Soldering

By Lynn Sondenaa

Soldering is a form of brazing in which nonferrous filler metals having temperatures below 800 degrees F are used. The filler metal is solder and goes on the surface by capillary action. Soldering conditions require that parts fit tight to invoke the capillary action. They must be absolutely clean or the solder will not stick.

Common types of solder:

- Tin – Lead
- 70%-30% 370 melting range general purpose
- 50%-50% 470 melting range general purpose
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- Tin-Antimony
- 95%-5% 350 to 375 melting range copper, around food (lead free) plumbing solder
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- Tin-Zinc 590 melting range aluminum
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- Lead-Silver 600 to 800 melting range used for strength
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- Silver-Nickel 375 to 500 melting range stained glass work
- Flux core solders
    - Acid core (corrosive) non electrical repairs
    - Rosin core (non-corrosive) copper wires & electrical repairs

Flux prevents the formation of oxides and increases the flowing ability of solder. Two common types of fluxes are soldering paste which is zinc chloride & muriatic acid. The second flux is tinning flux, which is mostly used for copper, tin and bismuth. It is composed of aluminum chloride, sal-ammoniac, and zinc chloride.

How to solder:

- Clean the surfaces
- Remove corrosion
- Remove dirt & grease
- Use Scotch Brite
- Apply flux
- Apply heat
- Once flux boils apply solder
- Clean soldered joint when cool