

Makita Charger DC7100 Repair

In this charger, the thyristor named SCR was defect. This was a result from a damaged battery, since it had shorted cells.

Here you can find the schematic, if you have to repair this unit. [makita-dc7100.pdf](#)

Please see also the blog article from [Skyjuice](#)

How does the Circuit work?

As far as I understand the circuit, the charging current is activated by inserting the battery, raising the minus-terminal, which then triggers through C2 the SCR. The minus-terminal is then at about 0.5-1V. Then the current flows until the thermo switch TS opens.

Then the minus-terminal rises again (because the transformer isn't loaded any more), but now it cannot trigger the SCR, because the TS is still open.

When it closes again, C2 is already charged, and the SCR isn't triggered any more, until a re-insertion (with discharging C2).

The Zener is most likely a 2.4V type.

Then the Gate voltage (= V_R5) is about 0.6V in static state, C2 charged. And this voltage is too low to trigger the SCR.

So the Zener protects the battery from restarting charging, when TS closes again. If you replace it with a 24V type, it has no effect on the charging itself, only on the overcharging protection.

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<http://www.zeilhofer.co.at/wiki/> - **Verschiedenste Artikel von Karl Zeilhofer**

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