HELLFOLD

DISTORTION VST3

15 Distortion Algorithms • Phase Fold Modulation • 3-Band EQ
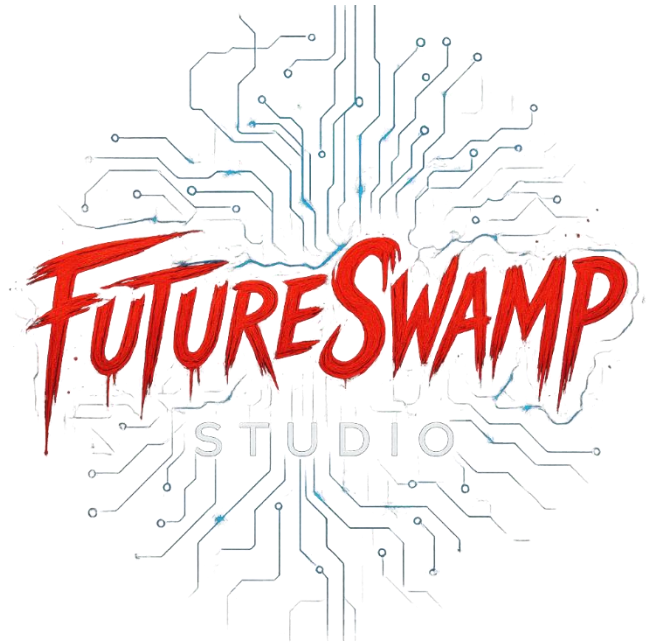

Beta v2.2.9 • User Manual

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1. Introduction

Welcome to **HellFold**, a powerful multi-algorithm distortion plugin designed for modern music production. HellFold combines 15 unique distortion algorithms with an innovative Phase Fold modulation system, giving you unprecedented control over your sound design palette. Whether you're crafting subtle warmth, aggressive industrial textures, or experimental sonic mayhem, HellFold provides the tools to transform any audio source into something extraordinary.

Key Features

- **15 Distortion Algorithms** – From warm tube saturation to brutal digital decimation
- **Phase Fold Modulation** – Unique phase-based effect for movement and texture
- **Oct Fold** – Professional subharmonic synthesis for massive low-end
- **3-Band Parametric EQ** – Shape your tone with precision
- **Oversampling** – Up to 8x oversampling for pristine audio quality
- **Real-time Oscilloscope** – Visual feedback showing input, output, and oct fold signals
- **Preset System** – Factory presets plus user preset saving/loading

2. Installation

Windows Installation

1. Run the HellFold installer executable (.exe)
2. Select the plugin formats you want to install:
    - **VST3** – for FL Studio, Ableton Live, Cubase, Bitwig, Studio One, Reaper
    - **AAX** – for Pro Tools (Coming Soon)
3. Follow the installation wizard
4. Restart your DAW and rescan plugins
5. HellFold should appear in your plugin list

Default Plugin Locations:
- **VST3:** C:\Program Files\Common Files\VST3\
- **AAX:** C:\Program Files\Common Files\Avid\Audio\Plug-Ins\

Mac Installation

1. Run the HellFold installer package (.pkg)
2. Select the plugin formats you want to install:
    - **AU** (Audio Unit) – for Logic Pro, GarageBand, Ableton Live
    - **VST3** – for Ableton Live, Cubase, FL Studio, Bitwig
    - **AAX** – for Pro Tools (Coming Soon)
3. Follow the installation wizard
4. Restart your DAW and rescan plugins

Mac Plugin Locations:
- **AU:** /Library/Audio/Plug-Ins/Components/
- **VST3:** /Library/Audio/Plug-Ins/VST3/
- **AAX:** /Library/Application Support/Avid/Audio/Plug-Ins/

Windows System Requirements

- Windows 10 or later (64-bit)
- VST3 or AAX compatible DAW
- 4GB RAM minimum (8GB recommended)
- Multi-core CPU recommended for oversampling features
- 100MB free disk space

Mac System Requirements

- macOS 10.13 (High Sierra) or later
- Intel or Apple Silicon (M1/M2/M3/M4/M5) – native support for both
- AU, VST3, or AAX compatible DAW
- 4GB RAM minimum (8GB recommended)
- Multi-core CPU recommended for oversampling features
- 100MB free disk space

Pro Tools Notes (Mac & Windows)

