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# 27

## Colour Warper

*Another dimension of colour space*

*The Colour Warper allows you to manipulate colour space with intuitive controls that provide precise colour correction, and histograms that help you visualize your image's colours.*

### Summary

In this chapter, you learn about:

- “Accessing the Colour Warper” on page 570
- “Fundamentals” on page 570
- “Using the 2D Vectorscope and RGB Viewer” on page 573
- “Viewing Clips in the Reference Buffer” on page 577
- “Colour Matching” on page 577
- “Basics Menu” on page 578
- “Warp|Gam Menu” on page 581
- “Selective Menu” on page 583
- “Subsetups” on page 588
- “Hot Keys” on page 589

### About the Colour Warper

The Colour Warper is a node that you drag and drop into the Batch process tree or the Modular Keyer's processing pipeline. You use the Colour Warper to colour correct clips, fine-tune mattes, adjust specific colours and colour ranges, refine keys, and match colours or overall saturations.

## Accessing the Colour Warper

The Colour Warper is available in Batch and the Modular Keyer. You may want to use the Colour Warper from the Modular Keyer to refine a key, or access it from Batch to perform colour correction to your clips.

**NOTE:** It is recommended that you be familiar with using the Batch schematic and the Modular Keyer processing pipelines before using the Colour Warper. For more information, see Chapter 29, “Batch Processing,” and Chapter 34, “The Modular Keyer”.

### To add a Colour Warper node in Batch:

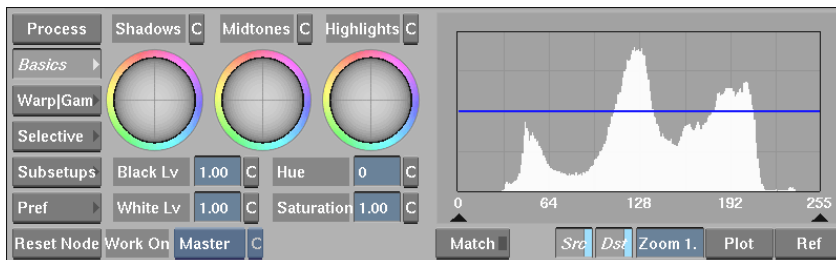
1. Click Batch from the Processing menu.
2. Select a destination reel.
3. Drag and drop a Colour Warper node to the process tree.
4. Click the Colour Warper node to display the Basics menu.

### To add a Colour Warper node in the Modular Keyer:

1. Click Modular Keyer from the Effects menu.
2. Select a front, back and key-in clip.
3. Drag and drop a Colour Warper node to the front, back, or key-in clip’s pipeline.
4. Click the Colour Warper node to display the Basics menu.

## Fundamentals

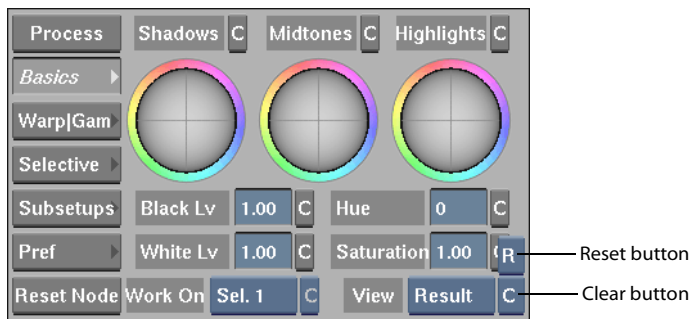
When you click the Colour Warper node in either Batch or the Modular Keyer, the Colour Warper menu appears:



Use:	To:
The Basics menu	Adjust shadows, midtones, and highlights, and to control black and white levels, hue, and saturation. See “Basics Menu” on page 578 for more information.
The Warp Gam menu	Perform colour warping and adjust gamma. See “Warp Gam Menu” on page 581 for more information.
The Selective menu	Define colour ranges using softness and tolerance, and apply colour correction to a selected region. See “Selective Menu” on page 583 for more information.
The Subsetups menu	Store, compare, and share Colour Warper subsetups. See “Subsetups” on page 588 for more information.
The Pref menu	Adjust vectorscope and hue cube settings. See “Setting Vectorscope Preferences” on page 576 for more information.

## Using Reset and Clear

Each menu in the Colour Warper has an individual reset and clear function for each control. Use C to clear and reset a control for the current frame only. Use R to reset the control for all the keyframes in the animation curve.

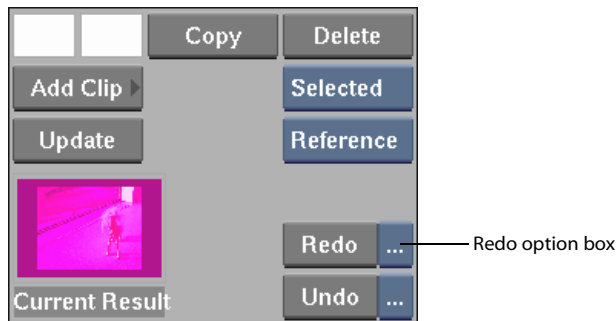


If there is no keyframe, use the C buttons to automatically set a keyframe at the current frame and to add a keyframe in the animation channel under Matrix.

**NOTE:** The trackball and Luma field in the Warp|Gam menu cannot be reset. Use the Undo box if you want to undo these controls (see the following section).

