nVent

RAYCHEM
TraceTek

TT-7000-HUV-CK-MC-M/F

Field Installed Connectors for nVent RAYCHEM TraceTek 7000-HUV Bulk Cable Installation Instructions



NOTES

- The pin connector should always be installed on the cable end going to the alarm module.
- Use with TT7000 sensing cable only. This kit is not compatible with other TraceTek sensing cables.

KIT CONTENTS (5 M and 5 F connectors)

Item	Qty	Description
A	5	nVent RAYCHEM TraceTek TT-CK-MC-M pin connector with spinner ring
B	5	nVent RAYCHEM TraceTek TT-CK-MC-F socket connector
C	45	SolderSleeve splices (5 extra)
D	11	Heat-shrinkable tubing, labeled SCT (1 extra)
E	11	Heat-shrinkable tubing, unlabeled (1 extra)
F	1	nVent RAYCHEM TraceTek TT-MET-MC Pin end termination
G	1	nVent RAYCHEM TraceTek TT-FET-MC Socket end termination
H	1	Pin and socket test tool

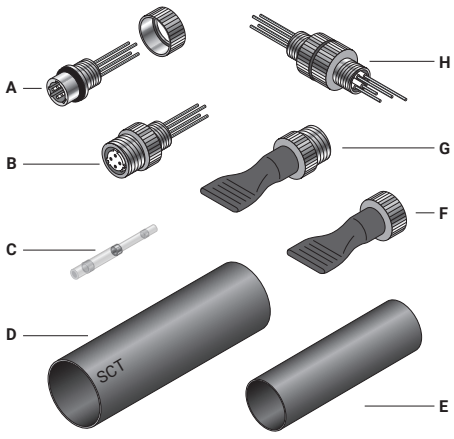
DESCRIPTION

These instructions describe field connecting of TraceTek TT7000-HUV Bulk Sensing Cable.

For technical support call nVent at (800) 545-6258.

TOOLS REQUIRED

- nVent RAYCHEM TraceTek TT-ULTRA-TORCH (PN 390067-000) flameless heating tool (Ultratorch 200) or suitable heat gun with concentrator tip.
- Greenlee stripper (1918) or equivalent for 26 AWG and 28 AWG wire
- High impedance ohmmeter (Fluke 87 or equivalent; meter must be capable of measuring to at least 20 megohms)
- Needle nose pliers
- Razor blade or utility knife
- Small pair of wire cutters
- 3/4 inch masking tape
- Butane lighter
- Permanent ink marker
- nVent RAYCHEM TraceTek TT-CT-SCT crimp tool (PN 644333-000)



⚠ WARNING:

FIRE HAZARD. Heat guns and flameless heating tools can cause fire or explosion in hazardous areas. Be sure there are no flammable materials or vapors in the area before using these tools. Follow all site safety guidelines when working in hazardous areas.

Component approvals and performance are based on the use of specified parts only.

⚠ CAUTION:

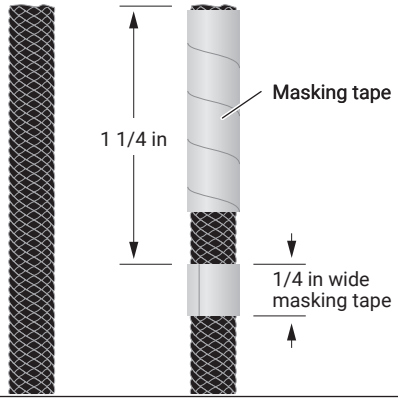
HEALTH HAZARD. Overheating heat-shrinkable tubing or SolderSleeves will produce fumes that may cause irritation. Use adequate ventilation and avoid charring or burning. Consult MSDS RAY3122 and RAY5103 for further information.

CHEMTREC 24-hour emergency telephone: (800) 424-9300

Non-emergency health and safety information: (800) 545-6258.

1

- Wrap 1/4 inch (6 mm) wide masking tape 1-1/4 inch (31 mm) away from roped cable end.



2

- Remove masking tape closest to roped cable end and unravel rope fibers.



