



## HOW TO INSTALL THE MOJOTONE DISCRETE HIGH-VOLTAGE EFFECTS LOOP VERSION 3

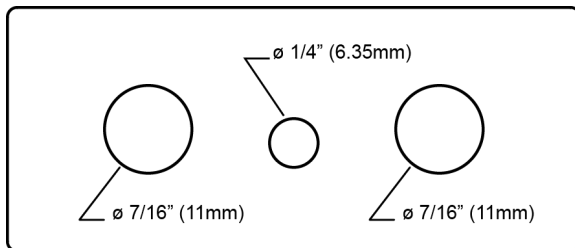
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*The Mojotone Discrete High-Voltage Effects Loop provides a quick and easy solution to adding an effects loop in series with the signal path of your guitar amplifier without introducing signal loss or coloring. Some of the basic features of this unit are true bypass, small footprint, return signal level adjustability, and a buffered input.*

### **Step One: Decide where the loop will be installed in the amplifier chassis.**

We strongly recommend installing the unit near the preamp section, away from the power section of the amplifier circuit. In most cases, there will be space on the back of the chassis on the same end as where the input of the amplifier resides.

Use the supplied fiberboard template to mark the holes on the outside of the chassis. Use the straight edges of the template as reference points to ensure that they are parallel to the edges of the chassis. This will ensure that the holes for the unit are plumb relative to everything else on the back of the chassis.



Drill the holes, and proceed to the next step.

### **Step Two: Mount the loop into the newly drilled holes.**

Use the nuts and washers to secure the board to the chassis. No other mounting is necessary. The loop can be installed with the components facing up or down.

### **Step Three: Connect the loop to a high voltage supply and chassis ground.**

Find the **B+** and **GND** pads in the corner of the board. The pads can accommodate up to an 18 gauge stranded wire, though 20 gauge wire will be sufficient for this application. Ground should be run to a convenient location nearby the preamp section of the amplifier circuit. The high voltage supply (B+) should be run to either the last or second to last filtering stage of the amplifier's power supply circuit. **Do not**

**exceed 400V.** This is the maximum DC voltage that the unit can handle.

### **Step Four: Connect the loop into the amplifier's signal path.**

The **Send** and **Receive** jacks are labeled on the back of the board. Identify the Receive jack, then find the pads labeled **'OUT'** and **'GND'** located next to it. The GND pad provides a convenient place to solder the twisted braiding of shielded wire to ground. In many applications, shielded wire is not necessary. Connect these pads to the preamp side of the coupling capacitor just before the input of the amplifier's phase inverter circuit. This means that the signal path must be broken there to install the loop in series. Break the connection to the signal path from the amplifier's preamp circuit at the coupling capacitor.

Next, find the pads that are labeled **'IN'** and **'GND.'** Connect these pads to the component that was connected to the coupling capacitor for the phase inverter before the signal path was broken. The loop features its own input coupling capacitor, so no additional capacitor is necessary for installation.

### **Step Five: Decide whether or not to add a remote return level trim potentiometer.**

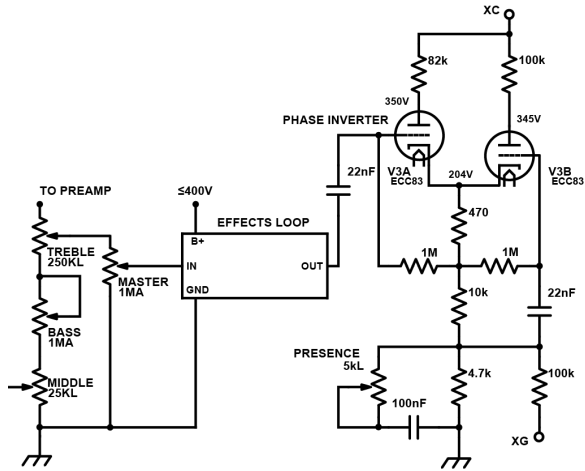
If a panel mount style potentiometer remote from the board is not required for adjusting the return level, skip to the next step. Locate the printed guide on the board that is labeled **Ext. Pot Connection.** Wire the remote potentiometer to the board by following the guide. For example, wire the wiper (middle lug) of the potentiometer to the pad that is labeled **'Wiper.'** Wire the left lug if looking at the back of the potentiometer to the pad labeled **'GND.'** The right lug will go to the pad labeled **'In.'** Finally, turn the on-board trimpot all the way to the right to bypass its influence on the circuit.

### **Step Six: Initial Startup / Adjust the return level of the loop.**

Now that the loop is wired into the amplifier circuit, turn on the amplifier. Measure the DC voltage on the 10k 2W resistor on the board. If the side closest to the 10uF capacitor is 400V or below, it can be assumed that the initial installation is successful. There should be a voltage drop due to the load the loop imposes on the amplifier's power supply. If the B+ drops too low, towards 200V, find another source for the B+ higher up in the amplifier's power supply filtering stages.

Turn the trimpot all the way to the right. Initially, the loop should provide more gain on the return. This should be apparent when toggling the **bypass switch.** The overall output should be louder when the loop is engaged. Adjust the **return level trimpot** so that the output level with the loop engaged matches the output level with the loop bypassed. This can be done by ear or with the use of an oscilloscope. Obviously, the use of an oscilloscope will yield more precise results.

As long as there are no oscillations, low frequency hum, or other noise originating from the loop, the installation is complete. If any of the above occur, consider the lead dress of the signal wires connected to IN and OUT first. Also, consider the use of shielded wire.



*Example of the effects loop in series with the master volume and phase inverter of a Marshall style circuit*