

Owner's Manual

THERMAL

 output

MANUAL & SYSTEM REQUIREMENTS

System Requirements:

OS X 10.9 or higher
Windows 7 or higher
Processor: 2.9 GHz Intel Core i7 or higher
Memory: 8GB minimum, 16GB+ recommended
At least 300 MB of free drive space

Thermal comes in 32 and 64 bit VST, VST3, AU and AAX format.

Thermal is supported by the following DAWs:

Ableton Live 9.2.2+ / 10.1 (Mac and PC: AU, VST)
Bitwig 1.3.9+ (Mac and PC: AU, VST)
Cubase 8+ (Mac and PC: VST)
Digital Performer 8+ (Mac and PC: AU, VST)
FL Studio 12+ (PC: VST, VST3)
Garageband 10+ (AU)
Logic Pro 9+ (mac: AU)
Native Instruments Maschine 2.4+ (Mac and PC: AU, VST)
Pro Tools 10.3.5 - 12 (Mac and PC: AAX)
Presonus Studio One 3.2.2 (Mac and PC: AU, VST, and VST3)
Propellerhead Reason 9.5+ (Mac and PC: VST)
Reaper (PC: VST)



TABLE OF CONTENTS

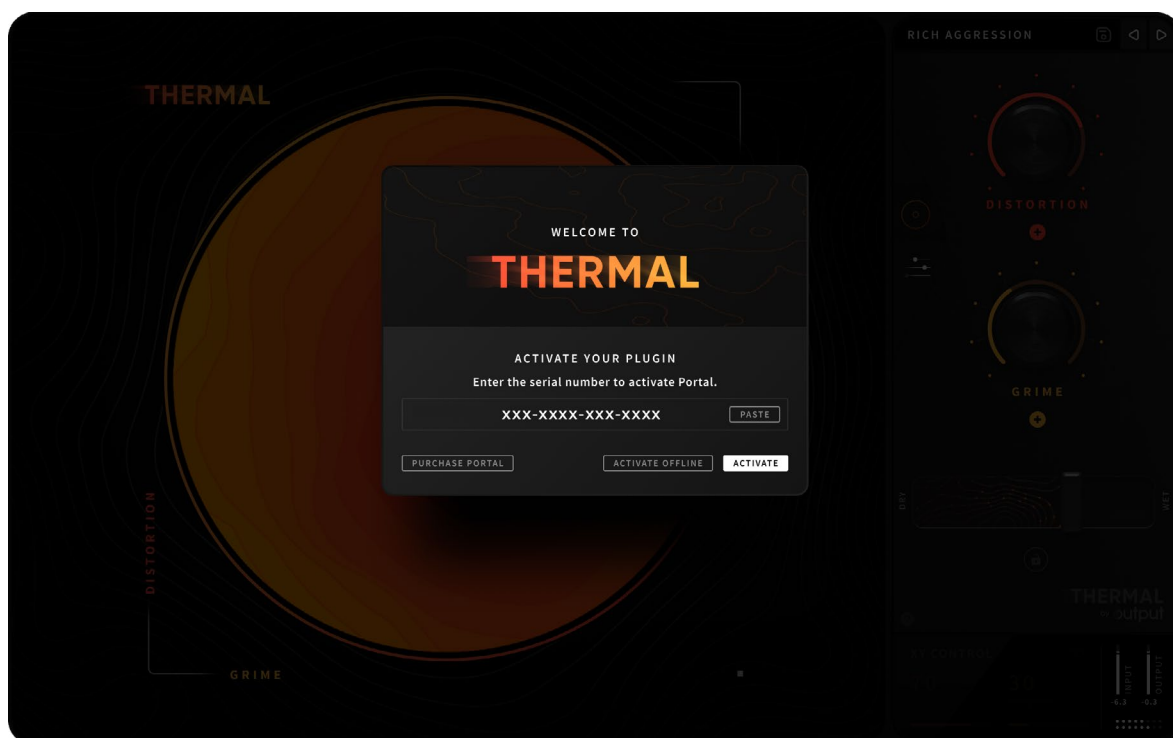
1 - INSTALLATION & ACTIVATION 1 OF 3

Thermal is an effects plugin - not a software instrument like most other Output products. To install THERMAL please begin by logging into [Output Hub](#). You can also use the download link in your [Output account](#) on the “Downloads” page under “FX Engines.”

Inside the HUB, click “Download” on the right side of the Thermal tab, and select “Desktop” as the download location.

When the download is finished please double click the Package installer and follow the indicated steps. **Make sure to install Thermal on your System Drive, and not another drive that holds your samples.**

At this point, you can open your DAW (Cubase, for example) and select Thermal from your FX Plugin menu. This will open the GUI where you can enter your serial code into the field when prompted. (Please ensure there are NO SPACES before and after your serial code.)



If you do not see Thermal in your plugins section for AU or VST/VST2/VST3, please restart your computer and re-open your DAW.

