

Warp Looper — User Manual



Version 1.0.2 · Warp Factor Audio · A six-track stereo looper pedal for Reason.

August 10, 2026

Bug Reports

Report bugs to Warp Factor Audio at charanga.geo@yahoo.com.

EMAIL Support requests will be ignored, unless you are a beta tester.

SUPPORT: Post a question on ReasonTalk.com forum, if you have a support question.

Important Information — read before your first session

- Warp Looper devices are inherently incapable of working with variable tempos. Warp Looper's buffers are built to work at fixed tempo projects only. **Changing your loop tempo causes loops to be cleared.**
- **Loop audio is NOT automatically saved with your song, until you opt in.** Live recording stays in RAM until you press **SAVE ALL** (writes every loop that can be saved), then save the Reason project. Closing without that loses the take.
- **Changing the song tempo or sample rate clears your live loops.** Saved takes also will not load if the song's sample rate no longer matches what was stored (no resampling). Tempo changes wipe live buffers; re-SAVE after you rebuild if you need the song pools updated.
- **Stopping Reason's transport stops all loops.** So does a MIDI panic / reset. This is deliberate — the looper never plays on into silence when the song has stopped.
- **Output is limited to -0.5 dBFS.** However many loops you stack, the final output is hard-clamped just below full scale to protect your ears and monitors. Stack thoughtfully anyway — clamping is not mastering.
- Unsaved live audio goes away when you close the program. **SAVE ALL** writes every saveable loop into the song document as full-fidelity int16 audio (SLAC-compressed when helpful, ≤32 bars). When you reopen the song, the load function is automatic, no clicking required.

Introduction

Warp Looper is a six track performance looper in the spirit of a Guitar Looper pedal, expanded to six independent stereo loops and built to be driven hands-free from a MIDI foot controller through Reason's Remote system.

Artists like Ed Sheeran and KT Tunstall have made the creative looping workflow world famous, and now this device brings that workflow to your Reason DAW setup.

The heart of the device is the ring display: six circular loops drawn as rings, in a modern circular style. Each ring shows its recorded waveform wrapped around the circle, a playhead sweeping as it plays, tick marks for its bars, and a colour-coded state indicator in the hub. Click a ring to select that track.



Warp Looper front-panel guide

Around the display:

Top left

1. THE BASICS: Record/Overdub Button, Play Button, Auto-Next Switch
2. POWER USERS: Easy Control Button, Record New Loop Button, Bars/ Seconds Length Mode Switch
3. MORE BASICS: Stop Button, Loop Double Button, Transport Controls Affect All tracks versus One Track Mode Switch
4. DEVICE SETUP: Auto Play Mode Switch, Auto Dry Duck Switch
5. DEVICE SETUP: Auto Record Mode Switch, Auto Overdub Switch, Free Sync vs Bar Sync Mode Switch.
6. DEVICE SETUP: Smaller values (1 ms) Prevent unwanted phasing and chorusing, larver values create a pronounced slapback (10+ ms), by changing Track Playback Delay Compensation (slider, and milliseconds display)

Bottom left

7. The standard reason device on/off/bypass switch.
8. A vertical column of per track quick controls to record, play, stop, erase loop, designed to be remote mapped. Yes they are tiny but most users won't use them. Those that do will probably set them up as hardware button mappings.
9. Pan (knob) and level fader (to the left of the pan knob), glitch (!) and playback direction switch control
10. Footswitch - A single track version of the Easy Control Button. Select this track and work with it like a multitrack guitar looper pedal would work
11. Playback speed switch (0.5, 1.0, 2.0)

