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Subject: Schematic needed....

Posted by [carlc](#) on Sun, 09 Jul 2006 11:23:42 GMT

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Hi all,

I'm new to the board. I have a Kustom that I bought new in '65 or '66. I've lost power and am in need of a schematic for repair.

It is a 745PA, reverb on one channel. Red sparkle with a dual 12" cabinet.

Thanks for the help!

Carl

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Subject: Re: Schematic needed....

Posted by [stevem](#) on Mon, 10 Jul 2006 16:17:30 GMT

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Hi, if you have a fax I will send you a copy, or post your adress and I will mail you a copy.

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Subject: Re: Schematic needed....

Posted by [carlc](#) on Mon, 10 Jul 2006 17:26:42 GMT

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Steve,

Thanks for the help!

Fax number is (843) 740-2249

Here's my address too (sometimes faxes are hard to read)

Carl Chinn

217 Brailsford Rd

Summerville, SC 29485

What's the cost?

Thanks again,

Carl

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Subject: Re: Schematic needed....

Posted by [chicagobill](#) on Mon, 10 Jul 2006 19:17:07 GMT

Welcome to the board Carl.

As most of the folks here know, I love the high brow K-200's, and having fixed all of mine, I'll tell you where to look first.

If I understand it correctly, your amp powers on, but you have no power? If so, then first check the large cap on the small driver board that is located on the back panel. It is cap number C203 on the schematic that Steve will send you. It is a 500mf electrolytic cap. Depending upon how old your amp is, it probably is a black plastic cylinder, about 1/2 inch in diameter and 2 inches long. If this cap opens up or drifts too low in value, it will cutoff the driver transistor and your amp will lose power or not make any sound at all. To replace it correctly you will need to un-mount the board by removing the two attached power transistors. If this is too much for your skill level, either refer service to a qualified pro, or just clip the leads off the cap and solder the new one to the old leads above the board. Not too pretty but it will get the job done. I prefer undoing the transistors, as this allows me to clean and re-grease them. Remember that this cap is polarized and must be installed in the right direction, or it may blow up (literally!).

As long as you are at it, you'll find another one of these same caps on the reverb board on the left side of your amp as well. It too should be replaced, as it has also probably drifted out of spec as well.

Best of luck,  
Bill

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Subject: Re: Schematic needed....

Posted by [carlc](#) on Mon, 10 Jul 2006 20:19:58 GMT

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Bill,

Thanks for the advice. You are correct, powers on, but at full volume I'm not getting much. Yeah, this thing is about 40 years old (since I bought it new it makes me REALLY old) so I know many of the components need replacing. Cleaning and re-greasing the power transistors is a definite. I'll also check the reverb. I liked seeing Steve idea about boxing the springs in with cardboard. Sure would like to see a picture of it.

I was a navigation electronics technician for 24 years in the Navy so repairs are not a problem. I've been away for quite a while and the theory stuff has faded some.

Thanks again,  
Carl

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Subject: Re: Schematic needed....  
Posted by [chicagobill](#) on Mon, 10 Jul 2006 22:06:51 GMT  
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Carl:

You should go ahead and re-mount all of the output devices while you're in there. Removing the back perforated panel will probably take the most time.

When you get into it, you'll find that the Frankenstein heads have a ground loop problem in the reverb tank circuit, that causes a hum. If your tank is original, both RCA jacks are grounded to the metal tank. Both of the cables also have grounded shields causing a ground loop. If you unhook the ground on the drive cable you should find that the hum will drop quite a bit. I believe that the factory tried to fix this by attaching the short ground wire that connects the metal reverb tank with the amp chassis, which actually made the problem worse.

Also, with the way that the tank is mounted inside the top of the case, I don't know if the cardboard encasement will work.

Bill

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Subject: Re: Schematic needed....  
Posted by [carlc](#) on Thu, 13 Jul 2006 13:20:40 GMT  
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Bill,

Thanks again for more information. I will look at it all when I get the schematic from Steve, hasn't arrived yet.

Regrds,  
Carl

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Subject: Re: Schematic needed....  
Posted by [steven](#) on Fri, 14 Jul 2006 11:01:05 GMT  
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Carl, is the copy I faxed you usable?

