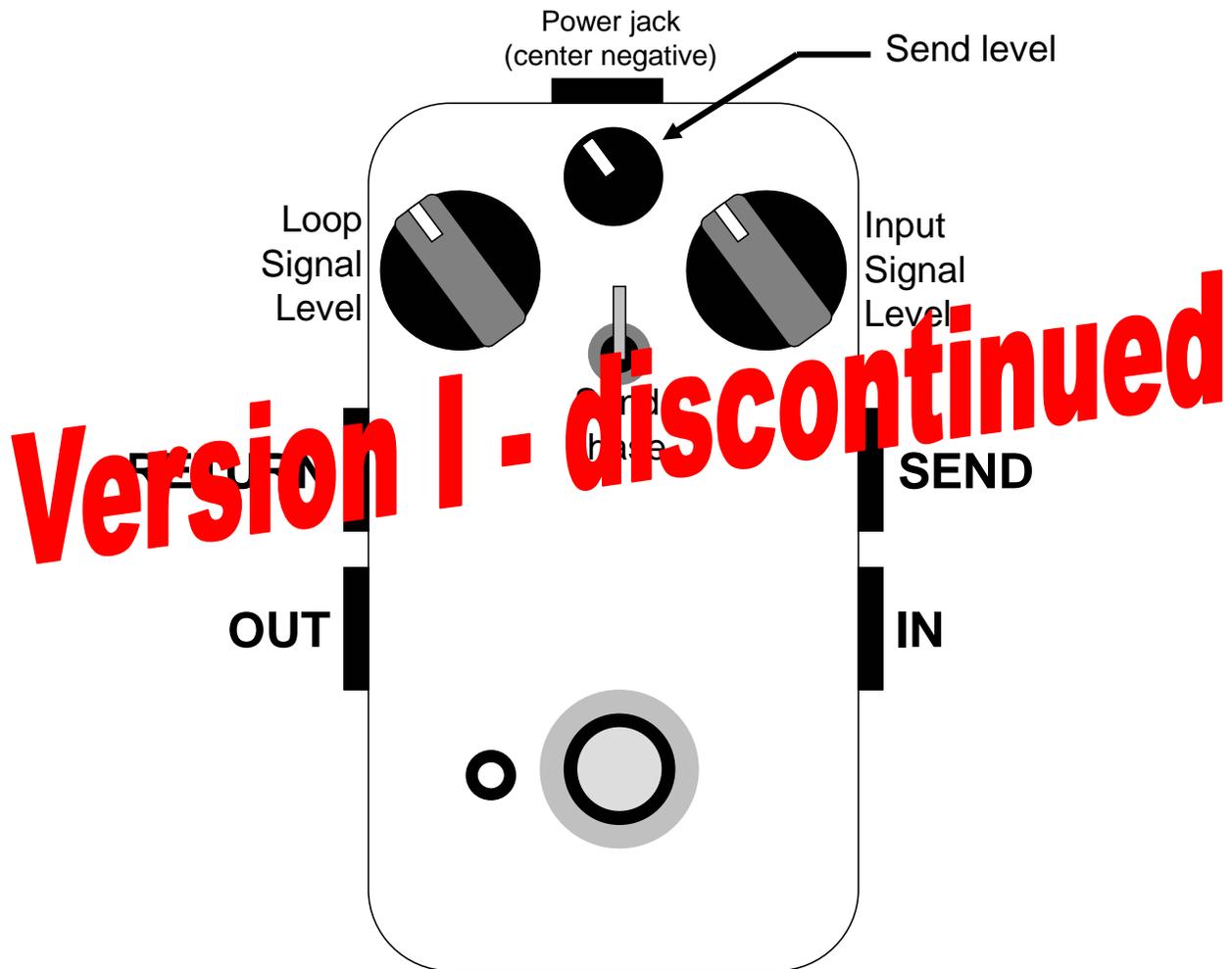
