

ÜBERHOLSPUR

TRUE STEREO ADT · TWO TAPES, DRY IN THE MIDDLE



User Manual

Version 1.0 · Audio Unit · VST3 · macOS

RUHRPOTT GUITARS

Dortmund

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At a glance

Put Überholspur on a vocal, guitar or keyboard track (**stereo** or **mono in, stereo out**). It opens with the preset **Wide ADT**: your dry signal stays in the middle, a tape double appears on the left and another one on the right. Set **Delay** between 12 and 25 ms, turn the outer **Motion** ring to taste and use **Offset** to make the two sides behave differently. That's it — the rest of this manual is for when you want more.

CHAPTER 1

Introduction

Überholspur is the true-stereo sibling of Doppelspur. It recreates Artificial Double Tracking, the tape trick invented at Abbey Road in 1966 — twice: one tape machine for the left side, one for the right, and your untouched signal in the middle.

Before ADT, a fuller, “doubled” lead vocal meant singing the part twice and layering both takes. Because no one sings a line exactly the same way twice, the small differences in timing and pitch make the pair sound richer than either take alone. Engineer Ken Townsend recreated this with a second tape machine: the vocal was played back a few milliseconds later while an oscillator constantly nudged the machine's speed, so the copy drifted slightly in time and pitch — enough to sound like a second performance.

Doppelspur gives you that classic pair: the original plus one double. Überholspur goes a lane further (*Überholspur* is German for the overtaking lane). It is built for wide, three-voice doubles and for stereo sources:

- **Signal** — the original, dry and in the middle. Left clean, it is a bit-exact copy of your input.
- **Tape L** — an ADT machine fed by the **left** input, placed on the left.
- **Tape R** — an ADT machine fed by the **right** input, placed on the right. With a mono track, both tapes receive the same signal but move independently.
- All three are summed, each with its own level and phase switch.

Highlights

- **True stereo:** the left and right channels of a stereo source each get their own tape machine; the stereo image of the source is kept.
- **Two views of one machine:** Easy for fast results, Pro for every detail of both tapes. Both share the same settings.
- **Motion** — a three-axis stacked knob that sets oscillator, wow and flutter for both tapes in one move.
- **Offset** — one knob that makes Tape R run a little later and wobble a little faster than Tape L, so the sides never move in lockstep.
- **LFO shapes** Sine, Triangle and Random, **tape saturation** up to +24 dB drive, 2× oversampled.
- **Animated reels** for both tapes and a live **Tape Offset** display showing where L and R are right now.
- **Your own presets**, a **Random** button and this manual built into the plugin (the ? button).
- Universal Binary for Apple Silicon and Intel, automatable parameters, 14 factory presets.

Credits

Überholspur is made by Ruhrpott Guitars, Dortmund. Built with the JUCE framework. ADT was invented by Ken Townsend at EMI's Abbey Road Studios in 1966. Überholspur is an independent product and is not affiliated with Abbey Road Studios or any other plugin maker.

CHAPTER 2

Installation

Requirements

Item	Details
System	macOS 11 Big Sur or later · Apple Silicon or Intel
Formats	Audio Unit (AU), VST3
Hosts	Logic Pro, LUNA, GarageBand, MainStage, Reaper, Ableton Live, Studio One and any other AU/VST3 host
Channels	mono stereo, stereo stereo (the output is always stereo)

Installing the plugin file

Überholspur comes as a ZIP file (**Ueberholspur-v1.0-macOS.zip**) with three files. Copy each plugin into the matching folder (you only need the format your DAW uses):

File	What it is	Copy to
Ueberholspur.component	Audio Unit · Logic Pro, GarageBand, LUNA, MainStage	/Library/Audio/Plug-Ins/Components/
Ueberholspur.vst3	VST3 · Ableton Live, Reaper, Studio One, Bitwig, Cubase	/Library/Audio/Plug-Ins/VST3/
Ueberholspur-v1.0-Manual.pdf	This manual. It is also built into the plugin (the ? button).	anywhere you like

The easiest way: in Finder choose **Go › Go to Folder...** (Shift-Command-G), paste the folder path, press Return and drag the file in. macOS asks for your password because this folder is shared by all users. Then restart your DAW.

