

Electrical Connections

by Mike Casey
March, 2006







The communication stack includes:

- Radio Tuner (IC-A200):** Shows frequencies 19.60 and 122.20.
- Navigation/Communication Panel (PMA7000B):** Features buttons for COM1, COM2, COM3, NAV1, NAV2, ADF, DME, WX, ICS, AUX, and SPR.

The multi-function display shows a map of the Chicago area and the following flight data:

UTC	TIME	BRG	Toc
19:23	12:23	118°	38.9nm
ALT	GS	CDI	
5433	168	000+000	

Map labels include: CHG, MWA, KMWA, KMDH, CGI, KCGI, FAM, 45, 55, 80, 67.

The control panel includes:

- Lighting:** Lights, Wiping, Landing.
- Flaps:** Flaps Up, Down.
- Other:** OFF, ON.

TRIM UP
DOWN

AILERON TRIM



Suppliers

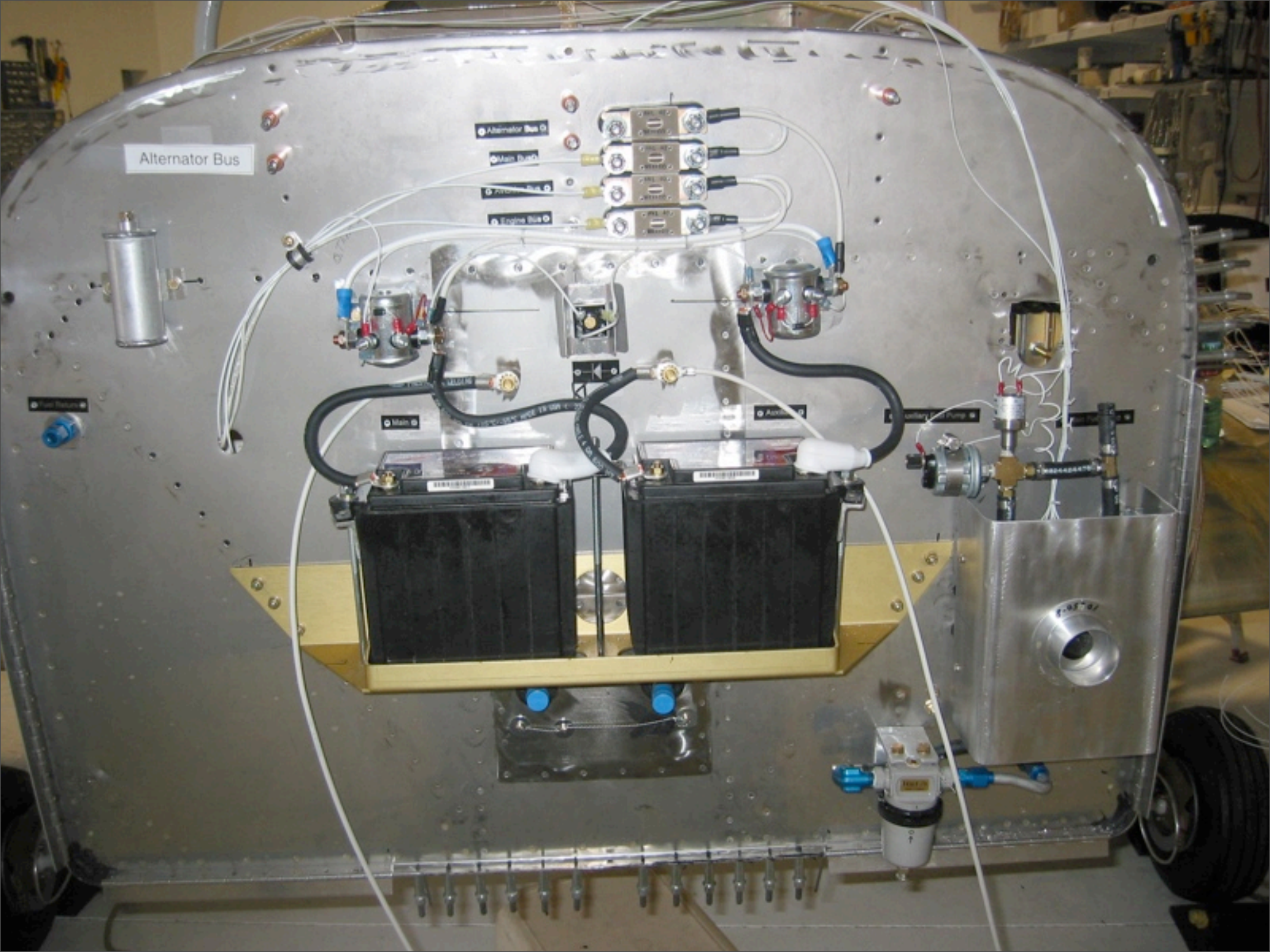
- My Tool Store <http://www.mytoolstore.com/klein/t1710.html>
- B & C Specialty Products 316-283-8000
- Terminal Town terminaltown.com
- Newark In One 800.463.9275
- www.epanelbuilder.com for online design of your instrument panel



