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Subject: Speaker brands used in Kustom combos  
Posted by [LesS](#) on Mon, 10 Jul 2006 15:27:36 GMT  
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Here is my estimate on:

Speaker brand used in Kustom combos  
.....S.N....Amp Prod Date..Speaker Brand Used  
From .. 44800 ..Sept 1969 ....Eminence speakers  
To ..... 54000 ..Mar 1970 .....Eminence speakers

From .. 55000 ..Apr 1970 .....CTS speakers (also Jensen on some K150 combos)  
To..... 86000 ..June 1972 ...CTS speakers (also Jensen on some K150 combos)

From ..87000 ..July 1972 ....KEI (Kustom-Eminence Integrated)  
To ...112000 ..Dec 1973 ....KEI (Kustom-Eminence Integrated)

CTS speaker with hole in center cap like Eminence  
Now, check out the ebay ad "Kustom 10 speaker". They came in a Kustom amp (could be a K100C-8 2x10). They are CTS but the chrome voice coil cap has a hole in the center like Eminence. They are 16 ohms each and are wired in parallel.

The newest of these two is 137 7011 so if you add some time for shipping to Kustom etc they could have been installed in a Kustom amp around SN 52700 say March 15, 1970.

Note that this is around the time that combos transitioned from using Eminence speakers to using CTS.

My guess on what happened here is that possibly CTS was just getting started producing speakers for Kustom and was not using the solid cap yet. Or possibly it was part of a pre-production test.

Another mystery is why these two were 16 ohms wired in parallel, as many of the 2x10's in this time period with both Eminence and CTS had two 8 ohm speakers wired in series.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [rodak](#) on Mon, 10 Jul 2006 17:02:25 GMT  
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Carvin's amps in the 1970's came with CTS speakers as an option, and those (at least according to the pictures in their catalogs) all had the hole in the center of the dome.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [LesS](#) on Tue, 11 Jul 2006 02:18:34 GMT

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Rodak-

You're right – I checked some catalogs - CTS was offered by Carvin beginning in 1971 and they all had a chrome cap with a center hole.

I never saw a Kustom that had a CTS with a center hole so maybe Kustom only bought the ones with a solid cap from CTS.

Carvin started using CTS in 1971 and Kustom started using CTS I believe approx April 1970 – was CTS just starting out then?

Carvin 1969 .....Jensen and JBL - no CTS

Carvin 1970 .....Jensen and Altec - no CTS

Carvin 1971-74 ....CTS speakers with hole in center cap

(In 1971 I bought a new Carvin L2500 lead amp (110 at 4 and 140 at 2)

It had full protection circuits, so we used to blow up a lot of 4 inch speakers with it for fun– actually smoke is a more accurate term. See, I have changed.)

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Subject: Re: Speaker brands used in Kustom combos

Posted by [stevem](#) on Tue, 11 Jul 2006 11:44:13 GMT

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All of my 2-15 bass cabs that I have ever owned(one as old as 1966) had CTS drivers with a paper dust cap in which the center had a hole in it that was closed off with what looks like a thin layer of felt.CTS driver where around for a long time. I just picked up off ebay a 15" that was made in mid 75.

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Subject: Re: Speaker brands used in Kustom combos

Posted by [oldnavycdr](#) on Wed, 12 Jul 2006 14:25:45 GMT

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My K150 SC 4-10, ser 80816 is loaded with speakers stamped with "Kustom" on the frames. I've not taken the back off to view all the data on them, though. I've been advised that they are CTS (silver dust cover w/o the hole). Could they actually be the KEI's? What a sweet amp, btw.

One other thing about this amp is the color. It looks like the blue but yet it isn't as dark as many blues I've seen, yet it isn't as blue green as some of the cascades I've seen. I wasn't recovered. Perhaps it was that particular family of Naugas that were sacrificed for the greater good?

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Subject: Re: Speaker brands used in Kustom combos

Posted by [stevem](#) on Thu, 13 Jul 2006 11:02:19 GMT

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Yes those would be the CTS drivers, you should be able to make out the 137 stamping in white if

you can view one of the magnets. Is your covering more green than blue? when the clear starts to yellow that can happen with cascade. Yellow and blue make green as I recall from my water color days!

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [oldnavycdr](#) on Thu, 13 Jul 2006 12:20:21 GMT  
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Actually, it is more blue than green but it is still more of an aqua than blue. This amp was always stored in the cover and despite its age it is nearly perfect so this could be closely representative of the original color.