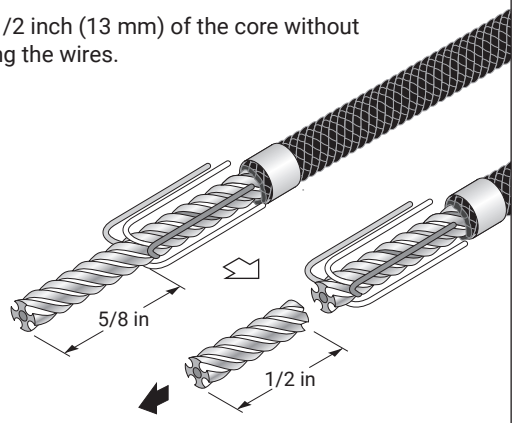
3

- Cut back rope fibers to tape edge as shown. **Do not damage the four wrapped (red, yellow, gold) wires.**



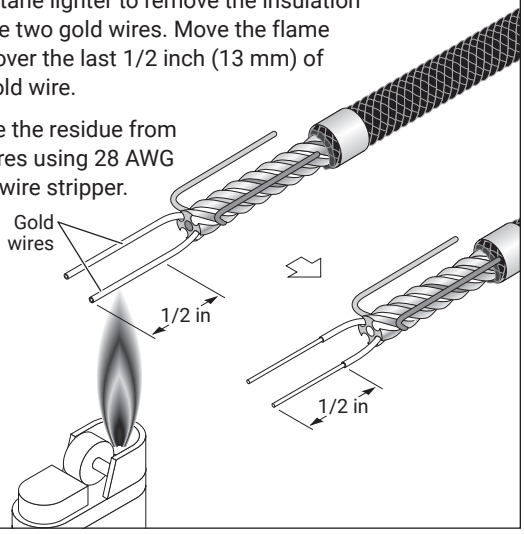
4

- Using needle nose pliers, pull the four wires from their grooves exposing 5/8 inch (16 mm) of the grooved core.
- Cut off 1/2 inch (13 mm) of the core without damaging the wires.



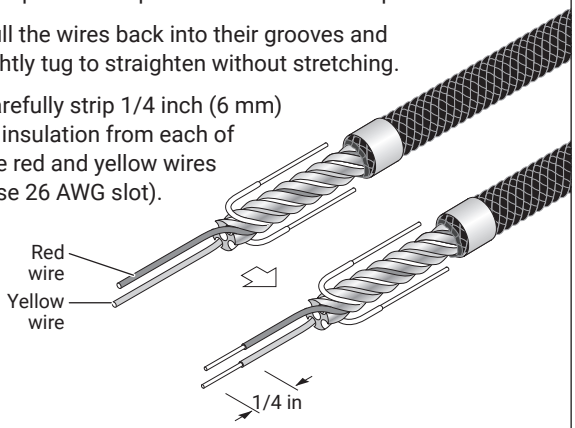
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- Us a butane lighter to remove the insulation from the two gold wires. Move the flame slowly over the last 1/2 inch (13 mm) of each gold wire.
- Remove the residue from gold wires using 28 AWG slot on wire stripper.