## Using Undo and Redo

Use the Undo and Redo boxes to remove or redo colour corrections to your clips. Undo and Redo store the last 10 actions performed in the Colour Warper. To undo or redo a function, click either box and select an option from the list.



## Processing

Processing in the Colour Warper is extremely efficient and preserves the original data. Functions are concentrated into one single processing engine: shadows control/level, highlights control/level, hue shift, saturation, matching, midtone, and gamma adjustment are all part of the same calculation.

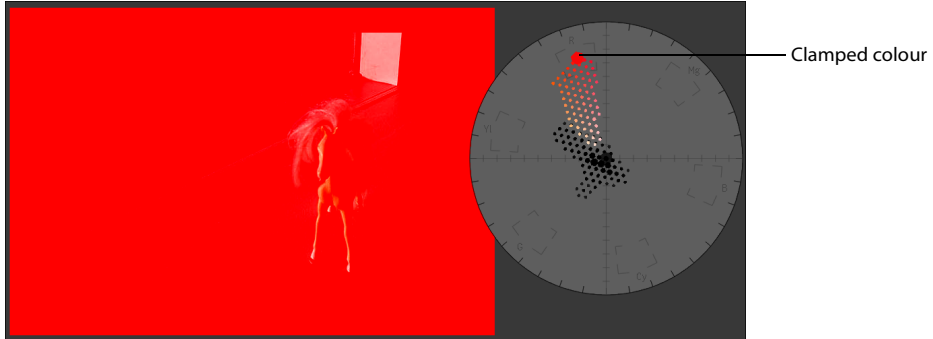
The processing engine's setup contains three shape channels: Midtones, Matrix, and Gamma (RGB). All operations can be animated, such as midtones, RGB curves, Master and Gamma curves. For more information about animation, see Chapter 9, "Animation."

When you use the Colour Warper, it is recommended that you process your clip in the following order: set whites, set blacks, and adjust midtones.

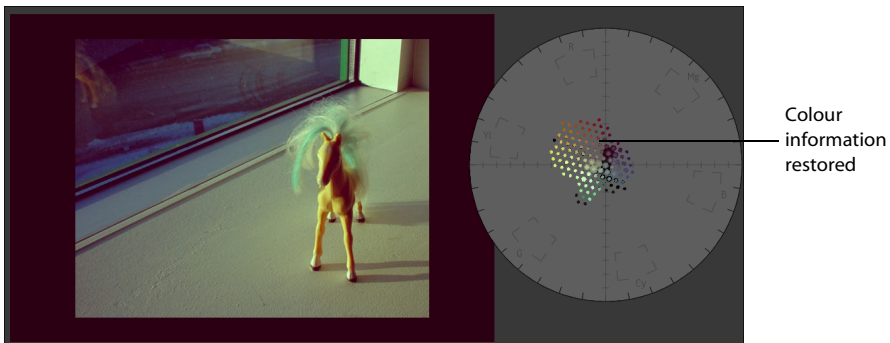
## Colour Clamping

The use of a single matrix provides faster processing and preserves image quality— each step is independent of the others. For example, if you clip colours using white level, it is still possible to retrieve highlights that are clamped by using midtones or the controls in the Warp|Gam menu.

Clamping occurs when colours go beyond the RGB range and colour information is lost. If you were using the Colour Corrector, colours lost in clamping would be irretrievable and you would need to reset or clear your colour correction.



In the Colour Warper, however, lost colour information is retrieved simply by readjusting the colour correction using the trackballs.

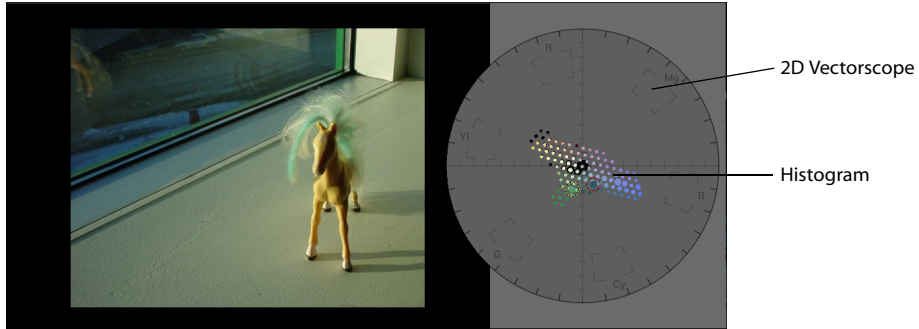


## Using the 2D Vectorscope and RGB Viewer

Use the vectorscopes to help you match colours, adjust shadows and highlights, view plotted and reference colours, and colour correct clips. The colours in the image are represented by cubes in the vectorscope's histogram. As you colour correct a clip, the cubes move accordingly and the histogram updates simultaneously to reflect any changes. Colours you plot, reference colours, source and destination colours are also distinguished in the histogram. See “Matching Colours with the Histograms” on page 575 and “Viewing Source and Destination Colours” on page 575 for more information.

