



Repairing Fluorescent Tube Starter (fused bimetal strip)

Repairing a glow starter that stopped working due to its fused bimetal strip. The starter will most likely be repaired by simply putting the starter into the freezer (due to the thermal deformation).

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INTRODUCTION

A starter is, as its name suggests, the element which "starts" a fluorescent tube. It is basically just a switch that opens and closes automatically. There are two different types of starters out there, one based on an electrical switch and the other on a mechanical switch. In this guide the mechanical switch is considered, i.e. a glow starter. It consists of a capacitor parallel to a glow lamp made of a bimetal strip (this combination makes an automatically opening and closing switch).

An indicator for a broken fluorescent lamp due to a fused bimetal strip is that the ends of the fluorescent lamp still glow a little bit but the starting process is not initiated (no switching takes place).

Hereafter a repair guide is given that explains how to repair a glow starter that stopped working due to a fused bimetal strip.

TOOLS:

- [freezer](#) (1)
- [Flathead Screwdriver](#) (1)
- [Sharp knife \(optional\)](#) (1)

Step 1 — Disassembling of fluorescent tube



- 1. First remove fluorescent tube by turning it.
- 2. Remove housing by lifting the metal sheet notch over the plastic flute with a flat-head screw driver (see circle in second image).
- 3. Remove the starter by turning it (see circle in third image).

Step 2 — Opening and determining of error case



- ① In step 2 the error case is determined by opening the starter but it is also possible to skip this step and carry on directly with step 3 without opening the starter (aka the "quick and dirty way").
- 1. Check that the starter is a glow starter by opening the starter-housing with a small cut parallel to the long side (see rectangular in second image). The housing is used again later on, so omit a complete destruction. If the disassembled starter looks like the second picture, it is a glow starter.
- 2. There are three different failure modes of a glow starter, those are:
 - -break-down of capacitor => effect: short circuiting the starter
 - -sputtered metal impurified gas => effect: switch won't close anymore
 - -bimetal strip fused to the other beam => switch won't open anymore, thus is short-circuited (as can be seen in the third picture)
- 3. The error that is addressed in this guide is a fused bimetal strip. To determine if the two beams fused together, one can have a closer look at the glow lamp. If the beams in the lamp touch each other, then the bimetal strip fused to the other beam (as can be seen in the third picture).

Step 3 — Actual repair



- 1. Put the starter for 24 hours into the freezer (see picture 1).
- 2. After 24 hours check visually if the bimetal strip is still fused to the other contact or if the bimetal strip opened and is functional again. (If the "quick and dirty way" was taken simply put the starter back to use).
- 3. If the bimetal strip opened again the starter can now be put back into its housing and is ready for use.

To reassemble your device, follow these instructions in reverse order.