If you prefer to install just for yourself, use the same folder inside your home Library instead (~/.Library/Audio/Plug-Ins/Components/ and ~/.Library/Audio/Plug-Ins/VST3/). Keep only one copy — two copies in different places confuse the DAW.

Updating: replace the old file with the new one. Your settings in existing projects and your own presets are kept.

If macOS blocks the plugin

Files received by AirDrop, Mail, Messages or download are marked as “from the internet”. If your DAW refuses Überholspur or macOS says it cannot be opened, remove that mark once. Open Terminal, paste these lines one at a time and press Return after each (you will be asked for your Mac password):

```
sudo xattr -dr com.apple.quarantine /Library/Audio/Plug-Ins/Components/Ueberholspur.component
sudo xattr -dr com.apple.quarantine /Library/Audio/Plug-Ins/VST3/Ueberholspur.vst3
killall -9 AudioComponentRegistrar
```

Then restart your DAW and let it rescan its plugins.

Finding it in Logic Pro

Audio Units › Ruhrpott Guitars › Ueberholspur (DAWs list it without the umlaut). On a mono track choose the **Mono Stereo** version, on a stereo track the Stereo version. If it does not show up: Logic Pro › Settings › Plug-in

Manager, select Ueberholspur and choose *Reset & Rescan Selection*.

CHAPTER 3

Quick Start

- 1 Insert**
Insert Überholspur on a vocal or guitar track — **Stereo** on stereo tracks, **Mono Stereo** on mono tracks. It opens in Easy mode with the preset **Wide ADT**.
- 2 Set the gap**
Turn **Delay**: around 10–25 ms sounds like extra takes. Below 5 ms the tapes start to phase; above 30 ms they separate into a slapback.
- 3 Bring it to life**
Turn the outer **Motion** ring. 0 % is a static copy, 30–50 % a natural double, the top third gets seasick.
- 4 Split the sides**
Turn **Offset** up so Tape R runs a little later and moves a little faster than Tape L. Around 50 % the two sides sound like two different singers.
- 5 Balance it**
Pull the **Level** of both tapes down a few dB until they sit behind the original, or use **Dry** to change the amount of original in the middle. Check in mono now and then.

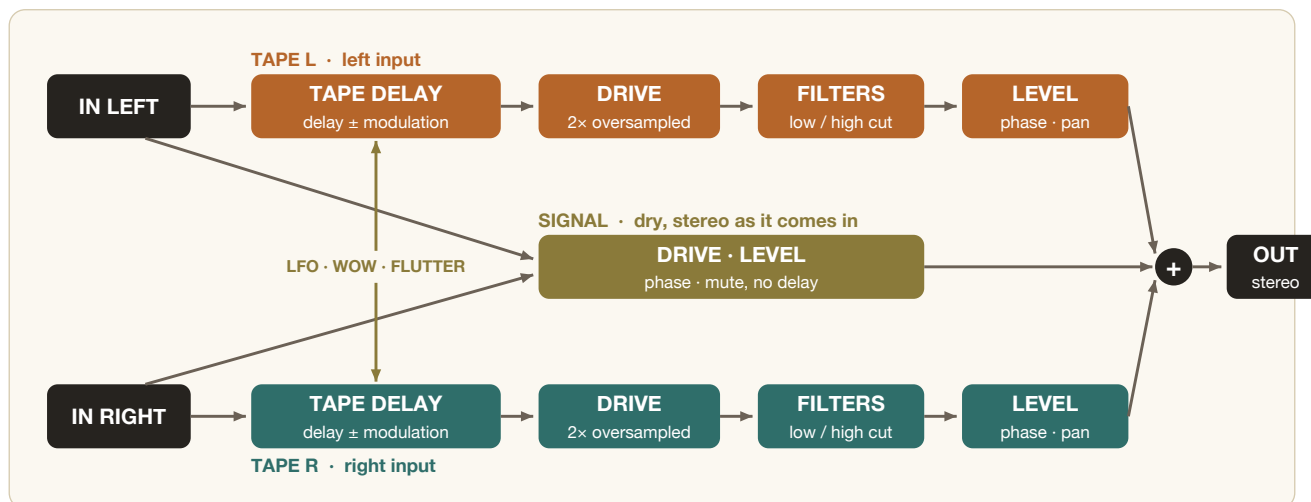
Tip

For a send effect, use the preset **Pro: Tapes Only (Send)** on an aux bus. The Signal is muted, so only the two tape doubles return.

