

## How to fix flexible "flex" cables broken or torn?

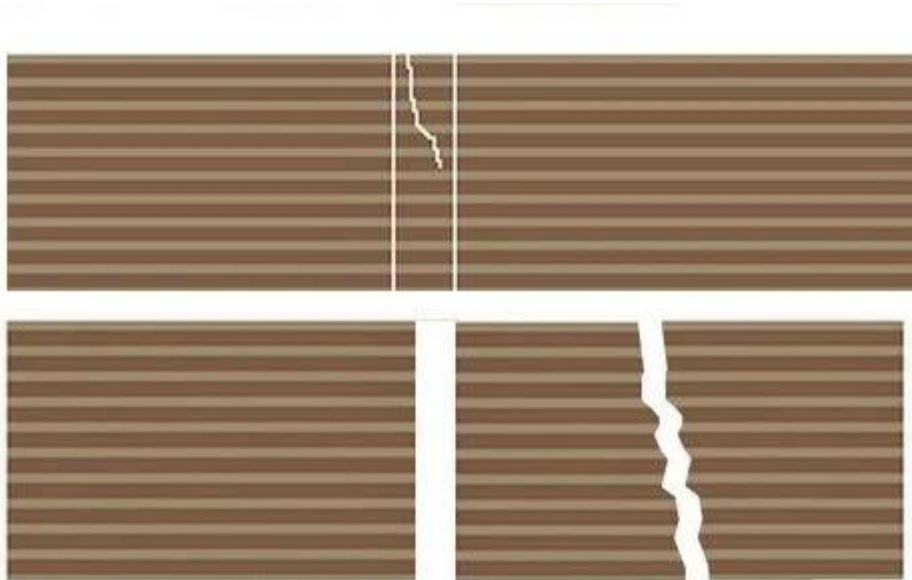
By Philippe Raybaudi

This tutorial explains flexible repair broken or torn cables that allow electronic links.

The images below contain all the steps and instructions to try to repair these flexible cables; they are deliberately enlarged to show detail transactions.

### INSTRUCTIONS:

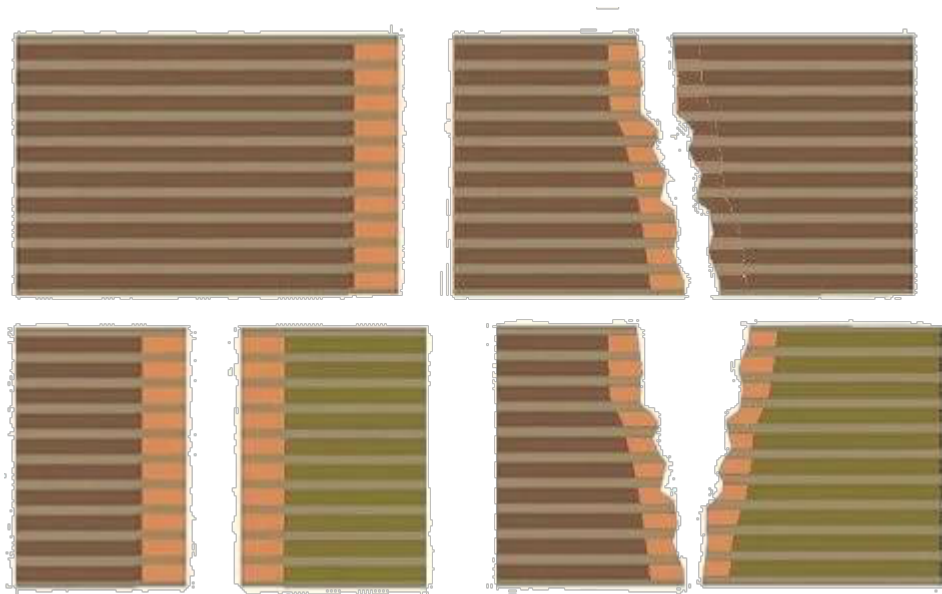
- 1) **To intervene on electronic cards** - which include integrated components (often sensitive to static discharge) - certain risks that may aggravate the malfunction and cause more serious failures and potentially destructive.
- 2) **Repair cables 'flex' can not be improvised and requires knowing perfectly already operate electronic solders on cards and conventional components.** It is also necessary to be equipped with a welding station (and de-soldering) performing (iron miniature conventional welding and hot air gun to temperature and flow variables)
- 3) **Tools and supplies:** Solder paste remover, small scissors tailor or surgical soldering iron with miniature failure, adjustable heat gun, welding roller for electronics, desoldering braid, masking tape or adhesive tape , razor blade one edge or surgical scalpel, flat-blade screwdriver.