## The 2D Vectorscope

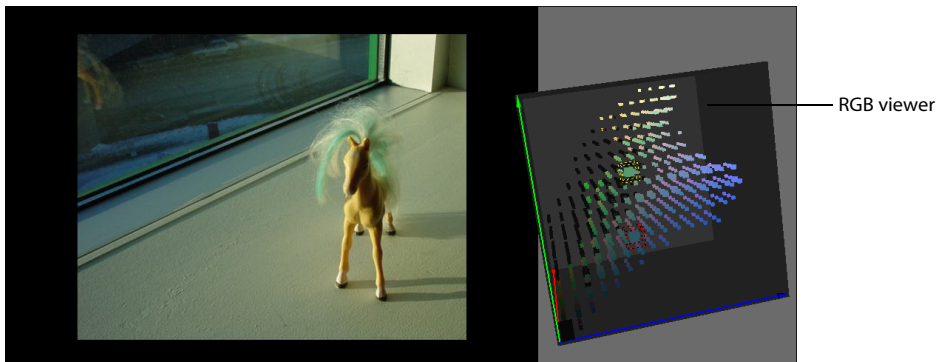
The 2D vectorscope provides a two-dimensional colour map of your clip. The cubes of colour are a colour model of your destination clip, and plotted and reference colours are represented by outlined colour cubes.



## The RGB Viewer

The RGB viewer is a three-dimensional colour model of the clip. Its X, Y, and Z axes represent the red, green, and blue components of the clip's colour space. The cubes of colour show the distribution of all the colours of the clip in RGB colour space. This three-dimensional colour map is referred to as the 3D histogram. When you scroll through a clip, the 3D histogram cubes update to display the colour distribution of each frame.

Use the 3D histogram to analyze the colour mapping of the clip and to locate specific colours.



## Switching from the 2D Vectorscope to the RGB Viewer

Rotate the 2D vectorscope (**CTRL** and drag) to switch to the RGB viewer. Alternatively, double click the vectorscope to toggle between the 2D vectorscope and the RGB viewer.

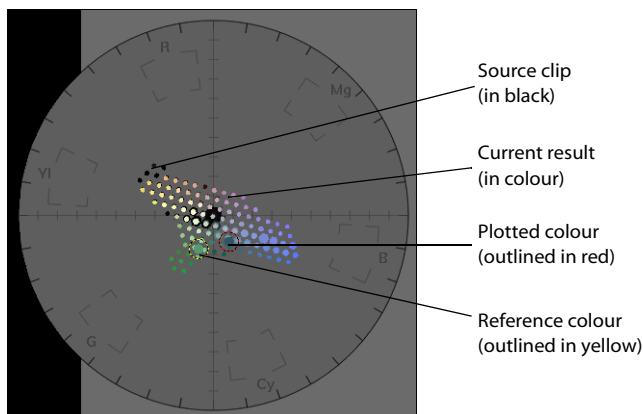
## Viewing Source and Destination Colours

In the Basics and Warp|Gam menus, use the Src and Dst buttons to display the source and/or the destination colours in the histogram. Use Src to see a view of the image before colour correction has been applied and use Dst to provide real-time representation of the corrected image. When both Src and Dst are enabled, you can view both the original image and the colour-corrected result

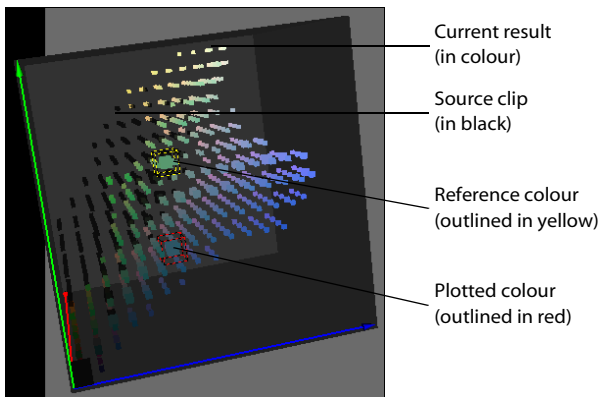
Your source clip is displayed in black in the histogram. This allows you to view the original colour information as you make changes to the image, while distinguishing this information from your current result by keeping it in black. The clip's current result is displayed in colour, providing a visual representation of its colour information. As you use the controls in the Colour Warper, the current result display updates simultaneously and reflects any changes that you make.

## Matching Colours with the Histograms

The current result display is useful when matching plotted and reference colours. For example, to make sure that a colour is truly black, pick a black in a reference image using the Plot button, and use the trackballs to drag the colour to the centre of the histogram. The plotted colour is outlined in red to distinguish it from the other colours in the image, and moves with the rest of the colours in the histogram as you use the trackballs. Reference colours are outlined in yellow, and represent a colour picked from a clip in the reference buffer. You can match plotted and reference colours by using the trackballs and aligning the colours in the histogram. For more information on using Plot and Ref, see “Using Plot and Ref” on page 580.





