# TECH TIPS

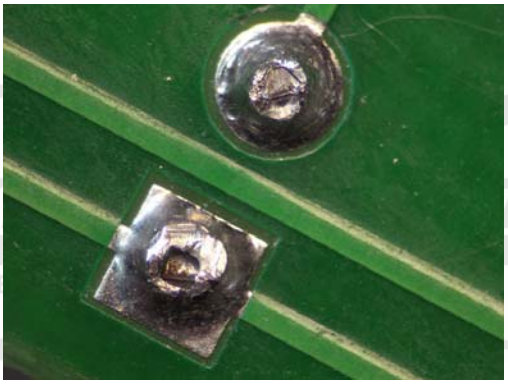
## Cold Solder Connection

Soldering parts is a skill and being able to solder well and identify cold solder connections (or cold joints) is vital to many repairs.

> *Definition:* **cold joint** In soldering, making a soldered connection without adequate heating, so that the solder does not flow to fill the spaces, but merely makes a mechanical bond.
> *Dictionary of Materials and Testing* – William H. Cubberly: SAE Press 1993.

Typically, when using a soldering iron to join 2 parts together the mistake often made is that the parts are held together, the soldering iron is placed on them and the solder is applied on to the iron. While this may work sometime there is a really good chance that the parts have not heated up sufficiently for the solder to bond to them. Below are some pictures of what this typically looks like. Notice that the solder has not melted and flowed into the wire at all.

On the picture below notice that the solder did not bond to the wire as the wire was not heated enough.



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On a good solder connection the solder becomes concave and remains shiny (not convex or “bubble shaped” and not pitted). Following is a picture of a proper solder connection.

Attached is a sketch as well to try and show the diffence more clearly.