



## INTRODUCTION

Congratulations on your purchase of the Radial BigShot MIX. Radial products are easy to use and this short manual contains all the information you need to start using your BigShot MIX right away. For more information on the BigShot MIX and other Radial products, visit our website, [www.radialeng.com](http://www.radialeng.com).

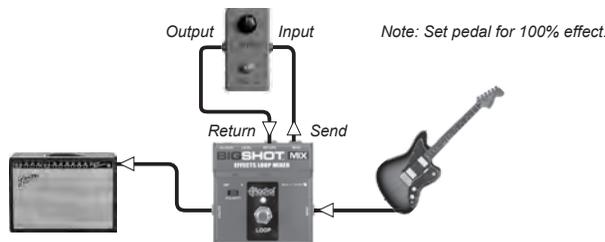
The BigShot MIX is an active class-A effects loop that allows you to blend the natural sound of an instrument with effect pedals. A standard effects loop, like the BigShot EFX, switches between true bypass and its effects loop. The BigShot MIX also switches between true bypass and its effect loop, except the loop works more like an auxiliary send on a mixing console. Just like an audio engineer in the studio mixes a vocal track with reverb, the BigShot MIX allows you to mix in the effect pedals while the natural tone of your instrument goes direct through to your amp. This is a big advantage with instruments that rely on their natural tone like acoustic and bass guitars. For all instruments the BigShot MIX is a unique way to create new tones. Like all Radial pedals the MIX is made road and stage tough with 14-gauge steel construction, a double-sided PC board and a heavy-duty footswitch.

## CONNECTING THE BIGSHOT MIX

Before connecting the BigShot MIX, make sure your amplifier is turned off and all volume levels are set to zero. This will avoid any loud pops that could cause speaker damage. To start, set the LEVEL control at 12 o'clock (or halfway).

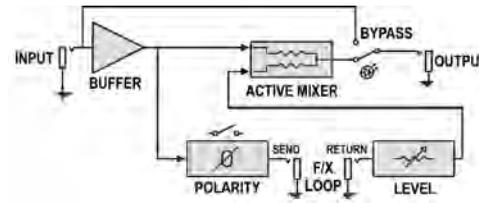
Connect your guitar to the INPUT jack of the BigShot MIX. Connect the OUTPUT jack to your amplifier. Connect an effect pedal to the SEND and RECEIVE jack on the BigShot MIX. You can use as many pedals as you like in the loop, but for initial testing one pedal will cut down on possible connection errors. The BigShot MIX is powered by a standard 9V adaptor with a negative center conductor. The MIX will be active the moment a 9VDC power supply is connected. Leaving the PB1 on for long periods of time will not cause damage.

Confirm that the LED is off (bypassed) before continuing. Turn on your amp and slowly turn up the volume to a low level to test. At this point you should hear your direct guitar sound. Depress the LOOP footswitch and confirm the LED is on and any effect pedal in the loop is also active. If all is working correctly, the sound should be a mixture of your direct guitar sound and the effect pedal.



## USING THE BIGSHOT MIX FEATURES

To assist in your understanding the BigShot MIX, follow the block diagram from left to right as each function is described.



### BUFFER

The class-A buffer preserves the natural tone of your instrument by presenting a high impedance input to your guitar. Radial class-A buffers are 100% discreet (no IC chips) and sound great. The buffer allows the signal to be split and drives effects pedals connected to the BigShot's effect loop.

### F/X LOOP

The SEND and RETURN jacks use standard 1/4" guitar cables. The SEND jack connects to the effect pedal input and the RETURN jack connects to the pedal's output. Pay close attention when connecting these jacks as most errors are made here.

### LEVEL

The LEVEL control sets the amount of signal that is returned from the effect pedal. The control is recessed to prevent accidental movement. A guitar pick can be used like a screw driver to turn the recessed knob. When the control is set at minimum position (full counter-clockwise) the BigShot MIX will output 100% direct sound. As the control is turned clockwise the effect pedal sound is mixed with the direct sound. When set at maximum (full clockwise) the BigShot MIX will output a 50%-50% mix of direct and effect signals. Adjust the LEVEL control to find the ratio of direct to effect that sounds best to you. The LEVEL control works best when the effect pedal your using to maximum effect or 100% wet signal.

### ACTIVE MIX SECTION

This circuit mixes the direct signal with the signal returning from the BigShot's effects loop. The class-A active mix section works in the same way a mixing console does to combine two signals ensuring that nothing is lost and the full-range natural sound of both signals is maintained. The active circuit also has the benefit of preventing the next device in the chain from affecting the performance of the BigShot MIX.

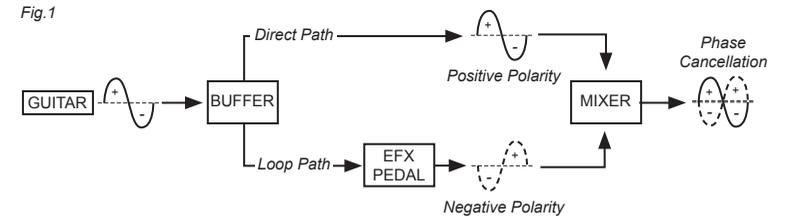
### LOOP FOOTSWITCH

A heavy-duty true bypass footswitch allows you to remove the BigShot MIX from the signal path for a direct connection to your amp. The LED status indicator will be off when the BigShot MIX is bypassed.

## POLARITY REVERSE

Some effect pedals reverse the polarity of the signal passing through them. When a pedal with a reversed output is used with the BigShot MIX phase cancellation can occur. Phase cancellation causes comb filtering and produces a weak, hollow tone with a drop in volume.

These two diagrams show what happens to your signal with respect to polarity when an effect pedal that inverts the polarity is used in the BigShot Mix.



In Fig. 1 the guitar signal is connected to the BigShot MIX. The signal is buffered and split into two paths; the direct path and the effect loop path. A pedal in the effects loop inverts the signal 180° from the direct path. When these two paths are combined in the mixer section they cancel each other out causing comb filtering.

To solve this issue the BigShot MIX is equipped with a polarity reverse switch that can compensate for a pedal that inverts its output. When the BigShot MIX is active (LED on) try the POLARITY switch in both positions and use the setting that produces the fullest sound. If the fullest sound is achieved with the switch set to 180° then an effect pedal is most likely inverting the signal.

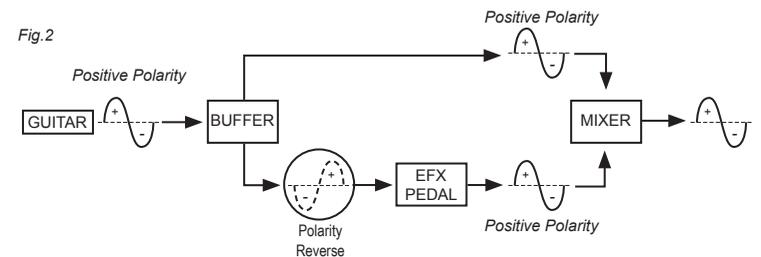


Figure 2 shows the same setup except the polarity reverse switch is shown inverting the signal before the effect pedal. By feeding the pedal a signal that has been reversed we trick its output to be in phase with the direct signal path.