

# MODboards™



MB-DL-1 Analog Delay

MB-CP-1 Compressor/Limiter

MB-CH-1 Chorus

MB-AM-1 Analog Amplifier Modeler

## The MODboard Concept

MODboards represent a tremendous new sonic opportunity for guitarists.

We've always thought onboard effects were cool. In the 70's and 80's a few manufacturers tried the concept, with thin sounding effects with no real control. Newer models went with brittle and lifeless digital effects chips. MODboards take the great vintage analog footpedal tones, shrink them down, and install them on a miniaturized circuit board with modular connections.

MODboards accommodate almost all control configurations,

from simple two knob guitars to four knob Les Pauls.

We've done a lot of installations to date, and careful planning and patience will result in a perfect, noise-free install.

Since MODboards use classic analog components they are very rugged, and not susceptible to the same voltage and static damage typically incurred by digital chips. That said, it is still critical to take the utmost care when handling, assembling and using the MODboards.

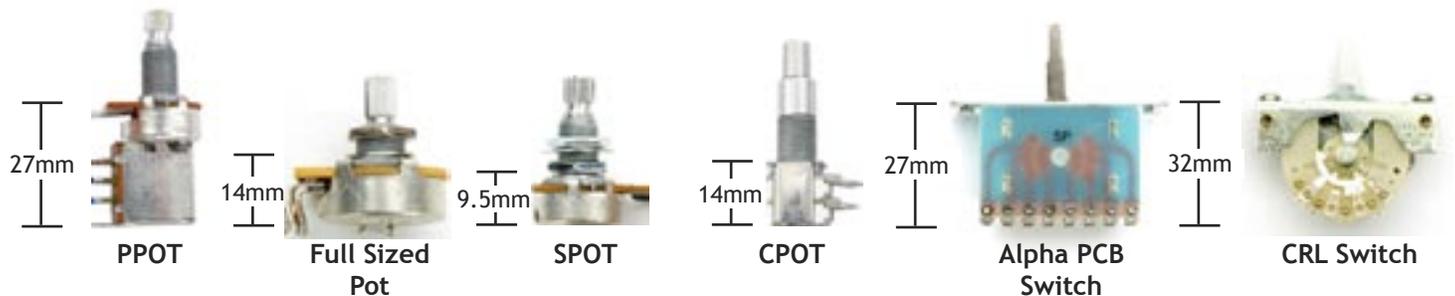
Please carefully review the next several pages before unpacking your MODboard, and email us with any questions.

## Measuring your Control Cavity

Before attempting any installation make sure you have the right components, and that they will FIT your guitar. We find the minimum installation depth to be 1 1/2" (38mm), which is usually not a problem in any guitar. On Strats we like to replace the thicker 35mm CRL or Oak switch with the slightly shallower 28mm Alpha Switch, and on thinner guitars you'll want to go with mini pots. You'll find the deepest component is the Push/pull switch, which at a Minimum depth of 27.5mm, added to the 10mm depth of the board makes it a very snug fit! A typical Strat is 40mm deep. A typical Les Paul is 45mm deep.



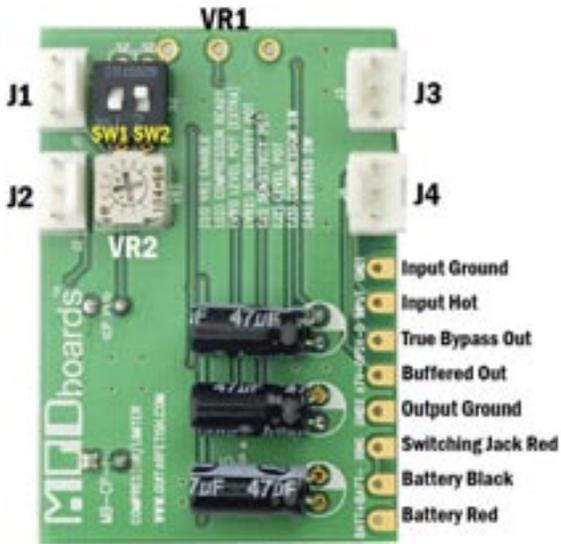
You'll want to measure your cavity thoroughly including depth, and then decide on controls that will fit depth-wise, as well as a good battery location. (A 9 volt battery is 26mm x 17mm x 48mm)



