WELCOME

Thank you for purchasing the Soundblox Pro Multiwave Bass Distortion. The Pro Multiwave Bass Distortion produces some very unique distortion sounds and does not attempt to model or emulate any classic distortions. It offers some new and different distortions ranging from the more organic to synth-like and octave sounds. The Pro version offers extended features over the Soundblox Multiwave Bass Distortion such as 6 user presets selectable via 3 footswitches, a 7-band graphic equalizer, and much more. Like the other Soundblox effects pedals, the Pro Multiwave Bass Distortion is also “Hot Hand® Ready”.

The Quick Start guide will help you with the basics. For more in-depth information about the Pro Multiwave Bass Distortion (MWB Pro), move on to the following sections.

Enjoy!
The Source Audio team

OVERVIEW

DIVERSE SOUND PALETTE
Featuring 23 varieties of our unique distortion algorithms with an added CLEAN BOOST/EQ mode.

MULTIBAND PROCESSING
Signal is split into multiple bands and distorted individually for unprecedented sound clarity.

STATE-OF-THE-ART DSP
Our proprietary 56-bit Digital Signal Processor, the SA601, and crystal clear 24-bit converters.

6 USER PRESETS
Easy to configure user presets in two banks selectable via 3 footswitches for quick access of your favorite sounds.

7-BAND EQUALIZER
Ultra-precise 7-band equalizer for in-depth tone control saved per preset.

EXTENDED CONTROL
An expression input (EXP IN) allows morphing of sounds between preset banks. A MIDI input allows external access to presets and parameters.

MOTION CONTROL
All Soundblox and Soundblox Pro pedals are “Hot Hand Ready” and can be used with any Hot Hand motion sensor to extend the capabilities of the unit.

ACTIVE ANALOG BYPASS
Bypass is fully routed around the DSP and active input ensures zero signal degradation.
1. POWER
To power the unit, connect the included DC adapter power supply to the 9V DC jack (A) on the back panel. Note: Using a different supply could damage the unit and void the warranty.

2. GUITAR/AUDIO CONNECTIONS
Next, plug your bass guitar (or other instrument) into the jack labeled GUITAR IN (B) via a standard ¼” cable. Connect your amp (or other audio device) to the GUITAR OUT jack (C), again with a standard ¼” cable. Both input and output are mono signals.

3. BRIEF KNOB, FOOTSWITCH, AND BUTTON DESCRIPTIONS
See Controls section for more details.

A EQ AMOUNT: adjusts how much equalizer is applied to the signal.
B DRIVE: the amount of distortion gain applied to the signal.
C PRESET BANK BUTTON: select preset bank A (presets 1, 2, and 3) or B (presets 4, 5, and 6).
D EFFECT KNOB: selects the type of distortion.
E CLEAN MIX: adjusts the amount of clean signal in the final output.
F DISTORTION MIX: adjusts the amount of distorted signal in the final output.
G HH ENABLE and CALIBRATE: for Hot Hand use only.
H EQ SECTION: the two buttons select the frequency band to edit and the knob adjusts the value of the selected band.
I FOOTSWITCHES: Enables/Disables a selected preset depending on the currently selected preset bank. Press and hold to save an edited preset.
The Soundblox Pro Multiwave Bass Distortion provides some unique distortion sounds. In creating this effects pedal, we didn’t intend to duplicate, model, or emulate any existing types of distortion. The types of algorithms we use to create the distortion are quite different from the standard set, although with certain settings the result can sound similar.

One of the techniques used is to divide up the input guitar signal into multiple frequency bands. Each band is separately distorted, and then all are recombined. Because of this, you can achieve a lot of clarity between notes on chords with complex harmonies. It’s possible to leave several notes droning, while a melody is played on top. A normal distortion tends to reduce such playing to mush by compressing and distorting low and high notes together. Because of the multiple bands, it’s also possible to get several notes feeding back at the same time. The first 15 settings (labeled MULTI BAND) on the effect knob use band splitting while the last 8 (labeled SINGLE BAND) do not.

The shapes of the distortion curves are also different from standard distortions. Normally, as the input signal voltage rises, the output voltage also rises, but begins to level off and finally pins (or clips) at a maximum value. With a foldback curve, for large enough values of the input, the output will begin to decrease. With more extreme amounts of foldback, after decreasing for a while, the output can begin to increase again. Maximum foldback has many regions where the output alternates between increasing and decreasing. These kinds of curves add a lot of high frequency content to the output. It also can provide a lot of control over the sound, based on the level of the input signal. With heavy foldback, chords containing only octaves and fifths tend to sound best. Other intervals can cause some strange, although not necessarily undesirable sounds.

