Filmworkz®
Create Incredible

DVO

STEREO FIX

USER GUIDE

WHAT DOES IT DO?

DVO Stereo Fix is an advanced stereo enhancement tool designed to resolve color matching and geometry alignment issues with stereo sequences. The tool can address areas with problems when they appear over the entire image frame (global correction) or in different areas inside a frame (local correction).

The tool will be able to correct most problems automatically but where this isn't possible, controls are available to allow straightforward manual correction.

HOW DO YOU USE IT?

DVO Stereo Fix works on the following platforms:

PHOENIX   NUCODA

If you're already a Filmworkz veteran, you can jump right in and use **DVO Stereo Fix**, however if you need a hand getting going, check out these QuickStart Guides:
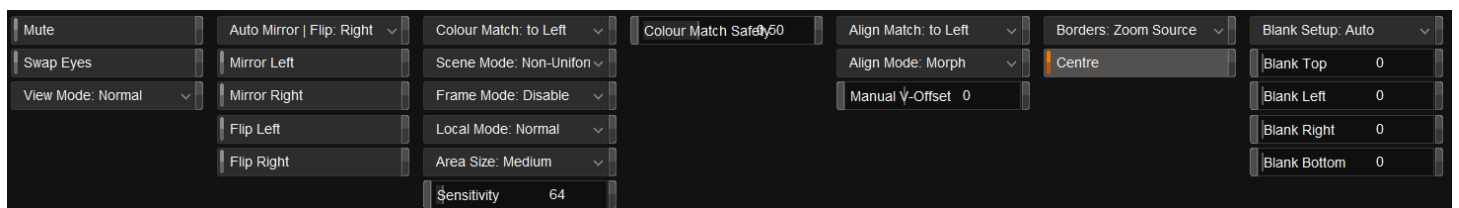
PHOENIX QUICKSTART GUIDE   NUCODA QUICKSTART GUIDE

GETTING STARTED

1. Launch your platform on your workstation.

2. Locate the toolbar, (positioned on the left-hand side of the interface)

3. Scan the toolbar options until you find the **DVO Stereo Fix** tool.
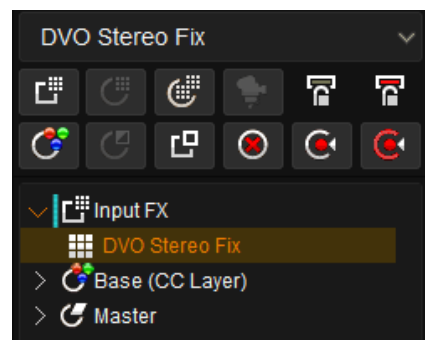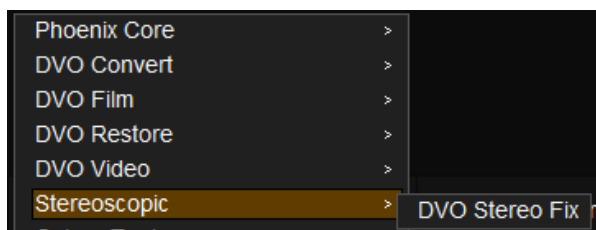
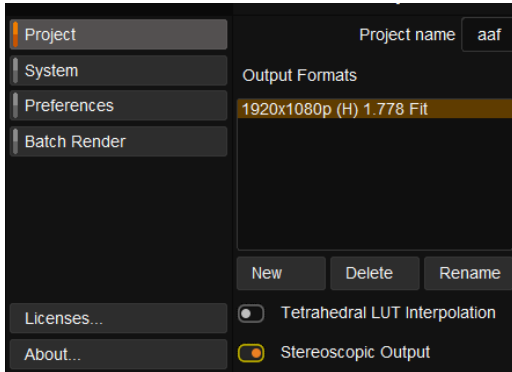4. Click on it and the control panel under appears:

CONTROL PANEL EXPLAINED

ENABLING STEREO WORK

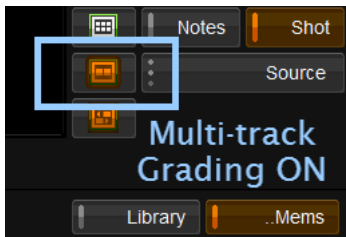Some basic setup is required to use the DVO Stereo Fix tool.