CHAPTER 4

Signal Flow

The left input feeds Tape L, the right input feeds Tape R. The Signal path takes both channels as they are. On a mono track, the one input feeds everything. The three results are summed and pass the master output gain.



Signal path of Überholspur. The modulation (LFO, wow, flutter) moves the playback point of each tape and therefore its timing and pitch.

Tape delay

Each tape is a delay line read at a moving position. When the oscillator pushes the delay longer, the tape effectively slows down and the pitch drops; when it pulls the delay shorter, the pitch rises. Each tape has its own oscillator, wow and flutter, so L and R never move exactly alike. Delay values are always *behind* the input: a tape can reach 0 ms but never run ahead of it.

Drive

Soft tape saturation with an emphasis on even harmonics. Quiet passages keep their level, peaks are rounded. The added harmonics are gently low-passed so heavy drive stays warm instead of fizzy, and a small head bump around 90 Hz adds weight. Drive runs at twice the sample rate to avoid aliasing. The Signal has a Drive control too, for colouring the original.

Filters, level, phase, pan

Low cut and high cut set the bandwidth of each tape; at their end stops (20 Hz / 20 kHz) they are fully out of the circuit. Level, phase (polarity) and pan come last. A tape is a mono signal, so its Pan control places it in the stereo field: fully left or right it plays on one side only at full level, in the centre it plays 3 dB quieter on both sides.

Latency

Überholspur reports a fixed latency of 23 samples (about 0.5 ms at 48 kHz) for the oversampling. Your DAW compensates automatically, so a clean Signal stays sample-aligned with the rest of your mix.

CHAPTER 5

Easy Mode

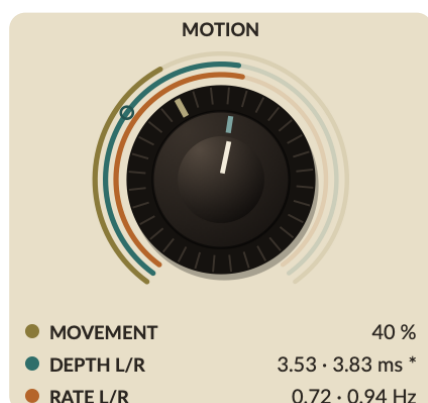
Easy mode shows what you need for wide double tracking. Switch views with the **EASY | PRO** selector at the top.



Easy mode with the preset Wide ADT and a Depth offset on the Motion knob.

- 1 **Easy | Pro** — switches the view. Both views control the same machine.
- 2 **Preset** — factory presets (Easy and Pro), your own presets and the save/delete functions (chapter 8). The arrows on either side step to the previous or next preset.
- 3 **Random** — sets the sound to new, random values within musical limits (chapter 8).
- 4 **? · Manual** — opens this manual.
- 5 **Tape speed display** — the reels turn with the tape speed (deviation strongly exaggerated); the figure shows the pitch deviation in cents.
- 6 **Drive · Level · Pan** — saturation, volume and stereo position of Tape L.
- 7 **Ø Phase · Mute** — flips polarity / silences the tape (the reels stop).
- 8 **Delay** — how far the tapes run behind the Signal, 0–40 ms. Tape L follows it exactly, Tape R adds the Offset.
- 9 **Motion** — three-axis knob for Movement, Depth and Rate of both tapes (see below). The values show L · R.
- 10 **Tape Offset** — live position of Tape L (above the line) and Tape R (below) relative to the Signal at 0 ms; the shaded trails show the recent range.
- 11 **LFO Shape** — oscillator waveform of both tapes: Sine, Triangle or Random.
- 12 **Offset** — how differently Tape R runs (see below).
- 13 **Dry** — level of the Signal, the original in the middle. All the way down mutes it.
- 14 **Output** — master output level, –24 to +12 dB.
- 15 **Tape R** — the same Drive, Level, Pan, Phase and Mute controls for the right tape.