- HellFold requires Pro Tools 11 or later (AAX 64-bit only) - Coming Soon
- After installation, Pro Tools should automatically detect the plugin
- If HellFold doesn't appear, go to Setup → Playback Engine and ensure AAX plugins are enabled
- The plugin will appear under Harmonic → HellFold in the insert menu
- Pro Tools may require you to authorize the plugin on first load – follow the on-screen prompts

Choosing Your Format

DAW	Windows	Mac
Pro Tools	AAX	AAX
Logic Pro	–	AU
GarageBand	–	AU
Ableton Live	VST3	AU or VST3
FL Studio	VST3	VST3
Cubase	VST3	VST3
Studio One	VST3	VST3 or AU
Bitwig	VST3	VST3
Reaper	VST3	VST3 or AU

Troubleshooting

- **Plugin not appearing:** Rescan your plugin folder in your DAW's preferences
- **Plugin crashes on load:** Make sure you're running the latest version of your DAW
- **High CPU usage:** Try lowering the oversampling setting (4x or 2x instead of 8x)
- **No sound:** Check that the ACTIVE button is lit in GUI and MIX is above 0%
- **Crackles or pops:** Increase your DAW's buffer size

3. Interface Overview

HellFold's interface is divided into several functional sections. Image below as a reference.

Oscilloscope Display

The oscilloscope at the top shows three signal traces:
- **Cyan** – Clean input signal (before processing)
- **Magenta** – Distorted output signal (after processing)
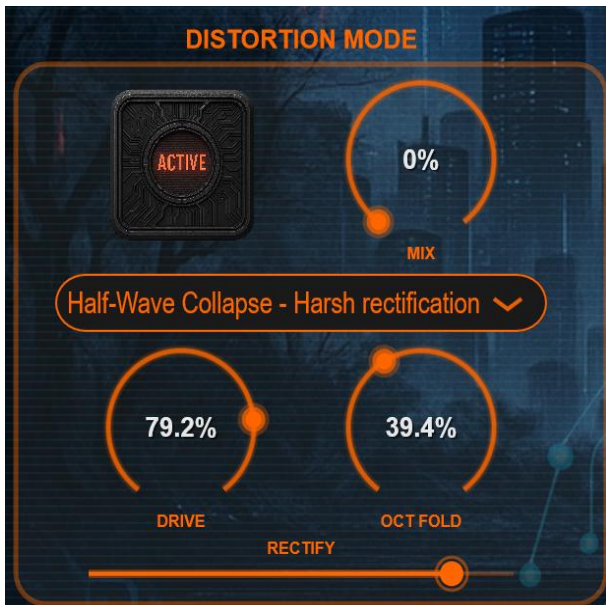- **Red** – Oct Fold signal (sub-octave)

Color Coding

HellFold uses consistent color coding throughout:
- **Orange** – Distortion section controls
- **Magenta** – Phase Fold modulation controls
- **Cyan** – EQ section and links
- **Green** – EQ frequency sliders

4. Distortion Section

The heart of HellFold is its versatile distortion engine featuring 15 unique algorithms.

Controls

• **ACTIVE:** Bypass toggle – turns distortion on/off
• **MIX:** Dry/wet blend (0% = dry, 100% = fully processed)
• **Mode Selector:** Dropdown menu with 15 distortion algorithms
• **DRIVE (Control 1):** Main distortion amount – label changes per mode
• **OCT FOLD:** Sub-octave synthesis amount
• **RECTIFY (Control 2):** Mode-specific secondary parameter – label changes per mode

Distortion Modes

1. Velvet Fold

Warm soft saturation using tanh waveshaping. Perfect for vocals, bass, and full mixes.
Control 1: DRIVE | Control 2: HARMONICS

2. Shatter Fold

Aggressive hard clipping for intense, edgy distortion. Great for leads and industrial sounds.
Control 1: DRIVE | Control 2: CRUNCH

3. Mirror Fold

Asymmetric foldback distortion creating unique degraded textures.
Control 1: DRIVE | Control 2: FOLD DEPTH

4. Digital Decimation

Lo-fi bit crushing and sample rate reduction for retro digital artifacts.
Control 1: BIT DEPTH | Control 2: SAMPLE RATE

5. Thermal Warp

Vintage tube-style saturation with power supply sag modeling.
Control 1: DRIVE | Control 2: SAG

6. Cascade Fold

Complex wavefolder with feedback for rich harmonic content.
Control 1: DRIVE | Control 2: FEEDBACK