As you can see from the minimum depths of the components listed above, in most circumstances a MODboard WILL fit underneath the Alpha switch (Combined min height of 37mm) but will not fit underneath the CRL Switch. (Combined min height of 42mm)

Guitars are different- we've seen some USA Strats with very deep cavities, and some Asian ones with VERY shallow ones. Placement of the bulky 9 Volt battery can be an issue, especially on hardtail strats. For tricky installations you might want to think about routing the proper cavity for a instant access battery box we sell. Almost all four knob Les Paul style guitars have plenty of room enough to wrap both MODboard and battery in foam and still have plenty of room to maneuver.

# Understanding MODboards

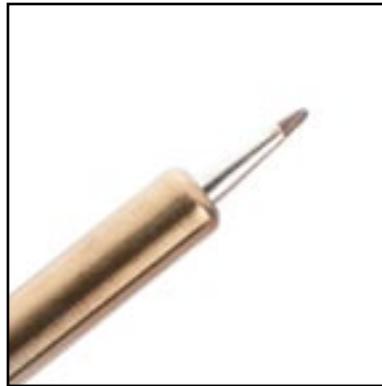


**J1**- Parameter 1- Top control on concentric pot, or a separate pot  
**J2**- Parameter 2- Bottom control of concentric pot, or a separate pot  
**VR2**- Parameter 3- Pre Set by user, not controllable by external pot  
**J3**- ON/OFF for Buffered Mode  
**J4**- ON/OFF for True Bypass Mode  
**VR1**- External location for J2- May be handwired.  
**Input Ground**- Connects to guitar ground, back of pot case  
**Input Hot**- Guitar +, connects to middle terminal of Volume Pot  
**True Bypass**- Output for true bypass mode, connect Output jack White  
**Buffered Bypass**- Output for Buffered mode, connect output jack White  
**Output Ground**- connect to output jack silver  
**Switching Jack Red**- Connect to output jack red wire  
**Battery Black**- ground for battery  
**Battery Red**- + for Battery

## Preparing the MODboard



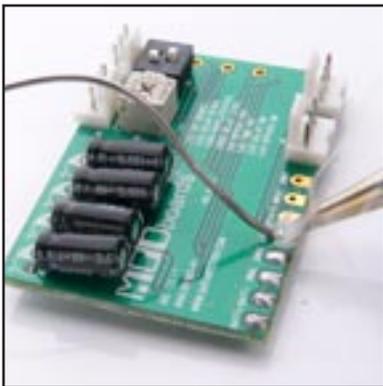
Correct installation requires the correct tools. We recommend a high quality 30-40 watt soldering station, high quality wire strippers, pliers and cutters, and only use correct 60/40 solder when working on MODboards



Good quality soldering starts with a well tinned tip. Make sure your have a meticulously clean soldering tip, with a shiny coating of solder. We like a small chisel tip like the Xytronic tip shown here.



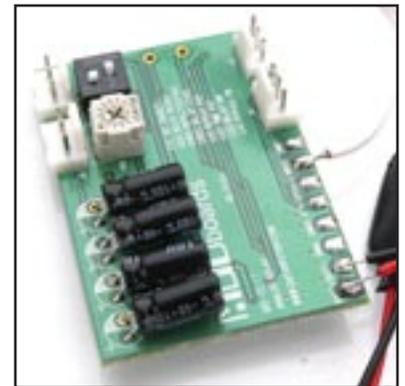
Remove the bare MODboard from the package. At this time DO NOT connect any of the plug-in components. First we'll see how much soldering we can do away from the guitar.



Before soldering any connections you'll need to pre-tin the solder tabs. You'll want each tab to receive a nice shiny blob of solder- as we show here.