Single Point Ground

B & C Specialty Products

\$54



Alternator Bus

Alternator Bus

Main Bus

Propeller Bus

Engine Bus

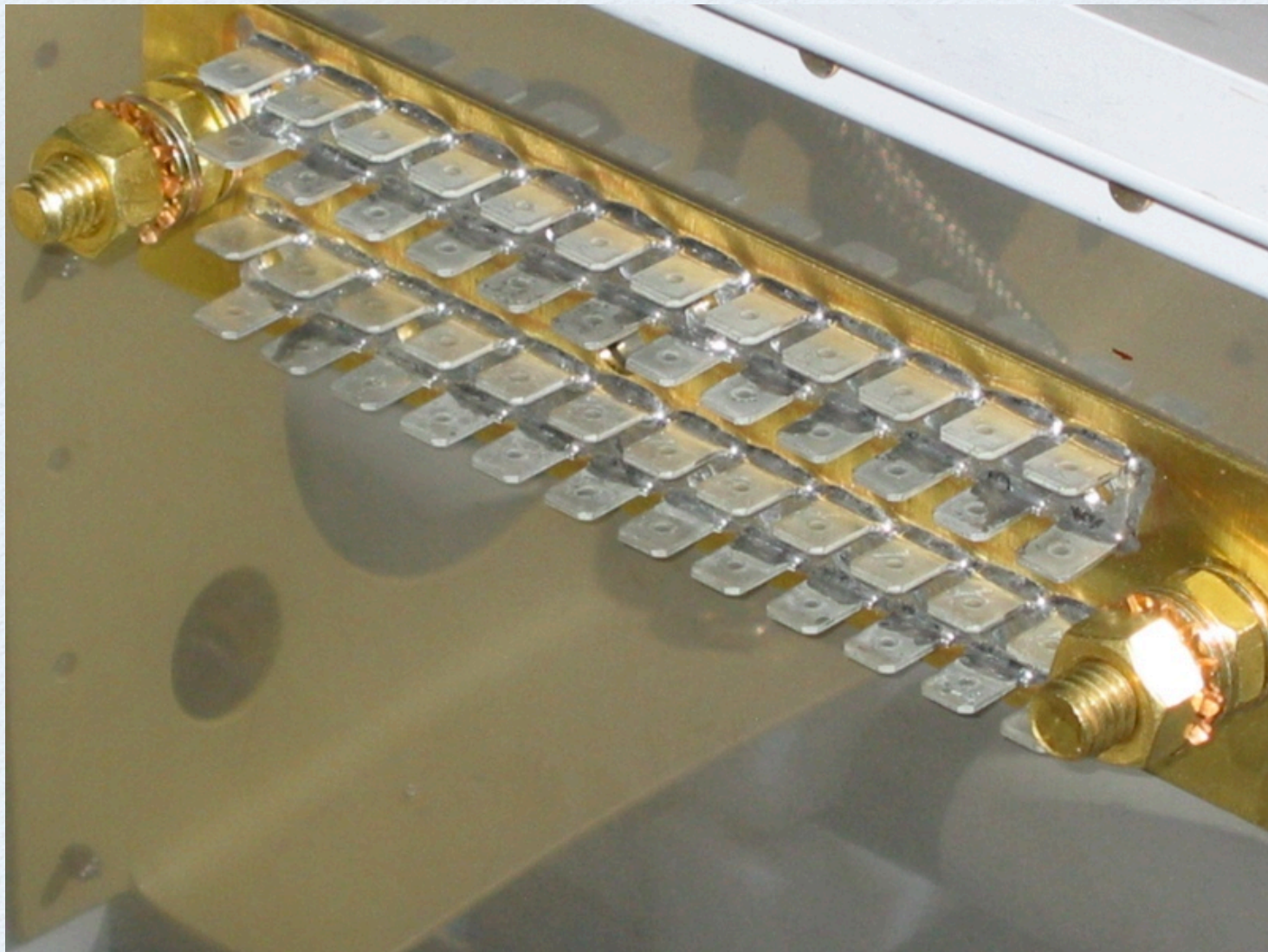
Fuel Return

Main

Alternator

Propeller

Fuel



Single Point Ground

Shielded Wire

- The Shield of a bundle of wires should only be grounded at one end.
- Do Not ground a shield at both ends.
- This applies to audio cables, strobe lights and any other shielded wires.
- Connect all grounds to a single point.



Use Only
Aircraft Wire
B & C Specialty Products

- Use black 3/4" buried lawn sprinkler tubing for conduits.
- Run the conduits from each wing tip to the fuselage.
- Run the conduits for and aft under the seats.
- Do Not lace the wire within the conduits.



NAPA

National Aircraft Parts & Accessories



Right Stuff



Home Depot
Circuit Testers \$5



Home Depot
Slick \$5



Heat Gun



TEF-GEL Lubricates External Screws B & C Specialty Products \$12



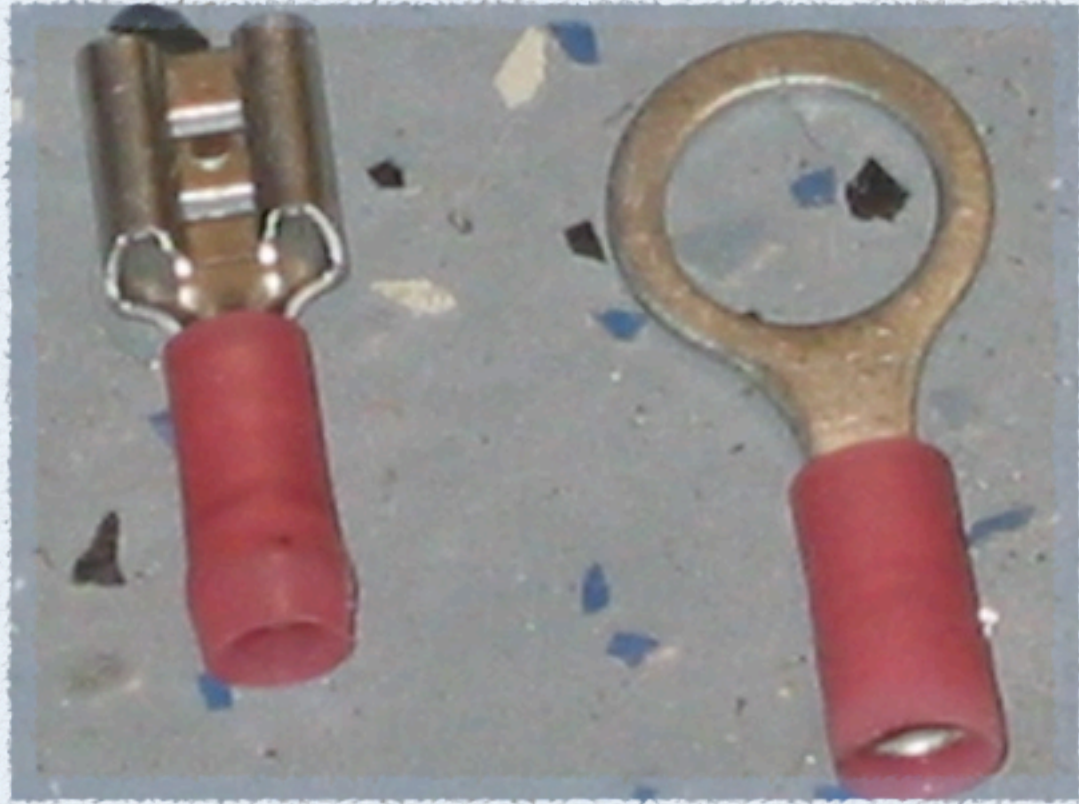
Wire Stripper
Be sure it can strip #22



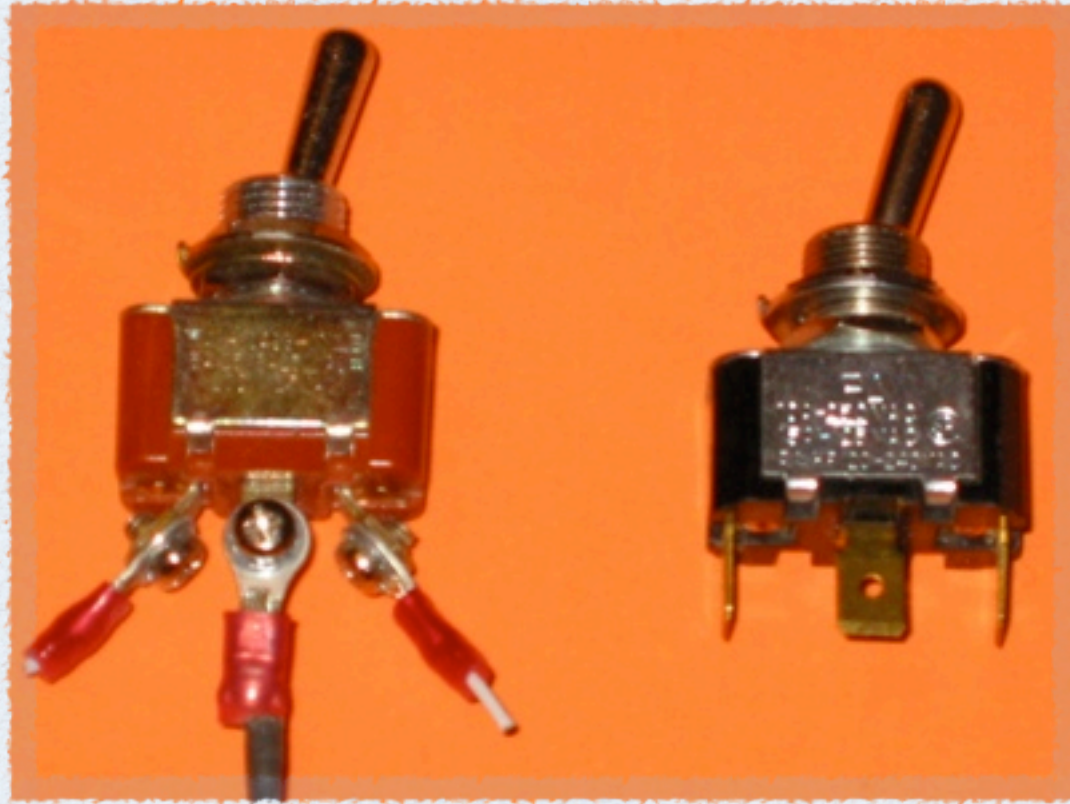
Crimper for AMP Connectors
My Tool Store
VACO T1710 \$185
Wire sizes #22 - #10



