
4500HT-9-5 Cable Splice Procedure



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CABLE SPLICE PROCEDURE



FIGURE 1: *Prepare for the splice*

If this splice will be subjected to high temperatures, all permanent materials used in the splice must be rated for the anticipated temperature.

TOOLS AND MATERIALS

- Swagelok (supplied by GEOKON)
- High temperature heat shrink tubing (supplied by GEOKON)
- High temperature solder
- Pipe cutter, or grinder with cut-off wheel
- Torch
- Soldering iron
- Wire cutters/strippers
- Vice grips
- 5 mm (13/16") wrench
- 23 mm (7/8") wrench
- Two 12 mm (1/2") wrenches

PROCEDURE

1. Separate the Swagelok from the tube via the 13 mm (1/2") Swagelok using the 5 mm (13/16") and 23 mm (7/8") wrench.



FIGURE 2: *Separating the assembly*

2. Slide one tube piece over a length of cable to be spliced and the other tube piece over the other length of cable. Make sure the orientation and order of the ferrules in the 4 mm and 13 mm (1/2") Swageloks is correct.

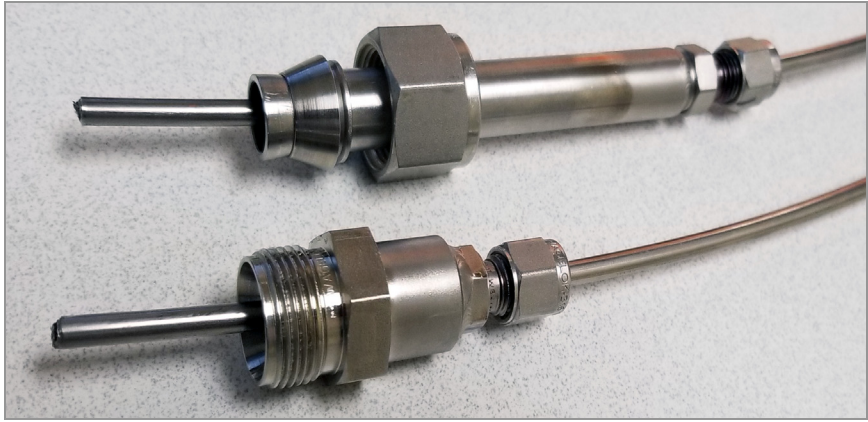


FIGURE 3: Cables inside Swageloks

3. Score the tubing approximately 25 mm (1") from the ends of each cable using either a grinder or wire cutters. Whichever you use, do NOT cut through the stainless steel casing, due to the risk of cutting the internal signal wires.