PROJECT

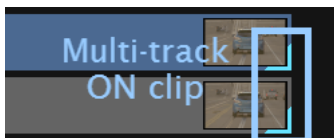Your **project** should be enabled for Stereoscopic Output:

COMPOSITION

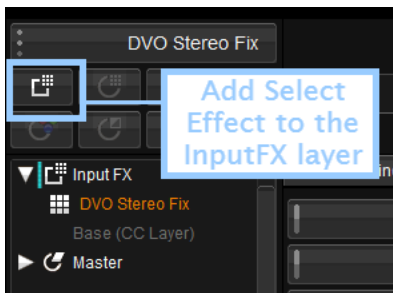You should have Multi-track Grading enabled inside the project:

A clip with multi-track *enabled* will display edge markers as shown below:
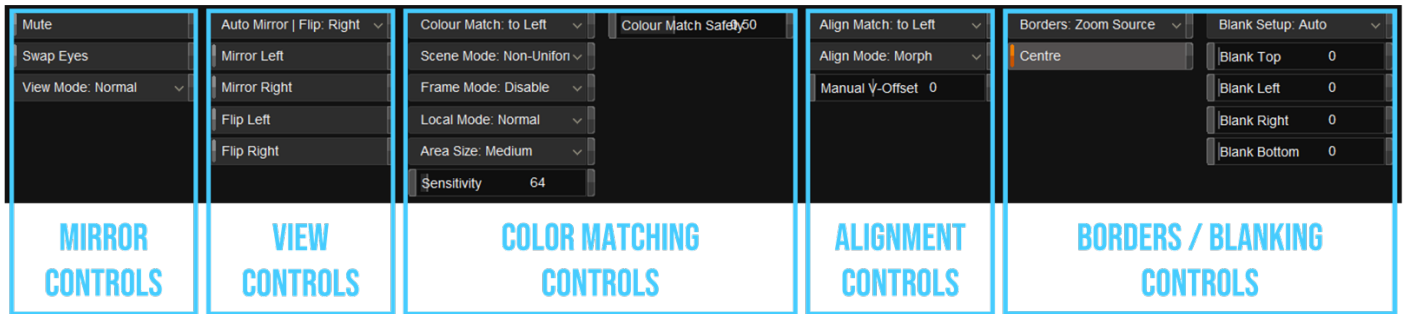

ADDING THE TOOL

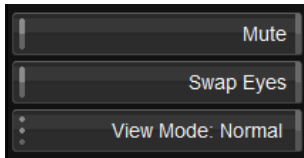DVO Stereo Fix must be added as an Input FX tool:

OVERVIEW

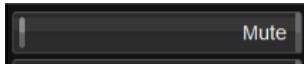The tool has the following basic control layout, with the two primary tool areas being:

- Color Matching controls
- Alignment (geometry) controls

MIRROR CONTROLS	VIEW CONTROLS	COLOR MATCHING CONTROLS	ALIGNMENT CONTROLS	BORDERS / BLANKING CONTROLS
Mute	Auto Mirror | Flip: Right	Colour Match: to Left	Align Match: to Left	Borders: Zoom Source	Blank Setup: Auto
Swap Eyes	Mirror Left	Scene Mode: Non-Uniform	Align Mode: Morph	Centre	Blank Top 0
View Mode: Normal	Mirror Right	Frame Mode: Disable	Manual V-Offset 0		Blank Left 0
	Flip Left	Local Mode: Normal			Blank Right 0
	Flip Right	Area Size: Medium			Blank Bottom 0
		Sensitivity 64		Colour Match Safety 50	

VIEW CONTROLS

Mute

Swap Eyes

View Mode: Normal

MUTE

Mute

Mutes both the color match and the align match, as well as any associated border/blanking modes.

The parameters in this section regarding view and orientation remain active i.e., Swap Eyes/View Mode/Mirror/Flip.

This can be used to compare before and after versions while correcting any necessary mirror/flip.
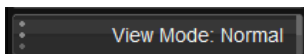
SWAP EYES

Swap Eyes
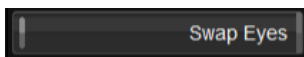
Swaps left and right eye on output.