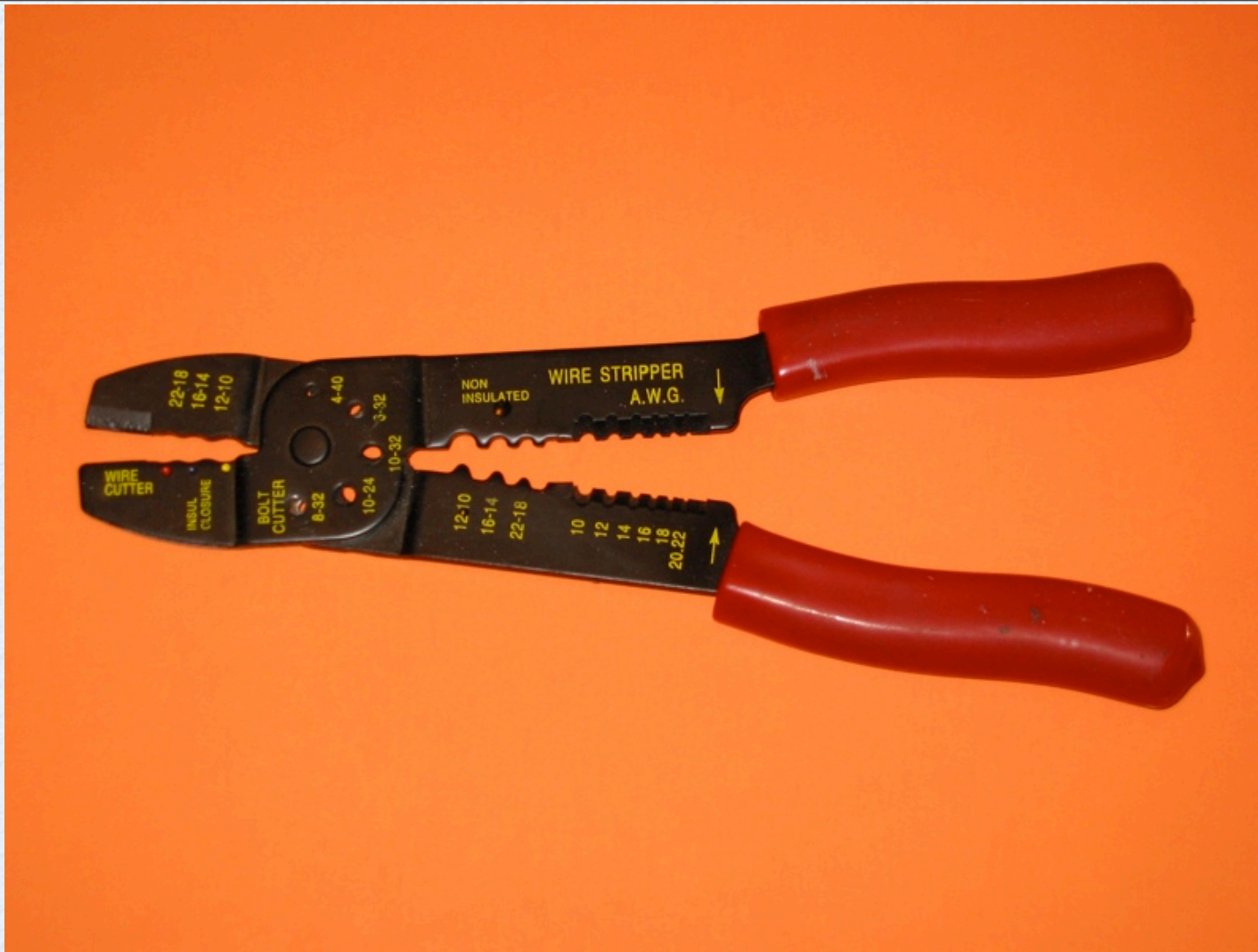
AMP Connectors B & C Specialty Products



AMP Connectors



Don't use switches with screw lugs. They will come loose.



—Do Not—
Use this Crimper

- Do Not use AMP connectors purchased from your local hardware, Radio Shack or Home Depot. They are NOT aviation quality.



