electro-harmonix

SWITCHBLADE PRO

Congratulations on your purchase of the Switchblade Pro, our deluxe switching box featuring true mechanical bypass, soft switching, high quality and low noise buffers, volume controls for all input signals, high headroom, and a multitude of different possible configurations for all of your signal routing needs.

CONTROLS

9V Power Jack – The SWITCHBLADE PRO operates with a standard 9VDC AC Adaptor capable of delivering at least 170mA to the 9V power jack, such as the EHX9.6DC-200. The AC Adapter must have a center negative plug. The SWITCHBLADE PRO has a current draw of 165mA at 9VDC.

INPUT Jack – This ¼" jack is the audio input of the SWITCHBLADE PRO. The input impedance is 2.2MΩ. This input will accept any audio source that is instrument or line level up to $4.2V_{p-p}$ without clipping.

SEND A Jack – This ¼" jack is an audio output of the SWITCHBLADE PRO. Connect this to the input of the effect(s) you want in FX loop A or send it to the input of an amplifier. The output impedance is 220Ω.

RETURN A Jack – This ¼" jack is an audio input of the SWITCHBLADE PRO. Connect this jack to the output of the effect(s) you want in FX loop A. This jack can also accept another instrument output. The input impedance is 90kΩ.

SEND B Jack – This ¼" jack is an audio output of the SWITCHBLADE PRO. Connect this to the input of the effect(s) you want in FX loop B or send it to the input of an amplifier. The output impedance is 220Ω.

RETURN B Jack – This ¼" jack is an audio input of the SWITCHBLADE PRO. Connect this jack to the output of the effect(s) you want in FX loop B. This jack can also accept another instrument output. The input impedance is 90kΩ.

A LEVEL Knob – Controls the volume of signal going into the RETURN A jack. Unity gain is achieved with the knob at 12:00. Turning this knob fully clockwise achieves a gain of 6dB.

DRY LEVEL Knob – Controls the volume of signal going into the INPUT jack. Unity gain is achieved with the knob at 12:00. Turning this knob fully clockwise achieves a gain of 6dB.

B LEVEL Knob – Controls the volume of signal going into the RETURN B jack. Unity gain is achieved with the knob at 12:00. Turning this knob fully clockwise achieves a gain of 6dB.

SERIES/PARALLEL Switch – This switch works in conjunction with the A/B and A+B footswitches to determine how the input signal is routed through the A and B FX loops. In SERIES mode, the FX loops are cascaded into one another with the A/B footswitch determining which FX loop is first. See **Fig. 1**.
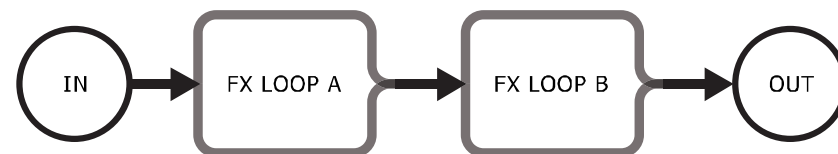

Fig. 1. Series Mode
Switchblade Pro series signal flow with FX loop A selected and A+B engaged

In PARALLEL mode, the input signal is routed to the A and B FX loops simultaneously. With the A+B footswitch engaged, both signals will be mixed together at the output. With the A+B footswitch disengaged, only FX loop A or B will be engaged which is determined by the A/B footswitch. See **Fig. 2**.
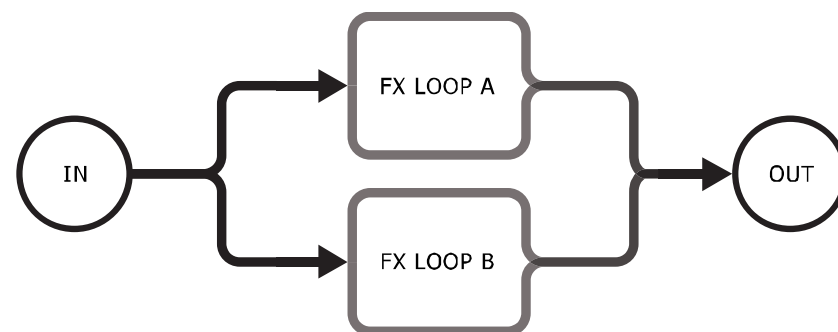

Fig. 2. Parallel Mode
Switchblade Pro parallel signal flow with A+B engaged (A/B setting irrelevant)

If using the SWITCHBLADE PRO to switch between two amplifiers, set the SERIES/PARALLEL switch to PARALLEL in order to utilize both amps at the same time.

