

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 Blues Jr. Modification Kit. After these simple changes your amp should sound 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

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 .

INCLUDED IN THIS KIT ARE ALL THE FOLLOWING PARTS:

Resistor Guide		
BLACK	0	K
BROWN	1	N
RED	2	R
ORANGE	3	O
YELLOW	4	Y
GREEN	5	G
BLUE	6	B
VIOLET	7	V
GREY	8	E
WHITE	9	W

Type	Qty	Value	Code
1/4W Resistor	1	33K	OOKRN
MICA CAP	1	250 pf	250
WIMA 10mmBox Cap	1	.1 μ F	0,1
WIMA 10mmBox Cap	1	.015 μ F	0,015
Poly Cap	1	.0015uf	152
FILTER CAP	1	100 μ F	100 μ F/450V
INPUT JACK	1	SW	N/A
Power Resistor	1	5w	330 or 470

If you ordered the Supreme kit your kit will also have the following:

Value	Type	QTY
22/25	AXIAL	2
22/500	AXIAL	3

NOTE: Capacitor voltage values may vary some from that specified.

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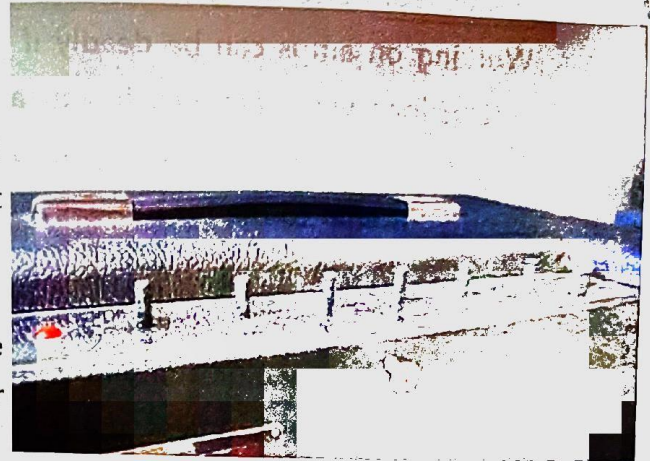


Instructions: Follow these instructions to the letter.

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 and the washer holding the input jack with a 9/16" in nut driver



2. Remove the 6 screws holding on the back panel and remove the panel. If the back panel does not come off easily you can loosen the two 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.

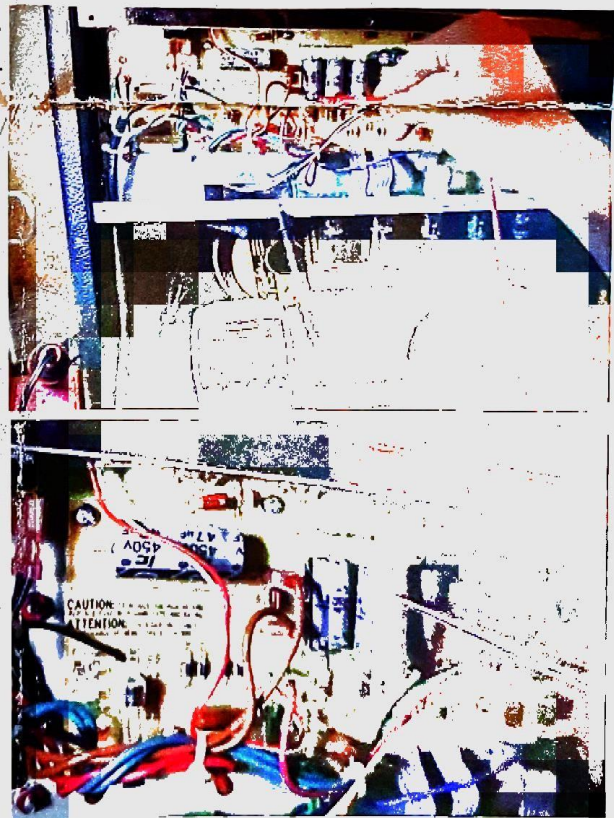
4. Using the insulated pliers to hold the power resistor touch one lead of the included 330 ohm resistor* to the negative side of the filter cap and the other to the positive side, leave the leads in contact with the power resistor for 30 seconds and measure again. Keep repeating this step until the 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

5. Clip all of the wire ties.

6. Remove the LED from the top of the chassis, it should just unsnap when pulled while squeezing the white LED holder.

*(The 330ohm resistor is only used for draining the filter caps and is not installed in the amp. Feel free to discard it after the mods are done.)



7. Remove the nuts holding the jack for the speaker and FAT switch with a $\frac{1}{2}$ " nut driver or socket wrench. Note: The lock nuts for these jacks are inside the chassis between the jack and chassis, not between the nut and the chassis.



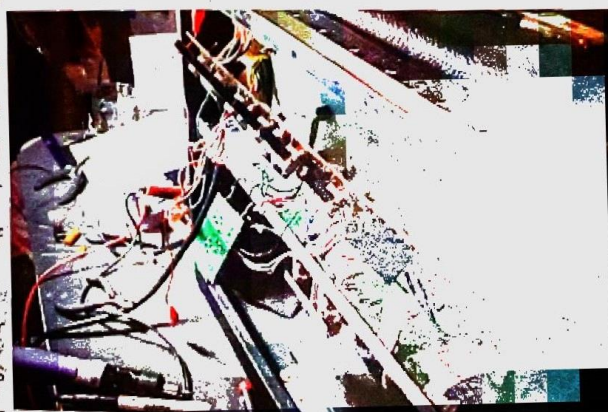
8. Unplug all the power and output transformer leads by pulling firmly with steady pressure gently rocking the lead terminal from side to side. As you remove each lead mark the wire with masking tape and a Sharpie so you will know where to plug it back in when you are putting the amp back together. I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



9. Remove all seven (7) circuit board screws.

Expose the circuit board:

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. Move the small board holding the jacks for the speaker and FAT switch out of the way, hanging over the edge of the chassis.



