect the brush's size, smoothing and other properties for the drawing style of your brush. Those properties can be saved into brush presets for later use.

Icon	Property	Description
	Preview Area	<p>The Preview area lets you see a preview of the stroke your drawing tool will make.</p> 
	Brush Properties Dialog	<p>The arrow button right of the preview area opens the Brush Properties dialog.</p>  <p>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</p>

		the Pencil Properties dialog, see the Brush Properties Dialog section below.
	Maximum Size	<p>Defines the maximum width of brush strokes.</p> <p>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.</p>
	Smoothing	<p>Defines the number of control points added to the centre line. The fewer the control points the smoother (but less faithful) the line.</p> <div style="border: 1px solid green; padding: 10px; margin-top: 10px;">  NOTE This option is only available when drawing on a vector layer. </div>

Brush Presets

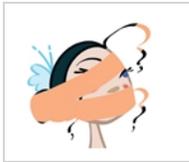
These options allow you to select, create and manage pencil presets.

Icon	Property	Description
	Presets list	<p>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.</p> 
	New Brush Preset	Creates a new preset based on the current brush properties.
	Delete Brush	Deletes the currently selected preset.
	Rename Brush	Deletes 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. This is the default setting.

Drawing Options

These options affect the way your drawing strokes are integrated into your artwork.

Icon	Property	Description
	Draw Behind	<p>When enabled, your brush strokes will appear behind the existing artwork. Note that they will appear over your artwork while drawing your stroke, until you release the brush.</p>  <p>Orange stroke appears behind existing black stroke</p>
	Repaint Brush	<p>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.</p> 
	Auto-Flatten Mode	<p>By default, when drawing, 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.</p>

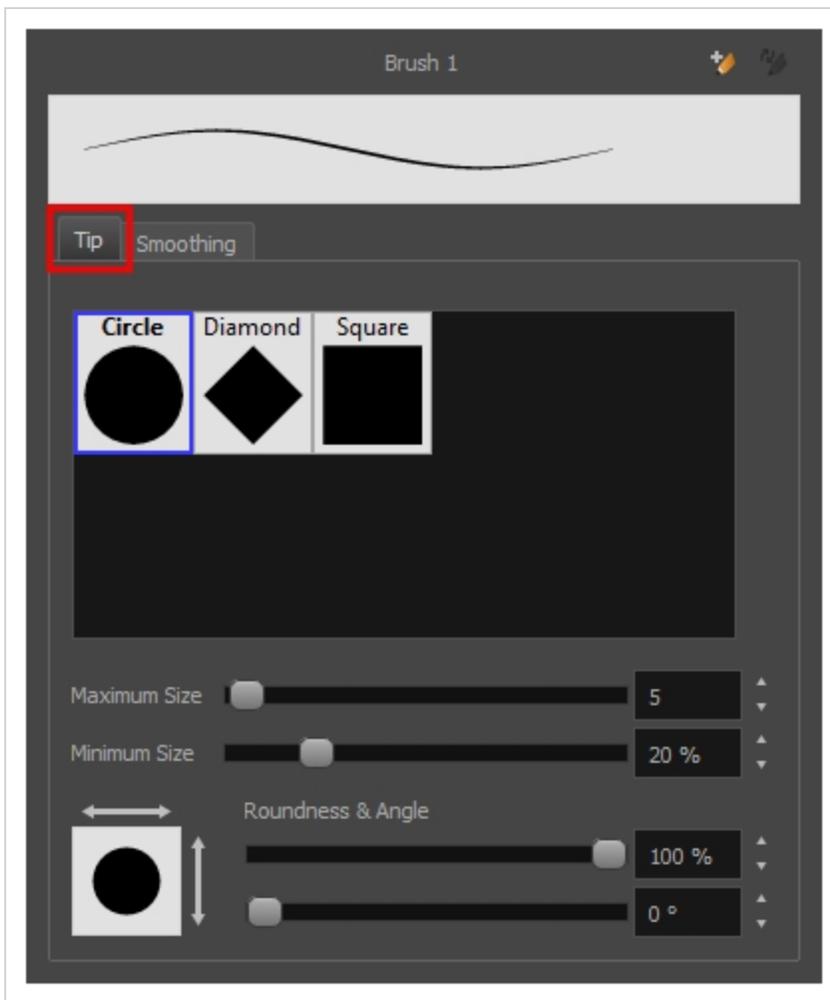
Brush Properties Dialog

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.

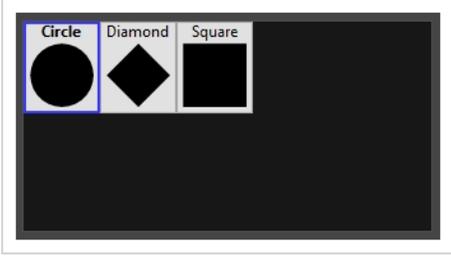


Tip Tab

The Tip tab allows you to configure the shape, size, hardness and spacing of your brush tip.

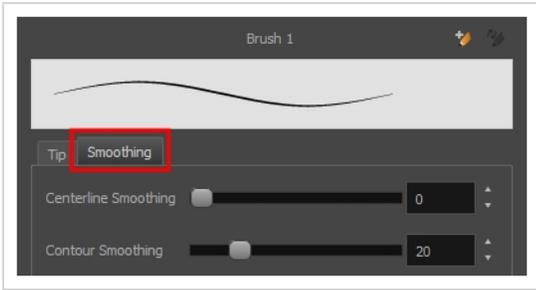


Property	Description
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Brush Tip Library	 <p>This is where you select the shape of the brush tip. By default it is round.</p>
Minimum and Maximum Size	<p>The minimum and maximum sizes of your drawing tool produce the thick and thin effect on your stroke. This works with the pressure sensitivity of a pen tablet.</p> <ul style="list-style-type: none"> • 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. <div style="border: 1px solid green; padding: 5px; margin-top: 10px;">  <p>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.</p> </div>
Roundness and Angle	<p>The Roundness and Angle parameters allow you to change the shape and orientation of the tip.</p> <ul style="list-style-type: none"> • Roundness: Squashes the height of the tip from its centre point. 100% roundness = the native height of the tip. A smaller percentage will make the brush tip look flatter and more narrow. The squashing is NOT relative to the angle value—if the tip is rotated, the squashing function still uses the brush tip's original orientation. • Angle: Rotates the brush tip counter-clockwise. 0° = the tip's native orientation. <div style="border: 1px solid gray; padding: 10px; margin-top: 10px; text-align: center;">  <p>Roundness = 100% Angle = 0° Roundness = 33% Angle = 0° Roundness = 100% Angle = 45° Roundness = 33% Angle = 45°</p> </div>

Smoothing Tab

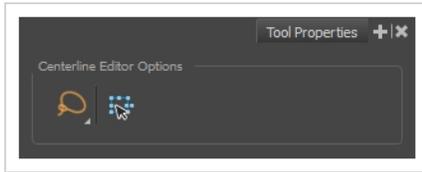
The Smoothing tab contains options to configure how Harmony should automatically smooth your brush strokes as you paint.



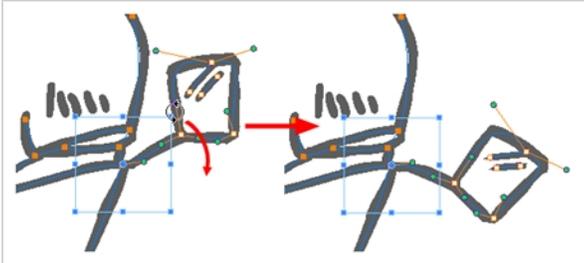
Property	Description
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on your brush stroke's direction, curves and corners. A higher setting will prevent your line from being shaky, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	Defines the amount of smoothing Harmony should perform on outer contour of the brush stroke. A higher setting will round sharp corners and reduce the amount of control points for the resulting vector shape.

Centerline Editor Tool Properties

When you select the Centerline Editor tool, its properties and options appear in the Tool Properties view.



Tool Options

Icon	Property	Description
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;">  TIP When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode. </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;">  TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode. </div>
	Show Centerline Editor Controls	<p>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.</p> 

Close Gap Tool Properties

When you select the Close Gap tool, its properties and options appears in the Tool Properties view.

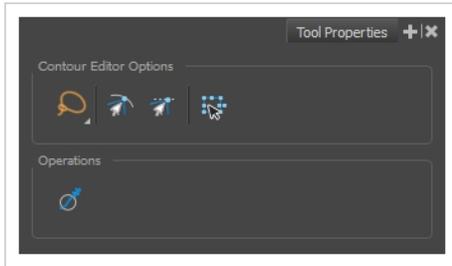


Tool Options

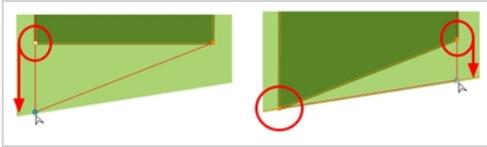
Icon	Property	Description
	Auto-Flatten Mode	By default, when drawing, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.

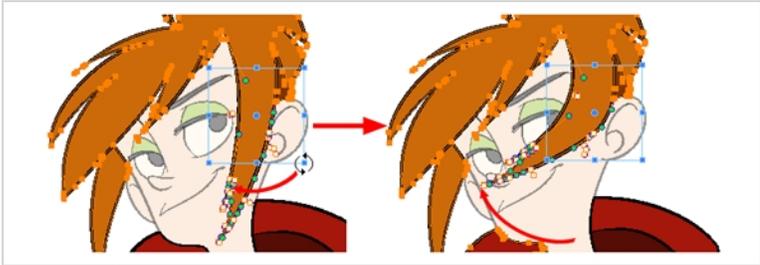
Contour Editor Tool Properties

When you select the Contour Editor tool, its properties and options appear in the Tool Properties view.

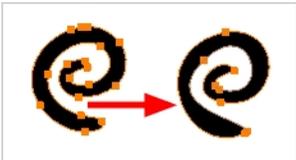


Tool Options

Icon	Property	Description
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.</p> </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.</p> </div>
	Snap to Contour	<p>Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.</p> 
	Snap and Align	<p>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.</p>

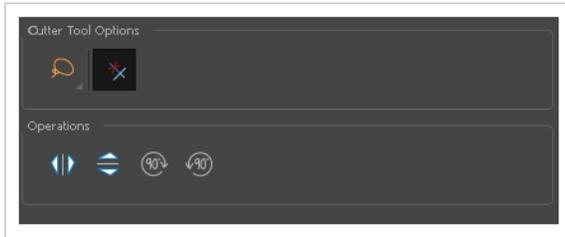
		
	<p>Show Contour Editor Controls</p>	<p>When enabled, selecting several control points will make a manipulator bounding box appear. You can use this manipulator to scale and rotate the selection of points.</p> 

Operations

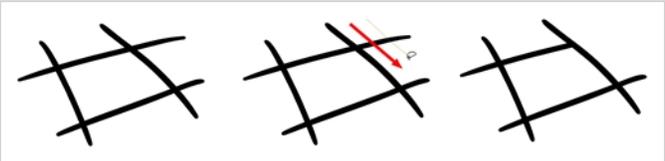
Icon	Property	Description
	<p>Smooth Selection</p>	<p>The Smooth operation lets you smooth out selected drawing strokes and remove extra points.</p> <ul style="list-style-type: none"> From the top menu, select Drawing > Optimize > Smooth or press Alt + Shift + S. 

Cutter Tool Properties

When you select the Cutter tool, its properties and options appear in the Tool Properties view.



Tool Options

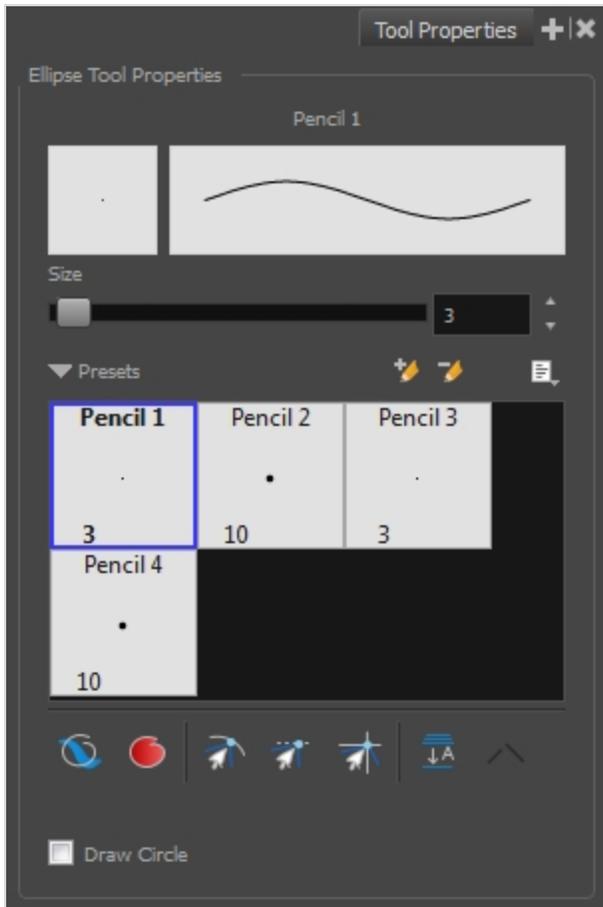
Icon	Property	Description
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #add8e6; padding: 5px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.</p> </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p> <div style="border: 1px solid #add8e6; padding: 5px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.</p> </div>
	Use Mouse Gesture	<p>When using the Lasso selection type, the Use Mouse Gesture option lets you automatically delete any extra sections of line in your artwork by simply dragging your mouse over it.</p> <div style="border: 1px solid #90ee90; padding: 5px;"> <p> NOTE For this operation to work, you lines CANNOT be flattened.</p> </div> <div style="text-align: center; margin-top: 10px;">  </div>

Operations

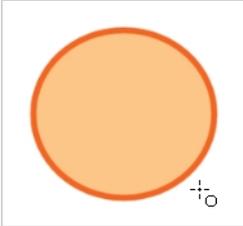
Icon	Property	Description
	Flip Horizontal	Flips the current selection horizontally.
	Flip Vertical	Flips the current selection vertically.
	Rotate 90 Degrees CW	Rotates the current selection 90 degrees clockwise.
	Rotate 90 Degrees CCW	Rotates the current selection 90 degrees counter-clockwise.

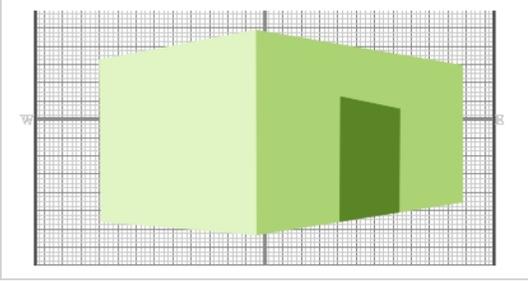
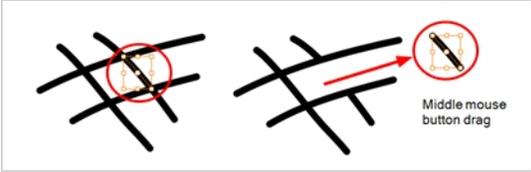
Ellipse Tool Properties

When you select the Ellipse tool, its properties and options appear in the Tool Properties view.



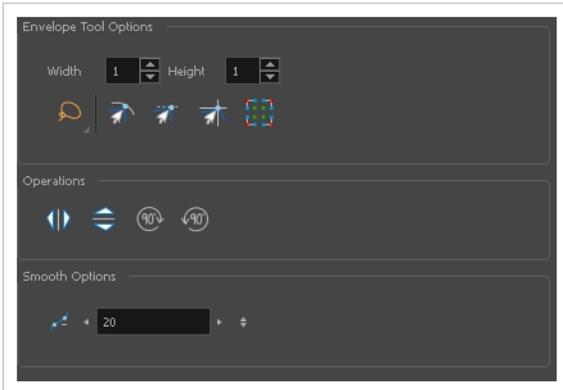
Icon	Tool Name	Description
	Size	Defines the width of the pencil line used to draw the circle.
	Presets	<p>Harmony provides a variety of presets and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw and design for efficiency and consistency.</p> <p>All tools using pencil lines share the same preset list. Therefore, the Polyline, Line, Rectangle, Ellipse, and Pencil tools share the same preset list.</p>
	New Brush	Creates a new preset based on the current brush properties.

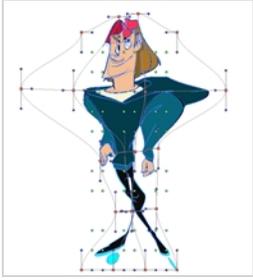
	Delete Brush	Deletes the currently selected preset.
	Rename Brush	Deletes the currently selected preset.
	Import Brushes	Allows you to import brush presets exported from Harmony.
	Export Brushes	Allows you to export your brush presets into an .xml file.
	Small Thumbnail, Large Thumbnail, and Stroke View	Allows you to display the presets as small square thumbnails, large square thumbnails or a list of stroke preview.
	Draw Behind	<p>When enabled, your brush strokes will appear behind the existing artwork. Note that they will appear over your artwork while drawing your stroke, until you release the brush.</p> 
	Automatic Filling	<p>Use the Automatic Filling option to automatically fill your shape with the selected colour as you draw. By default, the Shape tool creates the outline of an empty shape that you can later fill using the Paint tool. This option is unavailable for the line tool.</p> 
	Snap to Contour	Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.
	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	Snaps your selection following the currently enabled grid.

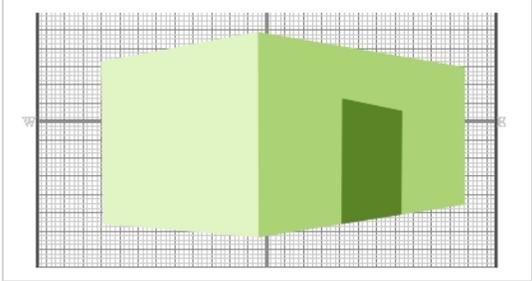
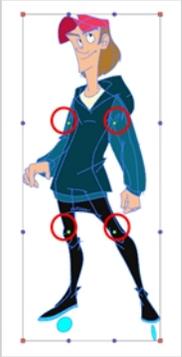
		
	<p>Auto-Flatten Mode</p>	<p>By default, when drawing, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.</p>  <div data-bbox="649 913 1429 1144" style="border: 1px solid green; padding: 10px;"> <p> NOTE</p> <p>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.</p> </div>

Envelope Tool Properties

Selecting the Envelope tool displays its properties and options in the Tool Properties view.



Icon	Tool Name	Description
	Width and Height	<p>Increase the width and height values to add more columns and rows to the deformation grids.</p> 
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #4F81BD; padding: 10px; margin-top: 10px;"> <p> TIP When this option is enabled, you can press and hold the ALT key to temporarily use Marquee mode.</p> </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p>

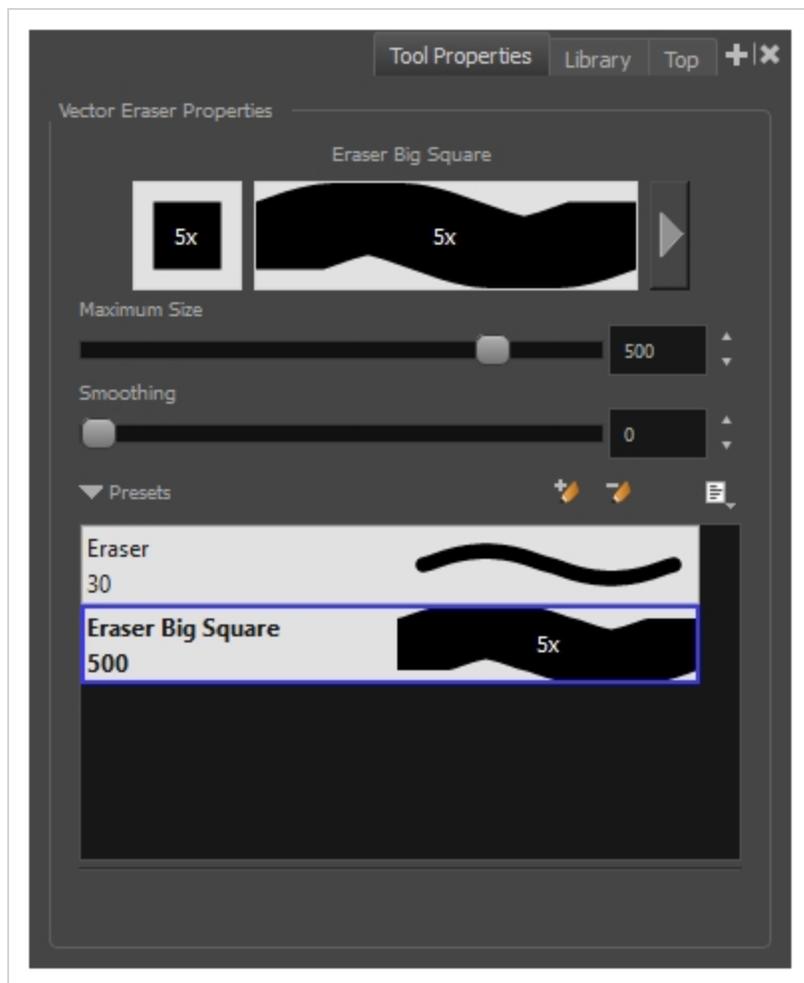
		 TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.
	Snap to Contour	Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.
	Snap and Align	Snaps the selected 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	Snaps your selection following the currently enabled grid. 
	Show Advanced Controls	To display more controls, you can click on the Show Advanced Controls button. 
	Flip Horizontal	Flips the current selection horizontally.
	Flip Vertical	Flips the current selection vertically.

