

DVO

STEADY 2

USER GUIDE

WHAT DOES IT DO?

DVO Steady 2 is used to reduce unsteadiness due to film weave during scanning or camera shakes during capture of footage. The use of advanced motion estimation provides better separation of random instability and pan/tilt movements. **DVO Steady 2** can be used for both **film** and **progressive video** material.

DVO Steady 2 is an updated version of the original **DVO Steady** tool. New features include splice jump fixing and now working as a single-pass tool. The new version also includes smaller updates for better results, more options and extra automation.

HOW DO YOU USE IT?

DVO Steady 2 works on the following platforms:



It's also coming soon to:



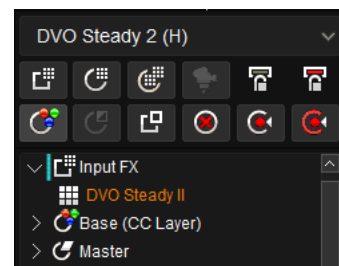
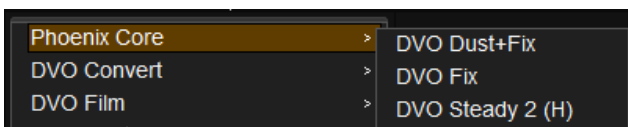
If you're already a Filmworkz veteran, you can jump right in and use **DVO Steady II**, however if you need a hand getting going, check out these QuickStart Guides:

[PHOENIX QUICKSTART GUIDE](#)

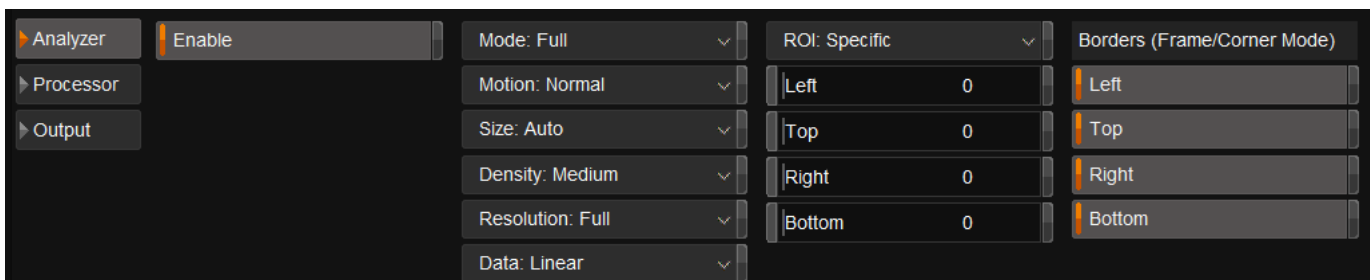
[NUCODA QUICKSTART GUIDE](#)

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 Steady 2** tool.




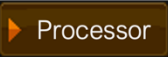
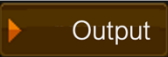
4. Click on it and the control panel under appears:



CONTROL PANEL EXPLAINED

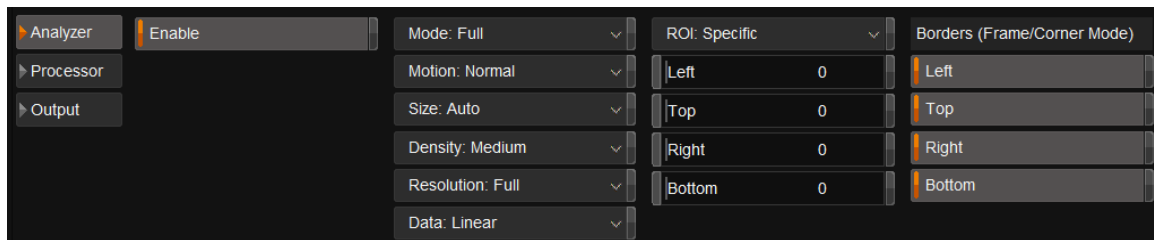
ORGANIZATION

The DVO Steady 2 tool is organized into three separate pages:

1.  Analyzer Settings regarding the focus of interest of the stabilization and particulars of the material.
2.  Processor Processing parameters are applied to the image in accordance with the result from the analysis. These settings are related to the amount of stabilization to be performed to achieve a certain level of smoothness.
3.  Output Settings for the final output rendering, enabling the user to hide visible incursions on frame borders.