Using a special shape of the distortion curve, strong second harmonics can be created, sounding like a note an octave higher. Rolling off the guitar tone control will help maximize the octave impression. Complex chords don’t typically work well for octave settings. The result is very sensitive to the input signal level (as long as the DRIVE control is not set too high) and can give a sort of auto-wah effect. Try dialing down the guitar volume for some interesting effects.

A conventional distortion effect tends to turn the guitar signal into square waves. Playing harder only makes the transition from negative clipping to positive clipping a little bit steeper. With our foldback and octave algorithms, a slightly higher input can have a radical effect on the shape of the output signal.

The MWB Pro features the same type of algorithms as the Mulitwave Bass Distortion but adds user presets and a 7-band equalizer and many other control and parameter options.
**CONNECTIONS**

**GUITAR IN**
Connect your bass guitar or other instrument here using a standard MONO ¼” cable.

**GUITAR OUT**
Connect this to your amp, pedal, or other audio device.

**EXPRESSION IN** (optional)
Connect a passive expression pedal that uses a TRS plug here. Allows morphing of sounds between banks A and B.

**SENSOR IN** (optional)
Connect an optional Hot Hand sensor here, either wired or wireless.

**SENSOR OUT** (optional)
Use a Source Audio daisy-chain cable to connect this jack to the sensor input of another pedal.

**MIDI IN** (optional)
MIDI program and continuous control input. Connect to a MIDI output with a standard MIDI cable

**9V DC**
Connect the included 9 Volt DC power supply here. Use of a non-Source Audio power supply may cause damage and void the warranty.

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**CONTROLS: KNOBS**

**EFFECT** (not labeled)
The effect knob selects which distortion type will be used. There are 23 effect positions (0 through 22) around the knob as well as a setting for CLEAN BOOST/EQ. In the CLEAN BOOST/EQ mode, the distortion effect is bypassed but the output, mix, and equalizer still apply. For information on the individual settings see the Effect Types section.

**EQ AMOUNT**
This is a master control for the equalizer. It changes the amount of the equalizer curve that is applied to the signal. To utilize the full effect of the EQ, this knob should be turned fully clockwise to the FULL mark. The other settings for this control can be useful for morphing applications or for tweaking the overall tone.
CONTROLS: EQUALIZER

One of the key features of the MBW Pro is the 7-band graphic equalizer. The Equalizer is post distortion. Each band can be adjusted up or down in 1 dB steps from -12 dB to +12 dB and the setting is indicated by the display. The display shows 1 dB steps by lighting adjacent LEDs with varying brightness. The equalizer section has three controls:

**BAND SELECT LEFT and RIGHT**
The two buttons on either side of the EQ knob select the frequency band to edit.

**EQ KNOB**
The equalizer knob changes the value of the selected band up or down in 1 dB steps.

You can quickly and easily zero the equalizer by pressing both left and right band select buttons at the same time. The equalizer display will reset to a default “flat” setting.
CONTROLS: OTHER BUTTONS

PRESET BANK
There are six available user presets that are in two banks. The bank can be switched by pressing the PRESET BANK button. When preset bank A is selected, pressing the corresponding footswitches will select presets 1, 2, or 3. When preset bank B is selected, the footswitches select presets 4, 5, and 6. The indicator lights (LEDs) above each footswitch will be green for bank A and red for bank B.

HH ENABLE
The Hot Hand enable button enables or disables Hot Hand control for the selected preset. This way, Hot Hand control can be set up for an individual preset and can be left off otherwise.

CALIBRATE
Pressing this button when the pedal is engaged will turn on calibration mode. Calibration mode allows you set a zero point for an attached Hot Hand sensor. Calibration can only be enabled when HH ENABLE is on.

CONTROLS: FOOTSWITCHES

There are three footswitches on the MWB Pro. From left to right, the footswitches correspond to presets 1, 2, and 3 for preset bank A and 4, 5, and 6 for bank B. Pressing any of the buttons will engage a given preset. Pressing the footswitch for the currently engaged effect will put the unit into bypass mode. Pressing another switch will engage that effect without going into bypass.