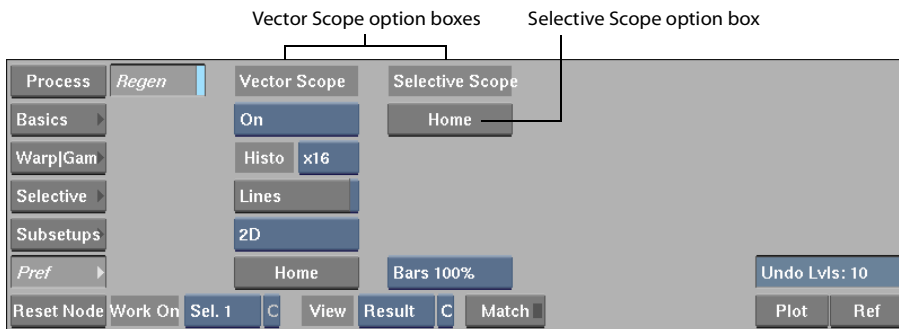


## Setting Vectorscope Preferences

Change the display at any time to help you best visualize the contents of your image and work with the viewer. Click and hold **CTRL** to rotate the RGB viewer, or click and hold **SHIFT** to resize it. To move either vectorscope, click the 2D vectorscope or RGB viewer, click **ALT** and drag.

Use the Pref menu to:

- Adjust vectorscope settings
- Return the vectorscope and hue cube to their default size and location



Click:	To:
On or Off	Toggle the vectorscope on or off.
Histo options	Set the vectorscope's histogram to display x8, x16, or x32.
Lines	Enable lines to be displayed in the RGB viewer.
2D or 3D	Toggle between the 2D vectorscope and the RGB viewer.

Click:	To:
Home (Vector Scope)	Reset the vectorscope to its original size and location.
Home (Selective Scope)	Reset the Selectives menu hue cube to its original size and location.
Bars 100% or Bars 75%	Match 75% and 100% SMPTE bars.

## Viewing Clips in the Reference Buffer

The split bar provides two different view modes simultaneously while you use the Colour Warper. This is useful when performing colour matching because you are able to see both your reference and destination clips when picking a range of colours to match.

You can toggle the split bar on or off in the Setup menu. Click Setup and select Split On or Split Off.

**NOTE:** You must click Grab in the Setup menu to view the clip in the reference buffer. Otherwise, the reference buffer will be black.

### Grab

In the Setup menu, click Grab to view the front, key-in, back, matte, context 1, context 2, or result in the reference buffer with your sample clip.

### Flush

In the Setup menu, click Flush to clear the reference buffer.

For more information on the reference buffer, see Chapter 4, “Fundamentals.”

## Colour Matching

Use the Match feature to match a range of colours to a colour range in a reference clip. You can match whites, blacks, or the overall saturation of an image.

### To use Match:

1. Make sure your view mode is set to CurResult.
2. In the Selective menu, click Match.  
A “MATCHING: Select an area to be modified.” message is displayed.
3. Click and drag on CurResult clip to draw a box around a range of colours. You can select an area of the image that is predominantly black, white, or contains a wide spectrum of colours. The blue indicator on the Match button is enabled, indicating that you need to select a destination sample.

**NOTE:** To match the overall saturation of an image, select a larger area of the image.

## 4. Click Match.

A “MATCHING: Select an area to match to.” message is displayed.

## 5. Click and drag to draw a box around a range of colours to match to in the reference clip.

**NOTE:** It is recommended to match whites with whites, blacks with blacks, and to select a broad range of colours on both images to match saturation. Trying to match completely different colours will produce unpredictable results.

## 6. Repeat these steps as often as necessary to obtain the best possible match between colours.

You can use Match repeatedly without destroying the result. Instead, your colour match becomes more precise. You can use other controls in the Basics menu (such as Saturation) to refine the result, then reuse Match again.

Each match you perform can be cleared by using the Undo box. Click the Undo box and select a colour match to remove. Additionally, if you begin using Match and want to cancel the matching process, adjust any value using the trackballs or fields. The blue indicator on the Match button will be disabled, indicating that the matching process has been cancelled.

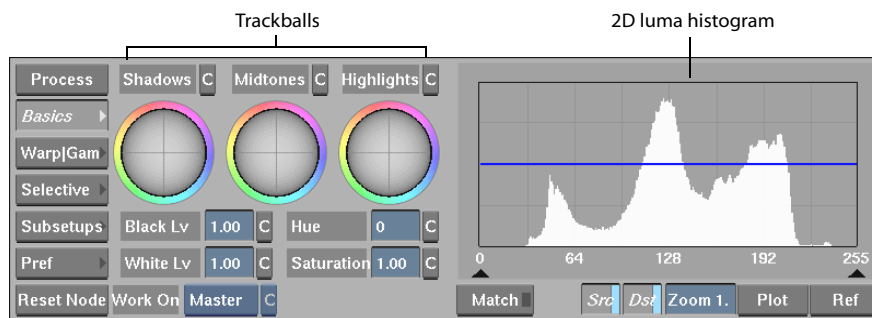
Use the Black Lv and White Lv fields in the Basics menu to match the luminance of a colour to the luminance of a source colour. See “Colour Correcting with the Numeric Fields” on page 579 for more information.

## Basics Menu

Use the Basics controls to colour correct the result image and refine a matte you create using the Selective controls. For more information about creating mattes in the Selective menu, see “Selective Menu” on page 583.

Use the Basics menu to:

- Control shadows, midtones, and highlights balances with luma preservation.
- Define the midtone range to be affected.
- Control black & white level, hue, and saturation.



## Colour Correcting with the Trackballs

Drag the trackballs to move the shadows, midtones, and highlights towards a specific colour range. The trackballs change the colour in your clip according to the direction the trackball is being dragged. For example, to add more yellow to the image's highlights, drag the Highlights trackball towards yellow.