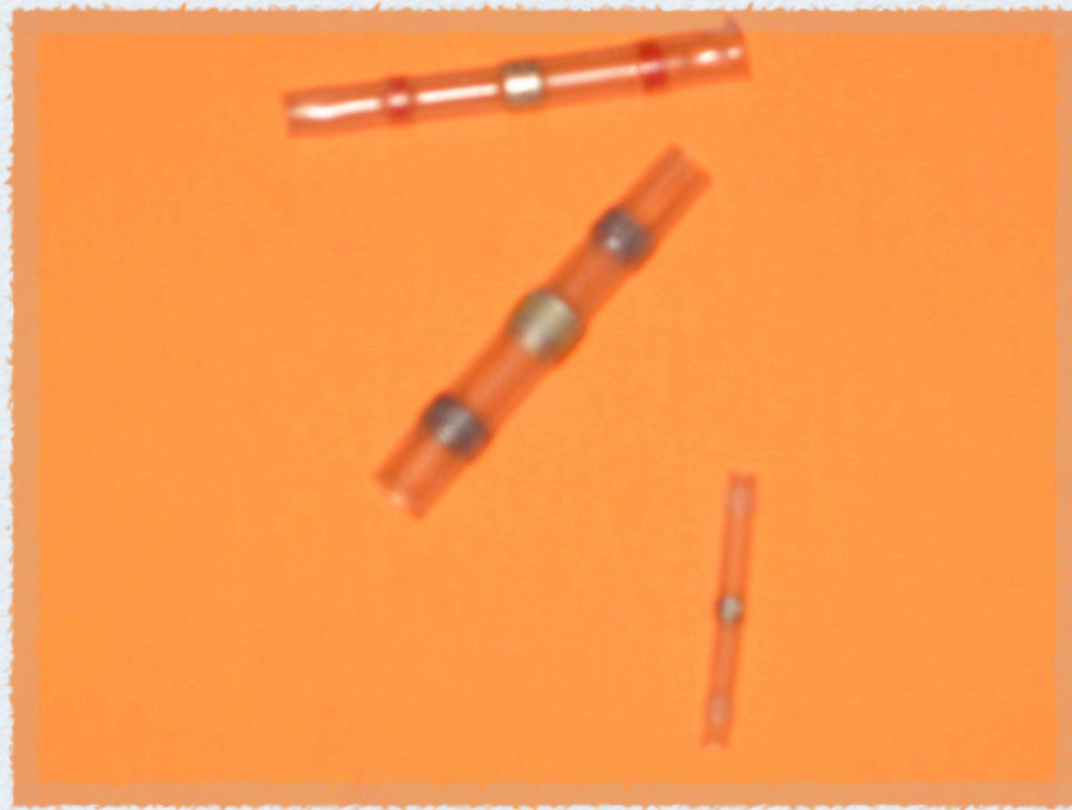
Nylon Lacing Tape

Aircraft Spruce P/N 11-12170 \$15



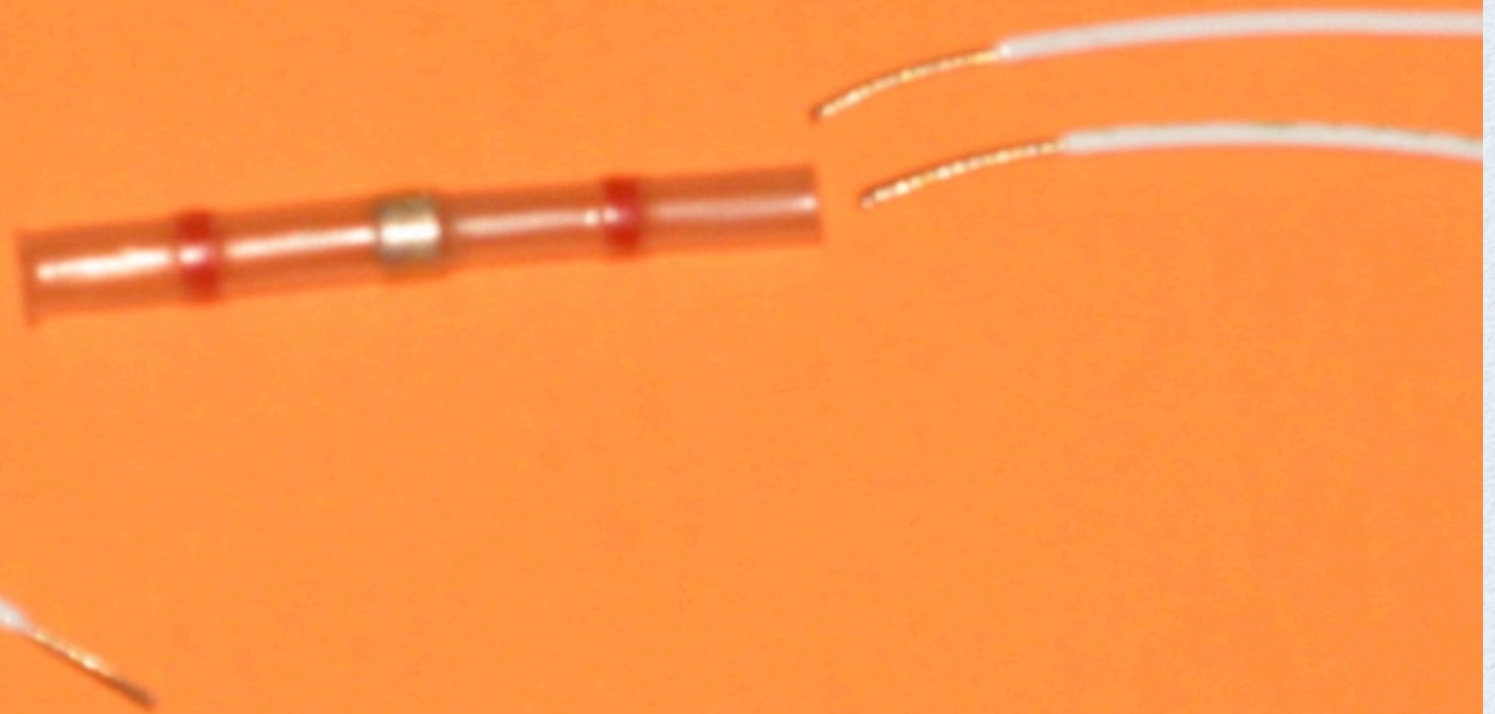
Pause for Goat Roping

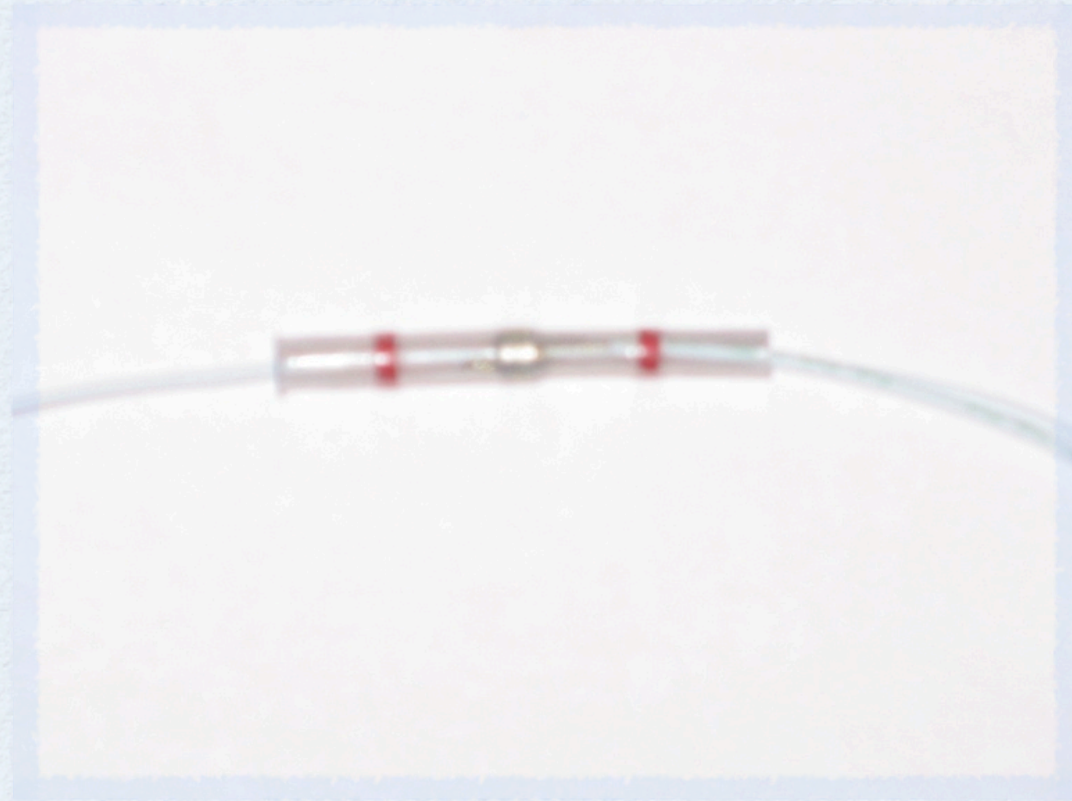
Demonstrate tying the lacing knot.



Solder Seal Splices

Terminal Town





Melt the solder with a
heat gun.



D-Sub Crimping Tool

B&C Specialty Products \$44



D-Sub Extraction Tool

B&C Specialty Products \$5



Extracting



D-Sub Pins & Sockets

B&C Specialty Products

These Pins & Sockets are gold plated
Do Not use Radio Shack Pins or Sockets



D-Sub 15 pin Male

B&C Specialty Products

These connectors are used for low current applications. Such as, avionics, trim tabs and autopilot servos.



