HOT GLUE!

And you just thought it was for arts and crafts…

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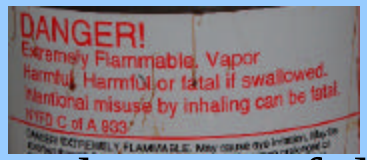
The Problem:

Scotchkote and Self Vulcanizing rubber tape splicing technique:

•Scotchkote is a Hazardous Material!



•It is flammable, produces vapors that can be Harmful or Fatal!

•Using a Heat gun to accelerate drying is not recommended.

•Scotchkote is only recommended for use with Scotch Brand VINYL Electrical Tape, No mention on it's effects when used with Self Vulcanizing rubber tape (Like Scotch 23).

•Temperature and Humidity effect drying time, Per data sheet it can take as much as 24 hours or longer to dry or fuse.

•Layering Scotch 23 and Scotchkote can prevent Scotch 23 tape from fusing to it self.


3M Scotch™ 23
Rubber Splicing Tape
High-voltage, Self-fusing, Insulating
Based on Ethylene Propylene
Can be used on cables whose
overload temperature can
3/4 in. x 30 ft. (10 yds.)
19,0 mm x 9,1 m x 0,76
Scotchkote™
Electrical
Coating
Part No.
054007-14853
DANGER
Extremely Flammable. Vapor Harmful
Harmful or fatal if swallowed.
Intentional misuse by inhaling can be
Read back panel for precautionary
Contents: 15 fl. oz./0.44

Additional Considerations:

•The scientist leaning over your shoulder asking: “How long is this going to take?”

•Making a good seal with more than one wire in and one wire out is very difficult.

•Splices are generally long and additional support is needed to prevent bending and breaking of wires inside the splice area.

•Scotchkote is messy and smells bad! If you like the smell you have probably killed a few to many brain cells doing splices with it!

A New and Different Way

Heat shrink and Hot Glue!

- Dries fast (or should I say “cools fast”)…
- Ready for deployment to 5000m+ only minutes after the splice is complete!
- Fills all voids between wires allowing multi wire to one wire splices.
- Much smaller splices.
- No toxic materials.
- Wide temperature range with good psychical splice support.
- Can be melted out and redone if there is a problem where cutting additional wire off to redo the splice is not an option!

Tools and Supplies

•Heat shrink: I Recommend Panduit HST 0.4 for Hydro wire to Impulse connector splices.

•Thick wall heat shrink is best but other types can be used. Look for a heat shrink with a high compression value. 3 to 1 or 4 to 1 is best

•Hot glue gun (Battery or AC powered)

•Hot Glue sticks: general purpose, medium temperature. Do not use Hot “calking” sticks or High temp glue sticks, General purpose medium temperature works the best.

Hot glue gun.

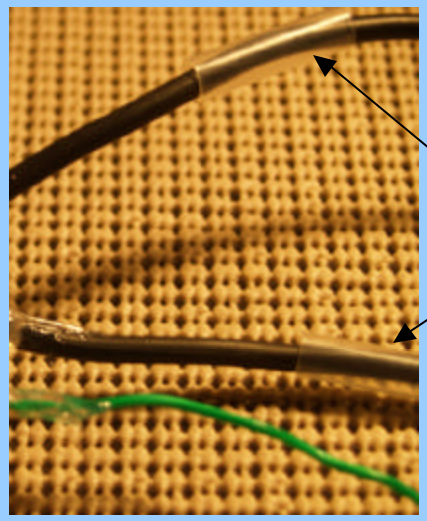
Inexpensive general (all) purpose Hot Melt Glue Sticks.

Available at most hardware and arts and crafts stores.