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.

Removing the Old Components. Be careful that your soldering iron is not too hot. The solder pads on the PCB are prone to curling and separating from the PCB, so remove the components with care, never using force. It is best to clip the component leads on the front of the PCB then remove the remainder of the lead and solder from the back side carefully with a solder sucker and de-soldering braid. This is an example of a pad that has come off the board during de-soldering. The trace next to the pad is carefully scraped to expose the copper and the lead will be bent and soldered to the trace.



1. Remove the Treble Cap numbered C5 on the board just below the treble pot.
2. Remove the Bass Cap numbered C6 on the board between the treble and bass pots.
3. Remove the Mid Cap numbered C7 on the board between the bass and middle pots.
4. Remove the largest filter cap numbered C25, Near the left side, oriented horizontally.
5. Remove bias resistor R52 on the board at the lower right of the three smaller filter caps.
6. Remove the Input Jack. This part is snapped into the PCB then soldered, I find it easiest to remove the solder from the back side first then remove the jack. You can also clip the leads on the solder side of the PCB after the solder is removed to aid in removing the input jack.

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.

Adding the New Components.

The leads of the components are pre-spaced to match the holes in the PCB. The WIMA caps and bias resistor do not have polarity so it does not matter which lead is installed in which hole. The filter cap and input jack must be installed exactly per instructions.



1. At C5 install the 250pf silver mica cap.
2. At C6 install the .1uF WIMA box cap.
3. At C7 install the .015uF WIMA box cap.
4. At R52 install the 33K bias resistor.
5. At C25 install the 100uf/450v electrolytic cap.
6. At R14 which is the Mid Tone Pot, bridge pins 2 and 3 which are the hole closest to the master volume pot and the center hole. Any clipped lead from one of the components you just installed will do the trick. You can also bridge the pins on the solder side of the board.



7. If you have a Blues Jr. III with the "Sparkle Mod" you won't have a cap at C9. Install the .0015uf cap at C9 if you want to change your "Sparkle Mod" back to stock.

8. Solder the wires included in your kit to the jack as shown. The green ground wire should bridge the two eyelets on the left. The input jack should be wired with the ground (green) wire in the hole closest to the top of the board and the lead wire at the hole closest to the bottom.



If you purchased the complete mod kit you can skip to the next page putting the amp back together. If you purchased the supreme mod kit replace all the electrolytic caps as indicated below.

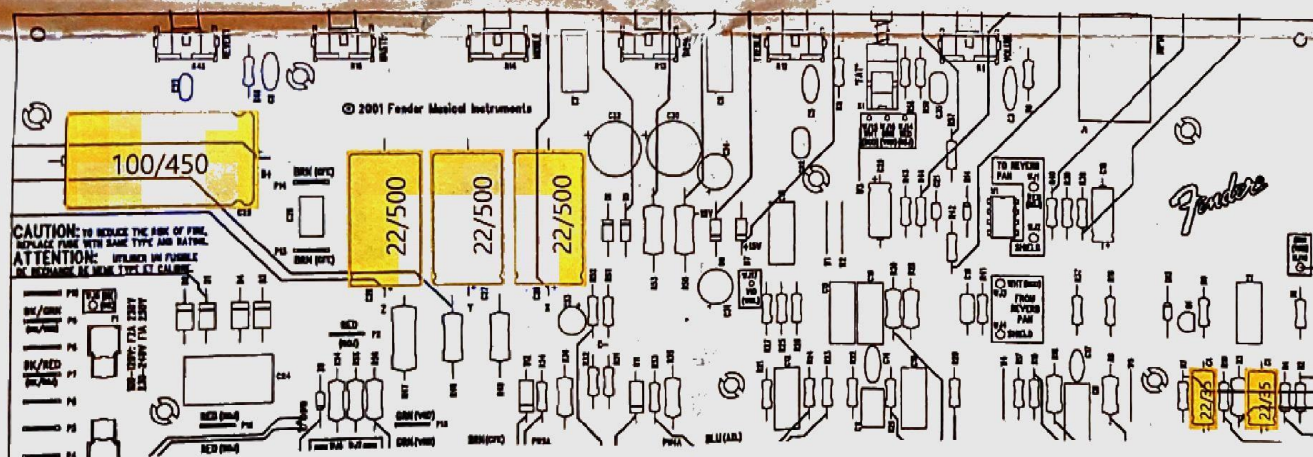
Position	VAL
C1	22/35
C4	22/35
C26	22/500
C27	22/500
C28	22/500

To the left is the chart for all the caps and where they go with position numbers for both the USA and Mexican made amps. Below is the board layout for each amp. 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.



> Arrow points to Negative lead >



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, fat switch, and input jack all line up with the control panel.

2. Replace all 7 of the PCB mounting screws.

3. Re-install the LED

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!!! The poor lead dress is a large part of the noise in this 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 the small board with the Speaker and FAT switch jack, remember that the lock washer goes on the inside of the chassis between the chassis and the jack. Do not tighten the nut too much on the jacks or you will strip out the jacks.

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.

8. Use cable ties as necessary to make the cables nice as tidy.

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.

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. Make sure that the old solder is cleaned off the pad and the holes are not obstructed prior to inserting the new components. 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 multimeter to insure that you have a good connection between components.