BYPASS FOOTSWITCH – This soft footswitch engages the SWITCHBLADE PRO, routing the signal on the INPUT jack to the SEND jacks. The signal routing is via relay and true mechanical bypass.

A/B FOOTSWITCH – This soft footswitch selects between FX loop A (RED) and FX loop B (GREEN). With the SERIES/PARALLEL switch set to SERIES mode and the A+B footswitch engaged (both FX loops on), the A/B footswitch determines which FX loop is first in the signal chain.

A+B FOOTSWITCH – This soft footswitch engages both FX loops A and B, regardless of configuration (e.g. two effects loops, two amps via the SEND jacks, two instruments via the RETURN jacks, etc.).

PHASE A & B SWITCHES – These internal slide switches allow the signals at the SEND A and SEND B jacks to be flipped 180°. This is for use with effects whose output signals are out of phase with the input signal. To access these switches, remove the four screws on the bottom of the SWITCHBLADE PRO and remove the lid. Be careful not to touch any components other than the PHASE A/B switches for danger of shocking sensitive components.

CONFIGURATIONS

The SWITCHBLADE PRO offers many different possible configurations to satisfy your various effects pedal, amp, and instrument routing needs. Here are a few examples.
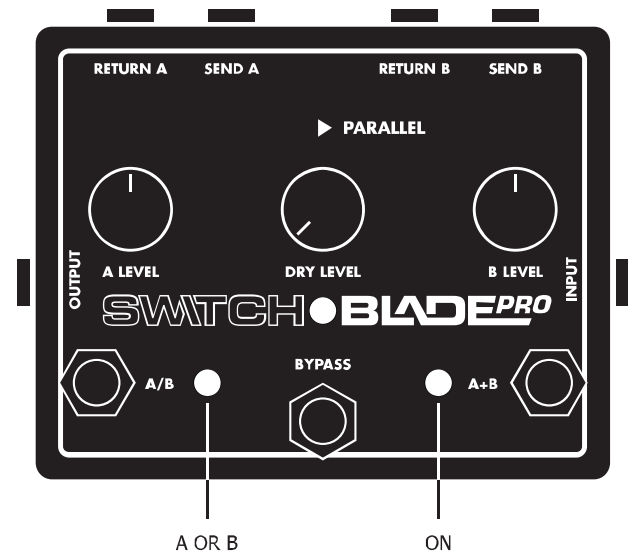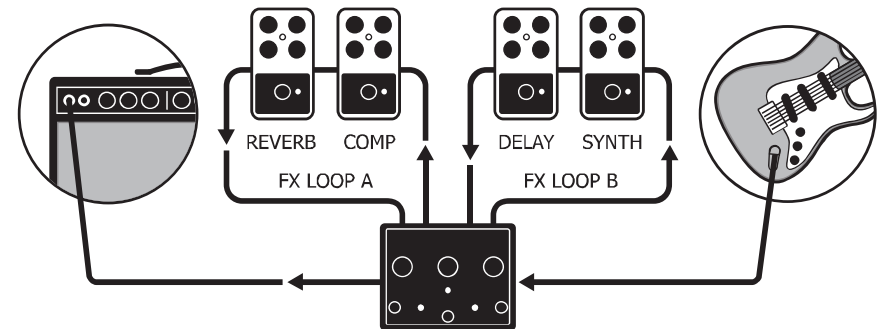
SERIES EFFECTS

