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Subject: k200 b-5

Posted by [jer19541](#) on Fri, 21 May 2010 16:16:41 GMT

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first, im new to this group. my k200 b-5 has very little output on all four channels. channel 1 very low output, channel 2-less than channel 1. and so on for the remaining channels. i took the cover off, and noticed broken transistors on preamp board.at least two broken transistors on all four preamp boards.i figured this may have something to do with the problem.i would like to replace all transistors in preamp boards.are these transistors still available? f2n3638-003 and fse4002-943. or equivelant? thanks.

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Subject: Re: k200 b-5

Posted by [chicagobill](#) on Fri, 21 May 2010 16:38:22 GMT

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Welcome to the place!

You say you found some broken transistors. How are they broken?

All Kustom 200 series amps used transistors that are fairly easy to replace. The 2N3638 is a PNP transistor that can be replaced with a common 2N3906. The SE4002 is an NPN that can be replaced by the common 2N3904. I think that both are still available at Radio Shack.

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Subject: Re: k200 b-5

Posted by [jer19541](#) on Fri, 21 May 2010 19:38:36 GMT

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thanks chicago bill for info.the leads were broken off at the base of the transistor. 2-3 in each preamp board. it looks like rust. im pretty sure this amp sat in a damp enviroment for a long time. but it has that "thump" sound when you turn it on.i read that that is a good sign.are there any other troubleshooting tips for this problem? also, only one lead was broken off in each transistor(2-3 in each preamp board) not all were broke.

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Subject: Re: k200 b-5

Posted by [chicagobill](#) on Fri, 21 May 2010 19:46:48 GMT

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Usually the leads are long enough that if the broken section is close to the pc board, you may be able to unsolder the transistor and insert it down into the board and resolder it back in place.

The thump is a good sign, as it means that the power amp section and the power supply are probably working ok.

Start by fixing or replacing the bad transistors on the preamp boards. If that doesn't fix it, the next

thing to check are the signal path capacitors.

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Subject: Re: k200 b-5

Posted by [jer19541](#) on Sat, 22 May 2010 13:20:54 GMT

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thanks again for your reply, got the amp apart last night. but, how do you orient the new transistors in the board? i know they have a flat side that goes a certain way. also i have read on this site that, replacing the original transistors with modern ones, there a loss with the original tone or sound that kustoms have. is there anything to this? thanks.

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Subject: Re: k200 b-5

Posted by [chicagobill](#) on Sat, 22 May 2010 15:56:02 GMT

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I've never noticed a difference in audio tone by replacing a transistor in a Kustom amp. I've sometimes noticed less noise and hiss though.

If you look at the original transistors, the leads are arranged in a triangular pattern. The center lead is always the base (B). The transistors will have a flat spot on the edge or rim of the case. The lead closest to the flat spot is the emitter (E) and the third lead is the collector (C).

A lot of new transistors have the lead designations molded into the case. Generally speaking, if you hold the transistor with the flat side facing you leads pointed down, the leads usually are E-B-C.

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Subject: Re: k200 b-5

Posted by [jer19541](#) on Mon, 24 May 2010 23:43:01 GMT

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thanks again bill, waiting for the transistors. what voltages should i look for in the preamp boards. and where are the test points. (no schematic) and how should i set my meter? thanks.

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Subject: Re: k200 b-5

Posted by [stevem](#) on Tue, 25 May 2010 09:50:35 GMT

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Each of the 4 preamp boards gets power off of a 8 volt DC positive and negative supply coming into the boards on the red and green wires, the blue wire is the audio output.

To test hook your meter up across each wire to ground/the chassis, if all is well each voltage should be no lower than 7.5 and no higher than 8.5.

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If your readings are off you may have just one board pulling down the voltage on all the others. In this case you can unsolder the red and black wires from each board( both wires at the same time)to see if the volatges change, if they do not solder them back on and move on to the next board.

Note that the 5 watt resistor next to the pilot lamp gets real hot, so steer clear!