The Motion knob



Motion works like a stacked potentiometer with three axes. Where you grab it decides what you move; the outline of the active part lights up. It drives both tapes at once.

- **Outer ring · Movement** sets oscillator rate, depth, wow and flutter together. 0 % is a static delay, 30–50 % a natural double, the top third reaches the extremes (up to 20 ms depth).
- **Middle disc · Depth** — how far the oscillators move the tapes (± 0 –20 ms).
- **Inner cap · Rate** — oscillator speed (0–3 Hz).

Depth and Rate follow Movement. Turn one of them yourself and Motion remembers the offset: it keeps following Movement, just shifted. An asterisk (*) after the value and a small ring on the scale (where Movement alone would put it) show the offset. The knob shows Tape L; the values list L · R.

Gesture	Result
Drag up / down	change the part you clicked (dragging sideways works too)
Shift + drag	fine adjustment
Mouse wheel	change the part under the pointer
Double-click outer ring	Movement back to 40 % (also clears all offsets taken over from Pro)
Double-click Depth or Rate	remove the offset — it follows Movement exactly again

Offset

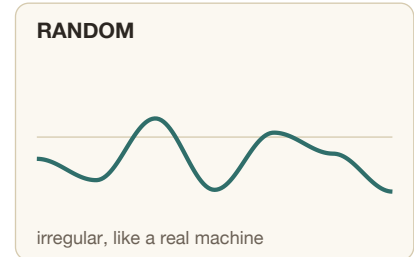
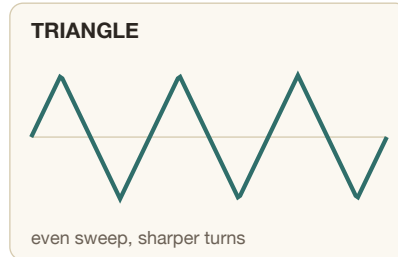
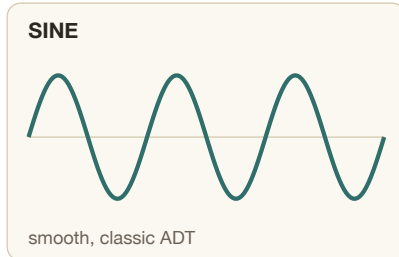
If both tapes ran with the same delay and the same oscillator, the left and right doubles would breathe in lockstep and the width would collapse. **Offset** pulls them apart:

Offset	Tape R compared with Tape L
0 %	same delay and oscillator speed (wow and flutter still differ)
50 % (default)	20 % more delay, oscillator 30 % faster — e.g. 18 ms / 0.72 Hz on the left, 21.6 ms / 0.94 Hz on the right
100 %	40 % more delay, oscillator 60 % faster

Because the oscillators run at different speeds, L and R drift in and out of phase with each other all the time, which keeps the stereo picture moving gently.

LFO shapes

The oscillators that move the tapes can have three shapes. In Easy mode the selector sets both tapes; in Pro each tape has its own. **Random** glides to a new random target twice per period, so the movement never repeats. Switching shapes is crossfaded and does not click. The curves show the delay of a tape over three periods:



CHAPTER 6

Pro Mode

Pro mode opens up both machines completely. Tape L and Tape R have identical controls; the Signal section in the middle holds the controls for the original and the master output.



Pro mode with the preset Pro: Classic Pair.

- A** **Tape speed display** — reels and pitch deviation in cents, as in Easy mode.
- B** **Transport row** — Delay, Osc Rate, Osc Depth, Wow, Flutter — everything that moves the tape in time.
- C** **Character row** — Drive, Low Cut, High Cut, Level, Pan — the sound and position of the tape.
- D** **Ø Phase · Mute** — polarity and mute for the tape.
- E** **LFO shape** — Sine, Triangle, Random for this tape's oscillator.
- F** **Signal** — Drive, Level, Ø Phase and Mute of the dry original in the middle.
- G** **Output** — master output level, shared with Easy mode.
- H** **Tape R** — identical controls for the right tape.