Shown below are two effects chains that can be used individually as clean (delay and reverb) and dirty (overdrive and phaser) sounds, but can also be used in series (FX loop B → FX loop A) when engaging the A+B footswitch.
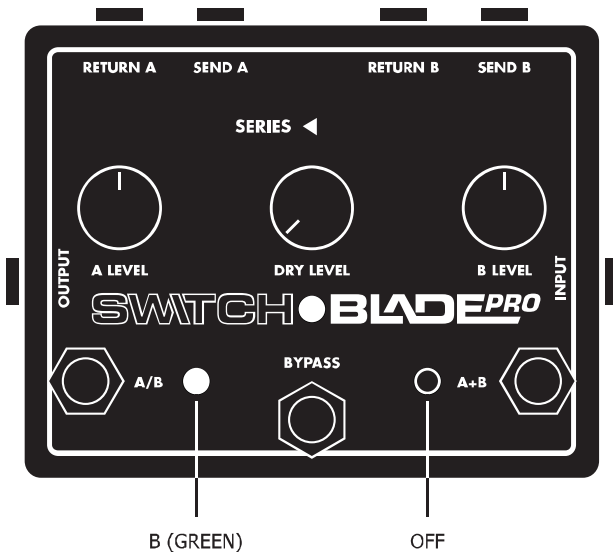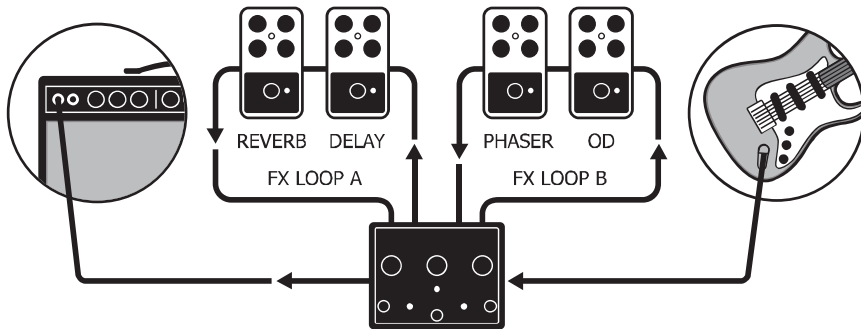
CONFIGURATIONS (cont.)

PARALLEL EFFECTS

This is an example of two effects chains that you may want to use in parallel. The synth pedal is feeding the delay in FX loop B while the compressor is feeding the reverb pedal in FX loop A. With the SERIES/PARALLEL toggle switch set to PARALLEL, each FX loop is independent and does not affect the other. The outputs of each FX loop are summed and sent to the guitar amp.

