

# HeadLoop v1.6

## User Manual

4-Head Looper + Tape Recorder for Norns

# INTRODUCTION

HeadLoop is a sophisticated 4-head looper with an integrated tape recorder for Norns. It features independent control over each playback head with extensive sound-shaping capabilities including pitch shifting, filtering, delay sends, and loop position control. The tape recorder allows you to capture the output of all heads for further manipulation.

## NORNS INTERFACE CONTROLS

### KEY 2 - Head Selection & Page Switching

- **Short Press:** Change active head (cycles through heads 1-4)
- **K2 + K3 Together:** Switch screen page (Main ↔ Tape)

### KEY 3 - Recording Control (Context-Dependent)

#### On Main Page:

- **Click:** Start/Stop recording
- **Double-Click:** Start/Stop overdub
- **Long Press:** Clear loop with fade

#### On Tape Page:

- **Click:** Start/Stop tape recording
- **Double-Click:** Start/Stop tape overdub
- **Long Press:** Clear tape (3-second fade)

### ENCODER 1 - Parameter Selection

- **Main Page:** Cycle through head parameters (volume, pitch, pan, filters, delay, start, end, filter Q)
- **Tape Page:** Select tape parameter (sends 1-4, volume, reverse, mute)

### ENCODER 2 - Coarse Adjustment

- Adjust the selected parameter value (coarse increments)

### ENCODER 3 - Fine Adjustment

- Adjust the selected parameter value (fine increments)

# SCREEN PAGES

HeadLoop has two screen pages that can be switched using K2+K3 (keep K2 pressed then press K3):

## Page 1: Main (Head Control)

The Main page provides control over the active head's parameters with visual feedback including position indicators for all heads and real-time value display.

## Page 2: Tape Recorder

The Tape page allows you to control the tape recorder including send levels from each head, tape volume, reverse playback, and mute functions.

# HEAD PARAMETERS

Each of the 4 heads has independent control over 9 parameters. Use E1 to select the parameter, and E2/E3 to adjust values:

Parameter	Range	Description
Volume	0.00 - 2.00	Head output level
Pitch	±24 semitones or ±2 octaves	Pitch shift (mode selectable in PARAMS)
Pan	L to R	Stereo position (-1 left, 0 center, +1 right)
Filter LP/HP	HP/Off/LP	Low-pass or high-pass filter (E2)
Filter BP	0.00 - 1.00	Band-pass filter amount (E3)
Delay	0.00 - 1.00	Send level to delay effect
Start	0.00 - 1.00	Loop start position (normalized)
End	0.00 - 1.00	Loop end position (normalized)
Filter Q	0.10 - 4.00	Filter resonance (E1 only, not on grid)

### Note on Filters:

The filter system uses E2 for LP/HP control and E3 for BP amount. Band-pass filter takes priority when active (BP > 0.1). Filter Q (resonance) affects all filter types and is accessible via E1 only.

# TAPE RECORDER

The tape recorder captures the output of all four heads, allowing you to create layers and build complex compositions. Each head has an independent send level to the tape.

## Tape Parameters

Parameter	Range	Description
Send H1-H4	0.00 - 1.00	Send level from each head to tape
Volume	0.00 - 1.00	Tape playback volume
Reverse	On/Off	Reverse tape playback direction
Mute	On/Off	Mute tape output (with 1s fade)

## Tape Recording Workflow

1. **Initial Recording:** Switch to Tape page (K2+K3), press K3 to start recording. The tape captures the output of all enabled head sends.
2. **Stop Recording:** Press K3 again to stop and begin playback.
3. **Overdub:** Double-click K3 to layer additional material onto the existing tape.
4. **Clear Tape:** Long-press K3 to clear the tape with a 3-second fade.

# EFFECTS

## Reverb

HeadLoop uses the Norns system reverb. Configure reverb parameters in the SYSTEM > AUDIO menu. The reverb send can be enabled/disabled and the mix level adjusted in the PARAMS > Reverb section.

