

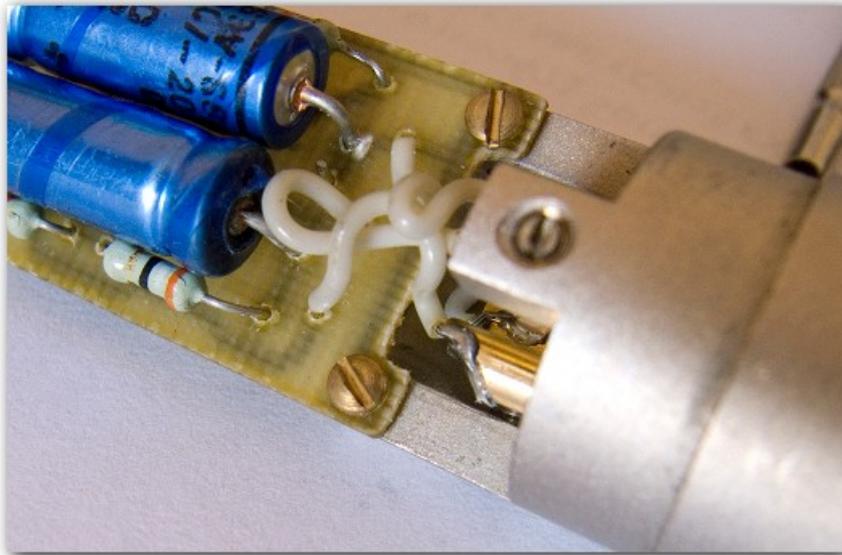
GROUNDING SOLUTIONS FOR OKTAVA MK-012 MICROPHONES

BY EMANUELE COSTANTINI

Users "on location" of this fantastic Oktava MK-012 microphone have probably experienced problems with signal noise, after using it for some time, especially in extremely humid conditions. This is mainly due to a manufacturing flaw with the grounding of the connector.

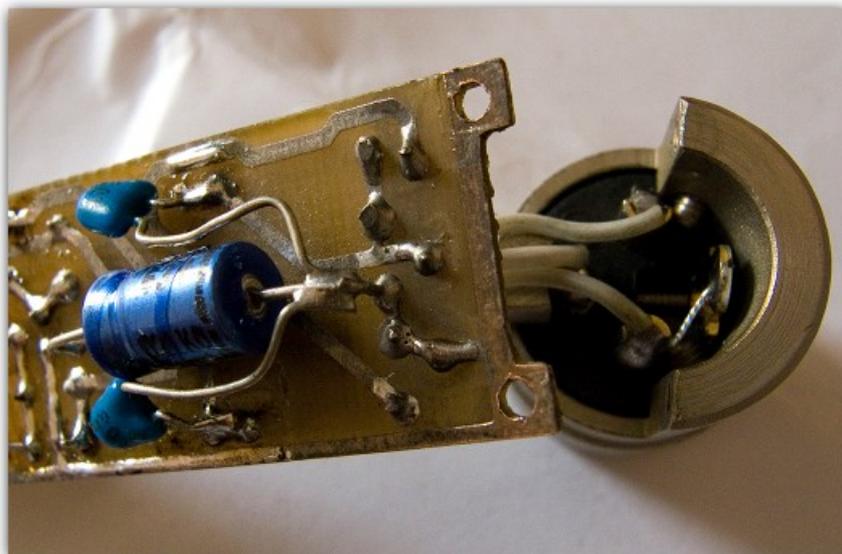
If we open up the preamplifier, we find an internal circuit board of surprisingly low quality (almost amateur-like), lacking any features designed to prevent or minimize oxidation. Inevitably, after a while, oxidation does occur, causing hissing and bumping noises upon recording, wrecking a great overall performance by this microphone.

This basically occurs because the connector acts as the actual ground for the circuit. When the circuit board is placed on the connector, contact is made between the copper of the circuit and the metal of the connector. Everything is held together by a couple of small screws (Picture 01).



Picture 01

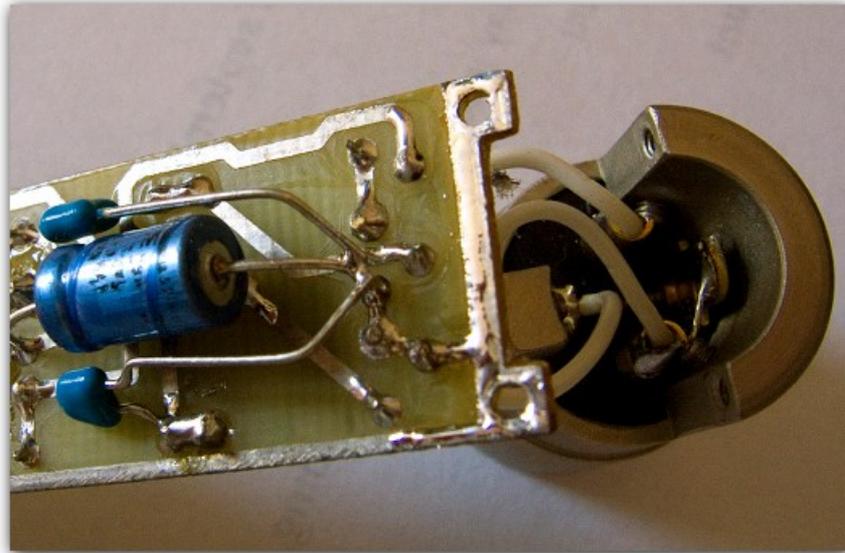
What happens is that the metal coating of the circuit slowly oxidizes, as seen in Picture 02.



Picture 02

When this happens, the contact surface is no longer functional and is isolated by the oxidized portion of the metal, with the circuit losing its ground. This leads to a steady increase in signal noise that eventually makes the microphone unusable.

I've tried to solve this important problem by soldering tin on top of the copper circuit (see Picture 3) in order to prevent oxidation.



Picture 03

I've also increased the contact surface efficiency by inserting a piece of aluminium foil (see Pictures 04 and 05) between the screws and the metal, improving contact on the connector side.



Picture 04



Picture 05

Another manufacturing flaw occurs with the area between the cover (the ground of the capsule) and the connector. The cover doesn't rest up perfectly against the connector and gets separated even more by the internal screws that tend to push it away once screwed in completely. This keeps the capsule's ground disconnected from the circuit ground.

It would be advisable to use screws with a head on the outside (as opposed to the headless internal screws currently used), as they would force contact by pushing the cover onto the connector, thus guaranteeing a strong connection. I've been having some difficulty finding these screws and was hoping to find them in a watch repair shop or something similar. For now, I use a ring of aluminium foil that, placed in the affected area, improves contact once the cover is in place, as shown in Picture 06.



Picture 06

LICENCE

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