7. Tape Saturation

Warm analog tape emulation with natural compression and HF roll-off.
Control 1: WARMTH | Control 2: HF ROLL-OFF

8. Pressure Warp

Smooth exponential distortion curve for controlled saturation.
Control 1: DRIVE | Control 2: CURVE

9. Clipped Fold

Classic diode clipper emulation reminiscent of vintage pedals.
Control 1: DRIVE | Control 2: THRESHOLD

10. Shadow Bend

Gentle soft saturation for subtle compression and warmth.
Control 1: DRIVE | Control 2: SOFTNESS

11. Harmonic Twist

Polynomial waveshaper generating smooth odd harmonics.
Control 1: DRIVE | Control 2: COMPLEXITY

12. Half-Wave Collapse

Harsh half-wave rectification with anti-aliasing.
Control 1: DRIVE | Control 2: RECTIFY

13. Skewed Reality

Asymmetric clipping for punchy, metal-style distortion.
Control 1: DRIVE | Control 2: SKEW AMOUNT

14. Transformer Saturation

Asymmetric core saturation modeling transformer behavior.
Control 1: CORE SAT | Control 2: LOW BUMP

15. Vowel Filter

Formant filtering that morphs through vowel sounds (A-E-I-O-U).
Control 1: DRIVE | Control 2: VOWEL

5. Input/Output

Input/Output Controls

- **INPUT:** Input gain before processing (-12dB to +12dB)
- **LINK:** Auto level compensation – maintains consistent output when adjusting input
- **OUTPUT:** Final output level (-12dB to +12dB)

6. Phase Fold Section

Phase Fold is HellFold's signature modulation effect, applying phase-based processing to create movement, texture, and harmonic enhancement.

Controls

- **ACTIVE:** Bypass toggle for Phase Fold effect
- **MIX:** Phase Fold dry/wet blend
- **SATURATION:** Adds harmonic content to the phase processing
- **CURVE:** Shapes the modulation response curve
- **CUTOFF:** Sets the frequency of the resonant filter
- **RESONANCE:** Controls the resonant filter emphasis

Tip: Start with MIX around 30-50% and SATURATION at 20% for subtle enhancement.

7. Oct Fold (Octave Down)

Oct Fold is a professional subharmonic synthesizer that generates frequencies one octave below your input signal using advanced pitch detection. When Distortion is active Oct fold feeds into distortion, when distortion is bypassed Oct Fold will still be active and feed directly into Phase Fold.

How It Works

1. Input signal is analyzed for pitch using YIN algorithm
2. A sine wave oscillator tracks at half the detected frequency
3. RMS envelope following shapes the sub-octave amplitude
4. The result is blended with your processed signal

Best used with monophonic sources like bass, synth leads, or vocals. Polyphonic material may cause tracking artifacts.
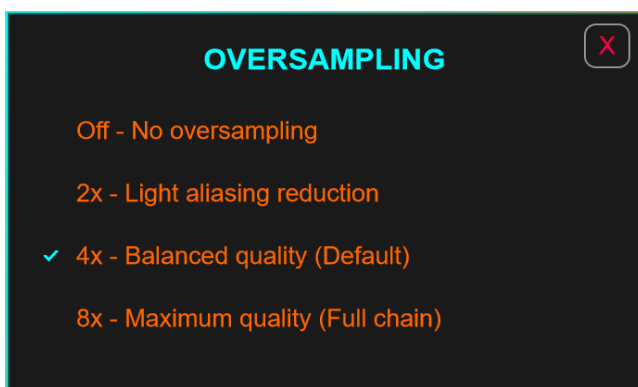
8. EQ Section

HellFold includes a fully parametric 3-band EQ for precise tonal shaping.

Controls

- **ACTIVE:** EQ bypass toggle
- **EQ PHASE:** Switches EQ position – Pre-distortion or Post-distortion
- **HIGH/MID/LOW:** Three frequency bands
- **GAIN:** Boost or cut in dB (-12dB to +12dB)
- **Q:** Bandwidth (higher Q = narrower band)
- **FREQ:** Center frequency (Hz) – green sliders

9. Oversampling

Oversampling Modes

- **Off:** No oversampling – lowest CPU usage
- **2x:** Light aliasing reduction – good balance
- **4x:** Balanced quality
- **8x (Recommended):** Maximum quality

10. Preset System

HellFold includes factory presets and a user preset system.

