electro-harmonix

deluxe

BIG MUFF π2

Welcome to the Electro-Harmonix Deluxe Big Muff Pi 2 (DBMP2), the ultimate harmonic distortion-sustain device. From original Big Muff designer, Bob Myer, we bring you his long-lost dual op-amp gain circuit with powerful additions for parametric midrange control, noise gate, wet/dry blend, and wicker mode. Please review this manual to learn the unique potential of the DBMP2.

Features

- Standard Big Muff Pi Controls – familiar Sustain, Tone and Volume controls
- Footswitchable MIDS Section – fully parametric MIDS EQ includes variable frequency sweep, boost or cut level control, and switchable Q or bandwidth amount
- Gate – remove unwanted noise and hum
- Blend – mix dry signal with distortion, from 100% dry to 100% wet
- Wicker – two positions to extend high frequency bandwidth for a bright and clear top end
- Expression Pedal Input – sweep the frequency of the MIDS EQ frequency with your foot
- Buffered Bypass – on a latching/momentary soft footswitch.

Operating Instructions

Connect your guitar to the INPUT jack of the DBMP2 and the OUTPUT jack to your amp's input. Apply power to the 9V power jack at the top of the unit. Press the EFFECT footswitch to ensure its LED is lit. Your DBMP2 is now ready to play.

A good starting point is to set TONE and SUSTAIN to their 12 o'clock positions, GATE counterclockwise, MIDS Footswitch off, Wicker down (OFF), and VOL to 10 o'clock. Add in MIDS, WICKER, and GATE as you please.

POWER REQUIREMENTS:

Voltage: **9VDC** Current: **45mA** 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 may cause the device to act unreliably.

Controls and Connections



1. **VOLUME Knob** Sets the output level of the DBMP2 at the OUTPUT jack. As you turn this knob clockwise, your output signal gets louder.
2. **BLEND Knob** Mixes between the dry and distorted signals. Turn this knob fully counterclockwise for 100% dry signal and fully clockwise for 100% distorted signal. Setting the BLEND knob to noon yields a 50/50 mix of dry/distorted signal.
3. **TONE Knob** Provides a range of sounds from high treble to deep bass. As you turn the TONE knob clockwise, treble increases and bass decreases.
4. **SUSTAIN Knob** As in the original Big Muff Pi, adjusts the amount of sustain, distortion, and fuzz.
5. **GATE Knob** Sets the input amplitude needed to open the noise gate. As you turn the GATE knob clockwise, the amount of gating increases, requiring a louder signal at the Input jack to open the gate and allow sound to pass through to the Output jack. Turning the GATE knob down all the way disables the noise gate function.
6. **MIDS LEVEL Knob** When MIDS is engaged—LED near MIDS Footswitch is lit—the MIDS LEVEL knob either boosts or cuts by up to 10dB, at the frequency set by the MIDS FREQ knob located below it. Turn MIDS LEVEL clockwise from its center 12 o'clock position to boost the center frequency. To cut, turn MIDS LEVEL counterclockwise from the 12 o'clock position. This knob has a notch near the 12 o'clock position to help identify the center of the knob's travel. In the center position, MIDS EQ is flat; it does not boost or cut. The MIDS LEVEL knob has no function when MIDS is bypassed.
7. **MIDS FREQ Knob** Sets the center frequency of the MIDS EQ circuit ranging from approximately 310Hz to 5.0kHz. To hear the range of the MIDS FREQ knob, turn the MIDS LEVEL knob up past 3 o'clock—make sure MIDS is enabled, the LED near MIDS Footswitch is lit—then play your instrument while turning the MIDS FREQ knob. This knob has no function if either the MIDS section is bypassed or if the MIDS LEVEL knob is set to its center position. The MIDS FREQ knob can be controlled by an external expression pedal or control voltage (CV). Connect the external device to the EXP jack on the input side of the Deluxe Big Muff Pi 2. The current position of the MIDS FREQ knob sets the toe position of the expression pedal or CV maximum. The heel position of the expression pedal equals the MIDS FREQ

knob's fully counterclockwise position. Please see EXP Jack below for more on the expression pedal.