Your serial code can be located inside the Thermal tab of [Output Hub](#), or on your [Downloads](#) page at [output.com](#) under “FX Engines.”

1 - INSTALLATION & ACTIVATION 2 OF 3

Thermal can be activated on up to four (4) computers simultaneously.

If you wish to activate Thermal on a fifth computer, you can either purchase the plug-in again for four additional activations or run an uninstaller on one of your computers to free up an activation.

To activate Thermal offline, click “Activate Offline” and follow the onscreen instructions.

If you do not see Thermal there, rescan your AU/VST/VST3/AAX plug-ins.

If you need to uninstall Thermal from a machine, please follow the steps below:

Before uninstalling Thermal, now is the time to back-up your user presets. Thermal’s user presets are saved as XML files in the following directories:

- Mac: /MacHD/Library/Application Support/Output/Thermal/Presets/USER
- PC: (C:) \ProgramData\Output\Thermal\Presets\USER

You can back up your user presets by making a copy of the Thermal user preset file and dragging it to your Desktop, then dragging it back to the above location after the reinstallation.

After this, we’ll have to delete these files your system drive:

Mac Users:

- MacHD/Library/Application Support/Output/Thermal

Plugin folders:

- HD/Library/Audio/Plug-Ins/Components/Thermal
- HD/Library/Audio/Plug-Ins/VST/Thermal
- HD/Library/Audio/Plug-Ins/VST3/Thermal
- HD/Library/Application Support/Avid/Audio/Plug-Ins/Thermal

PC Users:

- (C:) \ProgramData\Output\Thermal

Plugin folders:

- C:\Program Files\Vstplugins\Thermal
- C:\Program Files\Common Files\VST3\Thermal
- C:\Program Files\Common Files\Avid\Audio\Plug-Ins\Thermal

Once the Thermal folder and plugin files have been deleted, you’ve uninstalled Thermal. If you’d like to reinstall, please download the Package installer from the [Output Hub](#) or get the download link from your [Output account](#) under the “Downloads” tab. After installing, you can replace the USER presets back to the above location.

1 - INSTALLATION & ACTIVATION 3 OF 3

Thermal Offline Activation

Please follow these instructions if you'd like to use Thermal in an offline computer.

1. Click the 'Activate Offline' button.

IMPORTANT-PC USERS: before clicking, you must make sure that your machine is offline in the exact state that you plan to use Thermal (i.e. disconnect/disable all network cables/NICs that will be disconnected/disabled when you use Thermal).

2. Click 'Copy.'

3. Visit output.com/activate, paste the code that was copied in step 1 into the 'enter activation code' field.

4. Paste your Thermal serial code into the top field, click submit.

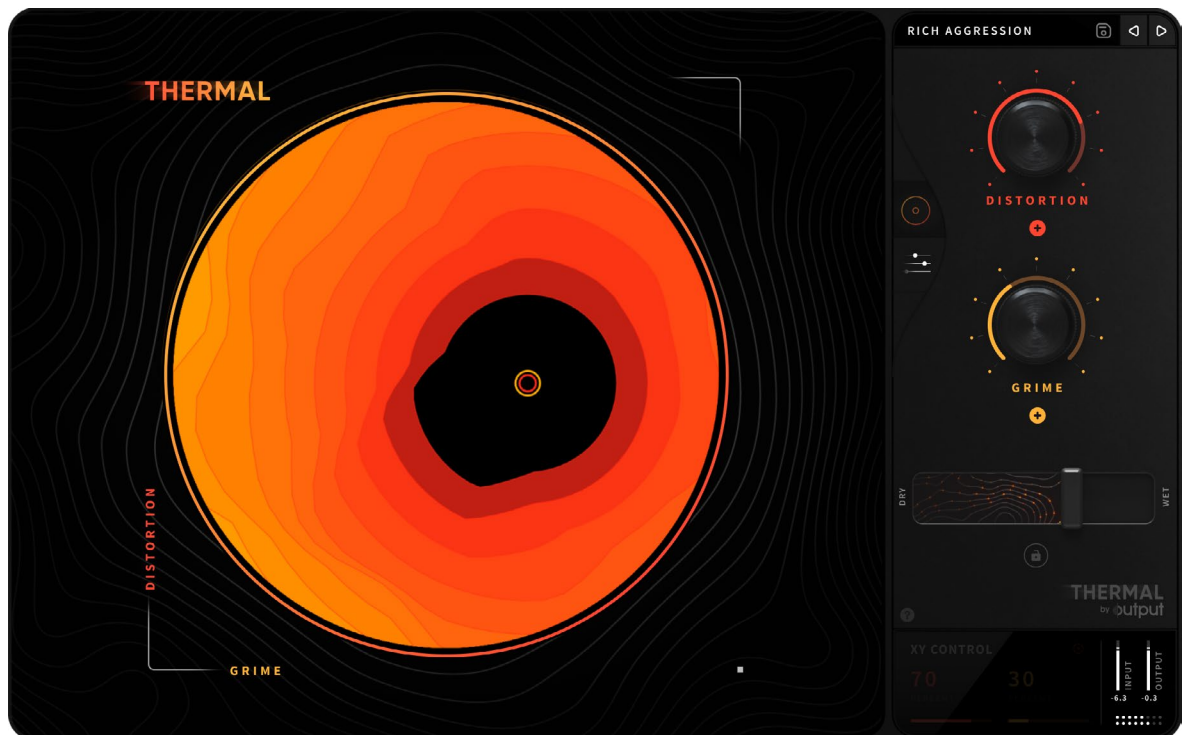
5. Your browser will download a .key file. Transfer this file to your offline machine using a portable hard drive.