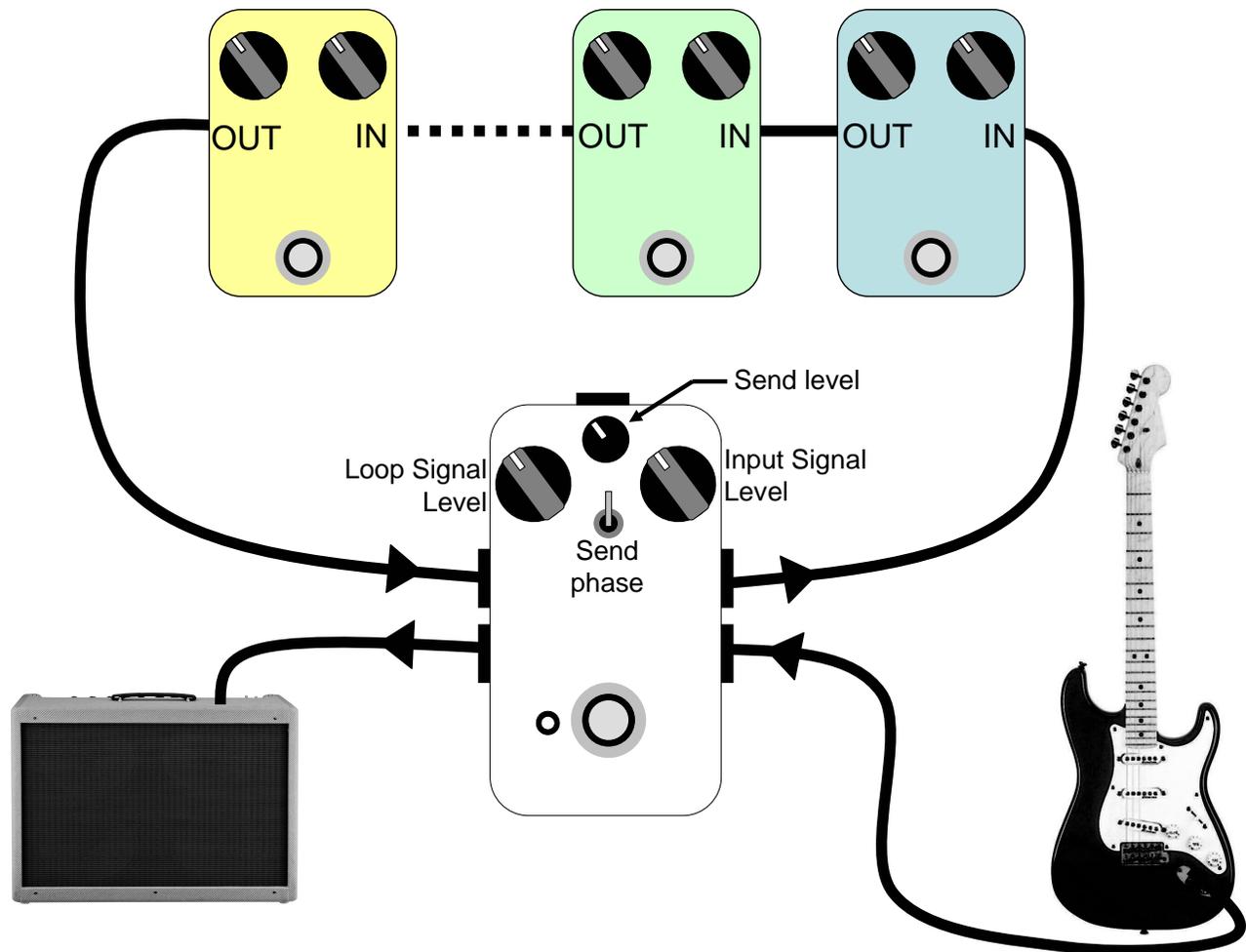