	<p>Rotate 90 Degrees CW</p>	<p>Rotates the current selection 90 degrees clockwise.</p>
	<p>Rotate 90 Degrees CCW</p>	<p>Rotates the current selection 90 degrees counter-clockwise.</p>
	<p>Smooth</p>	<p>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.</p>

Eraser Tool Properties

When you select the Eraser  tool, its properties and options appear in the Tool Properties view.

The Eraser tool properties are almost identical to the Brush tool properties.



Icon	Tool Name	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 view only gives you access to a few of the eraser properties, a list of eraser presets and options for the Eraser tool

		<p>that are not related to the eraser properties. For more information on the Eraser Properties dialog, see the Eraser Tool Properties section below.</p> 
	Maximum Size	<p>Defines the maximum size of the eraser.</p> <p>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.</p>
	Smoothing	<p>Defines the number of control points added to the centre line. The fewer the control points the smoother (but less faithful) the line.</p>
	Flow	<p>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.</p> <div style="border: 1px solid #c8e6c9; padding: 10px; margin-top: 10px;">  <p>NOTE This option is only displayed in the Tool Properties view when drawing on a bitmap layer.</p> </div>
	Opacity	<p>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.</p> <div style="border: 1px solid #c8e6c9; padding: 10px; margin-top: 10px;">  <p>NOTE This option is only displayed in the Tool Properties view when drawing on a bitmap layer.</p> </div>
	New Eraser	<p>Creates a new preset based on the current eraser properties.</p>

	Delete Eraser	Deletes the currently selected preset.
	Rename Eraser	Deletes the currently selected preset.
	Import Erasers	Allows you to import brush presets exported from Harmony.
	Export Erasers	Allows you to export your brush presets into an .xml file.
	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.

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.

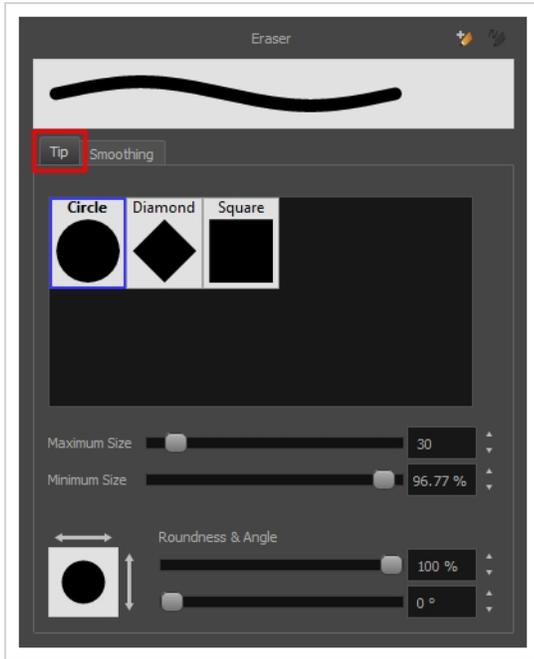


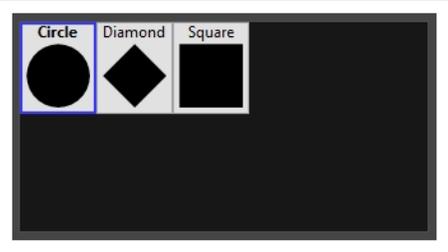
The Eraser Properties dialog has two tabs. Below is detailed information about the options available in each tab:

- [Tip Tab](#) on page 182
- [Smoothing Tab](#) on page 184

Tip Tab

The Tip tab allows you to configure the shape, size, hardness and spacing of your eraser tip.

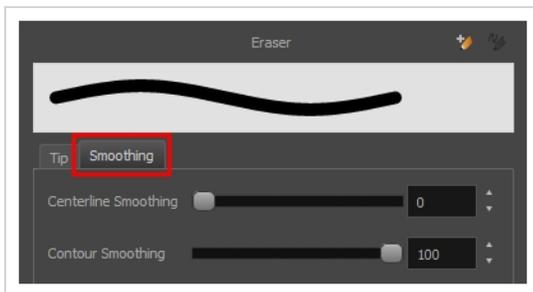


Tool Name	Description
Eraser Tip Library	 <p>This is where you select the shape of the eraser tip. By default, it is round.</p>
Minimum and Maximum Size	<p>The minimum and maximum sizes of your drawing tool produce the thick and thin effect on your stroke. This works with the pressure sensitivity of a pen tablet.</p> <ul style="list-style-type: none"> • 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. <div style="border: 1px solid green; padding: 10px; margin-top: 10px;">  <p>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.</p> </div>

<p>Roundness and Angle</p>	<p>The Roundness and Angle parameters allow you to change the shape and orientation of the tip.</p> <ul style="list-style-type: none"> • Roundness: Squashes the height of the tip from its centre point. 100% roundness = the native height of the tip. A smaller percentage will make the brush tip look flatter and more narrow. The squashing is NOT relative to the angle value—if the tip is rotated, the squashing function still uses the brush tip's original orientation. • Angle: Rotates the brush tip counter-clockwise. 0° = the tip's native orientation. <div data-bbox="787 604 1503 772" style="border: 1px solid gray; padding: 5px; text-align: center;">  <p>Roundness = 100% Angle = 0° Roundness = 33% Angle = 0° Roundness = 100% Angle = 45° Roundness = 33% Angle = 45°</p> </div>
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Smoothing Tab

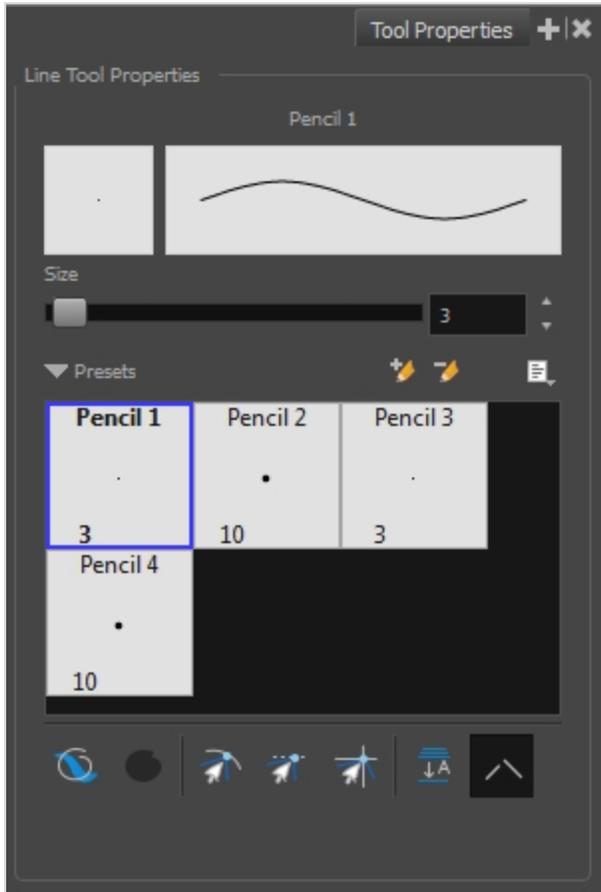
The Smoothing tab contains options to configure how Harmony should automatically smooth your eraser strokes as you paint.



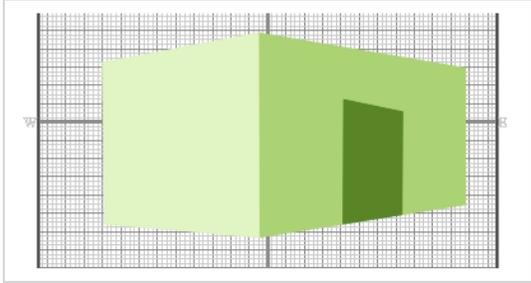
Tool Name	Description
Centerline Smoothing	Defines the amount of smoothing Harmony should perform on your eraser stroke's direction, curves and corners. A higher setting will prevent your line from being shaky, but is liable to reduce drawing precision and turn sharp angles into curves.
Contour Smoothing	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.

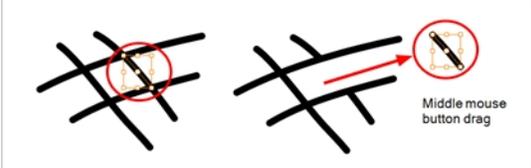
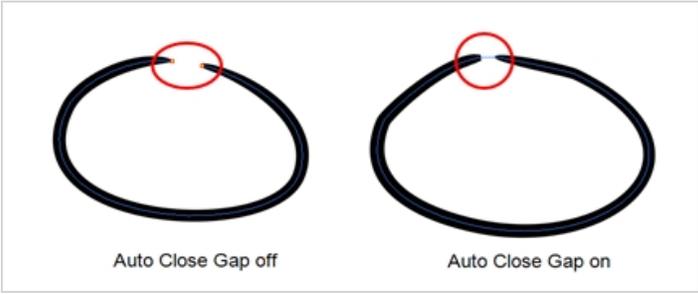
Line Tool Properties

When you select the Line tool, its properties and options appear in the Tool Properties view.



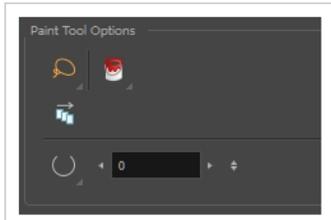
Icon	Tool Name	Description
	Size	Defines the width of the pencil line used to draw the line.
	Presets	<p>Harmony provides a variety of presets and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw and design for efficiency and consistency.</p> <p>All tools using pencil lines share the same preset list. Therefore, the Polyline, Line, Rectangle, Ellipse, and Pencil tools share the same preset list.</p>
	New Brush	Creates a new preset based on the current brush properties.
	Delete Brush	Deletes the currently selected preset.

	Rename Brush	Deletes 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, Large Thumbnail, and Stroke View	Allows you to display the presets as small square thumbnails, large square thumbnails or a list of stroke preview.
	Draw Behind	<p>When enabled, your brush strokes will appear behind the existing artwork. Note that they will appear over your artwork while drawing your stroke, until you release the brush.</p> 
	Snap to Contour	Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.
	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	Snaps your selection following the currently enabled grid. 
	Auto-Flatten Mode	By default, when drawing, 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.

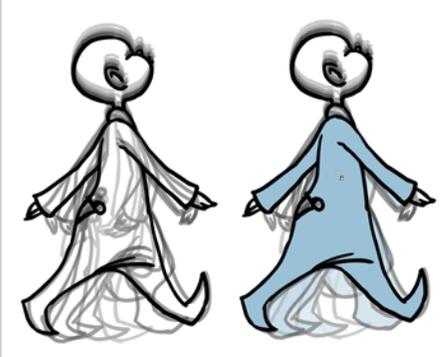
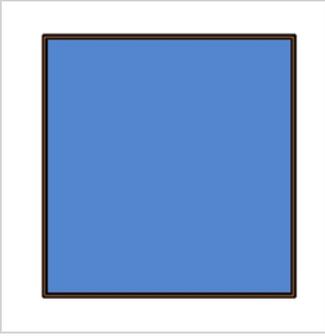
		 <div data-bbox="646 396 1430 632" style="border: 1px solid green; padding: 5px;"> <p>NOTE</p> <p>Using the Select tool, you can use select and remove a segment of flattened pencil lines. Overlapping pencil lines drawn with the Auto-Flatten mode are essentially cut into segments by the overlap and can be treated as individual lines.</p> </div>
<p>^</p>	<p>Auto-Close Gap</p>	<p>When using the pencil tool, you can automatically close strokes with an invisible stroke.</p>  <p>Auto Close Gap off Auto Close Gap on</p> <p>It is recommended to keep this option enabled when drawing with the Pencil tool.</p>

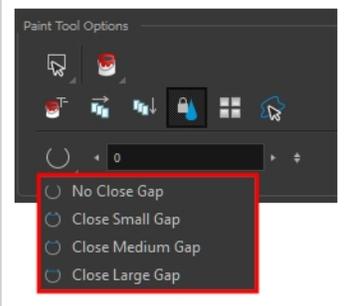
Paint Tool Properties

When you select the Paint tool, its properties and options appears in the Tools Properties view.



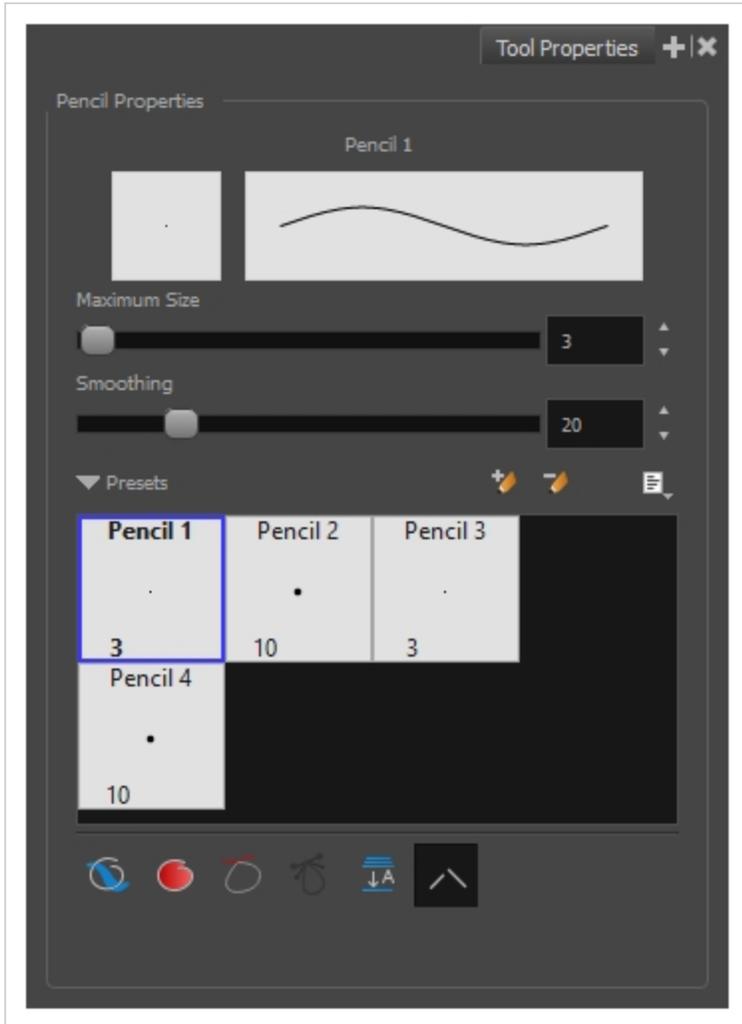
Icon	Tool Name	Description
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #0070C0; padding: 5px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.</p> </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p> <div style="border: 1px solid #0070C0; padding: 5px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.</p> </div>
	Paint Modes	<p>The Paint tool has three different modes available:</p> <ul style="list-style-type: none"> • The Paint mode paints everything it touches, including empty and filled zones. • The Paint Unpainted mode paints only empty zones. Any line or filled zone will remain unchanged. • The Unpaint mode unpaints everything it touches, including empty and filled zones.
	Apply to Multiple Drawings	<p>The Apply to Multiple Drawings option is used for fast painting in hand-drawn animation. When you want to</p>

		<p>paint several drawings in a same layer at once, such as a walk cycle, you can enable this option and make a selection in the Camera or Drawing view. All the closed zones located within your Paint tool selection are painted with the selected colour swatch.</p>  <p>You do not need to enable the Onion Skin preview to use this option. The option will stay enabled only for the next action. If you want to use it again, you must click on the Apply to Multiple Drawings button again, or press Alt + A.</p>
	<p>Select Newly Painted, and Unpainted Contours/Lines</p>	<p>In the Paint tool properties, this option keeps a selection highlighted around the latest painted zone after using the Paint, Unpaint, or Paint Unpainted tool.</p> 
	<p>Close Gap</p>	<p>The Close Gap option has four modes available. When the option is enabled, Harmony will consume more resources while painting.</p>

		 <ul style="list-style-type: none">• No Close Gap: The moment a zone has a gap in it, the Paint tool will not fill the area.• Close Small Gap: If a zone has a small gap in it, the Paint tool will fill the area. You can zoom out to make the gap appear smaller and the Paint tool will paint.• Close Medium Gap: If a zone has a medium gap in it, the Paint tool will fill the area. You can zoom out to make the gap appear smaller and the Paint tool will paint.• Close Large Gap: If a zone has a large gap in it, the Paint tool will fill the area. You can zoom out to make the gap appear smaller and the Paint tool will paint.
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Pencil Tool Properties

When you select the Pencil  tool, its properties and options appears in the Tool Properties view.



Pencil Properties

The following properties affect the pencil's width and smoothing. Those properties can be saved into pencil presets for later use.

Icon	Tool Name	Description
	Preview Area	<p>The Preview area lets you see a preview of the stroke your drawing tool will make.</p> 

	Size	Defines the width of the pencil line.
	Smoothing	Defines the number of control points added to the centre line. The fewer the control points the smoother (but less faithful) the line.

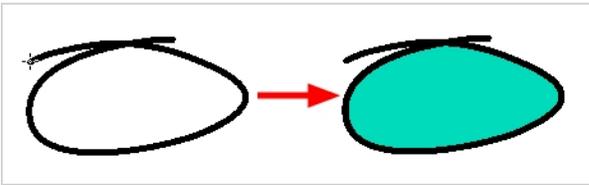
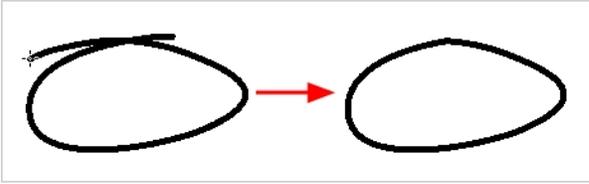
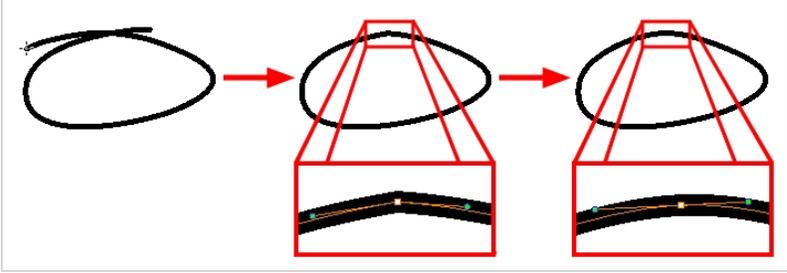
Pencil Presets

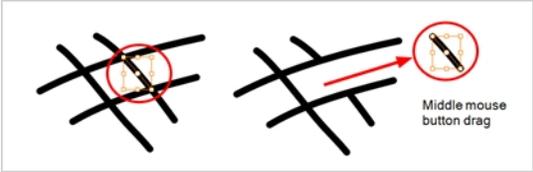
These options allow you to select, create and manage pencil presets.

Icon	Tool Name	Description
	Presets list	<p>Harmony provides a variety of pencil 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.</p> <p>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.</p>
	New Preset	Creates a new preset based on the current brush properties.
	Delete Preset	Deletes the currently selected preset.
	Presets Menu	Gives access to more options for managing presets.
	Rename Brush	Deletes 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. This is the default setting.

Drawing Options

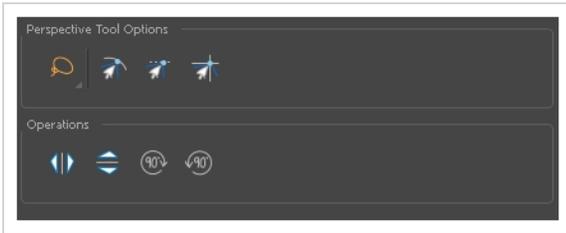
These options affect the way your drawing strokes are integrated into your artwork.

	<p>Draw Behind</p>	<p>When enabled, your brush strokes will appear behind the existing artwork. Note that they will appear over your artwork while drawing your stroke, until you release the brush.</p>  <p>Orange stroke appears behind existing black stroke</p>
	<p>Auto Fill</p>	<p>When enabled, drawing a closed shape will automatically fill it with the currently selected colour.</p> 
	<p>Trim Extra Lines</p>	<p>When enabled, drawing a closed shape will automatically remove the outstanding lines.</p> 
	<p>Align Handles After Trim</p>	<p>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.</p> 
	<p>Auto-Flatten Mode</p>	<p>By default, when drawing, 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</p>

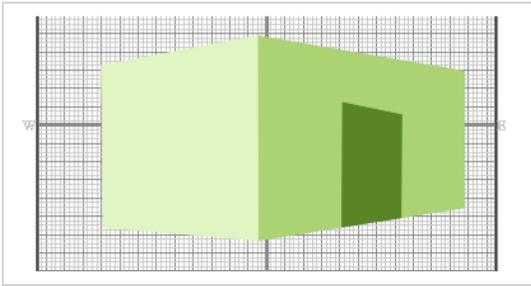
		<p>strokes into existing artwork.</p>  <p>NOTE</p> <p>Using the Select tool, you can use select and remove a segment of flattened pencil lines. Overlapping pencil lines drawn with the Auto-Flatten mode are essentially cut into segments by the overlap and can be treated as individual lines.</p>
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Perspective Tool Properties

Selecting the Perspective tool displays its properties and options in the Tool Properties view.



Icon	Tool Name	Description
Selection Tool Options		
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #add8e6; padding: 5px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.</p> </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p> <div style="border: 1px solid #add8e6; padding: 5px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.</p> </div>
	Snap to Contour	<p>Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.</p>
	Snap and Align	<p>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.</p>
	Snap to Grid	<p>Snaps your selection following the currently enabled</p>

		<p>grid.</p> 
	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.