REVERB   DELAY

FX LOOP A

PHASER   OD

FX LOOP B

REVERB   COMP

FX LOOP A

DELAY   SYNTH

FX LOOP B

RETURN A   SEND A   RETURN B   SEND B

SERIES ◄

A LEVEL   DRY LEVEL   B LEVEL

OUTPUT   INPUT

SWITCH●BLADE PRO

BYPASS

A/B   A+B

B (GREEN)   OFF

RETURN A   SEND A   RETURN B   SEND B

► PARALLEL

A LEVEL   DRY LEVEL   B LEVEL

OUTPUT   INPUT

SWITCH●BLADE PRO

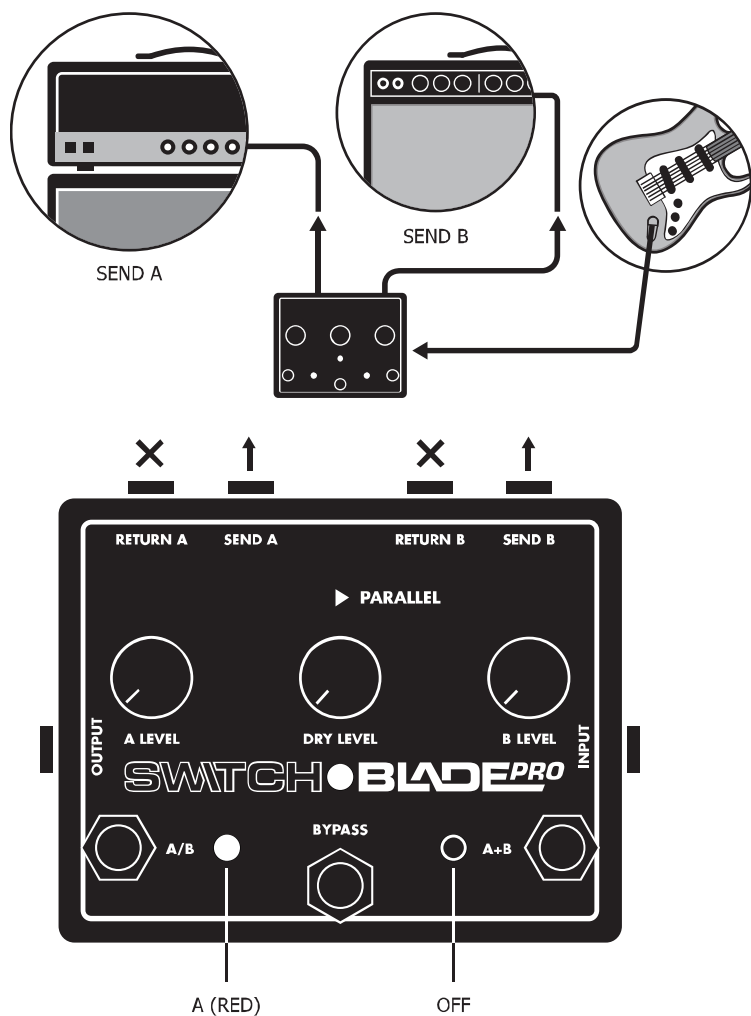BYPASS

A/B   A+B

A OR B   ON

CONFIGURATIONS (cont.)

TWO AMPLIFIERS

Utilizing just the SEND jacks of the Switchblade Pro will allow you to split your signal between two amps. Use the A/B footswitch to switch between SEND A and SEND B. The SERIES/PARALLEL toggle switch only needs to be set to PARALLEL if you want to use both outputs at the same time (A+B).
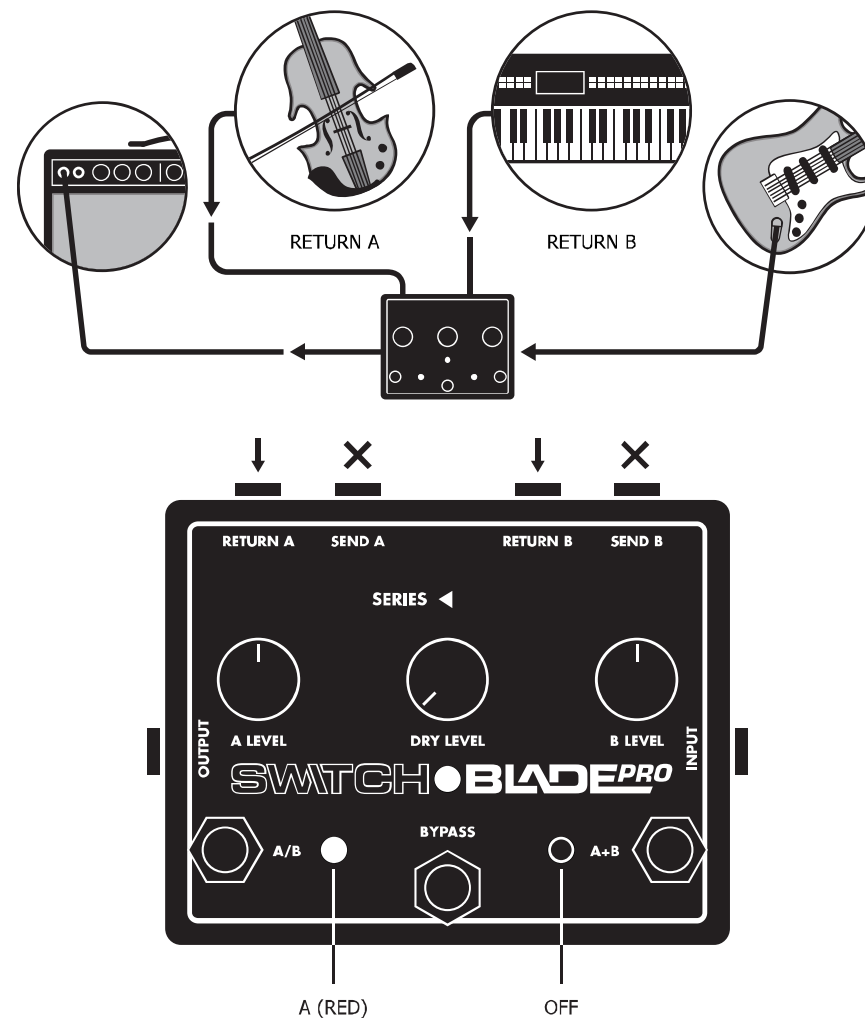
Note: To avoid hum, the ground connection on one of the amplifiers may need to be lifted. Either use the ground lift feature on the amplifier or use a 3-prong-to-2-prong power adapter (aka "cheater plug" or "AC ground lifter").