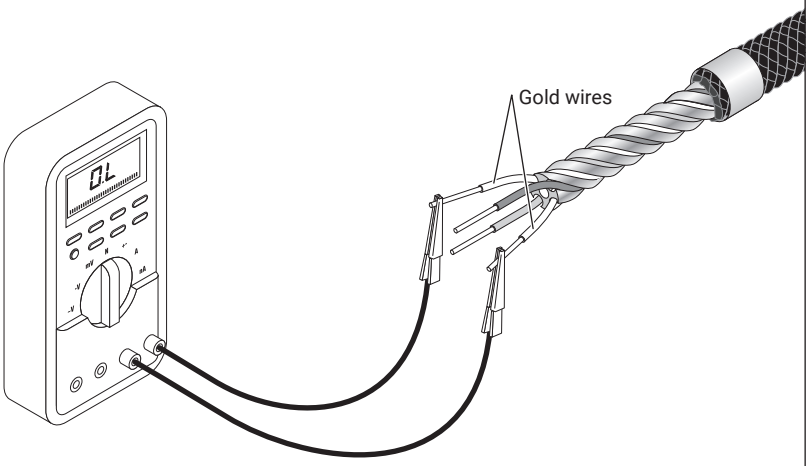
6

- Grasp the wire tips with the needle nose pliers.
- Pull the wires back into their grooves and lightly tug to straighten without stretching.
- Carefully strip 1/4 inch (6 mm) of insulation from each of the red and yellow wires (use 26 AWG slot).



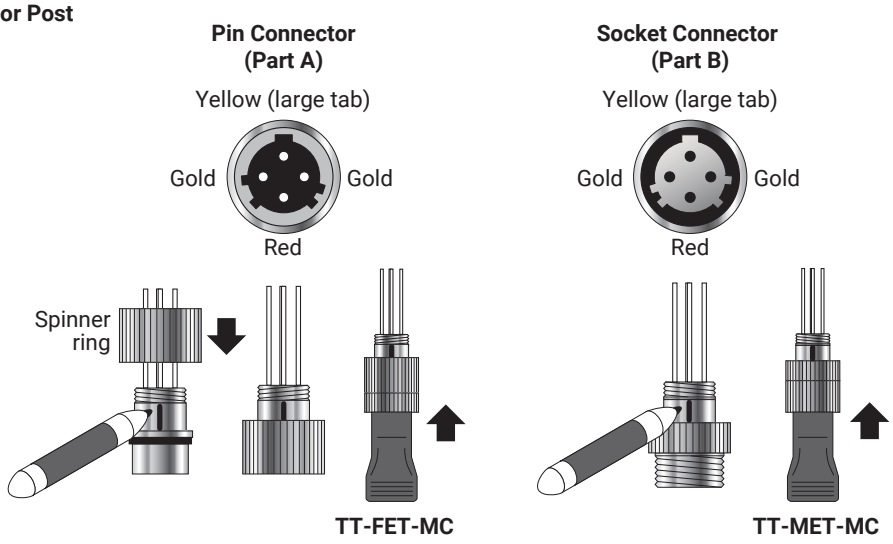
7

- Use the ohmmeter to measure the resistance between the gold wires. The resistance must be greater than 20 megohm (meter may read: ∞, O.L., etc.).
- If the measurement is less than 20 megohm, check that the cable is not wet or contaminated, and make sure the wires are not touching each other. Repeat measurement.



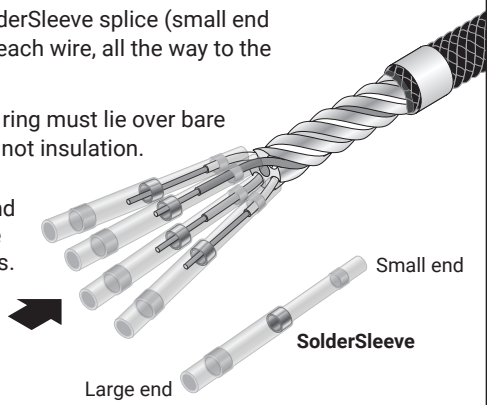
8 **Locate the Yellow Wire Connector Post**

- Note the large tab cutout around rim of connector. Position the large tab at 12 o'clock position, see below.
- Use permanent ink marker to mark flat portion of connector body behind the large tab.
- For the pin connector (Part A) only, slip the spinner ring, large hole first, onto the connector.
- Attach TT-MET-MC and TT-FET-MC (Parts F and G) to socket and pin connector (Parts B and A) to use as a holder to avoid burning fingers while applying heat.