True-bypass Loop Mixer

◀ **DingoTone** ▶



PLUG IT IN AND PLAY!



Connect the TLM as shown.

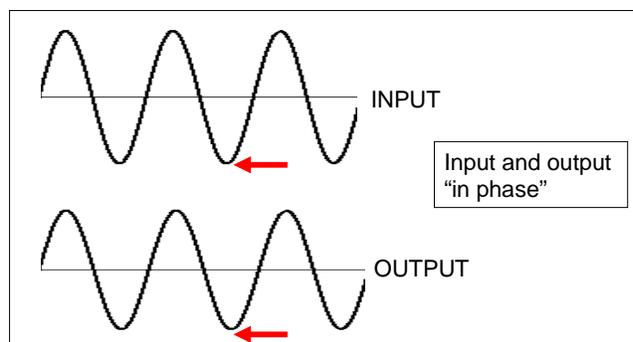
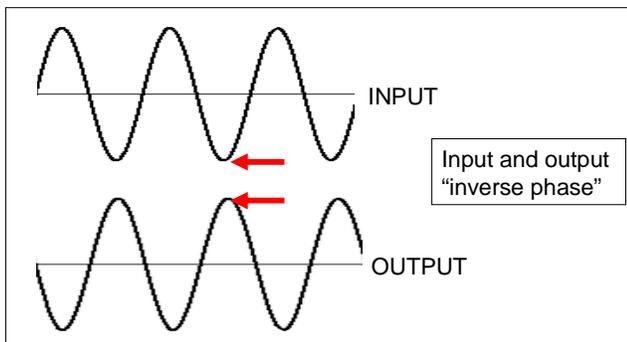
- Plug the instrument into the IN jack
- Plug the SEND jack of the TLM into the input of the first pedal in the loop
- Plug the output of the last pedal in the loop into the RETURN jack
- Plug the OUT jack of the TLM into the next pedal along or into the amplifier
- Set all controls to “12 o’clock” initially – this will mix equal parts of the input signal with the loop signal.
- Power the TLM with a battery or an external supply (see later in the instructions for acceptable supply types), and then turn on the amp.
- For all loop (no input signal), set the **Input** level to minimum and adjust the **Loop** level to taste.
- To blend the input and loop signals, set the **Loop** level and **Input** level controls to taste.

Send level adjustment

- It is important to set the **Send** level properly – setting it too high can over-drive the loop, setting it too low can make the loop noisy.
- A good starting point is with the **Send** level set to “12 o’clock” – this is approximately unity gain, or, said another way, the level coming out the SEND jack will be about the same as the signal coming in the IN jack. This usually works just fine, and you can normally leave the **Send** level here without worry.
- If you want to drive the loop harder, one way to set the **Send** level is to wind the **Send** level up a little at a time until you hear the loop distorting, then reduce the **Send** level a little. Take care with this though because when your picking strength increases in a live situation the added level can distort the loop unexpectedly.

The Send phase

- Some pedals “invert” the phase. What this means is when the voltage at the input of the pedal is at the maximum, the voltage at the output is a minimum. Like this:



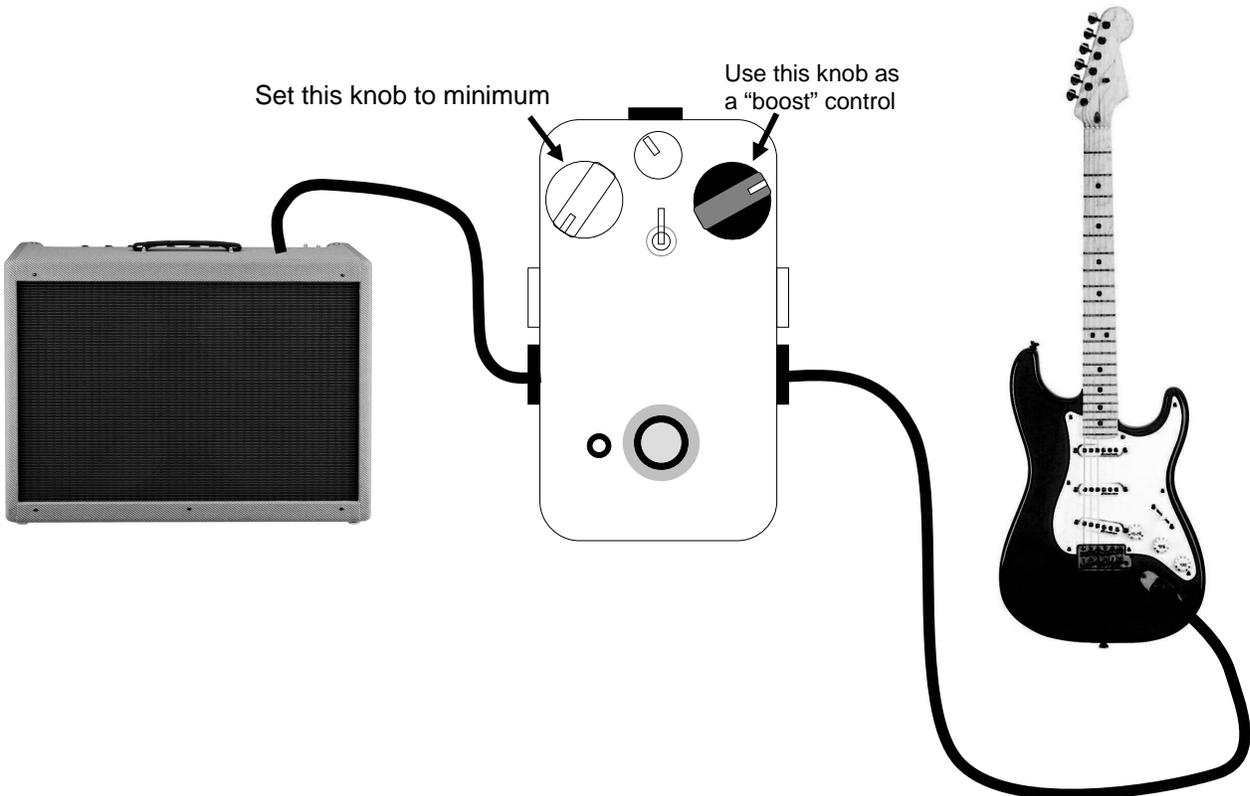
- If the pedals in the loop make the signal coming back from the loop “inverse phase”, then when the loop signal is mixed with the input signal the sound will go really “thin”. This is very similar to having one of your stereo speakers wired up the wrong way – it makes the bass disappear.
- Try the switch – see which position sounds best!

How will you know if the loop is “inverse phase”? Sometimes it is hard to tell, but a good indicator is if you have all the controls set to “12 o’clock” and it sounds like all the bass has been removed. If that happens, flick the **Send phase** switch to the other position – the bass should come back.

One pedal known to invert the phase is the MXR Phase 90. If you have a Phase 90 in the loop, try the **Send phase** switch in each position and pick the one that sounds best.