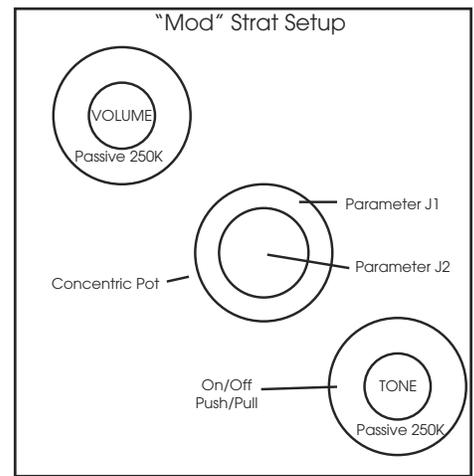
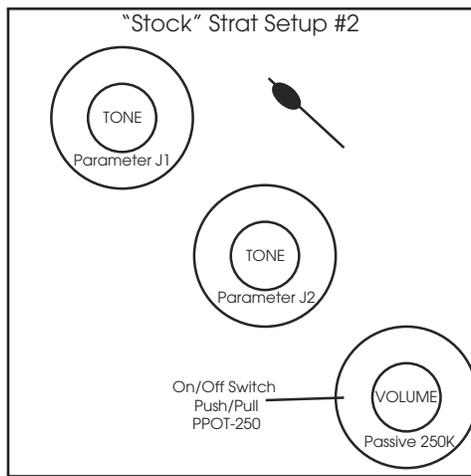
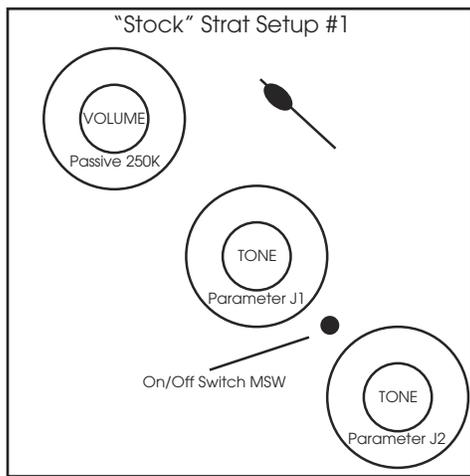


If you *can* mount the battery in the cavity, you'll want to install the battery leads now- Trim the leads so you don't have too much extra wire, and solder the black and red as shown.



In many cases you'll solder a lead for the + now. This will hook up directly to the center tab of your volume pot or to your guitar switch, depending on your configuration. (See page 6)

# Installing MODboards in a Strat®



The first thing you must do with a Strat is decide which control setup you want, and where to put the battery. If you choose Stock Strat Setup #1 you can fit the battery in the cavity as shown in the photo below on the left. This is the easiest arrangement to allow for the battery in the cavity. Stock Setup #2 maintains the vintage look with NO extra holes in the pickguard, by using the push/pull pot for volume. In order to make it fit however, you must move the volume control to the bottom position.

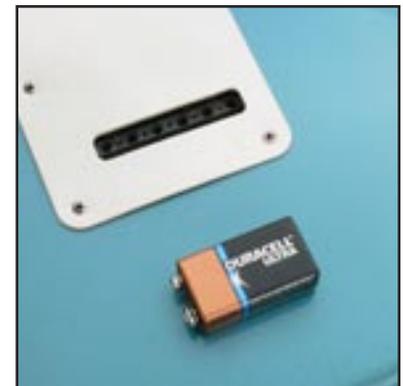
The vintage location. Both of these setups require installing the battery elsewhere. A nice easy method on trem guitars is to install it in the Trem box, we like the location below the trem on the guitar's rear as shown. Remember- You can do almost ANY installation you want- these are just guidelines.



If using Stock Strat Setup #1 you may place the 9 Volt battery under the Tone knob as shown.



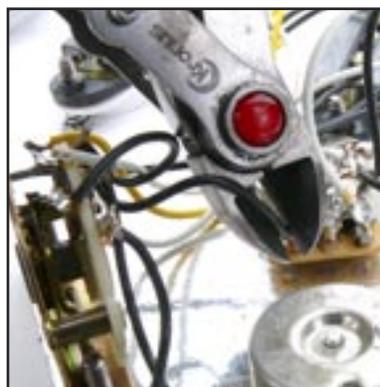
Using two springs on the bass side, one on the treble side- a 9 Volt battery fits perfectly. Tremolo action is relatively unaffected.