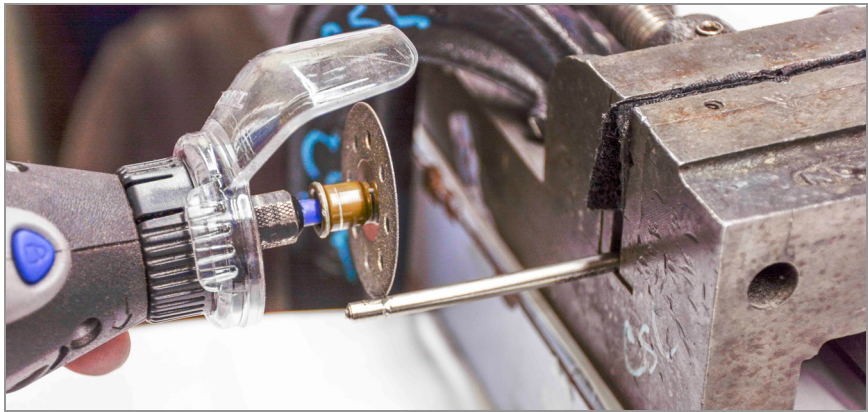


FIGURE 4: Score the tubing with a grinder

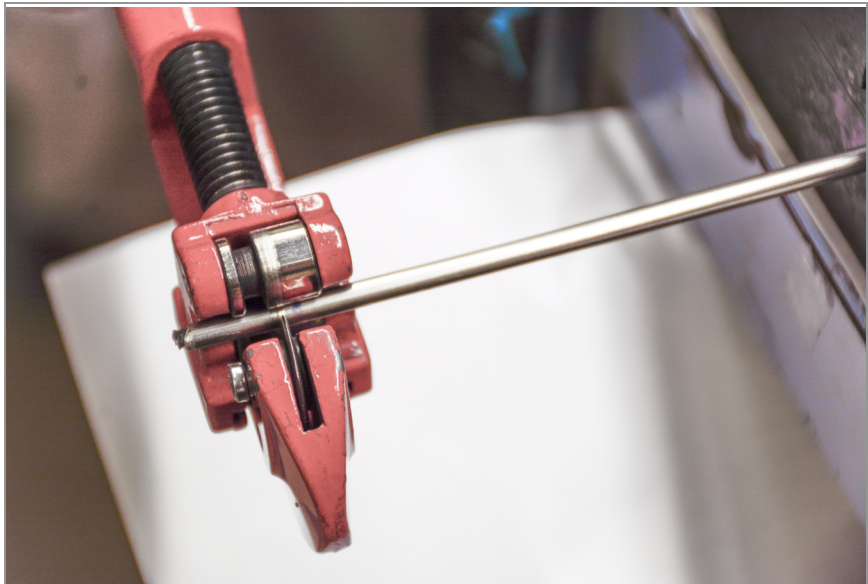


FIGURE 5: Scoring the tubing with wire cutters

4. Use the vice grips to work that 25 mm (1") section back and forth until it separates from the main section. Discard this piece and ensure there are no nicks in the sheathing of the internal wiring.

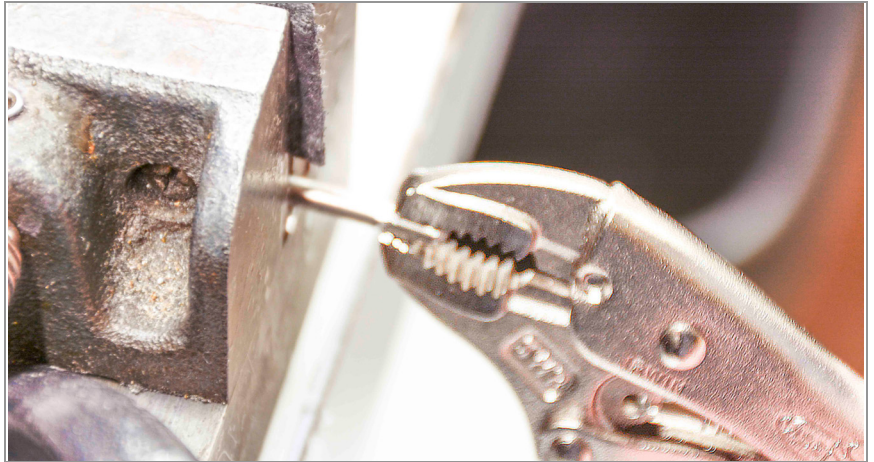


FIGURE 6: *Detach the end piece*

5. Strip the jacket off each of the four signal wires, approximately 3 mm to 6 mm (0.12" to 0.24") on both cables to be spliced.

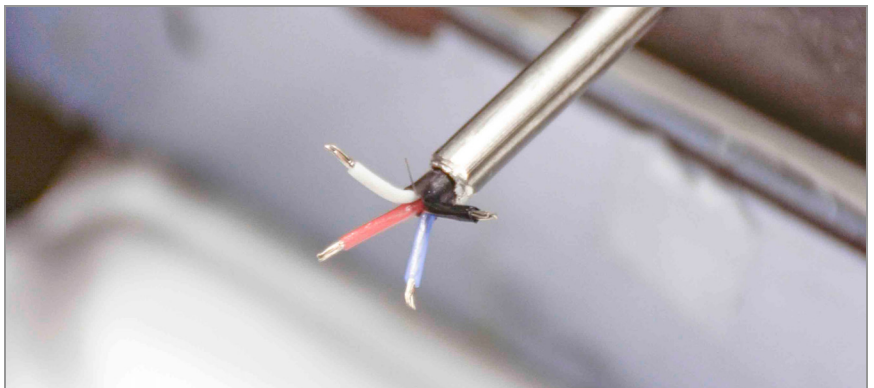


FIGURE 7: *Signal wire ends stripped of jackets*

6. Pre-tin the exposed ends with the high temperature solder. A temperature of about 415 °C is recommended for GEOKON solder.

Note: High temperature solder contains lead (Pb).

