Subject: Misprint or error
Posted by reyes61012 on Fri, 20 Apr 2012 23:38:52 GMT
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Salvaged a Kustom Amp (K200 maybe) from jumk. brought it home, removed from the piggyback cabinet, the vinyl wrap was a mess, and cleaned the chassis. When I plug the unit, there was a hiss and crackling sound. The volume was very low. I hooked up a microphone, samething - low volume.

I got DC 40V +/-. No 8V +/-; intead I got 25V on the 8V line.

I checked the circuit using PC 703 schematic found in this site. What puzzled me is Q711(FZ952) supposed to be an NPN. What is in the unit checked as PNP using a digital multimeter. Is this a misprint or a production error? Is there any service bulletin regarding this aspect?

I will start to unsolder components to check in depth but I would rather hear from expert techs who are familiar with Kustom Amps. This is the first time I saw this Brand and I am impressed at the layout of the components

Can anybody help? Will apprecdiate deeply any suggestions or tips or guidance.

Subject: Re: Misprint or error
Posted by chicagobill on Sat, 21 Apr 2012 00:50:29 GMT
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Hey, welcome to the place. You're right Kustom amps were very well built. As for your amp, there should be a model number printed on the small metal tag that is pop riveted to the back panel. Something like K200B-1 or K200A-1, etc. Unless your back panel is made from perforated steel, then there should be a small sticker under the perforated panel.

Each version of the K200 head had a slightly different power supply. The original Frankenstein heads had plus and minus 40 and a plus 24 for the preamps. The K200A series had + & -40 and + & -24 volts for the preamps. The later K200B series had + & -40 and + & -8 for the preamps. So when you say that you only have +24, I have to wonder if you have a different model amp than the one that uses the PC703 board.

If you give us a good description of the chassis, we can help to solve your problem.

Subject: Re: Misprint or error
Posted by reyes61012 on Sat, 21 Apr 2012 01:51:19 GMT
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Thanks for the prompt reply. This unit does not have any model or serial number. I have pictures that I can send you. If Kustom has series that have 27 or less volts, then I might be basing on the wrong PC703 board.

How can I send you the pictures so you will see the layout and probably you will know what model is this? I do not kn ow how to attach the pictures on this message.

And do you think the NPN is supposed to be a PNP?

Subject: Re: Misprint or error
Posted by pleat on Sat, 21 Apr 2012 02:05:44 GMT
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If your knobs on the front panel are in a triangle fashion, you have a Frankie model. If you amp has knobs in square fashion you have either a K200A or K200B. On the front panel below the input jacks, if it says By Ross Inc. It is a K200A series. The K200B series added)))200(((below the Kustom Logo and the By Ross was removed. This is a quick way to let us know what you have without having to post a photo.
pleat

Subject: Re: Misprint or error
Posted by reyes61012 on Sat, 21 Apr 2012 02:08:58 GMT
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The faceplate of the unit indicates that it is Kustom by Ross Inc. It has four channels each with its own vol. bass, treble, and reverb controls. There are four preamps circuit boards attached at the back of the faceplate. I think the reverb unit is at the bottom just like the power supplies and the filters. At the back are the audio amps output board and two regulator PC boards. The regulator PC board has Ross Inc printed at the back and I think it is PC 105 0r 501.

If I can send you the pictures that would help in determining what model it is. But I don't think I can attach here since it says Max. file size - 0KB. I can attach the image in email though.

The configuration of the knobs are square. The sw in the middle OFF in mid position and ON on either right or left. There are four input jacks. At the back are two speaker jacks on the right side and there is an RCA jack on the upper left and a i/4 jack for foot SW I think

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Subject: Re: Misprint or error
Posted by reyes61012 on Sat, 21 Apr 2012 02:27:06 GMT
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I am not familiar with Kustom amps. The little I know about this unit now, I got from surfing the forum. That's is why I got PC 703 and PC 709 that I am basing on trying to trace the circuits Now that we have a close description of the chassis am I correct to assume that I should have the 8V +/- supply for the preamps? The way I see it the 8V+ comes out at the junction of R745 and R746 and the 8V- comes out of collector R751.