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Subject: Re: Schematic needed....  
Posted by [carlc](#) on Fri, 14 Jul 2006 13:18:26 GMT  
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Steve,

The fax number I gave you is my wife's office. She said she got it yesterday. She also said it was really small and today is going to try to blow it up and see if it's readable.

I'll let you know when I see it this evening.

Thanks!!

Carl

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Subject: Re: Schematic needed....  
Posted by [carlc](#) on Tue, 18 Jul 2006 17:58:39 GMT  
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Thanks Guys...

Steve, the faxed schematic is too small to read and the enlarged version is too fuzzy. Bill mailed me a copy.

Bill, I got the copy you mailed and it is great! Thanks again.

I haven't been able to dig in ot it yet because of family in from out of town. We all know about that chaos!

Regards,  
Carl

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Subject: Re: Schematic needed....  
Posted by [stevem](#) on Wed, 19 Jul 2006 11:21:00 GMT  
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Sorry carl, I had to reduce it alot to fax.

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Subject: Re: Schematic needed....  
Posted by [carlc](#) on Wed, 09 Aug 2006 14:54:01 GMT  
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Hi Guys,

I still haven't had time to get into all the repairs, but I did take the back perforated plate off and get a good look at the ID tag.

Model 745 PA  
Serial # 10584

Color Black

From this info looks like mine was made in early 1967, which is when I bought it. The interesting thing is...mine is red sparkle, not black!

Hopefully I'll get to it soon and get the power back up to snuff.

Thanks again for all the help.

Carl

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Subject: Re: Schematic needed....

Posted by [chicagobill](#) on Wed, 09 Aug 2006 15:44:06 GMT

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Carl:

Don't ya just hate it when life gets in the way of one's hobbies!

There could be a few different reasons for the wrong color on your id tag. But, if you've owned it since it was new and it has never been out of your hands, then a factory error is probably the explanation. It's not difficult to switch cases and if your dealer needed a red head to go with red cab, then he may have made the switch.

I remember reading a few posts here, about Bud Ross telling stories about the old days when factory repairs may have really been exchanges. Or at least that's what I remember.

Keep us posted on your progress.

Bill

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Subject: Re: Schematic needed....

Posted by [carlc](#) on Sun, 08 Oct 2006 14:44:01 GMT

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Hi again guys.

Well, I made some repairs. Looked at C203 (500ufd) and the other just like it. They were right on spec. What was way out were the 2 4500 ufd capacitors (C2 and C3) on the driver regulator board. They both read about half value, so I replaced them. The hardest part was figuring out how to use the old clamps with the new, smaller caps.

Everything else appears OK. I now have a lot more volume and the background hum is even reduced greatly.

Thanks for the help.

Carl

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Subject: Re: Schematic needed....

Posted by [stevem](#) on Tue, 10 Oct 2006 11:49:33 GMT

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Good to hear your crankin again!

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Subject: Re: Schematic needed....

Posted by [chicagobill](#) on Wed, 11 Oct 2006 15:20:51 GMT

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Carl:

Congrats on getting it up and running again. There is still a lot of life left in these old amps.

A question for you... I don't own a Frank-PA, and I know this has been asked before, but I can't remember if it was ever answered: Are the 0.005 "HIGH" input caps removed from the PA heads? I know that the front panels are not marked high and low, and I would assume that they are not installed on a PA, but maybe you could let me know for sure.

Just wonderin'

Bill

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Subject: Re: Schematic needed....

Posted by [stevem](#) on Wed, 11 Oct 2006 16:42:35 GMT

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You know what bill, have a the PA head and I can not recall, so as I sit hear I am looking at the schematic for all the frank heads which are on one sheet as kustom provided it, and yes the caps are common to all versions due to that input board being used on all versions.

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Subject: Re: Schematic needed....

Posted by [carlc](#) on Thu, 12 Oct 2006 18:48:46 GMT

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Bill,

Don't know for sure. I took a bunch of pictures of the inside while I had it apart, but none that show those inputs.

Figures, thought I had a good idea with the pics and after it's all buttoned up I'd like to take a few

more.

Carl

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