6. In Thermal, click 'Browse' on step 2 and select the .key file which was transferred to your offline machine in the previous step.

That's it! Remove and reload Thermal from your channel and you will be all set.

2 - WHAT IS THERMAL?

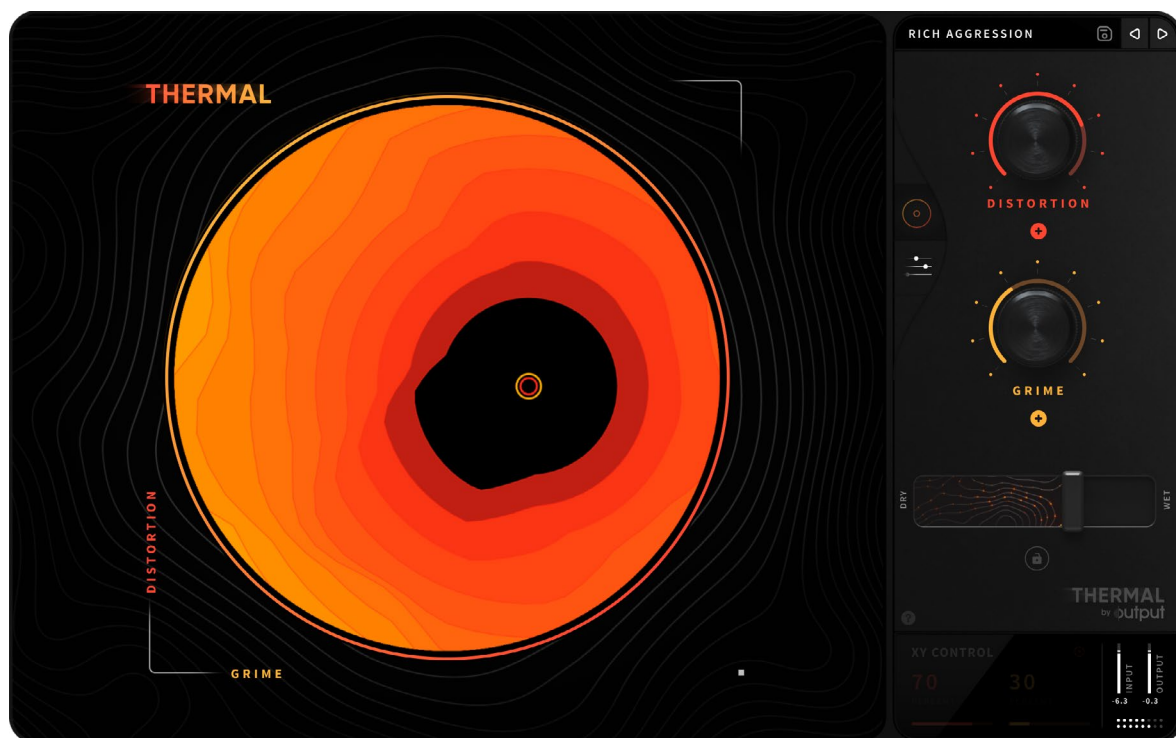
Thermal is a dynamic, multi-stage distortion plug-in. Offering different **STAGE PROCESSING** options such as **DISTORTION, EFFECTS, WIDTH, TONE** and more. The **XY** control is highly interactive, providing an easy interface to enhance harmonics by tapping into its layered engines, each with 19 different analog and digital distortion algorithms, 9 built-in FX, modulation capabilities, and stereo imaging.



3 - MAIN PAGE 1 OF 2

Thermal will load by default to the **MAIN PAGE**. The **MAIN PAGE** provides access to the **XY CONTROL**, **MACROS**, **PRESET BROWSER**, **DRY / WET SLIDER**, and the **VALUE READOUT PANEL**.

To navigate back to the **MAIN PAGE**, click the circle icon on the left-hand side of the **SIDE PANEL**.