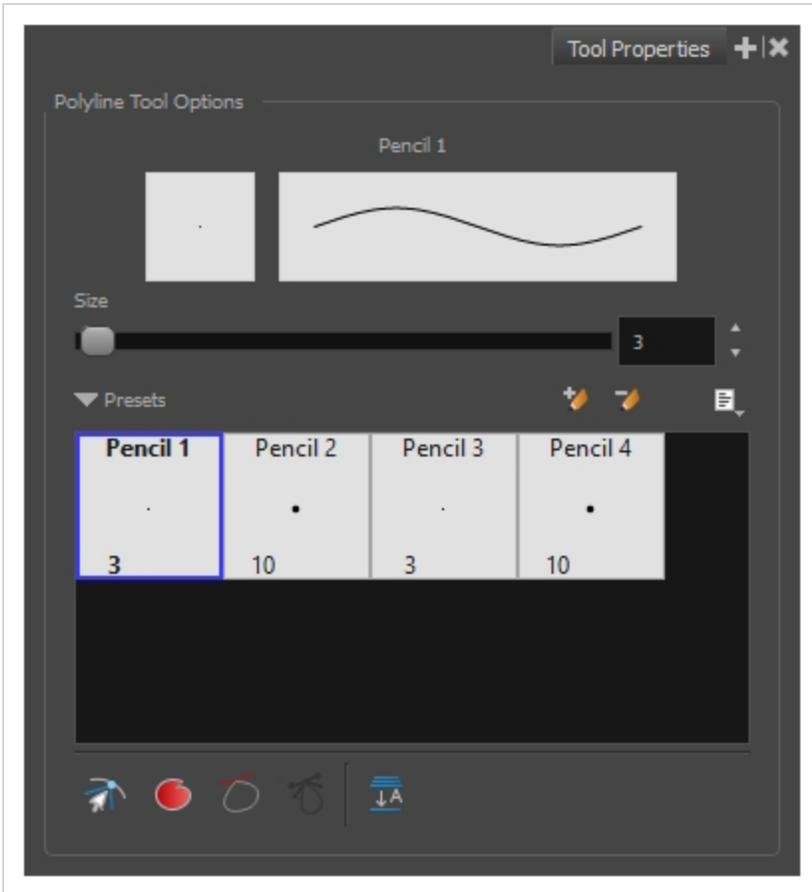
Polyline Tool Properties

When you select the Polyline tool, its properties and options appear in the Tool Properties view.



NOTE

Like other shape tools, the Polyline 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.



Pencil Properties

Icon	Property	Description
	Preview Area	<p>The Preview area lets you see a preview of the stroke your drawing tool will make.</p> 

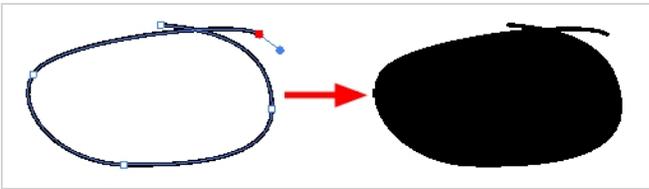
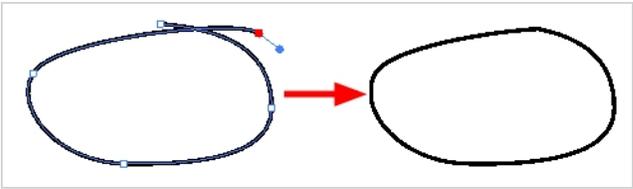
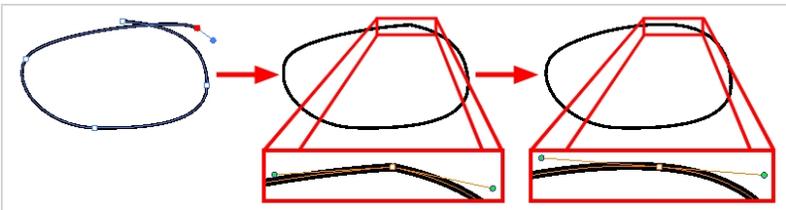
	Pencil Properties Dialog	<p>The arrow button right of the preview area opens the Pencil Properties dialog.</p>  <p>While the Tool Properties view only gives you access to the pencil size, a list of pencil presets and other drawing options, the Pencil Properties dialog gives you access to all the available options for your pencil's shape and texture. For more information on the Pencil Properties dialog, see the Polyline Tool Properties section below.</p>
	Size	Defines the width of the pencil line used to draw the shape.

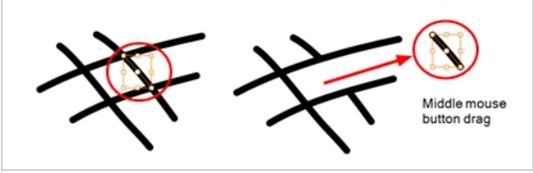
Pencil Presets

Icon	Property	Description
	Presets list	<p>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.</p> <p>All tools using pencil lines share the same preset list. Therefore, the Polyline, Line, Rectangle, Ellipse, and Pencil tools share the same preset list.</p>
	New Preset	Creates a new preset based on the current brush properties.
	Delete Preset	Deletes the currently selected preset.
	Presets Menu	Gives access to more options for managing presets.
	Rename Brush	Deletes 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. This is the default setting.

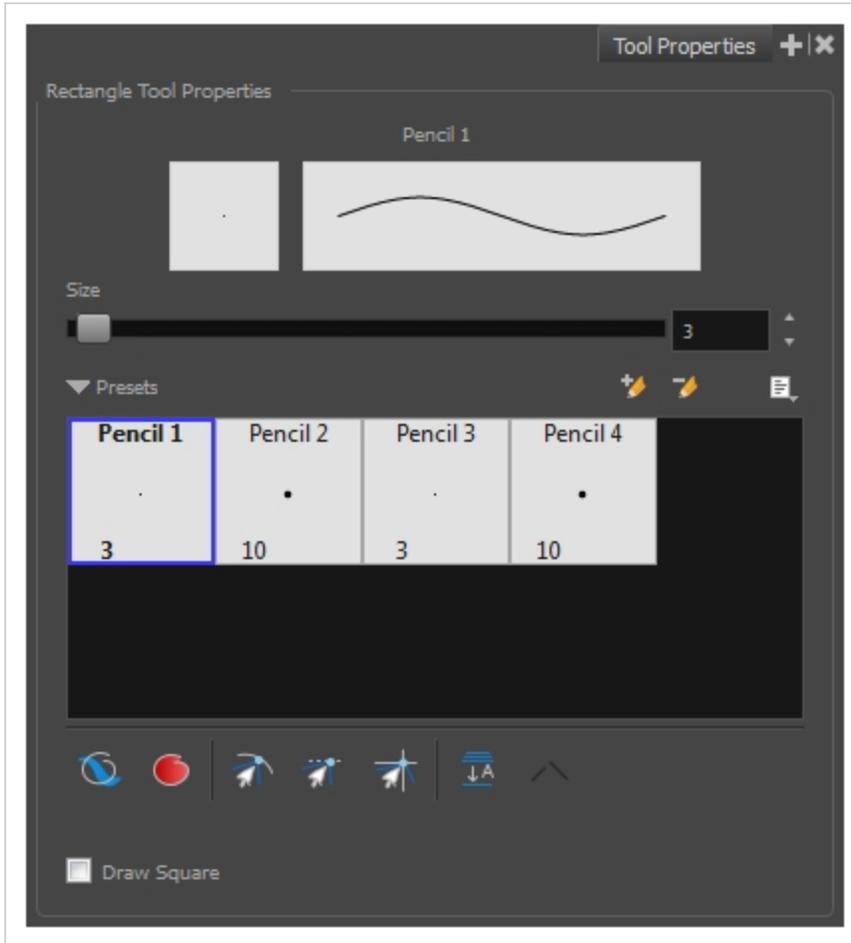
Drawing Options

Icon	Property	Description
	Snap to Contour	Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.
	Auto Fill	When enabled, drawing a closed shape will automatically fill it with the currently selected 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. 

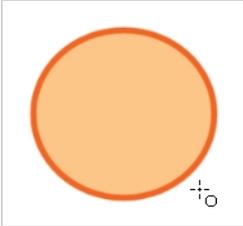
	Auto-Flatten Mode	<p>By default, when drawing, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.</p>  <p>NOTE</p> <p>Using the Select tool, 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.</p>
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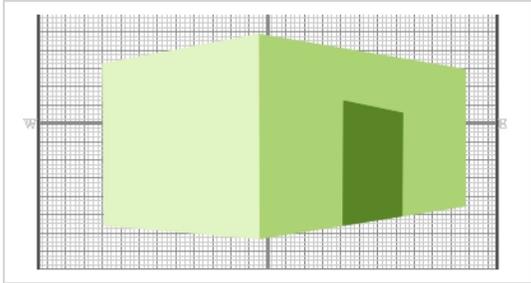
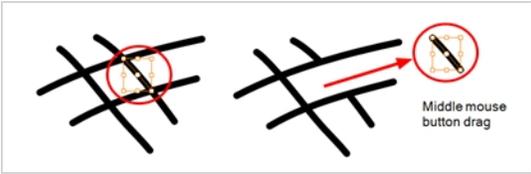
Rectangle Tool Properties

When you select the Rectangle tool, its properties and options appear in the Tool Properties view.



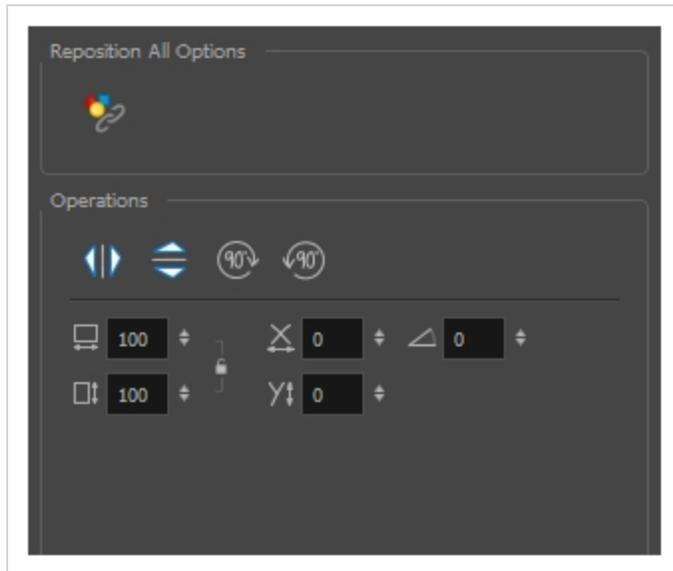
Icon	Tool Name	Description
	Size	Defines the width of the pencil line used to draw the rectangle.
	Presets	<p>Harmony provides a variety of presets and also lets you create and save your own. It is a good idea to create and save pencils with precise sizes and parameters when you draw and design for efficiency and consistency.</p> <p>All tools using pencil lines share the same preset list. Therefore, the Polyline, Line, Rectangle, Ellipse, and Pencil tools share the same preset list.</p>
	New Brush	Creates a new preset based on the current brush properties.

	Delete Brush	Deletes the currently selected preset.
	Rename Brush	Deletes 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, Large Thumbnail, and Stroke View	Allows you to display the presets as small square thumbnails, large square thumbnails or a list of stroke preview.
	Draw Behind	<p>When enabled, your brush strokes will appear behind the existing artwork. Note that they will appear over your artwork while drawing your stroke, until you release the brush.</p> 
	Automatic Filling	<p>Use the Automatic Filling option to automatically fill your shape with the selected colour as you draw. By default, the Shape tool creates the outline of an empty shape that you can later fill using the Paint tool. This option is unavailable for the line tool.</p> 
	Snap to Contour	Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.
	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	Snaps your selection following the currently enabled grid.

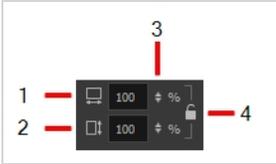
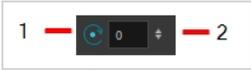
		
	<p>Auto-Flatten Mode</p>	<p>By default, when drawing, each new stroke is created as a separate drawing object, which can be edited independently from other parts of the artwork. When enabled, the Auto-Flatten option automatically merges strokes into existing artwork.</p>  <div style="border: 1px solid green; padding: 10px; margin-top: 10px;"> <p> NOTE</p> <p>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.</p> </div>

Reposition All Drawings Tool Properties

When you use the Reposition All Drawings tool, its properties and options appear in the Tool Properties view.

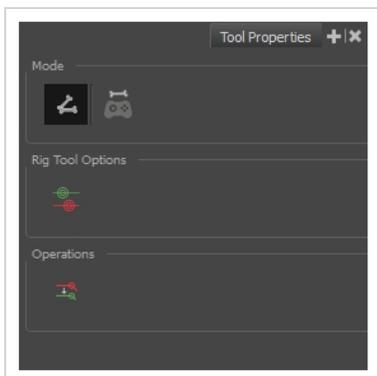


Icon	Option	Description
	Flip Horizontal	Flips the current selection horizontally.
	Flip Vertical	Flips the current selection vertically.
	Rotate 90 Degrees CW	Rotates the current selection 90 degrees clockwise.
	Rotate 90 Degrees CCW	Rotates the current selection 90 degrees counter-clockwise.
	Offset X and Y	<p>Use the Offset X and Offset Y operation fields to enter specific values and precisely reposition the selected shape.</p>  <ol style="list-style-type: none"> X: Type a value in this field to reposition your selection along the X-axis. Y: Type a value in this field to reposition your selection along the Y-axis.

		<p>axis.</p> <p>3. Up/Down arrows: Use the up and down arrows to modify the value in the X or Y value field.</p>
	<p>Width and Height</p>	<p>Use the Width and Height operation fields to enter specific values to resize the selected shape with precision.</p>  <ol style="list-style-type: none"> 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.
	<p>Angle</p>	<p>The Angle operation lets you to enter specific values and accurately rotate the selected shape.</p>  <ol style="list-style-type: none"> 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

Name	Button	Description
Bone Mode		Sets the Rigging tool to create Bone deformers.
Game Bone Mode		Sets the Rigging tool to create Game Bone deformers.

Options

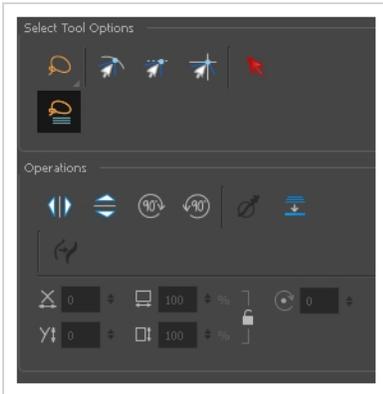
Parameter	Button	Description
Show All Manipulators (Show All Controls)		Lets you immediately see the resting position in red (Setup) and the animated position in green.

Operations

Name	Button	Description
Reset Deform (Reset Current Keyframe)		Copies the resting position of the deformation skeleton to the current frame.

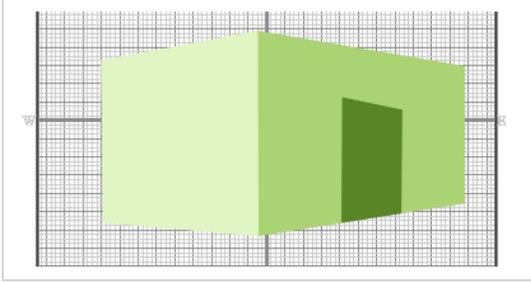
Select Tool Properties

When you use the Select tool, its properties and options appear in the Tool Properties view.



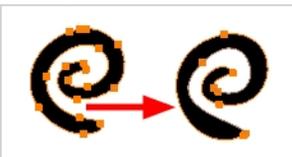
Tool Options

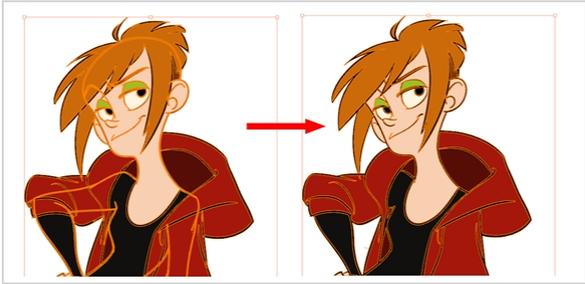
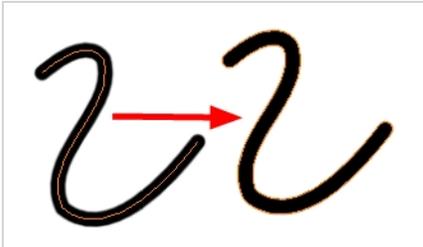
Icon	Tool Name	Description
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.</p> </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.</p> </div>
	Snap to Contour	<p>Snaps your selection or point to any line you position it on. As soon as you move it close enough to another line, your point or selection will snap to it.</p>
	Snap and Align	<p>Snaps the selected anchor point to any existing line while displaying temporary rulers as a guide that you</p>

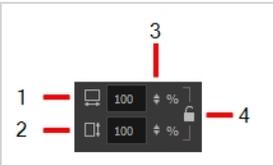
		can also snap your anchor point to.
	Snap to Grid	<p>Snaps your selection following the currently enabled grid.</p> 
	Select by Colour	<p>Lets you select all the zones and lines in your drawing painted with the same colour swatch.</p>  <p>In the Camera or Drawing view, click on any zone or line in your drawing. All zones and lines of the same colour are selected. Click the Select tool again to return to the regular Select mode.</p> <div style="border: 1px solid green; padding: 5px;"> <p> NOTE</p> <p>Only the zones painted with the SAME colour swatch will be selected. If another zone is coloured with the exact same RGB value (same colour), but not painted with the same colour swatch, it will not be selected.</p> </div>
	Works on Single Drawing	By default, when you draw a selection box in the Camera view, the Select tool will select only the drawing strokes of the current drawing. If you prefer the Select tool to select all the strokes on all layers,

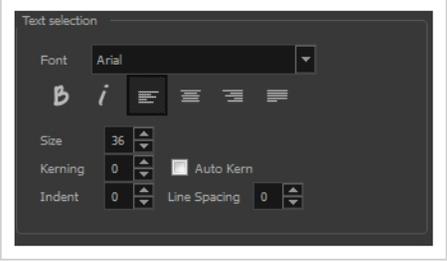
		<p>you can disable the Works on Single Drawing option in the Tool Properties view or disable the Select tool Works on Single Drawing preference. To do this, go to the top menu, select Edit > Preferences > Camera (Windows/Linux) or Harmony Essentials > Preferences > Camera (macOS) and uncheck the Select tool Works on Single Drawing option.</p> 
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Operations

Icon	Tool Name	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	<p>Smooth out selected drawing strokes and remove extra points.</p> 
	Flatten	<p>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</p>

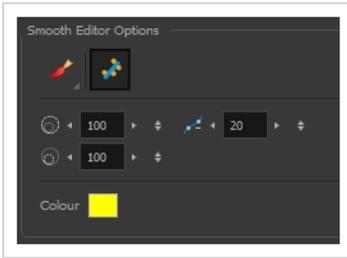
		<p>one on top of each other. If you intend to repaint the lines or modify their shape, it will be easier if they are flattened.</p> 
	<p>Create Colour Art from Line Art</p>	<p>Lets you use the outline you traced on one of the four embedded layers (line art, colour art, overlay, underlay) and create invisible strokes to paint your drawings on separate layers. This provides more inking and painting flexibility.</p> <p>You can also configure this option to create the invisible strokes on any of the four embedded layers.</p>
	<p>Distribute to Layers</p>	<p>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.</p>
	<p>Pencil to Brush</p>	<p>Converts the selected centre line pencil strokes into contour strokes brush lines.</p> 

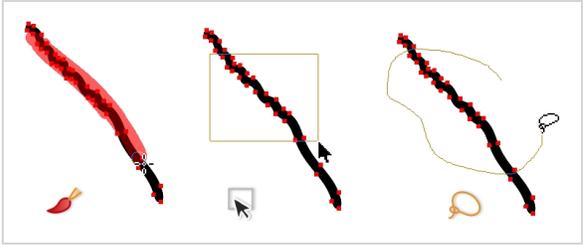
	<p>Offset X and Y</p>	<p>Use the Offset X and Offset Y operation fields to enter specific values and precisely reposition the selected shape.</p>  <ol style="list-style-type: none"> 1. X: Type a value in this field to reposition your selection along the X-axis. 2. Y: Type a value in this field to reposition 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.
	<p>Width and Height</p>	<p>Use the Width and Height operation fields to enter specific values to resize the selected shape with precision.</p>  <ol style="list-style-type: none"> 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.
	<p>Angle</p>	<p>The Angle operation lets you to enter specific values and accurately rotate the selected shape.</p>  <ol style="list-style-type: none"> 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.

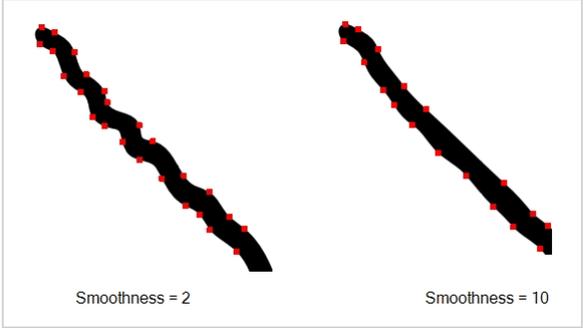
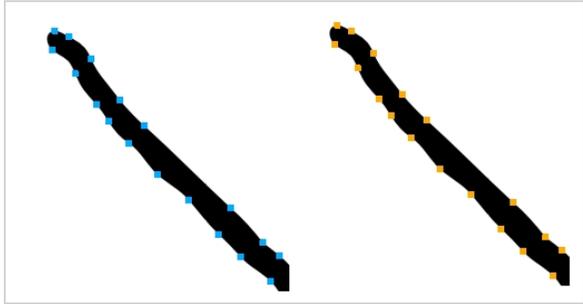
	<p>Adjusting the Pencil Line Thickness</p>	<p>When you select a pencil line with the Select tool, additional options appear in the Tool Properties view.</p> <p>Use the Adjusting the Pencil Line Thickness operation field to resize the selected centreline strokes. This operation is not permitted on contour line shapes, such as brush strokes or shape fills.</p> 
	<p>Adjusting the Text Selection</p>	<p>When you select text with the Select tool, the tool properties will display the Text tool options on the bottom of the view. You can also press Alt + 9 to display only the Text properties in the Tool Properties view—see Text Tool Properties on page 217.</p> 

Smooth Editor Tool Properties

When you select the Smooth Editor tool, its properties and options appear in the Tool Properties view.