Subject: Re: Misprint or error
Posted by reyes61012 on Sat, 21 Apr 2012 02:36:15 GMT
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Considering the age and condition of this unit, resistance checks of components in circuit is not way off at 20 % tolerance. The 2.7 ohms of the regulator measures 3.5 ohms. I have yet to check the capacitors after I am sure what model is this and if I can get the right schematic for this unit.

Subject: Re: Misprint or error
Posted by chicagobill on Sat, 21 Apr 2012 04:07:02 GMT
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Kustom amps were very well designed and extremely well built. They were one of the biggest and best manufacturers for a time there, sorta the Peavey of their day.

From your descriptions, it sounds like a PA model K200A-5. The giveaway is the fact that you say that you have a regulator board. The B-series amps do not have separate regulator boards as they are part of the power amp board.

I don't think that I have the schematic for the reverb/mixer circuit for your amp, but I do have the power amp and preamp circuits.

The two 24 volt supplies are carried by the red and green wires to the different boards. Do you have both + and - 24 volts?

On the back panel there is an RCA jack. This is meant to be used as an output to a tape recorder or other device. Because it is isolated with a cap and connected to the input of the power amp, it can be used to inject a signal directly to the power amp. If you have a signal generator plug it in there and see if the power amp is working to full power. If no generator try an ipod or other device.

You can also test the other way and test the preamps by taking the RCA output to another amp. Once you've isolated the problem to either the preamp or the power amp section, you'll be able to find the problem faster.

I wouldn't be overly concerned about resistor tolerances at this point, unless it's way off. I'd make a first guess that there probably is a bad cap before a bad resistor.

PM me your email address and I'll find the scans of the schematics that I have for your amp.

Subject: Re: Misprint or error
Posted by stevem on Sat, 21 Apr 2012 11:56:12 GMT
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I can fax you the schematics for the A serise amp which is what it sounds like you have, the latter B amps only have 4 TO3 type transistors mounted to the chassis floor.

Subject: Re: Misprint or error
Posted by chicagobill on Tue, 24 Apr 2012 15:52:13 GMT
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OK, I've seen photos of his amp and it definitely is a K200A-5 PA head. I've sent him the correct schematics for the power amp, voltage regs and preamps, but I don't have the reverb mixer board schematic for an A-series PA. Maybe one of you other guys has one that you can send him if he needs it.

Now maybe he can get it working again.

Subject: Re: Misprint or error
Posted by reyes61012 on Tue, 24 Apr 2012 16:58:30 GMT
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Stevem -

Chicagobill sent me schematics for the preamp circuit, the two regulator circuits and the power amps circuits. These will be a big help and thank to Chicagobill.

Did you send three faxes this morning? I ran some errands and when I got back home, there were three fax' reports but the three were blank. They were sent at 8:58A; 9:00AM and 9:23AM. Each duration of transmission - .23 min.
They did not have the number where they originated.

Before I go any further on the reverb section, I will try to have the unit in working order first. Two channels are working with reasonable vol. Channel 2 and 3 heve very low vol.

I will find what replacement I can use for Q101 and Q102. I do not like the reading I got.

KustomnDan mentioned that this unit does not have the reverb tank. That's how I got this when I removed it from its cabinet.
Channel 2 board has traces that it had been worked on.

I will surely let you guys know how I progress in this unit.

Thanks for all the help.

Subject: Re: Misprint or error
Posted by reyes61012 on Tue, 24 Apr 2012 17:06:41 GMT
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chicagobill

Thanks for the circuits schematics. The reverb tank is missing as mentioned by KustomDan. The middle alum. bar has two holes and the mixer-reverb board (I think that's the name) has two RCA

jacks. That might be the input and the output of the reverb.

But I will worry about that later on. First task is to have this unit in working order. It will be a nice toy to play with.

Thanks again and I will keep in touch as to how I progress in this project.