Thanks again on the speakers. Yes, I can easily make out the 137 XXX on the speaker frames.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [stobber](#) on Tue, 08 Aug 2006 18:21:55 GMT  
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I have a 150SC 2x10, black. It's likely from 1970-71. I purchased it for \$100 a few years ago.

I started having all sorts of problems with it and my tech determined that the carbon comp resistors were moisture-damaged and so he replaced them all. The crackling and spitting noise was cured but there was still a scratching noise. Tech determined it was the left speaker.

It was cleaned and reconed and when it was returned to me I realized that the serial number and the model number on this Kustom stamped speaker with the silver cone (no hole)...these were Jensen numbers and not CTS like I had thought from reading through this board.

I've got two Jensen C10N's with 220020 as the serial number for the one that was reconed. This would mean it was manufactured in the 20th week of 1970, I believe.

Who knows, really, if there is a standardized method by which Kustom chose speakers for these combos.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [LesS](#) on Tue, 08 Aug 2006 21:20:25 GMT  
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Hey, stobber,  
Thanks for the information.  
I have spent more time with K100 combos - I have less experience with K150 combos.  
I updated my chart in the first posting.  
I'm still learning - these amps are already 33 to 40 years old, so there is no rush.  
What is your serial number? (my guess is 57427, which would be in the first few weeks after

Kustom increased the amp size in the combos from K100 to K150)  
-Les S

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [stobber](#) on Thu, 10 Aug 2006 19:09:18 GMT  
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Hey there. My serial number is 79195 which puts it at the latter half 1971 according to the serial number charts located elsewhere in the forums. I've got the plexi-front which makes it one of the exceptions as most Kustoms produced at this time, according to that same post, have the stainless steel slant fronts. All very interesting.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [LesS](#) on Thu, 10 Aug 2006 21:41:42 GMT  
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Your amp (SN 79195) was made about Dec 18, 1971 plus or minus a few weeks, so if these speakers were original, this is an example of Kustom installing speakers that were made over a year and a half earlier. In a typical case, many of the parts in a Kustom will be manufactured 60 to 90 days earlier than the Kustom production date. But there are always exceptions – I have seen pot date codes in an amp that varied by a year from each other.  
-Les S

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [stobber](#) on Fri, 11 Aug 2006 13:22:07 GMT  
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Hmmm... Well I assume these are the original speakers as they are stamped with white Kustom logos on the speaker baskets. Perhaps they were an upgraded speaker at the time of purchase? Or maybe the parts warehouse was in a state of disarray at the time. I can see it now, there was a delay in shipping of speakers and then, at the back of the warehouse, there appeared a pair of the Jensens from last year's run...well, waste-not-want-not and into the cabinet they went.

It seems that with Kustom exceptions are the rule and there may be no way to really understand how every one of these wonderful amplifiers were assembled.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [stevem](#) on Fri, 11 Aug 2006 16:55:04 GMT  
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I know of things happening as I will explain with other brands, and kustom would be no

exception. Here's how it would happen, a 4-10 PA column or combo amp cabinet is damaged in shipping, it eventually gets shipped back to the factory and this could take a while, when it shows up the factory is in the middle of a production run and has no time to strip out the cabinet of its speakers, when things cool down they strip out the parts, test them and get them staged for the next production run. Total time elapsed could be just what you have in your amp with the date code spread. At least Kustom never sent out any tinkered with amps like Leo Fender did. He would get a bug up his butt about trying some circuit change, pull an amp off the assembly line, try the circuit change, some times holding the amp back from being sold for a while, and if he likes it send the amp on its way again! Some times this would result in an early made amp being sold after the rest of the whole production run of that model was gone off of the retail store's floor.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [QinVA](#) on Wed, 18 Nov 2015 19:45:02 GMT  
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I'm brand new to the forum and was not sure where to post my question. But, since this thread involves speakers, I chose this one.

Have to say the knowledge and expertise of the members of this forum is amazing, as is their willingness to share those.

The following info is offered to give as much detail it may take to make the proper decision.