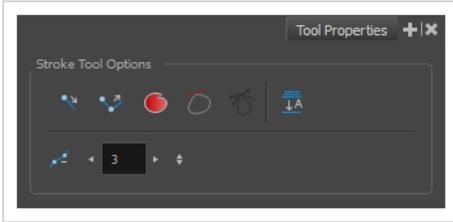


Icon	Tool Name	Description
	Smoothing Style	<p>The Smoothing Style options allow you to smooth a portion of your drawing by tracing a smoothing stroke over the zone to optimize or by selecting an area of the drawing with the Marquee or Lasso.</p> <p>Note that by default, the Smooth Editor tool colour is yellow, it was changed to orange for screen grab clarity.</p> 
	Show Control Points	<p>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.</p>
	Minimum Size and Maximum Size	<p>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.</p> <p>This options is available while using the Brush Smoothing  style.</p>

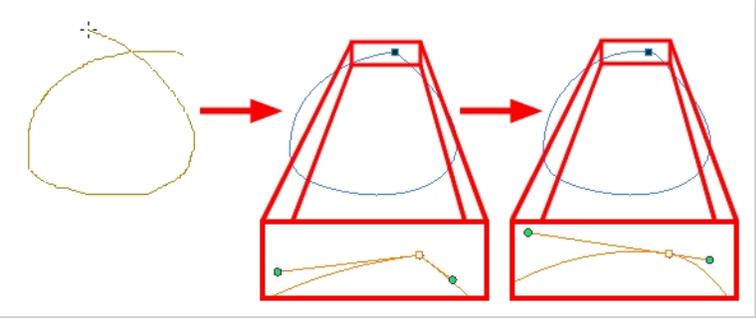
		<ul style="list-style-type: none"> • Maximum and Minimum Size: Defines the maximum and minimum width of the stroke. • Up/Down arrows: Use the up and down arrows to set the minimum and maximum size value.
	Smoothness	<p>The Smoothness impacts the strength of the smoothing result. The higher the value, the more points are removed and the smoother the curve. The Smoothness range is from 0 to 100; the default value is 20.</p> 
	Colour	<p>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.</p> 

Stroke Tool Properties

When you select the Stroke tool, its properties and options appears in the Tool Properties view.



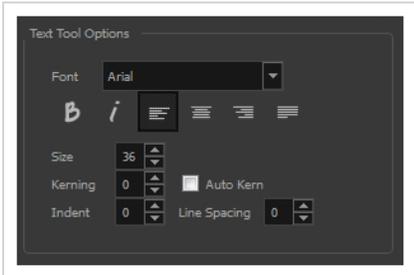
Icon	Tool Name	Description
	Draw Stroke as Straight Lines	Enable the Draw Stroke as Straight Lines option if you want the new strokes you draw to be a perfect straight line. Disable the option if you want the stroke to follow the mouse gesture.
	Connect Line Ends	Enable the Connect Line Ends option if 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 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.

		
	<p>Auto-Flatten Mode</p>	<p>By default, when drawing, 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.</p>
	<p>Smoothness</p>	<p>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.</p>

Text Tool Properties

Use the Text tool's properties to select the font type and other formatting options you want to apply to the text.

If you already wrote your text, you must first use the Text tool and select the text portion you want to format. You can modify the parameters of an entire text box using the Select tool.



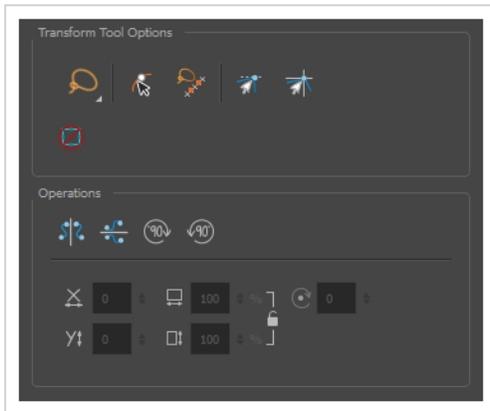
Icon	Tool Name	Description
	Font Type	Use the Font drop-down menu to select a font. OTF fonts are supported. 
B	Bold	Use this option to bold your text selection. 
<i>i</i>	Italic	Use this option to italicize your text selection. 
☰	Left Alignment	Use this option to left align the paragraph.

		<p>LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT. AENEAN VESTIBULUM, METUS AC FERMENTUM PORTTITOR, ODIO TURPIS PORTTITOR NIBH, ID CONSEQUAT MAGNA LIGULA ET ELIT. CURABITUR SOLLICITUDIN ELIT AC LOREM MOLLIS ACC UMSAN.</p>
	Centered Alignment	<p>Use this option to center align the paragraph.</p> <p>LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT. AENEAN VESTIBULUM, METUS AC FERMENTUM PORTTITOR, ODIO TURPIS PORTTITOR NIBH, ID CONSEQUAT MAGNA LIGULA ET ELIT. CURABITUR SOLLICITUDIN ELIT AC LOREM MOLLIS ACC UMSAN.</p>
	Right Alignment	<p>Use this option to right align the paragraph.</p> <p>LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT. AENEAN VESTIBULUM, METUS AC FERMENTUM PORTTITOR, ODIO TURPIS PORTTITOR NIBH, ID CONSEQUAT MAGNA LIGULA ET ELIT. CURABITUR SOLLICITUDIN ELIT AC LOREM MOLLIS ACC UMSAN.</p>
	Justified Alignment	<p>Use this option to justify align the paragraph.</p> <p>LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT. AENEAN VESTIBULUM, METUS AC FERMENTUM PORTTITOR, ODIO TURPIS PORTTITOR NIBH, ID CONSEQUAT MAGNA LIGULA ET ELIT. CURABITUR SOLLICITUDIN ELIT AC LOREM MOLLIS ACC UMSAN.</p>
	Font Size	<p>Enter a size for the text.</p> <p>small text big text</p>
	Kerning	<p>Use the kerning field to modify the spacing between letters and characters. You</p>

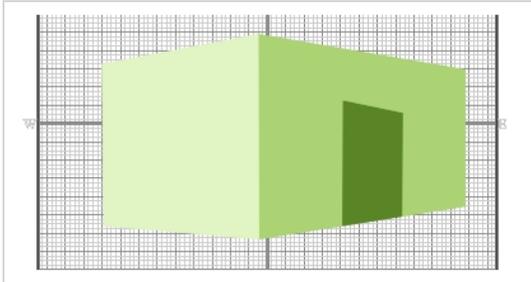
		<p>can select the Auto Kern option to set the kerning automatically based on the font's predefined standard. A negative value decreases spacing between each character, creating a letter overlap and a positive value increases it.</p> <div data-bbox="560 315 1144 598" style="border: 1px solid black; padding: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding-right: 20px;"> <p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p> </td> <td style="width: 50%; vertical-align: top;"> <p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p> </td> </tr> </table> </div>	<p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p>	<p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p>
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	<p>Indent</p>	<p>Enter a value in the Indent field to increase or decrease the indentation on the first line of your text. A positive value sets the first line of your paragraph farther to the right and a negative value sets it farther to the left.</p> <div data-bbox="560 798 1136 987" style="border: 1px solid black; padding: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding-right: 20px;"> <p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p> </td> <td style="width: 50%; vertical-align: top;"> <p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p> </td> </tr> </table> </div>	<p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p>	<p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p>
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	<p>Line Spacing</p>	<p>Enter a value in the Line Spacing field to decrease or increase the space between each line of text.</p> <div data-bbox="560 1144 1144 1365" style="border: 1px solid black; padding: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding-right: 20px;"> <p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p> </td> <td style="width: 50%; vertical-align: top;"> <p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p> </td> </tr> </table> </div>	<p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p>	<p> Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean vestibulum, metus ac fermentum porttitor, odio turpis porttitor nibh, id consequat magna ligula et elit. Curabitur sollicitudin elit ac lorem mollis acc umsan.</p>
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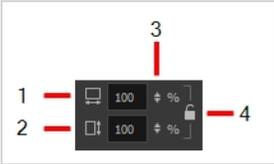
Transform Tool Properties

When selecting the Transform tool, several options are available in the Tool Properties view.



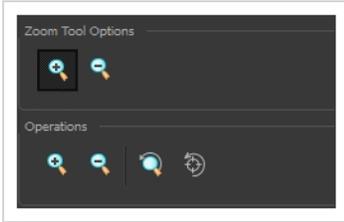
Icon	Tool Name	Description
	Lasso	<p>Sets the selection mode to Lasso, which allows you to select multiple items by drawing a lasso around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; background-color: #E6F2FF;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Marquee mode.</p> </div>
	Marquee	<p>Sets the selection mode to Marquee, which allows you to select multiple items by drawing a rectangle around them.</p> <div style="border: 1px solid #0070C0; padding: 5px; background-color: #E6F2FF;"> <p> TIP When this option is enabled, you can press and hold the Alt key to temporarily use Lasso mode.</p> </div>
	Peg Selection Mode	<p>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.</p> <p>When disabled, the Transform tool selects the drawing layers.</p>
	Control Selection Mode	<p>When enabled, it is possible to select one or several controls displayed in the Camera by drawing a lasso/marquee around them. By default, drawing a lasso or marquee with the Transform tool</p>

		selects layers.
	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	Snaps your selection following the currently enabled grid. 
	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.  <ol style="list-style-type: none">1. X: Type a value in this field to reposition your selection along the X-axis.

		<ol style="list-style-type: none"> 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	<p>Use the Width and Height operation fields to enter specific values to resize the selected shape with precision.</p>  <ol style="list-style-type: none"> 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	<p>The Angle operation lets you to enter specific values and accurately rotate the selected shape.</p>  <ol style="list-style-type: none"> 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

When you select the Zoom tool, its 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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Script Editor View Toolbar	245
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Top Toolbars

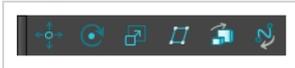
Harmony has a series of toolbars that are added by default at the top of the interface. These toolbars can be moved on the sides of the interface as well as within specific views.

All top toolbars can be added through the top menu **Windows > Toolbars > desired toolbar**.

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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**.

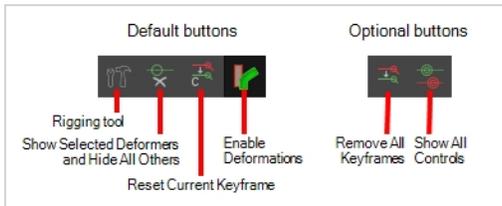
Icon	Tool Name	Description
	Translate	Lets you move the selected element along the X and Y axes.
	Rotate	Turns a selected element around its pivot point.
	Scale	Increases or decreases the size of a selected element. You can scale an object up to make it larger or down to make it smaller. Press Shift 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.

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.



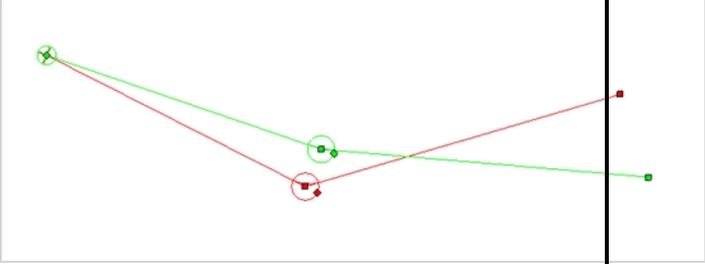
Default Buttons

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 206 .
	Show Selected Deformation Chains and Hide All Others	Displays the deformer manipulators for the selected drawings or selected deformers in the Camera view, and hides all other deformer manipulators.
	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	<p>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.</p>
	Enable Deformations	<p>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.</p> <div style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p> NOTE</p> <p>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.</p> </div>

Optional Buttons

Icon	Tool Name	Description
	Remove All Keyframes	The Remove All Keyframes option removes all keyframes on the selected deformation chain.

	<p>Show All Controls</p>	<p>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</p> 
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Edit Toolbar

The Edit toolbar contains common operations such as Copy, Paste, Cut, Undo and Redo. These options can also be found in the Edit 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 the common file operations such as New, Save and Open. These options can also be found in the File menu.



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	<p>Saves the current file with a different name and at a different location.</p> <p>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.</p> <div style="border: 1px solid green; padding: 5px; margin-top: 10px;">  <p>NOTE The scene name cannot exceed 23 characters.</p> </div>
	Import Images	Imports bitmap images which you can choose to vectorize.

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. Do one of the following:

- In the top menu, select **Windows > Toolbars > Game**.
- Right-click on any existing toolbar and select **Game**.

Icon	Tool Name	Description
	Toggle Anchor	<p>Adds or remove the Anchor property for the selected layer. When a layer is an anchor, its pivot point is exported as an anchor in Unity. A prop can be attached to the anchor to follow the anchor's animation. Since the anchor is the layer's pivot, it will move and rotate with the anchor layer's movement as well as its parent layers' movement.</p> <div style="border: 1px solid #add8e6; padding: 10px; margin-top: 10px;"> <p> TIP You can see whether a layer has the Anchor property in the Metadata Editor view—see Metadata Editor View on page 280</p> </div>
	Toggle Prop	<p>Adds or remove the Prop property for the selected layer. When a layer is a prop, it is exported as a prop to Unity. A prop can be attached to an anchor on your character, which makes it follow the anchor's animation.</p> <div style="border: 1px solid #add8e6; padding: 10px; margin-top: 10px;"> <p> TIP You can see whether a layer has the Prop property in the Metadata Editor view—see Metadata Editor View on page 280</p> </div>
	Export to Sprite Sheets	<p>Opens the Export to Sprite Sheets dialog, from which you can export your scene as a rigged sprite sheet that can be imported in Unity and which can have props and anchors—see Export to Sprite Sheet Dialog Box on page 24.</p>

Icon	Tool Name	Description
	Export to Easel JS	Opens the Export to Easel JS dialog, from which you can export your scene as a rendered sprite sheet that can be imported in Unity—see Export to Easel JS Dialog Box on page 19.

Playback Toolbar

The Playback toolbar 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.



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 Harmony 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

Name	Button	Description
		<p>sound track.</p> <p>You can also select Play > Enable Sound Scrubbing.</p>
Jog Frames		<p>Allows you to quickly play your scene forward or backward to preview your animation.</p> <p>Moving the handle towards the right will play your scene forward, while moving it towards the left will play your scene backward.</p> <p>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.</p> <p>Once the head is released, it returns to the middle and playback stops.</p>
Frame		<p>Lets you manually enter the current frame number, setting the playhead's position.</p>
Start		<p>Let's you manually enter the number of the first frame to play during playback.</p> <div data-bbox="695 1119 1430 1293" style="border: 1px solid #add8e6; padding: 10px; margin-top: 10px;"> <p> TIP</p> <p>You can also click on Start (just left of the input field) to quickly set the Start frame to the current frame.</p> </div>
Stop		<p>Let's you manually enter the number of the first frame to play during playback.</p> <div data-bbox="695 1444 1430 1619" style="border: 1px solid #add8e6; padding: 10px; margin-top: 10px;"> <p> TIP</p> <p>You can also click on Stop (just left of the input field) to quickly set the Stop frame to the current frame.</p> </div>
FPS (Frames per second)		<p>Lets you set the amount of frames that should be played during every second of playback, which is how the playback speed is determined.</p>

Name	Button	Description
		<div data-bbox="695 283 1430 453" style="border: 1px solid #c8e6c9; padding: 10px;"> NOTE This does not change the frames per second setting in your scene's resolution settings.</div>

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.



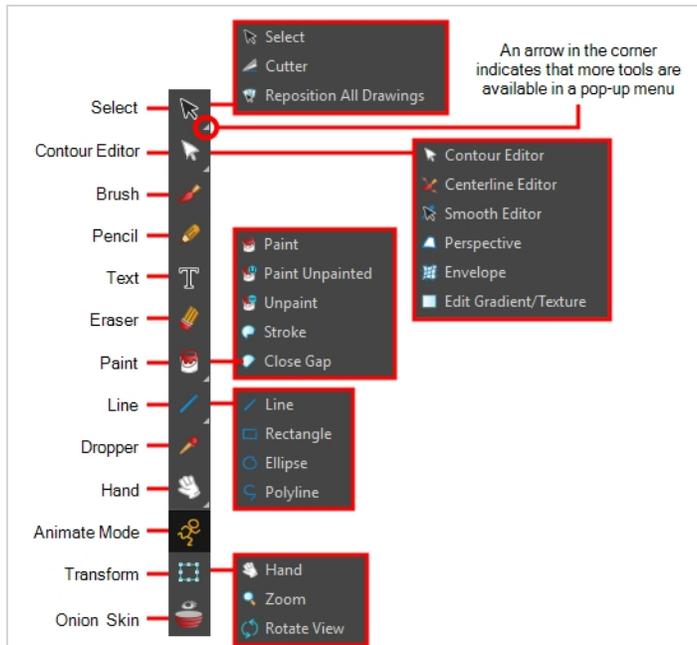
How to add the Scripting toolbar to your workspace

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.

Tools Toolbar

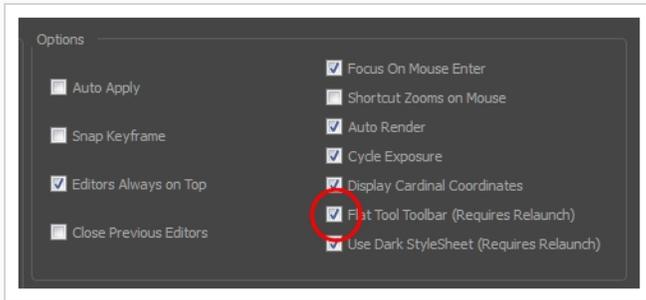
The Tools toolbar contains all the main tools you need to work in Harmony. In the default workspace, this toolbar is located on the left-most side of the interface. A small triangle at the lower-right corner of a tool indicates additional tools under the main tool. To access these tools, hold down the left mouse button until the additional tools appear, then select one.



By default, the Tools toolbar displays several of its tools in pop-up menus that must be opened. It is possible to make the Tools toolbar display every tool in its individual button instead by enabling the Flat Tools Toolbar preference. This makes the selection of tools quicker. However, because there is not enough vertical space to display all tools, some tools will be hidden from the Tools toolbar by default. Which tools are displayed in the Tools toolbar when Flat Tools Toolbar is enabled can be customized. The order in which tools are listed in Flat Tools Toolbar mode can also be customized.

How to make every tool in the Tools toolbar display in buttons rather than pop-up menus

- Do one of the following:
 - Select **Edit > Preferences** (Windows/Linux) or **Harmony Essentials > Preferences** (macOS).
 - Press **Ctrl + U** (Windows/Linux) or **⌘ + U** (macOS).
- Select the **General** tab.
- In the Options section, select the **Flat Tool Toolbar** option.

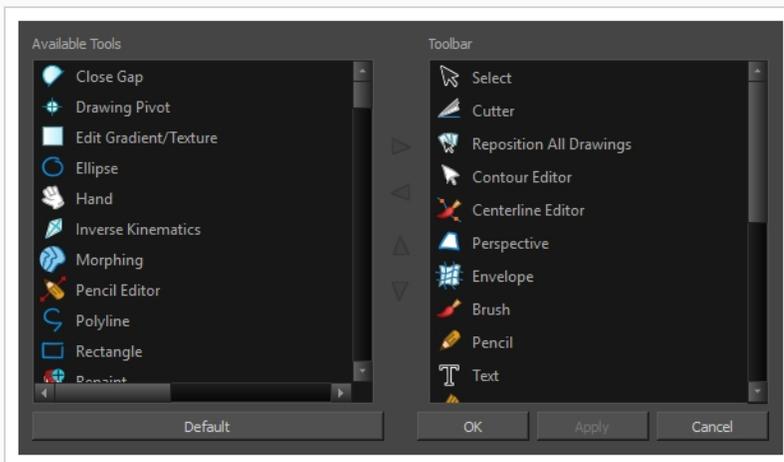


4. Click **OK** and restart Harmony.

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.

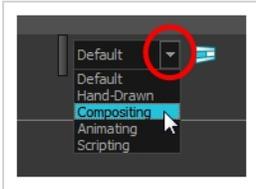
Reposition All Drawings		Allows you to reposition, scale, rotate and skew all drawings in the current layer.
Contour Editor		Allows you to edit the vector contours of brush strokes, pencil lines and shapes in your artwork. You can add, remove, tweak and move vector points, move the Bezier handles of 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.
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.
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.
Paint Unpainted		Allows you to quickly fill empty zones in your artwork with a colour or texture, leaving filled zones unchanged.