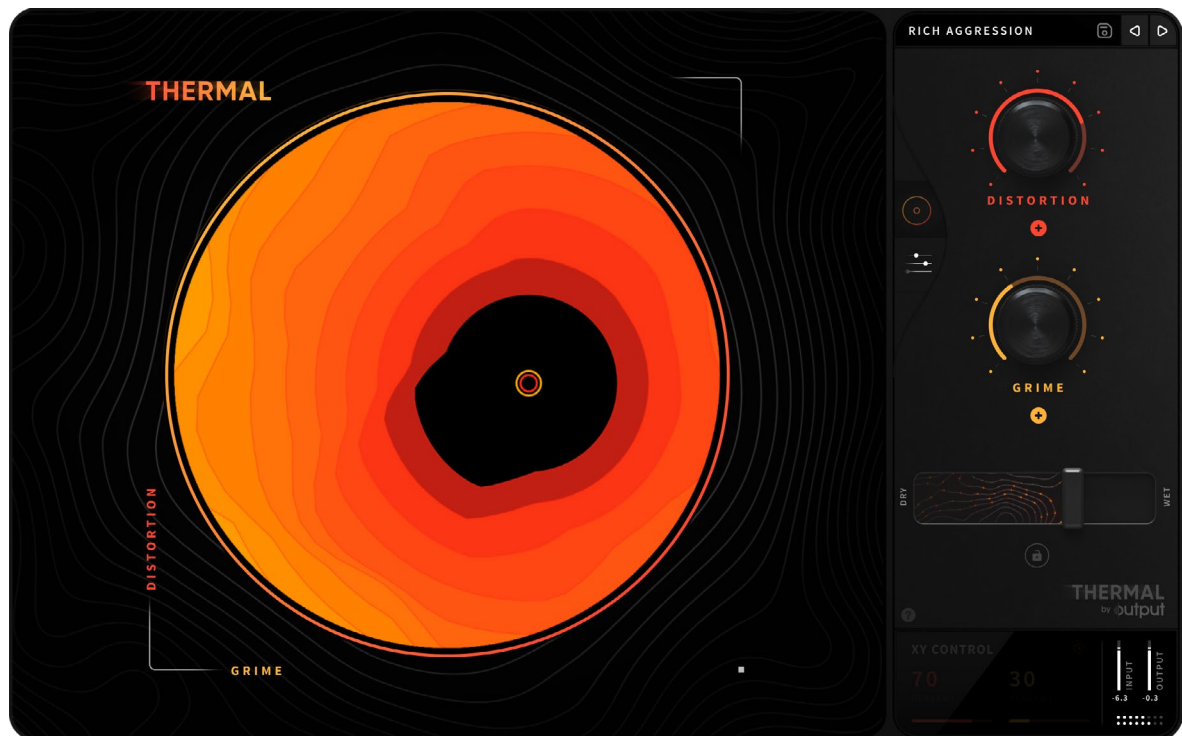
XY CONTROL - Grab the handle and drag around the circle to move both **MACROS** in simultaneously. The **XY CONTROL** changes appearance according to the settings of certain parameters in the engine.

MACROS - Control multiple parameters at once. Almost any knob or slider can be controlled by a macro. Assign a macro by dragging the “+” assignment indicator onto a knob or slider. Click and drag up or down to set the range of the macro. See **MACROS** and **MODULATION** sections for more info.

PRESET BROWSER - Click the preset name to enter the preset browser. (When opening a new instance, this should say “Default.”) Click the preset name again to exit the browser.

NEXT / PREVIOUS - Navigate through presets in the browser by clicking **NEXT / PREVIOUS** arrows.

3 - MAIN PAGE 2 OF 2



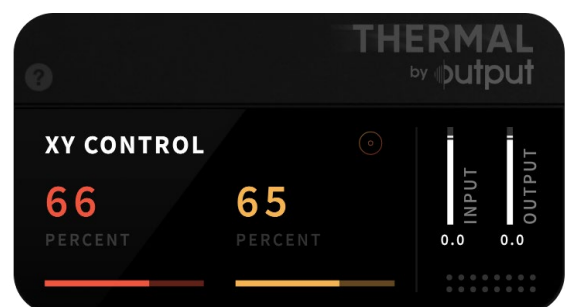
SAVE [FLOPPY DISK ICON] - Click to open the save menu. User presets are always saved to the **USER** folder, regardless of which directory is selected in the finder.

REVERSE - Click to turn on reverse grains.

DRY / WET - Adjust the amount of affected output to be blended with the original signal.

DRY / WET LOCK - Right click the **DRY / WET LOCK** icon to keep the slider at a set amount that won't change while cycling through presets.

VALUE READOUT PANEL - Large numerical display of the parameter currently being adjusted. Additionally, this section provides adjustment controls for **INPUT** and **OUTPUT GAIN** and a **VU** meter to show the output volume of the effect. Red dots at the far right of the meter indicates the signal is being clipped. Click on either the **INPUT** or **OUTPUT** selection to manually enter a value.



4 - ADVANCED PAGE: BASICS 1 OF 2

Enter the **ADVANCED PAGE** by clicking the horizontal sliders icon below the **MAIN PAGE** circle icon. The **ADVANCED PAGE** provides access to Thermal's full set of parameters, allowing for maximum customization of your sound.



