
Subject: K150-2

Posted by [cassent5150](#) on Tue, 20 Mar 2012 01:25:54 GMT

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I've been giving those metal face amps a bad wrap for years. I guess I just don't like the use of the IC chips in them. I much prefer the independent transistor warmth of the Plexy face with the exception of one metal face amp, the K150-2. I have 2 of them complete with the Cabinets and just acquired a third one, but just the head. These, I have to admit, are the only metal face amps that really capture that warm plexy sound and believe me I have and tried them all. I opened it up to repair it and noticed it has 2 transformers. Is this the reason why they are soooooo much warmer than the Challenger, Hustler, Charger, Commander and the K250's far as that goes? I got it up and running with all effects working great. I only have a slight issue with channel 2, dirty pot, molex connector or broken solder joint maybe, If I spike a F note she crackles and distorts. Other than that she sounds like the real deal. Steve C

Subject: Re: K150-2

Posted by [Kustom_Bart](#) on Tue, 20 Mar 2012 02:23:14 GMT

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I really love my Challenger and I have a K150-2 as well. They are the only metal face amps that I have. I gigged with the Challenger because it is sooooo loud and sooooo clean it takes my Boss ME-50 like a champ. So does the K150-2 though. Mine is complete except it is missing the reverb tank. I figured I could always use it for parts if I needed to.

Subject: Re: K150-2

Posted by [stevem](#) on Tue, 20 Mar 2012 10:30:19 GMT

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The extra Transformer as you put it is called a choke, like a lot of tube amps have in them. These do not add warmth to the tone, but they do help make the amp punchy, as their function is to maintain a stable current level feeding the amps circuits.

Why chokes were part of the Kustom plan for the k150s, and all three metal face PA heads (150, 300 and 600) and not the k250 is a question I would love to get a resolve to.

You can add them to a K250 if you like,(choke specs need to match) and the cheapest way to go would be to install two of them that would normally be used in a tube amp seing as the Kustom chokes were probably custom ordered due to the need of having 2 inputs and two outputs. In reagrds to the warmer tome of the early Kustom amps, much of that difference is due to the type of coupling caps used.

The latter heads used a large amount of whats called orange drop caps, and these higher grade caps have a more strident and accurate tone to them.

In the K200b and metal face amps changing out a 20 dollar fist full of caps will get the tonal responce difference you are missing, as the IC chips used have the same frequency responce as

the transistors used in the early amps!

Subject: Re: K150-2

Posted by [cassent5150](#) on Tue, 20 Mar 2012 19:59:24 GMT

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I'm not a Electronics tech so I can't argue with this from a tech's point of view. I rate an amps sound by what I hear from it under my playing style so its definitely opinionated. What I hear you say and what I actually hear are 2 totally different paths. I don't doubt your theory on the caps, but here's the deal. I use the same brand "Orange Drop" Caps in most every case when recapping a circuit board. They're a little pricy in my book when it can be replaced for pennies and sound OK, but well worth it when its equipment I want to sound GREAT when I use it. Most amps I acquire with the intent to be working equipment in my band and not show pieces. I've done several A and B series in the last 2 years using the same quality caps on both models and each time put the amps to the test and each time I have to say the same thing. The B models just don't have the warmth of the A models. This is really noticable in the old Frank models. The 300's that I have (I have 2 of them) only have a huge single transformer which is tucked into its own metal compartment with the huge filter caps. Is this 2nd transformer in the K150's strickly to give the circuitry more available energy? Seems there was an easier way like, maybe put a bigger transformer so it wouldn't need a second one. That gets me thinking of another experiment. I have a transformer from one of those XII SRS Tri-amp Slave units. That thing is a monster, its gigantic and enough energy available for 3 of those 5065 boards. Lets see, I have an extra PC-703, filter caps and a 4 transistor heatsink strip. Lengthen the output and diode wires and a set of 6-32 coupling spacers to piggieback the 703's on top of each other Maybe a K200-1 can turn into a "K400-1 PLUS" with tons of extra supply energy for warmth. Sure would make a hell of a Bass head. CRAP! then I'd have to carry around 2 cabinets for it, unless, can it be bridged? HMMMM. Just a thought, what do ya'll think. Thats my pennies worth. Steve C