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.
Dropper		Allows you to select a colour by clicking on a colour in your artwork.
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.
Animate Mode		Enables the Animate mode which records the position, rotation, scale, skew, etc. of objects as keyframes in the Timeline view. Turn off the Animate mode to reposition objects for the entire scene. When the Animate mode is disabled, keyframes are not created when an object's parameters change.
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.
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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

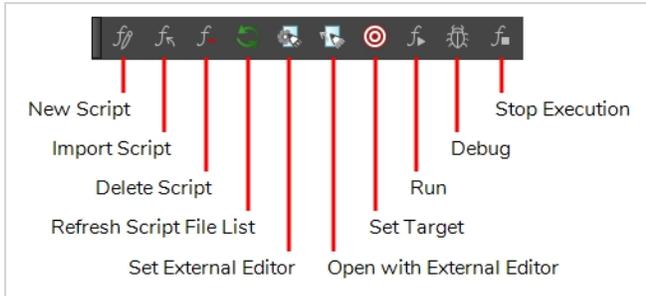
Harmony has a series of view specific toolbars that are only available in a given view. These toolbars can be moved only within their view.

All view toolbars can be added, as long as the view is visible, through the top menu **Windows > Toolbars > desired toolbar**.

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Script Editor View 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 282.



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	<p>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:</p> <ul style="list-style-type: none"> • User: Saves the script to your user preferences. You will be able to run and edit the script from any scene as long as you are logged in as the same user. • 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. <div style="border: 1px solid green; padding: 5px; margin-top: 10px;">  <p>NOTE For more information on script locations, see Script Editor View.</p> </div>
	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

Icon	Button	Description
		<p>system. Then, you are prompted to select which location to import the script in:</p> <ul style="list-style-type: none"> • User: Saves the script to your user preferences. You will be able to run and edit the script from any scene as long as you are logged in as the same user. • 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. <div data-bbox="561 558 1425 697" style="border: 1px solid #c8e6c9; padding: 5px;">  NOTE For more information on script locations, see Script Editor View. </div>
	Delete Script	<p>Deletes the selected script.</p> <div data-bbox="561 821 1425 1146" style="border: 1px solid #c8e6c9; padding: 5px;">  NOTES <ul style="list-style-type: none"> • 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. </div>
	Refresh Script File List	<p>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.</p>
	Set External Editor	<p>Allows you to type in the path and name for your preferred text editing software.</p> <div data-bbox="561 1434 1425 1759" style="border: 1px solid #c8e6c9; padding: 5px;">  NOTES <ul style="list-style-type: none"> • 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, unless your text editor is in your system's PATH environment variable, you will have to type in the full path to the editor. </div>
	Open with External Editor	<p>Opens the selected script in the chosen external text editing software.</p>

Icon	Button	Description
	Set Target	Prompts you to select which script and which function to use with the  Run and  Debug buttons.
	Run	<p>Runs the target script and function.</p> <div data-bbox="560 474 1429 852" style="border: 1px solid #c8e6c9; padding: 10px;"> <p> NOTES</p> <ul style="list-style-type: none"> • 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. </div>
	Debug	<p>Open the target script and function in the Qt Script Debugger, in which you can test and debug the function.</p> <div data-bbox="560 1008 1429 1386" style="border: 1px solid #c8e6c9; padding: 10px;"> <p> NOTES</p> <ul style="list-style-type: none"> • 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. </div>
	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.



Button	Name	Description
	Set Ease Type	
	Create Empty Drawing	
	Duplicate Drawing	
	Insert Keyframe	
	Delete Keyframes	
	Set Motion Keyframe	
	Set Stop-Motion Keyframe	
	Go to Previous Keyframe	
	Go to Next Keyframe	
	Add Key Exposure	
	Delete Key Exposure	
	Centre On Selection	
	Set Ease for Multiple Parameters	
	Fill Empty Cells	

	Paste Special	
	Enable/Disable	

How to access the Timeline view toolbar

You can add the Timeline view toolbar to the Timeline view by:

- Going to the top menu and selecting **Windows > Toolbars > Timeline view**.
- right-clicking on the space at the top of the Timeline view and selecting **Timeline view**.

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.

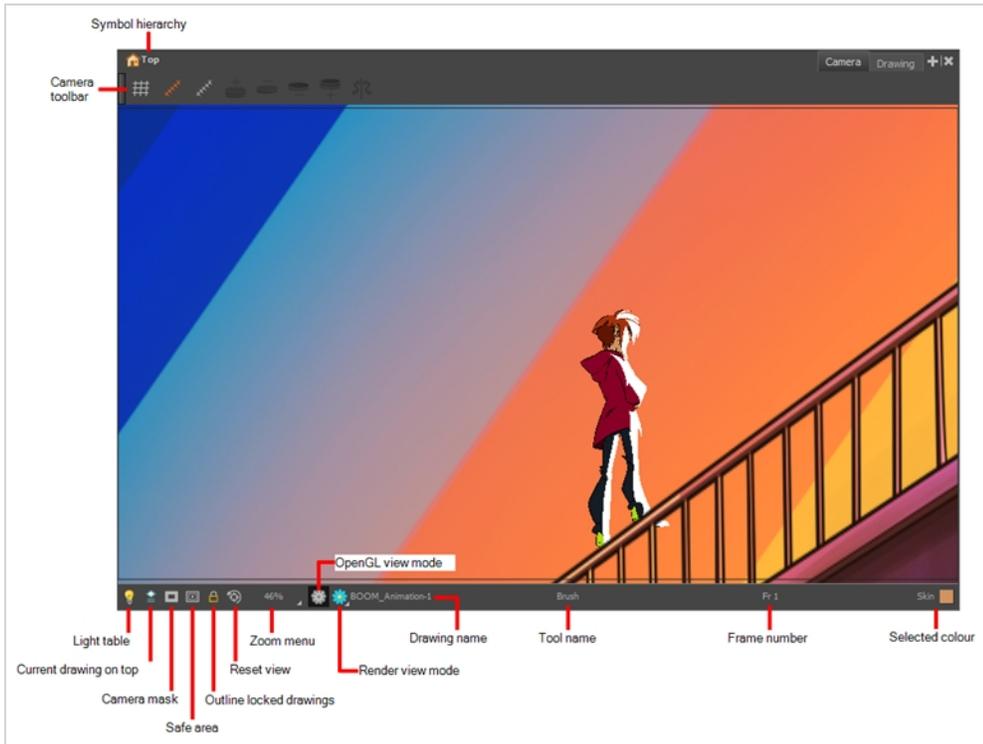
When a view is active, a red rectangle appears around the view. Keyboard shortcuts and top menu options are associated with the active view. If a menu option is greyed out, it means it does not apply to the layer, drawing or other type of selection or the option does not apply to the active view.

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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.

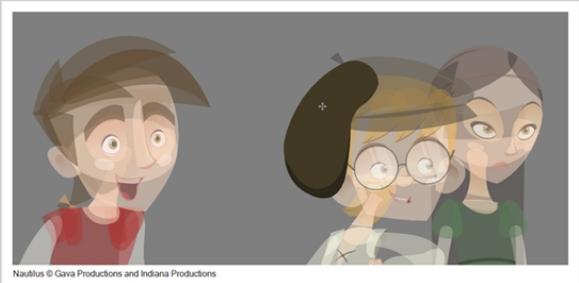


How to access the Camera view

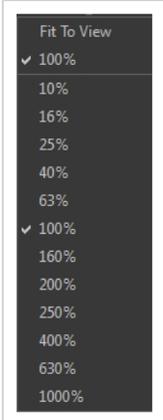
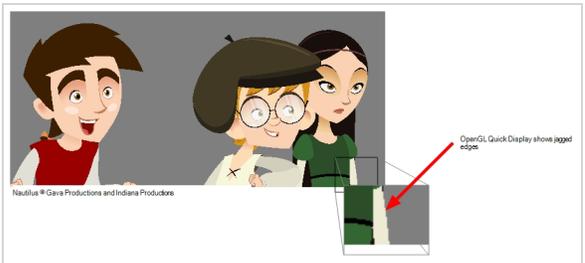
Do one of the following:

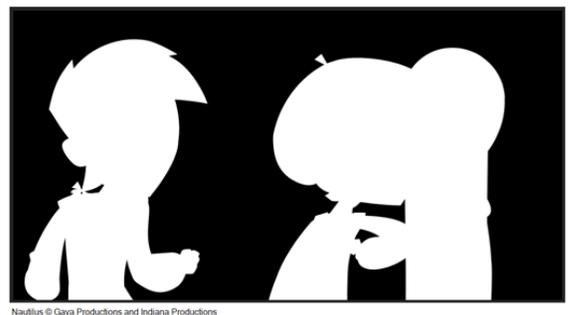
- From the top menu, select **Windows > Camera**.
- From any of the other views, click the Add View **+** button and select **Camera**.

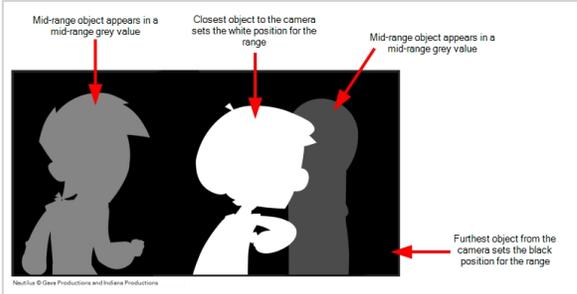
Icon	Section	Description
	Editing Stack	The Editing Stack menu displays the names of the symbols and their hierarchy when you are editing a symbol. You can click on the different names to go back up to the different parent symbols or the top/current project.

	Camera View Toolbar	<p>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.</p>
	Light Table	<p>When you have a drawing layer or drawing selected, the Light Table 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.</p>  <p><small>Nautilus © Gava Productions and Indiana Productions</small></p>
	Current Drawing on Top	<p>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.</p>  <p><small>Nautilus © Gava Productions and Indiana Productions</small></p>
	Camera Mask	<p>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.</p> <p>You can also access this from the top menu by selecting View > Show > Camera Mask.</p>

		
	<p>Safe Area</p>	<p>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.</p> <p>You can also access this feature from the top menu by selecting View > Show > Safe Area.</p> 
	<p>Outline Locked Drawings</p>	<p>Drawings that are locked in the Timeline view (cannot be selected in the Camera view) are displayed as wireframes.</p> 
	<p>Reset View</p>	<p>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.</p>
	<p>Zoom Menu</p>	<p>The Zoom menu lets you enlarge or reduce the Camera or Drawing view display.</p> <p>To make the camera frame size always match the size</p>

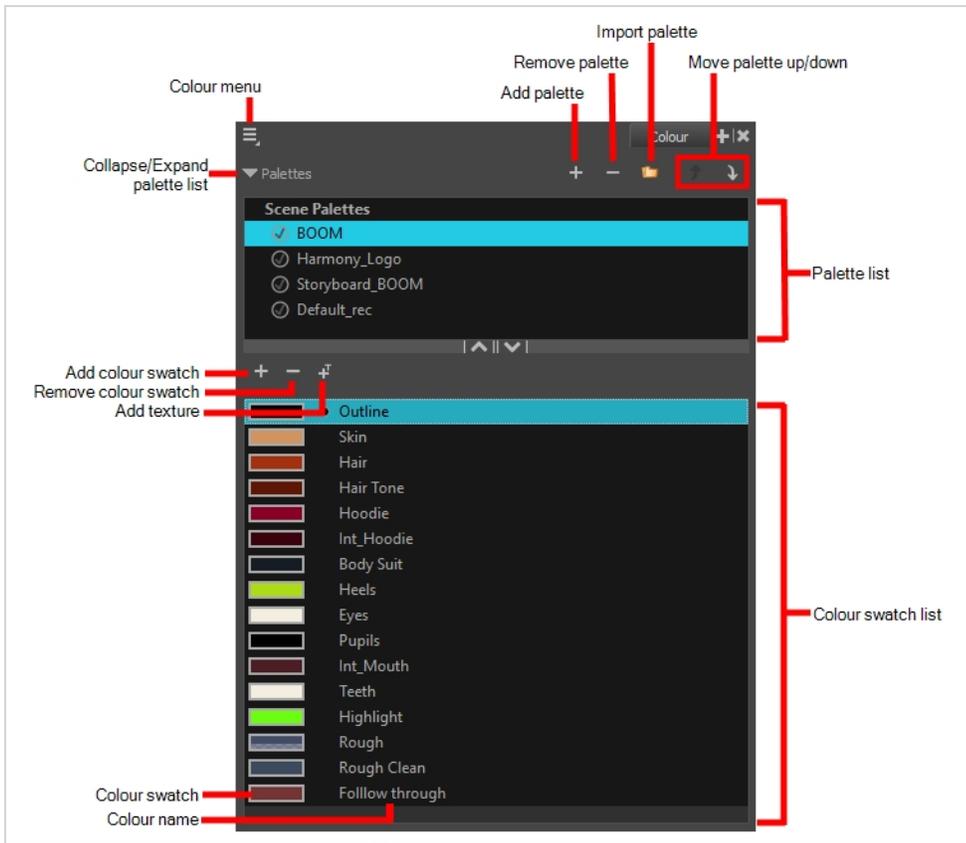
		<p>of your view, select the Fit to View option. Click the drop-down arrow and select a zoom level or press 1 and 2.</p> 
	<p>OpenGL View Mode</p>	<p>The OpenGL View Mode button switches the Camera view to fast display, letting you see your animation play in real time. The OpenGL display requires less 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.</p> 
	<p>Render View Mode</p>	<p>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.</p>

		 <p>Nautilus © Gara Productions and Indiana Productions</p>
<p>* </p>	<p>Matte View Mode</p>	<p>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.</p> <ul style="list-style-type: none"> To access the Matte View mode, click on the Render View button and select Matte View from the drop-down menu.  <p>Nautilus © Gara Productions and Indiana Productions</p>
<p>z </p>	<p>Depth View Mode</p>	<p>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.</p>

		 <ul style="list-style-type: none"> To access the Depth View mode, click on the Render View button and select Depth View from the drop-down menu.
	Drawing Name	<p>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.</p>
	Tool Name	<p>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.</p>
	Frame Number	<p>The Frame Number field displays the number of the current frame.</p>
	Selected Colour	<p>The colour swatch displays the currently selected colour in the Colour view.</p>

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	Allows you to show or hide your palette list and its options. By default, the

	List	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	<p>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.</p> 
	Import Palette	Allows you to import a palette from your machine into your scene's palette list. The palette will be copied to your scene's folder.
	Order Palette List	<p>Moves palettes further up or down the palette list.</p> <p>If a palette has been cloned, the highest palette among the original palette and its clone(s) will be used by Harmony.</p>
	Edit Palette List Mode Indicator	<p>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.</p> <div style="border: 1px solid green; padding: 10px; margin-top: 10px;"> <p> NOTE</p> <p>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.</p> </div>

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.

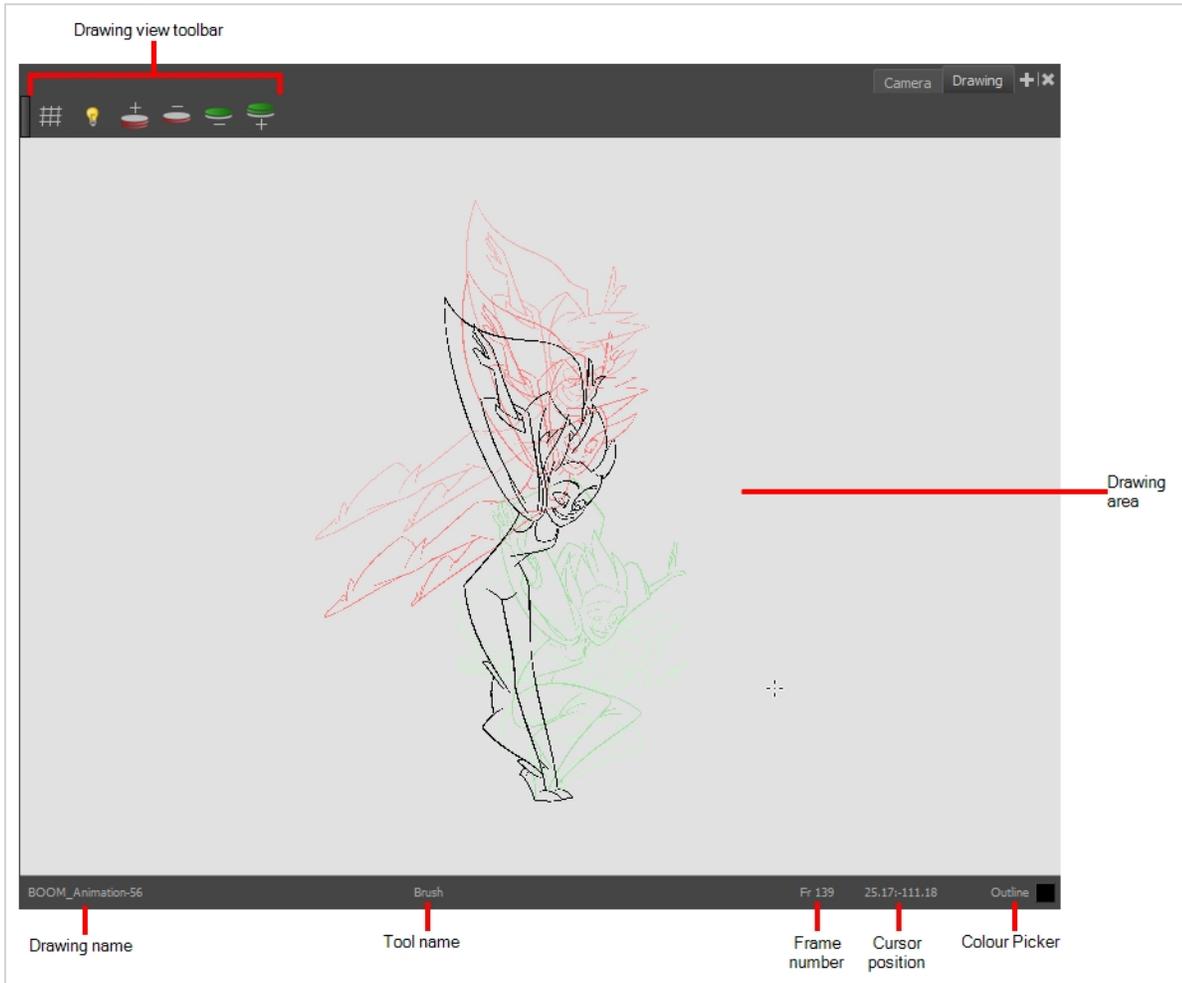
										
	Add Texture	<p>Allows you to import a bitmap image as a texture, which can be painted with just like a colour. When used with the Brush or Paint tools, bitmap textures are tiled inside the shape they fill. The scaling and position of the texture inside their shape can be tweaked with the Edit Gradient/Texture tool. When used with the Pencil tool or one of the Shape tools, a bitmap texture will follow the pencil line's direction.</p> 								
	Colour Swatch Name	<p>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.</p> <table border="1" data-bbox="691 1633 894 1770"> <tr> <td></td> <td>Skin</td> </tr> <tr> <td></td> <td>Teeth</td> </tr> <tr> <td></td> <td>Horns</td> </tr> <tr> <td></td> <td>Helmet</td> </tr> </table>		Skin		Teeth		Horns		Helmet
	Skin									
	Teeth									
	Horns									
	Helmet									

		<div style="border: 1px solid #90EE90; padding: 10px;">  <p>NOTE Two colours can have the same name. Harmony identifies colours by an identification number.</p> </div>												
	<p>Colour Swatch</p>	<p>Also referred to as <i>colour pots</i>, 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.</p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 10px; background-color: red; border: 1px solid black;"></td> <td>Colour 2</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: green; border: 1px solid black;"></td> <td>Colour 3</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: blue; border: 1px solid black;"></td> <td>Colour 4</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: #f5deb3; border: 1px solid black;"></td> <td>colour 5</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: #ffcc99; border: 1px solid black;"></td> <td>colour 6</td> </tr> <tr> <td style="width: 20px; height: 10px; background-color: white; border: 1px solid black;"></td> <td>colour 7</td> </tr> </table> </div>		Colour 2		Colour 3		Colour 4		colour 5		colour 6		colour 7
	Colour 2													
	Colour 3													
	Colour 4													
	colour 5													
	colour 6													
	colour 7													

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.

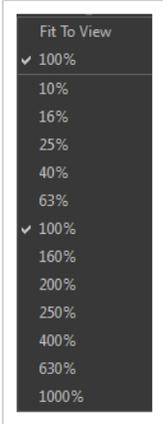
Only the selected drawing is displayed by default in the Drawing view. You can use features, such as the light table to display the current drawing of all the enabled layers of your scene in washed-out colours, or the Onion Skin to display the previous and next drawings of the currently selected drawing layer.