1968 (or pre, purple lamp, speaker cab output jack on back) K100C-8 with the 4x10 speaker set up. I just put it in the shop because it went dead - no sound. Tech said there was a bad ground to the speaker circuit - easy fix, however, one speaker is "open". I never had the back off the cab, but the tech said the speaker wiring had been modded and there were several incorrect splices which he fixed. The sound of the amp never impressed me - sounding cheap, overly trebly, and noisy. Perhaps the "custom" wiring job had it messed up. I'm looking forward to having the sound I've seen/heard on youtube and many Kustom fans speak of!

Through this forum I have been able to verify that the cab had 8 ohm speakers and I got the wiring diagram - illustration #11, thank you.

A lot of speakers used for replacements have been mentioned and discussed, but no one has mentioned what wattage speaker I need to get to replace the non functioning one in this combo. The shop is suggesting an Eminence for \$90.00. I looked on line and there are many Eminence 10" 8 ohm speakers, most being much less cost than \$90. My cab has the metal cone covers, but I gather the cover off the replacement speaker will have to be glued to the new as none of the available replacements have that feature, and the speakers in the cab are no longer available.

I am confused by all the differing opinions of which speaker is best for a replacement. If I was doing all four, I'd experiment with the advice I've read, but for one. . .

My question is: which replacement will properly replace the speaker that has gone bad? Or, should I get it repaired. Seems that there are members that have made a simple repair to an open speaker and extended its life.

Maybe it's not that important - one speaker out of four won't be noticeable if it does sound

different, but I have no way of knowing that - but I bet forum members do!

I appreciate any help that is offered. Thanks in advance.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [stevem](#) on Thu, 19 Nov 2015 11:40:37 GMT  
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your not at a easy place right now!

I have that same model amp and have worked on and played along with heard many of these models .

There tone leaning towards too much top end is due to the fact that the drivers never get played hard enough or long enough to break in the stiff souround ( non treated ) that they are made with. There are three ways you can go to deal with this.

1) roll back your guitars tone control some and or drop down its Bridge pickup some.

2) get the bad speaker reconed and then break them all in by applying 60 hz ac voltage to them for 1 1/2 to 2 days or more, you can look at the uncle spot.com site to get the facts on doing this and maybe your Tech can help you with this also.

I can assit more also with details if you like too.

Reconing the driver will be a tad cheaper then buying a new one and part of the good thing about these factory CTS speakers found in this amp is that they are Alinco magnet type, in light of this your Tech should have guided you towards a New Jensen driver with the also important to the sound seamed cone that these speakers where made with.

3) replace at least two of the speakers with a Eminence driver that will have better low end and mids right out of the box, this will hinge on you wallet I guess and how original you want to keep the amp.

Oh ,and by the way you did nothing wrong to make the speaker fail as I had the same thing happen to one of mine in my 100-8. In mine the the voice coil wire where it makes the jump from the top of the voice coil to the cone simple fatigued and broke open from normal vibration, not excess power or over heating.

I was able to fix mine blue to the fact that I had a spare voice coil cover, but it was a Bear!

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [QinVA](#) on Thu, 19 Nov 2015 17:14:36 GMT  
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Thanks SteveM.

I explored the Uncle's website. The idea of mixing two different speakers in a 4x10 sounds

interesting. I'm thinking of sending the "open" speaker there to be repaired. The cost sounds reasonable compared to new.

I had never heard that speakers need to be broken in, but it makes sense.

Thanks again

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**Subject: Re: Speaker brands used in Kustom combos**

Posted by [tito566](#) on Fri, 20 Nov 2015 17:31:22 GMT

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I have a black cab with 2x12 Jensens and 2x10 CTS. This is not exactly relative to the topic here in this thread but any reason why the two different brands being used in one cab? Was this a common practice with Kustom cabs? Thanks!

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**Subject: Re: Speaker brands used in Kustom combos**

Posted by [steven](#) on Sat, 21 Nov 2015 11:48:19 GMT

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I do not know that this question can be resolved with out talking to Bud Ross!  
Some possibillitys?

They gave the tone that the designers wanted.?

They gave the tone at the price they where looking for.?

CTS could supply the numbers that Kustom needed for production.? Even before Kustom became a big player in the amp world Fender was already using a huge number of 10" drivers from Jensen, now factor in that Kustom PA systems where getting very popular and at that point Kustom needed a ton of 10" drivers just for many of those cabinets!

The CTS drivers could take the wattage when only two where used in the 50 watt RMS ( K100 ) amps. Jensen was always very reluctant to makes changes and if you go back and look at the power ratings of even the top of the line Jensen concert series speakers ( C12n C15n, P12n, P15n ) in the late 50s they where not even rated for 30 watts.