Subject: Re: Misprint or error
Posted by cassent5150 on Wed, 25 Apr 2012 00:36:11 GMT
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yes your right the RCA jacks are for the reverb pan. the jack closest to the front preamp panel is the output to the tank and the rca jack closest to the back driver panel is the input recovery from the tank and I believe the reverb tank has to be grounded to the chassis for it to operate. Steve C

Subject: Re: Misprint or error
Posted by reyes61012 on Wed, 25 Apr 2012 04:07:41 GMT
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Steve C

Thanks for the info. It's a great help.

Subject: Re: Misprint or error
Posted by stevem on Wed, 25 Apr 2012 10:24:49 GMT
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I tryed to send you the schematics twice, at about 7 am est, but got no responce from your end.

Subject: Re: Misprint or error
Posted by reyes61012 on Wed, 25 Apr 2012 23:25:32 GMT
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Stevem

I am sorry for the inconvenience. I was rehooking my fax machine during that time. I transferred the machine to the other computer and reloaded the software. If this will not work, my son said he will just get me another fax machine.

I will send you PM soon as I get back from North Myrtle Beach on Sunday PM. This is an

unscheduled travel.

Subject: Got the amps all channels working
Posted by reyes61012 on Wed, 09 May 2012 21:05:12 GMT
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stevem

Got my k200 amps working - all 4 channels. I replaced msps 953 on the two chanells with an all purpose NPN transistors that I bought from Radio Shack.

Not a musician, I got a make-shift pick-up and mounted it on my cheap accoustic guitar. It worked but I think I am not getting at least 50 or 60 watts of power. I am using two 8-inch ordinary 8 ohms speakers in parallel to have 4 ohms load. I am now trying to figure where the hiss or noise coming from. I don't think it is 60 cycle hum. I have not tried using my old scope that is sitting in the basement for 20 some years now, he he he .

Now that I have this running, I am thinking of adding a reverb unit if I can find the schematic for it. Is the board mounted flat at the bottom the reverb board? I figured the other jack on the right side at the back is the foot sw. for that purpose.

By the way I sent you my postal address in my last email to you.

Any tips regarding the hiss and other noise?

As it is , I only replaced two transistors, a 25 MFD Mallory cap and the 100MFD on one of the tone control board. I have not touched the other parts but to check resistance in circuit - and not getting exact values.

Subject: K200 amps is back in operation.
Posted by reyes61012 on Wed, 09 May 2012 22:19:00 GMT
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chicagobill

Got my k200 amps working - all 4 channels. I replaced msps 953 on the two chanells with an all purpose NPN transistors that I bought from Radio Shack.

Not a musician, I got a make-shift pick-up and mounted it on my cheap accoustic guitar. It worked but I think I am not getting at least 50 or 60 watts of power. I am using two 8-inch ordinary 8 ohms speakers in parallel to have 4 ohms load. I am now trying to figure where the hiss or noise coming from. I don't think it is 60 cycle hum. I have not tried using my old scope that is sitting in the basement for 20 some years now, he he he .

Now that I have this running, I am thinking of adding a reverb unit if I can find the schematic for it.

Is the board mounted flat at the bottom the reverb board? I figured the other jack on the right side is the foot sw. for that purpose.

Considering the age and the condition of this unit (which might have been in humid basement or that sort) still it worked. I will see if I can feed a CD player and see if there any distortion at high volumne.

Any tips regarding the hiss and other noise?

As it is , I only replaced two transistors, a 25 MFD Mallory cap and the 100MFD on one of the tone control board.

Your schematics are a great help. Thanks.

Archie

Subject: Re: Misprint or error
Posted by stevem on Thu, 10 May 2012 10:43:16 GMT
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untill you get a reverb pan back in the unit I would make up a shorted RCA jack to go into where the output cable would plug in, with out this you have a open gain stage (if the gain stage works, see below) and may be picking up noise.

If you plug the cable in this output jack and get a buzz when you touch the tip, then thats good news and means that the recovery side of the reverb board is working and in all liklyhood when you pop in a new reverb pan with a ground to the chassis you will be good to go.

The blue wires in the amp are the signal wires, if you unhook them from the output driver board you can test out the noise level of just this board itself, when all is well these boards are pretty dam noiseless!

