

THE RUNNER v2.0

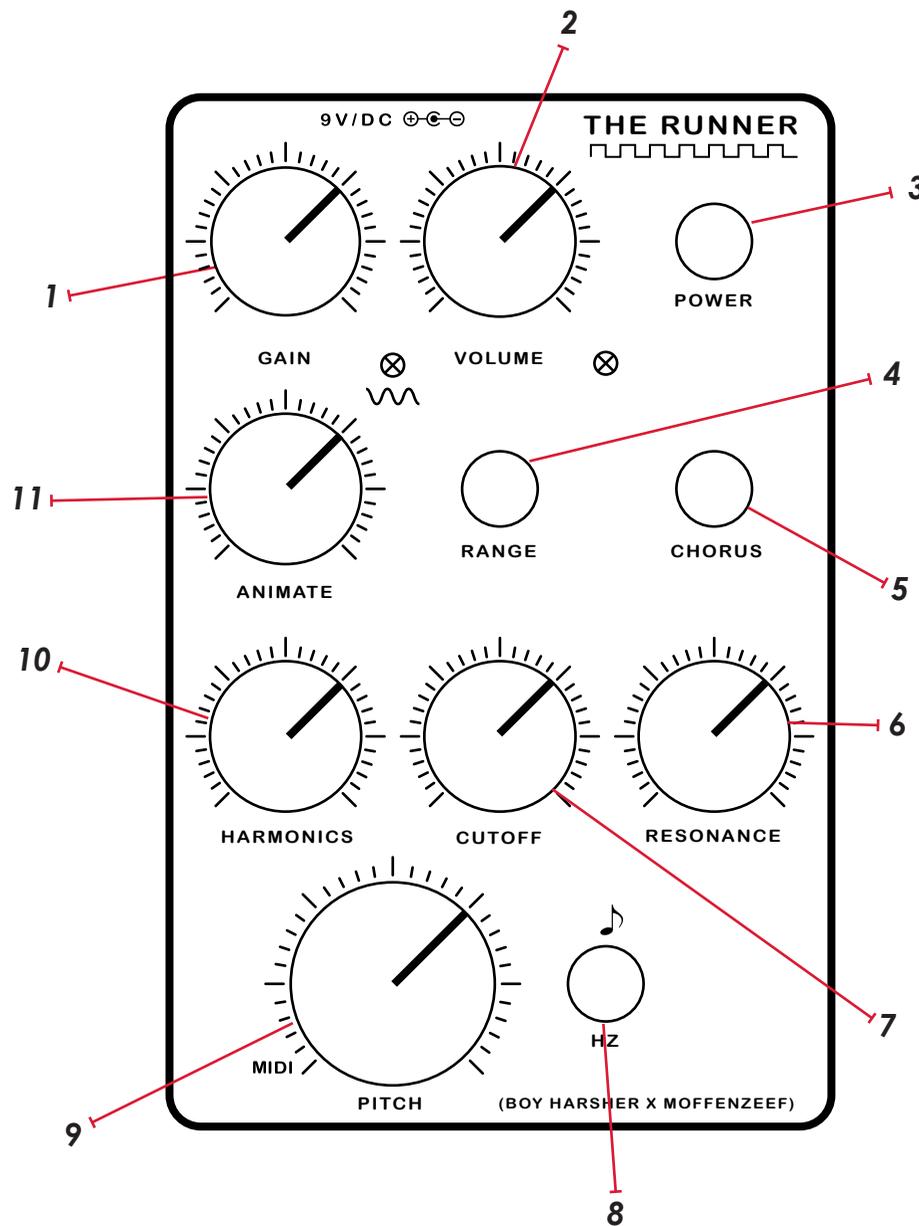
SPECIFICATIONS

THE RUNNER is powered by a "Boss style" center pin negative +9vDC power supply. This power supply is commonly used with guitar pedals. (power supply not included with purchase).

Current draw: 64ma

Output Impedance: 100k

THE RUNNER was made in collaboration with dark wave power house **BOY HARSHER**. We worked together to bring you a compact and feature rich drone synth that can cover the entire spectrum of evil drones. From sweet, mellow, chorus-rich, detuned washes to walls of brutal harsh noise, **THE RUNNER** will be sure to take you to the drone zone with little effort. We worked hard to give you a catered selection of macro controls; rather than cramming as many parameters onto the interface as possible, we carefully selected the most desirable controls for drone synthesis. Any position the knobs are in will deliver a pleasing result that will evolve and morph over time. This instrument hopefully eliminates the need for complicated setups or a deep knowledge of synthesis theory. For version 2 we added MIDI to allow for deeper control over all of the parameters. In addition to MIDI, there is also a button on the inside that allows you to change **THE RUNNER** into **KNACKLEBUSTER**, an experimental noise synthesizer previously released by **MØFFENZEEF**. Drone on and on till the break of dawn.