The indicator lights above the three footswitches are bi-color and will change depending on which bank is selected. Bank A presets are green while bank B presets are red. When a preset is edited, the LED will begin to blink occasionally to show that the preset has been changed. When a preset has been edited, pressing and holding any of the switches will save the changes to the corresponding preset. The LED will blink quickly to indicate that the preset has been saved. Once changes are saved, the LED will be lit solidly. See the Preset Saving section for other saving options.

Note: Changes made to a preset will be lost if you go into bypass or switch to another preset without saving!
**EFFECT TYPES**

Here are some brief descriptions of the effects included in the MWB Pro. The EFFECT knob settings are split into two major categories: MULTI BAND and SINGLE BAND. Where MULTI BAND settings use the band splitting discussed in the feature section and the SINGLE BAND settings do not. Each main category contains 3 sub-categories: NORMAL, FOLDBACK, and OCTAVE. For each sub-category, turning the effect knob clockwise will tend produce more dramatic effects.

**MULTI BAND**

**NORMAL 0-3**
These four settings are best for maximum clarity of the individual notes in a chord. These distortion curves are similar to standard distortions.

**FOLDBACK 4-9**
The foldback of the distortion curve greatly increases the distortion components for these settings. The higher numbered effects have more foldback creating even more distortion.

**OCTAVE 10-14**
Settings 10 and 11 give the purest octave effect. Settings 12 through 14 also have foldback and can get pretty strange. Dial down the guitar volume knob for a different range of sounds.

**SINGLE BAND**

**NORMAL 15-16**
These two settings are fairly conventional distortion sounds.

**FOLDBACK 17-19**
With the entire guitar signal processed through a single foldback distortion curve, there will be much more intermodulation-type distortion produced. Long sustained notes and unison bends work great.

**OCTAVE 20-22**
20 is the purest single band octave effect, and 21 includes some foldback.

**CLEAN BOOST / EQ**
This setting bypasses the Drive knob and will not provide any distortion. The EQ Amount, Clean Mix, and Distortion Mix knobs still apply. The most common use for this setting is to have a preset that gives you a clean signal boost with some EQ. This is also useful for when you want to morph from a clean sound to a distorted sound using an expression pedal. (See Morphing section.)
MORPHING

The expression input on the MWB Pro can be used to morph between two presets. More specifically, you can morph from between banks from preset 1 to 4, 2 to 5, and 3 to 6. For example, let’s say preset 1 is saved as a Multiband normal setting and preset 4 is a Multiband octave setting. By connecting a passive expression pedal, you can fade from the preset 1 Multiband normal sound into the octave effect by rocking the expression pedal from heel to toe. As you fade between the sounds, the color of the LED above the footswitch will fade from green (bank A) to red (bank B) to indicate where the morph is between the two presets.

In contrast to the MIX control, the morphing is not a cross fade between two sounds but rather a gradual shift between all of the individual parameters. So the middle of expression pedal range is truly an “in-between” sound.

There are 276 possible pair combinations of sounds and some will sound better than others. Some obvious applications are morphing from clean to distorted sounds, low drive settings to high drive settings, changes in volume, or between dramatically different sounds.

The expression pedal can be effectively inverted by pressing the PRESET BANK button. This will toggle start and stop presets for the pedal. Keep in mind that adjusting knobs while using the expression pedal will only control the preset in the currently selected bank, independent of the expression pedal position. Also, while tweaking presets to get the desired pair of sounds for morphing, don’t forget to save before switching banks with the bank select button.

The expression pedal can also be used as a means of effectively switching between preset banks, allowing access to all 6 presets with foot controls only.

The expression input is intended for use primarily with a passive expression pedal. It could potentially be used with a Control Voltage (CV) output but the input voltage range is limited to 0 to 3.3V. Take extra precaution before connecting any CV output to the MWB Pro. Exceeding the voltage range [above 3.3V or below 0V] could damage the unit.

- Continued
Expression pedals should have a three-conductor TRS [Tip, Ring, Sleeve] plug. This type of plug is also referred to as a “stereo plug”. Most expression pedals are this type. The resistance value of the pedal is not important.

**MIDI CONTROL**

The MWB Pro can optionally be controlled by an external MIDI controller such as the Hot Hand MIDI-Exp controller through the MIDI input. All of the knob parameters as well as morphing can be controlled via MIDI Continuous Controller messages. Individual presets can be selected by MIDI Program Change messages. The MWB Pro can also be put into bypass in this way. The following table describes the use of the MIDI input.