How to access the Drawing view

Do one of the following:

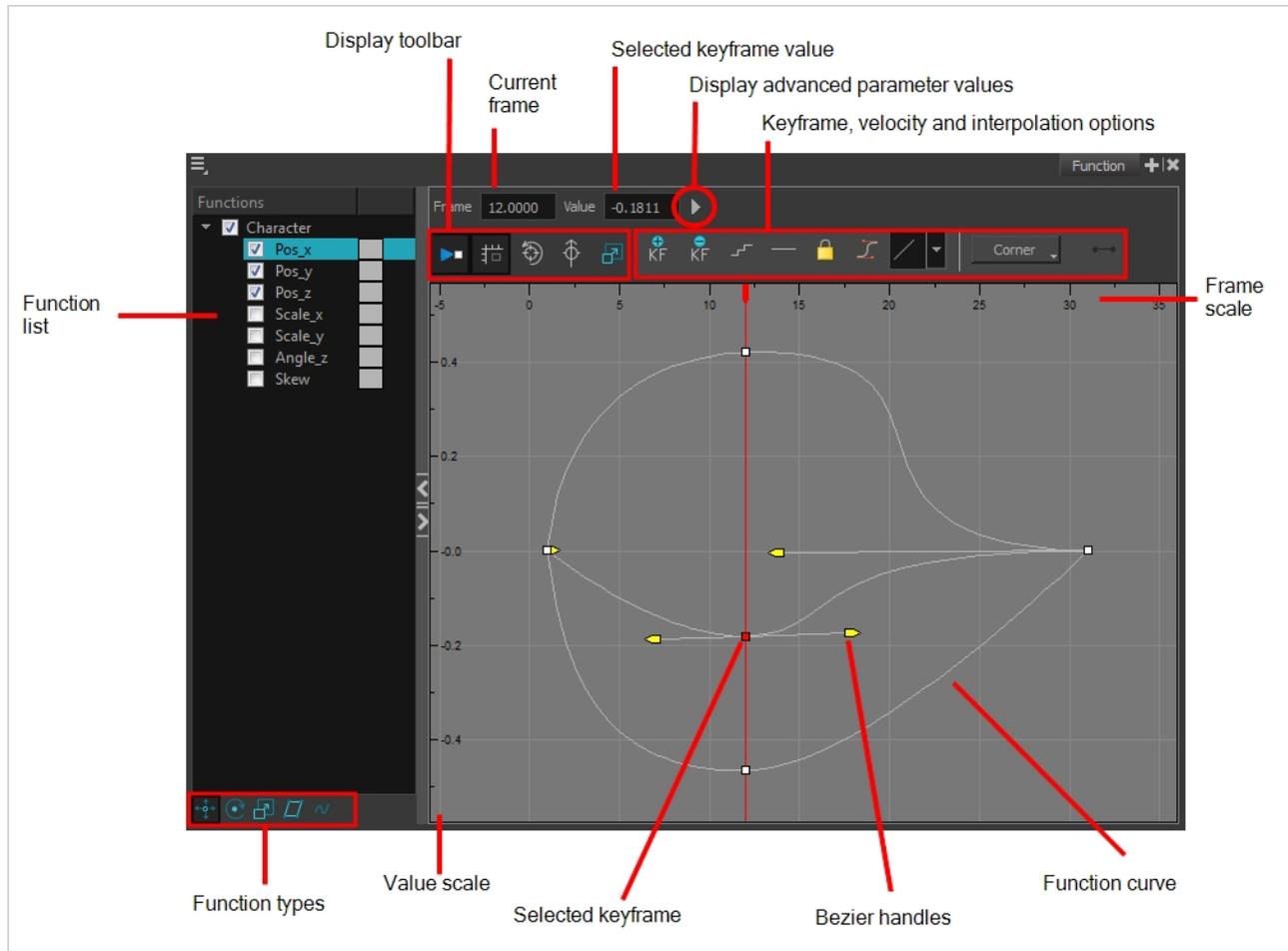
- From the top menu, select **Windows > Drawing**.
- From any of the other views, click the Add View **+** button and select **Drawing**.

Icon	Section	Description
	Drawing Area	This is the main space in the Drawing view. It is where you draw and where the drawings are displayed.
	Zoom Menu	<p>The Zoom menu lets you enlarge or reduce the Camera or Drawing view display.</p> <p>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.</p> 
	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.

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:

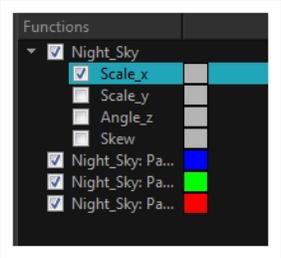
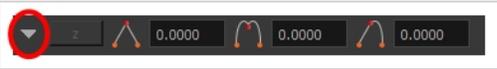
- From the top menu, select **Windows > Function**.
- From any of the other views, click the Add View **+** button and select **Function**.

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.

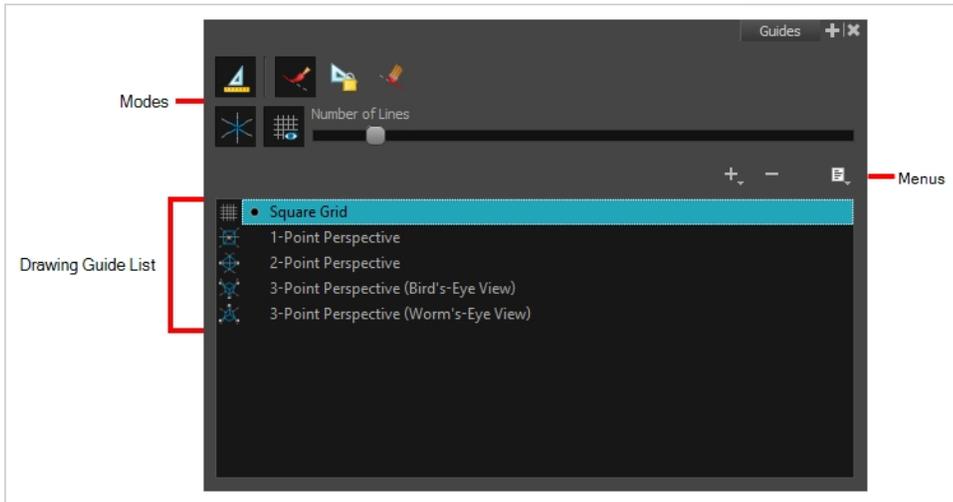
Parameter	Description
Function List	 <p>When selecting a layer in the Timeline view, all the corresponding functions are displayed (if any). Select the functions you want to see and edit, and hide the ones you don't.</p>
Display Toolbar	Allows you to modify how the editing area is displayed. You can 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	 <p>Displays the Projection, Bias, Tension and Continuity parameters to adjust the curve around the selected keyframe.</p>
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

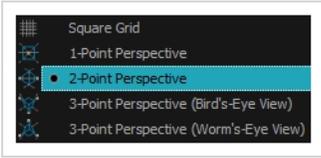
The Guides view enables you to manage drawing guides for a given storyboard panel. Use Drawing Guides to assist you in creating a drawing with perspective.

Guides can be added, selected, renamed, deleted, cut, copied, pasted and reordered. Guides can also be exported to a file and re-imported later.



Icon	Name	Description
Options		
	Enable Guide	Enables or disables drawing guides.
	Align with Guide	<p>When enabled:</p> <ul style="list-style-type: none"> The Brush, Pencil, Line and (optionally) Eraser tools are constrained by the Drawing Guide to draw/erase straight lines only. <p>When disabled:</p> <ul style="list-style-type: none"> The drawing tools are not constrained by the Drawing Guide, allowing you to do freehand strokes. The guide acts as a visual aid only.
	Lock Guide	Locks the editing of a Drawing Guide to prevent its accidental modification while drawing.
	Enable Guide with Eraser	Toggles the use of Drawing Guides with the Eraser tool.

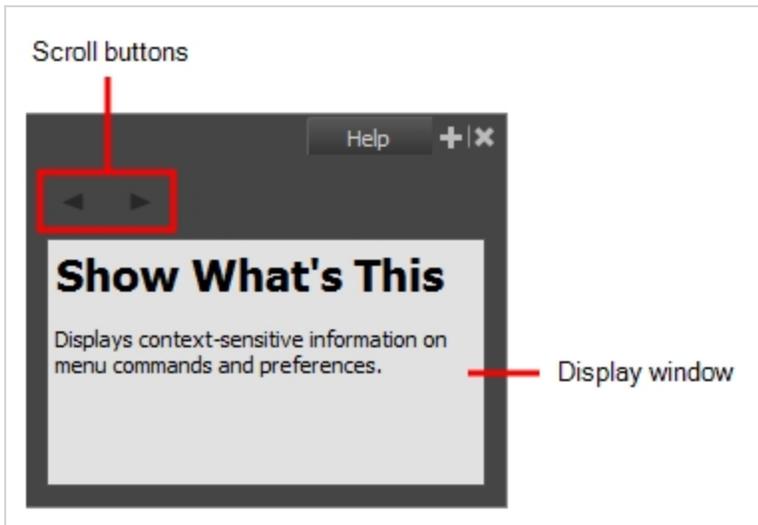
Icon	Name	Description
	Full Cursor Display	<p>When enabled:</p> <ul style="list-style-type: none"> • Drawing Guide axes extend to the edge of the drawing area. <p>When disabled:</p> <ul style="list-style-type: none"> • Drawing Guide axes are short. • Drawing Guide axes disappear while drawing a stroke.
	Show Reference Lines	Toggles the display of a visual reference consisting of lines that converge towards the vanishing point(s).
	Number of Lines	<p>Adjusts the amount of reference lines to display.</p> 
Guides List		
	New Guide	<p>Allows you to add a guide to the scene's guides list. You can add a guide of one of the following types:</p> <ul style="list-style-type: none"> • Square grid • 1-point perspective • 2-point perspective • 3-point perspective (bird's eye view) • 3-point perspective (worm's eye view)
	Delete Guide	Deletes the selected Drawing Guide(s) 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 Guide(s) from the list and adds it to the clipboard.
	Copy	Copies the selected Drawing Guide(s) to the clipboard.

Icon	Name	Description
	Paste	Pastes Drawing Guide(s) from the clipboard to the scene's guides list. Pasted guides are inserted under the selected guide.
	Import Guides	Imports Drawing Guides from a source 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 Guide(s) to a destination file.
	Drawing Guides List	<p>Displays the scene's list of guides and allows you to select which guide to display and use.</p> 

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

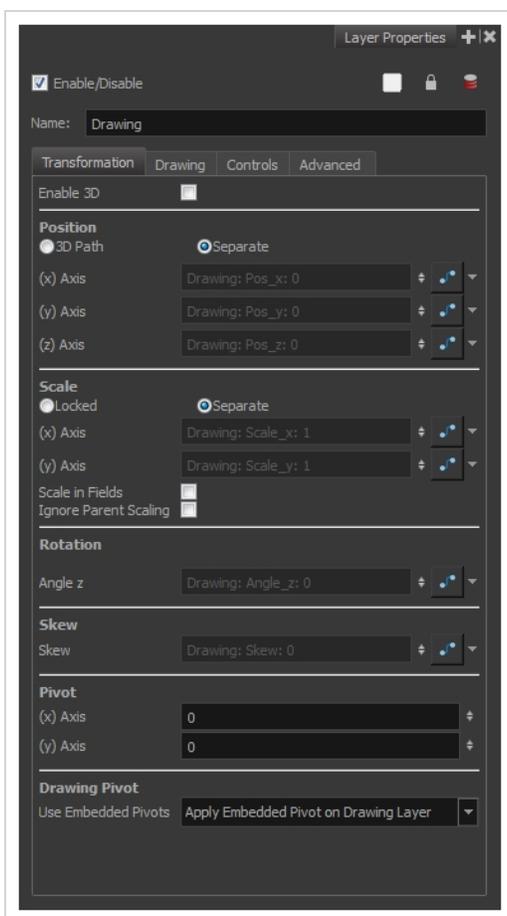
The Layer Properties editor or view lets you adjust the properties of a layer in the Timeline view. The Layer Properties can be viewed as a floating window or as a view (docked).

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 120.



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

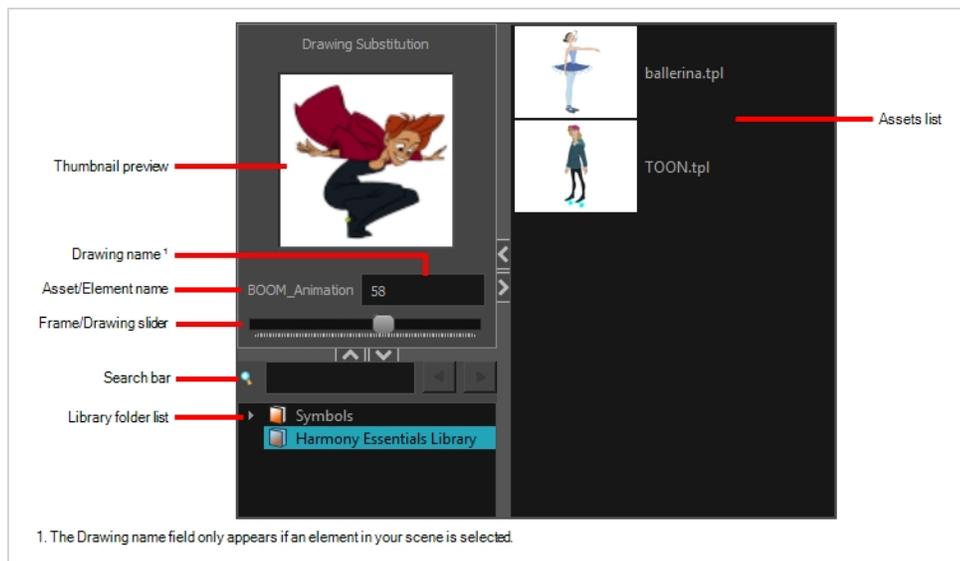
- Double-click on a layer in the Timeline view
- Right-click on a layer in the Timeline view and select **Layer Properties**.
- Select a layer in the Timeline view and press Shift + E.

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 Substitution 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.



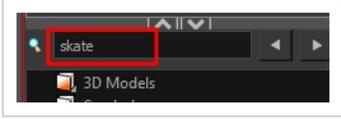
How to access the Library view

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**.

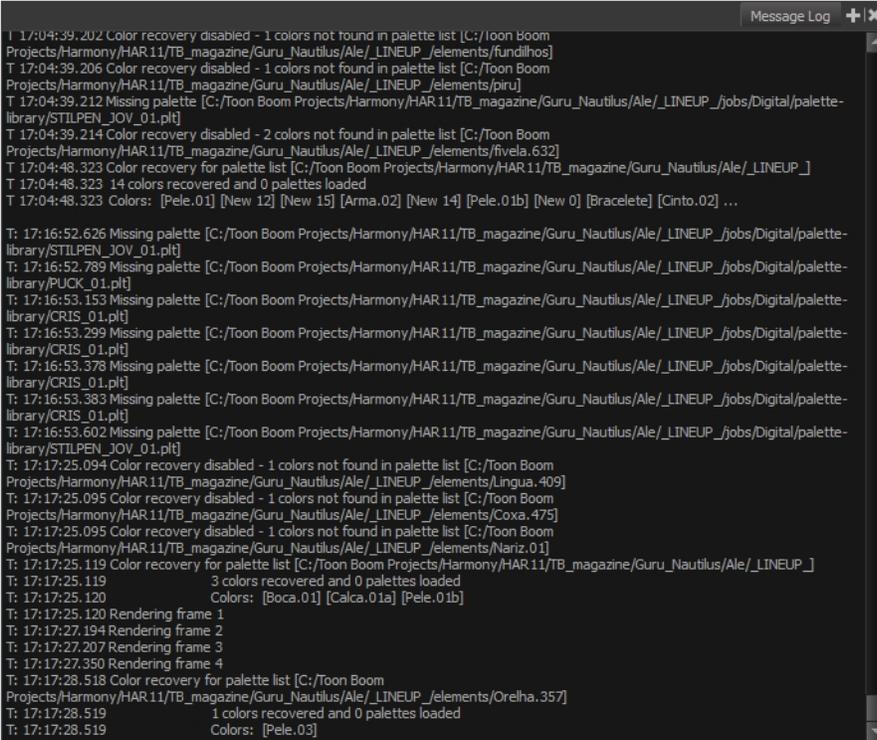
Icon	Section	Description
	View Menu	The Library menu lets you access commands related to the Library view, importing .swf movies and

		<p>Illustrator files, add a new folder, and refresh the library's content.</p>
	<p>Preview Window</p>	<p>The Preview window lets you see the content of the currently selected template or symbol in the Template/Symbol list.</p> 
	<p>Preview Playback</p>	<p>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.</p>
	<p>Library Folder List</p>	<p>The Library Folder List displays all the folders linked to the Library view.</p>  <p>There are two default folders:</p> <ul style="list-style-type: none"> • Symbols: This folder is the only folder containing symbols. You can organize it by adding subfolders inside. • Harmony Essentials Library: This is a default folder found on the hard drive in your user documents. This folder can contain templates, but no symbols. <p>You can link new library folders to the Library view and organize them with subfolders.</p>
	<p>Library Search tool</p>	<p>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.</p>

		
	Template/Symbol List	<p>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.</p>

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.



```

T 17:04:39.202 Color recovery disabled - 1 colors not found in palette list [C:/Toon Boom
Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/elements/fundilhos]
T 17:04:39.206 Color recovery disabled - 1 colors not found in palette list [C:/Toon Boom
Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/elements/piru]
T 17:04:39.212 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/STILPEN_JOV_01.plt]
T 17:04:39.214 Color recovery disabled - 2 colors not found in palette list [C:/Toon Boom
Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/elements/fivela.632]
T 17:04:48.323 Color recovery for palette list [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_]
T 17:04:48.323 14 colors recovered and 0 palettes loaded
T 17:04:48.323 Colors: [Pele.01] [New 12] [New 15] [Arma.02] [New 14] [Pele.01b] [New 0] [Bracelete] [Cinto.02] ...

T 17:16:52.626 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/STILPEN_JOV_01.plt]
T 17:16:52.789 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/PUICK_01.plt]
T 17:16:53.153 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/CRIS_01.plt]
T 17:16:53.299 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/CRIS_01.plt]
T 17:16:53.378 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/CRIS_01.plt]
T 17:16:53.383 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/CRIS_01.plt]
T 17:16:53.602 Missing palette [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/jobs/Digital/palette-
library/STILPEN_JOV_01.plt]
T 17:17:25.094 Color recovery disabled - 1 colors not found in palette list [C:/Toon Boom
Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/elements/Lingua.409]
T 17:17:25.095 Color recovery disabled - 1 colors not found in palette list [C:/Toon Boom
Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/elements/Coxa.475]
T 17:17:25.095 Color recovery disabled - 1 colors not found in palette list [C:/Toon Boom
Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/elements/Nariz.01]
T 17:17:25.119 Color recovery for palette list [C:/Toon Boom Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_]
T 17:17:25.119 3 colors recovered and 0 palettes loaded
T 17:17:25.120 Colors: [Boca.01] [Calca.01a] [Pele.01b]
T 17:17:25.120 Rendering frame 1
T 17:17:27.194 Rendering frame 2
T 17:17:27.207 Rendering frame 3
T 17:17:27.350 Rendering frame 4
T 17:17:28.518 Color recovery for palette list [C:/Toon Boom
Projects/Harmony/HAR11/TB_magazine/Guru_Nautilus/Ale/_LINEUP_/elements/Orelha.357]
T 17:17:28.519 1 colors recovered and 0 palettes loaded
T 17:17:28.519 Colors: [Pele.03]

```

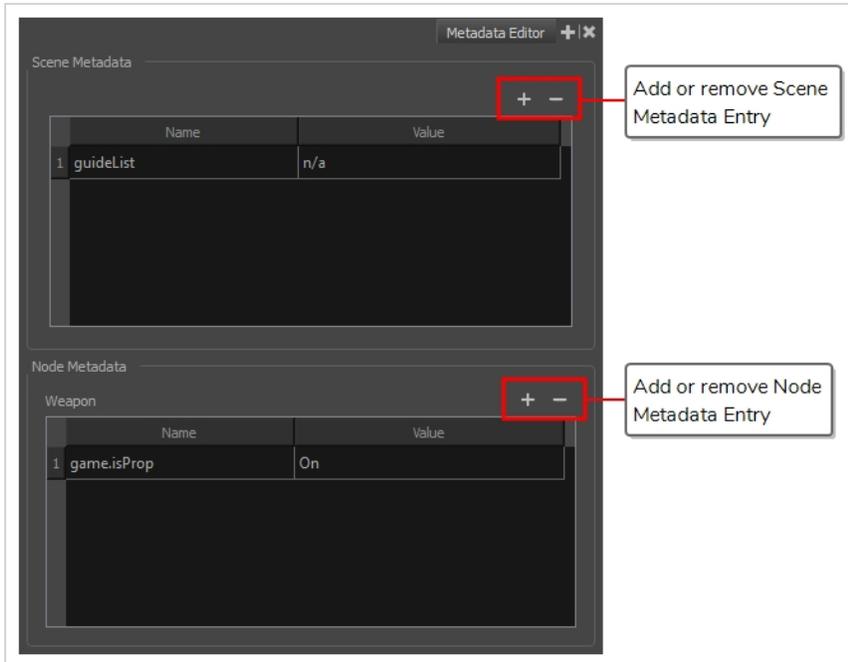
How to access the Message Log view

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 allows you to view and modify the information for props and anchors when creating a game character or asset in Harmony. It displays your scene's metadata as well as the metadata for the currently selected layer and allows you to add, remove or change the value of metadata nodes.



Usually, you do not need to manually add or modify metadata for a game character or asset using the Metadata Editor. The commands available in the Game toolbar can be used to define props and anchors, which will automatically fill your scene and layers with the proper metadata. The Metadata Editor is however useful for visualizing the way Harmony stores this information, to tweak it as necessary and to debug any issue that could occur when exporting a game asset to Unity.



IMPORTANT

You should avoid using any character but letters, numbers, dashes and underscores in the Metadata Editor.