4 - ADVANCED PAGE: BASICS 2 OF 2

The **ADVANCED PAGE** is made up of 4 sections:

1. STAGE PROCESSING CONTROLS

2. MACROS

3. MODULATION

4. XY, EFFECTS, MASTER



5 - ADVANCED PAGE: STAGE PROCESSING 1 of 6

STAGE FILTER

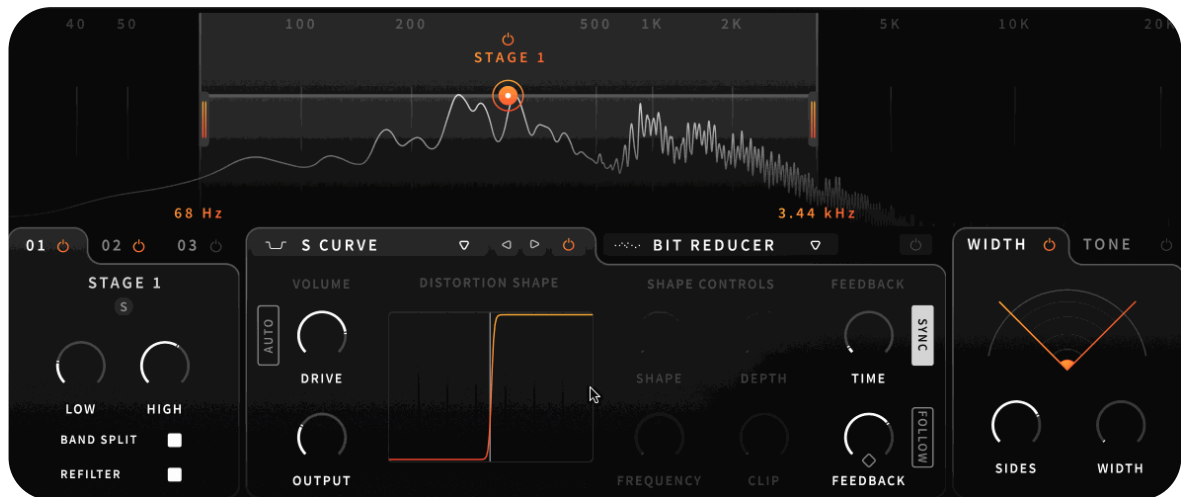


The Stage Filter section allows you to select, bypass, and activate the 3 stages. You can also “**SOLO**” each stage, giving you the option to listen to how a specific stage is affecting the signal.



5 - ADVANCED PAGE: STAGE PROCESSING 2 of 6

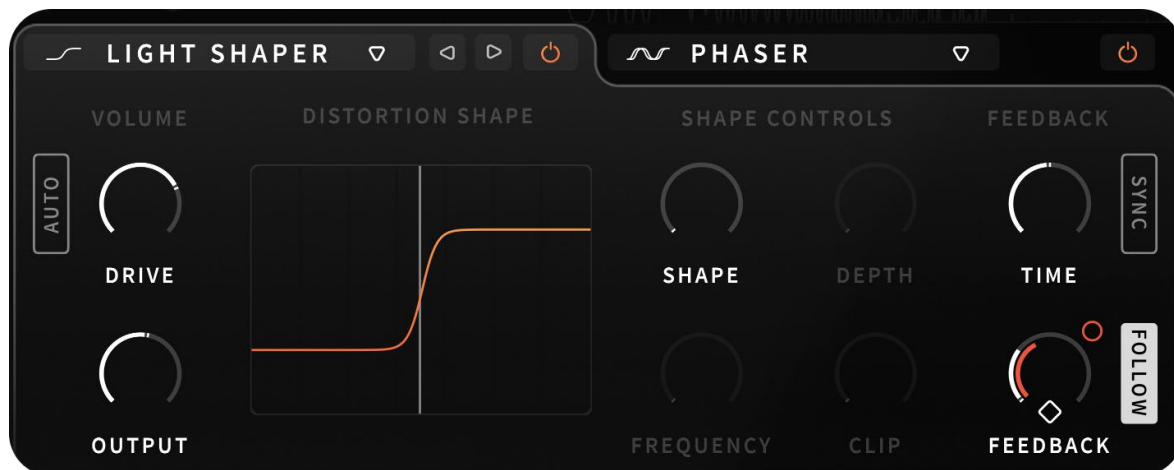
Use the “**LOW**” and “**HIGH**” parameters to set crossover points for each stage. The “**BAND SPLIT**” feature when enabled, gives you the option to set the frequency range that the stage will affect.



Use “**REFILTER**” to filter out unwanted harmonics created from the stage’s distortion and effects, using the “**LOW**” and “**HIGH**” parameters of that stage.

5 - ADVANCED PAGE: STAGE PROCESSING 3 of 6

STAGE DISTORTION



The distortion panel is made up of 4 sections:

1. VOLUME CONTROLS

- **DRIVE** (Input Gain)
- **AUTO** (Internal gain compensation)
- **OUTPUT** (Distortion Output Gain)

2. DISTORTION SHAPE

- Displays the wave shape associated with the currently selected distortion type.