### MIDI implementation:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Message Type</th>
<th>Data Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable Preset 1</td>
<td>Program Change</td>
<td>001</td>
</tr>
<tr>
<td>Enable Preset 2</td>
<td>Program Change</td>
<td>002</td>
</tr>
<tr>
<td>Enable Preset 3</td>
<td>Program Change</td>
<td>003</td>
</tr>
<tr>
<td>Enable Preset 4</td>
<td>Program Change</td>
<td>004</td>
</tr>
<tr>
<td>Enable Preset 5</td>
<td>Program Change</td>
<td>005</td>
</tr>
<tr>
<td>Enable Preset 6</td>
<td>Program Change</td>
<td>006</td>
</tr>
<tr>
<td>Disable Preset – Bypass</td>
<td>Program Change</td>
<td>007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Message Type</th>
<th>Data Value 1</th>
<th>Data Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>Continuous Controller</td>
<td>020</td>
<td>0–127</td>
</tr>
<tr>
<td>EQ Amount</td>
<td>Continuous Controller</td>
<td>021</td>
<td>0–127</td>
</tr>
<tr>
<td>Clean Mix</td>
<td>Continuous Controller</td>
<td>022</td>
<td>0–127</td>
</tr>
<tr>
<td>Distortion Mix</td>
<td>Continuous Controller</td>
<td>023</td>
<td>0–127</td>
</tr>
<tr>
<td>Morph Control</td>
<td>Continuous Controller</td>
<td>024</td>
<td>0–127</td>
</tr>
</tbody>
</table>

The MIDI Channel is selectable as a Backpage parameter. Please see the *Backpage Parameter* section for more details.

**USE WITH HOT HAND®**

While the primary function of the MWB Pro is as a standalone effects pedal you also have the option of exploring some additional functions by plugging in a Hot Hand sensor. When a sensor is connected and enabled, it will control the amount of DRIVE. The maximum amount of drive you can get by moving the sensor is determined by the position of the DRIVE knob.

**Hot Hand Basics**

The Hot Hand motion sensors are sold separately and come in either wired or wireless versions. Both will work with the MWB Pro. Additionally, the SENSOR IN jack will be compatible with any future Source Audio sensors. The SENSOR OUT jack duplicates the signals on the SENSOR IN and can be used to daisy-chain multiple pedals together using the same Hot Hand sensor.

The Hot Hand ring contains a two axis accelerometer that responds to acceleration and is not based on any type of proximity to the guitar. By moving your hand or by changing the position of your hand you can modulate the effect. For a good description of Hot Hand Theory, download the *Hot Hand Motion Controlled Wah Filters* manual. It is available at www.sourceaudio.net.

[Diagram of Hot Hand Ring Sensor]

Sold Separately
**Backpage Parameters**

The MWB Pro has some additional controls that can only be edited in a special mode called Backpage mode. Backpage mode is enabled by pressing the HH ENABLE and CALIBRATE buttons simultaneously, as indicated on the main control panel. Backpage mode can be exited by pressing the two buttons simultaneously again.

**HH Enable**

The HH ENABLE button will allow Hot Hand® control for an individual preset so it can be used on one preset and not on another.

**Calibration**

The MWB Pro has a calibration feature which is only used in Hot Hand mode. However, calibration is not required before use. The calibration feature allows you to set the MAXIMUM point of the DRIVE sweep for any position of your hand. Depending on your playing style, you may find it useful to try some different calibration positions. The default and most common use of calibration is to have your hand pointing straight up as the maximum point of the DRIVE sweep. Calibration can also be useful if you are putting the sensor on a headband or other alternate locations. Calibration mode can only be enabled when HH ENABLE in ON. Calibration settings are saved per preset.

**To perform a calibration:**

1. Select a preset by pressing a footswitch.
2. Enable Hot Hand control by pressing the HH ENABLE button.
3. Press the CALIBRATE button to put the MWB Pro into Calibrate Mode.
4. Put the Hot Hand sensor into the desired calibration position.
5. Press the footswitch for the currently selected preset.
6. The Calibrate LED will blink to when the calibration is complete.

If you have trouble with calibration and need to get back to the default setting, point the front of the sensor (the H logo) straight up towards the ceiling and run the calibration procedure again.