8. **MIDS Q Switch (HIGH/LOW)** The Q switch sets the resonance or bandwidth of the MIDS EQ. What this means is in LOW mode the EQ sounds broader or rounder and affects a larger range of frequencies; in HIGH mode the EQ sounds sharper or peakier and affects a narrow range of frequencies.
9. **WICKER Switch** Activate Wicker mode by flipping the WICKER switch up to the HALF or FULL positions. The HALF position adds a touch of high frequency. The FULL position fully opens up the high frequency bandwidth for a bright and clear top end. Set the WICKER switch to OFF for the standard Big Muff Pi 2 sound.
10. **EFFECT Footswitch and STATUS LED** The soft footswitch engages or bypasses the effect. The status LED lights red when the effect is engaged. The LED is off in bypass. The DBMP2 employs buffered bypass. The EFFECT footswitch includes a momentary action: pressing and holding the footswitch for more than half a second returns DBMP2 to the previous state upon release. The momentary footswitch action may be disabled, see the section *Footswitch Latching and Momentary Action.*
11. **MIDS Footswitch and LED** The soft footswitch engages or bypasses the MIDS EQ section. The MIDS LED lights white when the MIDS EQ is engaged. The LED is off when MIDS is bypassed. The MIDS footswitch includes a momentary action: pressing and holding the footswitch for more than half a second returns DBMP2 to the previous state upon release. The momentary footswitch action may be disabled, see the section *Footswitch Latching and Momentary Action.*
12. **INPUT Jack** Audio input jack. Impedance: 2MΩ.
13. **OUTPUT Jack** Audio output Jack. Impedance: 500Ω.
14. **EXP Jack** Expression control input jack allows you to sweep the MIDS FREQ knob from an external source, either an expression pedal with 1/4" TRS plug or control voltage (CV) ranging from 0 to 5V on a TS plug. The MIDS FREQ knob sets the sweep range's maximum frequency, which is the expression pedal's toe position or 5V from CV. Minimum frequency, at the heel or 0V from CV, is the lowest frequency in the MIDS total range. Some expression pedals allow you to increase the minimum frequency at the heel with a range control. To sweep the entire MIDS frequency range, set the MIDS FREQ knob to maximum.

    The EXP jack accepts expression pedals with impedance ranging from 10kΩ to 100kΩ and the wiper connected to the tip (T) of the TRS plug.

    - All EHX expression pedals are compatible with DBMP2, including Electro-Harmonix Single Expression Pedal and Dual Expression Pedal.
    - Compatible expression pedals from other manufacturers include Boss FV-500L, Moog EP-3, and M-Audio EX-P. Others may also be compatible.
15. **9VDC Power Jack** Current draw: 45mA at 9.0VDC, center-negative polarity.

Notes and Specifications

Audio impedance at the INPUT jack: 2MΩ

Audio impedance at the AMP jack: 500Ω

Current draw: 45mA at 9VDC

Power Supply: 9VDC, Center-negative polarity

Buffered bypass switching

Footswitch Latching and Momentary Action

The two soft footswitches work 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 or MIDS on/off. A momentary change between bypass and effect occurs when you press and hold the footswitch. The footswitches on the DBMP2 change 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 independently for each footswitch by performing the following procedure:

1. Power down the Deluxe Big Muff Pi 2.
2. Press and hold either the EFFECT or MIDS footswitch or both footswitches.
3. While holding down the footswitch, apply power to the DBMP2.
4. Continue to hold down the footswitch. After about 2 seconds, the LED blinks. A slow blink means momentary footswitch holds are disabled. A fast blink means momentary footswitch holds are enabled.
5. Release the footswitch.

The momentary hold setting for each footswitch is remembered through power-cycles, so you can set them to your preferred settings, and they will remain until you change them again.

Internal Trim Pots

Before you start
It is recommended that you photograph or sketch the position of each trim pot as it came to you from the factory in case you want to go back to those settings. The factory trim pot settings vary considerably from unit to unit and therefore we cannot provide the original settings of the trim pots to you.

When adjusting the trim pots, use a small flat head or slotted screwdriver with a width of 2mm. Do not touch any other parts of the circuit board while the bottom plate is off or you risk damaging a component.

Trim Pot Instructions
The Deluxe Big Muff Pi 2 includes four internal trim pots which may be adjusted to tweak and tune your DBMP2 sound. There is one trim pot for input gain (TRIM4 – IN GAIN) and three trim pots in the MIDS EQ section for adjusting: 1) High Q Bandwidth, 2) High Q Output Volume, and 3) overall MIDS EQ Output Volume.

If you would like to adjust the trim pots, remove the 4 screws on the bottom of the unit and detach the bottom cover. Place the pedal knob-side-down with the power jack facing away from you.

IN GAIN – TRIM 4 – located in middle-left area of circuit board
As TRIM4 is turned clockwise, the gain of the signal before it hits the Big Muff fuzz circuitry is increased, by up to 12dB. More input gain adds more definition and bite to the Big Muff sound. At the factory, TRIM4 is set to 9 o'clock for a 3dB gain boost.

MIDS EQ – TRIM1, TRIM2, TRIM3 – located in upper left area of circuit board
These trim pots are set at the factory so that 1) HIGH Q mode is resonant but does not self-oscillate, 2) HIGH Q mode is a little louder than LOW Q mode and 3) when engaged, MIDS EQ has a slight volume boost for most settings of the MIDS knobs.

The signal path through the MIDS EQ trim pots goes in this order:
HI Q AMT (TRIM1) → HI Q VOL (TRIM2) → MID EQ OUT VOL (TRIM3)

1. If needed, set HI Q's bandwidth by adjusting HI Q AMT, turn clockwise for higher Q.
2. After setting HI Q AMT, you may need to change Hi-Q's volume by adjusting the HI Q VOL trim pot.
3. Finally, set the total output volume from MIDS EQ section by adjusting MID EQ OUT VOL.