Top Center

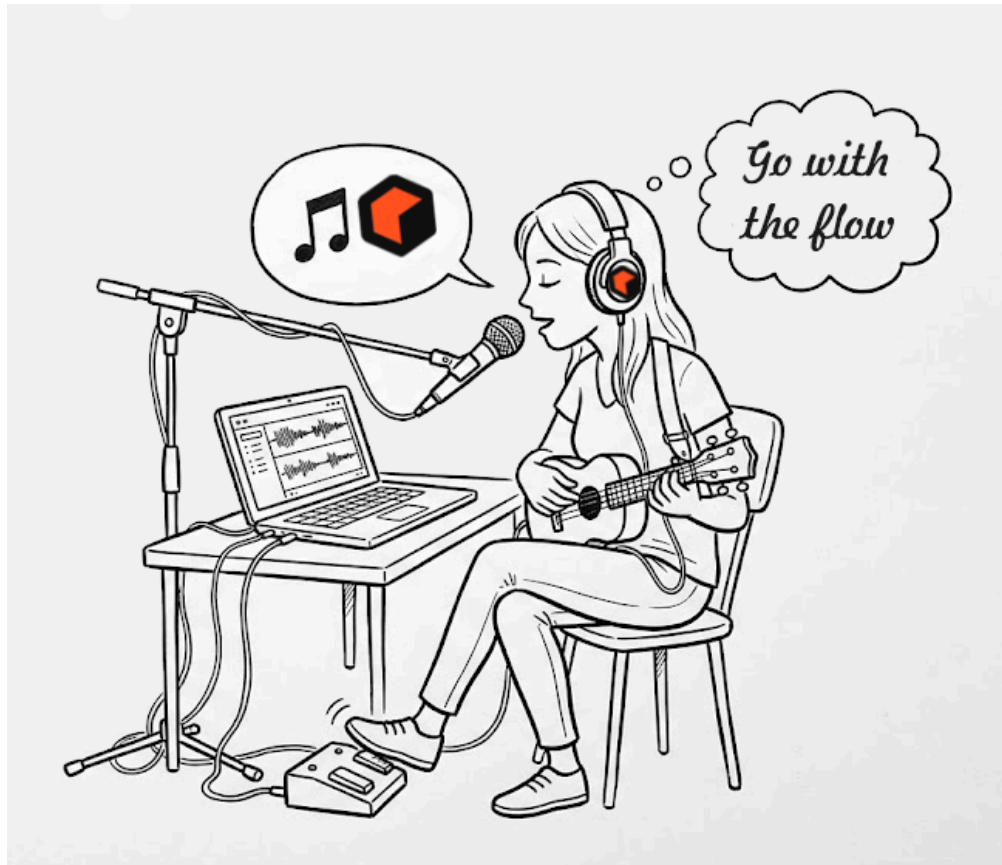
12. The Loop Display Area. Empty loops are just bare circles. See the Loop Display Area section of the manual below, for more details.
13. Soft Buttons Area.

Right

14. First Track Select Button, Next Track Select Button, Previous Track Select Button, Last Track Select Button -> Mostly these would be used when you have a physical Midi foot controller but you don't have six buttons needed to let you multi track loop with one button per track. Instead, quick one tap access to the first track, then the second and third track are access incrementally, lets the first two buttons in this group turn any two buttons on your looper pedal into all you need to navigate all six loops. Going backwards one track, or to the last track are specialty functions most users won't ever use.
15. (Version 1.0) Playhead scrub control and buttons to move around without audio playing. This will PROBABLY change into a scrub/scratch/DJ performance tool. Currently having this move around inaudibly through the track doesn't feel like a useful feature in a live looper except in very odd circumstances, but having this kind of a performance knob that also lets you DJ scratch through your loops backwards and then have it continue feels like a whole lot more useful and fun feature for live performances.
16. (Version 1.0) Corrupt Buffer and Buffer Test Button. These are useful only for the author of this plugin right now. The corrupt buffer button and test button will probably turn into a very flexible glitching and generative button set, designed to let you creatively distort, destroy, gate, glitch and stutter. Right now these features are pretty boring. The test button let's you load sine waves (with octave differences) into the tracks, and lets the RE author test that the loop mixing features work nicely, as the sine waves should be easily tested by test code or audio metering tools to see if the mixing is pure and without artifacts.
17. The Master Knobs section. i. Loop Level, ii. Dry Level, iii. fade out rate (playback stop fade out) iv. compressor ratio (currently inactive in version 1.0) v. makeup gain for compressor (currently inactive in version 1.0) vi. Overdub Decay Amount, vii. Initial Length (bars or

seconds) of a loop

--- # LIVE LOOPING QUICK START



What is Live Looping?

I. It's becoming one with the music, getting lost in a musical flow state, sometimes it takes five or ten tries going through the loop period and trying different ideas until something you like happens.

II. It means committing to a bar length and then playing with that bar length (2 or 4 bars) and multiples of that bar length.

III. It means performing or playing phrases or vocal takes and parts, that combine into a one-person-band performance.

IV. It can involve using a pre-recorded loop such as the REX loops that reason users love, usually those play OUTSIDE the looper pedal, and they are your "backing band", which you play in time with, OR you can do everything (even percussive parts) inside the looper, after all that's why there's six tracks in here.

It's a way to write songs as well as a way to perform them, and it's a way to have musical fun, even when nobody else is around.