D-Sub 15 pin Female

B&C Specialty Products



D-Sub 25 pin Male

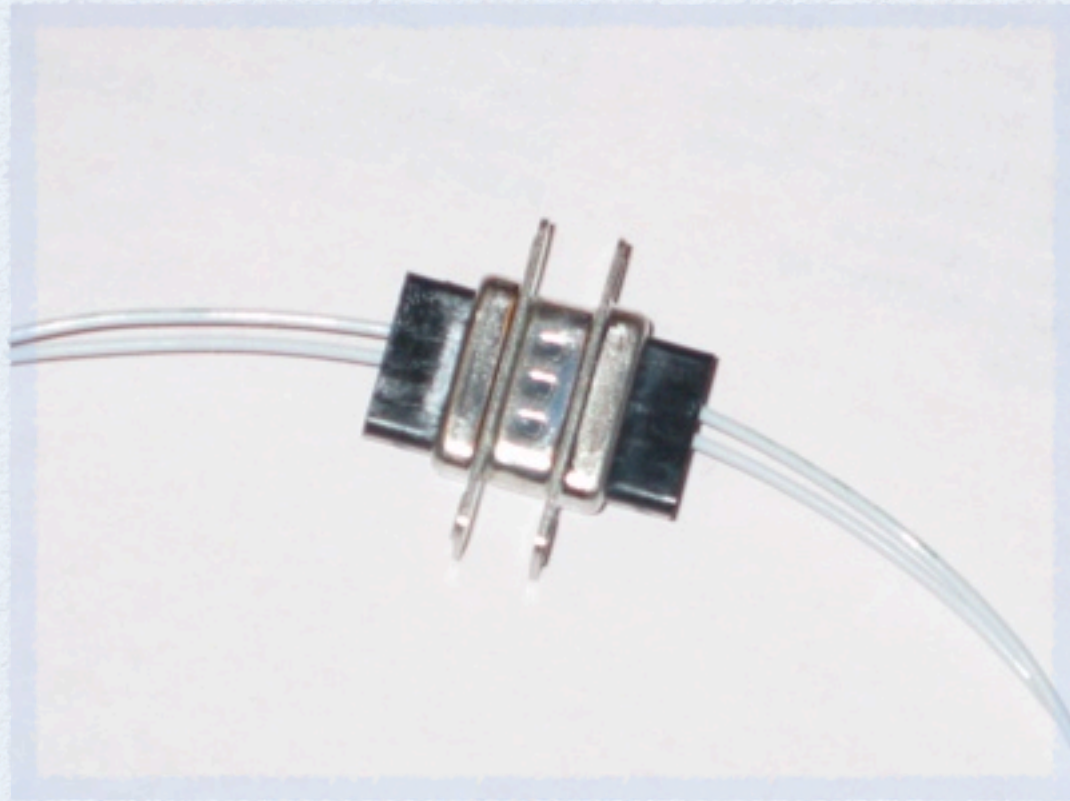
B&C Specialty Products



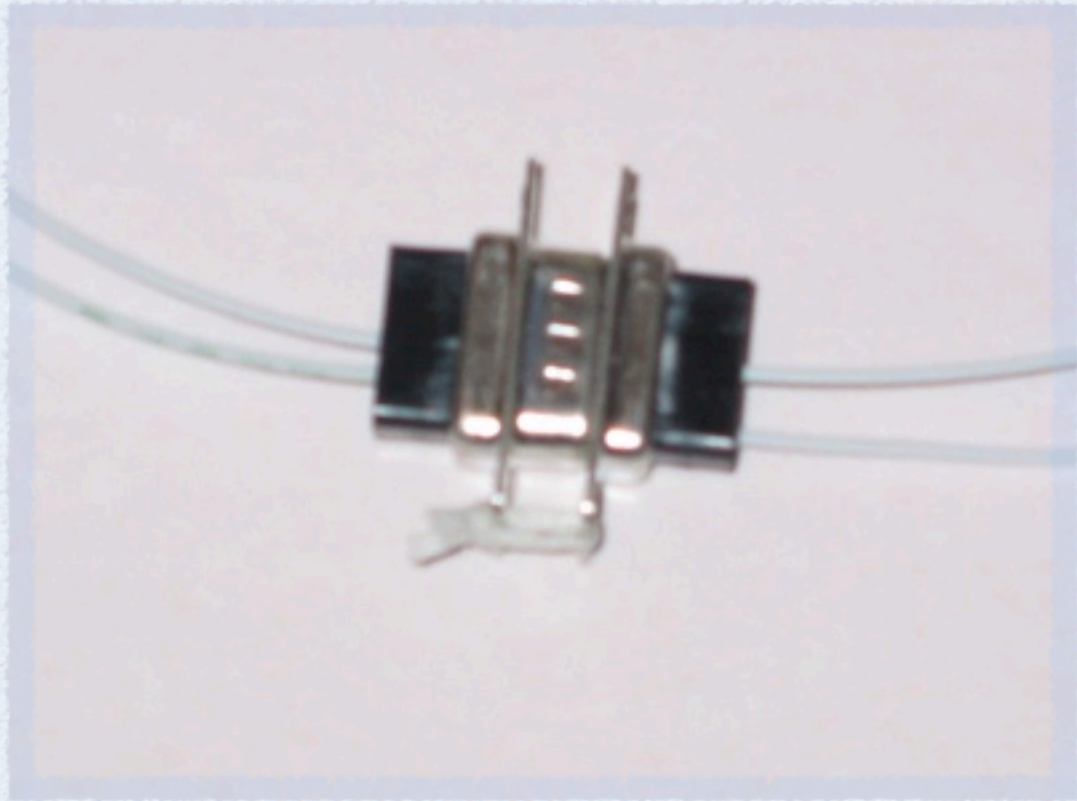
D-Sub 25 pin Female

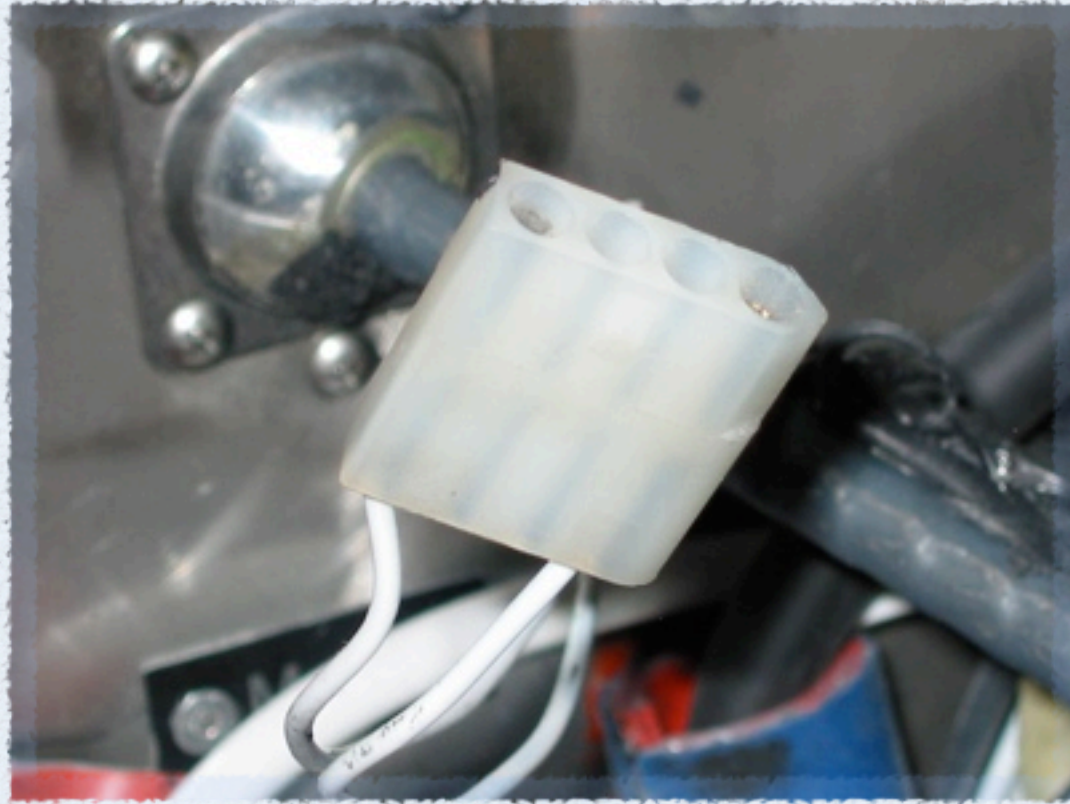
You can use Radio Shack D-Subs

Just don't use Radio Shack pins.



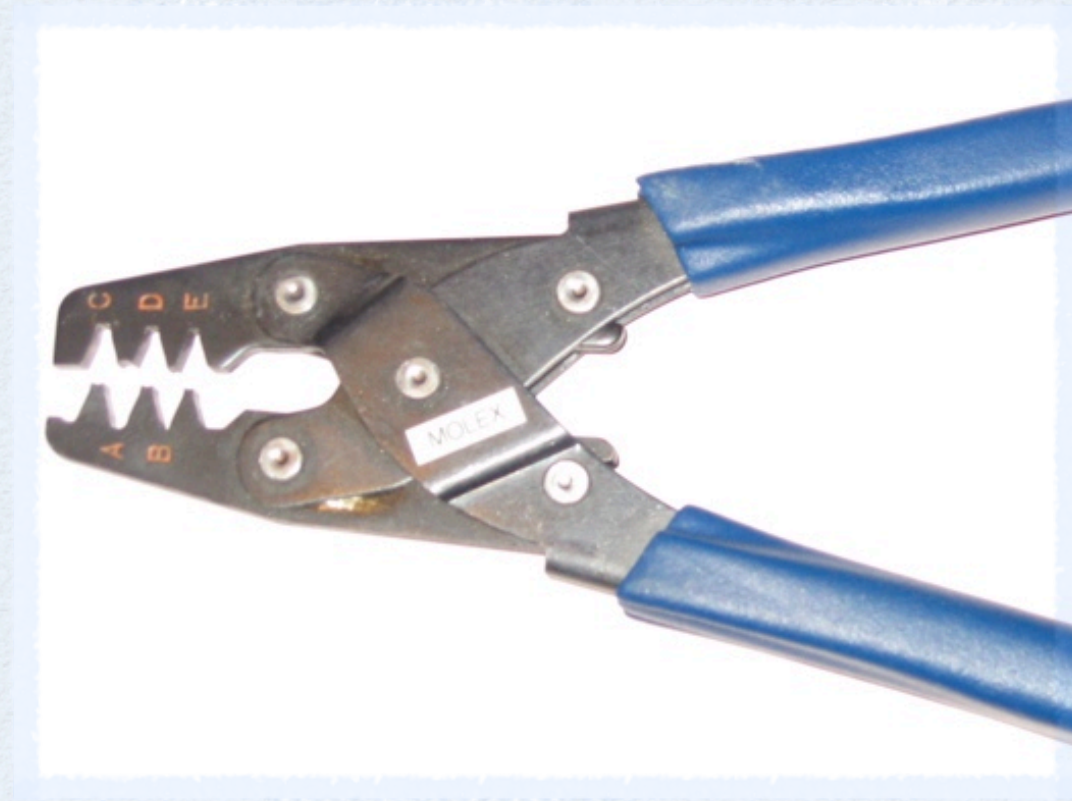
After plugging together
tie the two sides with
lacing twine.