Using Presets

- **Loading:** Select from the PRESETS dropdown menu
- **Saving:** Select "Save Current As..." from the menu
- **Deleting:** Select a user preset and click the X button
- **Browse:** Click the "..." button to load external presets

User presets are stored in: Documents/FutureSwamp/Presets/

Important: The following settings are **NOT** saved with presets (they are session-specific): Input Gain, Output Gain, Oversampling, and Link Compensation. This allows you to maintain your gain staging and CPU settings when browsing presets.

11. Tips & Best Practices

Gain Staging

- Use INPUT to control how hard you hit the distortion
- Enable LINK to maintain consistent levels
- Watch the oscilloscope for visual feedback
- Use MIX for parallel processing to retain dynamics

Creative Uses

- **Bass:** Velvet Fold + Oct Fold for massive sub weight
- **Drums:** Shatter Fold or Half-Wave for aggressive punch
- **Vocals:** Thermal Warp for vintage warmth
- **Synths:** Cascade Fold for complex harmonics
- **Sound Design:** Vowel Filter + Phase Fold for evolving textures
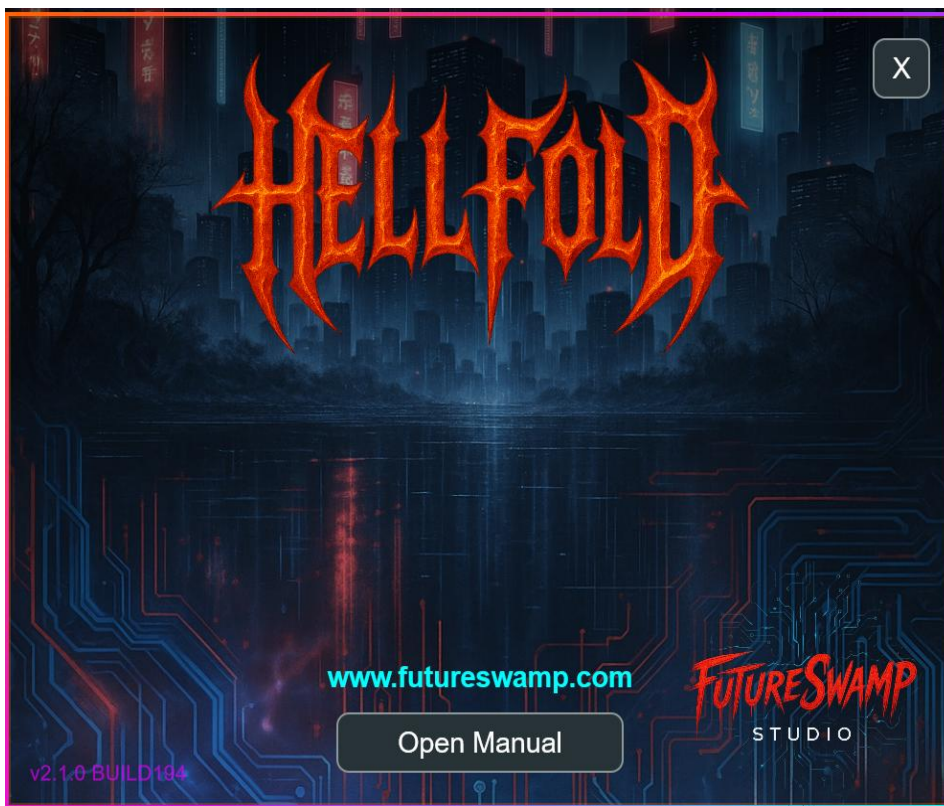- **Mix Bus:** Tape Saturation at low mix for glue

12. About

Click the **ABOUT** button in the bottom-left corner of the plugin to open the About window.

About Window Contents:

- **Credits** – Scrolling display showing plugin information, features, and development credits
- **Open Manual** – Click to open this user manual (PDF)
- **Website** – Click to visit www.futureswamp.com for updates, news, and support
- **Close (X)** – Click to close the About window

The About window displays the current version number in the bottom-left corner.

Development

FutureSwamp Studios
Lead Developer: Jeshua Brown

Special Thanks

Beta Testers
Ben Wiedemer - Beta Tester
Beckham Brown - Beta Tester

Thank you for choosing HellFold!

For support, updates, and more plugins visit:
www.futureswamp.com