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Subject: Re: k200 b-5

Posted by [jer19541](#) on Tue, 25 May 2010 22:33:33 GMT

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thanks for the reply. checked voltages, 8.1 and 8.2 volts.so semms ok with that. but i noticed there is some corrosion (green) on the foil side traces.is there a safe way to clean this off? and how would this affect the operation of the board?

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Subject: Re: k200 b-5

Posted by [stevem](#) on Wed, 26 May 2010 09:45:46 GMT

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The voltages are so low in a solid state circuit that I do not think the green tarnish is a problem as far as bleeding over voltages and signals.

Any household polishing product for brass and silver can be used to remove it.

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Subject: Re: k200 b-5

Posted by [chicagobill](#) on Wed, 26 May 2010 16:14:00 GMT

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I think it depends on how bad the corrosion is. The traces on the pc board are Copper, thus the green corrosion. If whatever the substance that got on it is highly reactive with copper, it could cause problems with the board. I've seen traces etched away by something that had been dripped on to a board.

I'd clean it with a wet Q-tip followed by a little kitchen cleanser like Comet. Then finish with a clean water wipe down. Be sure that the board is dried off before plugging the amp back in.

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Subject: Re: k200 b-5

Posted by [jer19541](#) on Fri, 28 May 2010 09:34:47 GMT

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thanks again for your reply. well, i installed all transistors in preamp board # 1. radio shack equivalant. still no sound. just a low hiss.no change when i rotate bass, trelble, volume controls. what should i check next? thanks.

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Subject: Re: k200 b-5  
Posted by [chicagobill](#) on Fri, 28 May 2010 18:40:58 GMT  
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Let's go back to the beginning here and do this right. Your amp powers up, but there is very little signal from any of the channels. You have found that there are some transistors that have broken legs on them in the preamps. Right so far?

If you shake the reverb tank will it make a loud sound through the speaker? Did you check the rest of the amp for broken transistor leads?

Did you check the voltages on the preamp board besides the + & - 8vdc supplies? Which of the transistors did you replace? There are 5 on each preamp board.

Do you have the schematics for your amp?

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Subject: Re: k200 b-5  
Posted by [stevem](#) on Fri, 28 May 2010 18:51:19 GMT  
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Hey Bill, I do not have my schematics with me here today, can he bypass the audio output from the preamp(s) to the reverb board and just run the output from any of the amps channels to the output driver board?

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Subject: Re: k200 b-5  
Posted by [chicagobill](#) on Fri, 28 May 2010 19:18:52 GMT  
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Yes, then it would be the same as a K200B-1.

What I'm trying to find out is how well the power amp and the reverb/mixer boards are working before diving into the preamps.

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Sat, 29 May 2010 01:34:51 GMT  
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yes, right so far. i have not checked any other voltages besides the 8 vdc in the preamp board.i have removed preamp boards #2,3,and 4. also, i have found another broke transistor in the main amp board. # fz952. and i do not have a schmatic. i have also replaced all transistors in preamp board # one. with radio shack transistors one 2n3906, and four 2n3904.also, it powers up and has the THUMP. i have not checked reverb board yet. didnt see any broken transistors.and what is the equivelent to fz952? thanks again.

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Subject: Re: k200 b-5  
Posted by [chicagobill](#) on Sat, 29 May 2010 17:32:31 GMT  
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That may not be a broken transistor, that may be a normal part of the regulator circuit, where they used a transistor basically as a diode.

PM your email address and your pc board numbers to me and I will send you copies of whatever I have.

What about the reverb question, if you shake the tank does it sound loudly through the speakers?

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Sat, 29 May 2010 20:01:02 GMT  
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thanks again. i guess your right. the third leg on the transistor (collector) is not there. the solder hole doesnt look like it has never been used. no flux, no solder residue. clean copper. and it is connected to nothing. the reverb tank has three broken wires in it. which i will fix later today. my e mail is [jer19541@yahoo.com](mailto:jer19541@yahoo.com). thanks again for all your help. i will let you know about the reverb tank tomorrow.