Tape controls

Control	Range	What it does
Delay	0–120 ms	Base delay of the tape. 10–30 ms classic ADT, 40–60 ms wide and psychedelic, 80–120 ms slapback.
Osc Rate	0–3 Hz	Speed of the varispeed oscillator. 0 Hz freezes it.
Osc Depth	±0–20 ms	How far the oscillator moves the delay. This creates the pitch drift. If depth exceeds the delay, the tape touches 0 ms and stays there for that part of the cycle.
Wow	0–100 %	Slow, irregular speed variation like a worn capstan or reel (up to ±1.5 ms).
Flutter	0–100 %	Fast, fine speed variation from rollers and capstan (up to ±0.12 ms).

Control	Range	What it does
Drive	0–100 %	Tape saturation up to +24 dB into the curve, 2× oversampled, with head bump.
Low Cut	20–600 Hz	High-pass filter. At 20 Hz it is switched out completely.
High Cut	2–20 kHz	Low-pass filter. At 20 kHz it is switched out completely.
Level	–inf to +6 dB	Output level of the tape.
Pan	L100–R100	Places the tape in the stereo field (constant power). Default: Tape L at L100, Tape R at R100.
Ø Phase	on / off	Inverts polarity — the key to hollow phasing sounds.
Mute	on / off	Silences the tape; the reels come to a stop.
LFO shape	Sine · Triangle · Random	Waveform of the tape's oscillator.

Signal and master

Control	Range	What it does
Drive	0–100 %	Tape saturation for the original, same character as on the tapes.
Level	–inf to +6 dB	Level of the original. The same control as Dry in Easy mode.
Ø Phase	on / off	Inverts the polarity of the original.
Mute	on / off	Silences the original — only the tapes remain (useful on a send).
Output	–24 to +12 dB	Master level after the sum of Signal and both tapes.

A clean Signal

With Drive at 0, Level 0 dB and Phase off, the Signal passes your input bit-exactly, left stays left and right stays right (shifted only by the reported latency). The preset **Pro: Init** shows this: both tapes are muted and the output equals the input.

CHAPTER 7

Easy and Pro Together

Easy and Pro are two views of the same machine. Easy simply shows less.

Controlled by	Parameters
Easy only (Delay, Motion, Offset)	Delay, Osc Rate, Osc Depth, Wow and Flutter of both tapes
Shared, identical in both views	Drive, Level, Pan, Phase, Mute and LFO shape of the tapes, all Signal controls (Dry = Signal Level), Output, the filters

- **Easy Pro:** the values produced by Delay, Motion and Offset are written into the controls of both tapes. You can refine from there.
- **Pro Easy:** Tape L's delay becomes the Easy Delay; every difference in rate, depth, wow and flutter — and everything that makes Tape R differ from what Offset would do — is kept as a hidden offset. Movement and Offset stay where they were.
- The sound does not change when you switch, in either direction.

Limits

The Easy Delay reaches 40 ms. A Pro delay above 40 ms on Tape L is limited to 40 ms when you switch to Easy. Filter settings made in Pro stay active in Easy, even though Easy does not show them. In Easy, the LFO shape selector shows Tape L and sets both tapes.

CHAPTER 8

Presets and Random

All presets live in the menu at the top of the plugin. Loading a preset resets every parameter first, then applies the preset's settings. The arrows left and right of the menu step through the presets one by one: first the factory presets, then your own, and from the last one back to the first.