All parameters referring to either left or right are associated with the source left and right tracks. As such, the actual processing isn't affected by swapping eyes on the output.

VIEW MODE

View Mode: Normal

This control allows different view modes to be applied on the output and is used mainly for visualization purposes. The options are:

Normal (default):   Separate left and right outputs.

Blended: Blends the left and right images, which could be used to verify alignment processing.

Side-by-side: Displays the left and right images side-by-side with halved horizontal resolution. If this mode is used to verify color matching simultaneously, please note that many monitors might have color reproduction that varies spatially or by viewing angle.
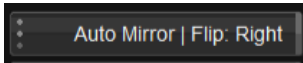
MIRROR CONTROLS

Auto Mirror | Flip: Right

Mirror Left

Mirror Right

Flip Left

Flip Right
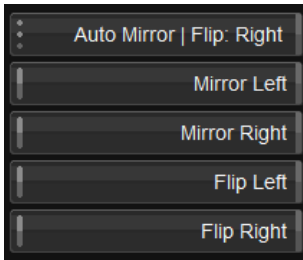
The Mirror Controls will automatically determine and correct for a mirrored left or right eye. If required, manual correction can also be set here.
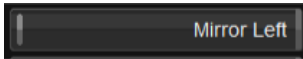
AUTO MIRROR

Auto Mirror | Flip: Right

Automatically determines mirror and flip between left and right eye. If we detect a requirement to mirror or flip, it's applied to the specified eye. This automatic correction will follow any manual mirror or flip settings applied to the other eye.

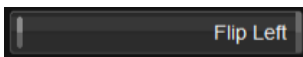**Values:** Disable, Left, right (default)

MIRROR LEFT

Mirror Left

Manually set left eye to be mirrored.

MIRROR RIGHT

Mirror Right

Manually set right eye to be mirrored.

FLIP LEFT

Flip Left

Manually set left eye to be flipped (*vertically*).

FLIP RIGHT

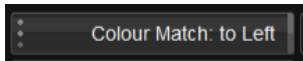Flip Right

Manually set right eye to be flipped (*vertically*).

COLOR MATCHING CONTROLS

Colour Match: to Left	Colour Match Safety 0.50
Scene Mode: Non-Uniform	
Frame Mode: Disable	
Local Mode: Normal	
Area Size: Medium	
Sensitivity 64	
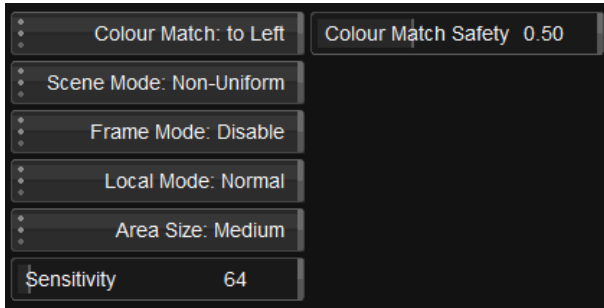
These controls allow us to correct the color match between the left and right eyes.
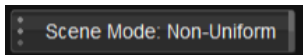
COLOR MATCH

Colour Match: to Left

Sets color processing to match the *specified* eye. Setting this to "*to Left*" will process the right eye to match the left.

Values: to Left (default), to Right

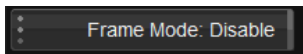## SCENE MODE

Scene Mode: Non-Uniform

Sets the color matching mode for a scene such that the scene is analyzed and processed equally throughout (all frames). The different modes relate to how color matching may vary *spatially* over the image. The options are:

Disable:	No color match processing is performed (on scene basis).
Uniform:	Color matching is assumed to be spatially uniform.
Non-Uniform: (default)	Color matching is allowed to be spatially non-uniform. This mode typically works just as well when the color differences are spatially uniform.

This is unrelated to any spectrum transformation being uniform or non-uniform.

Scene Mode requires proper scene edits, as one scene will behave very differently to another.

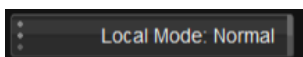## FRAME MODE

Frame Mode: Disable

Sets the color matching mode which is applied per frame individually. The processing and modes are the same as described above for Scene Mode.