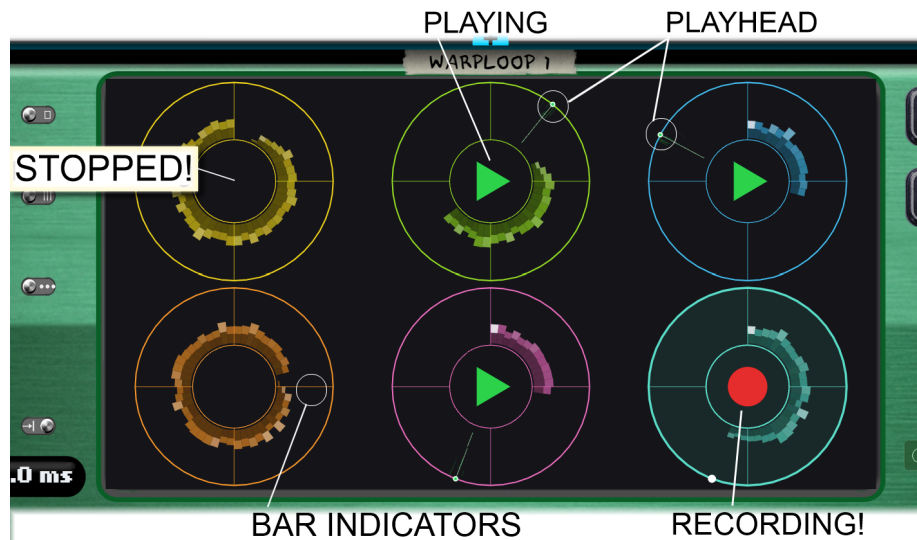
2. Quick start: your first loop

1. Insert Warp Looper as an insert effect, or send effect, on the instrument or audio channel you want to loop. If you want to sing, or play an acoustic or electric guitar into the looper you would typically place the looper effect as an insert on an audio track and connect that audio track's input to an input on your audio interface where your instrument or microphone is plugged in.
2. Your live signal passes through at the same volume (unity) the Warp Looper device never ducks your dry sound if you use it as an insert effect, and the loop dry volume knob is left in its default state. When used as a send effect you may wish to manually reduce dry audio through to nothing to protect overall mix levels. You are always in control.
3. Start Reason's transport, if you want to loop and play or record along with other tracks. This helps you keep time, also, especially if you turn on the Reason DAW metronome click.
4. Press **Record** (the red dot). The first ring turns red and records.
5. After one pass of the loop length (4 bars by default), recording automatically flips to **playback** — you'll see the green play indicator and hear your loop repeating. Playing IN TIME with the bars and beat markers, or the metronome while doing the initial recording, is the key to the live looping workflow. If you do not play in time, the loop won't sound good.
6. Press **Record** again to overdub new layers on top.
7. Press **Stop** to fade the loop out; **Play** to start the loop playing again.

That's the whole core looping workflow. Everything else in this manual is about doing more advanced things, or setting up hardware to control the looper, and even ideas for hands free looping.

Screenshot pending: Screenshot of one ring mid-recording (red), with waveform forming.

3. The Loop Display Area



Each of the six rings shows:

- **Waveform** — the loop's audio drawn as radial peaks around a ring.
- **Playhead** — a white dot sweeping the ring while it records, overdubs, or plays. (Stopped loops normally hide it; see Playhead Transport.)
- **Bar ticks** — one spoke per bar of loop length.
- **Hub indicator** — solid red = recording, orange = overdubbing, green triangle = playing, amber caution triangle = unsaved live content that **SAVE** can write (or that needs a re-SAVE after edits), nothing = stopped or empty with nothing pending. A **flashing red ring with a hollow red hub** means a bar-synced recording is armed and waiting for the next bar (see Bar Sync Record).
- **Focus** — the selected track's ring is brighter with a thicker outline. Click any ring to select it.

If the device's power switch is Off, the display shows a sleeping robot instead. He wakes up when you wake the looper back up.

4. Looper Global Controls

The controls in this section usually affect one track, but can also affect multiple tracks. Play and stop will affect all tracks if the all track switch is in all track mode. The easy control button and record/overdub buttons are **always** track buttons.