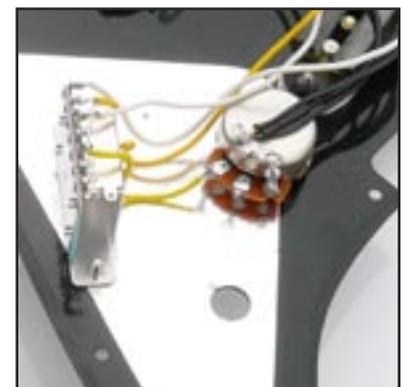
Our favorite location for installing the BCK-PL Battery box.



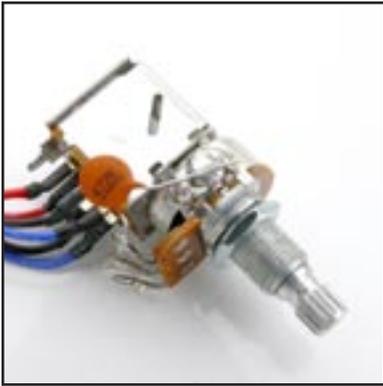
The wire on the left tab of your volume control is the output from the 5-way switch. The middle wire is the output from the volume control- Stock #1 and Mod wiring uses this center wire straight to the Input tab on the MODboard.



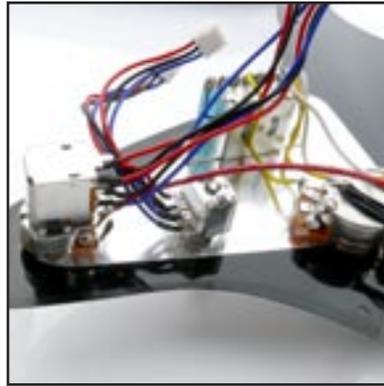
Here we are going to replace the deep wafer switch with the Shallower Alpha PCB switch. This gives you quite a bit more room for the MODboard install. We're going to cut out the volume pot and tone pots and clean up the wiring first.



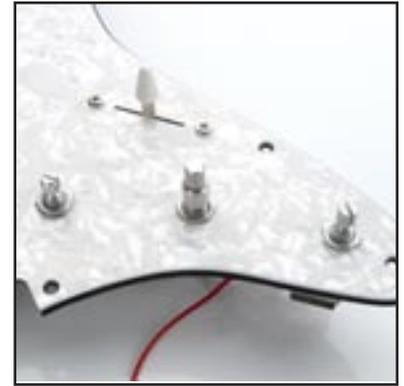
Here we've wired up the 5-way to the pickups, soldered out common grounds to a new 250K audio pot, and soldered the output of the 5-way to the left tab of the volume pot. With the two tone controls removed it's a pretty tidy setup right now!



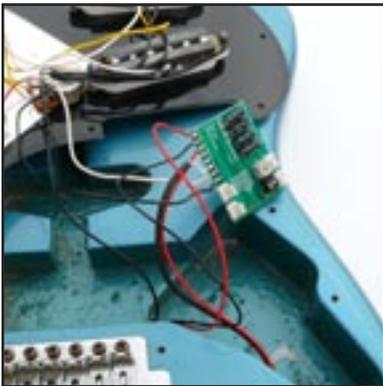
Since we're going to use the passive tone as the on/off switch- we'll solder the tone cap from the left most tab of the volume pot to ground. The middle tab will go to the volume pot.



The concentric pot goes in the middle hole- there is no wiring to do for it. The push/pull need to be connected to the volume pot via a single wire.



Here's what it looks like assembled. Volume, Concentric pot, Tone. Remember- you DO NOT need any extra ground wires to the CPOT or SPOT.



Now we can finish the installation. The output jack installs to the jackplate, then we solder the ground, white lead and red lead to "Ring". We need to solder a wire from the input ground to the case of the volume pot.