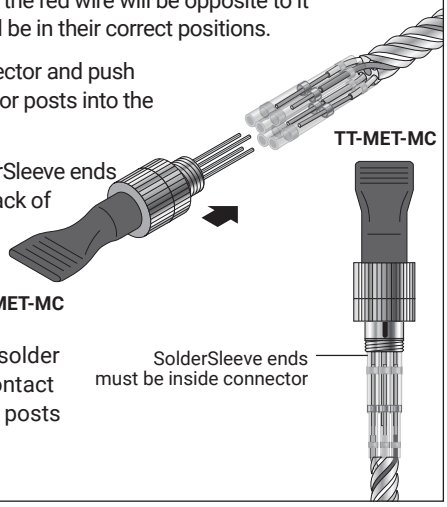
9

- Keep wires in the same order that they exit from the cable end.
- Slide a SolderSleeve splice (small end first) onto each wire, all the way to the cable end.
- The solder ring must lie over bare conductor, not insulation.
- Wire ends must extend beyond the solder rings.



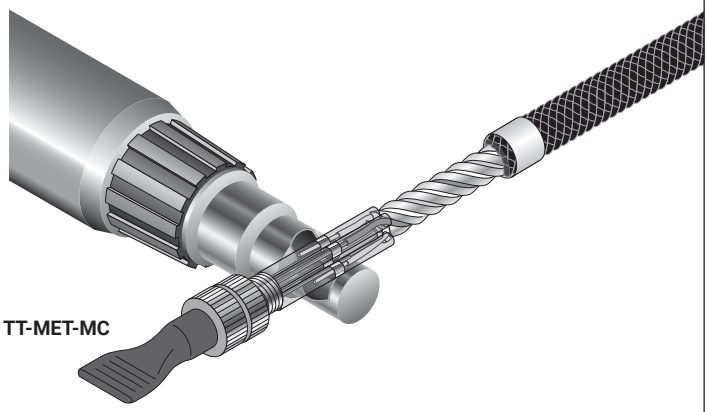
10

- Once yellow wire is aligned correctly to the mark on connector body, the red wire will be opposite to it and all wires will be in their correct positions.
- Orient the connector and push aligned connector posts into the SolderSleeves.
- Verify the SolderSleeve ends are inside the back of the connector.
- Make sure the solder bands are in contact with connector posts and the wires.



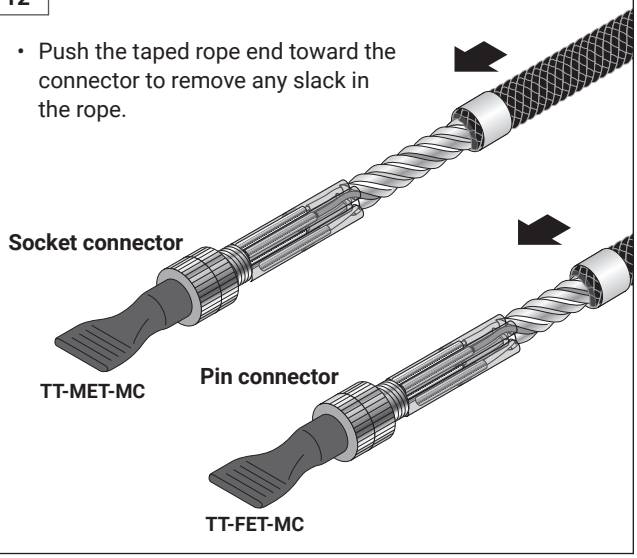
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- Heat the SolderSleeves until they have shrunk fully and the solder rings have melted and flowed. **Keep the heat source moving to avoid charring the connector.**
- Carefully remove assembly from heat. Hold connector and cable steady and allow to cool. Moving solder joint when hot can weaken the connection.



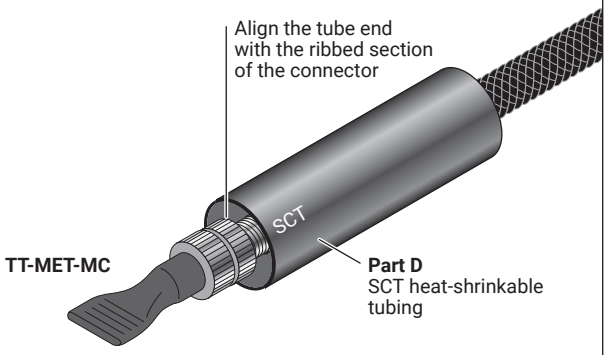
12

- Push the taped rope end toward the connector to remove any slack in the rope.