- easy control **Easy Control** - one-button looper pedal control, cycles the selected track without wiping entire takes you've already got. On an empty track first time you press it goes into **Record** → **Overdub** → **Play** and then after that **Overdub** → **Play** → **Overdub** → **Play** forever — never back to the initial Record.
- new recording **New Recording** — start a fresh take on the selected track, replacing its content. With **Auto Next** on, it first hops to the next *unused* track so you never overwrite a take by accident.
- **Record / Overdub** — on an empty track this starts recording; on a track with audio it overdubs (layers on top of what's there).
- **Play** — start playback. Whether this starts one track or every non-empty track depends on the **Track Operations** switch (section 7).
- **Stop** — fade out and stop. Also scope-dependent. Two extra gestures:
 - **Double-tap** (two presses within 300 ms) always stops *all* tracks, even in one-track mode — the quick way out of a wall of sound.
 - **Long-press** (hold more than 3 seconds) clears every loop. The nuclear option; content is erased, not just stopped.
- **x2 (Double)** — instantly double the loop's length by copying its content twice end-to-end. The loop sounds identical, but you now have twice the room to overdub longer phrases over it. Press again for 4x, up to the two-minute buffer limit.

Why Double matters: record a tight 2-bar groove, double it to 4 bars, and overdub a lead line that evolves over the longer cycle — the classic looper arrangement trick.

5. Looper Global Mode Switches

Global setup options as slide switches. Hover any of them and the hint shows the active mode.

Auto Next (Off / On)

When on, **New Recording** automatically advances to the next unused track before recording. Turn it on for live building — each press of New Recording lays a fresh take on a fresh track, no navigation needed. Turn it off when you deliberately want to re-record the same track until the take is right. If all six tracks are full, it stays put.

Length Mode (Bars / Seconds)

Sets how the **Initial Length** knob is interpreted for new recordings: musical bars locked to the song tempo, or literal seconds.

- **Bars** (default): loops line up with your song. A tempo change clears loops (see the notices above).
- **Seconds**: for ambient and free-time work with no grid. Loops survive tempo changes.

Bar Sync Record (Free / Bar)

- **Free** (default): recording starts the instant you press Record.
- **Bar**: with the transport rolling, pressing Record *arms* the track — its ring flashes red — and recording actually begins at the next bar line. Press Record again while flashing to cancel. Perfect for keeping every loop locked to the downbeat without split-second timing on the pedal. Flipping the switch back to Free while armed starts the recording immediately.

Auto Play and Auto Record and AUto Duck

Screenshot pending: Screenshot of the two red-LED buttons under the transport grid.

- **Auto Play (On by default)** — when a recording completes one full pass, the track automatically switches to playback. Turn it *off* and the completed initial recording switches to overdub instead.
- **Auto Record (Off by default)** — when Reason's transport starts, the looper arms a take automatically so you can keep your hands on the instrument. What it does depends on **Auto Next**:
 - **Auto Next off:** overdub the *selected* track (or record it if empty).
 - **Auto Next on:** hop to the next unused track (same rule as New Recording) and start recording there. If all tracks are occupied, stay on the selected track and overdub it. If a take is **already recording**, transport Play does **not** start another Auto-Record (the in-progress take continues). Hitting Play on the looper mid-take punches out early but **keeps** the Initial Length — the rest of the loop is silence until you overdub or re-record.

7. Per Track Controls

Screenshot pending: Screenshot of the bypass switch, S and Track Operations switch on the bottom row.

- **Bypass / On / Off** — the standard Reason device switch, with labels drawn beside it. *On* processes normally, *Bypass* passes your dry signal straight through, *Off* silences the device (and naps the robot).
- **Track Operations (Affect All Tracks / Affect One Track)** — the scope switch. It decides how much of the device the performance controls grab:
 - **All Tracks** (default): Play starts every non-empty loop, Stop fades everything, and the playhead tools (section 9) move every playhead. This is band-in-a-box mode — one press affects the whole arrangement.
 - **One Track**: those same controls act only on the selected track. This is surgical mode — stop just the drums, scrub just the pad. Remember: double-tap Stop still stops everything.

8. Loop navigation (top right)

Screenshot pending: Screenshot of the four navigation buttons.

Four buttons move the track selection: first, previous, next, last. They're the pedal-friendly way to move focus without touching the mouse — map next/previous to two footswitches and you can reach any track. Selecting a track that is overdubbing finalizes that overdub to playback (so a forgotten overdub can't quietly decay while you work elsewhere); selecting away from a recording take lets it finish its pass.

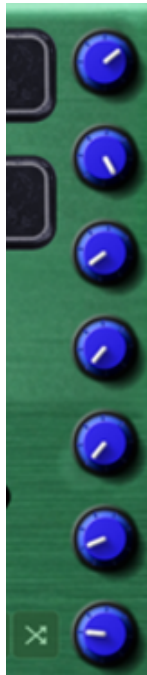
9. Playhead transport (right side)

Screenshot pending: Screenshot of the six playhead-transport buttons.

