# NOISE REAP

# Foundation
User Manual v1.0

## Overview

The Foundation is an original bassdrum synthesizer with a smooth and organic sound. It's modeled after an actual acoustic drum. Each part of the physical instrument has been translated into analog and digital electrical components.

## Technical Specifications

- Width 10hp
- Depth 28mm
- Current draw 20mA @ +12V
- Current draw 10mA @ -12V
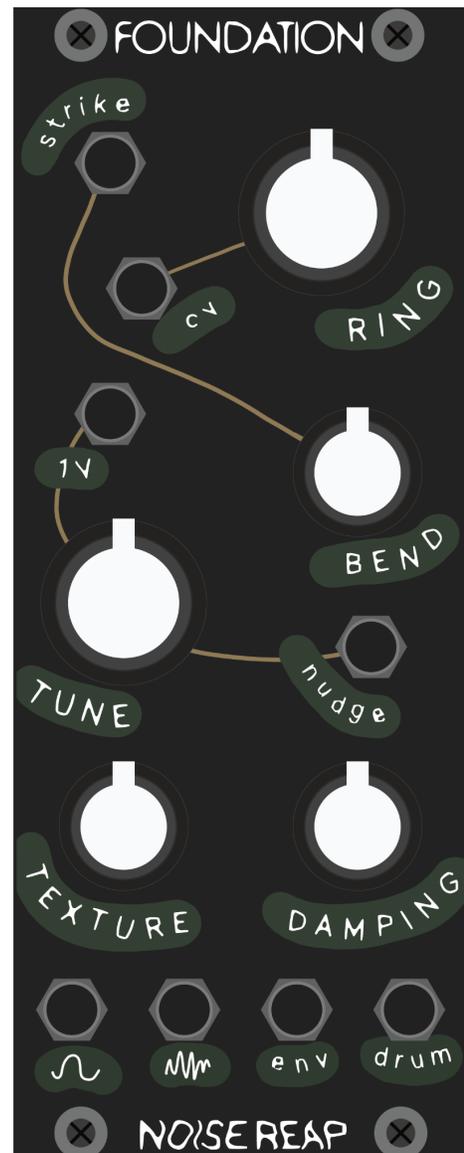
# Inputs

### STRIKE

Triggered by any hard edged waveform greater than 2V. Sets the drum in motion.

### CV

5V range. Controls the amount of RING. Positive voltages increase RING, negative decrease.

### 1V

10V range. Standard 1V per octave input to control the drum tuning.

### NUDGE

10V range. A heavily attenuated exponential input to control the drum tuning. This is calibrated such that a 5V gate will add a point of interest to the sound, but not change the tuning so much that it sounds disjointed. It can be used with random sources/LFOS/etc to achieve subtle pitch variations and add humanization to a track.

# Outputs

### DRUM

~10V audio output. The final drum synth output.

### ENV

0 - 5V envelope output. It has a range of about 50mS to 1.5 seconds, and a blended exponential/linear shape.

### NOISE

5V audio output. This is a digital white noise signal used by the texture control.

### SINE

~10V audio output.

# Knobs

### RING

Controls how long the drum "rings out". This changes the decay length of both the main envelope and a shorter envelope controlling the texture transient.

### BEND

This control mimics the amount the drum membrane bends when struck. It applies a fixed 45mS sweep to the tuning. More BEND results in a higher pitched transient.

### TUNE

Controls the fundamental tuning of the drum. Has a wide range from about 20Hz to 180Hz.

### TEXTURE

This represents the complex midtones resulting from the drums shell, hardware, atonal interactions, etc. Rotating TEXTURE clockwise adds digital noise to the signal. RING controls the length of this texture transient.

### DAMPING

Damping is like stuffing a pillow in the drum shell or softening the beater. It filters out some of the harsh higher frequency and 'click' of the attack. Use in conjunction with TEXTURE to achieve a nuanced kick sound that sits great in a mix.

*Damping affects volume. You'll want to adjust the gain on your mixer when creating a heavily damped kick sound.

# Patch Notes

### Realistic Bassdrum

Ring & tune 11 o'clock. Bend noon. Texture & damping 9 o'clock.

### 909 Style

Ring noon. Tune 10 o'clock. Bend 2-3 o'clock. No damping. Barely any texture.

### Lofi Hiphop

Ring 2 o'clock. Bend 9 o'clock. Texture & damping noon (or alternatively both minimized). Adjust mixer gain to compensate for increased damping.

### Minimal Techno

Ring & tune 9 o'clock. Bend 10 o'clock. Add just enough texture so that you hear it. Then add just enough damping so that you hear it.

### Indie Rock Kick

Ring & tune noon. Bend 9 o'clock. Texture min. Damping max. Adjust mixer gain to compensate for increased damping.

### Unlock the Kick!

Set up a kick sound with no damping. Run it through a nearly closed lowpass filter with plenty of resonance. Use the Foundation envelope to open the filter. Anomaly works really well for this because it adds a bit of additional grit and character.

### Hihat & Snare

Use the texture output to create rudimentary hihat or snare sounds. Patch a short envelope to modulate a VCA. Run texture through the VCA. This can all occur without interrupting the use of the kick drum.

### Easy-ish Ducking

Run your to-be-ducked signal through a VCA. Send an *inverted* copy of the Foundation envelope out to modulate the VCA.