SEND B

SEND A

RETURN A   SEND A   RETURN B   SEND B

▶ PARALLEL

A LEVEL   DRY LEVEL   B LEVEL

OUTPUT   INPUT

SWITCH●BLADE*PRO*

BYPASS

A/B   A+B

A (RED)   OFF

CONFIGURATIONS (cont.)
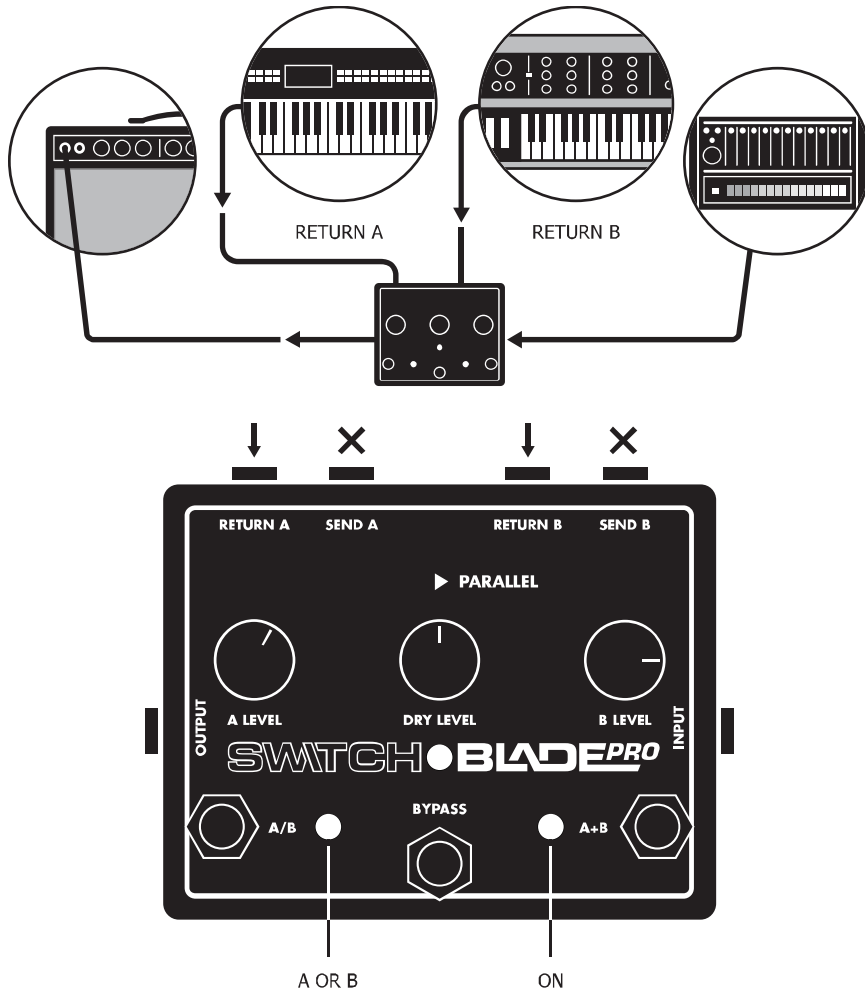
THREE INSTRUMENTS TO ONE AMPLIFIER

A multi-instrumentalist can use the Switchblade Pro to connect up to three instruments to a single amplifier. To engage the guitar in the example below, put the Switchblade Pro into bypass. Engaging the Switchblade Pro allows you to switch between either the electric violin or the keyboard and the volume of each instrument is controlled by the A and B LEVEL knobs.