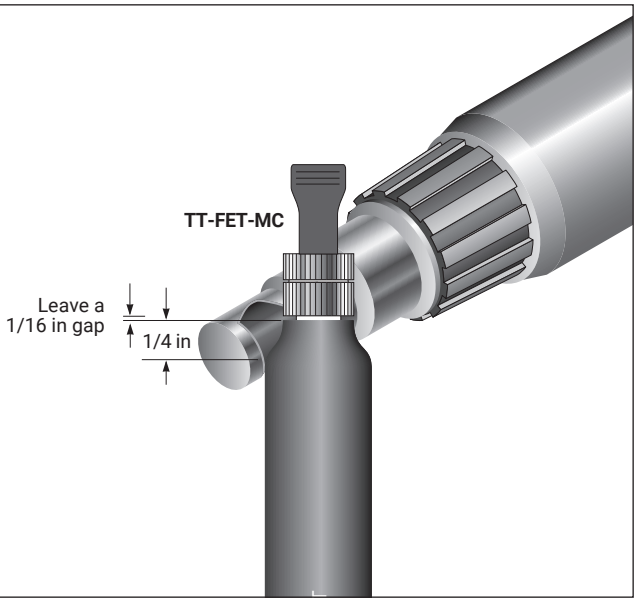
13

- Slide an SCT labeled heat-shrinkable tube over the assembly.



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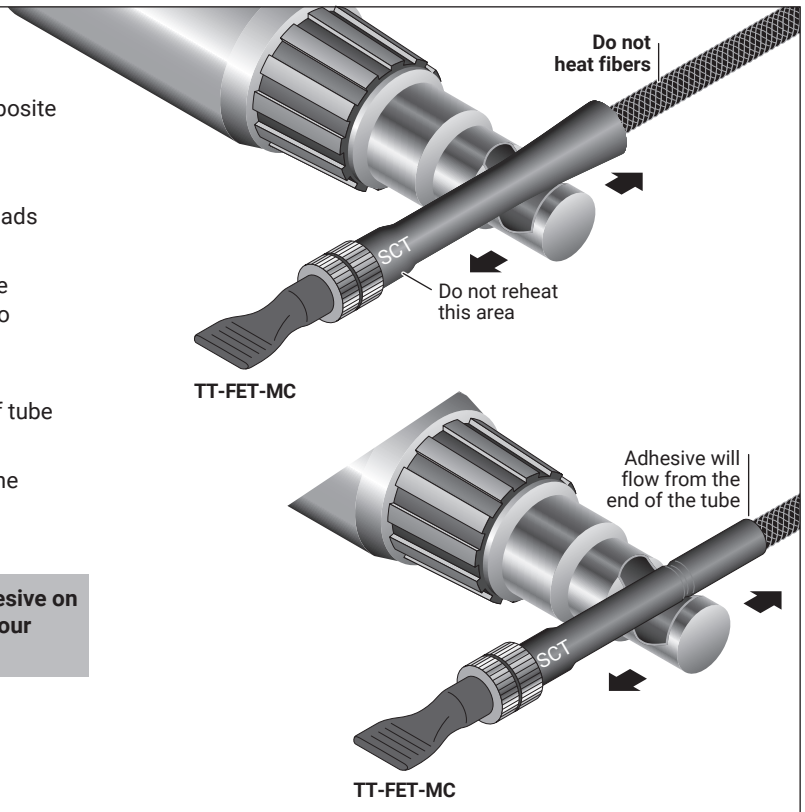
- Heat shrink 1/4 inch (6 mm) of the tube onto the connector, moving the heat source around the tube to heat evenly.
- Leave a small gap (1/16 inch) (1.5 mm) between the tube and the ribbed section of the connector.
- **Do not overheat.** The tube may slip off of the connector if it is overheated.
- **Allow to cool before proceeding.**



