Subject: Kustom K150 Death Cap? Getting voltage through guitar cord.
Posted by ARKustom on Thu, 05 Oct 2017 15:48:33 GMT
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I recently picked up a 1972 K150 head and 212B cabinet. This morning I leaned against the instrument lead shirtless and got a little sting from it. I noticed last night that it also buzzes quite a bit if my hand is not in contact with a conductive part of my bass. Does this thing have a death cap? How should I go about removing it? I have decent knowledge of working on an amp and decent soldering skills.

Subject: Re: Kustom K150 Death Cap? Getting voltage through guitar cord.
Posted by chicagobill on Thu, 05 Oct 2017 22:40:11 GMT
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Did you try reversing the line switch?

Back when these old amps were designed most of the country was still wired for two wire ungrounded outlets and the chassis was connected to the power line through a capacitor. This cap is what is referred to as the "Death Cap". If the cap connects the chassis to the neutral side of the AC line, then there is less hum and noise and there should be no voltage difference between the chassis and the AC ground connection. If the chassis is connected to the hot side of the AC line, the cap will allow a certain amount of ac voltage to reach the chassis. This creates a voltage differential between the chassis and the ground connection (like a concrete floor), which is what you felt. If the cap is working fine, the voltage will be limited in voltage and current. If the cap fails and shorts, then the full ac line voltage could be connected to the chassis. So it would be just like touching a bare live wire.

In order to be sure that the chassis is connected to the neutral side of the AC line, most amplifiers came with a "Line Reverse" or "ground" switch that changes connection of the cap to the two sides of the AC line. Of course, all of this relies on the fact that the AC outlet is correctly wired and that the ground cap is functioning correctly.

The correct way to deal with this is to replace the two wire ac cord with a modern three wire one and plug it into a correctly wired wall outlet.

Subject: Re: Kustom K150 Death Cap? Getting voltage through guitar cord.
Posted by ARKustom on Fri, 06 Oct 2017 06:27:11 GMT
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Well, the night before I had to open it up and fix a loose connection on the output. While doing this, I checked the polarity switch (which I had not been able to get to "click" beforehand). I discovered that the threaded portion of the switch was broken off of the body, but I was able to get it to cycle if I held it in place. I suppose I may have clicked it an odd number of times and switched the polarity. I'll have to open the amp up again to switch the polarity again, so I might as well just fix the root of the problem. Are there any tutorials around on removing the cap and wiring the new

cord in?

Subject: Re: Kustom K150 Death Cap? Getting voltage through guitar cord.
Posted by stevem on Fri, 06 Oct 2017 09:53:24 GMT
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If you get some narrow cable ties you can rap one around each side of the switch and pull it up and against the metal switch mounting bracket and make it usable again.
I do this to all of my switches in my 150 and 250 heads even if the switch is not busted yet .

Subject: Re: Kustom K150 Death Cap? Getting voltage through guitar cord.
Posted by chicagobill on Fri, 06 Oct 2017 17:36:07 GMT
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To replace the power cord, the basic steps are very simple. The original two wire cord has a black (hot) and a white (neutral) wire. The new three wire one will have a black and a white and a green (ground) wire. You will just need to connect the new white wire to where the original white wire was connected and the new black wire to where the original black wire was connected. And then the new green wire connects to the chassis ground.

Because the switches on this series of amps are very delicate, I suggest that you be very careful pulling on any of the wires that connect to the switch. If you pull too hard on the back of the switch it will break off at the threaded section, just like your polarity switch.

The ground cap will be connected from the polarity switch to the metal front panel. Cut off the cap at the switch side and then remove the cap from the chassis side. I like connect the new green ground wire to the same spot that the cap was removed from, but your situation could be different. Just be sure that the green wire is securely connected to a clean metal spot of the chassis.

Once the ground cap has been removed, the polarity switch will no longer have any function other than to light up and fill the original hole.

Remember that you are working on the most dangerous part of your amplifier. Work carefully and slowly and you should double check your work before you plug the amp in and turn it back on. With reasonable care and basic skills you should not have any problems doing this change.

Subject: Re: Kustom K150 Death Cap? Getting voltage through guitar cord.
Posted by Jack62 on Sun, 21 Jun 2020 08:44:25 GMT
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you wrote "Once the ground cap has been removed, the polarity switch will no longer have any function other than to light up and fill the original hole."

I have a similar polarity issue with my Kasino Concert U200-P

When you said that after the cap is cut out and replaced with the new ground wire i got confused.

after the new black runs through the fuse it will still go to the polarity toggle switch. will i still use that switch to turn the amp on ? and will it work in both (on) positions without switching the polarity?

thanks

Subject: Re: Kustom K150 Death Cap? Getting voltage through guitar cord.
Posted by chicagobill on Sun, 21 Jun 2020 18:30:35 GMT
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The switch on your amp, a three position center off toggle is different than the push button switches on the metal front series amps.

Once the two wire cord and ground cap has been removed and the three wire one has been installed, the three way switch will continue to work pretty much the same as it had before. The center position will still be off and the two side positions will still turn the amp on.

The difference will be that the switch will no longer connect the metal chassis to either the hot or neutral side of the ac line.

If you have any questions about this, please feel free to ask, as this is a very important safety issue.