TO USE THE TLM AS A CLEAN BOOSTER

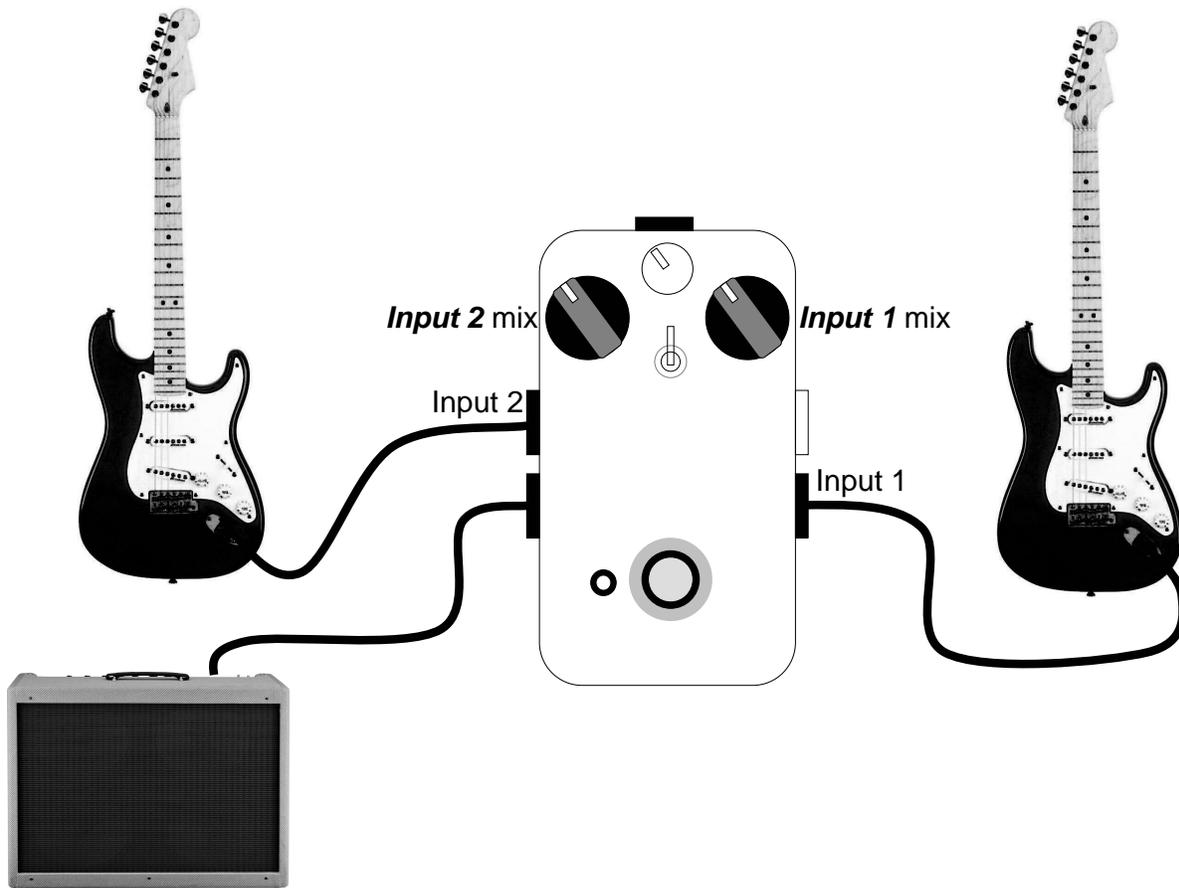
Connect the TLM as shown. This works exceptionally well as a booster between single-coil pickups and the clean channel of a tube amp.



- Leave the SEND and RETURN jacks unconnected.
- Adjust the **Input** level control to taste – this is the “boost” control.
- To minimize noise, turn the **Loop** level control (the left one) to minimum.
- The **Send phase** switch can be left in either position (it has no effect).
- The **Send** level knob can be left anywhere (it has no effect).

TO USE THE TLM AS A SIMPLE TWO CHANNEL MIXER

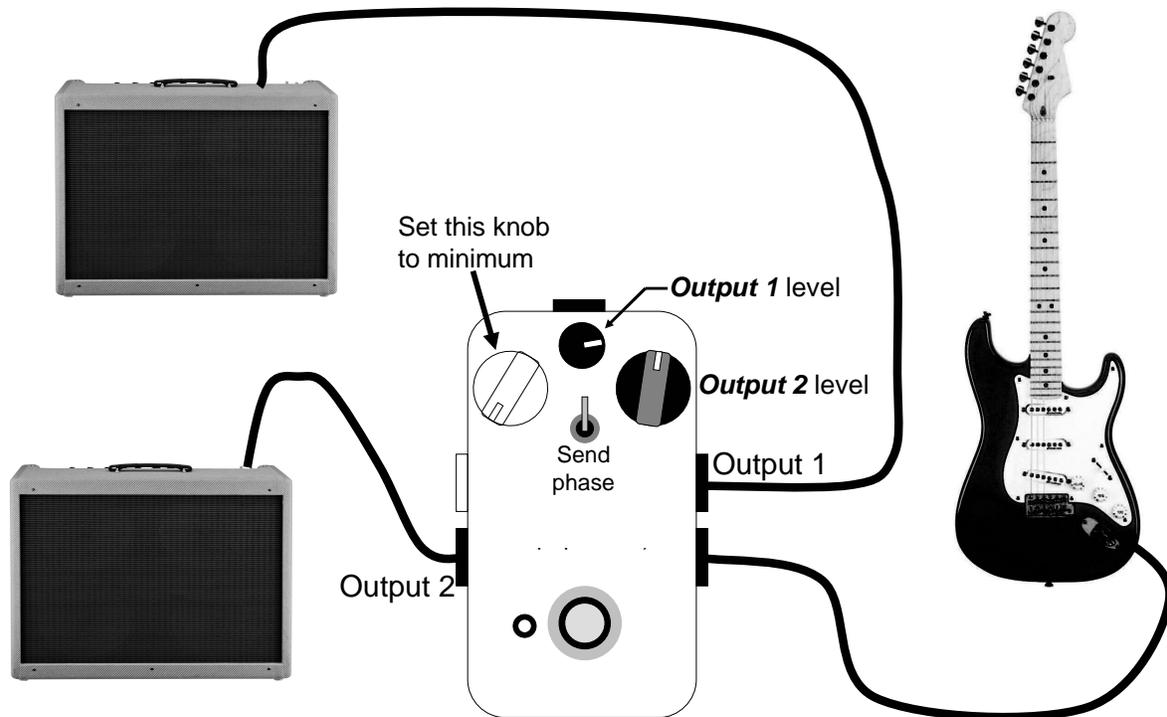
Connect the TLM as shown. To connect two guitars to an amp that has a single input, this is the "right" way to do it. The TLM can also mix two line level signals (stereo) to mono.