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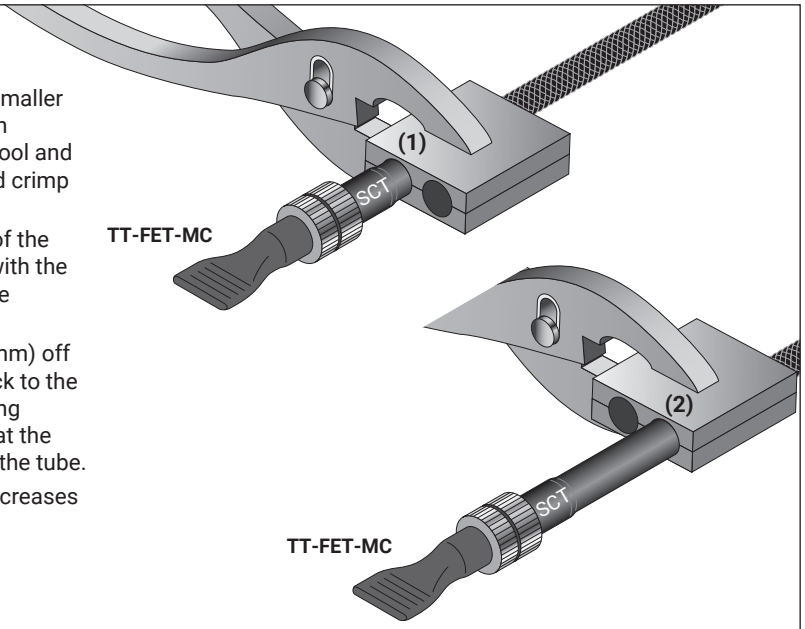
- Finish shrinking the tube, starting at the end opposite the connector.
- Do not apply heat directly to the rope.
- Heat the tubing end until adhesive melts and beads on the rope.
- Inspect the exposed adhesive at the tubing/rope interface. If a void is visible, use a glove or rag to squeeze the tube slightly and fill the void with molten adhesive.
- Keep heating the tubing section in the middle of tube until fully recovered.
- Avoid reheating the already shrunk section on the connector body.
- Proceed to the next step before the tube cools.

⚠ **CAUTION: Burn Hazard. Do not get hot adhesive on your bare skin. The hot adhesive will burn your skin.**



16

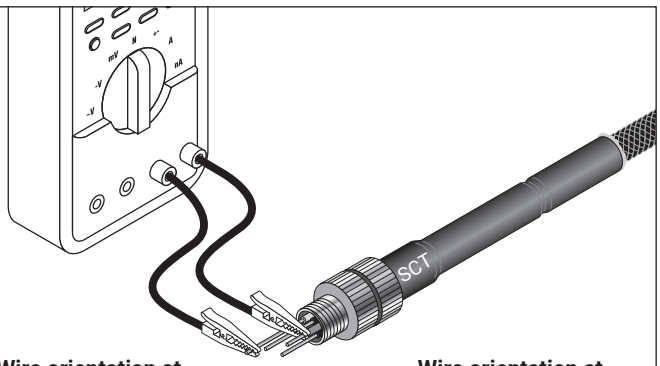
- While the tubing is still hot, place tubing in the smaller opening of the crimp tool **(1)**. Align opening with SolderSleeve/cable area. Crimp SCT tubing to cool and seal. Open and rotate crimp tool 90 degrees and crimp again to ensure proper adherence to the cable.
- While the tubing is hot, align the large opening of the crimp tool **(2)** over the roped portion of cable (with the end of the tube halfway into the tool). Fully close the tool.
- If the tubing has moved more than 1/8 inch (3 mm) off the threaded connector, push the hot tubing back to the original position while supporting assembly using "holder" end termination. You may have to reheat the tube. Hold the crimp tool in place while it cools the tube.
- Apply heat to tubing one last time to soften the creases made by the crimp tool. Do not overheat.
- Remove the crimp tool and let the assembly finish cooling.
- Allow the assembly to fully cool.
- Remove the end termination.
- For the pin connector, the spinner ring must turn freely. If necessary, gently use pliers to break it free.



