WARNING: Performing these modifications WILL void the warranty on your amplifier. Working on amps can be deadly if you do not take proper precautions. Follow these instructions very carefully. If you are at all unsure of your ability to perform these modifications STOP and take your amp to a professional to be modified. You can also send your amp to me for modification.

No Warranty: This kit and the instructions included do not include any warranty of any kind. The modifications to your amplifier are at your own risk and you agree to completely hold harmless the seller of this kit against any and all claims. Tube amplifiers contain parts that operate at very high temperatures and deadly voltages. If you are not sure of your abilities to perform these modifications then do not perform them.

Thanks for purchasing the Hot Rod Deville Re-Cap Kit. After these simple changes you amp should sound and perform far better than it does now.

Required Tools/Supplies:

- Temperature Controlled Soldering Iron and Solder
- Solder Sucker and or de-soldering braid
- Multi-Meter Capable of reading 500V DC
- Phillips Screwdriver
- Pliers with insulated handle
- Wire Cutters
- Safety Goggles
- Alligator Leads
- 10 Ohm 10W power resistor or similar low ohm high wattage resistor (for draining the filter caps)

Optional Tools/Supplies:

- Silicone glue.
- 9/16" nut driver or socket wrench.
- 1/2" nut driver or socket wrench.
- Fine point Sharpie or similar permanent marker.
- Masking Tape

Skills required:

- Basic soldering skills .
- Basic knowledge of electronics.
- The Ability to follow instructions.

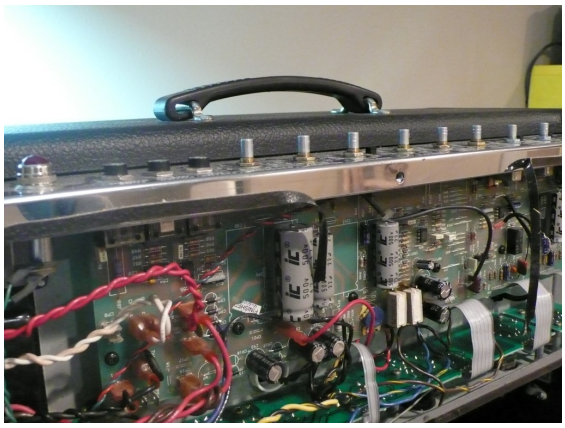
INCLUDED IN THIS KIT ARE ALL THE FOLLOWING PARTS:

VALUE	TYPE	QTY
1/100	MLCC AXIAL	1
22/35	RAD	3
22/500	AXIAL	2
47/500	AXIAL	2
100/450	AXIAL	2
5W	Resistor	1

(For draining filter caps)

NOTE: Capacitor voltage values may vary some from those specified

Instructions: Follow these instructions to the letter.

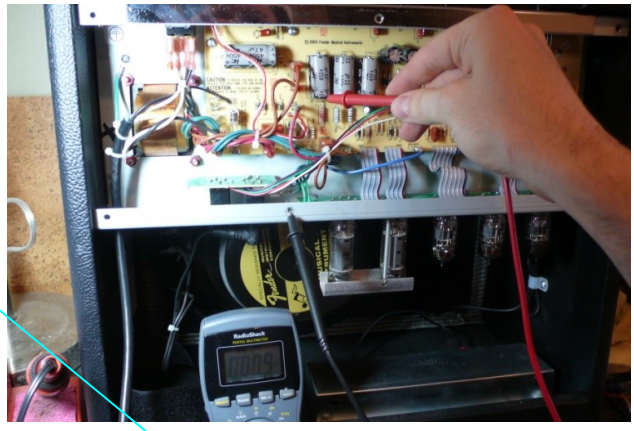


Prep the Amp. It's a good idea to have all the parts and tools you will need laid out before starting in a well lit area. Unplug the Amp and put on your safety goggles.

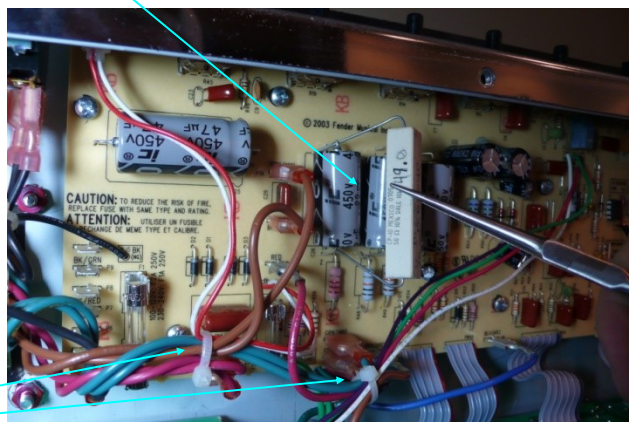
1. Remove the chicken head control knobs by loosening the set screws. Remove the nuts and washers holding the potentiometers and jacks on the top panel.