- Leave the SEND jack unconnected.
- The OUT jack has the mix of the two input signals – adjust the levels to taste.
- The **Send phase** switch can be left in either position (it has no effect).
- The **Send level** knob can be left anywhere (it has no effect).

TO USE THE TLM AS A BUFFERED SIGNAL SPLITTER

Connect the TLM as shown. This arrangement splits an instrument signal without making the instrument drive two loads. This is the “correct” way to split a guitar signal into two amps.



- Leave the RETURN jack unconnected
- Try the **Send phase** switch in each position – use the one that sounds best
- To minimize noise, turn the **Loop signal level** control (the left one) to minimum

NOTES

- The TLM is designed to work with guitar, however, it can also be used for bass and line-level signals.
- Assuming the TLM is correctly powered, the TLM is in true-bypass when the LED is off. True-bypass will work even if power is lost (note that the LED will not indicate the status if power is lost).
- Inserting a lead into the INPUT jack turns power on – note that the INPUT jack is quite stiff.
- Use a 9V battery or DC supply with center negative (see below).
- The TLM may produce hum if the power supply is not regulated. If you experience hum with a power supply, please change to a regulated supply and power only the TLM from the supply.
- The **Send phase** switch is “up” (away from the foot switch) for in-phase, “down” (toward the foot switch) for inverse phase.

POWERING THE TLM

The TLM will happily accept a power supply up to 20VDC. Please note though that the pedal is designed to be operated from a linear (not switched-mode) regulated supply. If you experience noise or other power problems using the pedal, please switch to a 9VDC linear regulated supply.

It is important to note that unregulated power supplies can give much greater voltage than the rated voltage – some 20VDC unregulated supplies can give over 30VDC when lightly loaded.

CAUTION Exceeding 24VDC supply will cause the protection circuitry to operate and this WILL damage the power supply and/or the pedal. This is not covered under warranty.