These manipulate playback *position* — performance tools for glitch, tape-style effects, and cueing. They affect all tracks or just the selected one per the Track Operations switch, and never touch a track that is currently recording.

- **Rewind ×1 / ×2 and Fast-Forward ×1 / ×2** — *hold-to-scrub*. While held, the playheads glide backward or forward at 1× or 2× real speed — even against active playback (rewind ×1 on a playing loop really moves backwards at 1×). As a playhead crosses the 12, 3, 6, or 9 o'clock point it **pauses there for a quarter second** — release during that pause and you've parked exactly on a quarter of the loop. Scrubbing a *stopped* loop shows its playhead while you move it and for 5 seconds after, so you can cue a start point precisely. Why: cueing a stopped loop to its halfway point before bringing it in; pushing a playing loop out of phase with the others for a beat-repeat feel, then Home to snap everything back.
- **Home** — every playhead (or just the selected one) returns to its start position, 12 o'clock. The instant "everyone back to one".
- **Shuffle** — every playhead jumps to a random position. The chaos button: six loops that were marching in step suddenly interlock in a new pattern. Press Home when you've had your fun — or when you find a combination you like, just leave it.

10. The Blue knobs (far right)



(In a future version these will all get distinctive colors and styles to make it easier to see what they do as there's no room on the front panel for labels.)

- **Loop Level** — master playback level of all loops together, applied on top of the per-track mixer faders.
- **Dry Level** — your live signal's pass-through level. Default is unity; the looper is designed as an always-in-line pedal that never touches your dry tone. Pull it down only if the device feeds a separate loop-only bus.
- **Fade Out** — how long Stop takes, from a 5 ms cut to a 2-second swell (default ≈ 0.1 s). Short = tight stops on the beat; long = ambient washes that breathe out. This same time is used when you stop a track mid-recording — the recorded ending ramps down instead of clicking.
- **Makeup Gain** — up to +24 dB of clean gain on the summed loops. Useful when many quiet layers need lifting against a hot dry signal.
- **Overdub Decay** — how quickly older layers fade as you stack new ones. At 0%, layers accumulate forever (classic infinite looper — watch your levels). At the default 10%, each pass gently pushes older material down, so the loop stays alive and never runs away. High

values approach "replace": new material quickly dominates. Why you care: infinite decay suits carefully built song sections; moderate decay suits evolving ambient beds that self-clean.

- **Initial Length** — the length of a *new* recording, 1–32 bars (or seconds, per Length Mode). Existing loops are unaffected; use $\times 2$ to grow a loop after the fact.

(One knob position is reserved for a future compressor ratio control; it currently has no effect.)

11. Track Controls (kind of a mixer, sort of)



If this section looks a little overwhelming and scary to you, repeated six times, you're not alone, the developer also feels that it's a bit insane. . This area of the plugin may be redesigned as a more flexible panel, however with these track controls being one mode, and perhaps other simpler modes.

For each track, in the track controls area (aka Mixer) we have some common mixer functions, but we have also intentionally skipped common mixer functions like mute and solo because in a performance mixer those controls are often a liability. If you want to stop a loop, then stop it. Having it playing with no audio coming out is not a friendly looper behaviour so we don't have it, and now you can't fat-finger the mute button. You're welcome.

Per track controls starting from the bottom right:

- **Footswitch:** This is a throwback to the looper designs form factor as a guitar pedal. It's intended to be used to select, record and play a loop on the track, and to be mapped to your foot controller or any midi controller you want to let you trigger playing and recording, once you learn the tricks. The control works the same as the Easy Control on the top, but it's per track. One Press on an empty track gets you recording a single loop. Tap to move to overdub. Tap again to play. Double tap to stop. **Long-press** (hold more than 3 seconds) clears the track. Map these to a MIDI foot controller via Remote for hands-free multi-track looping.

- **Direction switch** — Forward (default) or Reverse. Affects *playback* only: the playhead walks backward through the loop. Recording always captures realtime forward. Combine with Speed for reverse half-/double- speed tape tricks. Display rings and CV phase follow the playhead.
- **Pan fader** — Loop audio stereo position. Clever people could also use this to turn this single output looper into a dual mono output looper.
- **Stutter/Glitch** -- A performance button meant to be mapped to a hardware looper pedal or midi controller to let you force a 16th note stutter. In future versions, the stutter generation will be controllable from CV.
- **Gain fader** — the track's level, -48 dB to +6 dB, unity at default.
- **Speed switch** — tape-style varispeed: **0.5×** (octave down), **1.0×** (default), or **2.0×** (octave up). Speed equals pitch — not time-stretch. Scrub / Home / Shuffle still move the playhead in buffer coordinates (independent of the direction switch).
- And on the left, **Five colour buttons** — instant per-track actions that also *select* the track: **Record** (red), **Play** (green), **Clear** (orange), **Stop** (grey), **Double** (purple). These are the fastest route when mixing with the mouse: one click stops the bass loop, another doubles the pad, no navigation required.