- Continued
Here is the list of parameters that can be edited in Backpage mode:

**Noise Gate (NG)**
This sets the threshold of the noise gate. Lower values lower the threshold, and result in less gating action. The default value is set to what seems appropriate to the noise level in our box, which is rather low. You might want to raise the threshold to deal with other noise in your system. If you just don’t like gates, lower the threshold all the way to the bottom.

**Hot Hand Gain (HG)**
The gain or depth of the Hot Hand signals can be adjusted with this parameter. Increasing the value from the default will make Hot Hand have more effect with less motion. Decreasing the gain will do the opposite.

**Hot Hand Smoothing (HS)**
This controls the amount of smoothing (filtering) on the Hot Hand signals. Similar to the motion knobs on other Hot Hand products. Turning this up will result in more smoothing on the signal.

**Hot Hand Axis (HA)**
Controls the Hot Hand axis used. The default value of this parameter uses the X axis. Any other value will select the Y axis.

**Hot Hand Range (HR)**
Adjusts the overall range of the Hot Hand attenuation from a maximum of 36 dB to a minimum of 18 dB. The bottom default value is 36 dB, 18 dB is the top.

**MIDI Channel (Effect Knob)**
The label numbers around the effect knob correspond to MIDI Channels 1 through 16. Channel 1 is the default. This is a global setting and not saved for individual presets.

Don’t forget to save the preset after editing the Backpage parameters. All of the Backpage parameters except the MIDI Channel are saved per preset. To reset values to the default, press both left and right column select buttons at the same time.

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**SPECIFICATIONS**

- **Dimensions**
  - L: 7 inches (18.1cm)
  - W: 6 inches (18.1cm)
  - H: 2 inches (including knobs)

- **Power**
  - 110mA @ 9 VDC (max 145mA w/ Hot Hand Wireless Adapter)
  - NEGATIVE tip power jack

- **Audio Performance**
  - 115dB audio ADC
  - 24 bit audio conversion
  - 56 bit digital data path
  - Analog bypass

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**TROUBLESHOOTING**

<table>
<thead>
<tr>
<th>Noise</th>
<th>Power</th>
<th>Audio Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near noise source</td>
<td>Move pedal away from power supplies and other equipment.</td>
<td><strong>115dB audio ADC</strong></td>
</tr>
<tr>
<td>Other equipment</td>
<td>Remove other effects from signal chain, see if noise persists.</td>
<td><strong>24 bit audio conversion</strong></td>
</tr>
<tr>
<td>Bad cables</td>
<td>Swap out audio cables.</td>
<td><strong>56 bit digital data path</strong></td>
</tr>
</tbody>
</table>

- **Hot Hand doesn’t work**
  - Not calibrated properly | Calibrate the Hot Hand - see page 20. |
  - Not connected | Check Hot Hand connections. |

- **Knobs don’t work /light up**
  - Wrong power supply | Use correct power supply as defined on pages 4 and 8. |

For additional assistance, please visit www.sourceaudio.net.

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![Recycling Symbol](image)

If possible, dispose of the device at a recycling center. Do not dispose of the device with the household waste.

For full compliance with EN 61000-4-6 standard, input cable must be less than 3 meters in length.
LIMITED WARRANTY

Source Audio, LLC (hereinafter “Source Audio”) warrants that your new Source Audio Soundblox Effects Pedal, when purchased at an authorized Source Audio dealer in the United States of America (“USA”), shall be free from defects in materials and workmanship under normal use for a period of one (1) year from the date of purchase by the original purchaser. This Limited Warranty does not extend to the batteries which are purchased as is. Please contact your dealer for information on warranty and service outside of the USA.

Under this Limited Warranty, Source Audio’s sole obligation and the purchaser’s sole remedy shall be repair, replacement, or upgrade, at Source Audio’s sole discretion, of any product that, if properly used and maintained, proves to be defective upon inspection by Source Audio. Source Audio reserves the right to update any unit returned for repair and to change or to improve the design of the product at any time without notice. Source Audio reserves the right to use reconditioned parts and assemblies as warranty replacements for authorized repairs. Any product repaired, replaced, or upgraded pursuant to this Limited Warranty will be warranted for the remainder of the original warranty period.

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Source Audio LLC
120 Cummings Park, Woburn, MA 01801
(781) 932-8080 or at www.sourceaudio.net.

Unauthorized service, repair, or modification will void this Limited Warranty.

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