Once the shadows and highlights are properly balanced, you can modify the midtones by using the Midtones trackball to give a specific tint (while still preserving luma) to the overall appearance of the image. Alternatively, use the Hue and Saturation fields.

Use the:	To:
Shadows Trackball	Modify the chroma in the low luminance area, but not affect the luma.
Midtones Trackball	Add horizontal RGB curves in the 2D luma histogram. These curves represent the amount of chroma tint you apply to the image. For example, if the red and green curves are above the middle line while the blue curve is below the middle line, you are adding a yellow tint to the midtones components of your image.
Highlights Trackball	Modify the chroma in the high luminance area, but not affect the luma.

## Colour Correcting with the Numeric Fields

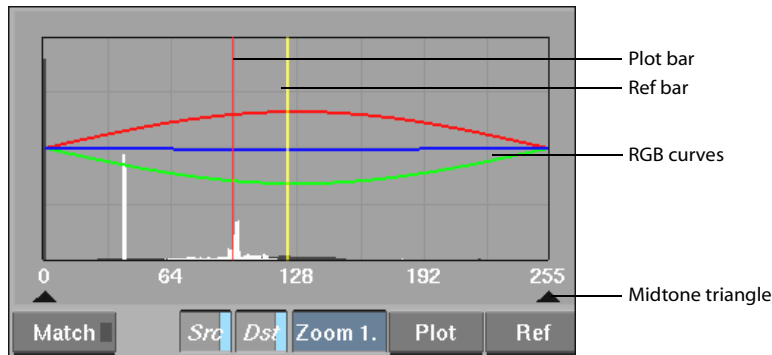
The BlackLv field affects the luma values in the image's shadows and keeps the chroma at the same position. The WhiteLv field affects the luma values in the image's highlights and keeps the chroma at a constant level. Hue "turns" the chroma (rotates it in the 2D luma histogram) and keeps its relative value intact. The Hue field does not affect the luma. Saturation amplifies or decreases the chroma in an image, and keeps the luma at a constant level.

## Using the 2D Luma Histogram

The 2D luma histogram shows transformations of the main gamma control. You can define a region to be affected by the Midtones trackball by dragging the triangles.

By default, the Midtones trackball affects all ranges except white and black in varying degrees, as shown by the histogram's curves. To change the luminance range, use the two triangles below the histogram to restrict the regions affected by the Midtones trackball. Click on the histogram and drag the triangles closer together to limit the range of midtones by limiting the Midtones trackball's movements. The RGB curves only change within the area defined by the triangles. You can modify the range as many times as you like.

**NOTE:** You can animate the curve using the Shape channel under Midtone. For more information on animation, see Chapter 9, “Animation.”



## Using Plot and Ref

Use Plot to sample a colour from your CurResult clip and move its position in the vectorscope, and to adjust its lightness value in the 2D luma histogram. For example, Plot is useful for selecting a colour to modify when performing a colour match using Ref.

You can also use Plot to get more information on colours you want to change. For example, when you are trying to adjust colours and levels and are not sure which controls to use, click Plot and select a colour in your image. If the plotted colour appears in the middle of the histogram, use Midtones. If the plotted colour appears on the left, use Shadows.

Use the Ref button to plot any pixel you see on the screen. For example, you can select a colour from images displayed in the reference buffer to match to a colour in another image.



You can use the Ref representation as a target and the Plot as the moving representation. In general, you move the Plot representation closer to the Ref representation in the vectorscope and 2D luma histogram. Plot is represented by a red bar and Ref is represented by a yellow bar in the 2D luma histogram. In the vectorscope, Plot is represented by a red circle around the plotted colour and Ref is represented by a yellow circle around the reference colour.

**NOTE:** The Ref representation does not move while you are colour correcting the image.

Plot can be used to sample shadows in your image and adjust the blacks in your clip. For example, you may want to sample a black colour in your clip and adjust its intensity.

**To sample shadows in the image using Plot:**

1. Click Plot and drag the cursor over the portion of the CurResult clip containing black.

**NOTE:** To get an average box for Plot or Ref, press Plot or Ref and hold **CTRL** while dragging on the image.

2. Using the Shadows trackball, move the colour to the center of the vectorscope to ensure it is truly black. Alternatively, you can move the trackball until the shadows are the desired colour.

A red plot line is displayed in the 2D luma histogram, indicating the intensity of the sampled blacks.

3. Adjust the black level using the trackballs or the BlackLv field.

**HINT:** Whites can be sampled using the same steps.

Ref can be used to match a specific colour in a reference clip to a colour in another clip. For example, you may want to match a red in one image to a different shade of red in another clip.