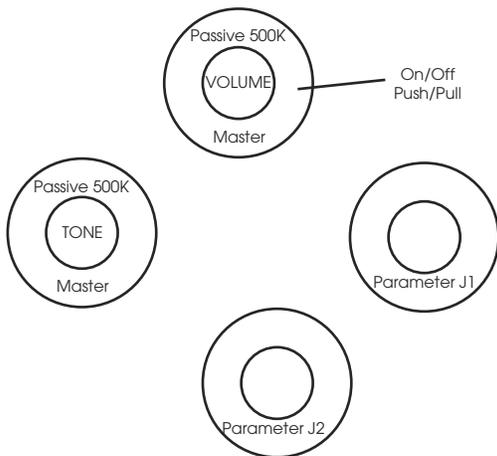
Using the supplied cellular foam, make a wrap for the board. If space is tight you can use thin cardboard to create a shield for the board, or lightly wrap it in electrical tape. It is very important that the bottom of the MODboard is covered to prevent shorting.



The finished product! Passive volume and tone are still there, so with the switch off there is no change in tone. The concentric pot gives you fingertip control of the MODboard, and we have made exactly ZERO mods to this guitar...

## Dual Humbucker Install

"Stock" LP Setup

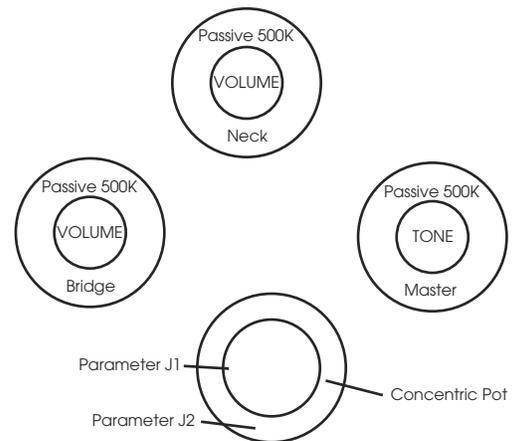


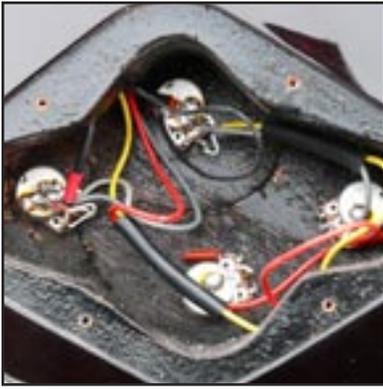
There are two basic methods for mounting the MODboard in a four knob, twin Humbucker guitar.

The "Stock" setup on the left uses the four original knobs, a pair of SPOT single potentiometers, and the outputs of the pickup go directly to the Toggle switch. Twin passive volume and tone controls are replaced with a "Master" tone and a "Master" volume.

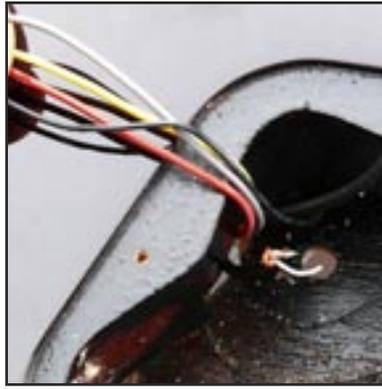
The "Mod" setup at right retains the twin passive volumes, installs single passive tone, and uses the CPOT concentric pot stack.

"Mod" LP Setup





We're going to install the "Stock" install, so first we need to remove all of the pots and output jack- We'll need to keep track of which lead is for the Bridge pickup and which for the neck pickup



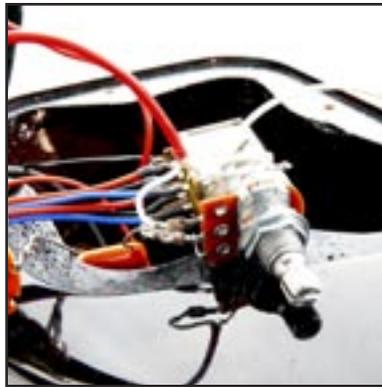
With all of the pots removed we only have the two shielded cables from the pickups and the three wires that lead to our toggle switch. The goal here is to connect the pickups directly to each pole of the switch, so the single return wire is the Hot wire for guitar output.