**Step 1:** Using scissors, cut directly the torn section completely from two straight edges.

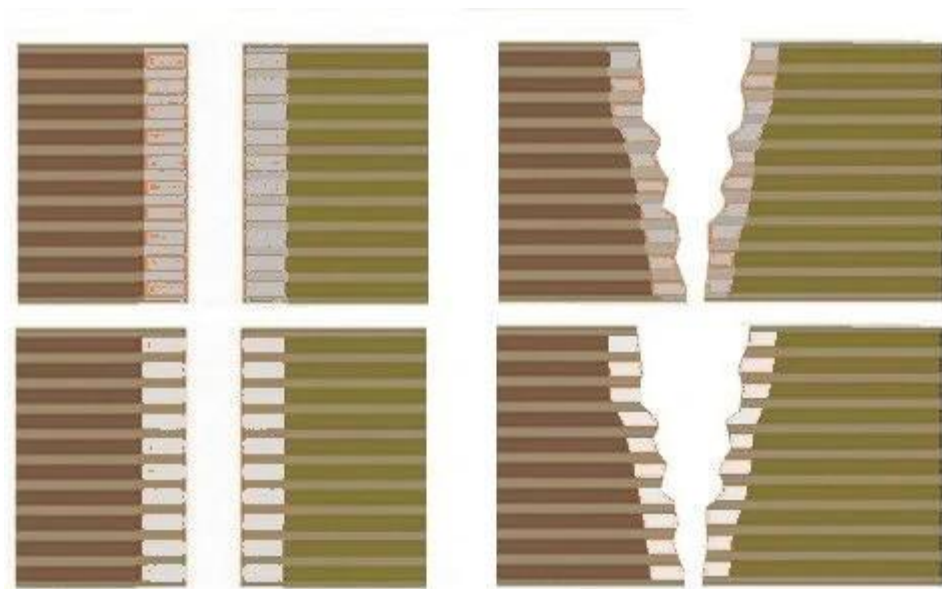
or

If the cut takes too long, while harder, cut or tear as straight as possible non-torn area to get two halves. Then follow the instructions below.



**Step 2:** With the single-edged razor blade, scrape the insulation of a cable half to expose the bare copper of 3 to 4 mm long for each of the contacts. Be careful not to injure or remove the copper because it could break, take your time! It's a slow process.

Then go back the other half of the cable (at the rear) and scrape it to also expose the bare copper. Obviously, you can not scratch the lacquered (plastic) insulation as precisely as on the pictures.

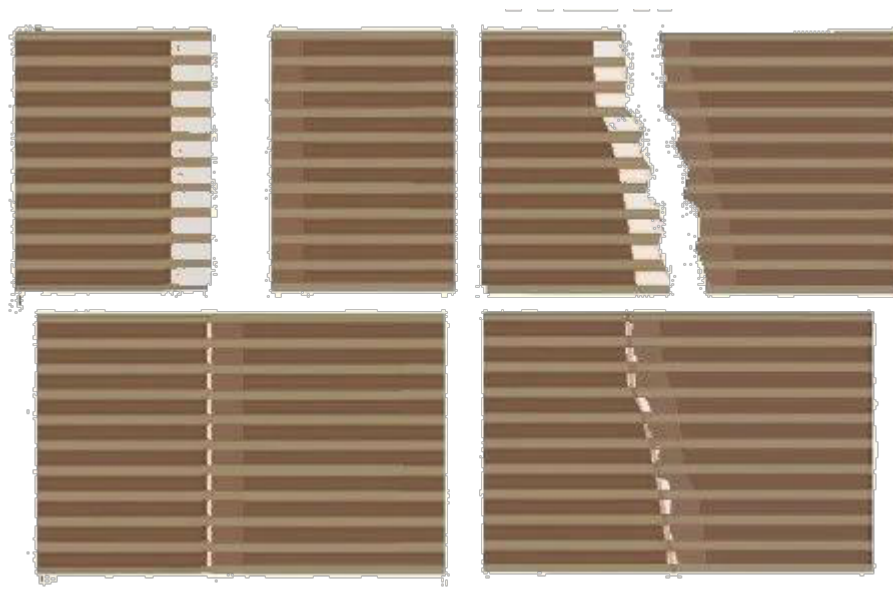


**Step 3:** With copper side up, spread a thin layer of solder paste remover on all copper exposed ... Do not worry if it overflows.

Using the soldering iron, heat the dough to adhere to the copper portion of the cable.

Do this on both sides. Any remaining dough must be cleaned at this stage with a solvent or cleaner, taking care not to wipe too aggressively copper so as not to dissolve the plastic (painted) insulation. then depositing a thin layer of solder on each of the contacts for tin. Doing this on the contacts of the two pieces of cable "flex" to reassemble

If you put too much solder, use desoldering braid to remove the solder too much or to separate two tracks unintentionally contacted.



**Step 4:** Using the masking or adhesive tape firmly tape the two cable ends 'flex' stacked one on the other by aligning as perfectly as possible and making them overlap by about 4 mm, so that previously tinned contacts are fully in contact (without current circuit) also apply the masking tape to hold the assembly firmly in place.

Apply a small amount of solder paste to the junction of the two parts.

Heat the top sheet (with the heat gun to the welding station) by gently raising the temperature while making forth / Returns not to destroy the insulation of the cable "flex" (overheating) but while ensuring the melting uniform solder until it is drawn on all the contacts of the two parts of the cables to reassemble.

Then, using a flat-blade screwdriver or a rigid metal plate, hold pressure in the two layers of cables, and then again to make round trips / returns with the heat gun to improve the grip of the welding on contact. Keep the screwdriver (or the metal plate) in place until the solder is cooled (approximately 30 seconds)

If possible, check the ohm meter connections end to end (to check if there are no loose connections) then clean all alcohol after removing the tape. If you detect bad contacts, repeat the process of welding with hot air.