
Subject: K100-2 Hiss

Posted by [hgibson](#) on Mon, 25 Jan 2021 20:45:35 GMT

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I know, I know, one more post about Hiss. I have an all original blue sparkle ser # 21338 with original cable, foot switch and manual with vinyl near mint except one very small, you guessed it, cig burn on top. I replaced power cord to 3 prong, kept the original for some fool who might want to put it back. All other components are the original. So I want to know what is acceptable hiss. I have heard that these amps had some hiss when new? I am looking for a baseline decibel reading for hiss that most would assume to be acceptable. Example, place iphone with decibel app mid speaker height, 2 feet in front, volume knob 1/2 way up with bass, treble centered and reverb off. Seems like this would be good information to use to determine where your amp is in terms of acceptable hiss. If you should not have any then I guess this is a mute (ho hiss) point. Looking forward to thoughts. Hugh Gibson, Vermont.

Subject: Re: K100-2 Hiss

Posted by [stevem](#) on Tue, 26 Jan 2021 10:57:01 GMT

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Due to widely veering efficiencys of different speakers , and how old the speakers Magnet may be , a test done like that would not be valid, not to mention that control pots have a 10 to 15% resistance tolerance to them!.

I will try and come up with a better way for you to test out results and get back to you.

Do you have a digital voltmeter?

Subject: Re: K100-2 Hiss

Posted by [hgibson](#) on Tue, 26 Jan 2021 14:51:21 GMT

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Good Morning, Thank you for your response. First I want to know if I should have any hiss at all, if not then I need to troubleshoot. If hiss at some level was inherent in the Kustoms when built, well I dont need to do a thing. That is what I was trying to establish. For starter reference, Speakers are original Kustom G12a. I have noticeable hiss at 1/2 volume, increasing with volume and increases significantly when increasing reverb. When both are turned all the way up, hiss abundant and I pick up a local radio station. Unfortunately the music from the station is better than what i am playing. :p You have a valid point on too many variables using decibel level as I described to troubleshoot. I was using that method to establish if hiss level needed attention at all. In any case my answer to your question is yes, I have digital mutimeter, 2 year degree in Electrical Engineering, but most of that was lecture , book learning, it would have helped to actually troubleshoot something in lab. I can read a diagram, crank calculus, solder like a pro but lost in signal tracing. Hands on failure of higher Ed. I do like a logical approach to troubleshooting and not solution by replacement. Since Hiss is so prevalent in Kustoms it begs for someone to lay out a step by step procedure for troubleshooting. Thank you for your time. Hugh, Vermont

Subject: Re: K100-2 Hiss
Posted by [stevem](#) on Wed, 27 Jan 2021 19:07:54 GMT
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While I am working on your testing procedure of the hiss issue I can tell you the old factory mod /!fix for getting rid of radio station pick up.
The fix is to add a .005 cap followed by a 47k resistor to ground off of the hot of both input jacks.

Subject: Re: K100-2 Hiss
Posted by [hgibson](#) on Wed, 27 Jan 2021 20:01:17 GMT
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Thanks for the radio station squelch tip. 8)

Subject: Re: K100-2 Hiss
Posted by [hgibson](#) on Sat, 06 Mar 2021 18:18:37 GMT
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Hello Steve,
As per our previous discussion on reducing Hiss on the K100-2, I replaced Q100, Q101, Q102, C121, C124, C125, C126. I used 2n3904 and 2n3906 transistors and capped with matching tants. I did not replace any resistor in audio stream 10K or larger as you suggested, mainly because I simply missed that part of your advice since it was set aside for a time. Post work VAC readings on output were same .004VAC full vol/no treb and .020VAC (down by .006) with treble full. I tested all 3 original transistors and caps on my DVM and they seemed good. Any idea of where to go now? Can you point out the audio stream resistor numbers over 10K. more importantly what would be the logical approach to fully check everything when I have that board out again. Thanks, Hugh Gibson

Subject: Re: K100-2 Hiss
Posted by [stevem](#) on Sun, 07 Mar 2021 15:30:39 GMT
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The best way to continue on at this point is to use a osciloscope to tap into the output of the many stages of the amp to see where the added noise hash is being introduced .
If you can not do such then I would do things which continues on with a process of elimination.

Q106 and 107 comprise a boost circuit so shot gunning those would be my next thing to try.

After that I would try to cut up the audio stream into blocks to try and find out where the hash is coming from.
Unfortunately this it not too easy due to every thing being on that one board!

Anyway to do this I would lift out one end of each of these coupling caps to break open the circuit

feed, as this will also separate the amp into blocks .

Starting with the input jack end of the circuit I would lift up one end, and one at a time C107,112,113,119,121 and 143.

This pain in the Ass way of trouble shooting will narrow possibility's down a bunch!

Besides transistors Noisy resistor wise width in a circuit section could be R100,102,107,119,120,129,131,133,137 and 217.

To make opening up the circuit by means of the coupling caps doable, once you lift up one end try to stand them vertical as best you can, then tin up some stripped out wire and solder into the now open hole.

Make this wire stand up vertical and long enough to solder back up to the now lifted end of the coupling cap so you can get the audio stream back to being hooked back up as easy as possible!

Subject: Re: K100-2 Hiss

Posted by [hgibson](#) on Wed, 10 Mar 2021 15:27:45 GMT

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Steve, Thank you for taking a good deal of time to provide such a detailed process. I hope others who follow the forum can also benefit from your response. After reviewing I think I will acquire an oscilloscope and go at it and at the same time learn a lot more about troubleshooting in general. It has been some 25 years since I have been at the bench with a scope. I will check the forum for any other ideas or places to start with a scope. Thanks again and I will post what happens. Hugh

Subject: Re: K100-2 Hiss

Posted by [stevem](#) on Wed, 10 Mar 2021 16:54:28 GMT

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Your welcome!

Keep us posted.
