
Subject: k250 Nasty Hum/Part ID.

Posted by [OSI7](#) on Sat, 25 Dec 2004 05:44:37 GMT

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Let me start off by saying thanks to all people responsible for this forum,I have become a huge fan of Kustom TNR since I set off to repair a k250-1 that I rescued from a trash pile along with the 2x15 cab with blown speaks. I have read all posts backward and forward many times but alas I am at wits end and I need the help of an expert ,So here goes....

After replacing 2 pre amp transistors ,2 outputs and multiple open resistors I was left with a nasty hum in the form of a sawtooth wave everywhere I touched the probe ,this hum was so bad it produced a puff of smoke from my speaker cabinet within a few seconds.So I of course suspected and replaced the main filter caps ,hum was still there,everywhere,so I disconect the main outputs , still hums , I then unplugged ,clipped and unsoldered everything leaving only the transformer the cap/resistors and what I think is the rectifier ,the sawtooth wave was still there. I come to figure out after much scouring for info on the web that this rectifier is maybe not a rectifier and I'm still uncertain what it actually is . It's stamped IN4436/f and has word Varo on it.I'm guessing it's a variactor? or somthing of that nature.

And thats my long winded story...Soooo can anybody please clear this up?... What is this device? Where can I find one? How can I test it? Is this even likely the problem or could the transformer be suspect also?

I would reeeaaaalllly like to get this unit going so any advice would be very much appreciated!!!

Subject: Re: k250 Nasty Hum/Part ID.

Posted by [OSI7](#) on Sat, 25 Dec 2004 07:44:49 GMT

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Ok...So shortly after posting this I'm laying in bed and it dawns on me...DUH diodes/rectifiers almost always have part numbers that begin with a 1N . So I jump out of bed and I Google 1N4436 and BAM I get gobs of hits . In my defense I will mention that the part also has the numbers 7146 below the part number and the 1 looks like a 1 the other looks like an l...Anyways I guess before I jump the gun again and order a part I don't need maybe someone can advise me on if the rectifier could cause this hum...In my experiance rectifiers usually seem to short out and blow a fuse but maybe not , I dunno??? I'll gladly accept any advice...Thanks again.

Subject: Re: k250 Nasty Hum/Part ID.

Posted by [rodak](#) on Sat, 25 Dec 2004 16:04:40 GMT

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I couldn't say for sure if a blown rectifier could cause those symptoms, but they're pretty cheap and easy to replace, so I'd just do that. Probably don't need to get an exact part# match - I'd think any decent silicon rectifier rated 200PIV/4A or better would do. Are they discrete rectifiers (i.e., are they 2-lead devices, with four of them present)? If so, I'd just replace all four with a full-wave bridge. You can get a hefty 25A bridge for just a few dollars.

Subject: Re: k250 Nasty Hum/Part ID.
Posted by [OSI7](#) on Sat, 25 Dec 2004 20:19:17 GMT
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Still no joy Took your advice rodak , I leached a kbh2502 out of an old Ampzilla I've been working on and the buzz is still very much present ,so unless that one is bad also I'm thinkin' the problem lies elsewhere , but where ? the only thing connected is the caps that I replaced the resistors that I'm guessing are to drain the caps and the transformer (blah) . Any other ideas or was this unit in the trash for good reason? Please help prevent this machine from becoming landfill fodder!!!

Subject: Re: k250 Nasty Hum/Part ID.
Posted by [rodak](#) on Sat, 25 Dec 2004 22:05:30 GMT
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Wish I could help more, but my amp circuit knowledge is rather limited. I'm sure there's someone else here who could offer advice, though.

Subject: Re: k250 Nasty Hum/Part ID.
Posted by [OSI7](#) on Wed, 29 Dec 2004 03:30:45 GMT
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After many hours of scouring for whatever info I could find concerning rectification I have come to the conclusion that the sawtooth waveform is normal (it's actually just normal D.C. ripple,I'm thinking) the problem is that it's making it's way to the preamp board and out of the mains. So I figure what the heck,I'll just rebuild the board and just eliminate that as a possibility.

So what I really need now is the schematic for the 5065 preamp board and hopefully the rest of it as well. Anyone know of the best way to go about finding the paperwork without spending a bunch?

This has become an obsession!!!

Subject: Re: k250 Nasty Hum/Part ID.
Posted by [stevem](#) on Sun, 02 Jan 2005 01:15:40 GMT
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The smoke coming from your speaker means the output section still has a problem and you have DC voltage going to the speaker which should never happen, (unless something in the driver/output stage is blown or leaky) its a great way to blow your speakers, if it was a large AC voltage like the 40 or so volts from the power transformer you would not have the smoke until that 40 volts at 60 cycles had that 2-15" or whatever cabinet jumping off the floor, and the other people in your house thinking you found a portal to hell! In the 250s power supply their are 2 zener diodes that regulate the 12 volt neg and pos supply to both preamps and the effects section if so made. some level of AC ripple is normal in this type of supply, I can get back to you latter in the week on the ripple level I have in any of my 250s. when ever you trouble shoot a transistor

output amp always have a volt meter set for DC on the output. You do not need a speaker or a load resistor with this type of non-single ended output stage, and the voltmeter will tell you right away if you have it fixed or not. One thing to look for in a amp that has been messed with is the 2 power supply filters (4500 mfd at 50 volts stock) if these are not wired right for the neg and pos supply rails, you will blow the output stage and mabe even some preamp stage semiconductors every time you turn the amp on.I have a comple set of schematics for this amp(and so do other people at on this site, you know who you are!) so mail me a self addressed legal, please legal size stamped envelope and I will send you copys if you need such. Steven Magnotti p o box 1160 Yorktown NY 10598. Talk to you latter in the week.

Subject: Re: k250 Nasty Hum/Part ID.

Posted by [OSI7](#) on Tue, 04 Jan 2005 04:16:16 GMT

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Steve!!! You're the guy I really wanted to hear from and I was actually holding off on making too many more moves till I got a response from you....I have already ordered most of the parts I need for a re-build of the 5065 "Driver" board (I have been calling it the preamp board..my mistake)and both pre-boards (5066 and 5067) and I would very much like to have the scheme before I begin.

I have checked the zeners , and they read ok using my meter on diode check but I intend to replace them either way ,perhapse you could post the values/part number so I could have them included in my next order for the remainder of the parts which I would like to place tonight or tommorrow.Also would like to know part numbers for replacements on the transistors on the drive board 38735 38736 38737 and the diode that clips into the chassis near the outputs also the three transistors on the 5066 pre-board which includes a 4-legged TO-39 case all with numbers from Kustom that don't cross with anything.I figure I could purchase clip on heat sinks for 736-737's. I would like to keep things as close to original as possible and I refuse to use NTE stuff as I have never had good results on audio equipment.

I will have an envelope on it's way first thing in the morning and I will post my progress and results for all that may be interested in the resurection of my "ShytCan System" ,maybe even pictures if I really get bored ,I dunno.....Thanks to all who gave advice!!!! and Deb and Steve
OSI7