How to:

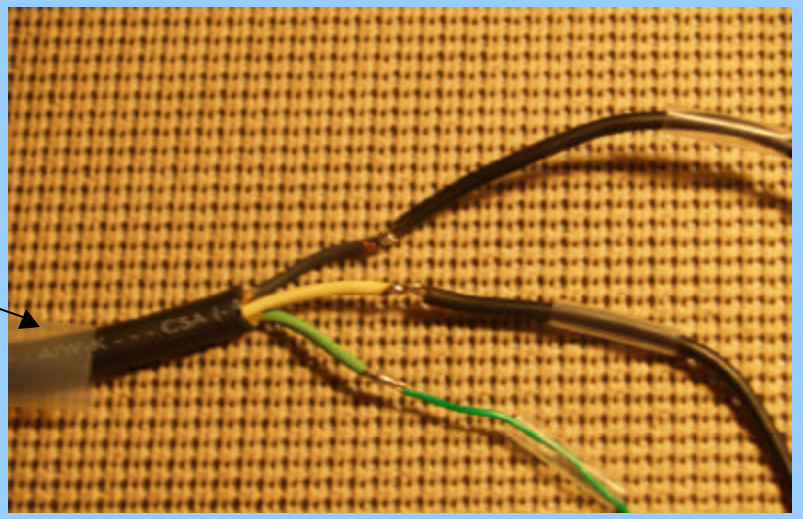
•The Hot Glue splice is the same as any other potted splice.

•Start by putting the heat shrink over the wires as it may be difficult to do once the wires are soldered together.



Heat shrink

Fit heat shrink

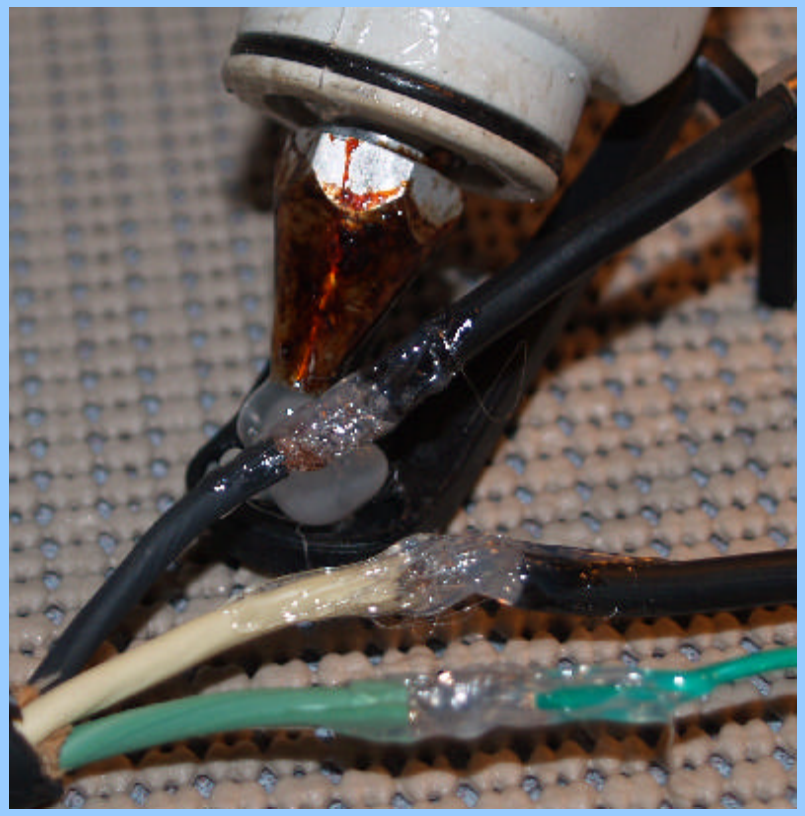


Solder wires

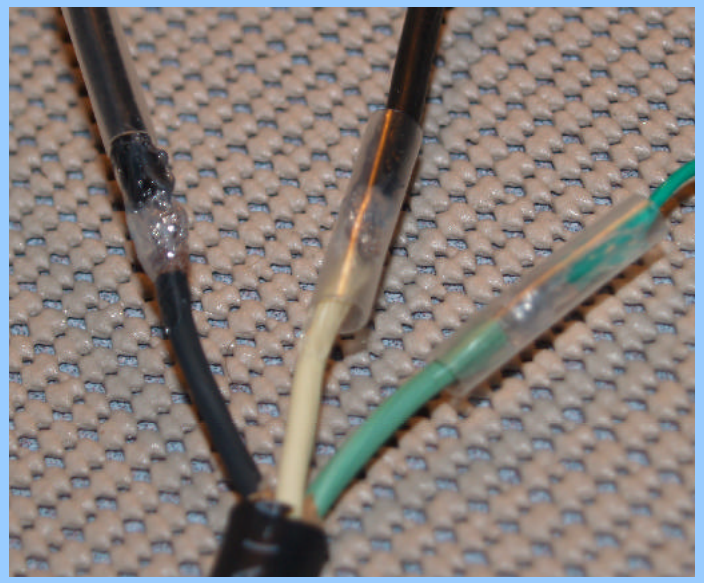
Make Initial Hot Glue Seal

•Start with a thin coat of Hot glue on each solder connection.