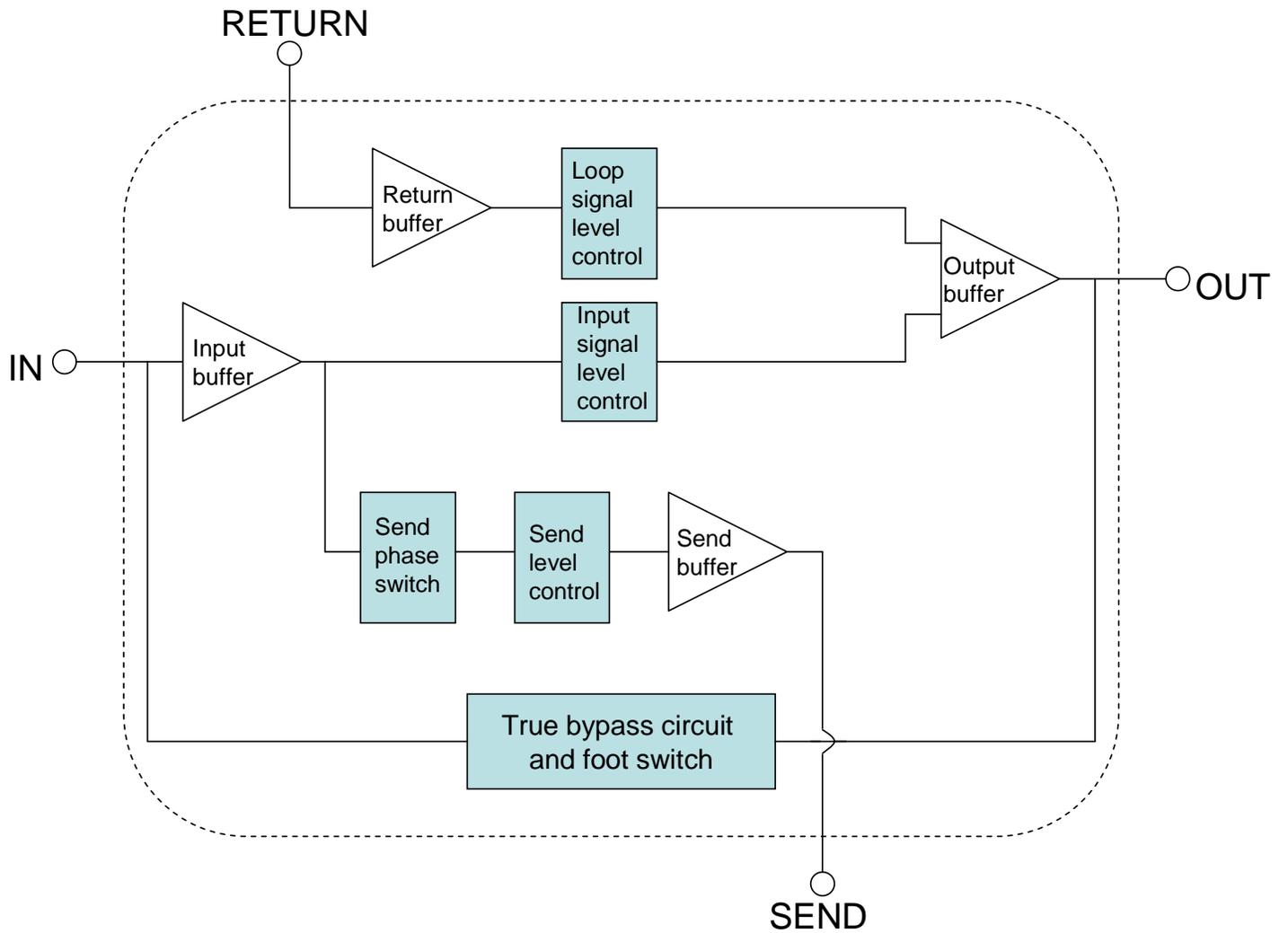
So the rules of thumb for powering the TLM are:

- If the power supply is regulated, name-plate ratings up to 20VDC are safe.
- If the power supply is unregulated, do not use a supply with a name-plate rating of greater than about 12VDC without measuring it with a meter first.

SPECIFICATIONS

- Small signal AC input impedance approximately 500k Ω
- Output impedance typically less than 1k Ω
- DC current consumption is approximately 10mA