RETURN A   RETURN B

RETURN A   SEND A   RETURN B   SEND B

SERIES ◀

A LEVEL   DRY LEVEL   B LEVEL

OUTPUT   INPUT

SWITCH●BLADE*PRO*

BYPASS

A/B   A+B

A (RED)   OFF
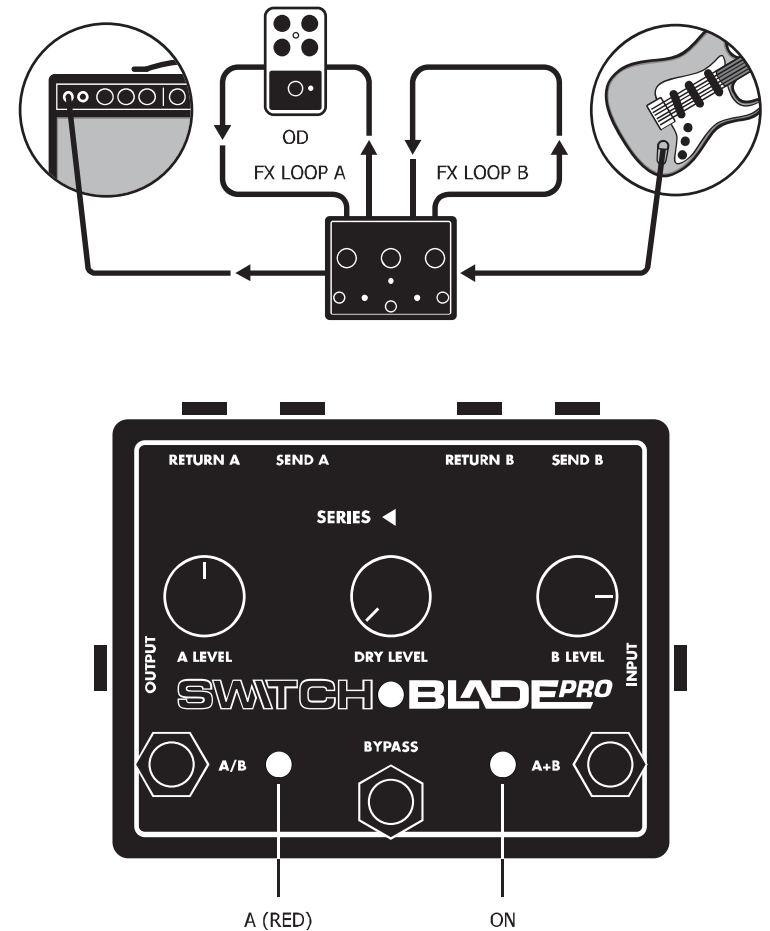
CONFIGURATIONS (cont.)

INSTRUMENT MIXER

In a similar configuration as the previous example, switching to PARALLEL mode allows you to mix all three instruments together. This could be useful for three players to play into a single amp, or for an electronic music setup. Below is a drum machine and two synths mixing to one output.

RETURN A   RETURN B

RETURN A   SEND A   RETURN B   SEND B

▶ PARALLEL

A LEVEL   DRY LEVEL   B LEVEL

OUTPUT   SWITCH●BLADE*PRO*   INPUT

A/B   BYPASS   A+B

A OR B   ON

CONFIGURATIONS (cont.)
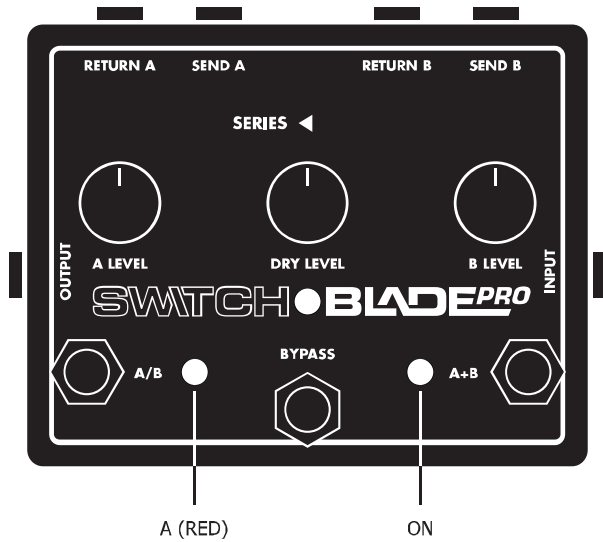
SIMPLE SOLO BOOST