• Make sure to keep the diameter small enough that the heat shrink can fit over the glue when cool.

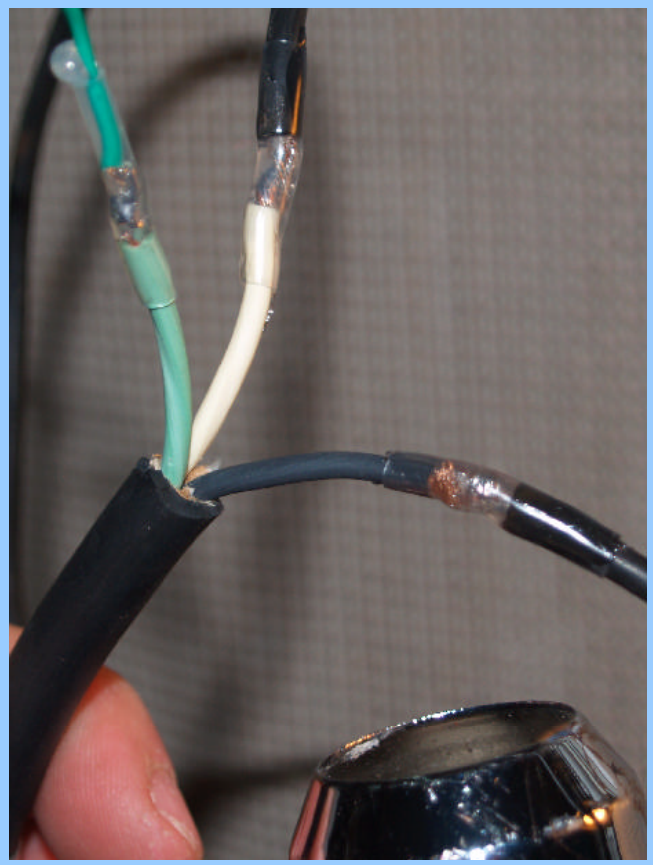


Once the glue is cool slide heat shrink over the solder and hot glue taking care to overlap the insulation with the heat shrink. If to much glue was applied use the tip of the Hot glue gun to smooth away some of the high spots.

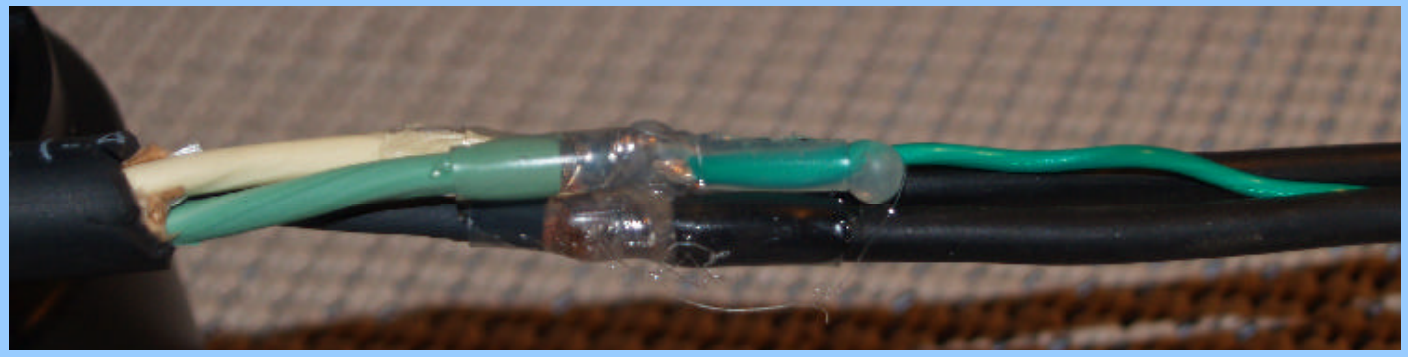


Position the Heat Shrink

Then Shrink it!