Molex Connectors

Used for high current applications such as lights.



Molex Crimping Tool

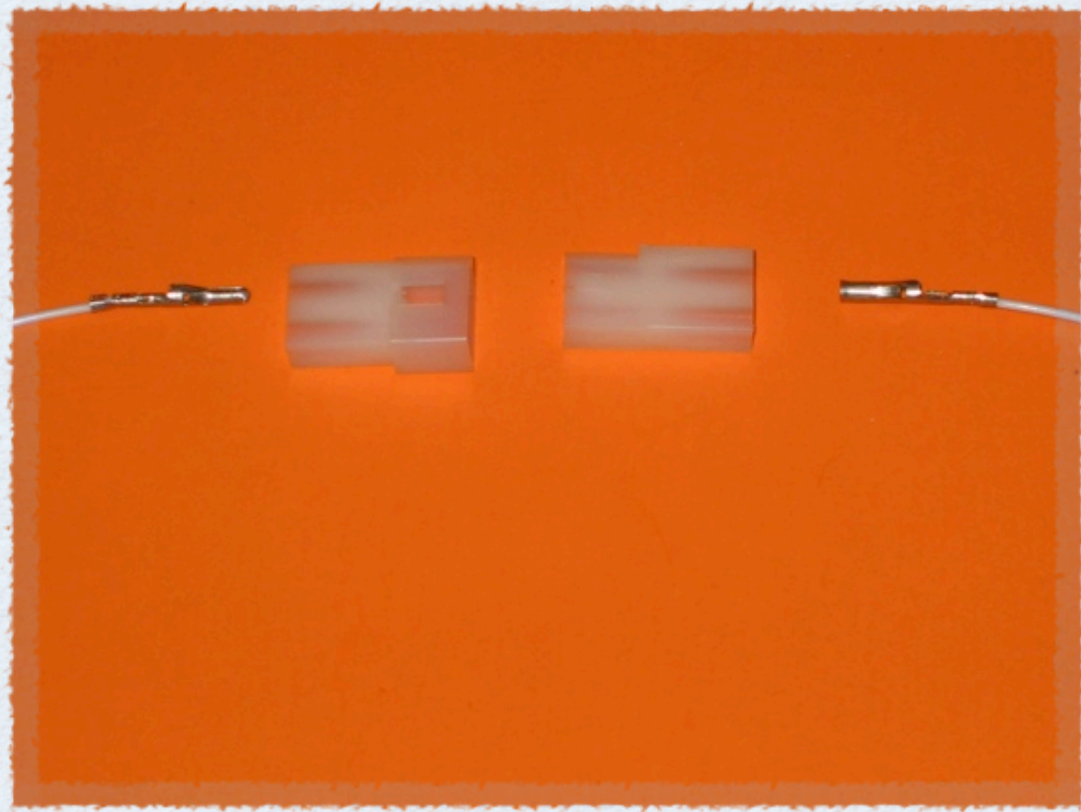
B&C Specialty Products

Stock # BCT-2 \$32

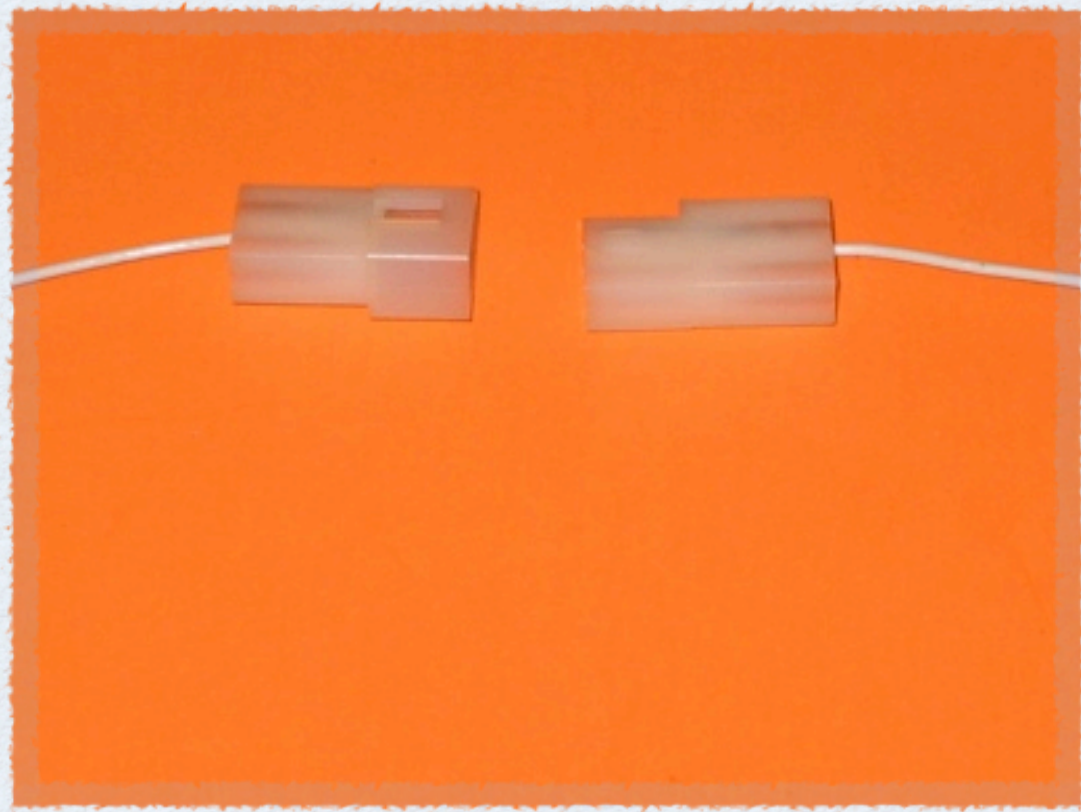
I typically only use the “C” die.



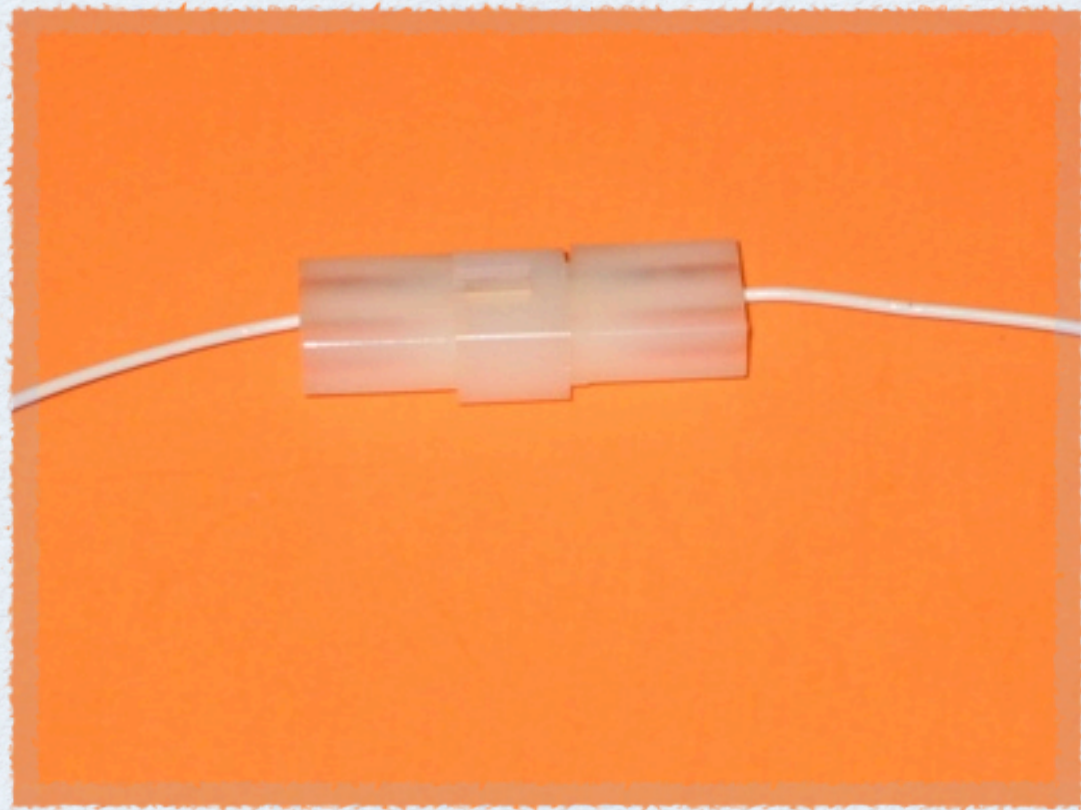
Molex pen extractor
Radio Shack \$5



Molex connectors with
crimped on pins.



