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Subject: speaker combinations for a 3-15

Posted by [terminal](#) on Fri, 21 Jul 2017 18:02:51 GMT

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I have a 1971 3-15 with CTS speakers (all three speakers are 1377116). My amps are K100-1's. I was thinking about adding a jack plate to the back of the cab with 1/4" TRS switch jacks, maybe one for the top speaker and one for the middle speaker. The 3rd jack (the original) would connect the bottom speaker to the switch jacks (and thus the speakers) in parallel. If I only plug into the bottom jack, I have 5ohms (as original, all three 15"s). If into one of the other two, say the top, then I have 16ohm (like an original K100-15-1).. If I plug into the bottom jack and then plug an unconnected plug into one of the other two (rendering that speaker unconnected), I'd have 8ohm at the bottom jack.

I'd post a schematic of what I'm thinking if I had the post count for links..

anyone try anything like this?

I'd like to try different speaker combos but I don't want to take the back off the cab (45 screws?) ever again!

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Subject: Re: speaker combinations for a 3-15

Posted by [Iowa Boy](#) on Sat, 22 Jul 2017 00:01:23 GMT

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I did something similar to what your thinking with 2 of my 3-15's only I added a switch into the circuit so I could use all three speakers or just the two bottom ones. 5.33 ohms to 8 ohms. I then used a 16 ohm horn with crossover and connected to the top speaker jack and ran that to my bi-amp. This way I get full use out of four speaker cabinets and don't run the risk of frying my amps. Just have to make sure you have the correct speakers selected for either application or you will cook your amp head.

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Subject: Re: speaker combinations for a 3-15

Posted by [terminal](#) on Sat, 22 Jul 2017 00:34:34 GMT

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cool, thanks Iowa Boy. The 3-15 is more cab than I can really use, but it is what I got. These cabinets are so big and heavy that you can wait around to find a 1-15 local (the last one that was for sale locally, I bought in 2010!). The 3-15 came up just down the road and I couldn't yield to temptation.

The switchcraft switch jacks have a small contact from the tip "bar" to the switch, but of course the wire that Kustom installed in these cabs is what, 26gauge wire? so I don't think a big contact surface is as important as one would think. (anyone think differently?)

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Subject: Re: speaker combinations for a 3-15  
Posted by [stevem](#) on Sat, 22 Jul 2017 09:51:14 GMT  
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All K 100 amps need a 8 ohm load to output there full 50 watts of RMS power!

With a 5 ohm load or a 16 ohm load you will only have have of that 50 watts and with less the a 8 ohm load your running the amp twice as hot and are chancing burning or blowing something up in the amps output stage.

If I where you I would just disconnect the top 15 and run the cab as wired with the two remaining 16 ohm drivers in parallel for the needed 8 ohm load.

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Subject: Re: speaker combinations for a 3-15  
Posted by [pleat](#) on Sat, 22 Jul 2017 14:59:34 GMT  
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You mentioned that your cab is a 1971. If it has silver threads through the black grill cloth, you may not have 16 ohms speakers but 8 ohm speakers that Kustom used with the slant metal face K250 amps.

If you do have the older 3x15 cab without the sliver threads, then you do have the 16 ohm CTS speakers. If weight is a problem and to keep the K100 amp stable, you could remove the top speaker, trace the 15" speaker mark and drill for the bolt holes and make a plywood blank to cover the top speaker opening. That should reduce the weight by 15 pounds or more.

Another option would be install the kustom siren horn and with your switching jack idea, you could run the cab as a PA cab.

pleat

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Subject: Re: speaker combinations for a 3-15  
Posted by [stevem](#) on Sun, 23 Jul 2017 10:03:28 GMT  
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I can't see why in world Kustom would have not had 16 ohm drivers in 3 15 cabs for the metal face amps as it's the only way to get close to the needed 4 ohm load and have all 3 drivers produce the same volume level!

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Subject: Re: speaker combinations for a 3-15  
Posted by [Iowa Boy](#) on Mon, 24 Jul 2017 03:12:21 GMT  
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It comes back to the age old question, after 45 years, who knows what has been put in these

cabinets over time. It's especially interesting to find (2) 16 ohm speakers and (1) 8 ohm speaker in these cabinets. I've ran into two of these so far. Removing 45 screws is a lot cheaper than replacing a blown speaker or possibly blowing some more. Just because they all look the same from the outside of the cabinet, doesn't always make it so.

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Subject: Re: speaker combinations for a 3-15  
Posted by [terminal](#) on Mon, 24 Jul 2017 16:00:47 GMT  
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The cab is a 1971 200 series cab for sure and all 3 speakers measure out to be 16ohms. I have a 3 position heavy duty Carling switch that'll allow the output to be 1/2/3 speakers or 16/8/5 ohm.