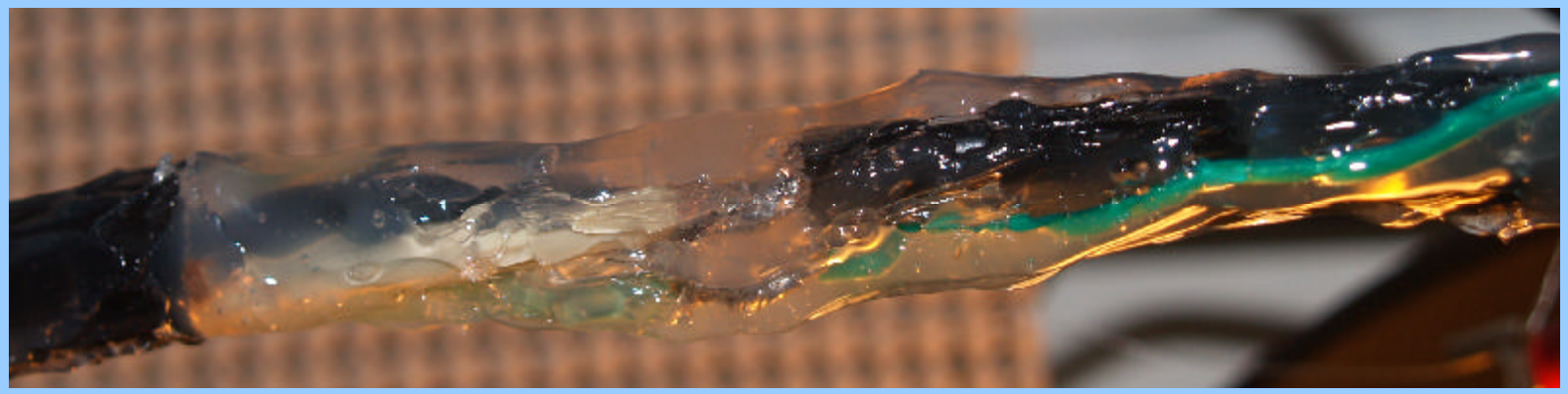
Position the wires and glue them together.



Start building up hot glue filling the gaps between the wires.

Build up the glue in thin layers, this helps to prevent air bubbles.

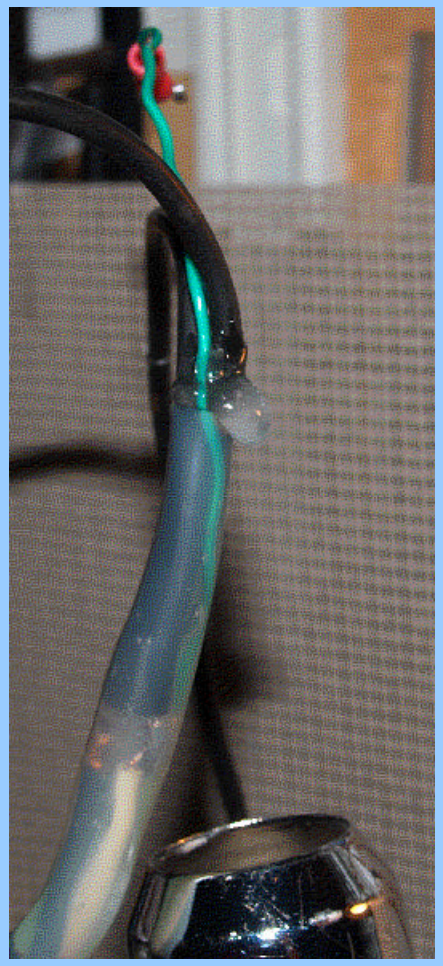
Once the glue layer is built up to about the thickness of the wires, let it cool.