Each page has a separate  Enable button (default: Enabled).

1. ANALYZER



MODE



This parameter sets the general mode of detection. As well as the Full image, you can choose to concentrate on other specific regions of interest.

The different modes are:

- Full:** Analyzes all parts of the image equally (default)
- Centre-Weighted:** Has a higher focus at the center of the image.
- Border-Weighted:** Has a higher focus at the borders of the image.
- Film Frame:** Only uses the film frame borders in the image. Optionally, this can further be adjusted by specifying which actual borders to include in the analysis. The analysis is separated such that left and right borders are used for horizontal correction, and top and bottom borders for vertical correction. *See below.*
- Film Corners:** Only uses the film frame corners in the image during analysis. Similar to the Film Frame mode, the selection of borders also applies here. *See below.*

The most tried and tested modes are: **Full**, **Centre-Weighted** and **Border-Weighted**. These will try to stabilize the image content whether unsteadiness is a result of scanning, damaged sources or just camera movement.

Normal Analyzer Modes

Full, Centre-Weighted and Border-Weighted will be referred to as the normal analyzer modes.



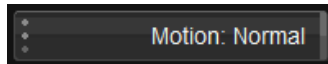
NOTES ON FILM FRAME AND FILM CORNER MODES

The Film Frame and Film Corner modes are only intended to be used when the images are overscanned (i.e. the image includes film frame borders and maybe also sprocket holes). The selection of borders should correspond to which sides have overscan available.

These modes will try to use only the frame for stabilization (i.e. they won't try to correct for camera movement). Typically, the region of interest should be set manually to where the frame border is, or possibly an edge of any available sprocket holes. An automatic region of interest detection can also be used under some circumstances (see below). There will also be special considerations regarding border selection for these modes.

These modes are fast but should be considered less robust, and the frames themselves may sometimes actually not be the best thing to use for stabilization.

MOTION



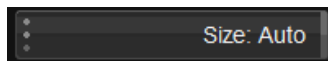
This parameter is used to describe the expected motion content of the material.

The available settings are:

- **Normal:** Default setting
- **Fast:** Use Fast mode if you have fast-moving material which seems to create breaks in the smoothness of the stabilization using "Normal".

This parameter only has an effect when "Size" (see below) is set to "Auto".

SIZE



The optimal size parameter is related to several conditions such as:

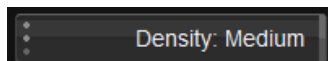
- image size
- analyzer mode and
- motion content

The available settings are:

- **Auto:** The default. The application will determine an optimal setting for Size.
- **Small:** Tuning as small.
- **Medium:** A larger image, higher motion and more complex analysis mode might require larger sizes.
- **Large:** Same description as medium
- **X-Large:** Same description as medium

Size affects processing time - larger sizes require more processing and take longer.

DENSITY



Density determines how detailed the analysis will be. The setting is related to the scene motion complexity (i.e., different objects with different and/or complex motion patterns).

Medium is the normal setting. For scenes with higher complexity, try High.

Density will affect the processing speed, so a Low setting can be used for low complexity scenes to improve speed.

Values: Small, Medium (default), High



RESOLUTION

Resolution: Full

This parameter lets you optimize based on the resolution of the source media compared to the selected project Output Format. If the source media is lower resolution than the output format you can use the *Half* setting to speed processing. Lower image resolution might be due to *soft* source footage, very noisy sources or high-resolution scans (e.g., scans of 8mm film at 4K or 8K).

Using Half can reduce processing time by 300%.

Values: Full (default), Half

DATA

Data: Linear

This describes the data format of the sources. The analysis will adjust depending on whether we have Linear or Log input material.

Most of the time *Linear* will work just as well for Linear and Log formatted images.

However, do not use the Log setting for a Linear source.

Values: Linear (default), Log

REGION OF INTEREST

In the **normal analyzer modes** (Full, Centre-Weighted and Border-Weighted), the region of interest is simply used to isolate the part of the image which should be analyzed.