*** Some of the below parameters will only be enabled with certain wave shapes.***

3. SHAPE CONTROLS

- **SHAPE** (Adjusts the acuteness of the wave shape, which adds more harmonics as the shape knob is increased)
- **DEPTH** (Sets the amplitude modulation amount)
- **FREQUENCY** (Sets frequency rate of amplitude modulation)
- **CLIP** (Clips the zero crossing of the waveshape causing bit crushing-esque effects, or adds steps to smooth wave shapes depending on the distortion type.)

5 - ADVANCED PAGE: STAGE PROCESSING 4 of 6

4. FEEDBACK SECTION

- **TIME** (Sets the delay time of the distortion feedback.)
 - Sync - Syncs the delay time to quantized musical values.
- **FEEDBACK** (Sets the amount of signal sent into the delay line.)
 - Follow - An envelope follower that controls feedback amount based on input amplitude.
 - Release Diamond - Sets the envelope follower release time

STAGE EFFECTS



Choose from a list of available effects by accessing the drop-down menu. Each effect will include a series of effect specific parameters, allowing you to further sculpt your sound.

Use the “**DRY/WET**” slider to dictate how much of the effect is applied to the stage.

5 - ADVANCED PAGE: STAGE PROCESSING 5 of 6

STAGE WIDTH



SIDES - Adds or subtracts M-S Side gain.

WIDTH - Adds time-based stereo width.

5 - ADVANCED PAGE: STAGE PROCESSING 6 of 6

STAGE TONE



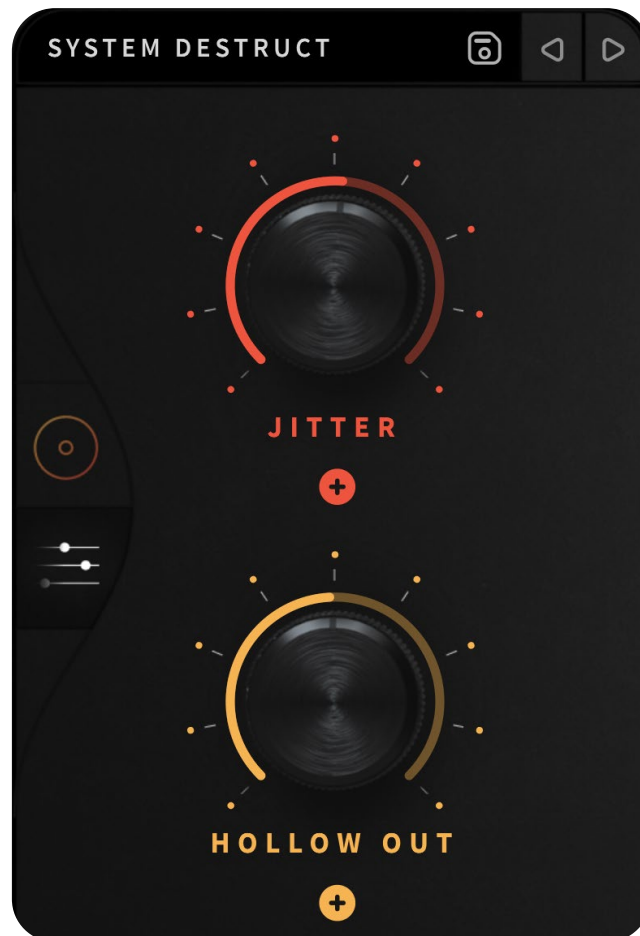
Note - The **TONE** section is post-stage summing. This means that the tone shaping is applied to the full spectrum of the signal, regardless of the filtering happening in the stage.

LOW - Low shelf at 500 Hz.

HIGH - High shelf at 5 kHz.

6 - ADVANCED PAGE: MACROS 1 of 2

Assign **MACROS** by dragging and dropping colored **MACRO** indicators (+) onto a knob. Set **MACRO DEPTH** by clicking and dragging on the **MACRO** circle beside the assigned knob.



Right click on a **MACRO** circle to change **MACRO** to **BIPOLAR**, **UNIPOLAR**, or to **REMOVE MACRO**. Right click a knob to **RESET** to default, and remove all assignments. **MACROS** take on the current knob position as the zero point of modulation. Change the zero position for **MACRO DEPTH** by holding shift, then clicking and dragging up or down on the assigned **MODULATION** circle.

