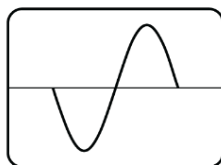


# SCIENCE AMPLIFICATION



## MOTHER PREAMP



USER MANUAL

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## Intro

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Thank you for purchasing the Mother preamp pedal! This manual covers the pedal's features, operation, and specs in detail. You'll also find many helpful tips to get the most out of your new pedal.

The Mother preamp has been painstakingly designed to replicate the tone and functionality of the all-tube Mother Dual Channel amplifier. This has been achieved by recreating the analog signal path and using field-effect transistors (FETs) in place of vacuum tubes. The Mother preamp is designed to work equally well into the front of a guitar or bass amp, a power amp, or directly into a recording interface (in conjunction with speaker cab emulation). We hope you find tons of tone, versatility, and utility inside this pedal.

Special thanks to John Synder of Electronic Audio Experiments, who through close collaboration, translated and condensed the Mother down to pedal-size.

*- Alex, Science Amplification*

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## Powering the Pedal

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The Mother preamp uses a standard 9VDC center-negative supply with a 2.1mm tip. The unit has a maximum current draw of 150mA. Its power input is protected and will not power on during over-voltage or reverse polarity conditions. When using other pedals in the signal chain, an isolated supply is recommended to reduce the possibility of power supply coupled noise.

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## Ins and Outs

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- **Input:** High impedance mono input for your instrument or preceding pedals that you'd normally run into the front of your guitar or bass amp.
- **Channel Switch:** Mono jack for an external footswitch (sold separately) to remotely switch between Channels A and B. Footswitch must be momentary, normally-open type. This

allows the Mother to be placed anywhere on your pedal board, or on top of a power amp or desktop.

- **Power Amp/Direct Out:** Mono jack for use into a power amp or recording interface in conjunction with speaker emulation. Please see the next section: **Operating Modes** for more detailed information.
- **Output:** Mono jack for use into the front/input of a guitar or bass amplifier. Please see the next section: **Operating Modes** for more detailed information.

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## Operating Modes

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Before diving into the pedal's controls, it's important to understand its two basic operating modes:

1. In front of a guitar or bass amp using the **Output** jack
2. Into a power amp or recording interface using the **Power Amp/Direct Out** jack

Thanks to the pedal's two dedicated outputs, the Mother works equally well in either application.

### In front of a guitar or bass amp

Most instrument amps have an inherent/baked-in voicing that emphasizes treble, bass, and cuts mids to varying degrees (Yes, even amps that are typically referred to as “mid-heavy”). This EQ curve compliments guitar and bass pickups, and for better or worse, is what we're accustomed to hearing as a “neutral” or even “natural” electric guitar sound.

The Mother preamp pedal replicates the full tonal response of the real amp (with a flattering EQ curve of its own), but what happens when you take that carefully designed EQ curve and run it into the frontend of a typical guitar or bass amp? Essentially, two EQ's in a row. Double the bass, double the mid-scoop, and double the treble. Too much of a good thing by most standards, creating an exaggerated EQ curve that for most situations would be undesirable (this is subjective, of course). To solve this, the Mother's leftmost jack, simply-named **Output**, is carefully voiced to work with your amp's existing preamp, so it won't get too boomy, scooped, or harsh, while keeping full functionality of the pedal's EQ controls.

The Mother preamp can be used a few different ways using the **Output** jack in front of a guitar or bass amp. Here are some ideas to get you started:

- Use Channel A for a boost/mild-breakup into a clean amp and Channel B for a heavier overdrive, essentially turning your amp into three channels.
- Use Channel A as an always-on tonal “sweetener” or musical EQ correction, and use Channel B as a boost/overdrive.
- Use the pedal into a dirty amp for more extreme overdrive/distortion sounds. Like with any gain-stacking, hiss/noise levels may become objectionable, but experimentation is key.

Of course, using the Mother pedal together with your amp’s existing preamp will create its own unique tone. If you’d like to more closely recreate the sound of the actual amp in your own rig, you can run the Mother pedal in its other distinct operating mode.