I cut the wires at a place where I can just red butt splice them back togethere.
As a matter of course I would replace the first two or three transistors after the input jacks on all four channels, as most times this is the root of alot of hiss and crackle, it takes way less than 3/4s of a volt RMS of signal input to drive these amps to full output, and if a former owner drove any of the channels witha stomp box its all too easy to harm the input gain stage transisor!

If your O-scope still works you can trace back up stream form each channels blue output wire and find any other noisy transistors, or with a volt meter leaky coupling caps.

Once you get it back in good shape I mod I have done with mine for guitar or bass use is you change the tone caps in 3 of the 4 channels for a different frequency range, then with a out board a/b/c/d foot switch that I made, I can switch to different channels for tone and volume changes.

Subject: Re: Misprint or error
Posted by reyes61012 on Thu, 10 May 2012 22:33:43 GMT
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Stevem

Thanks for the tips. That is a great help.

On the reverb board, there are two RCA jacks. One in front and the other at the back towards the regulator boards.

Is the one in front the output to the tank and the one at the rear the return from the tank?

Do I plug the shorted RCA to the one in front? Then using another RCA plug with cable, connect it to the rear jack and if I hear a signal, it means that the reverb is working?

I experimented on replacing the input coupling caps on all four boards and I am surprised at the tone quality results. I started with .01 through .05 and the 470pf seems to give a nice tone maybe suitable for a bass guitar.

Not a musician and non-guitar playing, I have a keen ear to highs and lows of High Fidelity components.

You guys drew me back again to my old hobby. I thank you all.

Subject: Re: Misprint or error
Posted by cassent5150 on Thu, 10 May 2012 23:03:34 GMT
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The RCA jack close to the back is your recovery input from the Reverb tanks output and if its working well, stevem is right, could be some of your noise. The RCA closest to the front of the amp is output to reverb tank. "NOTE: THE REVERB TANK NEEDS TO BE GROUNDED TO THE CHASSIS TO OPERATE"

Subject: Re: Misprint or error
Posted by stevem on Fri, 11 May 2012 10:20:10 GMT
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You plug the shorted out RCA into the rear most jack like 5150 posted to stop any added noise from the open gain stage, and if you plug a good RCA cord into that jack and touch the center pin on the other end you will get a buzz sound thru the spreaker.
This tells you the recovery side of the reverb board is working.

If you hook up the front most jack to your O-scope and feed a signal into a channel with its reverb control up you will see the pans drive signal and have confrimed that the drive side of the reverb board is ok also.

Do you have the orignal aluminum mounting tubes that spaned the top of the amp front to rear? This where the pan hung from orignally.

Subject: Re: Misprint or error
Posted by reyes61012 on Fri, 11 May 2012 19:30:59 GMT
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Thanks for the info.

Only one aluminum tube is in this unit. There are two holes near the other end of the chassis and I figure those are for the missing tube. I can make another one when I come to that phase of restoring the amps.

Sometimes there will be a very loud hissing sound for a few seconds when you switch on the amps. When the hissing levels off the amps works normally. This is also true with all vol. controls at minnimum position.

Looking for the offending components is getting interesting as I progress in this project.

Thanks again.

Archie

Subject: Re: Misprint or error
Posted by stevem on Sat, 12 May 2012 11:33:15 GMT
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Are talking hiss as in white noise, or 120 hz hum?
If its hum that means one side of the power supply is coming up to volatge slow and in that case I would replace the two big main 4500 uf @ 50 volt filter caps on the floor of the amp.
These amps have alot more punch if you replace these with 10,000 uf filters, and they will last twice as long if you go with the more expensive 75 volt or greater ones.

Subject: Re: Misprint or error
Posted by reyes61012 on Sun, 13 May 2012 01:20:36 GMT
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Hard to tell if it is 60 or 120 hum.

When the hiss level off the amps sounds like a tube unit. I can turn the bass control full and you barely notice the change in sound. The trebble control is at mid point, and when you advance it to full, the hissing increase noticeably.

You might be right that half the power supply delays in coming up as the hissing levels off

gradually and without any sort of motor boating sound.

I will try your suggestions. Will let you know what happens next.

Thanks for all the service tips and the logic that come with those valuable points.