Pins in sockets



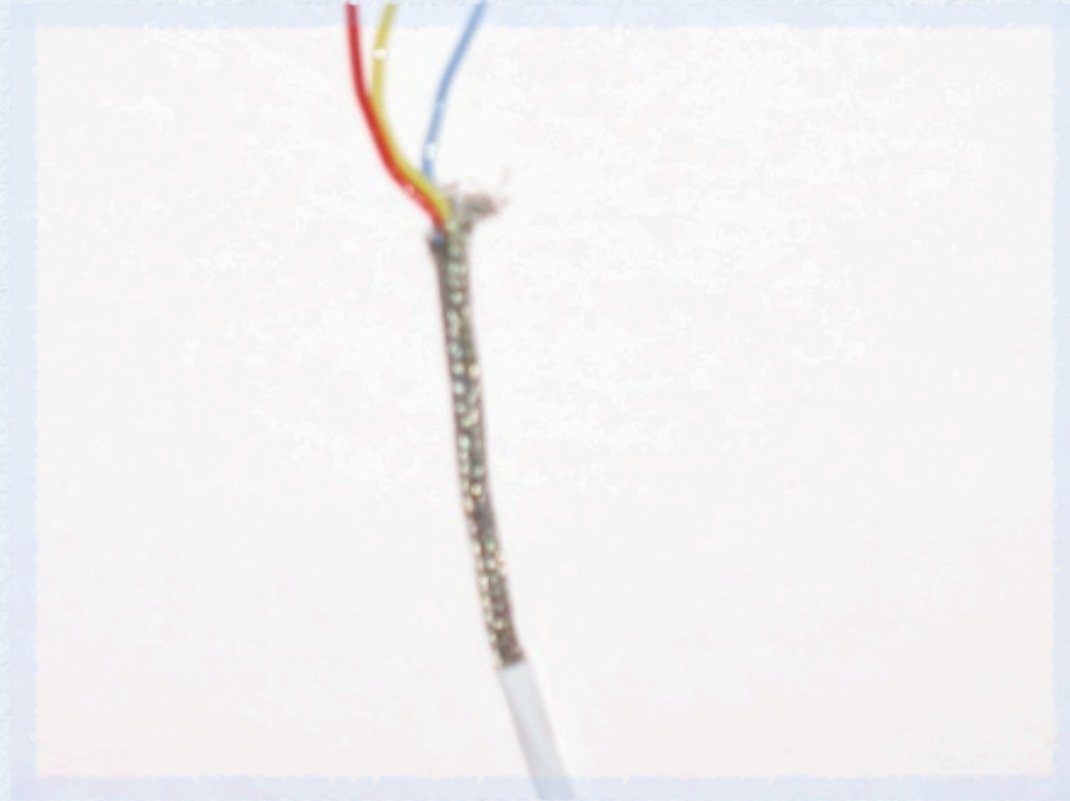
Connectors plugged
together

- Order Molex connectors from Newark InOne
- There are many pin sizes. I recommend 0.093"
- 100 Female pins 02-09-1104 \$11
- 100 Male pins 02-09-2103 \$11

- You also need to order the Nylon Receptacle & Plug. There are many circuit combinations. Plugs & Receptacles are approximately \$0.40 each.
- Receptacle 03-09-1022 2 circuit
- Receptacle 03-09-1032 3 circuit
- Receptacle 03-09-2042 4 circuit (1 x 4)
- Receptacle 03-09-2049 4 circuit (2 x 2)

- Receptacle 03-09-1064 6 circuit
- Receptacle 03-09-1094 9 circuit

- Plug 03-09-2022 2 circuit
- Plug 03-09-2032 3 circuit
- Plug 03-09-2042 4 circuit (4 x 1)
- Plug 03-09-2049 4 circuit (2 x 2)
- Plug 03-09-2062 6 circuit
- Plug 03-09-2092 9 circuit