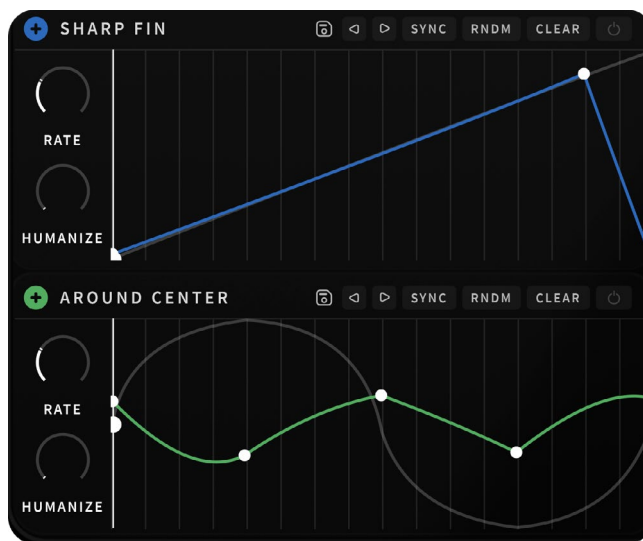
6 - ADVANCED PAGE: MACROS 2 of 2

Right click on a **MACRO** circle to change **MACRO** to **BIPOLAR**, **UNIPOLAR**, or to **REMOVE MACRO**. Right-click a knob to **RESET** to default, and remove all assignments. **MACROS** takes on the current knob position as the zero point of modulation. Change the zero position for **MACRO DEPTH** depth by shift + click and dragging up or down on the assigned **MODULATION** circle.



7 - ADVANCED PAGE: MODULATION 1 of 2

The **MODULATION** section of the **ADVANCED PAGE** is made up of two freely assignable **CLICKABLE ENVELOPES**.

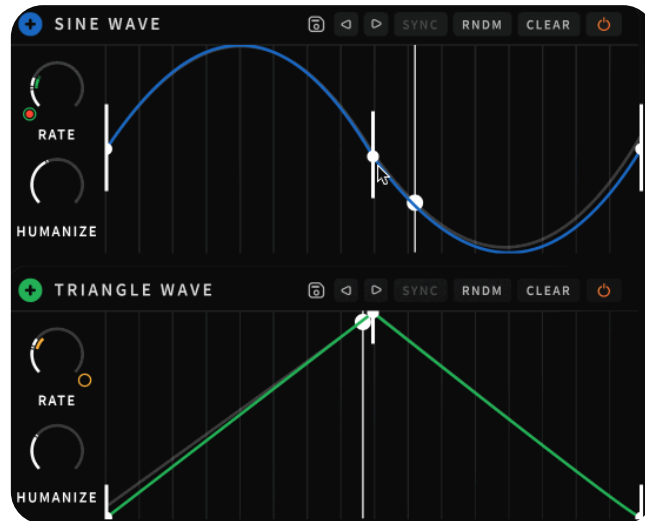


CLICKABLE ENVELOPES - Click to add nodes. Double click to remove nodes. Click and drag to move nodes. Click and drag lines between nodes to change curve. Assign **MODULATION** by dragging and dropping colored **MODULATION** indicators (+) onto a knob. Set **MODULATION DEPTH** by clicking and dragging on the **MODULATION** circle beside the assigned knob.

Right click on a **MODULATION** circle to change **MODULATION** to **BIPOLAR**, **UNIPOLAR**, or to **REMOVE MODULATION**. Right click a knob to **RESET** to default, and remove all **MODULATION**.

MODULATION takes on the current knob position as the zero point of modulation. Change the zero position for **MODULATION DEPTH** depth by holding shift, then clicking and dragging up or down on the assigned **MODULATION** circle.

7 - ADVANCED PAGE: MODULATION 2 of 2



RATE - Control the speed at which the clickable envelope moves through its cycle.

SYNC - Switch between Hz and musical timing.

HUMANIZE - Add randomization to the clickable envelope.

RANDOM - Create a random envelope.

CLEAR - Clear the current envelope.

SAVE [FLOPPY DISK ICON] - Save envelope shapes.

Note **USER** modulation presets are saved in the Thermal > SubPresets > Modulation Presets > User folder. This does not save **RATE** or **HUMANIZE** settings.

LOAD - Click the **CLICKABLE ENVELOPE** name to open and load the list of available presets.

8 - ADVANCED PAGE: EFFECTS

The **EFFECTS** section of Thermal is made up of two **EFFECTS** which run in series after the Stage Processor.

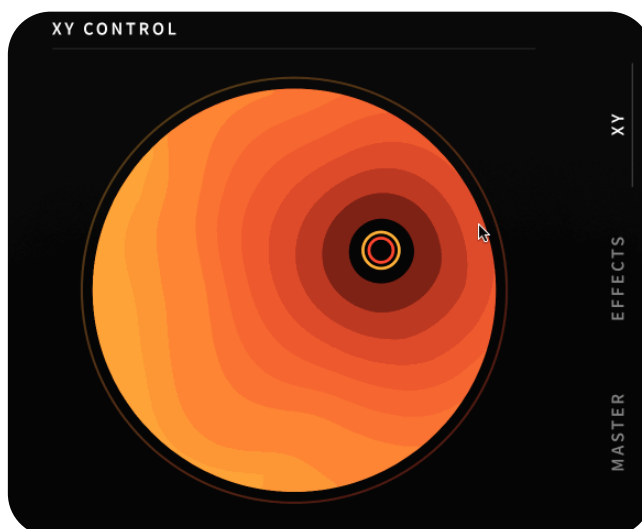


There are 9 possible **EFFECTS** to choose from:

- Bit Reducer
- Chorus
- Compressor
- Filter
- Flanger
- Frequency Shifter
- Phaser
- Reverb
- Stereo Delay

9 - ADVANCED PAGE: XY CONTROL

The **XY** section is a scaled-down copy of the **MAIN PAGE XY CONTROL**.