Subject: Re: K150-2

Posted by [cassent5150](#) on Tue, 20 Mar 2012 20:55:48 GMT

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I'll go with you on the Challenger thing. I will give it credit for its volume and clarity, not that the other metal face amps don't all have the same qualities in those departments. I had two challengers at one time and still have one I sent to my Dad in Michigan. I've got a Hustler which sounds better with a 4X12 than the 4X10's specially on a 412 celestion Carvin Cab. Charger, well not much to brag about there. Thats strickly Bass app there and although it has a lot of punch I can't give it an A for warmth. The Commander is just that, if you want to just blow someone away in volume its killer. She's mean and clean, but plexy warmth its not even in the same league. This is coming from 18 to 20 years of playing Kustoms in my band and acually giging with these amps. K250's I've had four or five and still have 2 of the best ones I've had. One has the 215-B cabinet and the other a 118-B cabinet (The Huge Tuck N Roll Model, not the folded horn one) which is the best of the two. They're a whole lot a punch but still not that smooth as butter sound like a plexy 200. Well thats my bucks worth. Steve C

Subject: Re: K150-2

Posted by [stevem](#) on Wed, 21 Mar 2012 10:45:33 GMT

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Frank era amps do not have a choke, they have a driver/phase inverter transformer that takes the place of 3/4s of what the 702,703 and such driver boards do in the latter heads.

Using a much larger power transformer (IE same basic voltage when loaded, but more current) can lead to excess voltage that the regulator circuit can not ditch!

Subject: Re: K150-2

Posted by [cassent5150](#) on Thu, 22 Mar 2012 03:55:50 GMT

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OK. I stand corrected on the second transformer of the frank heads. Thanks for the info. The PC-5065's dont have a regulator do they? The transformer ran three 5065's. Could it run 2 without burning things up and if so can they be bridged for a single output (MONO)?

Subject: Re: K150-2

Posted by [stevem](#) on Thu, 22 Mar 2012 10:26:07 GMT

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The metal face guitar amps use a Zener diode on the + and - 12 volt rails to regulate that voltage, if the main power supply voltage creeps up too much in the output stage and runs over the break down voltage spec of the drivers and outputs, then yes things are going to pop.

A simple high current regulator circuit could nix that, many of which examples can be found on line, or in the radio shack IC projects hand book.

Oh, and by the way, my mid 1970 K300-5 and K600-5 PA head both have a choke in them.

The one in the K300 is calling me to add it into my main K250 head that I play bass thru, but then I got a better idea. I started stripping it out to place the whole output and power supply from the 300 into my K250.

Starting next week I will cover the progress and post pictures up here if I can figure out how to do that?

Subject: Re: K150-2

Posted by [cassent5150](#) on Fri, 23 Mar 2012 00:39:11 GMT

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I have the old Johnny Cash Tuck and Roll 300's and don't remember seeing a second transformer, not to say it wasn't there. I guess I never really paid that much attention. Stuffing the guts from a 300 into a 250 chassis is going to be a challenge, but sounds like something I would do. I don't know that I would go through all that for 20 more watts. I cant wait to see some pictures and hear about the end result.

Subject: Re: K150-2

Posted by [pleat](#) on Fri, 23 Mar 2012 02:03:23 GMT

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Steve C the XII SRS is actually a Bi-Amp power amp, not tri-amped. The amp's crossover has three selectable cross over points, 500, 800 and 1K. The amp uses three of PC 5065 power amp boards. Two are used for the low end and the third amp is used to power the horns.

Ever thought of using it as the power section driving a pair of 2x15 cabs and the horn amp for a pair of 2x10 cabs and using the pre amp section of a K200 or K250 to drive the XII SRS? That would be a nice bass rig if you have room on stage.

pleat

Subject: Re: K150-2

Posted by [stevem](#) on Fri, 23 Mar 2012 11:01:55 GMT

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Well I have some added tricks I will stick in the K250 mod to bring it to near 200 watts RMS.

Just before bed time last night it came to mind that the power section I will pull out of the K250 when I stuff the 300s in could be slipped into my other K100-8 combo!

You must have the reissue cash 300 not a K300-5 model if there is no choke in the baby!

