



ColorSound™ ToneBender™ 3-knob Replica Instructions

Version 2013August18

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This is a replica of the **ColorSound™ ToneBender™ 3-knob Version** referred to as **TB3** in these documents.

The kit includes transistors to build a complete kit of the NPN Silicon transistor version. The kit also includes transistor sockets for PNP or NPN Germanium transistors that you provide.

Follow the General Instructions and the layout diagram for the version you are building. You should set the trimmer to the sound you like. 4.5v is sometimes recommended, but a lower voltage sounds better to us. If you build the PNP version: there is a "down side" to the wiring we use. If you don't have a battery in the battery snap, it's possible that the battery snap can cause the power to short out if it touches the enclosure. We recommend that you cover the battery snap so that it can't short out. You can use tape to cover it or you can use a old used snap that you might have laying around as shown in the picture. Again, this is **only** for the PNP versions.

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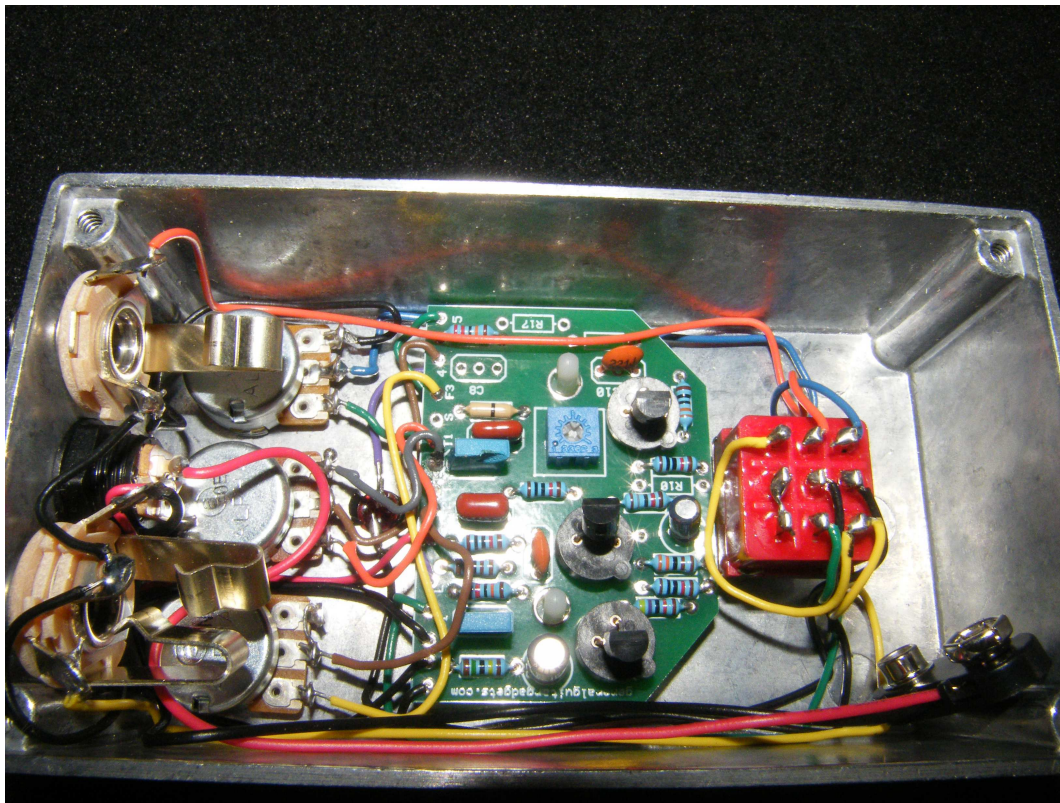
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Here's an inside view of the unit we built to show some construction details.





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Have fun, comments and questions are welcome and can be sent to info@generalguitargadgets.com

Here is a chart of voltages taken at the transistor pins. This information can be used to help you find and fix problems if your TB3 doesn't work when you test it.

Silicon Version

Component	Location	Voltage
9 volt supply		9.4v (One Spot)
Q1	Collector	6.7v
	Base	1.6v
	Emitter	1.1v
Q2	Collector	6.7v
	Base	1.6
	Emitter	1.1v
Q3	Collector	4.5v (or your trimmer setting)
	Base	0.67v
	Emitter	0.1v

Germanium Version

Component	Location	Voltage
9 volt supply		9.4v (One Spot)
Q1	Collector	3.43v
	Base	1.7v
	Emitter	1.6v
Q2	Collector	3.4v
	Base	1.6v



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Component	Location	Voltage
	Emitter	1.4v
Q3	Collector	4.2v
	Base	0.02v
	Emitter	0v