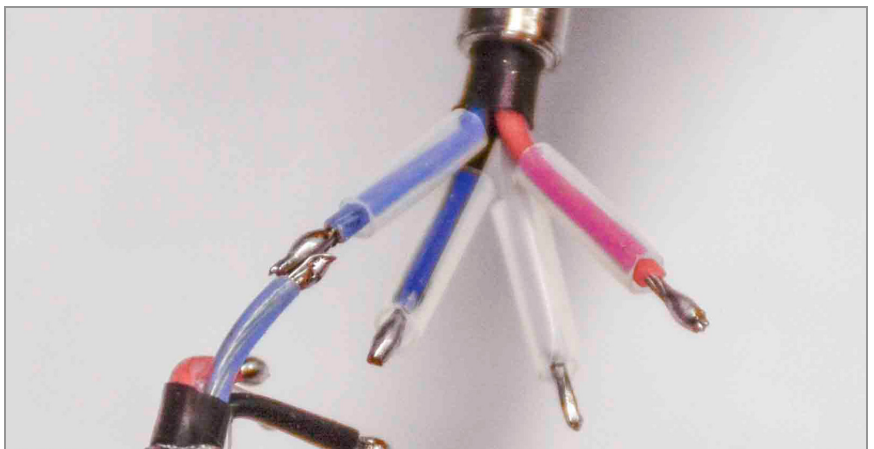


FIGURE 8: *Pre-tin the exposed ends*

7. Slide a 12 mm (0.5") long piece of heat shrink tubing on each of the four signal wires, on only one of the cables.
8. Overlap the pre-tinned parts of the corresponding signal wires from each cable and apply enough heat to melt the solder and adhere the wires together.
9. Position the heat shrink tubing so that it is centered on each of the solder joints and, using a torch, heat the shrink tubing until it is securely bonded with the signal wires.

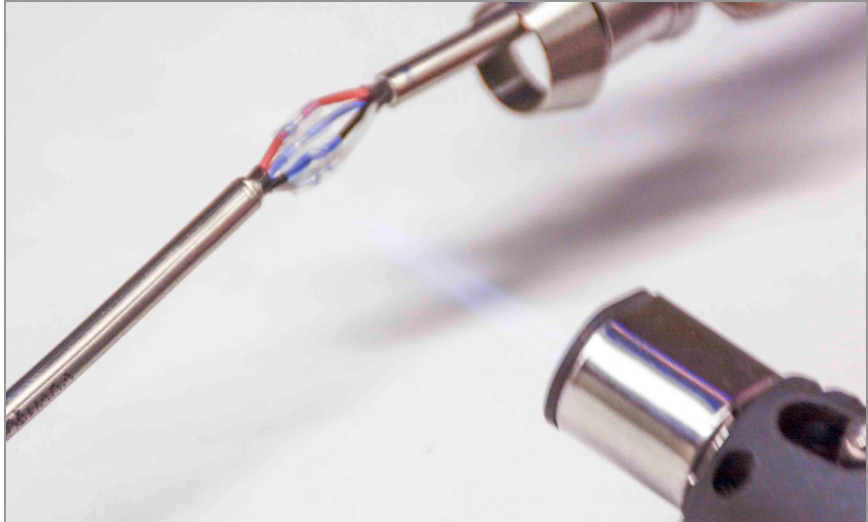


FIGURE 9: Use a torch to bond the tubing to the wires

10. Check continuity from each end of a signal wire, or to a transducer, and ensure there are no shorts to each other, or to the stainless steel cable housing.
11. Slide the 13 mm (0.5") diameter sheathing tube section of the splice so that it is centered on the solder joint.
12. Using the two 12 mm (0.5") wrenches, tighten the 4 mm (0.16") Swagelok past finger tight one 3/4" turn.



FIGURE 10: Tighten the Swagelok

13. Slide the other piece of the splice (the piece that has the 13 mm (1/2") Swagelok), until it comes to a positive stop on the 13 mm (1/2") tube.
14. Using the 5 mm and 23 mm (13/16" and 7/8") wrenches, tighten the 13 mm (1/2") Swagelok past finger tight until there is significant resistance.
15. Using the two 12 mm (0.5") wrenches, tighten the remaining 4 mm (0.16") Swagelok past finger tight one 3/4" turn.



FIGURE 11: *Completed splice*

16. Perform continuity and short-circuit checks to verify that the splice was successful.



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