How to access the Metadata Editor view

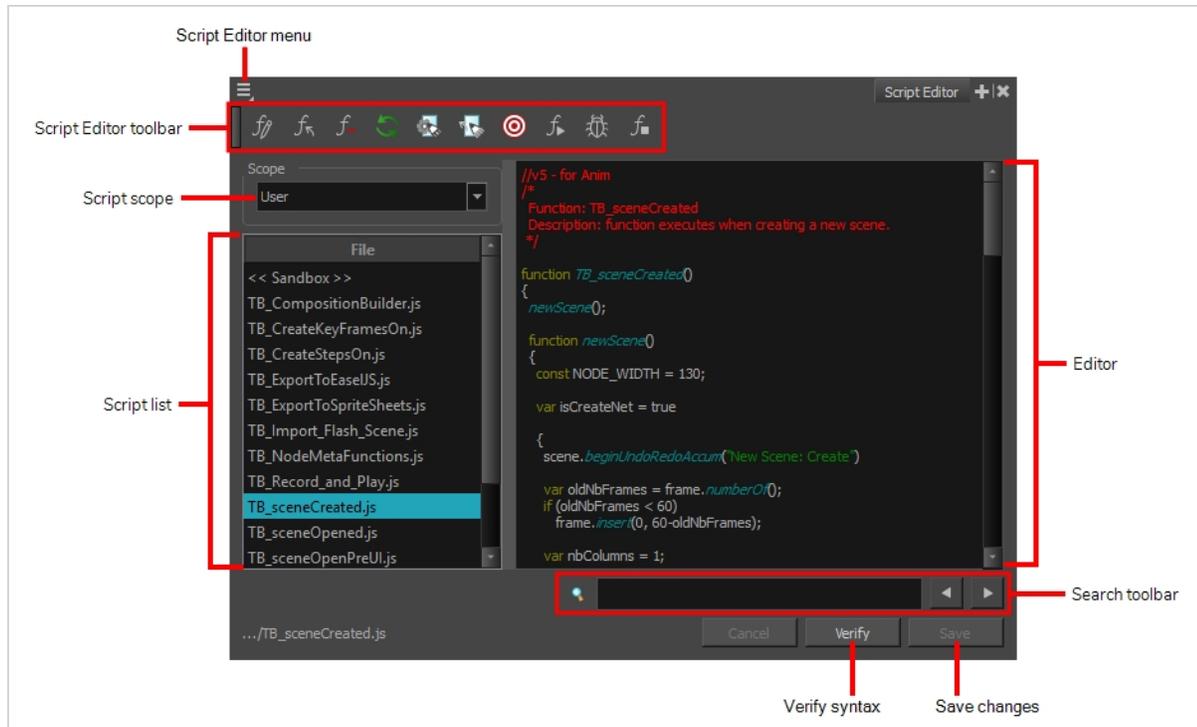
- In the top-right corner of a view, click the Add View **+** button and select **Metadata Editor**.
- In the top menu, select **Windows > Metadata Editor**.

Parameter	Description
-----------	-------------

<p>Scene Metadata</p>	<p>Displays the metadata for the Harmony scene. Each entry has a name and a value.</p> <p>Typically, metadata for a scene includes the following entry:</p> <table border="1" data-bbox="565 298 1429 514"> <thead> <tr> <th data-bbox="565 298 748 388">Metadata</th> <th data-bbox="748 298 1429 388">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="565 388 748 514">guideList</td> <td data-bbox="748 388 1429 514">This is a node in which the guides created in the Guide View are stored. This can be ignored—see Guides View.</td> </tr> </tbody> </table>	Metadata	Description	guideList	This is a node in which the guides created in the Guide View are stored. This can be ignored—see Guides View .				
Metadata	Description								
guideList	This is a node in which the guides created in the Guide View are stored. This can be ignored—see Guides View .								
<p>Node Metadata</p>	<p>Displays the metadata for the currently selected layer. Each metadata entry has a name and a value.</p> <p>Typically, metadata for a node includes the following entries:</p> <table border="1" data-bbox="565 718 1429 1423"> <thead> <tr> <th data-bbox="565 718 902 808">Metadata</th> <th data-bbox="902 718 1429 808">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="565 808 902 1024">game.isAnchor</td> <td data-bbox="902 808 1429 1024">When set to On, this sets the selected layer as an anchor. This means that, in Unity, the layer's pivot will be an anchor to which props can be attached. A prop will follow its anchor's movement.</td> </tr> <tr> <td data-bbox="565 1024 902 1176">game.isProp</td> <td data-bbox="902 1024 1429 1176">When set to On, this sets the selected layer as a prop. In Unity, a prop can be attached to an anchor to follow its movement.</td> </tr> <tr> <td data-bbox="565 1176 902 1423">game.<metadata name></td> <td data-bbox="902 1176 1429 1423">When a layer has the game.isProp property, you can add any metadata node to it provided that the name of the metadata node starts with game followed by a period (.). This metadata will be exported to the list of metadata values for the prop, which can be used in Unity.</td> </tr> </tbody> </table>	Metadata	Description	game.isAnchor	When set to On, this sets the selected layer as an anchor. This means that, in Unity, the layer's pivot will be an anchor to which props can be attached. A prop will follow its anchor's movement.	game.isProp	When set to On, this sets the selected layer as a prop. In Unity, a prop can be attached to an anchor to follow its movement.	game.<metadata name>	When a layer has the game.isProp property, you can add any metadata node to it provided that the name of the metadata node starts with game followed by a period (.). This metadata will be exported to the list of metadata values for the prop, which can be used in Unity.
Metadata	Description								
game.isAnchor	When set to On, this sets the selected layer as an anchor. This means that, in Unity, the layer's pivot will be an anchor to which props can be attached. A prop will follow its anchor's movement.								
game.isProp	When set to On, this sets the selected layer as a prop. In Unity, a prop can be attached to an anchor to follow its movement.								
game.<metadata name>	When a layer has the game.isProp property, you can add any metadata node to it provided that the name of the metadata node starts with game followed by a period (.). This metadata will be exported to the list of metadata values for the prop, which can be used in Unity.								

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**.

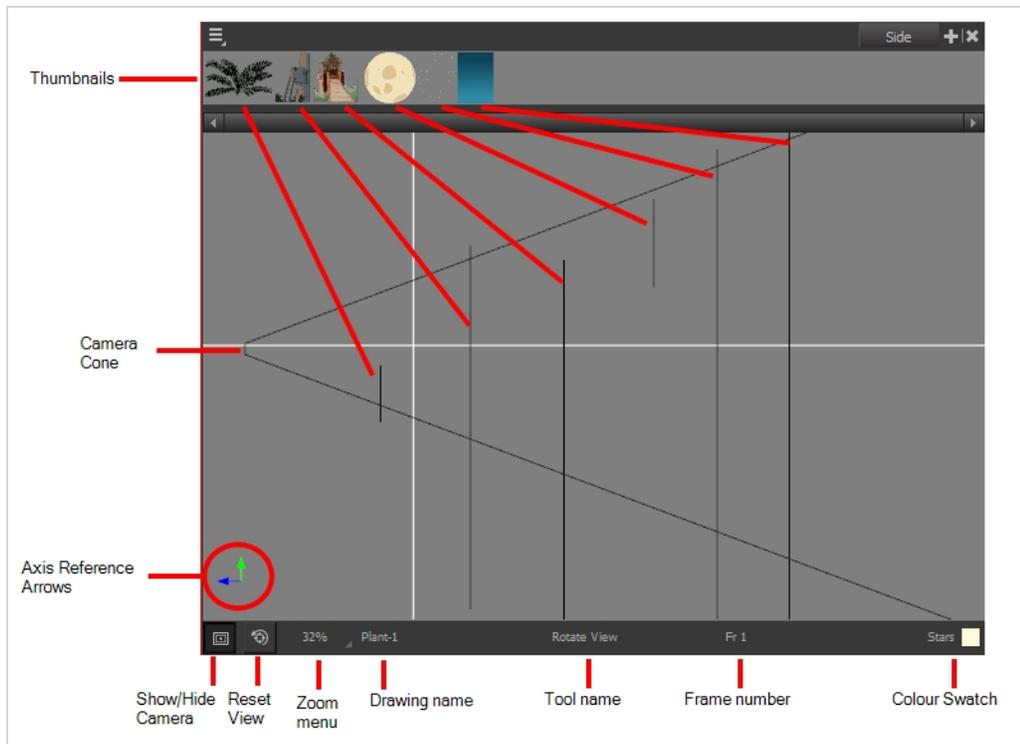
Parameter	Description
Scope	<p>The location of the scripts you are editing. The script editor can list, open and edit scripts from the two following scopes:</p> <ul style="list-style-type: none"> • User: Scripts are saved alongside your user preferences. Those scripts can be loaded, executed and edited in any scene, but only as the currently logged-in user. • Scene: Scripts are saved to the scripts subfolder of the currently opened scene. This scope is for scripts that should be used in the scene specifically, but should be available to any user that opens the scene.

	<div style="border: 1px solid #c8e6c9; padding: 10px;">  <p>NOTE</p> <p>User scripts are stored in the following location:</p> <ul style="list-style-type: none"> • Windows: <code>C:\Users\[username]\AppData\Roaming\Toon Boom Animation\Toon Boom Harmony Essentials\1500-scripts</code> • macOS: <code>/Users/[username]/Library/Preferences/Toon Boom Animation/Toon Boom Harmony Essentials/1500-scripts</code> </div>
<p>Script list</p>	<p>The list of script files. Selecting a script will open it in the editor and allow you to make changes to it.</p> <div style="border: 1px solid #c8e6c9; padding: 10px;">  <p>NOTE</p> <p>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, but changes to the sandbox will not be saved.</p> </div>
<p>Editor</p>	<p>A syntax highlighting text editor in which the script is loaded and can be edited.</p>
<p>Search toolbar</p>	<p>Allows you to search for a keyword within the script.</p>
<p>Verify</p>	<p>Verifies that the script has no syntax error.</p>
<p>Save</p>	<p>Save the modifications to the script to its corresponding script file.</p>

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.

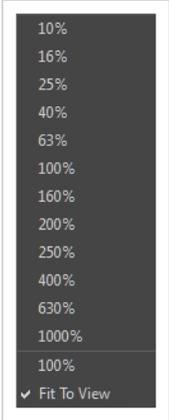


How to access the Side view

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
	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

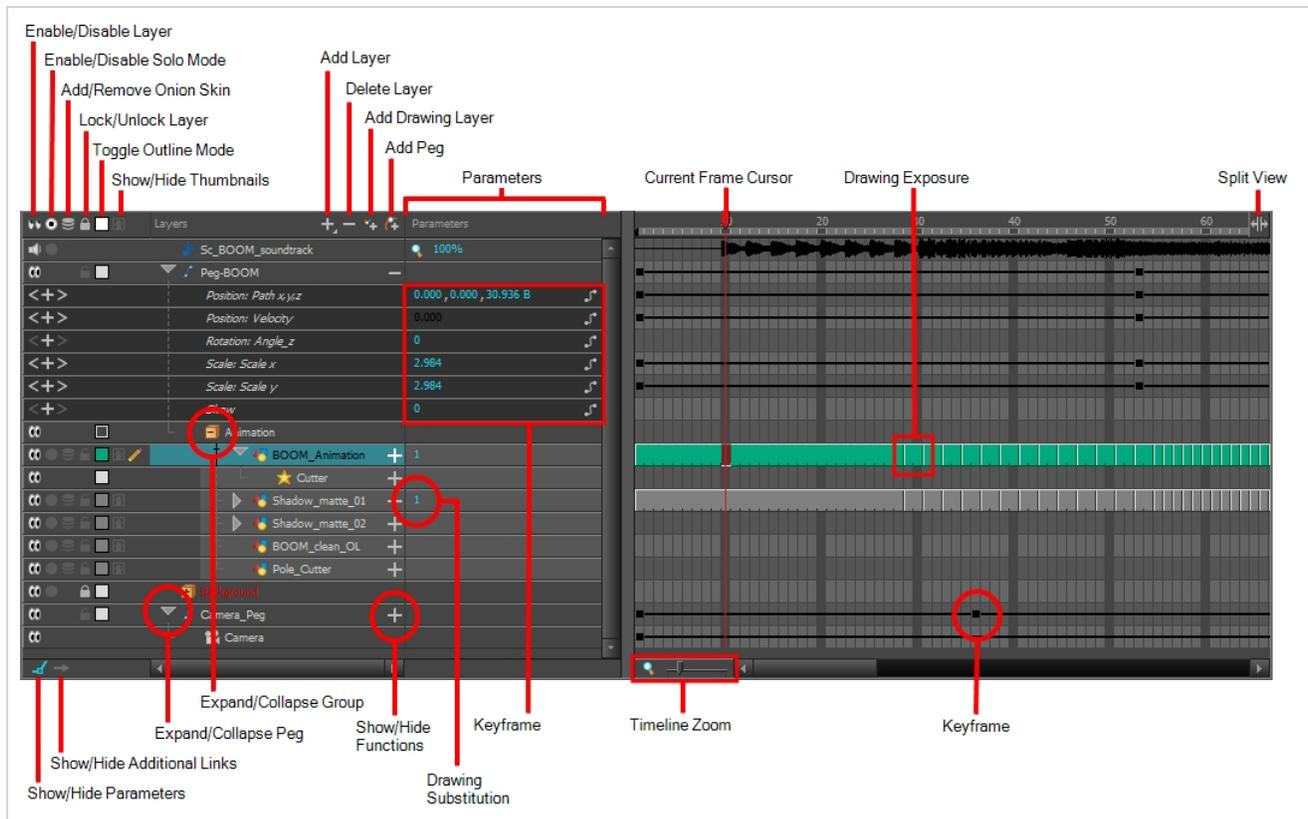
		field-of-view (FOV).
	Axis Reference Arrows	The axis reference arrows let you maintain your orientation when navigating in the view.
	Show/Hide Camera	Shows or hides camera frame in the Perspective view.
	Reset View	Resets the pan, rotation, and zoom of the Perspective view.
	Zoom Menu	<p>This field 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.</p> 
	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

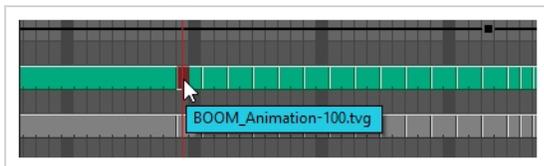
T-HFND-006-002

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.



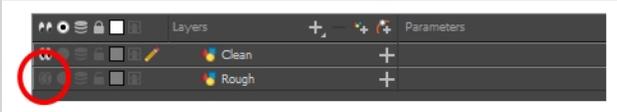
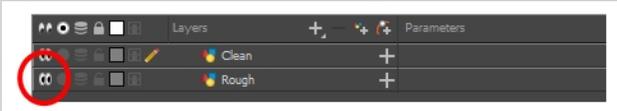
The Timeline view allows you to read your timing from left to right. It represents the scene's elements in their simplest form. You can also see the layers and their names, as well as the drawing's exposure. The drawing name is displayed when you place your pointer over the drawing's exposure.

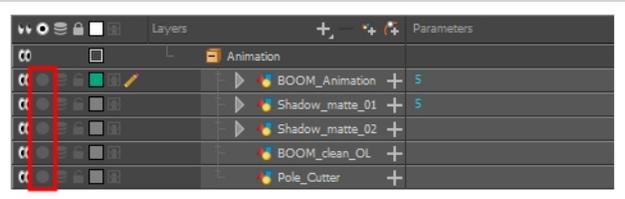
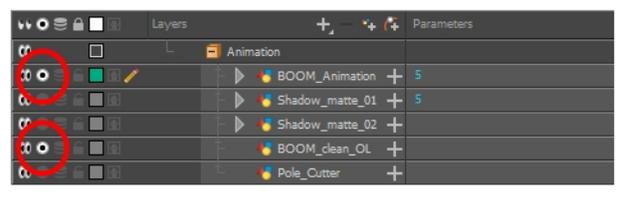
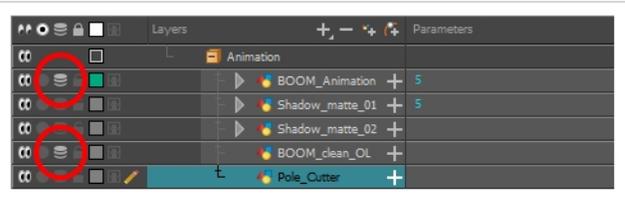
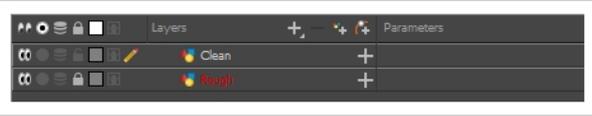


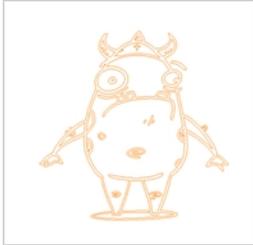
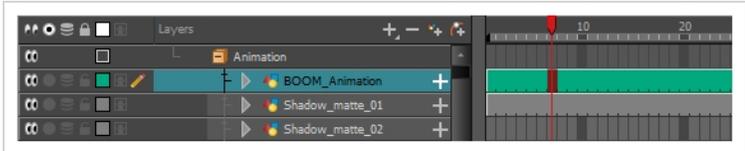
How to access the Timeline view

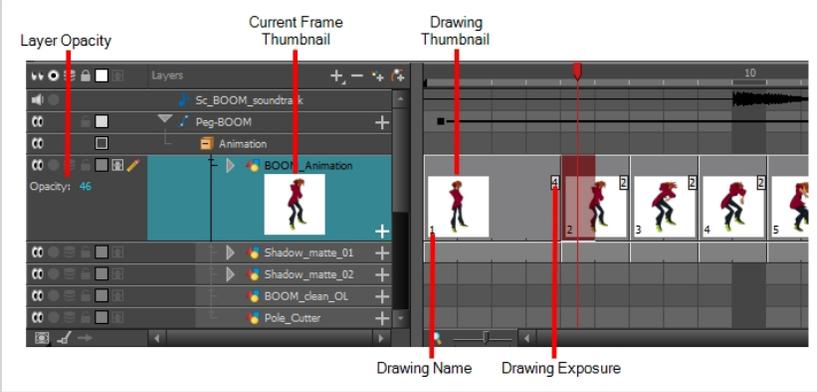
Do one of the following:

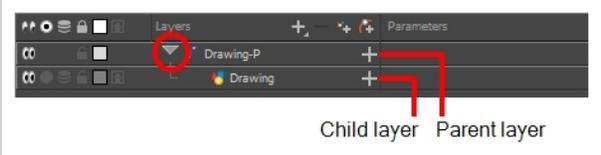
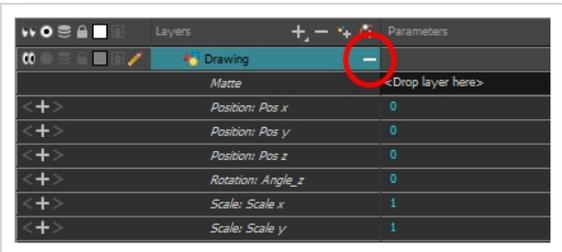
- From the top menu, select **Windows > Timeline**.
- From any of the other views, click the Add View **+** button and select **Timeline**.