Subject: Re: K150-2

Posted by [cassent5150](#) on Sat, 24 Mar 2012 01:04:21 GMT

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Yes it is a Bi-amp design far as frequency outputs I understand that, but it is called tri-amp in the manual and schematics. Its model is" XII SRS Slave Tri-amplifier. Meaning Low Left output, Low right output and Horn outputs are driven independently which makes it a three or tri-amplifier and the manual states each output handling a min. 4 ohm load "aint that just cool". I've used one of these units, (I have 2 of them), one time just for the "BI-AMP" capabilities and it will drive four 8 ohm Cabinets plus the horns with ease. The only thing bad I can say is the low end frequency response isnt as good as the equipment we have now. I've used this thing for Bass and "YES" its a thunder bolt. Its right up there with my K-IV Bass, but theres no need for that kind of power on stage for the most part in most clubs I play. Its like driving a Ferrari in rush hour traffic downtown Dallas. The K200's on the 215-B cabinet is all I need to get the job done. That reminds me, I got one of those Blue haired gigs tomorrow night. We definitely don't need any volume there!!! A bunch of Dallas Court reporters and such from District 23, that will be a real blast. No smoking and limited boose, guess we're the only fun they'll have. Steve C

Subject: Re: K150-2

Posted by [cassent5150](#) on Sat, 24 Mar 2012 01:15:49 GMT

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Hey stevem, your absolutly right about the choke (Why is it called "Choke") in the 300's I have.

They are the early Baldwin era T&R metal face 6 channel versions. That metal enclosure has 2 transformers and the filter caps in it. Thats weird how the rectifier outputs are directed into the second transformer and its outputs going to the Power Filter Caps. I did notice there is no zenier Diodes on the supply voltage resistor banks for the pre-amp section, why is that? By the way, it doesn't look too bad to fit its components into a smaller case like a 250, 200 or maybe even a 100 for all that goes. Steve C

Subject: Re: K150-2
Posted by [stevem](#) on Sat, 24 Mar 2012 14:19:25 GMT
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The generic name is choke, its really a Inductor.
The DC voltage output from the recto`s gets feed into the choke, this creates a standing magnetic feild, just like in shop class when you made a magnet out of a nail, wire and a 6 volt battery if you recall.
In the amp when large current demands pull down the voltage thru the choke the standing magnetic feild colapses driving the voltage level back to what it was for the most part feeding the amp as before.
I do not know why Kustom has no regulation in the metal face PA heads (have never seen the guts of a 150 PA head), I can only guess that they found that the preamp supply voltage could never rise up too high to pop things with how the currnet loading of the power supply worked out. Than again I have not looked close to the center main board or seen a schematic, as they may have something on that, but its not in the normal location of the stacked mounted power resistors Like in the K150 or K250 heads.

Subject: Re: K150-2
Posted by [Kustom_Bart](#) on Sat, 24 Mar 2012 17:28:15 GMT
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I am not nearly as smart about this stuff as you guys, but it has always been my understanding that a choke cleaned up the power. This is at least on a tube amp. Is it different on a solid state amp? Please teach the Grass Hopper!

Subject: Re: K150-2
Posted by [stevem](#) on Sun, 25 Mar 2012 14:06:59 GMT
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Yes,all chokes reduce AC ripple voltage, but in a SS amps power supply where you have atleast 3000 uf of filtering compared to a tube guitar amp power supply with a best of 150 uf it has less of a fight to put up to keep the voltage stable.
Just look at the average tube amp, when floored if it had 400 volts on the output tubes plates it can be pulled down 100 volts or more, if that took place in a SS amp you would have no output!!

Subject: Re: K150-2

Posted by [Kustom_Bart](#) on Sun, 25 Mar 2012 15:23:43 GMT

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Very good stuff to know Steve, thank you and what does uf stand for I know what mf is micro farad. I just don't know all of the terms. teach the grass hopper once again...lol!

Subject: Re: K150-2

Posted by [cassent5150](#) on Sun, 25 Mar 2012 16:00:26 GMT

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The symbol isn't really a U and F to be exact. It just resembles a u that is backward and the line protrudes below the letter. uf is the alternate spelling for the micro farad symbol.

Subject: Re: K150-2

Posted by [chicagobill](#) on Sun, 25 Mar 2012 18:04:08 GMT

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The lower case u looks similar to the greek letter mu, which is used to represent micro in micro-farad. So either uF or mF are common abbreviations.

Subject: Re: K150-2

Posted by [Kustom_Bart](#) on Sun, 25 Mar 2012 21:18:20 GMT

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Thank you guys, if I come and ask 1 question every day, I should be pretty smart about the time I die....lol! I love messing with this stuff, I really need to learn how to read a schematic though!