XY CONTROL - Grab the handle and drag around the circle to move both **MACROS** in simultaneously. The **XY VISUALIZER** changes depending on the number of active Stages in the distortion engine. More stages present a more saturated visual effect.



10 - ADVANCED PAGE: MASTER FX SECTION

The **MASTER** section consists of an **HP / LP FILTER** and a **COMPRESSOR**.

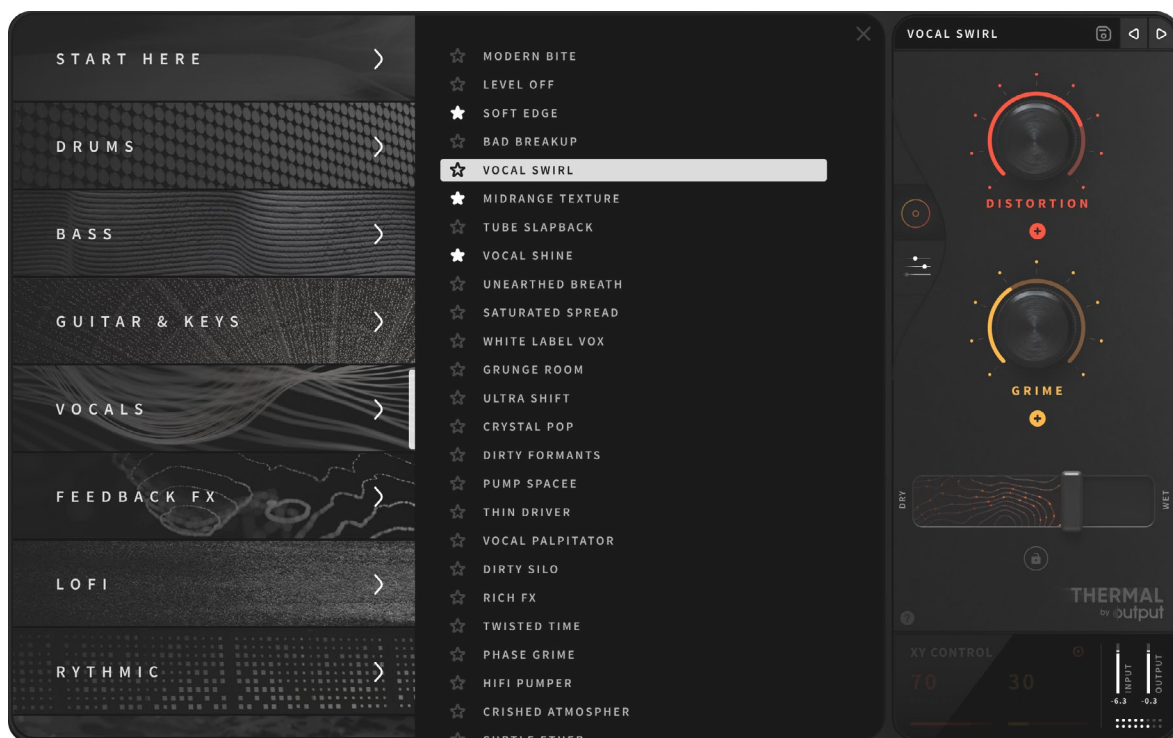
MASTER EFFECTS are **POST STAGE PROCESSOR DRY / WET**, **POST FX**, and **PRE MASTER DRY / WET**.



11 - PRESET BROWSER

The **PRESET BROWSER** is made up of **PRESET CATEGORIES**, and lists of **PRESETS**.

Enter the **PRESET BROWSER** by clicking the **PRESET** name in the top right of the **SIDE PANEL**.
LOAD PRESETS by clicking a **PRESET** name.



Click a **PRESET CATEGORY** to see the presets in the **PRESET list**. To exit, click the **PRESET** name again, click the X in the top right of the list, double click a name, or navigate to the **MAIN** or **ADVANCED PAGE** using the page navigation icons in the **SIDE BAR**.

12 - TIPS & TRICKS

RESIZABLE GUI - Click and drag from the right side of the plugin window.

DRY / WET LOCK - Right click on the **DRY / WET** slider and select **LOCK PARAMETER VALUE**. While active, the **DRY / WET LOCK** amount will stay the same while switching between presets. Right click again and select **UNLOCK PARAMETER VALUE** to unlock.

LOAD INIT PRESET - The factory **INIT** preset is located in the **USER** folder of the **PRESET BROWSER**.

Tool Tips - Click the Question Mark on the right-hand side to learn more about the controls and knobs inside **Thermal**.

www.output.com