## Delay

Each head has an independent delay send parameter. The delay effect has global controls for delay time, feedback, and mix level, adjustable in the PARAMS menu.

## Tape FX

The Tape FX simulate analog tape characteristics and can be enabled in the PARAMS menu:

- **Wobble:** Simulates wow and flutter (pitch instability)
- **Saturation:** Adds subtle harmonic distortion
- **Age (Dropout):** Simulates tape degradation with random volume dropouts

# LFOS

HeadLoop features 4 independent LFOs that can modulate various parameters. Each LFO is configured in the PARAMS menu:

Parameter	Options/Range	Description
Shape	Sine / Random	LFO waveform type
Speed	0.01 - 20 Hz	LFO frequency
Depth	0.00 - 1.00	Modulation amount
Destination	21 options	Target parameter to modulate

## LFO Destinations

Each LFO can target: None, Volume 1-4, Pan 1-4, Start 1-4, End 1-4, or Pitch 1-4. This allows for complex modulation routings and evolving soundscapes.

# MIDI CONTROL

HeadLoop supports extensive MIDI control via CC (Continuous Controller) and Note messages. All MIDI mappings are configurable in the PARAMS menu.

## MIDI Setup

1. Select your MIDI device in PARAMS > MIDI Device
2. Configure CC mappings in PARAMS > MIDI CC Mapping
3. Configure Note mappings in PARAMS > MIDI Note Tape

## MIDI CC - Head Parameters (Default Mapping)

Parameter	Default CC	Target
Volume	CC 1	Active head volume
Pitch	CC 2	Active head pitch
Pan	CC 3	Active head pan
Filter LP/HP	CC 4	Active head LP/HP filter

Filter BP	CC 5	Active head BP filter
Filter Q	CC 6	Active head filter resonance
Delay	CC 7	Active head delay send
Start	CC 8	Active head loop start
End	CC 9	Active head loop end

## MIDI CC - Tape Parameters (Default Mapping)

Parameter	Default CC	Description
Tape Send H1	CC 10	Send level from head 1 to tape
Tape Send H2	CC 11	Send level from head 2 to tape
Tape Send H3	CC 12	Send level from head 3 to tape
Tape Send H4	CC 13	Send level from head 4 to tape
Tape Volume	CC 14	Tape playback volume

## MIDI Notes - Tape Actions (Default Mapping)

Action	Default Note	Function
Tape Rec/Stop	C3 (60)	Start/stop tape recording
Tape Overdub	C#3 (61)	Start/stop tape overdub
Tape Clear	D3 (62)	Clear tape with fade
Tape Mute	D#3 (63)	Toggle tape mute
Tape Reverse	E3 (64)	Toggle reverse playback

# TIPS & WORKFLOW SUGGESTIONS

## Basic Recording Workflow

1. Press K3 to start recording your initial loop
2. Press K3 again to stop and begin playback across all 4 heads
3. Use K2 to select different heads and adjust their parameters independently
4. Double-click K3 to add overdub layers

## Creative Techniques

- **Polyrhythmic Patterns:** Set different start/end points for each head to create complex rhythmic relationships
- **Harmonic Layers:** Use pitch shifting to create chords from a single loop
- **Evolving Textures:** Assign LFOs to volume, pan, or start/end positions for slowly evolving soundscapes
- **Tape Layering:** Record multiple passes to the tape recorder to build dense, complex compositions
- **Reverse Glitches:** Toggle reverse on individual heads or the tape for instant backwards effects

## Filter Usage

The dual encoder filter system allows for quick sound shaping. Use E2 for LP/HP sweeps and E3 for band-pass focus. Increase Filter Q for more resonant, aggressive filtering.

## Tape FX Recommendations

Start with subtle settings (0.1-0.3) for tape character. Higher wobble values create extreme pitch warping. Age/dropout works best at low values (0.1-0.2) for occasional glitches.