BOY HARSHER X MØFFENZEEF

- 1. GAIN:** Overall gain of analog distortion circuit. 1x to 100x.
- 2. VOLUME:** Overall volume. ~3v peak to peak - ~6v peak to peak.
- 3. POWER:** Power switch for **THE RUNNER**.
- 4. RANGE:** Speed range for **ANIMATE** knob. up = fast, down = slow.
- 5. CHORUS:** Chorus on/off switch. Chorus has a fixed rate and depth.
- 6. RESONANCE:** Resonance control for lowpass filter.
- 7. CUTOFF:** Lowpass filter cutoff frequency. 80hz - 15khz.
- 8. NOTES/HZ:** Quantize on/off for pitch of the root oscillator. Up = fixed chromatic pitches, down = free running oscillator.
- 9. PITCH:** 27.5hz - 440hz when quantize is off. Musical notes A0 - A4 when quantize is engaged. To receive MIDI notes, this knob must be turned all the way down.
- 10. HARMONICS:** **THE RUNNER** has 5 square wave oscillators that are controlled by the same pitch knob. The **HARMONICS** knob is a crossfader to mix between them all.
0-25%: Sub oscillator
25-50%: 5th above root pitch
50 - 75%: 1 octave above root pitch
75 - 100%: 2 octaves above root pitch
- 11. ANIMATE:** A complex random LFO that is routed to the filter cutoff and all 5 of the oscillator's pulse width. This knob controls both the speed and depth of the LFO. The LFO will ebb and flow on its own without any human intervention. When **ANIMATE** is all the way down, the LFO is off.

For more information visit: moffenzeefmodular.com | boyharsher.com

MIDI + KNUCKLEBUSTER

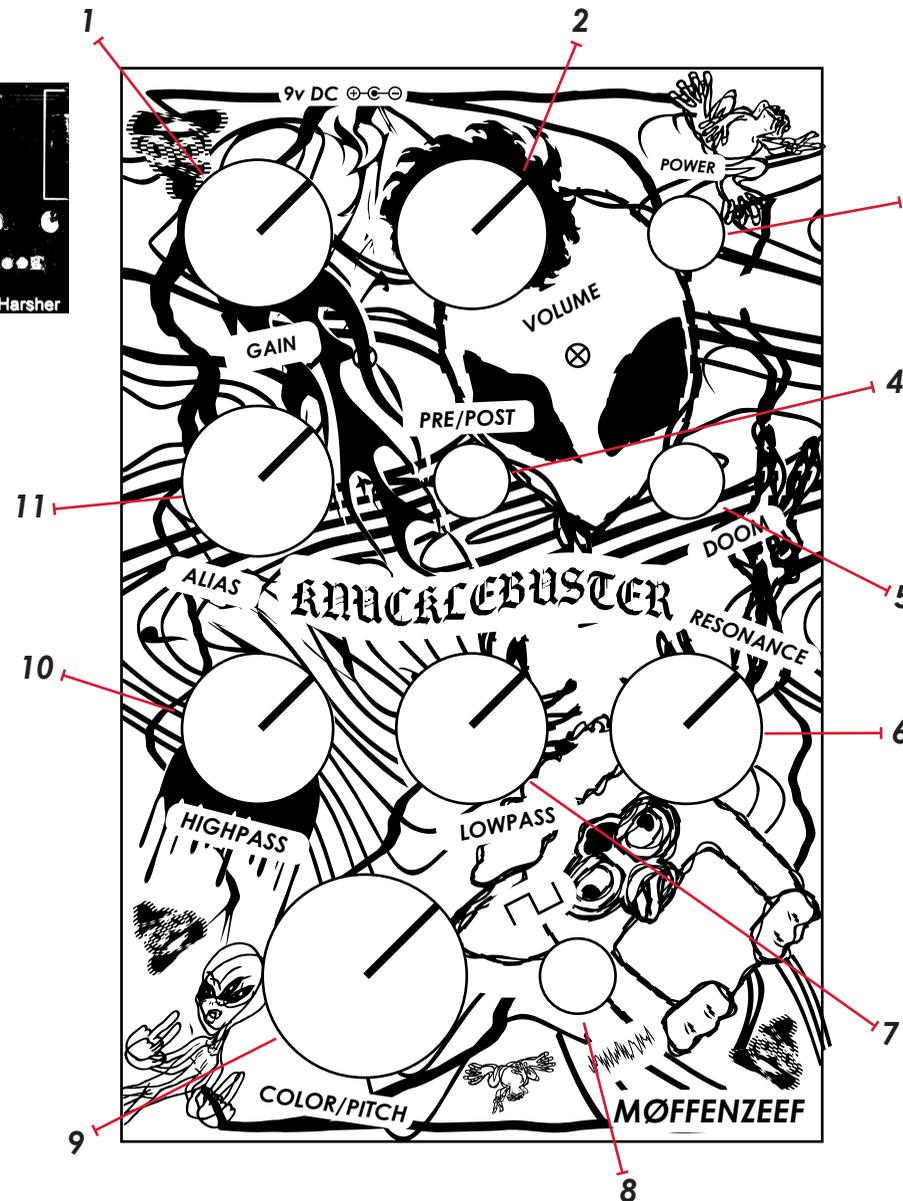
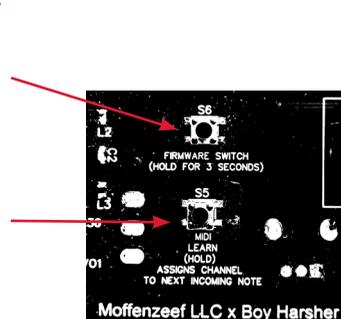
BOY HARSHER X MÖFFENZEEF

