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Subject: Changes in capacitor values - from schematic  
Posted by [Saransk](#) on Sat, 04 Mar 2017 03:47:02 GMT

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I'm currently working on a PC1500 from the "garage sale" K100C-8 that had very low volume and a "funky" volume control circuit

What I've discovered is that, so far, every 100uf capacitor on the schematic (C1501,C1506) and I suspect the matching ones on PC1400, are all 33uf capacitors.

This appears to be factory installations, either due to size, or costs. A couple of the film capacitors are also different values, such as the .15uf input capacitor is actually .47uf.

On both boards (1500 & 1400) the 10uf output capacitor had the positive leg on the power amp side of the connection, reversed from the schematic

Not sure if any of this makes a difference, but I can't help but feel the higher power buss caps might make it quieter. What about the polarity direction of the output coupling capacitor. As it is primarily for DC blocking I suspect it makes no difference.

Should I be concerned about the difference between what was built, and the schematic?

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Subject: Re: Changes in capacitor values - from schematic  
Posted by [chicagobill](#) on Sat, 04 Mar 2017 04:56:33 GMT

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The substitution of the 33uF caps for the 2 100uF caps may have been done because the factory ran out of the 100uF caps that day and they had to finish running the line. The value in those positions will not be all that critical, so I wouldn't worry that much about them. If you are recapping the amp, then I would go with the schematic value.

As for the output cap polarity, it does make a difference if there is voltage at the output of the preamp. Yes, it is a dc blocking cap and the positive side should connect to the side of the circuit that has the higher voltage. To be safe, you should measure the dc voltages on each side of the cap to see if they are installed correctly or not.

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Subject: Re: Changes in capacitor values - from schematic  
Posted by [Saransk](#) on Sat, 04 Mar 2017 05:06:20 GMT

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This is a unmodified, maybe unrepaired amp

On the PC1400, which works fine, the positive side of the cap faces the PC900 as opposed to the schematic

But I'll measure the voltage on the line

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Subject: Re: Changes in capacitor values - from schematic

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Posted by [stevem](#) on Mon, 06 Mar 2017 11:06:37 GMT

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If your recapping then just order up non polarized electrolytic types and then it does not matter.

Is there a issue with the amp humming, as you mention the main supply filters?

How does the 8 volt plus and minus supply check in the amp, and are the two output Transistors original RCAs?

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Subject: Re: Changes in capacitor values - from schematic

Posted by [Saransk](#) on Mon, 06 Mar 2017 14:12:43 GMT

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As far as I can tell, this is basically 100% stock box that I bought.

No humming from the amp - sounds great using the "plain" channel

I did change the power caps, and the smoothing caps on the PC900 board.

The PC1500 had issues so it is getting a "make-over"

What is interesting is that I've found several 10uf caps reversed from the schematics - and all were factory installed that way.

Besides the 2 coupling caps from PC1400/PC1500 output, the capacitor connected to the Intensity control was reversed. It appears it was only the 10uf caps that were affected.

Since WIMA makes a great line of small film caps, most of the tantalum caps in the audio path will be replaced, only the 10uf will be ELNA. That negates the whole polarity issue.

What really is evident is that the designer(s) had "real" audio background. The Power Amp (PC900) looks more like a high-end stereo amp - think Phase Linear/David Hafler/Harmon Kardon Citation. Very over-designed. The use of feedback volume controls is very high-end, not sure any other guitar amp maker ever used them. And the regulated voltage for the preamps did cut down on the noise. Other contemporary amp designs were primitive - like the US designed VOX amps and the early Fender Solid State amps.

I wonder, has anyone rebuilt the voltage regulators using "modern" IC's, like the LM317, when they fail

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Subject: Re: Changes in capacitor values - from schematic

Posted by [stevem](#) on Mon, 06 Mar 2017 18:00:32 GMT

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Not just the early US Vox amps and Fenders, but the the 71 to like 78 Acoustic amps where simplistic single rail power supply's also!

Kustom where also using FET type Transistors long before others where too!

I have thought about using a modern IC based regulators in these amps when repairing them, but I don't think they would provide any audio quality improvement in regards to being a Guitar amp?

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They only thing they could really use especially in the early Frank type heads is a output stability circuit like Peavey SS amps started using very early on.

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