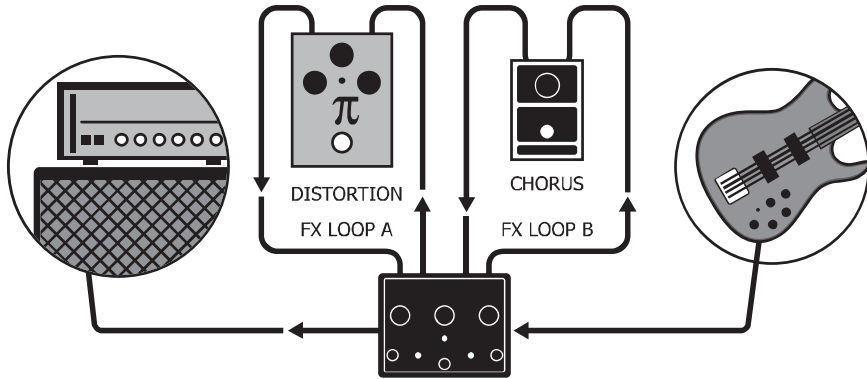Since the FX loops of the Switchblade Pro provide 6dB of clean gain on the RETURN, simply patching one of the loops with a guitar cable can create an adjustable volume boost when needed on the fly.
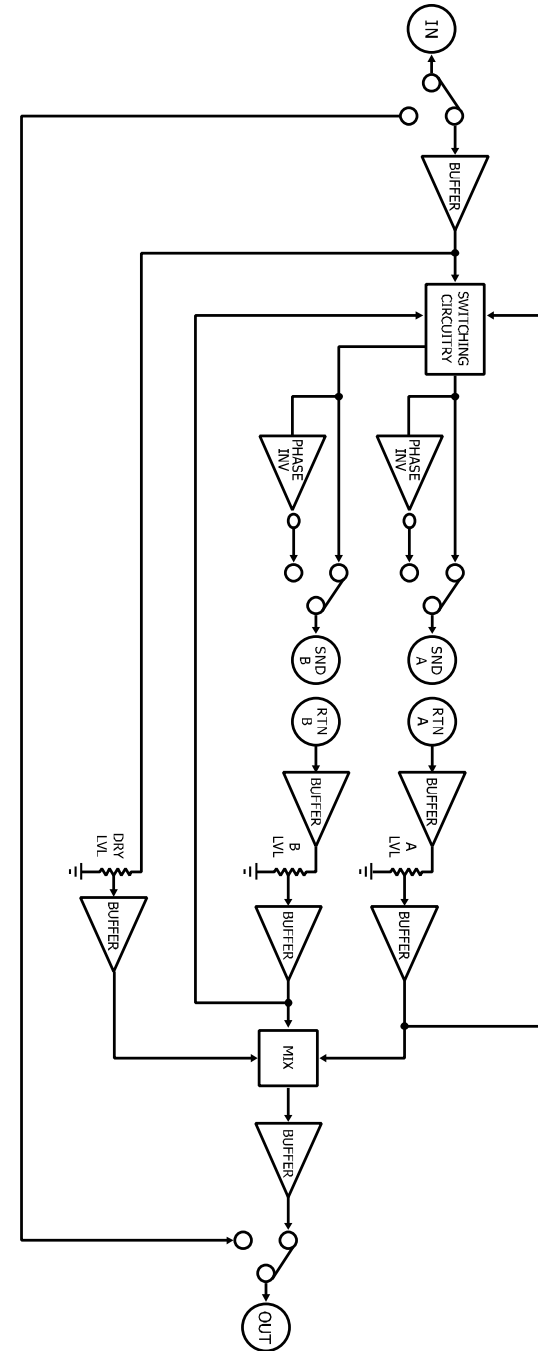

OD
FX LOOP A   FX LOOP B

RETURN A   SEND A   RETURN B   SEND B

SERIES ◀

A LEVEL   DRY LEVEL   B LEVEL

OUTPUT   SWITCH●BLADE*PRO*   INPUT

A/B   BYPASS   A+B

A (RED)   ON

CONFIGURATIONS (cont.)

VINTAGE PEDAL TRUE BYPASS WITH DRY BLEND

With its DRY LEVEL control, the Switchblade Pro is great for bass players, especially those who may have vintage pedals that do not have true bypass. Below is an example setup where the output not only has the original input signal mixed in, but it is also not susceptible to tone-suck when the pedals in the FX loops are disengaged.

DISTORTION
FX LOOP A

CHORUS
FX LOOP B

RETURN A   SEND A   RETURN B   SEND B

SERIES ◀

A LEVEL   DRY LEVEL   B LEVEL

OUTPUT   INPUT

SWITCH●BLADE*PRO*

BYPASS

A/B   A+B

A (RED)   ON

FUNCTIONAL BLOCK DIAGRAM

IN

BUFFER

SWITCHING CIRCUITRY

PHASE INV   PHASE INV

SND B   SND A

RTN B   RTN A

BUFFER   BUFFER

DRY LVL   B LVL   A LVL

BUFFER   BUFFER   BUFFER

MIX

BUFFER

OUT

ADVANCED MODES & CONFIGURATIONS

During normal operation, when an FX loop is inactive the signal coming out of that loop's SEND jack and any signal coming into that loop's RETURN jack are muted. The Switchblade Pro enables you to disable either mute in both FX loops for an even broader range of switching applications.