If not used to target some specific part, it's usually best to set the ROI to exclude any "black" borders (whether blanking or overscan).

In the Film Frame or Film Corner analyzer modes it's imperative that the ROI is set to where the film frame is aligned (or possibly aligned) with the border of any **sprocket holes**.

ROI

ROI: Specific	
Left	0
Top	0
Right	0
Bottom	0

For Auto ROI, the GUI and Left/Top/Right/Bottom parameters will not reflect the result. The available settings are:

- **Disable:** No ROI is used (or rather ROI corresponds to full image).
- **Specific** (default): ROI is set manually using the GUI control overlay or using the individual parameters Left, Top, Right, and Bottom for the offset from respective image edge.
- **Auto:** Will find the relevant frame of content automatically removing for instance blanking or overscan. The automatic mode should work most of the time if the material has clean and undamaged borders. In the event of sprocket holes, if they're only available at the far top and far bottom, they'll be excluded. Otherwise, if running more towards the middle, the *Auto* ROI will be set to include them.

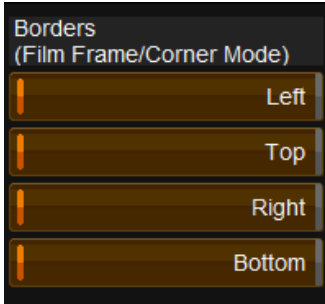


ROI SIZE

This is the number of pixels from each edge where the frame (active area) starts.

- **Left/Right** range: 0 - Width
- **Top/Bottom** range: 0 - Height

BORDERS

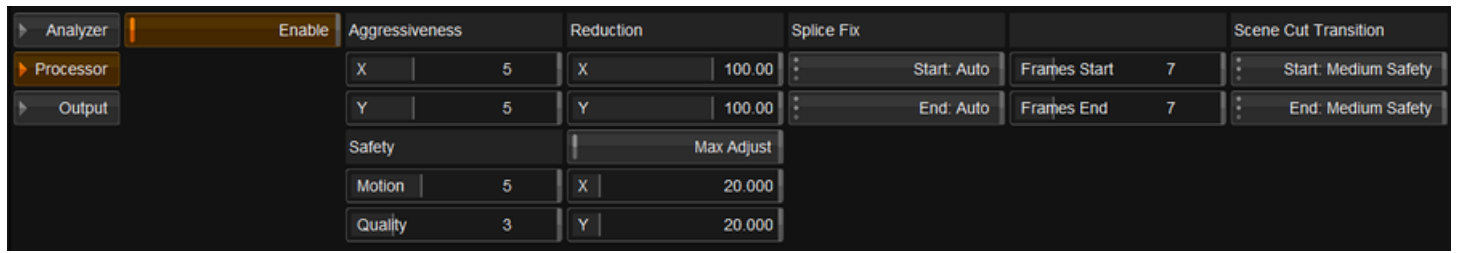


In the **Film Frame/Corner modes** the user needs to select which borders can and should be used for the analysis. The default setting enables all parameters.

- **Film Frame Mode:** Left and Right borders will only be used for *horizontal* analysis and top and bottom only for *vertical analysis*. As an example, deselecting both Left and Right means no horizontal stabilization will be performed.
- **Film Corner Mode:** A deselected border implies that *both* corners on that border are unfit for use in the analysis.

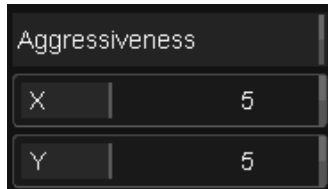
Only genuine and completely visible film frame borders can be used, any others must be deselected. The actual film frame isn't always completely consistent in size between frames and if this seems to be the case (e.g., stabilization seems ineffective), one must resort to selecting only one of either Left or Right and one of Top or Bottom.

2. PROCESSOR



Processing parameters are applied to the pictures based on the result from the Analyzer.

AGGRESSIVENESS



Aggressiveness determines the level of smoothness that the stabilization can achieve. The setting should relate to both the amplitude and the temporal nature of the unsteadiness which is targeted for stabilization. This parameter can be set separately for horizontal (X) and vertical (Y) stabilization.

