

electro-harmonix

BENDER ROYALE

⚡ MK.III ⚡

Welcome to the Electro-Harmonix Bender Royale, our feature-rich homage to the Tone Bender MKIII. The Bender Royale expands on the original circuit's controls by adding separate TREBLE and BASS knobs, as well as controls for BIAS, FUZZ, VOLUME, BLEND, a switch to adjust clipping character, and a FAT switch. The Bender Royale also boasts true mechanical bypass on a momentary switch. If you're into trashy, ripping fuzz or big, fat saturated tones, the Bender Royale will get you there.

Operating Instructions

Insert the output plug from the supplied 9VDC AC Adapter into the power jack at the top of the Bender Royale. Connect your guitar to the INPUT jack of the Bender Royale and the AMP jack to your amp's input. Press the footswitch to ensure the LED is lit. Your Bender Royale is now ready to play.

A good starting point is to set the VOLUME, FUZZ, BIAS, TREBLE, and BASS controls to 12:00. Set the BLEND control to maximum. Further tweak the knobs and switches to dial in your perfect setting.

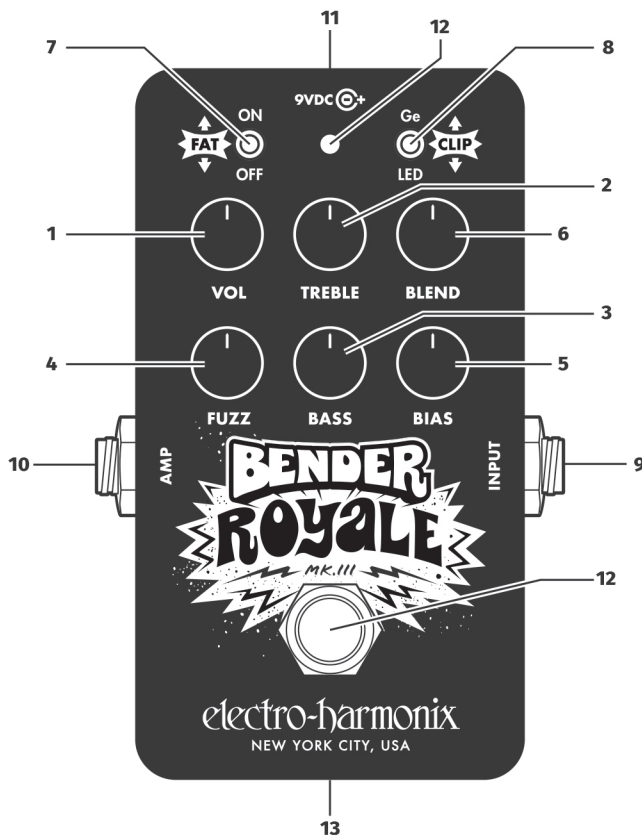
Tip: To get the classic Tone Bender MKIII sound, keep the BIAS and TREBLE knobs at noon, and the BLEND knob at maximum. Adjust other knobs to taste. The BASS knob corresponds with the "Treble/Bass" knob on the Tone Bender MKIII.

POWER SUPPLY REQUIREMENTS:

Voltage: **9VDC** Current: **12mA** Polarity: **Center-Negative**

This device comes equipped with an Electro-Harmonix 9.6DC-200 power supply. Use of the wrong adapter or a plug with the wrong polarity may damage the device and void the warranty. Do not exceed 12VDC on the power plug. Power supplies rated for less than 50mA can cause the device to act unreliably.

Controls and Connections



- 1. VOLUME Knob** Sets the output level of the Bender Royale.
- 2. TREBLE Knob** Active treble shelving control of high frequencies. Turn up for a brighter tone, turn down for a warmer sound.
- 3. BASS Knob** Passive Tone-Bender-inspired control of bass frequencies. Turn up for a fuller sound, turn down to cut low frequencies.
- 4. FUZZ Knob** Controls the input gain of the fuzz circuit. Turn clockwise for more fuzz.
- 5. BIAS Knob** Sets the input bias voltage of the fuzz circuit. Set to the middle for normal operation, and turn either direction to push the transistors out of bias for crunchier or sputtering sounds.

6. BLEND Knob Adjusts the mix between the fuzz and your dry signal. At maximum, the output is entirely the fuzz signal. As the knob is turned down, more of the dry signal is blended into the output. At the minimum position, the signal is completely dry.

7. FAT Switch Turn on for more low-end and middle frequencies, turn off for a thinner, cutting fuzz tone.

8. CLIP Switch Changes the biasing diode of the germanium transistor fuzz stage. Set to “Ge” to bias the transistor evenly for balanced clipping. Set to “LED” for a rougher balance.

9. INPUT Jack Audio input jack. Input impedance 1.1M Ω .

10. AMP Jack Audio output jack. Output impedance 660 Ω .

11. Power Jack A 9VDC, center-negative power supply provides power to the Bender Royale, which draws 12mA.

12. FOOTSWITCH and STATUS LED The soft footswitch engages or bypasses the effect. The status LED lights when the effect is engaged and is off when in bypass. The Bender Royale employs True Bypass with a mechanical relay. The footswitch includes a momentary action when you press and hold the switch for more than half a second. The momentary footswitch action may also be disabled, see the section Footswitch Latching and Momentary Action.

13. Internal IMPEDANCE ADJUST trimmer This trimmer adjusts the series impedance going into the fuzz circuit, which can emulate a guitar plugged directly into the Bender Royale. This gives you the feel of a classic fuzz pedal regardless of where the Bender Royale sits in your signal path.

To use this trimmer, carefully remove the bottom plate of the Bender Royale and locate the IMPEDANCE ADJUST label on the PCB. The trimmer is set to the middle position at the factory, for the most natural feel of a guitar plugged directly into the fuzz. With a small screwdriver, you can adjust this clockwise to increase input impedance, for a smoother tone. Turn counterclockwise for less input impedance, for a more intense fuzz.

Footswitch Latching and Momentary Action

The soft footswitch works both like a standard latching footswitch and a momentary footswitch. The latching action means each press and release of the footswitch will toggle between bypass and effect modes. A momentary change between bypass and effect occurs when you press and hold the footswitch. The Bender Royale changes state immediately upon pressing the footswitch. If you continue to hold the footswitch—for more than half a second—it will return to the previous state when you release the footswitch.

Momentary hold action can be disabled completely by performing the following procedure:

1. Power down the Bender Royale.
2. Press and hold the footswitch.
3. While holding down the footswitch, apply power to the Bender Royale.
4. Continue to hold down the footswitch. After about 2 seconds, the LED blinks. A slow blink indicates momentary footswitch holds are disabled. A fast blink means momentary footswitch holds are enabled.
5. Release the footswitch.

The momentary footswitch hold setting is remembered through power-cycles so you can set it and forget it.

Notes and Specifications

- ▶ Audio input impedance at INPUT jack: 1.1M Ω
- ▶ Audio output impedance at OUTPUT jack: 660 Ω
- ▶ Current draw: 12mA at 9VDC
- ▶ Power Supply: 9VDC, Center-negative polarity



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