12. Clearing all Tracks



- **Clear All** (left box) — erase all six loops at once. Can be pressed, and then you can undo, if you haven't started any new recordings.
- If there is saved audio loops, the REVERT command will show up after a clear all, if you want to undo the clear. There may also be regular Undo/Redo Reason support if the developer can figure out how to make it work.

13. Advanced/Temporary/Test Features

These are temporary features that will probably be improved or replaced by something better that serves the same purposes while adding more musicality and choice to the device:

- **Tone Generator** (right box, bottom) — fills all six loops with a stack of A-minor sine tones at a safe level. It exists for checking your gain staging, mixer, and cabling without playing a note — and it's an honest demo of six loops playing at once.
- **Corrupt** (right box, above the tone generator) — the musical destruction button. Each press chops every playing loop into quarter-bar segments and reorders them randomly, with a short interpolation across every seam so the glitch never clicks. The loop keeps its length, energy, and tempo — but the phrase is rearranged. Every press deals a new hand. Try it on a doubled ($\times 2$) loop for longer scrambled patterns, or corrupt just one track (Track Operations: One) while the rest hold the groove. There is no undo — corrupt a loop you're willing to lose, or resample first.

14. MIDI CC and Remote control

One button or key on one control surface, three gestures to learn.

Learning to use a looper is a physical skill not unlike learning to play guitar. The simplest way to use it when learning is to use a single foot switch button (not a midi sustain pedal input, although a midi sustain pedal plugged into an auxiliary foot switch input that is NOT the keyboard sustain pedal jack, is acceptable). More advanced users will want to invest in a Midi floorboard/foot-controller.

Whether you have a lot of hardware or none, Warp Looper is designed so that a *single* remote control — one footswitch, one pad, even one deliberately chosen note on your MIDI keyboard — can carry three distinct actions, told apart purely by timing:

Gesture	Timing	What Stop does
Single quick tap	one press, then nothing	Stop the scoped track(s)
Double tap	two presses within 300 ms	Stop all tracks
Long press	hold for more than 3 seconds	Clear every loop

Practise these three as separate moves until they're automatic — the difference between "park the drums", "end the song", and "erase everything" is entirely in your foot. The timing windows are deliberately far apart: a relaxed pair of taps still lands well inside 300 ms, and nothing destructive happens before a full three-second hold, so you cannot stumble from a stop into a clear.

The same discipline pays off across the device: any momentary control you map — Record, Easy, New Recording — responds to when and how long you press, so one pedalboard switch does more work than its label suggests.

"Can I use a MIDI sustain pedal to control this looper?"

Yes — with one important provision. Unplug the pedal from your keyboard's *sustain* input and plug it into an **auxiliary / assignable pedal input** that you configure to send a proper MIDI CC — value **0 when released, 127 when pressed**. Mapped that way, it's a perfectly good momentary footswitch: point it at Easy or Record, set Switch Mode to Latching, and loop away.

What is *not* supported is leaving the pedal on the sustain jack and trying to remap the MIDI sustain message to do a control's job. Sustain (CC 64) carries pedal-specific meaning throughout Reason

and your keyboard — half-damper curves, polarity auto-detection, sustain handling in every instrument downstream — and bending it into a generic trigger invites all manner of trouble. It's a fish-on-a-bicycle way to work, and this plugin deliberately doesn't support it. The hardware is fine; just let it send a midi CC value into Reason and we're cool.

14b. Per Track MIDI notes (C1–B6) in version 1.0

Full per-note MIDI chart (also printed on the device back panel):

Warp Looper — MIDI note map

Reason note names: **Middle C = C3 = MIDI 60**, so **C1 = 36**. Map range: **MIDI 36–107** (C1 through B6). Six octaves → six loops (Tracks 1–6).

Source of truth in code: `kMidiNoteMapBase` / `kMidiNoteMapEnd` in `./Constants.h`.