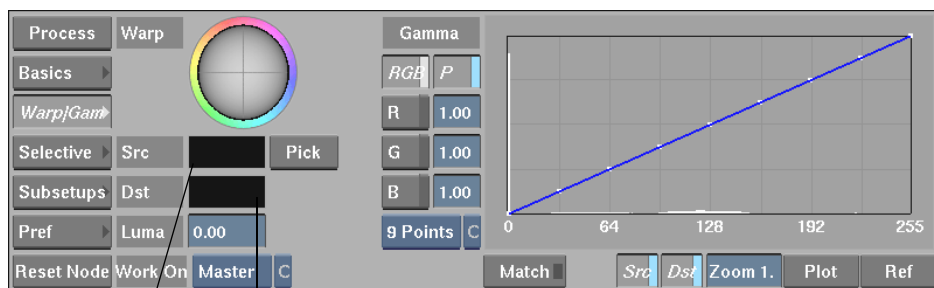
**To match colours using Ref:**

1. Click Plot and pick a colour in the clip you want to affect.
2. Click Ref and pick a colour to match to.
3. Use the trackballs to match the plotted and reference colour in the vectorscope. Move the plotted colour until it is over the reference colour in the vectorscope.

## Warp|Gam Menu

Use Warp controls to pick a colour from your image and warp colour space in a localized area around that colour. You use Warp controls to perform fine adjustments after a colour correction has been completed. For example, you can adjust a blue-screen key if skin tones are discoloured at the edges, or readjust a colour that has become altered from other controls in the Colour Warper.

Use the Gamma controls to adjust the gamma of the R, G, and B levels in your image.



Source colour box

Destination colour box

## Warping Colours

When you colour correct clips, sometimes colours you do not want to alter are modified in the colour correction process. If you want to readjust a specific colour, select the colour again and adjust it with the Warp controls. This process can be repeated as many times as necessary.

Warping may need to be performed a few times before achieving the desired result.

To warp colours, you select a colour from the image and use the trackball and Luma field to adjust the colour. The selected colour is indicated by a white circle around the colour in the 2D vectorscope, a white cube around the colour in the RGB viewer, and a cyan bar in the 2D luma histogram. This helps you distinguish the colour you pick from the other colours in your clip.

### To warp colours:

1. Click Pick and select a colour you want to adjust in the image.

2. Click the Src colour box to set the source colour.

The Dst (destination) colour box updates to match the source colour.

3. Adjust the destination colour using the trackball and Luma field.

The image is colour corrected locally.

4. Release the trackball or click the Luma field.

The Src colour box is set to the Dst box colour.

### Suppressing a Hue Range

You can use the Warp controls to suppress a specific hue range. Select the colour that represents the range you want to suppress, and use the trackball to desaturate the colour by bringing it to the middle of the vectorscope.

### To suppress a hue range:

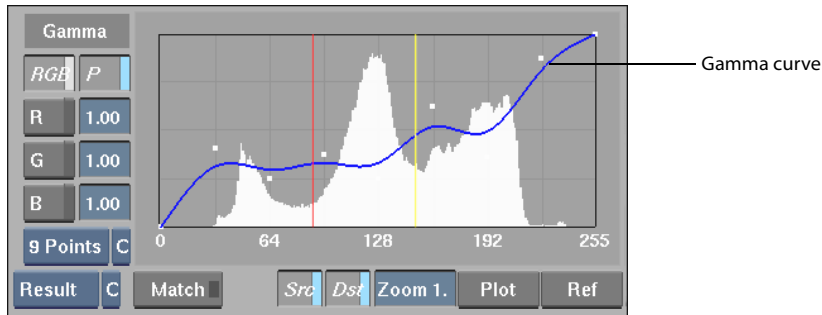
1. Click Pick and select a colour range to suppress.

2. Click Src to add the colour to the Source colour box.

3. Use the trackball to move the colour to the middle of the vectorscope.

## Adjusting Gamma

Use the Gamma controls and curves to change gamma for R, G and/or B, and use three or nine control points to make fine adjustments to the curves. The 3 Points option allows global modification while the 9 Points option is recommended for fine-tuning adjustments. Enable the P button to adjust gamma proportionally, or disable P to adjust R,G, and B separately.



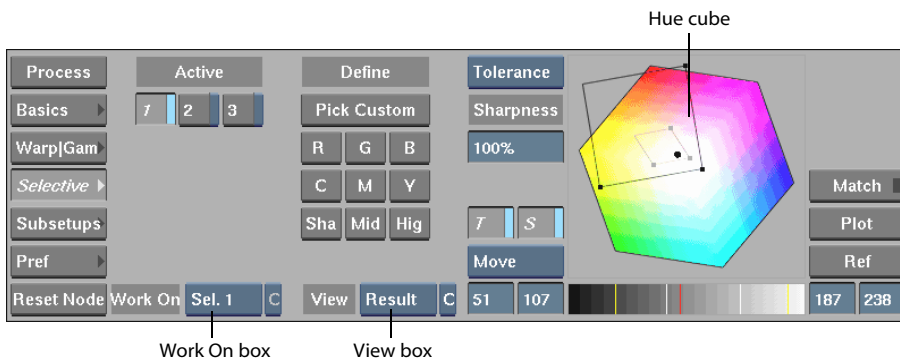
To adjust gamma, click on any point of gamma curve and move point up or down. Alternatively, you can click and drag in the R, G, and B fields or double click in any field and type a value.

**HINT:** To raise the contrast in an image, you can lower the gamma of the RGB curves. To adjust the black and white portions of the image, adjust the Black Lv and White Lv in the Basics menu. To smooth the contrast, increase the gamma and adjust the Black Lv and White Lv.

To clear or reset the Gamma control points, press C or R next to the 3 or 9 Points box. C resets the points on the curve for the current frame while R resets the points on the curve for the entire animation. To reset the Gamma numeric fields, **CTRL-CLICK** on a field.