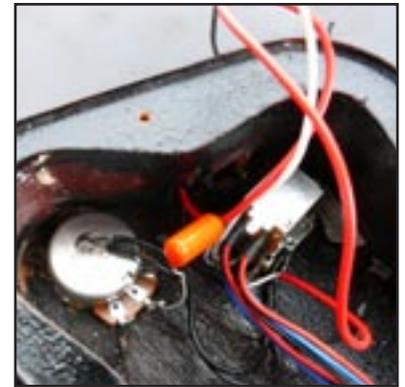
We need to look at our toggle switch and check to see which side is neck and which side is bridge. Most guitars are color coded, but even if you're wrong you can rotate the switch 180 degrees to be correct.



After you connect the pickups to the toggle switch, TEST everything before you go any further. Once you know that both the wire coming back from the toggle switch is getting the output of both pickups, you're OK.



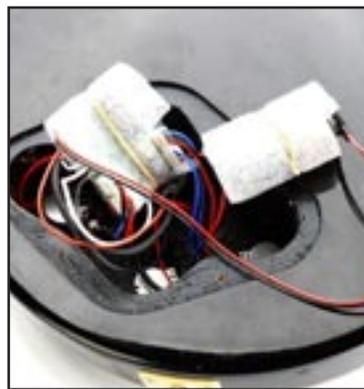
Now we will put together our Master Volume and Master Tone control. Here we've chosen to make the Master Volume the push pull pot.



Here's the volume and tone installed- Notice how the cap connects from the middle terminal of volume to middle terminal of ground. Also notice we've grounded our pickups and string ground to the back of the pot.



Once the volume and tones are installed it's time to wire up the MODboard. You can install the output jack first, then the battery leads, then the input from the volume pot. Remember to connect INPUT ground to the back of the volume pot.

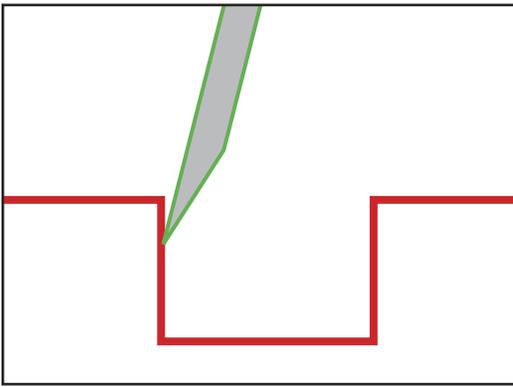


Using the supplied cellular foam, wrap both board and battery. There's plenty of room in most LP style guitars, but make sure no wires are shorting out, and ensure that none of the connections have the opportunity to touch a potentiometer.

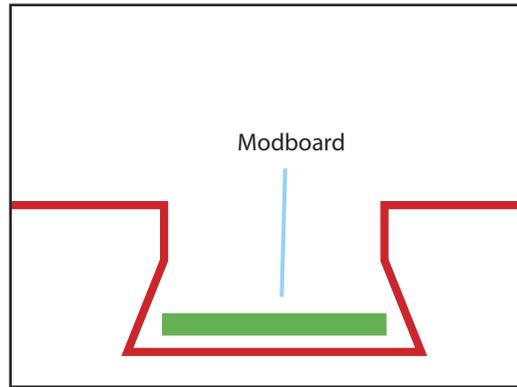


Once installed everything looks stock! By pulling up on the volume pot we can engage the MODboard, and this control STILL operates as the standard passive volume control.

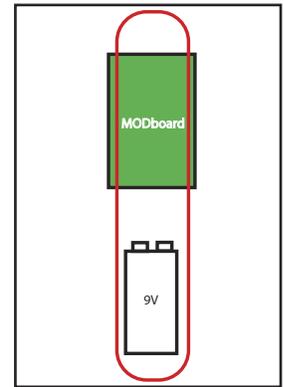
# Telecaster Install Mods



You can leave the exterior of a stock Tele untouched by using a VERY SHARP chisel and carefully creating a recess on both sides of the cavity. We don't use a hammer, rather shave a little bit of wood at a time.



Once the recess is created there should be plenty of room. We put the battery under the Concentric pot (Located in the tone control location) and put the MODboard under the 3-way. There's plenty of room for a push-pull volume this way.



Viewed from the top, this is what the positioning looks like.

## Typical Installation Schematics