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Sat, 29 May 2010 21:44:13 GMT  
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also forgot to mention, the preamp board numbers are ke1-1 and pc105 thanks

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Sun, 30 May 2010 15:02:52 GMT  
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i fixed the three wires on the reverb tank. replaced the phono cables (bad). it does work, but only if i swap the cables. from input on reverb board to output on reverb tank, and output on the reverb tank to input on reverb board (weird). and i do have some volume, but only highs (no bass) using a cd player. but if i hook up input to input and output to output, doesnt work. no sound and no reverb. i think im getting close

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Mon, 31 May 2010 03:06:00 GMT  
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well i got it to work. i put a 1/4 inch dummy plug in the footswitch female plug on the back of the amp.( i guess this cuts the reverb out). using a cd player, i have full volume. but the bass and treble controls do not work.(bad pots?)is there a way to check them? thanks.

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Subject: Re: k200 b-5  
Posted by [stevem](#) on Tue, 01 Jun 2010 09:49:33 GMT  
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I cracked open my b-5 over the week end, and all the 5 transistors on the preamp boards have all 3 leads each, also each board has 4 bare metal ( steel it looks like) jumper wires.  
Do all of your preamp boards have jumpers, as I am wondering if they corroded away?

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Tue, 01 Jun 2010 13:07:42 GMT  
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yes, they have 4 steele jumpers. some corrosion. concentrating on just one board at a time,(channel one)i now have it working good. i removed the bass and treble pots, took them apart, cleaned them, cleaned the ground foil on the bass pot (very corroded) new washer. reinstalled them, fixed yet another broke transistor. and what do you know.....it works! plenty of volume, bass and treble. i will start on channel two shortly.thanks again!

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Subject: Re: k200 b-5  
Posted by [chicagobill](#) on Tue, 01 Jun 2010 20:11:10 GMT  
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Great to hear that you're on the way to getting it working again. Your approach of one channel at a time is the smart way to go.

Is it possible that this amp was a flood victim? This would explain the corrosion on the boards and also the broken (rusted through) transistor leads.

Double check your board numbers, as I think that your amp should have 4-PC105 preamp boards, 1-PC803 Reverb Mixer Board and 1-Power amp PC board.

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Wed, 02 Jun 2010 01:24:34 GMT  
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yes it has the boards as you mentioned. i replaced all transistors in board # two, (channel two) and nothing. just a slight hiss. so, i checked them again and i had one backwards.unsolderd it and put it back in. base and collector were backwards. and it worked very good just like channel one.

---

so, two down and two to go! this thing sounds awsome!i never imagined that that kind of sound could come out of that beat up old box with padding. i got it from a local speedmetal or deathmetal or whatever band that invited me to hear them. they sucked bad, im 56 years old, i dont give a damn about that crap.i noticed that there was a kustom amp holding the door open. i asked them if they would sell it. they told me that, if i find something else to hold the door open, i could have that piece of shit. so i put a brick in its place, took the amp and left. no respect whatsoever!well thats the story.i will continue to work on it till its 100% or as close as i can get it.thanks all for your help. couldent have done it without everyones help.

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Subject: Re: k200 b-5  
Posted by [stevem](#) on Wed, 02 Jun 2010 09:52:16 GMT  
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Keep pluggin away as you have a good handle on it now and I`am sure you will get all 4 channels working.

Like bill said, be sure to check the 4 output transistor steel leads where the slip on connectors go for rust and in the connector itself.

Be carefull working around down near the outputs as that bias diode that is clipped down in the center has brass leads that snap off easy!

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Subject: Re: k200 b-5  
Posted by [jer19541](#) on Sat, 12 Jun 2010 11:23:12 GMT  
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just orderd more transistors, bulb, one blue jewel.getting ready to start on channel 3. (k200-b5). i have noticed that channels 1-2, has only one blue wire from the input jack to the preamp board. but channels 3-4 has two wires from the input jack to the preamp board. one black and one blue. is this a low input? also does anyone know what the frequency responce of this amp is? thanks.

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Subject: Re: k200 b-5  
Posted by [stevem](#) on Mon, 14 Jun 2010 09:42:22 GMT  
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Could you post a picture of that side of the amp, from the input jacks across those two baords? I have never frequency swept a k200A or B model like I have the esrlyer Frank model, but they should do better than the Frank head that can go from 20 to 10k which than rolls off fast from 12k on up.

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