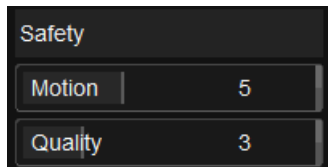
Low values are used for fine errors (small and quick e.g., introduced by a scanner/telecine) and don't try to correct for slower and larger movements.

High values take care of fine errors and handle coarse errors (large and slow) e.g., very old material or handheld/shaky cameras.

Range: 1 - 10

Default: 5

SAFETY



The stabilization process is adaptive in a way that, when difficult situations arise, it can react and proceed with robust behavior.

The stabilization process is adaptive, adapting to maintain correct behavior. In some situations, considered "unsafe", the stabilization effect will be limited to reduce errors.

There are two aspects of safety which are considered: **motion** and **quality**.

MOTION



High motion frames will be considered less safe (as analysis can become more complex) and more prone to potential "errors".

Range: 0 - 10

Default: 5



QUALITY

Quality	3
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A low quality can indicate a complex scene or other difficulties which'll be considered unsafe.

The user doesn't have to consider this behavior specifically, but rather just set a desired level of safety applied for each aspect. A higher value always corresponds to higher safety. Obviously, if safety is set too high the stabilization will be less effective.

Range: 0 - 10

Default: 3

REDUCTION

Reduction	
X	100.00
Y	100.00

Used to set how much the unsteadiness should be decreased, with separate controls for horizontal (X) and vertical (Y) reduction.

Reduction is typically set to 100% to achieve maximum correction.

A bit of residual unsteadiness might be necessary to create a more natural result sometimes e.g., a camera shaking during frame capture resulting in motion blurs.

Range: 0 - 100

Default: 100%

MAX ADJUST

Max Adjust	
X	20.000
Y	20.000

Sets a maximum limit (in pixels) for how much the process is allowed to adjust the stabilized frames, with separate horizontal (X) and vertical (Y) controls. The setting is disabled by default.

Range: 0 - 100

Default: 20 pixels

SPLICE FIX

Splice Fix	
Start: Auto	Frames Start 7
End: Auto	Frames End 7

Splice Fixing refers to being able to correct for large frame jumps which can occur around scene cuts or physical splices in the original reel. This feature is based on finding the number of frames affected on either side of the scene, which can be done automatically (or manually, if necessary).

When set manually, use the setting as a frame count number to the first frame which is considered **unaffected** (counting from the first / last frame in the scene respectively) e.g., 0 corresponds to disable and 1 corresponds to a correction for the first frame only, and so on.



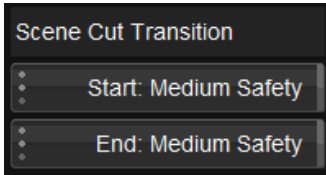
When a splice fix is actively processing, this feature overrides the effect of Scene Cut Transition (below). “Actively processing” means that the Auto mode has detected an actual jump or that the Frames setting is not zero in Manual mode.

Values: Disabled, Manual, Auto (default)

Range: 0 - 25

Default: 7

SCENE CUT TRANSITION



Scene Cut Transition refers to special processing modes at the start and end of the scene that take into account unbalanced temporal information.

This basically means some form of information extrapolation is necessary, and the options are best described according to how safe they are. In the end, the different safety settings can be seen as corresponding to how large a correction is allowed to be. For better or worse a Low Safety allows a larger correction than High Safety. The actual behavior may be very similar between modes many times.

Start and End modes are set separately.

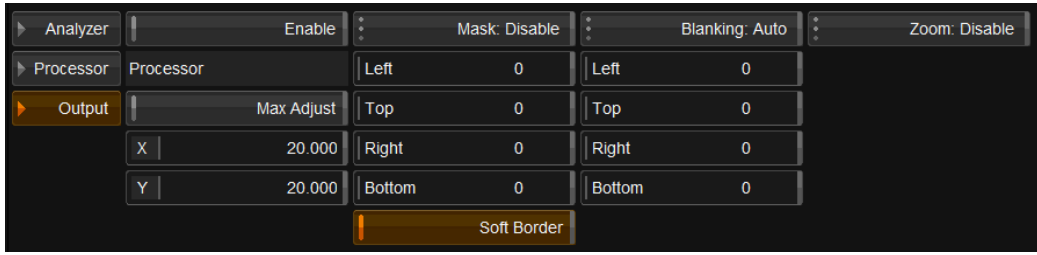
There is a further option to set the stabilization such that the start/end frame will appear as **locked** to the original position. The lock option can be useful when a scene is edited and will allow the edit to hold together – such scene edits may be used when one wants to change the parameters within a scene for different behaviors.