Octave → loop

Octave	MIDI	Loop (0-based)	UI track
C1–B1	36–47	0	Track 1
C2–B2	48–59	1	Track 2
C3–B3	60–71	2	Track 3
C4–B4	72–83	3	Track 4
C5–B5	84–95	4	Track 5
C6–B6	96–107	5	Track 6

Within each octave

Deg	Note	MIDI offset	Action
0	C	+0	Play forward 1×
1	C#	+1	Play forward 0.5×
2	D	+2	Play reverse 1×
3	D#	+3	Play reverse 0.5×
4	E	+4	Play forward 2×
5	F	+5	Play reverse 2×
6	F#	+6	Glitch / stutter (hold)
7	G	+7	Glitch + jump every 2 beats (hold)
8–11	G#–B	+8...+11	Reserved

Absolute MIDI number = 36 + (loop × 12) + degree .

Full chart (MIDI number)

Track 1 / Loop 0 (C1)

Note	MIDI	Action
C1	36	Play fwd 1×
C#1	37	Play fwd 0.5×
D1	38	Play rev 1×
D#1	39	Play rev 0.5×
E1	40	Play fwd 2×
F1	41	Play rev 2×
F#1	42	Glitch
G1	43	Glitch + jump
G#1–B1	44–47	Reserved

Track 2 / Loop 1 (C2)

Note	MIDI	Action
C2	48	Play fwd 1×
C#2	49	Play fwd 0.5×
D2	50	Play rev 1×
D#2	51	Play rev 0.5×
E2	52	Play fwd 2×
F2	53	Play rev 2×
F#2	54	Glitch
G2	55	Glitch + jump
G#2–B2	56–59	Reserved

Track 3 / Loop 2 (C3 / middle C)

Note	MIDI	Action
C3	60	Play fwd 1×
C#3	61	Play fwd 0.5×
D3	62	Play rev 1×
D#3	63	Play rev 0.5×
E3	64	Play fwd 2×
F3	65	Play rev 2×
F#3	66	Glitch
G3	67	Glitch + jump
G#3–B3	68–71	Reserved

Track 4 / Loop 3 (C4)

Note	MIDI	Action
C4	72	Play fwd 1×
C#4	73	Play fwd 0.5×
D4	74	Play rev 1×
D#4	75	Play rev 0.5×
E4	76	Play fwd 2×
F4	77	Play rev 2×
F#4	78	Glitch
G4	79	Glitch + jump
G#4–B4	80–83	Reserved

Track 5 / Loop 4 (C5)

Note	MIDI	Action
C5	84	Play fwd 1×
C#5	85	Play fwd 0.5×
D5	86	Play rev 1×
D#5	87	Play rev 0.5×
E5	88	Play fwd 2×
F5	89	Play rev 2×
F#5	90	Glitch
G5	91	Glitch + jump
G#5–B5	92–95	Reserved

Track 6 / Loop 5 (C6)

Note	MIDI	Action
C6	96	Play fwd 1×
C#6	97	Play fwd 0.5×
D6	98	Play rev 1×
D#6	99	Play rev 0.5×
E6	100	Play fwd 2×
F6	101	Play rev 2×
F#6	102	Glitch
G6	103	Glitch + jump
G#6–B6	104–107	Reserved

Behaviour notes

Play (C–F)

- Note-on → set that loop's direction × speed, `startPlaying` on **that buffer only**.
- Note-off → fade-stop that buffer only (pad gate), unless another play note for the same loop is still held.
- **Last-held wins**: e.g. hold C then D → reverse; release C → stay reverse; press C again → forward; release D → stay forward.
- Empty / soft-cleared buffers: note-on is a no-op.
- Velocity ignored. Panel Direction/Speed widgets are not moved.

F# glitch

- Hold → stutter (same as panel `loop_glitch_N`).
- If the loop is **stopped** and no C–F note is down → also start forward **1×** while held; release fade-stops when nothing else is gating play.
- If already playing → glitch only; release does not stop.

G glitch + jump

- Hold → stutter, and every **2 beats** (tempo, 4/4) jump playhead to a random phase and re-anchor the stutter window.
- First jump is 2 beats after note-on (not immediate).
- Release ends the effect only — does not stop C–F / F# playback.

Routing in Reason

Notes need a track / Combinator **Key** path to the device

(`accepts_notes = true`). **Send FX do not get MIDI from the send bus**

alone — use an Effect Combinator track or a dedicated note lane.
See `./usermanual.md` §13b.

Unmapped leftovers

Range	Notes	Count
Below map	MIDI 0–35 (C-2–B0)	36
Per-octave	G#–B × 6 loops	24
Above map	MIDI 108–127 (C7–G9)	20
Total free		80 / 128

Used: **48** notes (6 loops × 8). Reserved for later (not in this build): record/overdub, stop, clear, select, global transport, etc.

