

Wire to Terminal Joints: Soldered vs. Crimped

While there are a lot of opinions about whether soldered or crimped joints are better, the reality is that either method can produce high quality reliable wire to terminal joints. Here is a list of some of the pros and cons of each method:

Crimping Pros:

- Properly done, a crimped joint is gas tight and probably superior (both electrically and mechanically) to a soldered joint.
- You typically don't need electricity to do a crimp joint.

Crimping Cons:

- The "properly done" in the above sentence is important. It's easy to make a bad crimp joint, and sometimes hard to tell that it isn't good.
- The correct terminals, wire gauges, and crimp tools are 100% necessary. This is expensive.
- Crimp tools need periodic recalibration.
- Reworking a bad crimp joint can often be difficult without shortening the wire.

Soldering Pros:

- With the proper skills, it's probably easier to reliably get good solder joints than crimp joints.
- Tools are less expensive.
- You can usually see a bad solder joint and rework it if needed.

Soldering Cons:

- There is potential for the wire to break (in high vibration or flex environments) at the point where the solder has wicked up the wire.
- Some manufacturers say the plating on the terminal can be adversely affected by the heat from the soldering process.
- The wire insulation can be damaged by the heat from the soldering process.

At Scorpion Technologies (unless there is a pressing reason not to), we have settled on a policy of crimping all connectors and then soldering them as well. Our assembly technicians all have good soldering skills, and we feel that doing both processes adds more of the pros than the cons.