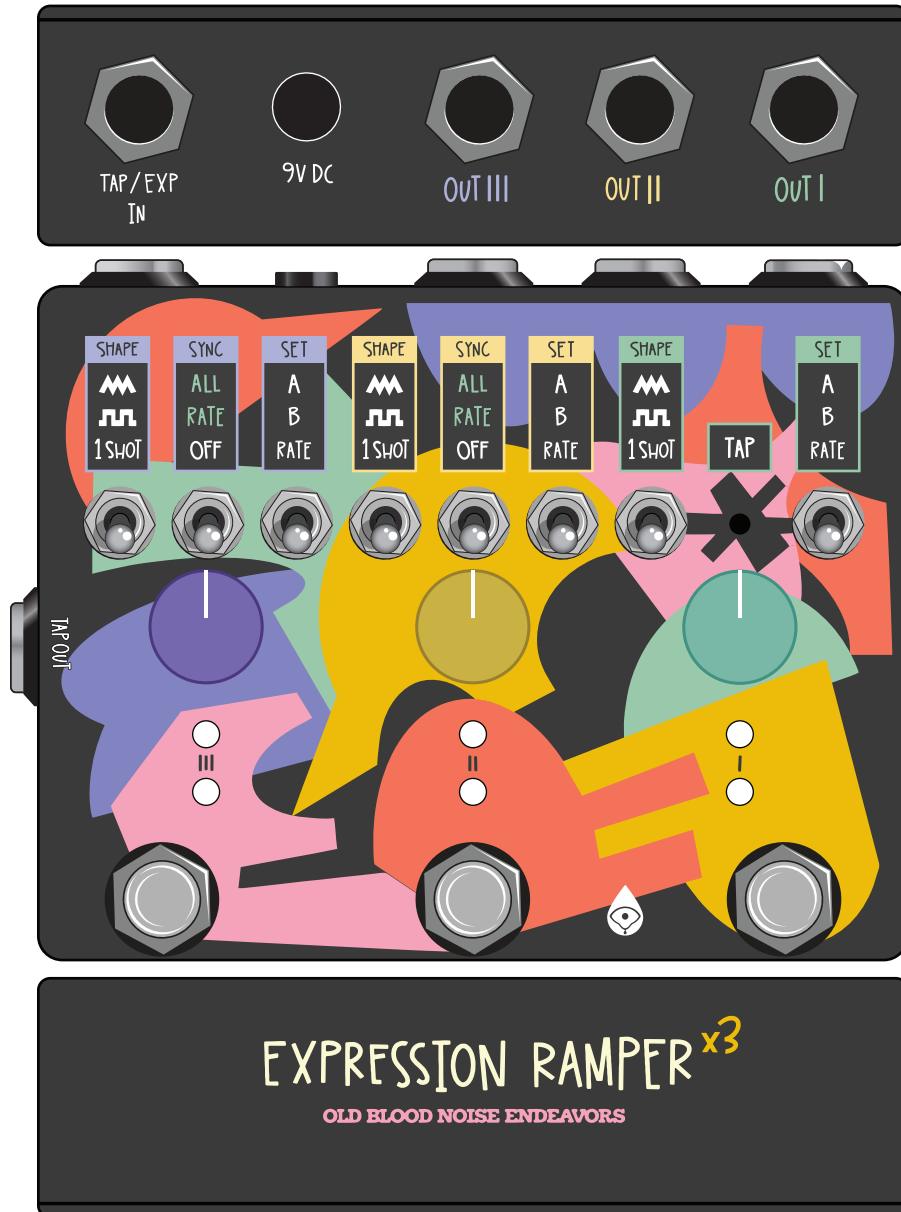


OLD BLOOD

EXPRESSION RAMPER^{x3}

instruction manual





What's a Ramper?

A ramper is a device that creates motion on your expression-enabled devices. You choose point A, point B, and the way it moves between. It's utilitarian, but opens up a number of sounds from your existing pedals.

Let's start with how to control a ramper on its own.

At its heart, each of the three Rammers features a knob, two toggles, and a footswitch.

The **SET** toggle determines which setting the knob affects.


A sets the A position (the start point of your expression motion), from all the way down (heel position) to all the way up (toe position). When a Ramper is at A, its top LED will be fully illuminated.


B sets the B position (the end point of your expression motion), from all the way down (heel position) to all the way up (toe position). When a Ramper is at B, its bottom LED will be fully illuminated.

RATE sets the speed of motion for the Ramper, from very slow (approximately .0013Hz) to very fast. At the fastest setting, the motion is slewed - it will not become a ring modulator.

The **SHAPE** toggle sets the shape of the LFO (the thing that determines the expression motion). There are three standard shapes, **and three random variations of those shapes**. To access the alternative shapes, simply hold down the tap button while switching the shape toggle.

From top to bottom, the shapes are:

 (triangle), for a linear motion between A and B, starting and ending at A and hitting B at halfway on the LFO cycle. Alternate shape: smooth random, which repeatedly moves to a random spot between A and B in a linear fashion.

 (square), to snap between A and B, spending half of the LFO cycle in each position. Alternate shape: sharp random, which immediately moves to a new random spot between A and B at the start of each cycle.