Factory presets

Preset	Mode	Character
Wide ADT	Easy	The standard: 18 ms gap, natural movement, Offset 50 %, tapes hard left and right, 3 dB down. Default when the plugin is inserted.
Tight Stereo Double	Easy	Short gap, gentle movement, tapes 5 dB down — widens without being noticed.
Big Tape Chorus	Easy	More gap, lots of movement and Offset for a lush, chorus-like spread.
Stereo Phasing	Easy	1.2 ms gap, Tape R with inverted polarity: hollow, sweeping phasing across the stereo field.
Driven Slap Pair	Easy	40 ms slapback on both sides with heavily saturated tapes and a driven original.
Random Wobble	Easy	Random LFO on both tapes and a high Offset for an irregular, living double.
Narrow Tapes	Easy	Tapes at L50 / R50 for a fuller, less extreme width.
Classic Pair	Pro	Two classic ADT tapes at 18 and 23 ms with 60 Hz low cut and 12 kHz high cut.
Wide Thickener	Pro	Short, quiet, bandwidth-limited tapes.
Psychedelic Split	Pro	45 / 62 ms, heavy wow, a triangle LFO on the right — the late-60s “three singers” effect.
Stereo Tape Flange	Pro	1.6 / 2.1 ms with slow, deep sweeps: tape flanging on each side.
Slapback Pair	Pro	95 / 118 ms, saturated, dark, at L70 / R70.
Tapes Only (Send)	Pro	Signal muted — for use on an aux bus.
Init (Signal clean, tapes off)	Pro	Neutral starting point: clean pass-through.

My presets

Save your own sounds and recall them in any project. The **My Presets** section of the preset menu lists them; the actions are at the bottom of the menu:

Menu item	What it does
Save preset...	Asks for a name and saves the current settings. Using an existing name replaces that preset (the dialog warns you).
Delete “name”	Deletes the active preset of your own after asking. The current sound stays as it is.
Show preset folder	Opens the folder with your preset files in Finder.

SAVE PRESET

Name for your preset:

Cancel

Save

Each preset is a small file ending in **.uhspreset**, stored in:

```
~/Library/Audio/Presets/Ruhrpott Guitars/Überholspur/
```

To share a preset, send the file; the other person puts it into the same folder. A preset stores the complete sound including the view (Easy or Pro) and the output level. The name of the active preset is saved with your project.

Random

The dice button next to the preset menu rolls a completely new sound — every click a different one, always within musical limits. The preset menu then shows **Random**; if you like the result, save it as your own preset.

What Random sets	
Both views	Drive, Level and Pan of both tapes (mostly wide, sometimes narrower), Drive and Level of the Signal, LFO shapes and sometimes inverted polarity on Tape R for short gaps. Mostly a classic ADT gap of 8–30 ms, sometimes short (phasing) or long (slapback).
Easy	Delay (up to 40 ms), Movement, Offset and small Depth/Rate offsets on the Motion knob.
Pro	Everything on both tapes including Rate, Depth, Wow, Flutter and the filters, Delay up to 120 ms. Tape R always runs a little later and faster than Tape L.
Never changed	Output level, the view (Easy/Pro), Mute. The Signal always stays the original in time.

CHAPTER 9

Techniques

Three-voice vocal

Mono Stereo on a lead vocal, Delay 14–22 ms, Movement 30–45 %, Offset around 50 %, tapes 3–5 dB below the original. The lead stays solid in the middle while the doubles widen it.

Stereo guitars and keys

On a stereo track the left and right channels each get their own tape, so the stereo image of the source is kept and every side gets its own double. Works well on acoustic guitar, organ, Rhodes and synth pads.

Wider or narrower

Pan the tapes in (e.g. L50 / R50) for a fuller, more mono-compatible sound, or keep them hard left and right for maximum width. Check in mono now and then — short gaps can comb-filter when summed.

Phasing

Delay below 5 ms, Ø Phase on one tape for the hollow sound. With a high Offset the phasing sweeps differently on each side.

Slapback

Delay 40 ms in Easy, or 80–120 ms in Pro, with little movement and some drive. Pull the High Cut down to 6–8 kHz for a vintage echo; give the right tape a longer delay than the left for a ping-pong feel.

As a send effect

Use Pro: Tapes Only (Send) on an aux. Your dry track stays untouched, the aux fader controls the amount of double.

Doppelspur or Überholspur?

Doppelspur gives you the classic pair — original plus one double, panned where you like. Überholspur is for the wide three-voice picture and for stereo sources.