UNMUTE SEND A/B – This can be useful for any application where you want the INPUT signal routed to SEND B to stay active when FX loop A is selected (or vice versa). For example, you may use this as a "dry out" to send to another amp or effects chain and want it to stay active at all times.

How to disable SEND A/B mute:
1. Select the channel whose SEND you want to unmute with the A/B footswitch (RED = A, GREEN = B).
2. Press and hold the A+B footswitch for at least 3 seconds.
3. The A+B LED will blink rapidly to signify that the selected FX loop's SEND has been unmuted.

How to re-enable SEND A/B mute:
1. Select the channel whose SEND mute you want to re-enable with the A/B footswitch (RED = A, GREEN = B).
2. Press and hold the A+B footswitch for at least 3 seconds.
3. The A+B LED will blink slowly to signify that the selected FX loop's SEND mute has been re-enabled (normal operation).

UNMUTE RETURN A/B – This can be useful for any application where you want the signal plugged into the RETURN B jack to stay active when FX loop A is selected (or vice versa). For example, you may use this to retain the tails of a delay or reverb in FX loop B when switching back to FX loop A.

How to disable RETURN A/B mute:
1. Select the channel whose RETURN you want to unmute with the A/B footswitch (RED = A, GREEN = B).
2. Press and hold the BYPASS footswitch for at least 3 seconds.
3. The BYPASS LED will blink rapidly to signify that the selected FX loop's RETURN has been unmuted.

How to re-enable RETURN A/B mute:
1. Select the channel whose RETURN mute you want to re-enable with the A/B footswitch (RED = A, GREEN = B).
2. Press and hold the BYPASS footswitch for at least 3 seconds.
3. The BYPASS LED will blink slowly to signify that the selected FX loop's RETURN mute has been re-enabled (normal operation).

Note: If you disable the muting of both the SEND and RETURN of a given FX loop, that loop will remain always active regardless of the state of the footswitches/LEDs. If this is an undesirable state for you, see the factory reset instructions below.

FACTORY RESET – If you were experimenting with unmuting the SENDs and RETURNs and want to reset the Switchblade Pro back to its original, out-of-the-box factory settings, perform these steps:

1. Unplug the AC adapter power cable from the Switchblade Pro.
2. Hold down the A/B footswitch and plug the AC adapter power cable in, continuing to hold down the A/B footswitch for at least 3 seconds.
3. If all of the LEDs blink rapidly and the Switchblade Pro shows both the A/B LED and BYPASS LED as RED, then the factory reset was successful.

FREQUENCY RESPONSE

INPUT to SEND A/B: 8Hz to 50kHz

RETURN A/B to OUTPUT: 20Hz to 27kHz

INPUT to OUTPUT: 20Hz to 27KHz

WARRANTY INFORMATION

Please register online at http://www.ehx.com/product-registration or complete and return the enclosed warranty card within 10 days of purchase. Electro-Harmonix will repair or replace, at its discretion, a product that fails to operate due to defects in materials or workmanship for a period of one year from date of purchase. This applies only to original purchasers who have bought their product from an authorized Electro-Harmonix retailer. Repaired or replaced units will then be warranted for the unexpired portion of the original warranty term.

If you should need to return your unit for service within the warranty period, please contact the appropriate office listed below. Customers outside the regions listed below, please contact EHX Customer Service for information on warranty repairs at info@ehx.com or +1-718-937-8300. USA and Canadian customers: please obtain a **Return Authorization Number** (RA#) from EHX Customer Service before returning your product. Include–with your returned unit–a written description of the problem as well as your name, address, telephone number, e-mail address, RA# and a copy of your receipt clearly showing the purchase date.

United States & Canada	**Europe**
EHX CUSTOMER SERVICE	JOHN WILLIAMS
ELECTRO-HARMONIX	ELECTRO-HARMONIX UK
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The CE logo indicates that this product has been tested and shown to conform with all applicable European Conformity directives.

FCC COMPLIANCE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. If the device is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications and void the user's authority to guarantee the equipment.

Note: *This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:*

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.