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Subject: Transistor replacements

Posted by [bcalla](#) on Fri, 16 Feb 2018 05:35:41 GMT

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I dropped my 1971 K-100 off with a local amp tech to see if we can eliminate the baseline hiss. Someone here mentioned that replacing some of the transistors with modern equivalents can go a long way to quiet the amp.

My tech identified the probable culprits: one 2N3638A and six FS35677s. Does anyone know what transistors to use for these?

I found an NTE equivalent for the 2N3638A - NTE 129. Is that the best / only option?

I can't find any info on the web for the FS35677. Is there a replacement for this?

Thanks,  
Bob

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Subject: Re: Transistor replacements

Posted by [steven](#) on Fri, 16 Feb 2018 13:20:45 GMT

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Is this in reference to the driver/ output board PC900?

If so what is the Q number of the fs35677 transistor in question?

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Subject: Re: Transistor replacements

Posted by [bcalla](#) on Fri, 16 Feb 2018 14:48:52 GMT

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Here is my tech's reply to that question:

This transistor is 6 of the first 7 in the signal chain from the input jack. I've isolated the noise to the preamp itself so it's likely that this will quiet it down.

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Subject: Re: Transistor replacements

Posted by [chicagobill](#) on Fri, 16 Feb 2018 17:04:43 GMT

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Those are just house numbered SE4002 or PET8002 NPN transistors. Use any good quality NPN as a replacement.

The 2N3638 PNP can be replaced by any good quality modern PNP transistor.

The preamp circuits are not tuned or in any way critical when it comes to transistor selection.

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Think about it, if the amp was designed to only work with one specific transistor and that transistor had to have very specific gain or voltage or frequency characteristics, the factory would have to either special order them or hand select them from the batches they bought. This would be very time consuming and or expensive. It would also make for a non field serviceable product that could never last some 40-50 years. The only problem I've had with replacing Kustom transistors are the 40409 and 40410 driver transistors. But at least there are ways to work around these replacements, so it's just a little more inconvenient.

With age, the internal workings of the transistors can be subjected to static spikes, heat, cold, etc. and will start to breakdown. This can lead to catastrophic failure like open or shorted junctions or more often decreased performance like hiss and noise.

The NTE is fine, but will cost you far more than a generic transistor. I use a lot of 2N4401 and 2N4402 transistors in these amps. The power supply for the preamps has less than 20 volts available, so any decent transistor that is rated at least 30-40 volts and has a medium gain rating will make for a fine replacement.

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Subject: Re: Transistor replacements  
Posted by [bcalla](#) on Fri, 16 Feb 2018 20:12:01 GMT  
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Thanks to both stevem and chicagobill for your replies, I passed all this on to my tech.

I'll post an update when he's done. Hopefully the result will be a quiet, useable amp.

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Subject: Re: Transistor replacements  
Posted by [bcalla](#) on Sun, 25 Feb 2018 21:38:19 GMT  
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I got my amp back and I'm very happy with the results!!!

It will still hiss if I crank the treble all the way up, but with the treble set at a moderate level, it is dead quiet.

Thanks to everyone for your suggestions.

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Subject: Re: Transistor replacements  
Posted by [stevem](#) on Mon, 26 Feb 2018 11:03:24 GMT  
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Good to hear, enjoy!

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