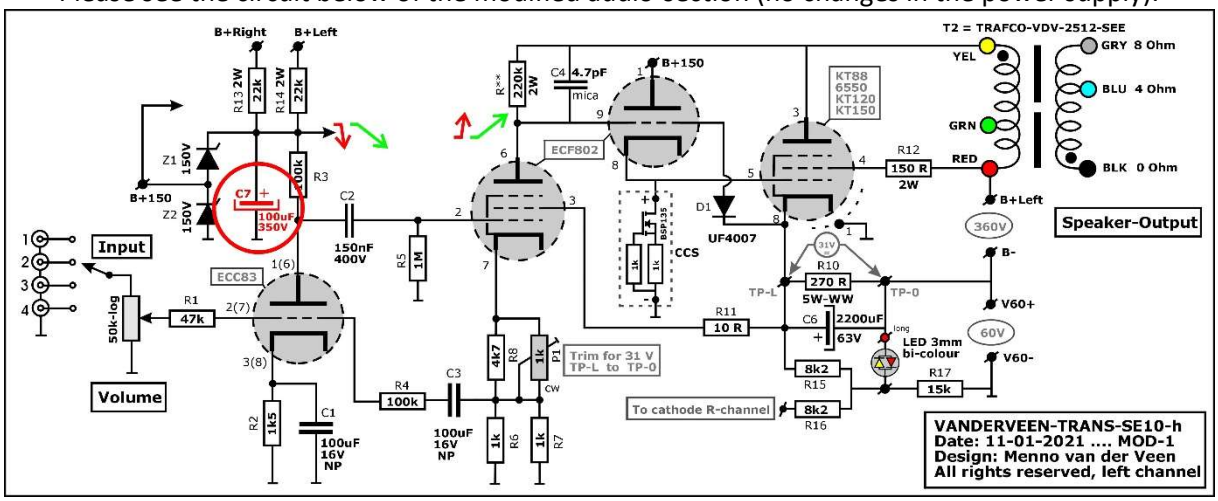
2021-01-11 Trans-SE10 Modification-1: ANTI-PLOP at switch-off

The SE-10 manual states: “you might expect improvements”. Well, here is the first one.

The Trans-SE10-kit is almost a year on the market and we received positive comments. Some clients with high efficiency loudspeakers (105 dB/W,m) observed a plop-sound at amplifiers switch-off. With standard efficiency loudspeakers (around 90 dB/W,m) the plop was hardly noticeable. This super small **anti-plop modification** is especially important for those lucky ones who own high efficiency speakers.

Please see the circuit below of the modified audio-section (no changes in the power supply).



We only changed C7. Its capacitance was 10uF / 350V; now it changes into 100uF / 350V.

How does it work? At mains switch-off the DC-voltage at the top of R3 disappeared too fast. See the **red arrow**. That created a quick voltage drop through C2 to the control grid (pin 2) of the ECF802. As result its anode (pin 6) showed a positive going pulse. Through the cathode follower the KT88 control grid received this positive pulse and the tube started to draw more current which created the plop-sound in the loudspeakers.

C7 = 100 uF solves this effect; see the **green arrow**. The voltage drop at the top of R3 is much slower, because C7 has 10 times larger capacitance. At mains switch-off the voltage supply of the power tube is already almost discharged when the slower green pulse reaches the KT88. Result? No plop is heard. See the photo how to mount the new C7 which is bigger than the 10 uF version.

Some additional information about C7:

- C7 = 100 uF / 350 V
- Height = 33 mm ; diameter = 18,5 to 20 mm ; 105 degrees Celsius
- You only need ONE new C7
- Bend its wires (before soldering) to press C7 against the spacer, see photo
- Mount C7 on 1 cm distance of the PCB, not touching the input posts
- Apply a tie-wrap (or two) to fixate C7.
- Because it is only one component, please order locally.