## Selective Menu

Use the Selective menu to colour correct specific colours, as opposed to a global correction to the master image. You can have up to three selectives cascaded in order after the master correction.





The Work On box indicates if you are working on the master or one of the selectives. To colour correct a specific range of colours in a selective, you begin by defining a matte that will characterize the range. Then, you use any of the tools in the Basics and Warp|Gam menu to achieve a correction associated to the selective you choose in the Work On box. This correction will only be applied where the matte is black. You output the matte by selecting Matte from the View box and by using the matte to perform a chroma key.

Once your selection is complete, all controls in the Basic and Warp|Gam menu will be applied to the region defined by the matte in the Work On selective.

Use the Selective menu to:

- Define up to three colour ranges using softness and tolerance.
- View the matte, a selected region, or the result.
- Apply color correction to a region using the Basics and Warp|Gam menus.

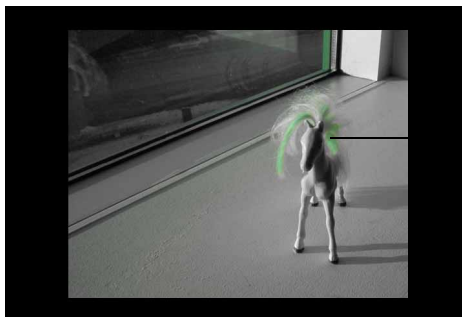
The Active buttons display the results from the Work On selectives when your view mode is set to CurResult.

## Viewing the Defined Area

Use the View modes to help you adjust and refine your matte.

Select:	To display:
Matte	The matte through which the secondary correction will be done.
InvMatte	The inverse of the matte.
Selection	The colours of the image that you pick with the Define buttons through the greyscale display.
Result	The final colour correction.

When you choose one of the selectives from the Work On box, the View box is set to Selection if no selective range has been defined, and the C button next to the Work On box will be disabled. When you determine a selective range using the Define controls, the range becomes visible through the greyscale display and the C and R buttons are enabled.



Original colour visible through the greyscale display.

**NOTE:** Switching to either the Basics or Warp|Gam menu will automatically switch the view to Result.

## Selective Colour Correction

Selective colour correction is applied to a specific colour range. You can define up to three selective corrections.

### To perform Selective colour correction:

1. Select Sel1 from the Work On option box. Only the region defined for Selective 1 will be affected.

The image turns to greyscale if you have not defined a selective range.

2. Define a matte using any of the Define controls.

If you select Pick Custom, drag the cursor over the image to define your selection.

**NOTE:** The Active 1 button is enabled automatically after you click a Define button. You can click the Active 1 button to disable it if you do not want to apply this condition to the global result.

3. Refine your matte by using Tolerance, +Softness, or -Softness from the Adjusting box. Select +Softness to add softness and -Softness to remove softness from the matte.
4. Drag the cursor over the image or drag and click **CTRL** to draw a box. Alternatively, move the handles of the tolerance or softness lozenge on the hue cube or make adjustments using the luma range.

For more information on using the luma range, see “Using the Luma Range” on page 587.

**HINT:** Use the Sharpness field to adjust softness and help with noise if the matte appears grainy. You can create a matte to use in the Keyer.

### To create a Keyer matte:

1. Set Work On to Sel 1.
2. Set View Matte.
3. Set your key using the Define controls.
4. Refine the matte as needed by adding or removing tolerance and softness. Use the boundaries in the hue cube or sample the image to fine-tune the matte.

The output will be a matte in the processing pipeline.

**HINT:** To get a good key, make sure that you have enough processing speed to see the result in real-time while interacting with the Tolerance and Softness boundary handles. If your resolution is too high and you are in the Modular Keyer, you can use the Crop feature to speed up processing time.

### Clearing and Resetting the Matte

You can clear or reset the matte and the correction of any selective. Use the C/R button next to the Work On box to reset the correction but maintain the matte. Use the C/R button to the right of the View box to reset the matte but maintain the correction. Use C to clear and R to reset all related keyframes in the animation. If there is no matte or colour correction associated with the correction, the C/R button is disabled.

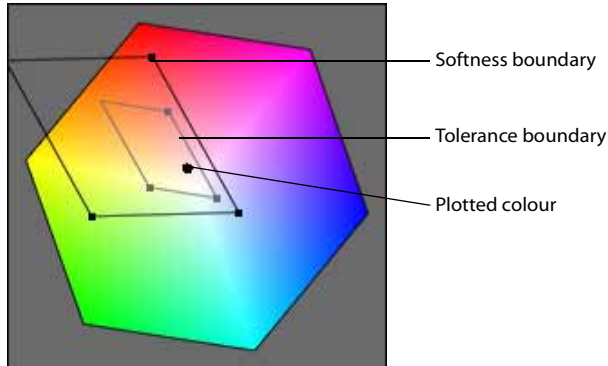
### Using the Hue Cube

The hue cube shows the range using tolerance and softness indicators: the small boundary shows tolerance, and the larger boundary shows softness. These ranges can be adjusted to increase or decrease the range of colours affected. The T and S buttons display the tolerance and softness boundaries on the hue cube.