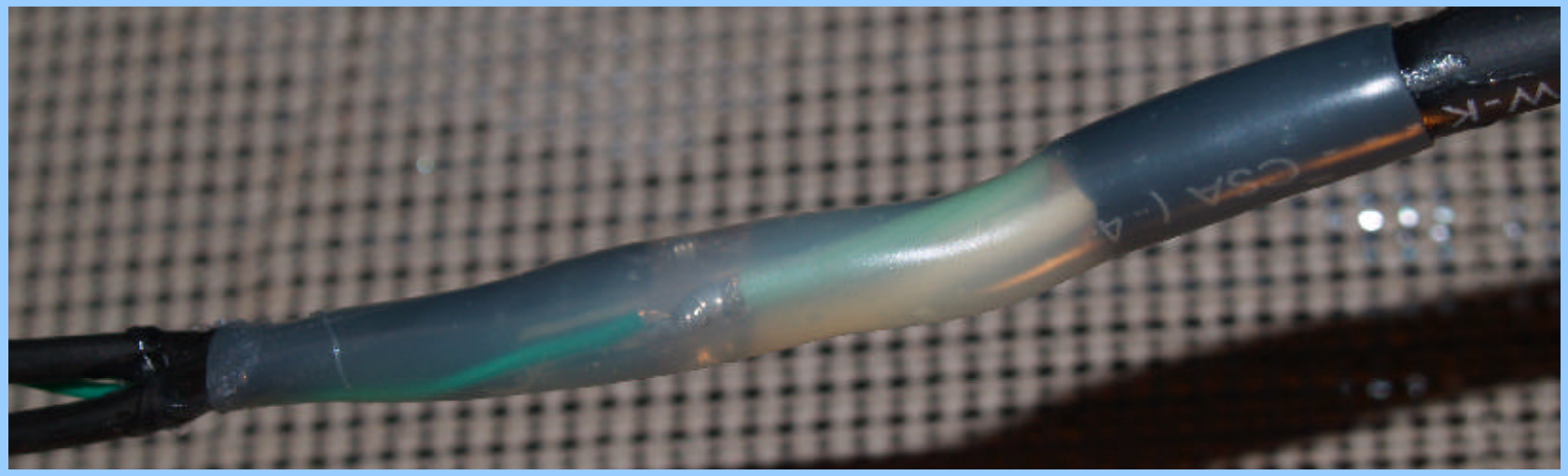
Position the heat shrink over the splice, overlap the splice area 3 to 5cm on each side.

Starting from the end with the least number of wires shrink the heat shrink holding the cable upright as shown. Once the heat shrink contacts the hot glue it will begin to melt it forcing air bubbles up. Continue slowly shrinking in an upward direction turning the wire to evenly shrink the tubing. Allow time for the Hot Glue to melt and the excess glue and air to be forced ahead of the shrinking process. The heat shrink will force air and glue to the top where the excess can be removed.

Remember
They call it
HOT GLUE
for a reason!!



Once the heat shrinking is complete allow the splice to cool, If needed water can be used to speed up the cooling process.

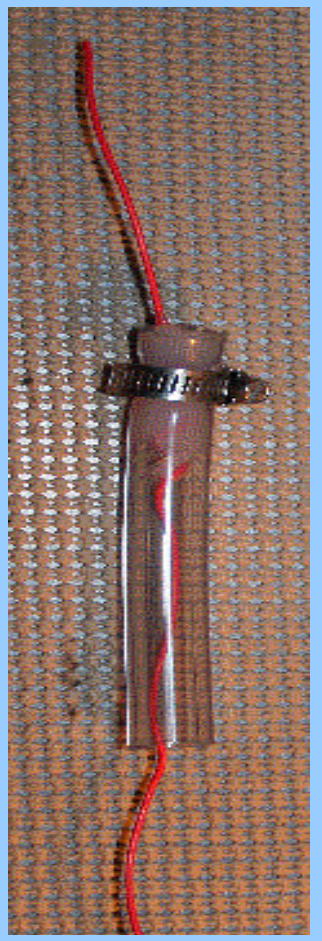


As the splice cools off it can be formed as needed. It can also be reformed at a later time by slowly re-heating the splice to soften the Hot glue and making the splice pliable. Avoid overheating or heating to fast as it can make a real mess!

Other fun things you can do with Hot Glue

Water proof spade lugs help to prevent hidden corrosion.

A simple inexpensive conductor pass through for pressure equalized housings.



Conclusion

✍ Happy Gluing ✍