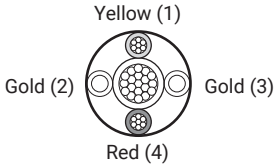
17 Test the Connector Assembly

Electrical Test

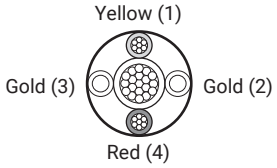
- Attach the mating test-tool-half to the connector to be tested.
- If both cable ends have connectors, attach a mating end termination at the opposite end. If there is no connector on the opposite cable end, prepare it according to steps 1 through 6 and twist together wires 1 & 2. Also join wires 3 & 4.
- Use an ohmmeter to measure the resistance between the test tool posts.
- The resistance between the 2 longest posts or the 2 shortest posts should be ≈ 2.5x cable length (ft) (i.e. A 100 ft. (30 m) cable should measure ≈ 250 Ω between the two longest posts and ≈ 250 Ω between the two shortest posts.)
- The resistance between the 2 intermediate length posts should be greater than 20 megohms.
- If the assembly fails any of the resistance tests;
  1) Check the twisted wires at the opposite able end.
  2) If necessary, cut off and discard the connector and install a new one.



Wire orientation at cable end opposite socket connector



Wire orientation at cable end opposite pin connector



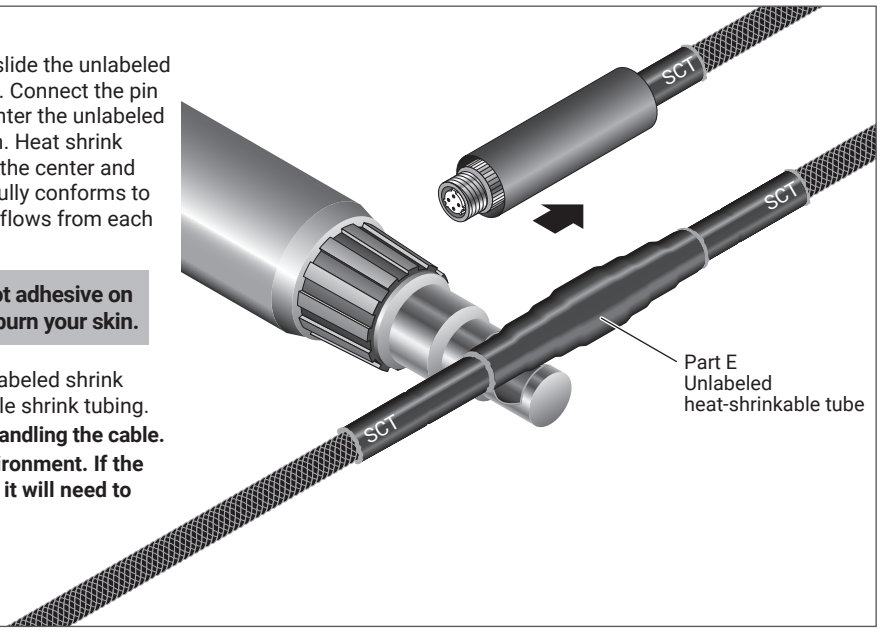
18 Apply Environmental Seal

- Before mating the connector assemblies, slide the unlabeled shrink tube (Part E) onto one of the cables. Connect the pin and socket connectors together firmly. Center the unlabeled shrink tube over the pin/socket connection. Heat shrink the tube over the connection, beginning in the center and shrinking towards the ends until the tube fully conforms to the shape of the connection and adhesive flows from each end of the tube.

⚠ **CAUTION: Burn Hazard. Do not get hot adhesive on your bare skin. The hot adhesive will burn your skin.**

- Avoid overheating Part E. The thin wall unlabeled shrink tubing requires less heat than the SCT cable shrink tubing.
- **Let the entire connector area cool before handling the cable.**

Note: Do not leave connector open to environment. If the connector becomes wet or contaminated, it will need to be replaced.



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