The consensus here is 8ohm is the way to go (for K-100 and K-200 alike?). All speakers have the same CTS code as well as the same 5815113 038-0004-00 codes. FWIW I've seen 5815xxx numbers on Ampeg CTS speakers so I guess the 5815113 is a CTS number. (maybe the 038- is a Kustom PN?)

I'll post pictures once I've got 10 messages posted.

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Subject: Re: speaker combinations for a 3-15  
Posted by [stevem](#) on Mon, 24 Jul 2017 16:41:51 GMT  
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No, that's not the consensus!  
100 and 150 series amps need a 8 ohm load to output max power, 200s and 250s need a 4 ohm load, period!

Also note that the port area of the two tubes used in the cabinets is not large enough for even just the 2-15" inch cabinets , no less a 3-15" cab , so not using one of the 15's to save its needed cab sq footage and then setting up the cab for 8 ohms will help the amp have more puncheon the low end!

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Subject: Re: speaker combinations for a 3-15  
Posted by [terminal](#) on Tue, 25 Jul 2017 15:44:10 GMT  
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stevem, thanks for the clarification.

I've read elsewhere that Kustom installed 16ohm 15" in the 1-15 cabs they paired with K100's as a matter of convenience and buying power (they had lots of 16ohm speakers for all the other 2-15 3-15 cabs..) As I understand it, a 16ohm load on the K100 is 25W?

Is this ohm's law figuring accurate? : A 50W-rms output on 8ohm is a 20V-rms signal. A

100W-rms output on 4ohm is a 20V-rms signal. Both K100 and K200 power amps are designed to deliver a 20V-rms, but the K200 power amp produces 20V-rms at 5amps whereas the K100 produces 20V-rms at 2.5amps.

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Subject: Re: speaker combinations for a 3-15  
Posted by [stevem](#) on Tue, 25 Jul 2017 16:29:03 GMT  
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50 watts made by 20 volts into 8 ohm load would be RMS power if the wave form was not clipping.

100 watts made by 20 volts into a 4 ohm load would RMS power if the wave form was not clipping.

Yes on the amperage deal W/V is amps.

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Subject: Re: speaker combinations for a 3-15  
Posted by [terminal](#) on Thu, 27 Jul 2017 01:04:49 GMT  
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Got the 10 posts..

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Subject: Re: speaker combinations for a 3-15  
Posted by [stevem](#) on Thu, 27 Jul 2017 10:00:30 GMT  
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So you have a early 1971 cab there.  
When you view it from the side does the cab taper from bottom to top?

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Subject: Re: speaker combinations for a 3-15  
Posted by [terminal](#) on Thu, 27 Jul 2017 17:02:32 GMT  
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yes, it looks to be about 12" deep at the top, and 14" or so at the bottom.

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Subject: Re: speaker combinations for a 3-15  
Posted by [Iowa Boy](#) on Fri, 28 Jul 2017 15:29:34 GMT  
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Just a thought.....but if you haven't done it yet, you might want to pull the speaker grille and take it to the car wash and power wash all the crap that 40 some years has accumulated in the grille cloth. Of course you have to remove the speakers and those two boards that do not extend from side to side in the back are an absolute pain. I took those out and cut new boards that exactly fit the cabinet and fastened them to the cabinet with L brackets that can be removed if needed.

I didn't see wheels in your picture, but you can get them thru Grainger or if you don't mind the antique brass ones you can get them at Lowes or Menards for half the price. Part number is 100089723.

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Subject: Re: speaker combinations for a 3-15  
Posted by [terminal](#) on Mon, 31 Jul 2017 00:19:40 GMT  
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Maybe I'll wash the baffle board some day. If it wasn't for all the fiberglass, I probably would have gone ahead and done it but...

The previous owner installed a handicap bathroom grab bar on the back to give it a handle like an SVT cabinet. He also installed two casters on the back that roll when you tilt the cabinet. I'll leave all that as-is in favor of the rolling casters.

Here it is with the 1968 K200-B5 I'm repairing over on the 'Repairing Kustom Amps' forum.

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Subject: Re: speaker combinations for a 3-15  
Posted by [steven](#) on Mon, 31 Jul 2017 09:54:00 GMT  
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I have found that you can get a lot of dust and grime off of the grille cloth by just wetting it from a sponge that also has some dish wash detergent in it , then do a scrub job with a tooth brush , then absorbe the floated grime with paper towels, or wet shop vacuume it.

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