Fender super reverb amps fitted with 4-10" Jensens with only 45 watts of RMS power would blow out a driver or two regularly if played on 7 or higher!

This is all conjecture on my part, but I am sure there is a good amount of truth here also.

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**Subject: Re: Speaker brands used in Kustom combos**

Posted by [tito566](#) on Sat, 21 Nov 2015 13:19:15 GMT

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Thanks Steve! Very intriguing stuff when you throw Bud Ross's name in there. I do have pictures

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of the speakers themselves along with the cab's interior and s/n that I could try and post here, if that helps at all.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [Iowa Boy](#) on Sun, 22 Nov 2015 16:29:12 GMT

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Stevem posted a lot of good info. I never did understand why Jensen never built their speakers for power. Sound wise, they are good (guitar only) but if you needed 10 speakers just to get enough power....well you can see where you start running into big \$\$\$\$. My personal choice is the JBL's.....I'd put them up against a Jensen any day. Your different sizes in your cabinet is kind of puzzling.....I didn't realize that Kustom mixed sizes in their cabinets, other than the one PA column. Would make better sense..at least to me ..to use 4 of the biggest size that would fit the cabinet to move the most air. Maybe one of you guys could explain their reasoning.....or were they just trying to get rid of stock laying around. Consistency didn't seem to be a trademark of Kustom in my opinion.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [Kustom\\_Bart](#) on Sun, 22 Nov 2015 17:43:02 GMT

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It is a matter of choice, but the Altec speakers for guitar both the 12" and 15" are really nice for guitar, the JBL's (D-130's) are nice if you take the aluminum voice coil cover off and replace it with a cloth one. The Jensen 12" are very nice for guitar as well. The reason, I believe for the lower wattage is so they would over drive when you crank the amp. The higher the wattage the more power you need to over drive the speaker.

Kustom kind of used whatever they had on hand that is why some would have one speaker at one time and not the other. If they ran out of Jensens, they would use whatever they had on hand. That is how it worked for them over time.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [pleat](#) on Mon, 23 Nov 2015 00:43:03 GMT

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If you go to the literature tab, click on the 100/200/400 tab and with the catalogs you can select supplemental catalog which will show the 2x10 over 2x12 and the other cabs with different size speakers.

Kustom didn't buy 10" Jensens, and my guess would be, Jensen may not have offered a 16 ohm 10" speaker. The odd cabinets, the top two speakers were vented out the back and the larger speakers were ported out the port tubes. The 10's gave a brighter tone and sounded more like an open back cabinet and the 2x12 or 15's gave a more robust bass with a sealed ported cabinet.

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Everyone has their opinion of what sounds good. Being old school, what ever amp I'm playing, I prefer to all the speakers matching regard of what size speaker I'm playing through.

pleat

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [QinVA](#) on Tue, 08 Dec 2015 22:18:51 GMT  
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Turned out that the speaker was not bad. I got it home from the shop, took the back off, and I immediately saw the braided wire hanging down from the spade connector bracket on the speaker frame. It was the top left speaker, the wire was clearly visible with the cab laying face down on my rug. Makes me wonder if they'd rather install a new speaker than repair the broken wire. I admit it was not an easy repair, but I saved some money and time compared to sending the speaker out to be fixed. I reconnected it and it tested as the others and sounds great. Now, because the amp was not bench tested due to having a bad speaker, and after paying for the repairs, the reverb is not working.

Is there a diagnostic procedure to be followed to test the reverb tank? I already read about testing across the plugs and will do that, what's next?

Thanks again, in advance for the help.

Q

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [QinVA](#) on Tue, 08 Dec 2015 22:46:12 GMT  
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Saw the post about reverbs. Going to order the Mod reverb unit from AES. At \$17.00 it's hardly worth messing with the old one.

If the new one doesn't work I'll have to continue the search for the problem, and will post again for next step.

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Subject: Re: Speaker brands used in Kustom combos  
Posted by [stevem](#) on Wed, 09 Dec 2015 11:59:18 GMT  
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It's rare that a a Kustom reverb driver or recovery circuit goes south so the pan should get you back up and running.  
If you turn up the reverb knob and hear a hum come in and get louder than at least the recovery

end of the circuit is good.

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