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Subject: K100-2 3754 Bias Diode  
Posted by [Lovguitar](#) on Sat, 11 Aug 2018 18:29:25 GMT  
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Hello -- I'm so happy to find this forum!! I've been working on my K100-2. A mouse (or mice) built a nasty nest inside and the amp developed a very loud hissing sound that would get louder as I turned up the volume control. All the other functions worked as did the reverb and trem. The hiss, however, is SO LOUD that the amp was unusable. I traced the sound, using a signal tracer that I built, to the very front section of the amp, the pre-amp. In the process of replacing pre-amp transistors, I managed to break the leads of the 3754 (which was clipped to the chassis) right at the base of the diode. I've ordered another, which hasn't arrived yet. When it does arrive, I want to be sure that I hook it up the right way. Don't want to reverse the polarity. Unfortunately, the way the leads broke, I can't tell the way the original was hooked up.

Any suggestions welcomed!! Thank you!

Paul (Lovguitar)

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [stevem](#) on Sun, 12 Aug 2018 10:34:46 GMT  
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Hello and welcome!

Good to hear your close to having that k100 close to being back to working for you!

You can get these diodes on eBay for 11 bucks and it's well worth it to have the metal case and not a new epoxy case type.

You can tell how to wire it back in with your ohm meter and compare it to how the other 2 test out that are in that bias diode string in the amp.

One thing I do to help these diode lead survive is to place some silicone sealer on the can end and on each lead on the board.

This helps to not have the leads brake from being bent too far which will put them on the fast track to snapping.

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [Lovguitar](#) on Sun, 12 Aug 2018 18:36:49 GMT  
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Thanks Steve. I didn't realize there were other diodes like this in the amp. This is the only one clipped to the chassis. I appreciate your help! I'm pretty accomplished with working on old tube guitar amps and am just making the transition into the solid state stuff. I love the sound of this K100-2 and am learning more about these Vintage Kustoms by reading this forum. I recently found a K200 5 PA top on ebay that someone found "in the attic" I didn't know what to expect - I thought, if nothing else, I can use it for parts. Guess what -- it works perfectly, including the reverb.

I'll let you know how the K100-2 repairs come along!

Paul

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [chicagobill](#) on Sun, 12 Aug 2018 21:00:34 GMT  
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Paul, Welcome to the place.

The 1N3754 thermal compensation diode that mounts to the output transistor heat sink is part of the 3 diode string that sets the bias of the output stage. If you look at the schematic, you will find them connecting the bases of the driver transistors for the top and bottom halves of the circuit.

The diode should have a red dot on the case that is closest to the cathode lead of the diode, so it's like the striped end of a typical axial diode.

Be certain that the diode is back in circuit before you turn on the amp again, as without the bias string in place, the two halves of the power amp will both turn at the same time causing all sorts of circuit damage. If you need to test the amp before the new 1N3754 comes in, you can temporarily replace it with just about any standard diode like a 1N4148, etc.

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [Lovguitar](#) on Sun, 12 Aug 2018 21:11:41 GMT  
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Hi Chicago Bill -- thanks for your input. I BRIEFLY (1 second maybe) turned it on before I realized the leads were broken. It hummed and I heard the trem and quickly shut it down. I hope I didn't do other damage!! I ordered the proper diode on ebay and when it comes I will carefully solder it in.

I will put a current limiter on the amp before I turn it on.

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [stevem](#) on Mon, 13 Aug 2018 10:23:58 GMT  
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Paul for added safety on start up ( if you have such) besides the soft start light you can change out the 3 amp fuse to a 2 amp fuse .

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [Lovguitar](#) on Tue, 14 Aug 2018 01:13:10 GMT  
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Thanks for your advice Steve!

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [Lovguitar](#) on Tue, 14 Aug 2018 04:16:33 GMT  
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Thank you to Steve and Chicago Bill for helping me with my first successful Kustom Amp Repair!!!! I temporarily soldered in a diode as suggested and the amp is now working fine. The transistors that I changed out prior to messing up the original diode apparently did the trick. I would never have been able to get this amp working without the schematic, the parts and substitution list and without your help. I will be receiving the proper replacement diode by the end of the week and I'll put that one in and then put the amp back together.

Next, I'll tackle a K100-2 that has a non-working reverb. All you get is hum although if you bang the tank you can hear it through the speakers. Someone prior to my ownership messed with this amp and put in a tank that clearly doesn't belong in this amp. I substituted a known good Kustom reverb tank and that doesn't work either, so I'm guessing we have a problem of some kind on the "send" side of the amp's reverb circuit. Gotta check out the schematic and then break out that signal tracer again!

Thanks again for your help!

Paul

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [stevem](#) on Tue, 14 Aug 2018 13:05:38 GMT  
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A easy check out of the reverb drive amp is your hook up a voltmeter set for AC volts to the male rca and play or drive a normal volume signal thru the amp , you should see a easy 2 volts on the meter.

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Subject: Re: K100-2 3754 Bias Diode  
Posted by [Lovguitar](#) on Wed, 15 Aug 2018 03:05:52 GMT  
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Great -- thanks Steve!

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