1 SHOT, to move linearly either from A to B or B to A (depending on the starting point) and then stop. Alternate shape: one shot random, where each press of the footswitch snaps to a new random spot between A and B.

The **Footswitch** sets things in motion. A stomp of the footswitch will initiate motion according to the shape and LFO speed you've set, and another stomp will stop that motion. By holding the footswitch, you can momentarily stop or start the movement, and then revert to where you were before when the footswitch is let go. Most of the time, when not in motion, a Ramper will be in the A position, unless using one of the 1 Shot modes or currently setting the B position. To know where your Ramper is, use your ears as an auditory guide and the two LEDs as a visual guide.



Expression Ramper X3 is more than three Rammers in one box

There are a plethora of additional controls to tempo sync multiple Rammers.

The **SYNC** toggles on Rammers II and III determine whether they are synced to Ramper I.

ALL syncs everything about the Ramper: the output of the completely synced Ramper will match Ramper I's output exactly.

RATE syncs only the rate of the Ramper: A, B, Shape, and motion settings stay independent, but the rate is tempo synced. In this setting, changing the Rate knob assigns subdivisions: ¼, ⅓, ½, 1x, 2x, 3x, and 4x speeds are all available.

OFF deactivates any syncing, so the Ramper can act fully independently.

Ramper I (the green one) has a **TAP** button. This can be used to tap in the desired LFO speed. It begins syncing at two taps, but multiple taps in a row at similar BPMs will average out to increase accuracy. Note: the slowest possible tap tempo is 30 BPM, so taps outside of this range will be disregarded.

Ramper I also has external control via the **TAP/EXP IN** jack. It can be used in three different ways, configurable via the internal dipswitch (located on the bottom right of the board, labeled "TAP/EXP SETTING").

For TRS Expression input, set 1 on, 2 on, 3 off. The Expression input takes the place of the Ramper 1 knob, allowing external setting of A, B, or Rate depending on the position of the Set toggle.

For External Tap Tempo with a footswitch, set 1 off, 2 off, 3 on. Plug in an external footswitch like our 'Scooch' Tap Tempo device using a TS cable and tap away. The footswitch will work the same way as the built-in tap tempo button, but without a lower limitation on tempo.

For External Tap Tempo using a pulse, turn 1 off, 2 off, 3 off. This is optimized to sync tempo across two ERvX3s by plugging into the second ERX3's Tap Out jack, but will also work with other external pulse sources. Pulses should range between 0V and 3.3V-5V and last at least 10ms. Pulses can be high-to-low or low-to-high.

There is a **TAP OUT** jack on the side of Triple Ramper. This continually outputs 3.3V pulses based on Ramper 1's tempo. In this way, you can sync external units (like another Expression Ramper X3) to Ramper 1.

Each Ramper's output is on the corresponding Out jack (**OUT I**, **OUT II**, **OUT III**), and can be configured for TRS active at Tip, TRS active at Ring, or TS connection using the internal jumpers. By default, it is configured for TRS active at Tip to be compatible with the Old Blood expression standard. The output setting uses a 50K digital potentiometer by default. This potentiometer is socketed and can be replaced with 10K and 100K values if needed (part code MCP41010-I/P and part code MCP41100-I/P respectively).

TRS at tip



TRS at ring



TS





Additional notes

A note on expression and CV : While often used interchangeably, these are different standards. With expression, the pedal with the expression input provides voltage for the expression pedal to use. With CV, the CV generator creates voltage and sends it to the expression input of the pedal. Expression Ramper is not a CV generator, so for proper function, be sure the pedal you're connecting it to is expecting expression and not CV. The only exception is on the Tap Out jack - Expression Ramper X3 will output CV pulses in order to externally sync an additional ERX3 (or other device that can interpret 3.3V pulses)

A note on expression voltage : Expression Ramper prefers expression setups that are 5V or below. Above that, behavior can be unexpected. While a majority of expression setups are within this range, we have found some that are outside of it. Feel free to reach out if you are unsure what voltage your pedal uses on its expression jack.

A note on other weirdness : there are many expression standards out there. By manipulating a digital potentiometer, Expression Ramper acts very similarly to the analog potentiometers found in standard expression pedals. However, it can sometimes be confused by voltages as noted above, and does not do well when manipulating AC signals. We have found it to be compatible with many manufacturers that use expression standards similar to ours, but sometimes it's simply not the right tool for the job.

Below is a very incomplete list of companies whose pedals are known to be compatible:

Asheville Music Tools
Boss
Catalinbread (TRS active @ Ring)
Chase Bliss
Electro Harmonix
Earthquaker Devices
Eventide
Fender
Hologram
JHS
Keeley
Line6 (TS configuration, 10K digipot)
Meris
Montreal Assembly
Red Panda
Strymon

If your Ramper is acting up, feel free to reach out with questions, but first, we always ask that you:

- Check your TRS cable
- Try your Ramper with another device
- Try your device with another expression pedal

Expression Ramper requires 50mA 9V DC power via the 2.1mm center negative jack

Happy Ramping!