### **Into a power amp or recording interface**

This mode of operation is accessed by using the jack labeled **Power Amp/Direct Out** (Abbreviated to **Pwr Amp/Dir Out**), and outputs the unfiltered full-spectrum response of the Mother amplifier’s tone. In contrast to the previous mode, this jack is meant to feed into a “flat” or neutral device, like a power amp for driving speaker cab, or recording interface for capturing and processing. There are three main applications when using the pedal in this mode:

1. **Into a power amp:** Use the Mother to drive a power amp. Start with the **Loudness** controls all the way down/CCW. While playing, slowly turn up until your power amp’s input clipping indicator lights up (if it has one). Then, bring down a little and adjust the overall volume further on the power amp itself. Since the pedal captures the full amp’s EQ curve, set any power amp EQ controls to flat (typically noon), and adjust to taste.
2. **Into an amp’s Effects Loop Return jack:** Same as above, except if the amp has power amp EQ controls like Presence and Resonance, start with those all the way down, and bring up to taste. Note that these work a bit differently than typical stand-alone power amp EQ, and the “flat” setting is not at noon. Again, start with the **Loudness** controls all the way down, and bring up slowly. Depending on the design of your amp’s effects loop, the return jack may be post-volume, so it could get very loud, very quickly!
3. **Into a recording interface:**

**CAUTION: Plugging into an interface with phantom power engaged may damage the unit! Ensure phantom power is turned off before connecting your preamp pedal.**

Use the high impedance setting or separate jack of your interface. When using the Mother pedal for direct recording (or just playing/practicing) in your DAW, you will need to apply speaker/cab emulation with a plug-in, or better yet, impulse responses (IRs as most people know them) with an IR loader plug-in. Because the pedal's **Power Amp/Direct Out** jack delivers the realistic, pure amp sound, much like what your speaker "sees" coming straight from the amp's speaker jacks, it needs the tonal coloring of a loudspeaker speaker to complete the sonic recipe. Fortunately, today there are many IR loader plug-ins and countless IRs, many of which are free. This includes some taken from our own Science cabinets, which can be found for free here: <https://www.scienceamps.com/irs.html>

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## Controls

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**Gain A:** Adjusts preamp gain for Channel A. For the cleanest sounds, most settings will be below noon on the dial, depending on the output of your pickups. With most pickups, Channel A can achieve edge or breakup, and with hotter pickups, vintage crunch tones.

**Gain B:** Adjusts overall preamp gain for Channel B. This channel has a wide range from nearly clean to hot-rodded, higher gain sounds with lots of shades in between, and even supersaturated modern high gain sounds can be obtained with hotter pickups and a boost.

**Loudness A & B:** Volume controls for each respective channel. Can be used for overall volume control and to balance the level between both channels.

**Depth:** Controls front-end bass for both channels. This control can be used to fine tune the preamp's response to your instrument's pickups, or to control the "tightness" of the overdrive sounds. The Depth adjusts low end frequency content before the overdrive stages in the preamp, so adjusting it can alter both the feel and texture of the distortion. The center (noon) position is flat. Turn counter-clockwise for a leaner/tighter sound, and clockwise for a fatter/looser sound.

**Absence:** Turn clockwise to smooth-out the upper harmonics, especially in distorted sounds, and turn counter-clockwise to bring the sound forward and add top-end and bite.

**Bass:** Adds low-end frequencies to both channels when turned clockwise, and reduces bass when turned counter-clockwise. Unlike the **Depth**, this bass control is after/post the overdrive stages, and can add or reduce "clean" bass to the signal without affecting the overall character.

**Middle:** Adds mid-range frequencies to both channels when turned clockwise, and reduces mid-range when turned counter-clockwise.

**Treble:** Adds treble frequencies to both channels when turned clockwise, and reduces treble when turned counter-clockwise.

**Bypass/Mute Indicator:** Center red LED to indicate the pedal is active when using the **Output** jack, or unmuted when using the **Power Amp/Direct Out** jack.

**Channel Indicator:** Red LED next to each channel's **Loudness** control to indicate which channel is selected with the internal or optional external footswitch.

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## Technical Specs

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- Power: 9VDC center negative only, 150mA max
- Input impedance at 1Khz: 1Meg
- Output impedance at 1Khz: <500Ohms
- Bypass: True-bypass with relay switching (mute for **Power Amp/Direct Out**)
- Dimensions: 5.72 in x 4.77 in x 1.55 in (145 mm x 121 mm x 39 mm)

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## Warranty

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Science pedals feature a lifetime warranty for the original owner. Please see our website [www.scienceamps.com](http://www.scienceamps.com) for more details and contact information.