MIDI CC / Remote chart is separate — see `./usermanual.md` §13.

Within a combinator with **Accept Notes** enabled, MIDI notes on the device’s track drive per-loop playback and glitch. Reason’s middle C is **C3 = MIDI 60**, so **C1 = 36**. Each full octave maps to one loop (Track 1–6):

Octave	MIDI	Loop
C1–B1	36–47	Track 1
C2–B2	48–59	Track 2
C3–B3	60–71	Track 3
C4–B4	72–83	Track 4
C5–B5	84–95	Track 5
C6–B6	96–107	Track 6

Within every octave the same pattern applies:

Note	Action
C	Play forward 1×
C#	Play forward 0.5×
D	Play reverse 1×
D#	Play reverse 0.5×
E	Play forward 2×
F	Play reverse 2×
F#	Glitch / stutter (hold while the note is down)
G	Glitch + jump : stutter, and every 2 beats jump to a random place in the loop
G#–B	Reserved (unmapped)

Play notes (C–F): note-on sets that loop’s direction and tape speed, then starts playback on **that buffer only** (Track Ops scope is ignored). Several play notes may be held at once: the **most recently pressed** note owns direction/speed; releasing an older note does not stop the loop while another play note for that loop is still down. Note-off of the last held play note fade-stops that buffer (pad-style gate). Empty or soft-cleared buffers ignore note-on. Velocity is ignored in this version.

Glitch (F#): note-on engages that loop’s stutter (same as holding the panel glitch button); note-off releases. If the loop was stopped and no C–F play note is down, F# also starts playback at forward **1×** for as long as it is held, and releasing F# fade-stops when nothing else is holding play. Direction/speed from an already-held C–F note are left alone.

G (glitch jump): like F# stutter while held, and every two beats (at the current tempo, assuming 4/4) the playhead jumps to a random position in that loop and the stutter window re-anchors there. Combine with C–F play notes. Note-off releases the effect only — it does not stop playback.

Panel Direction / Speed switches are not moved by these notes — the sounding rate is applied in the DSP. Remote / MIDI CC mapping is unchanged (section 13).

Reserved / unmapped leftovers

Range	Notes	Count
Below map	MIDI 0–35 (C–2–B0)	36
Per-octave leftovers	G#–B × 6 loops	24
Above map	MIDI 108–127 (C7–G9)	20
Total free		80 / 128

Used: 48 notes (6 loops × 8). Natural later uses for leftovers (not in this build): record/overdub, stop, new-recording, clear, select, global transport — leave them free for a future map.

15. Other topics

15.1 CV inputs and outputs (back panel)

Screenshot pending: Screenshot of the back panel CV section.

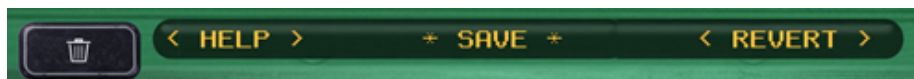
The back panel carries per-track CV sockets:

- **Loop Level in (×6)** — modulate a track's level from any CV source. The CV *adds* to the fader position (bipolar), so an LFO gently pumps a track, an envelope ducks it, a Matrix pattern gates it rhythmically.
- **Loop Pan in (×6)** — the same, for stereo position. Slow LFOs here turn a static wall of loops into a slowly rotating field.
- **Loop Out (×6)** — each track emits its own smoothed output level as CV. Use a drum loop's level to duck a pad on another device (side-chain-style), drive a filter from the swell of a loop, or light up other gear in time with your layers.

Because levels and pans are also real mixer faders, CV modulation and manual mixing combine — CV moves the sound, the fader sets the centre.

15.2 Saving and Loading

LOOP AUDIO IS ONLY SAVED (with the Reason song), after you press SAVE in Warp Looper and then save your reason song



Hub caution (amber triangle): shown on a loop that has live content that SAVE can write — never-saved takes, or takes edited after the last SAVE.



LOAD happens automatically when the song opens, and can be forced to happen additional times if you want to undo the last recording, and you click **REVERT** in the warp looper dynamic soft buttons area

Clear All: first press soft-clears the live loops (should be recoverable by undo or revert action). Second press will not be recoverable by undo or revert. It was originally intended that double clearing would also reset your device, but we probably will build a **RESET** item inside a special menu context instead, in a future version.

15.3 No presets yet, but combinator works.

Currently we do not support saving presets but WarpLooper content and setups can be saved inside a Combinator.

15.4 We can't read or write user samples yet, but we'd love to.

If the reason SDK gains the ability to code support for user samples in a looper context, we'll quickly move to support user samples.

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