2. Remove the screws holding on the back panel and remove the panel. If the back panel does not come off easily you can loosen the chassis screws on the side of the amp about a half turn each.

3. Drain the Filter Caps: The filter caps on your amp may be drained already but you must follow these steps to insure that any deadly voltage is removed from the amp before you begin work. Test the voltage across the filter caps. Set your multi meter to DC and measure the voltage across the positive and negative side of any of the filter caps. If the voltage reads higher than 10 volts, then you need to drain the caps.



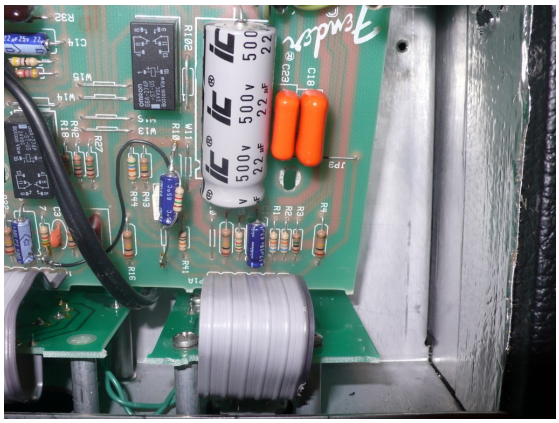
4. Using the insulated pliers to hold one of the included 5W power resistors touch one lead of the resistor to the negative side of the filter cap and the other to the positive side, leave the leads in contact with the power resistor for 30 seconds and measure again. Keep repeating this step until the voltage reads below 10V. Capacitors can recharge even when the amp is not plugged in!!! After the filter caps are drained take an alligator lead and clip one end to the positive lead of the filter cap and the other end to the chassis and leave it there until you are done with your work. This will prevent the filter caps from re-charging.



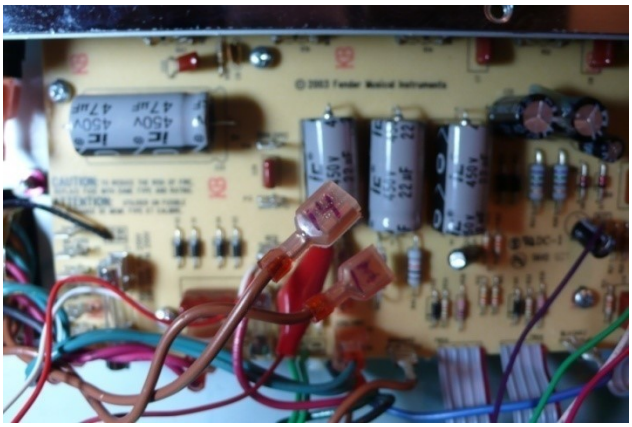
5. Clip all of the wire ties.

6. Remove all the nuts from the pots.

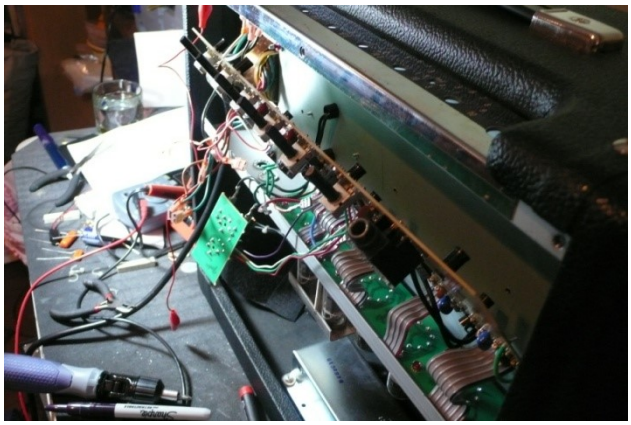
7. Remove the smaller PCB which supports the tube sockets. The easiest way to do this is by removing the tubes, then removing the black screws which hold the sockets to the chassis, also remove the really small PCB which supports V1.



8. Unplug all the power and output transformer leads by pulling firmly with steady pressure gently rocking the lead terminal from side to side. As you remove each lead mark the wire with masking tape and a Sharpie so you will know where to plug it back in when you are putting the amp back together. I just mark the terminal number on the lead.
9. Remove all circuit board standoff screws.