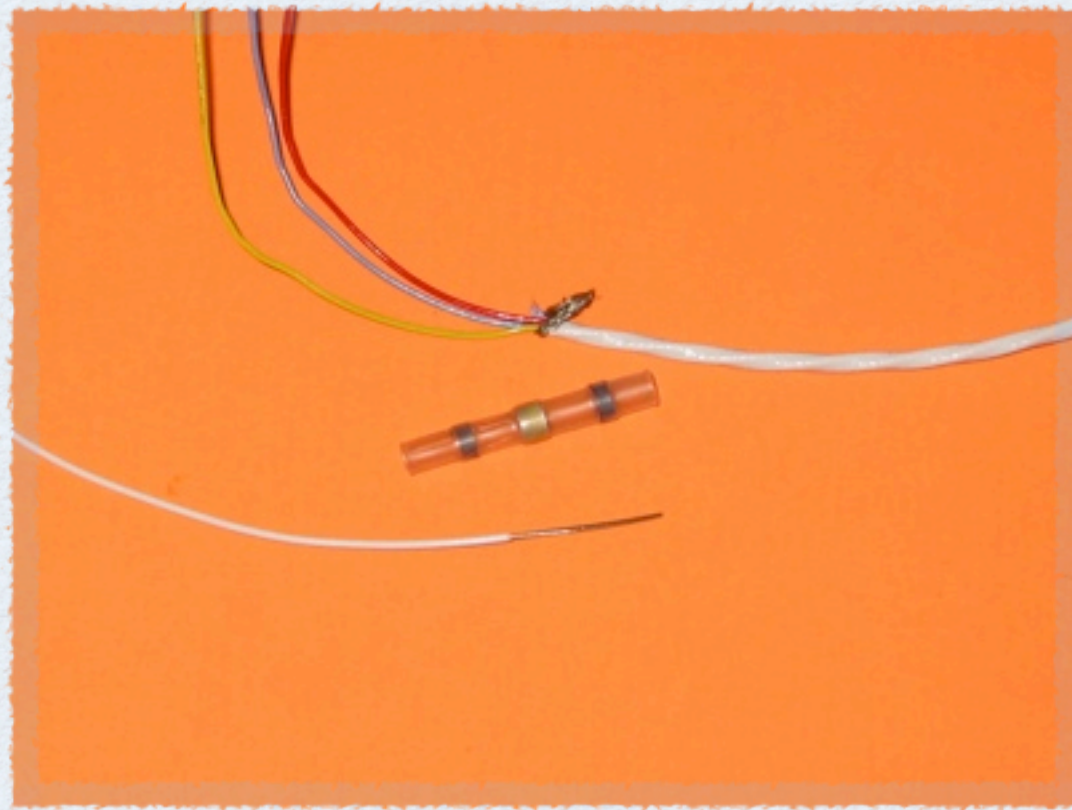


Audio hookup wire

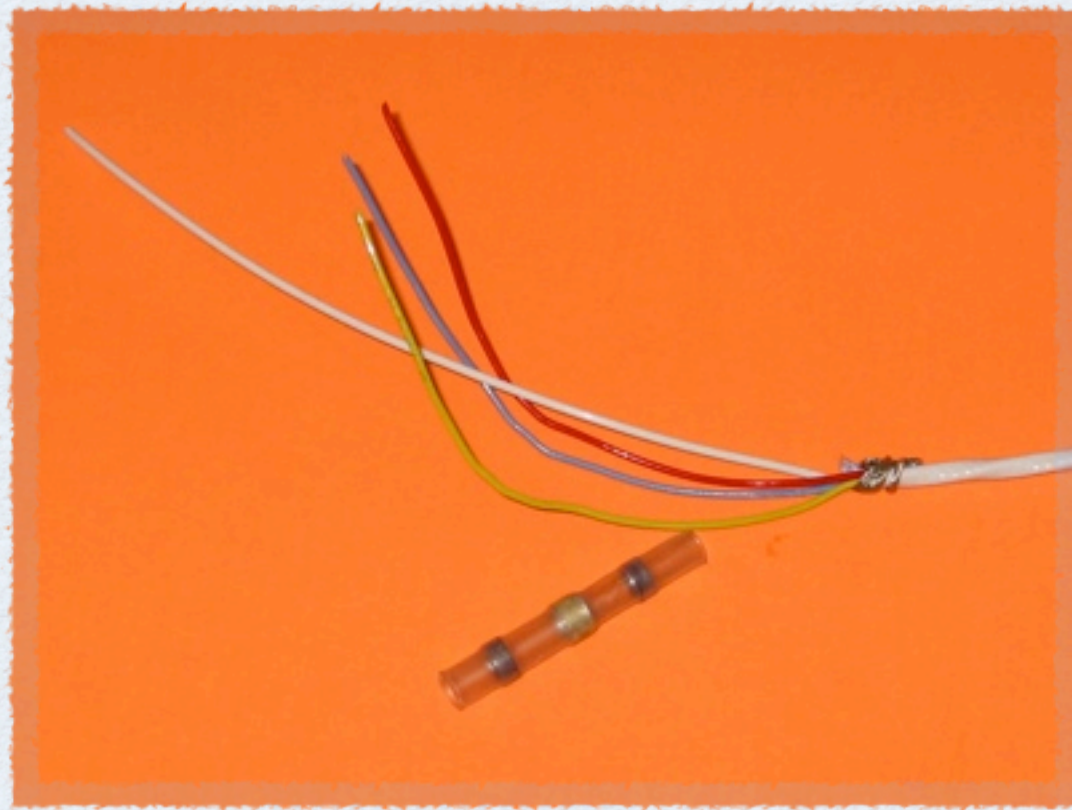
B&C Specialty Products

#22 Shielded Trio Wire

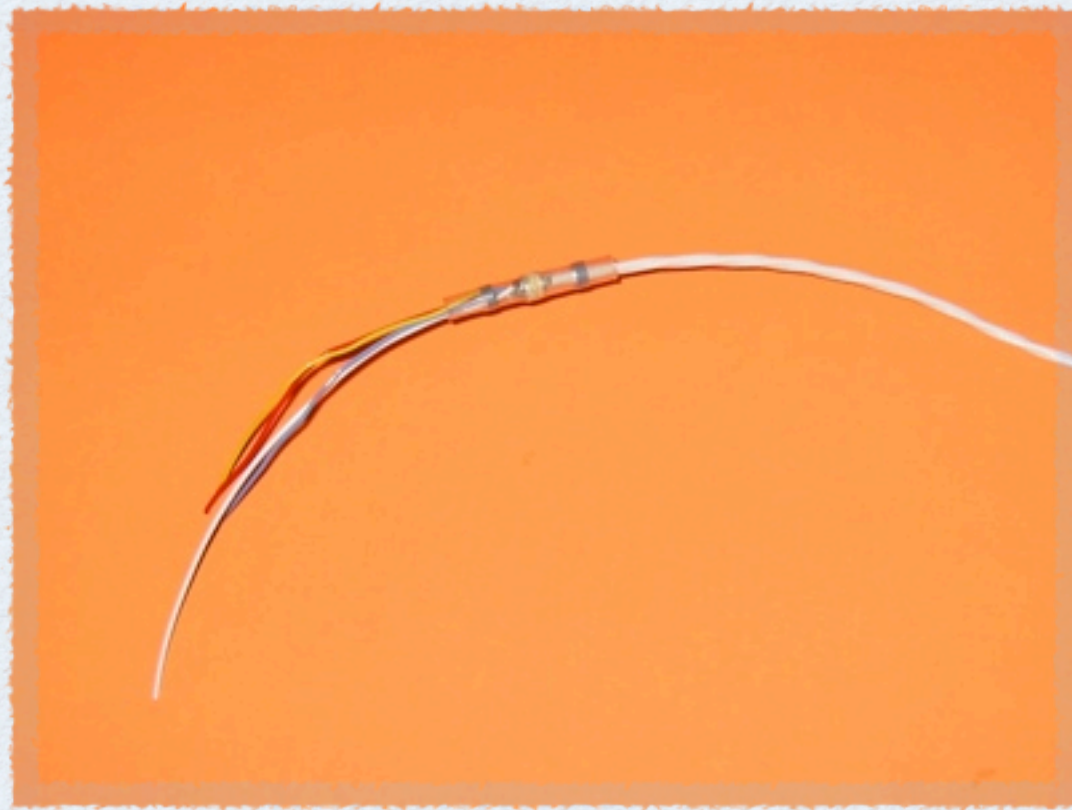
Stock # S906-3-22



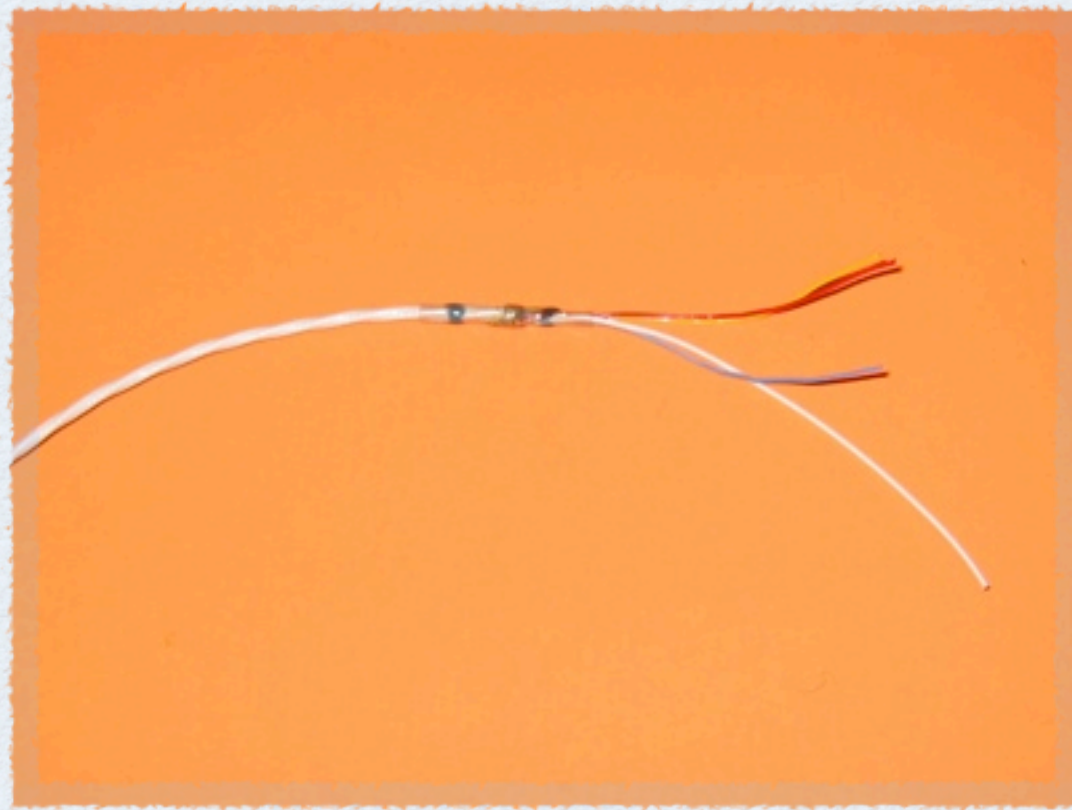
Making Audio wire ground splice



Fold back the shield and lay the white wire over it.



Slide on the solder sleeve.



When connecting to an audio panel leave 3" - 4" of wire beyond the shield.



The Bitter End