This option can be used as an alternative to Scene Mode processing if color differences change on a *frame-by-frame* basis. It's recommended that Scene Mode processing is **Disabled** when using this option.

Values: Disable (default), Uniform, Non-Uniform

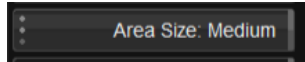## LOCAL MODE

Local Mode: Normal

This option allows for more localized color match processing than found in Scene or Frame Modes. The Area Size and Sensitivity controls are linked to Local Mode processing.

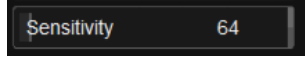**Values:** Disable, Normal (default)

AREA SIZE

Area Size: Medium

The smaller the Area Size is the more locally aggressive the processing will be.

Values: X-Small, Small, Medium (default), Large, X-large

SENSITIVITY

| Sensitivity	64

The Sensitivity parameter is used to control the allowed difference ranges. The values we set correspond to 10-bit levels. The effect of Sensitivity is as a safety measure rather than a processing amount.

To speed up the processing of complete scenes/material, Local Mode processing can be disabled.

Range: 0 - 1023

Default: 64

COLOR MATCH SAFETY

Colour Match Safety 0.50
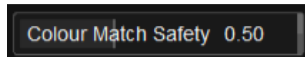
This parameter sets a general safety level for the Scene and Frame Mode color matching.

Color Match Safety applies to **black levels** as well as the analysis and variability of the spectrum transform applied.

This **doesn't** include Local Mode, which uses Area Size and Sensitivity.
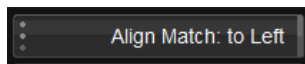
Range: 0.0 - 1.0

Default: 0.5

ALIGNMENT

Align Match: to Left
Align Mode: Morph
Manual V-Offset   0

These controls allow us to correct the alignment (or *geometry*) between the left and right eyes.
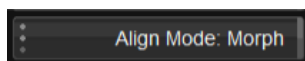
ALIGN MATCH

Align Match: to Left

Sets alignment processing to match the *specified* eye. Setting this to "to Left" will process the right eye to match the left.

Values: to Left (default), to Right

ALIGN MODE

Align Mode: Morph

The alignment processing is based on scene analysis and frames are processed equally throughout the scene. The alignment can also be set manually or adjusted with a global offset (Manual V-Offset).
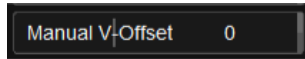
The options are:

Disable: No alignment processing.

Manual: Set manual global vertical offset (using Manual V-Offset).

Global: Automatic and global adjustment.

Morph: Spatially variable adjustment with linear variability over the image.
(default)

Like Scene Mode color matching, Align Mode requires proper scene edits as normally one scene will behave very differently to another.
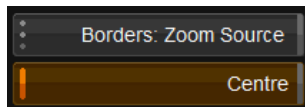
MANUAL V-OFFSET

Manual adjustment of the alignment.

Range: 0 - 128

Default: 0

BORDERS

The *Borders* controls let us correct any effect alignment has on frame borders. Border correction also depends on the *Blanking* configuration (see below). The options are:

Disable: Disable border processing.

Blank: Automatically applies necessary blanking to borders.

Zoom Source: Automatically zooms the output to the source frame and original blanking. As per
(default)   the *Blanking Mode*, this mode considers what needs to be excluded regarding the borders and alignment.

Zoom Fill: Automatically zooms the output to fill the full frame disregarding any original blanking of the source.

CENTRE

Centre the result in the frame. This may be necessary for some Border modes.

Values: On (default), Off

BLANKING

Blanking is closely linked to the *Borders* control and allows us to control how the frame borders are blanked.

BLANK SETUP

Blank Setup lets us choose if blanking is setup by automatic analysis or manually in relation to the source or the output. The options are:

Auto: (default)   Use automatic analysis to define the blanking amount.

Source: Allow manual blanking setup.

Output: Manually specify blanking completely based on the output alone. This allows you to consider any frame effects from the alignment processing manually, as well as the original source frame blanking. **This is Advanced Mode.**

Blanking affects the border processing, and its effect will depend on the Borders mode.

BLANK TOP / LEFT / RIGHT / BOTTOM

Manual blanking adjustment to the top, left, right and bottom of the frame. Specified in pixels.

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