<u>Expose the circuit board</u>:
1. Pull gently on the board to make sure that it is not stuck to any of the standoffs that were holding the circuit board screws.
2. Press the wires from the output transformer and reverb as far away from the board and as close to the chassis as possible. The board needs to come down toward the bottom of the amp before the pots will clear the top of the chassis as shown.
3. Using gentle pressure on the top of the circuit board press the board down making sure it is not getting hung up on any wires until all the pots have cleared the top of the chassis then pull the board to you to expose the underside. DO NOT PUT PRESSURE ON ANY COMPONENTS INCLUDING THE FILTER CAPS WHEN MOVING THE BOARD.



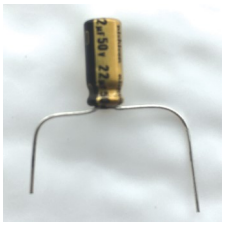
C1	22/25	AX
C8	1/100	AX
C9	22/25	AX
C31	100/450	AX
C32	100/450	AX
C33	47/500	AX
C34	47/500	AX
C35	22/500	AX
C36	22/500	AX
C56*	22/25	AX

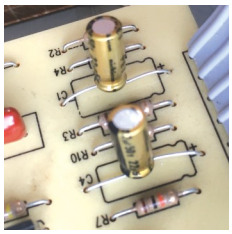
(*On some later models)

To the left is the chart for all the caps and where they go with position numbers. Below is the board layout. Make sure you mind the polarity of the caps, they must be inserted the right way or your amp will have problems which could be serious.

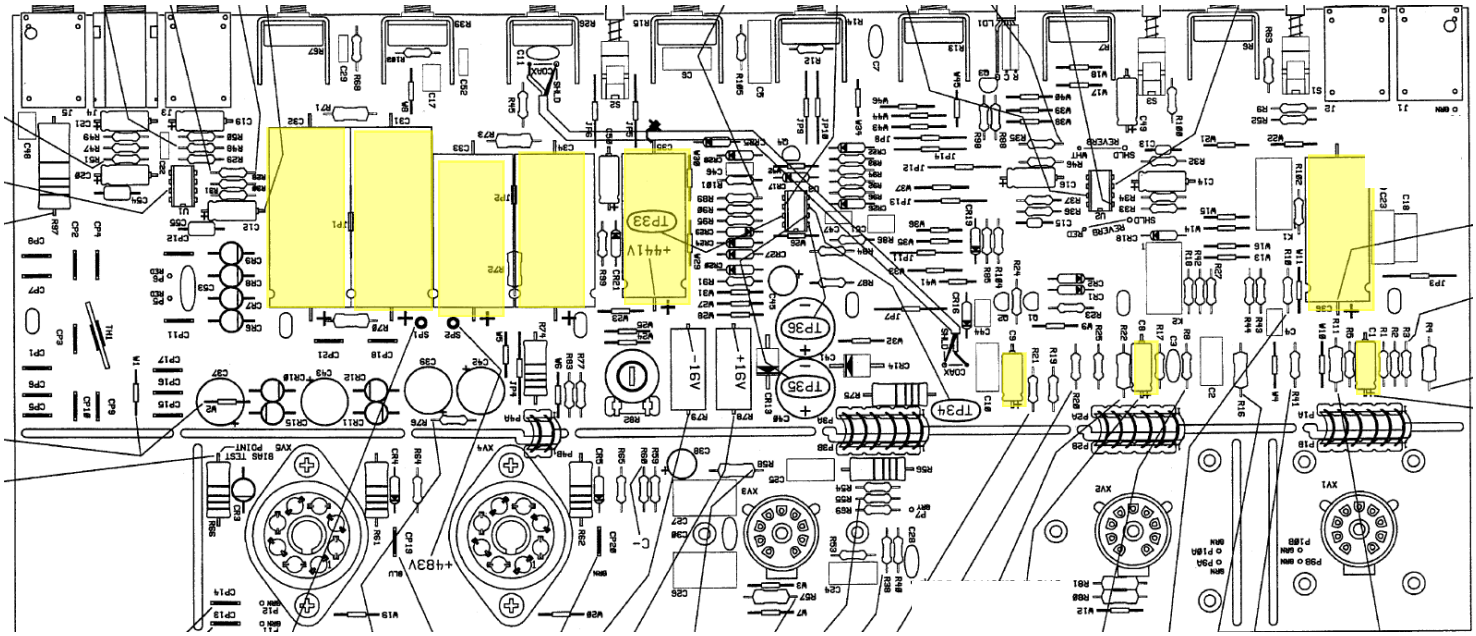
The circuit board will have a "+" sign closest to the hole where the positive lead of the cap goes. The axial caps have an indented ring on the positive side and a "-" sign in an arrow pointing to the negative side. For radial caps the longer lead is the positive side and there is a "-" sign in a band closest to the negative terminal.