Inside **THE RUNNER** there are two buttons.

The top button labeled "FIRMWARE SWITCH" allows you to toggle between **THE RUNNER** and **KNUCKLEBUSTER** firmwares. Hold it down for 3 seconds to switch firmware. The current firmware saves on power down.

The button labeled "MIDI LEARN" is used to assign **THE RUNNER**'s MIDI channel. When you hold down the button you will see a slow flashing light inside the box. This means **THE RUNNER** is in **IDLE** mode and is ready to receive MIDI.

While the button is held down, send a MIDI note from a keyboard, sequencer, or a computer and **THE RUNNER** will automatically assign its MIDI channel to whichever channel the note is coming from. The lights flash quickly when the channel has been assigned. The current MIDI channel saves on power down.



KNUCKLEBUSTER original artwork by Vern Avola

For more information visit: moffenzeefmodular.com | boyharsher.com

Both **KNUCKLEBUSTER** and **THE RUNNER** can be controlled externally via MIDI. In addition to being able to receive notes (in **THE RUNNER** mode), control change messages can be sent to the unit to modulate the knobs for both firmware modes. When CC messages are received, the value is **ADDED** to the position the knobs are in. Switches receive CC messages when they are in the **OFF** position.

The CC mappings below are shared for both **THE RUNNER** and **KNUCKLEBUSTER**.

THE RUNNER	KNUCKLEBUSTER	CC#	Range
Pitch (Knob)	Color / Pitch	17	0-127
Notes / Hz	Square / Noise	18	0 off, 127 on
Harmonics	Highpass	16	0-127
Cutoff	Lowpass	74	0-127
Resonance	Resonance	71	0-127
Animate	Alias	1	0-127
Range	Pre / Post	19	0 off, 127 on
Chorus	Doom	20	0 off, 127 on

1. **GAIN:** Overall gain of analog distortion circuit. 1x to 100x.

2. **VOLUME:** Overall volume. ~3v peak to peak - ~6v peak to peak.

3. **POWER:** Power switch for **KNUCKLEBUSTER**.

4. **PRE/POST:** Toggle the routing for **ALIAS** between pre and post filter routing.

5. **DOOM:** x32767 gain boost.

6. **RESONANCE:** Resonance control for lowpass and highpass filter.

7. **LOWPASS:** Lowpass filter cutoff frequency. 80hz - 15khz.

8. **SQUARE/NOISE:** Toggle the behavior of **COLOR/PITCH** between noise crossfader and square wave oscillator frequency.

9. **COLOR/PITCH:** When switch is set to **NOISE:** Crossfader for 4 noise algorithms. The algorithms are laid out across the knob in the following order: white noise, random squares, garbled buffer, deconstructed reverb. When switch is set to **SQUARE:** pitch control for square wave oscillator. 0.01hz - 40hz.

10. **HIGHPASS:** Highpass filter cutoff frequency. 20hz - 15khz.

11. **ALIAS:** Sample rate reduction. 18khz - 1khz.