Icon	Section	Description
	<p>Enable/Disable Layer</p>	<p>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:</p> <ul style="list-style-type: none"> • 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. <p>To disable a layer, click the layer's Enable/Disable button or press D.</p>  <p>To enable a layer, click the layer's Enable/Disable button or press A.</p>  <div data-bbox="613 1146 1430 1318" style="border: 1px solid green; padding: 5px; margin-top: 10px;"> <p> NOTE</p> <p>Next to sound layers, the Enable/Disable layer button will look like this: .</p> </div> <div data-bbox="613 1350 1430 1522" style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p> TIP</p> <p>You can enable or disable all layers by clicking on the Enable or disable all layers  button in the top row.</p> </div>
	<p>Enable/Disable Solo Mode</p>	<p>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.</p> <p>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.</p>

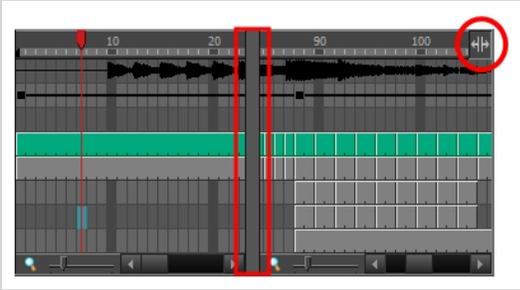
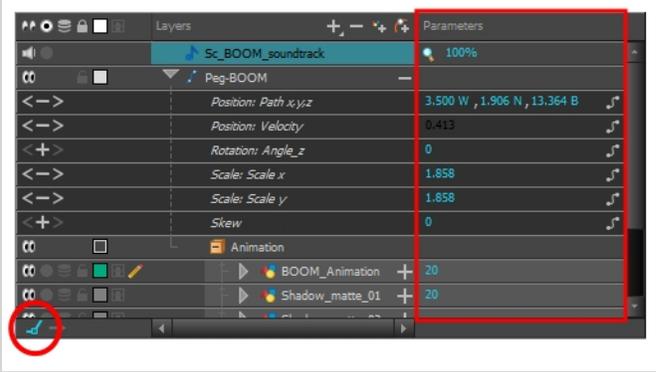
		 <p>All layers are visible in the Camera view</p>  <p>Only layers with the Solo icon activated are currently visible in the Camera view.</p> <div data-bbox="613 730 1429 934" style="border: 1px solid #add8e6; padding: 10px;"> <p> TIP</p> <p>When some layers are in solo mode, you can disable or re-enable solo mode on all layers that have it enabled by clicking on the Toggle solo mode on or off  button in the top row.</p> </div>
	<p>Add to/Remove from Onion Skin</p>	<p>For when the Onion Skin option is enabled, this allows you to enable or disable Onion Skin on specific layers.</p>  <div data-bbox="613 1318 1429 1491" style="border: 1px solid #add8e6; padding: 10px;"> <p> TIP</p> <p>To activate the general Onion Skin preview, in the Tools toolbar, click the Onion Skin button</p> </div>
	<p>Lock/Unlock Layer</p>	<p>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.</p>  <p>In the top menu, there is a series of locking options. Select Animation > Lock</p>

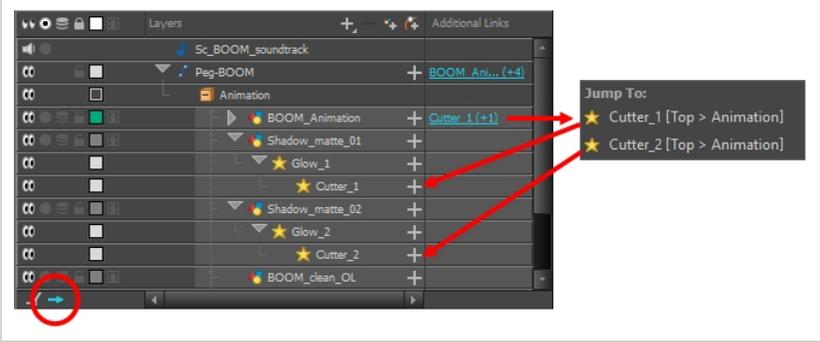
		<p>> select one of the following:</p> <ul style="list-style-type: none"> • Lock: Locks the currently selected element. • Unlock: Unlocks the currently selected element. • Lock All: Locks all the elements in the Camera view. • Unlock All: Unlocks all the elements in the Camera view. • Lock All Others: Locks all the elements in the Camera view except the currently selected one.
	<p>Toggle Outline Mode / Change Track Colour</p>	<p>Each drawing layer has a little colour swatch that has two functionalities:</p> <ul style="list-style-type: none"> • 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.  <ul style="list-style-type: none"> • 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. 
	<p>Show/Hide Thumbnails</p>	<p>Expands the layer to display a thumbnail of the drawing in the current frame, as well as for each drawing in the timeline.</p> <div style="border: 1px solid green; padding: 10px; background-color: #e0f2f1;"> <p> NOTE</p> <p>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 294.</p> </div>

		 <p>When a drawing layer is in Show Thumbnails mode:</p> <ul style="list-style-type: none"> • 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. <div style="border: 1px solid #add8e6; padding: 10px; margin-top: 10px;">  <p>TIP You can show or hide thumbnails for all drawing layers by clicking on the Show/Hide All Thumbnails  button in the top row.</p> </div>
	<p>Opacity</p>	<p>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.</p> <div style="border: 1px solid #90ee90; padding: 10px; margin-top: 10px;">  <p>NOTE This parameter only displays for drawing layers that are in Show Thumbnails mode.</p> </div>
	<p>Active Drawing Layer Indicator</p>	<p>This icon appears next to the active drawing layer, which is the layer you draw on when using drawing tools.</p> <div style="border: 1px solid #90ee90; padding: 10px; margin-top: 10px;">  <p>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.</p> </div>
	<p>Add Layer</p>	<p>The Add Layers button lets you add new layers to the Timeline view. When</p>

		<p>you click the Add Layers button, a menu appears displaying the available layer types.</p>
	Delete	<p>The Delete Layers button lets you delete the currently selected layers in the Timeline view.</p>
	Add Drawing Layer	<p>The Add Drawing Layer button lets you automatically add a new drawing layer to the Timeline view. By default, the layer is named Drawing.</p>
	Add Peg	<p>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.</p> 
	Expand/Collapse	<p>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.</p>  <p style="text-align: center;">Child layer Parent layer</p>
	Show/Hide Functions	<p>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.</p> <p>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.</p> 

	<p>Add/Remove Keyframe</p>	<p>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.</p> <div data-bbox="613 283 1425 420" style="border: 1px solid #c8e6c9; padding: 5px;">  <p>NOTE This button only displays for function layers.</p> </div>
	<p>Previous Keyframe</p>	<p>Moves the timeline cursor to the previous keyframe on the selected function.</p> <div data-bbox="613 541 1425 678" style="border: 1px solid #c8e6c9; padding: 5px;">  <p>NOTE This button only displays for function layers.</p> </div>
	<p>Next Keyframe</p>	<p>Moves the timeline cursor to the next keyframe on the selected function.</p> <div data-bbox="613 793 1425 930" style="border: 1px solid #c8e6c9; padding: 5px;">  <p>NOTE This button only displays for function layers.</p> </div>
	<p>Function Menu</p>	<p>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.</p> <div data-bbox="613 1087 1425 1224" style="border: 1px solid #c8e6c9; padding: 5px;">  <p>NOTE This button only displays for functions layers, in the Parameters column—see Show/Hide Parameters on page 293.</p> </div>
	<p>Function Keyframe</p>	<p>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.</p> <div data-bbox="613 1486 1425 1864" style="border: 1px solid #bbdefb; padding: 5px;">  <p>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:</p> <ul style="list-style-type: none"> • In the Timeline toolbar, click on the Delete Keyframe  button. • Press F7. • From the top menu, select Animation > Delete Keyframe </div>

		<div style="border: 1px solid green; padding: 10px; background-color: #e0f2f1;">  <p>NOTE If a collapsed layer has children that have function keyframes, you will see a white square  instead.</p> </div>
	<p>Split</p>	<p>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.</p> 
	<p>Drawing Exposure</p>	<p>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.</p> 
	<p>Show/Hide Parameters</p>	<p>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:</p> <ul style="list-style-type: none"> • 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. 

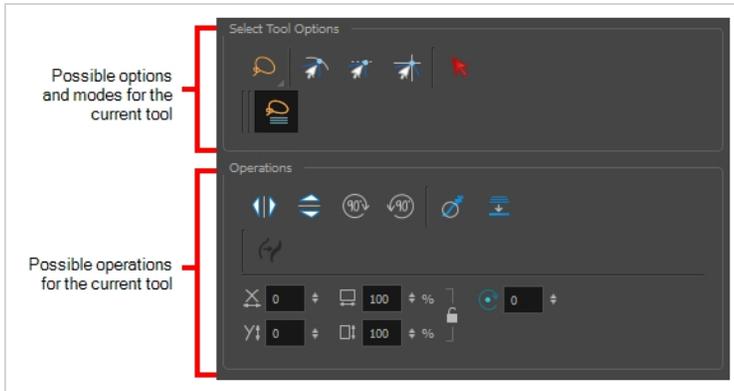
		<p>Using the mouse, you can drag the parameter left and right to change its value. This is especially useful for quickly changing a drawing's exposure at the current frame.</p>
	<p>Show/Hide Additional Links</p>	<p>Shows or hides the Additional Links column. The Additional Links column displays layers 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.</p> <p>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.</p> <p>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.</p> <p>In the following example, the BOOM_Animation layer is used as the matte of Cutter_1 and Cutter_2:</p> 
	<p>Timeline Zoom</p>	<p>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.</p> <p>If you want to reset the Timeline view's zoom, click on the Timeline Zoom  icon left of the slider.</p>

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 160](#).

How to access the Tool Properties view

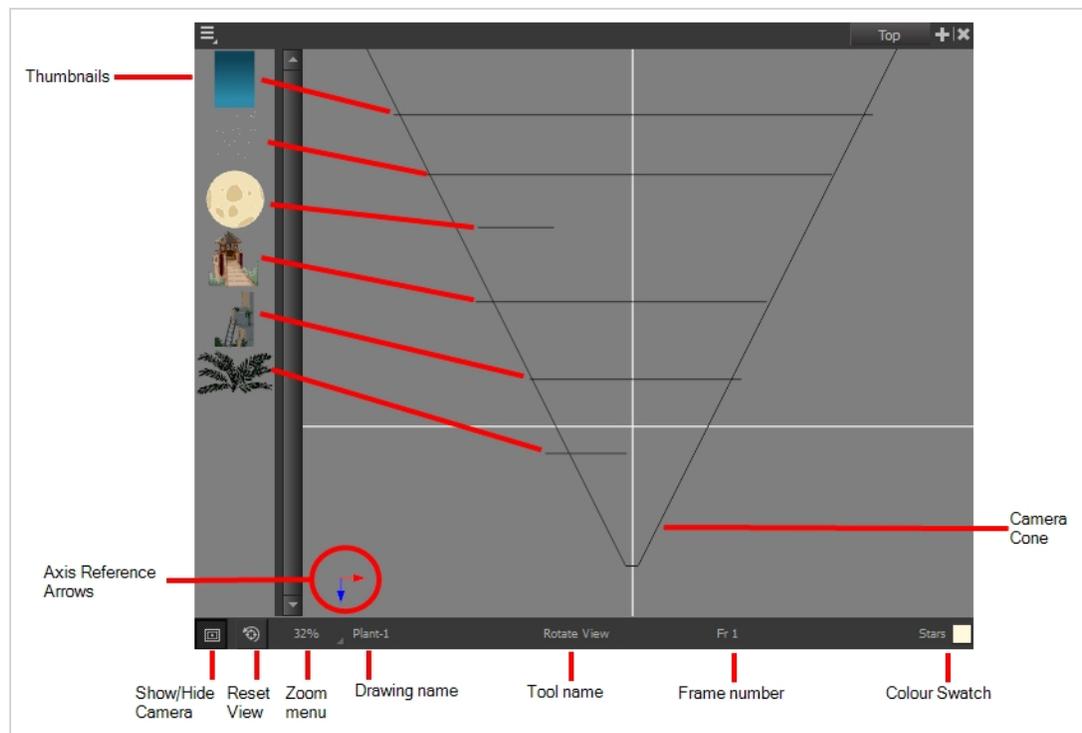
Do one of the following:

- 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.

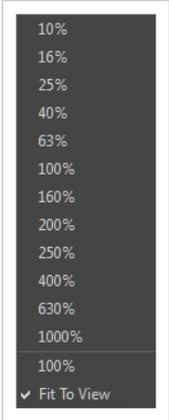


How to access the Top view

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
	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	<p>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.</p> 
	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.

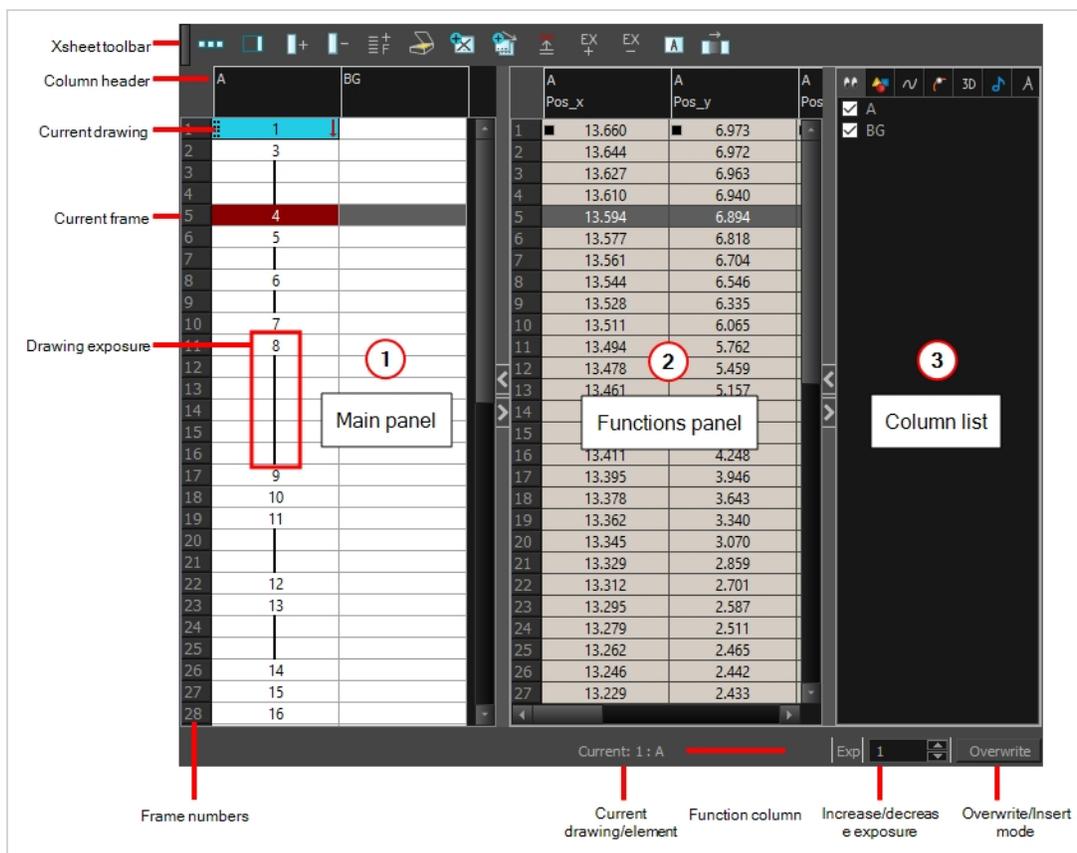
Xsheet View

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.

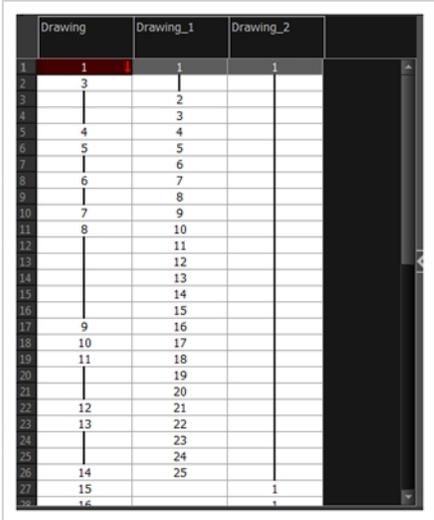
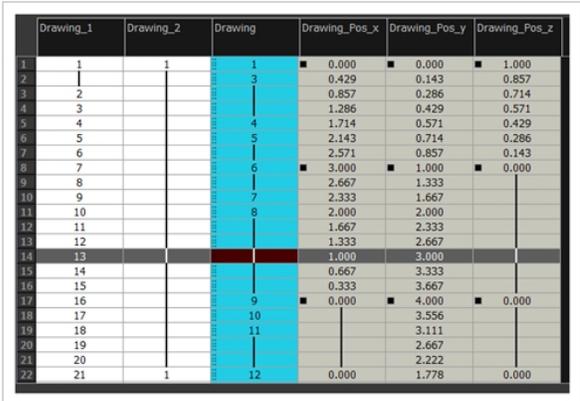
Contrary to the Timeline view, the Xsheet view does not display pegs, effects or layer hierarchy. Hence, it is optimized for traditional and paperless animation, whereas the Timeline view is optimized for digital or cut-out animation.

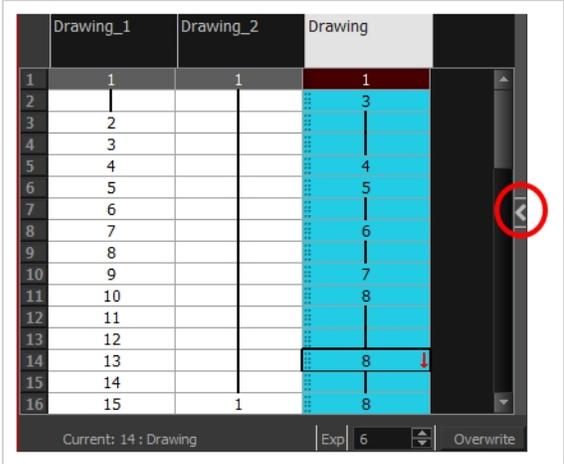
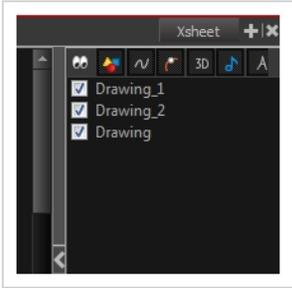


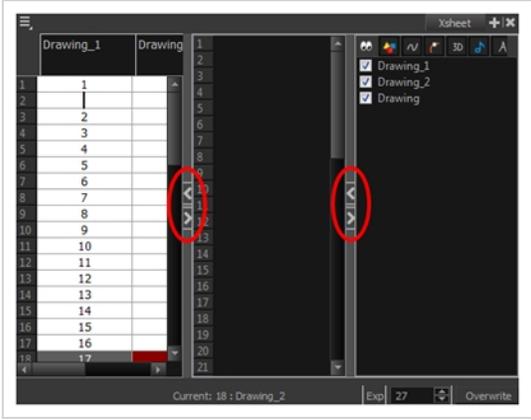
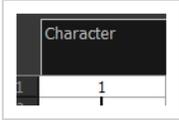
How to access the Xsheet view

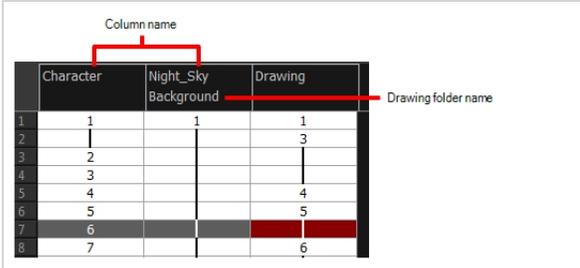
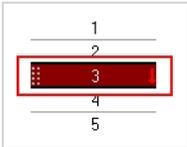
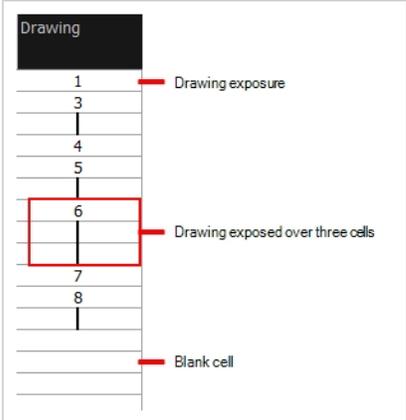
Do one of the following:

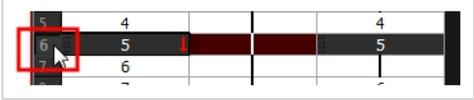
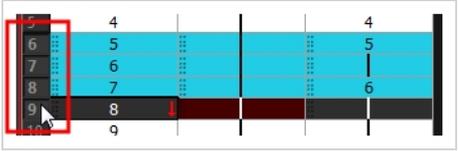
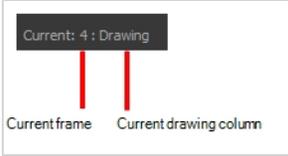
- From the top menu, select **Windows > Xsheet**.
- From any of the other views, click the Add View **+** button and select **Xsheet**.

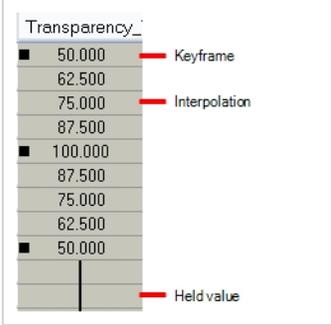
Icon	Section	Description
	View Toolbar	<p>The view toolbar contains all the tools and options you can use in the Xsheet view to manage columns and timing.</p>
	Xsheet Main Section	<p>The Xsheet view has three sections. By default, only the main section is visible. It displays the drawing layers, also known as drawing columns.</p>  <p>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.</p> <p>When you reconnect functions to a layer, they are still visible in the main section.</p> 

	<p>Functions Section</p>	<p>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.</p> <p>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.</p> 
	<p>Column List Section</p>	<p>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.</p>  <p>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.</p> <p>In the Xsheet view, click the Expand button on the right side of the main section to show the Functions</p>

		<p>section. Click on the same button to collapse it. You can also use the Show Column List  button in the Xsheet toolbar.</p> <p>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.</p> 
	<p>Column Header</p>	<p>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.</p> <p>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.</p> <p>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.</p>  <p>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.</p>

		
	<p>Current Drawing</p>	<p>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.</p> 
	<p>Current Frame</p>	<p>The darker frame appearing in the Xsheet view represents the current frame.</p> 
	<p>Drawing Exposure</p>	<p>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.</p> 

	<p>Frame Numbers</p>	<p>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.</p> <ul style="list-style-type: none"> To go to a particular frame, click the frame number.  <p>The screenshot shows a vertical column of frame numbers (5, 6, 7) on the left side of the Xsheet view. A red box highlights the number 6, and a mouse cursor is pointing at it. To the right, there are columns of drawing numbers (4, 5, 6) and a dark red bar representing a drawing.</p> <ul style="list-style-type: none"> To select an entire range of frames, click and drag a selection downwards.  <p>The screenshot shows the same vertical column of frame numbers (5, 6, 7, 8, 9) on the left side. A red box highlights the range from 6 to 9, and a blue selection bar is shown across these frames. To the right, there are columns of drawing numbers (4, 5, 6) and a dark red bar representing a drawing.</p>
	<p>Current Frame Display</p>	<p>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.</p>  <p>The screenshot shows a small black box with white text that reads "Current: 4 : Drawing". Below the box, two red vertical lines point down to the labels "Current frame" and "Current drawing column".</p>
	<p>Functions Column</p>	<p>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.</p> <p>A function column can also be related to an effect. Selecting the effect layer shows you the corresponding function column in the Xsheet view.</p> <p>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.</p>

		 <p>The screenshot shows a 'Transparency' graph with a vertical axis and a horizontal axis. The vertical axis has values: 50,000, 62,500, 75,000, 87,500, 100,000, 87,500, 75,000, 62,500, 50,000. A red vertical line is at the 50,000 mark, labeled 'Held value'. A red horizontal line is at the 75,000 mark, labeled 'Interpolation'. A red square is at the 50,000 mark, labeled 'Keyframe'.</p>
	<p>Increase/Decrease Exposure</p>	<p>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.</p>  <p>The screenshot shows a control field with 'Exp' and the number '8'. To the right of the number are two arrows: an up arrow and a down arrow. Both arrows are circled in red.</p>
	<p>Overwrite/Insert Modes</p>	<p>The Overwrite/Insert button allows you to decide the way the values are inserted into the Xsheet.</p>