

# *Lightning Boy Audio*

## **“Thunder Knob”**

### Users Guide

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Lightning Boy Audio thanks you for your purchase! Please read the following before starting.

**Plug it in.** The Thunder Knob requires 9 volts DC @ 350mA (minimum current required) and connects with a standard 5.5mm OD X 2.1mm barrel jack, center negative. After the pedal is connected to a power supply you will notice at least one LED is illuminated somewhere on the pedal. When the pedal is bypassed the red LED on top will be off, but a green LED inside the pedal turns on and can be visible through the side vent hole. Since the pedal operates on a vacuum tube, it will take about 15-20 seconds to power up and up to 10 minutes for its internal power supply to fully stabilize. During the stabilization period, the pedal will function normally and will sound correct. A slight improvement in tone may be subtly perceivable after stabilization. The Thunder Knob operates internally at around 250 volts DC, so do not open when it is powered on.

**Functionality.** The large knob on top is a volume control. In the circuit, this comes post gain. The amount of distortion is somewhat preset. The amount of distortion can be changed a number of ways. Since this pedal is highly responsive to dynamics, the amount of distortion can be reduced by turning down your guitar's volume or increased by placing a boost pedal in front of it. In version 2, the pedal was optimized for the 12AX7 vacuum tube, but will also work with a 12AU7 if you want a mostly clean tube sound, or 12DW7 (my personal favorite) for something in between. The easiest way to change the sound of the pedal is with the “Thunder” switch. In the down, or normal position, the pedal has a nominal amount of gain with a more vintage quality. The up, or Thunder position, offers a slight increase in treble, a bit more distortion, a smidge more volume, and an increase in B+ voltage for a tad more headroom. You will note when Thunder is on, the Lightning Boy Audio logo becomes illuminated.

**Safety First.** The Thunder Knob was designed to be safe and solid.

- Onboard is a self-resetting fuse that will kick out if anything catastrophic goes wrong with the pedals onboard high voltage power supply. The fuse will reset automatically after the problem has been resolved. In the unlikely event this ever happens, consider replacing the vacuum tube before contacting LBA about servicing.
- In the event of replacing a vacuum tube, wait 10 minutes before opening the pedal so the high voltage capacitor has time to fully discharge. Read on for details on replacing vacuum tubes.
- We all know vacuum tubes can get hot. While the tube in the Thunder Knob gets warm, the pedal was designed to operate at a relatively cool temperature with safety in mind. No one wants a hot pedal if it's on a potentially flammable surface (ie. carpet).

**Changing Tubes.** This is not recommended. Why? Because the tube is inside of the pedal and there's not much wiggle room. You could easily bend the pins of the vacuum tube or worse... break them. If you want to risk it, keep that in mind and be careful. Grab the base of the tube with your fingers and gently rock back and forth while pulling out and upward. Work it out on an angle so as the nipple of the tube is worked up and out of the case. Obviously, be careful. Don't do this with a tube that's still hot, as this can potentially shorten its life. Inserting a different vacuum tube is done in the reverse order. Be careful to line up the pins with the socket! It only goes one way. Swapping tubes often is advised against as this can wear out the tube socket. Every time a tube is replaced the grip strength of the socket is diminished by a small degree.

**Practical use.** Customers have offered a number of practical uses for getting the most out of the Thunder Knob. Many claim it works best as the first pedal in your chain in that it can make all the

rest of your pedals sound better as a result. In this instance it can be thought of as a preamp/buffer close to the guitar and is used in an always-on state. Another way some people have used it is as a substitute to an amplifiers preamp stage. This may be useful if you have a solid-state guitar amp and want more of a tube amp sound. It could also be useful if you often play live with a backline and want a repeatable preamp sound. This can be done two different ways. One possible way would be Guitar->Pedals->Thunder Knob->FX Return on amplifier. In this instance, you would not be using the instrument input on the amplifier, thus bypassing the amp's preamp stage. Another way is the guitar amp on a pedal board method. There are some tiny solid-state power amps available which are not much larger than a guitar pedal. Using the Thunder Knob as the preamp just before one of those would give you a very small hybrid amp on a pedal board. Lastly, the Thunder Knob works great as a pedal in a mix of other pedals. I found it takes on some very cool and unique distortion qualities when you put a somewhat clean booster in front of it, or a low/mild overdrive after it. I have been getting cool results feeding my Op-2 Comp pedal into it with the boost available from the Op-2. It's just a small amount of boost, but it has a good bit of creamy smooth color to it that adds something special when paired with the Thunder Knob. Somewhat similar results could likely be had with a solid-state overdrive pedal set fairly clean into the Thunder Knob.

For more information, friendly up with Lightning Boy Audio on social media and at [www.lightningboyaudio.com](http://www.lightningboyaudio.com). Thanks and Enjoy!