This functionality is disabled when *Splice Fixing* is actively processing (see above).

Values: Locked, High Safety, Medium Safety (default), Low Safety

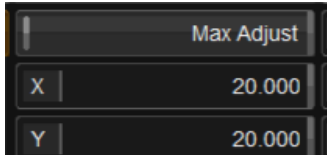


3. OUTPUT



Settings for the final output rendering, enabling the user to hide visible incursions on frame borders.

MAX ADJUST

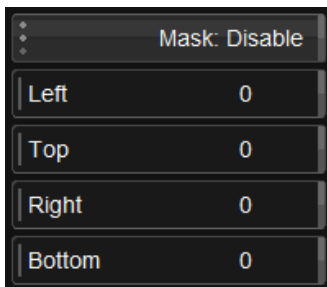


Sets a maximum limit (in pixels) for how much the process is allowed to adjust the stabilized frames, with separate horizontal (X) and vertical (Y) controls. The setting is disabled by default.

Range: 0 - 100

Default: 20 pixels

MASK



The options regarding the output are all connected to the masking of the frame/image border. The most common mode is to use the complete (or interior) frame for stabilization. While the interior will become steady the image/frame borders may instead move around. The masking operation can then be used to blank these moving border areas.

The mask can be set up specifically for each border or can be set to follow the max adjustment set for the processor.

If the *Processor* setting **Max Adjust** is *disabled*, the actual masking will be considered as 0 pixels but the other options in *Output* will still be considered (unlike when *Mask* is set to *Disable*). The complete masking operation will further be able to include the original blanking area of the source (see below).

When *Mask* is set to *Disable*, **Blanking and Zoom options** (below) have no actual effect.

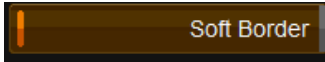
Values: Disabled (default), Follows Max Adjust, Specific

Left/Right: 0 – Width

Top/Bottom: 0 – Height

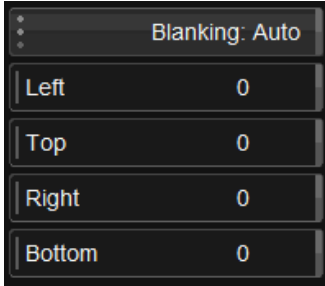


SOFT BORDER



Creates a soft border at the picture masking, to give a more natural look. The default setting is Off.

BLANKING



Blanking is used to describe the original blanking of the source or how it would be set in the source. This information will then be considered by the **masking** operation.

See the description of the *Analyzer Region of Interest*: the setup and behavior is essentially the same except there is no GUI overlay to adjust the blanking manually (the GUI overlay always shows the manually set *Regions of Interest* of the *Analyzer*).

If *Mask* is set to **Disable**, Blanking has no effect.

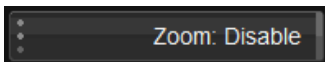
If *Mask* effectively is **0 pixels**, then masking will be performed exactly as *Blanking* is set.

Values: Disabled, Specific, Auto (default)

Left/Right: 0 – Width

Top/Bottom: 0 - Height

ZOOM



The zoom option allows the final masked result to be zoomed. The settings are:

- **Disable:** No zoom (default)
- **To Blanking:** Zooms to the blanking setup (for the source)
- **Zoom Letter/Pillarboxed:** The masked output is centered and zoomed such that it fills either letter or pillar box whichever is reached first. The original pixel *aspect ratio* is maintained
- **Zoom Fill Full Screen:** The masked output is centered and zoomed such that it fills the full screen and if necessary, clips the image either at top/bottom or left/right depending on what is necessary. The original pixel *aspect ratio* is maintained

All modes keep the correct aspect ratio.



WANNA KNOW

MORE?

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