You can adjust softness and tolerance by moving the handles on the tolerance and softness boundary. Click and drag the points on either boundary area to move the handles.

**HINT:** To obtain a good level of softness, move the handle of the softness boundary all the way around (taking care not to move the handle too far) and look at the matte.

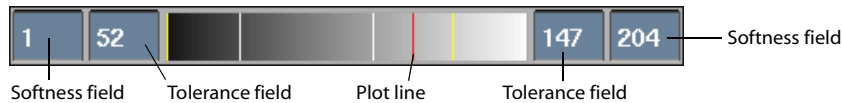
When you use Plot, a black dot appears on the hue cube representing the plotted colour. You can move the boundaries to include or exclude the plotted colour.



You can zoom the hue cube by changing the option from Move to Zoom and then dragging the cube. Press the **SPACEBAR** and drag the cube to pan the view. Set the option back to Move to move the lozenge handles again. Alternatively, press the **SPACEBAR** to move the hue cube and press **SHIFT** to zoom.

Use any of the Define controls to reset settings and move the lozenges to the appropriate area of the hue cube. For example, if you click Y, the lozenges move to the yellow area of the hue cube. Define specifies your start-up condition.

## Using the Luma Range



When you use Plot, a red line appears in the luma range. You can then expand or contract the luma range to include (or exclude) the plotted colour. Once the range is defined, you can switch to view Result and apply colour correction from the Basics or Warp|Gam menu.

The tolerance appears as two white lines in the range. All the pixels in the key-in clip with the selected colour value are keyed out.

The yellow lines indicate the limits of the softness range. The pixels in the front clip with colour values at the centre of the range are black (transparent) in the matte. As you move away from the centre, the pixels become more opaque.

Use the numerical fields to set maximum and minimum softness and tolerance ranges.

## Adjusting Shadows, Midtones, and Highlights

Use the Sha, Mid, and Hig buttons to adjust the entire image's shadows, midtones, and highlights. These three buttons expand the tolerance and softness boundaries to include all ranges of colours in the image.

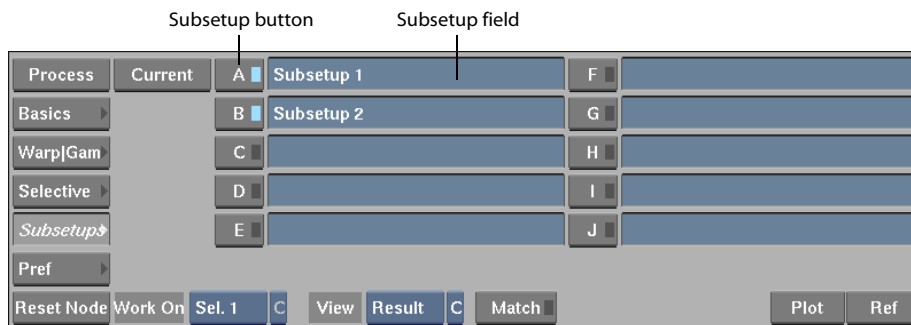
### To desaturate highlights:

1. Select Sel1 from the Work On option box. Only the region defined for Selective 1 will be affected.
2. Click Hig to select highlights.
3. Use either the Luma field or the Saturation field and Highlight trackball in the Basics menu to desaturate the highlights.

**NOTE:** To adjust shadows, click Sha and use the Basics menu. To adjust midtones, click Mid and use the Basics menu. For more information on using the Basics menu, see "Basics Menu" on page 578.

## Subsetups

Subsetups are Colour Warper setups selected at a specific moment at a specific frame. Subsetups are for the current frame only and do not include entire animations. You can select up to 10 different subsetups, and can compare colour corrections in other subsetups.



Use the Subsetups menu to:

- Selectively store intermediate setups.
- Compare any subsetup to the current setup.
- Share subsetups between Colour Warper nodes.

## Storing Setups

To store the current setup for later retrieval, press and hold one of the subsetups buttons until a message appears indicating “Storing subsetup <subsetup letter>” and release. Use the setup at another frame or in another node by pressing the corresponding button. LED indicators on each subsetup button indicate active subsetups. If you have not stored anything into a subsetup, the active light of the button will be off.

**NOTE:** Subsetups are shared between multiple Colour Warper nodes.

## Naming and Comparing Setups

You can name your subsetups. This allows you to store setups and later compare them to your current setup, or to apply the same correction to different points in time in a clip. Click in a subsetup field, type in a name or description, and press **ENTER** to store the setup.

## Deleting and Replacing Setups

To discard the current setup, click Current. Click and hold to overwrite and replace subsetups. A keyframe is set and the current frame is saved.

Click Current to return to the settings you used before trying out various subsetups. To set the Current setup, perform an operation such as advancing a frame or changing a value in the Basics or Warp|Gam menu and your present settings will be displayed the next time you click Current.

**NOTE:** Subsetups cannot be saved and are deleted when you close **inferno**. If you do a commit by doing an operation, you cannot undo it.

## Hot Keys

Press:	To:
In the Basics menu, Click+Z	Adjust Shadows (black).
In the Basics menu, Click+X	Adjust Midtones.
In the Basics menu, Click+C	Adjust Highlights (white).
O	Plot a colour.
R	Plot a colour for reference.
CTRL+G	Enable Grab in the reference buffer.