CHAPTER 10

Technical Specifications

Item	Value
Formats	Audio Unit (type aufx, subtype Uhsp, manufacturer Rpgt), VST3 (Fx · Delay · Modulation)
Platform	macOS 11 or later, Universal Binary (arm64 + x86_64)
Channel layouts	mono stereo, stereo stereo
Sample rates	all rates offered by the host
Latency	23 samples, fixed and reported to the host
Delay range	0–120 ms per tape, plus up to ± 20 ms oscillator depth, wow and flutter
Interpolation	4-point cubic Hermite (smooth pitch modulation)
Saturation	asymmetric tanh, 2× oversampling with 47-tap linear-phase half-band filters (approx. 70 dB stopband)
Parameters	44, all automatable; parameter smoothing against zipper noise and clicks
Presets	14 factory presets plus your own (.uhspreset files); plugin state and preset name are saved with your project

CHAPTER 11

Parameter Reference

Names as they appear in your DAW's automation lists. Every tape parameter exists for Tape L (prefix “L”) and Tape R (prefix “R”).

Tape parameter	Range	Default L / R
Delay	0–120 ms	18 ms / 23 ms
Osc Rate	0–3 Hz	0.8 Hz / 1.05 Hz
Osc Depth	0–20 ms	0 ms
Osc Shape	Sine, Triangle, Random	Sine
Wow	0–100 %	0 %
Flutter	0–100 %	0 %
Drive	0–100 %	0 %
Low Cut	20–600 Hz (20 = off)	20 Hz
High Cut	2–20 kHz (20 kHz = off)	20 kHz
Level	–inf to +6 dB	0 dB
Pan	L100–R100	L100 / R100
Phase Invert	off / on	off
Mute	off / on	off

Signal and global	Range	Default
Signal Drive	0–100 %	0 %
Signal Level	–inf to +6 dB	0 dB
Signal Phase Invert	off / on	off
Signal Mute	off / on	off
Mode	Easy, Pro	Easy
Delay (Easy)	0–40 ms	18 ms
Movement	0–100 %	40 %
Offset L/R	0–100 %	50 %
Movement Rate / Depth Trim	–1 to +1 (share of knob travel)	0
Movement Wow / Flutter Trim	–100 to +100 %	0
R Delay / Rate / Depth / Wow / Flutter Trim	see below	0
Output	–24 to +12 dB	0 dB

Defaults are the values each parameter returns to on reset. When the plugin is inserted, the preset Wide ADT is loaded on top of them. The trim parameters are the hidden offsets of the Motion knob and of Tape R; they are set by the Motion knob and when switching from Pro to Easy. You do not need to touch them.

CHAPTER 12

Troubleshooting

Überholspur does not appear in Logic

Check that Ueberholspur.component is in /Library/Audio/Plug-Ins/Components. Rescan in Logic Pro › Settings › Plug-in Manager and restart Logic. In Terminal, `auval -v aufox Uhsp Rpgt` shows whether macOS finds the plugin.

Überholspur does not appear in a VST3 host

Check that Ueberholspur.vst3 is in /Library/Audio/Plug-Ins/VST3 and let the host rescan its plugin folders.

Only a mono version is missing

Überholspur always outputs stereo. On a mono track, choose Mono Stereo; a pure mono mono version does not exist.

“Cannot be opened” or validation fails

The file is quarantined. Remove the mark as described in chapter 2.

Two Überholspurs in the plugin list

There is a copy in /Library and another one in your home Library. Delete one of them.

A side is silent on a stereo track

Tape L only hears the left input, Tape R only the right. If your source is stereo but one channel is empty, use the plugin as Mono Stereo or on a mono track.

The double sounds thin or hollow in mono

Short gaps comb-filter when summed. Increase the Delay, lower the tapes' level or pan them in a little.

The ? button does not open the manual

Some DAWs do not let plugins open other apps. Überholspur then offers to save the manual (for example into Documents) and opens it from there. The PDF is also included in the ZIP file.

My presets are missing

They are files in ~/Library/Audio/Presets/Ruhrpott Guitars/Überholspur. Use “Show preset folder” in the preset menu to check. Files must end in .uhspreset.