TLM BLOCK DIAGRAM

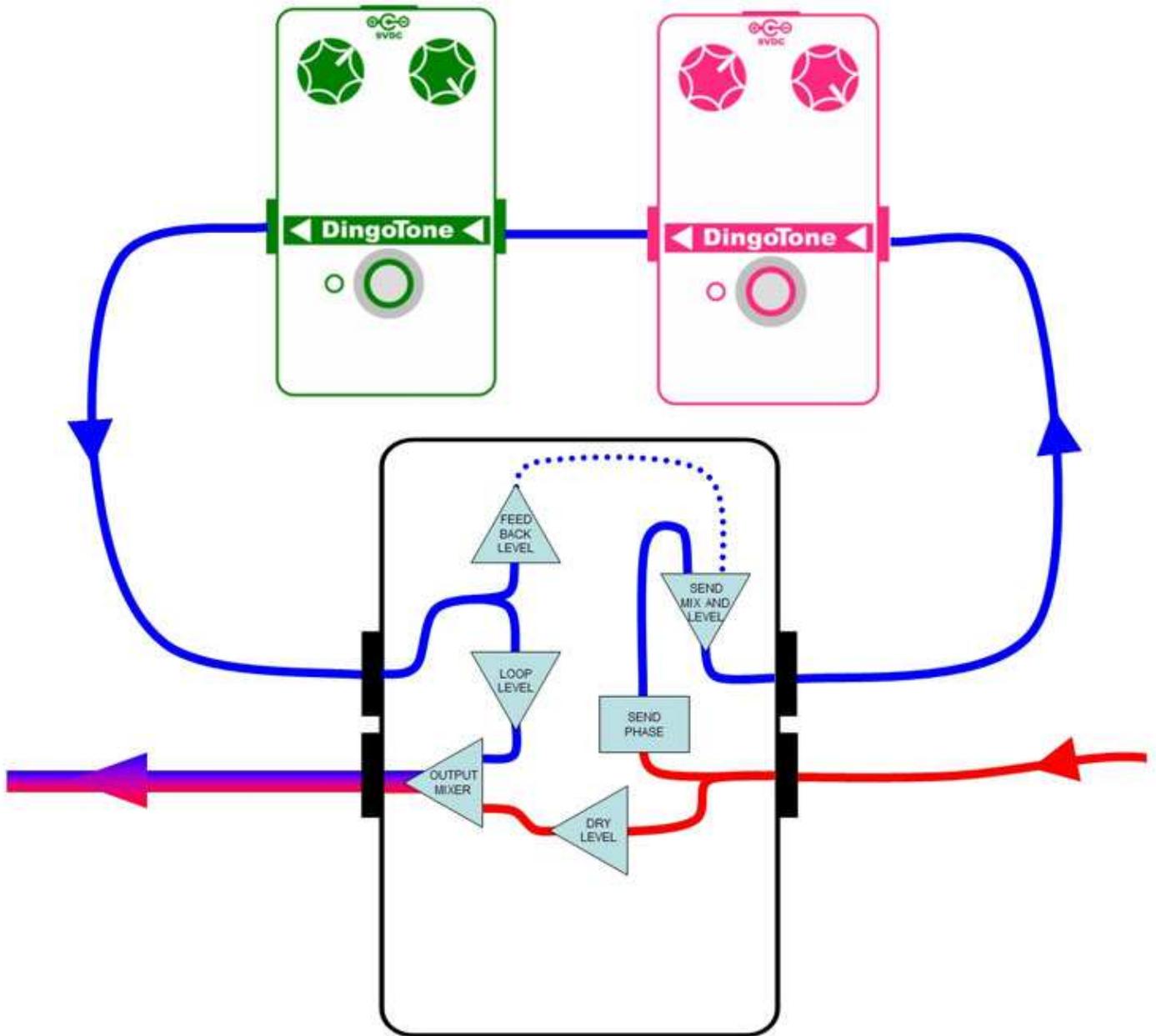


APPENDIX

MORE ABOUT THE TLM DESIGN

The design for the TLM came about because we had an old phaser that we loved, but it was “too much”. What we wanted was a true-bypass looper with a volume control – we wanted to be able to back off the phaser so it wasn’t so “wet”. Kind of like an “effect level” knob on modern effects.

This was our original concept:



Managing a loop requires some specific features (e.g. phase control). We have spent hundreds of hours prototyping, testing, and evolving the design of a pedal to do the job properly.

What we have ended up with is an extremely versatile pedal. It can be used as a:

- clean booster
- simple two channel mixer
- buffered signal splitter
- and, of course, a “loop-mixer”

We wanted to preserve *tone*, so we have used high quality 4558 opamps in the TLM. What this means to you is that your guitar tone is not “sucked”, and if the TLM is ever driven hard enough to distort, it will give a smooth breakup.

We are very proud of this pedal, and we hope it gives you years of enjoyment!