
Subject: K250 Preamp Mods

Posted by [Coolerhead94](#) on Sat, 10 Mar 2012 01:15:10 GMT

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Hello Everyone:

I am brand new to this forum and I have spent some time searching the archives (and elsewhere) for some answers but without any results.

Here's the deal: I am doing a CCR Tribute, and I recently purchased a K250-1 ('73?). When I fired it up the first time - it sounded terrible. As I have 'some' experience modding amps and pedals, I opened it up and started with the power supply. I replaced the 4700uf Caps with new 10,000 uF 100V Mallory's and re-wired the primary of the transformer with grounded cable. I even replaced the Bridge Rectifier with a heavier duty one - and put it all back together and tested.

Now, the amp sounds very good at low volumes (the bass doesn't fart like it did before) - which I guess is to be expected if you replace the 40 year old power caps.

The problem I have is that as I turn it up - the sound starts to clip at like 1-2. I feel like the Power amp section is working fine - but the signal going to it is messy. BTW: The speakers I tested it out on sound unbelievably good with my other amps - so the issue is not there

So - and I know this is probably blasphemy in the vintage arena, but - does anyone have any mods that I can try on the Preamps to smooth them out - and make them a lot cleaner. I am really looking for a more 'modern' tone - so my first thought was to replace the OpAmps, but it seems like there are no modern "drop in replacements" as most of the caps surrounding the originals would be integral to the newer options. Also thinking that the the tantalum caps on these boards might need replacing...

Anyone have any wisdom to share? Thanks

Subject: Re: K250 Preamp Mods

Posted by [chicagobill](#) on Sat, 10 Mar 2012 01:47:10 GMT

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Welcome to the place.

Have you tried taking a signal from the RCA jack on the back panel? If you listen to this signal feed you can tell if the preamp is distorting or if it's the power amp.

Beyond changing the main filters and rectifier, did you do anything with the low voltage supplies? Do you have good clean plus and minus 15 volts?

What are you playing through the amp, guitar or bass?

You can replace the 739 op amps with modern 8 pin dual versions, but you will have to do some circuit revisions. The main thing will be to revise the pc board for the new chips. There are compensation parts on some of the boards that were needed for the older style chips. These parts are not needed for the modern chips and can be removed.

Subject: Re: K250 Preamp Mods
Posted by [Coolerhead94](#) on Sat, 10 Mar 2012 02:06:01 GMT
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Hello CB:

Thanks for the quick reply. To answer your questions...

There is no RCA - just (2) 1/4" jacks (Tape) and (Module) - I assume you mean I should test the Module (as I understand it this is essentially a Pre-Amp out, right?).

When I fed this Pre-Amp out into a clean power amp - I got the same issues.

I did nothing other than the Mains.

I am using this as a Bass amp.

As for circuit revisions - for OpAmp replacement, do you have any "step by step" instructions you can share? Preferred Part Specs, etc..

Also - I am thinking I would like to double check the Power amp section... do you have any ideas how I can bypass the Pre's and run a signal direct to the Power Amp?

Thanks again!

Subject: Re: K250 Preamp Mods
Posted by [chicagobill](#) on Sun, 11 Mar 2012 05:43:22 GMT
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You can send a signal in via the same module jack for test purposes.

As for the opamp replacement, try Googling PAIA 4739 board. They used to make one that would allow you to adapt an 8 pin for the 14 pin. The details of the board will help you to modify the original board for use with a modern 8 pin chip.

Subject: Re: K250 Preamp Mods
Posted by [RobbieNuke](#) on Mon, 30 Apr 2012 02:43:54 GMT
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While your at it, remove the resistor between the speaker output jack and the tape recorder jack. This will give you two parallel speaker jack... use one 4 Ohm cabinet or two 8 Ohm cabinets since this amp goes down to 3-4 Ohms for MAX power.

You can still use the Pre-Amp out jack (1/4" phone jack at lower right corner)... but I read they are sensitive and can cause Pre-Amp failure unless all power is OFF during interconnect. Use a DI Box so the transformer will be isolated any stray charges.

Subject: Re: K250 Preamp Mods
Posted by [stevem](#) on Mon, 30 Apr 2012 10:32:51 GMT
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The K100 s and K150s output there full RMS wattage into a 8 OHM LOAD, if you run it with a 4 ohm load the amps power drops down to about 55 watts of clean rms power instead of 75 and will run the output stage twice a hot for any given volume level as it would at 8 ohms. In light of this, if you must run a 4 ohm load I would place a small fan set at low speed facing the rear of the amp for gig usage, or get a box type 220 volt fan and power it with 120. This will be very noiseless and provide enough cooling to keep the amp safe and alive.

Subject: Re: K250 Preamp Mods
Posted by [RobbieNuke](#) on Mon, 30 Apr 2012 12:01:39 GMT
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I do not know the spec of the K100/K150 amps (don't own any). But I've never heard of power dropping when reducing the load! Did you actually measure this since this goes against all other laws of physics? Since voltage remains constant, when R (or Z) decreases, current increase... hence giving one more power output in Watts.

My response was to the owner(s) of K250 series amps which are stated at running a load of 3 to 4 Ohms... according to the speaker plates on the rear panel. I've seen other Kustom heads with twin speaker jacks stating 8 Ohms each (for a 4 Ohm total load). All K200 and K250 heads are designed to perform at 4 Ohm loads (unless someone has documentation to the contrary). I don't know the specs for other amps (i.e. SC Series combos, post-Naugahyde units, etc).

I would agree with the increase in heat (which is, again, indicative of an increase in power output. My Sunn Concert Bass amp runs hotter at 4 Ohms than at 8 Ohms). Using a 220 VAC fan is a nice trick!

Subject: Re: K250 Preamp Mods
Posted by [Coolerhead94](#) on Tue, 01 May 2012 01:35:20 GMT

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Thanks for the suggestions regarding the speaker outs - and I make sure I have connections in place before I power up to prevent frying the preamps (or any other parts)...

Still looking for any Mods to prevent this thing from breaking up so early... I have acquired some 4739AK adapters and will probably drop in the 5532 op amps as a test... maybe even roll some other more modern equivalents...

Anyone else have other suggestions?

Subject: Re: K250 Preamp Mods
Posted by [stevem](#) on Tue, 01 May 2012 10:22:04 GMT
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Yes the power loss is what takes place with Kustoms and I will post you the voltage output seen at different resistive loads tomorrow morning.

Subject: Re: K250 Preamp Mods
Posted by [pleat](#) on Tue, 01 May 2012 12:54:14 GMT
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Getting back to the original question of early breakup and distortion, it sounds from what I've read, the power amp section is good. Advice on changing out the IC's in the pre amps might be good to try, but I believe you have issues in the pre amps that are causing the early break up. Have you cleaned all the Molex connector plugs between the circuit boards? Kustom finally sent out a dealer memo to cut the plugs off and hard wire to the boards. Would it make sense to trace the pre amp early distortion issue to fix the issue and then try more modern IC's?

Kustom sent a dealer memo on 11-5-71 addressing the opposite issue where the first run of the series, customer complaints that they wanted more gain. Models after 11-5-71 had those changes from the factory. The #1 input was normal gain, and #2 input had increased gain for running single coil guitars, or if you wanted a lot of gain #2 with humbuckers.

Pleat

Subject: Re: K250 Preamp Mods
Posted by [stevem](#) on Wed, 02 May 2012 10:30:18 GMT
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Is your bass active?