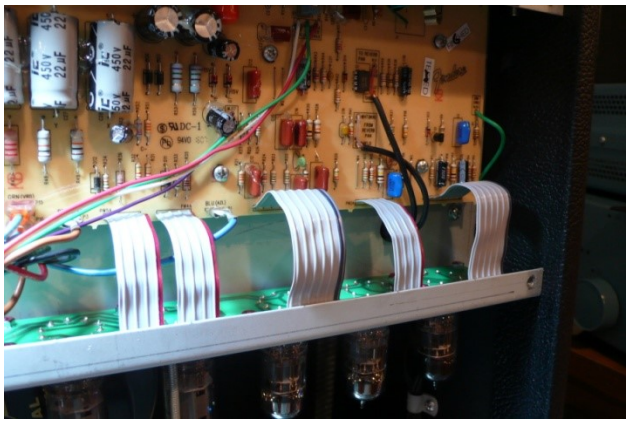
CAUTION: The circuit board is very fragile and the solder pads can easily become separated from the circuit board if extreme care is not used. Carefully examine each solder pad after removing the component to make sure the solder pad is intact. If the solder pad is damaged you will need to carefully scrape away the solder mask of the trace next to the hole, bend the lead to the trace and solder directly to the trace. Remember to always check continuity with your multi-meter to insure that you have a good connection between components.





Install the radial 22uf / 50v capacitors by bending the leads to fit and minding polarity, the longer lead being the + Positive lead and the shorter being the - Negative.

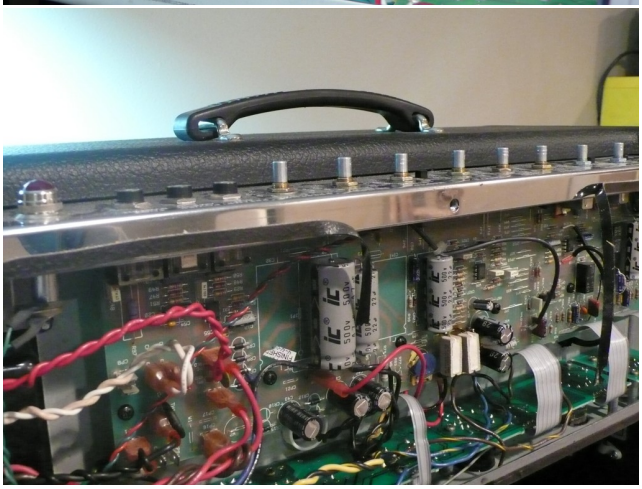




Putting the Amp Back Together. Make sure that you have clipped all the excess leads from the solder side of the board and that all your new solder joints are secure before continuing.

1. Carefully put the PCB back into place making sure that the pots, switches, and input jack all line up with the control panel.
2. Replace all of the PCB mounting screws.
3. Re-install the small PCB that holds the tubes.
4. Make sure all the ribbon cables have a smooth path with no kinks or sharp turns in the cable.

5. Dress the Transformer leads!!! Poor lead dress is a large part of the noise in an amp. Instead of using a new cable tie to put the wires back like we found them we are going to use standard wiring techniques for proper tube amp design. Twist the green heater wires and position as shown. All other lead pairs should cross each other at 90 degree angles to avoid noise, hum, and oscillation.
6. Re-install all the washers for the pots and jacks use the isolation washers on the input jacks as shown. Do not over tighten the jacks for the effects loop or footswitch.
7. Make sure all the ribbon cables have a smooth path with no kinks or sharp turns in the cable.



8. Glue ALL the caps to the board as well as the lead wire for the reverb. You can omit this step if you want but securing all the caps to the board will decrease the likely hood that they will get shaken loose in travel or by vibrations from the speaker.
9. Plug the speaker back into the speaker jack.
10. Re-install the control knobs and install the washer and nut on the new input jack.
11. DOUBLE CHECK ALL YOUR WORK.
12. Replace the back panel and make sure to tighten the chassis screws if you loosened them.

ENJOY YOUR NEW AMP