



# RAYCHEM

TraceTek

## TT-JC-CK-MC-M/F TT-JC-CK-MC-M TT-JC-CK-MC-F

### Field-installed Connectors for JC or JC-BLACK or JC-BLACK-HS Jumper Cable Installation Instructions



**TT-JC-CK-MC-M/F** (PN D33062-000)  
**KIT CONTENTS:** (5 M and 5 F connectors)

Item	Qty	Description
A	5	TT-CK-MC-M pin connector
B	5	TT-CK-MC-F socket connector
C	42	SolderSleeve® splices (2 extra)
D	5	Heat-shrinkable tubing, labeled SCT
E	5	Heat-shrinkable tubing, unlabeled

**TT-JC-CK-MC-M or** (PN 588007-000)  
**TT-JC-CK-MC-F** (PN 797263-000)  
**KIT CONTENTS:** (1 M or 1 F connector)

Item	Qty	Description
A	1	TT-CK-MC-M pin connector (or)
B	1	TT-CK-MC-F socket connector
C	5	SolderSleeve® splices (1 extra)
D	1	Heat-shrinkable tubing, labeled SCT
E	1	Heat-shrinkable tubing, unlabeled

#### DESCRIPTION

These instructions describe field connecting of nVent RAYCHEM TraceTek TT-JC jumper cable, TT-JC-BLACK jumper cable or TT-JC-BLACK-HS jumper cable.

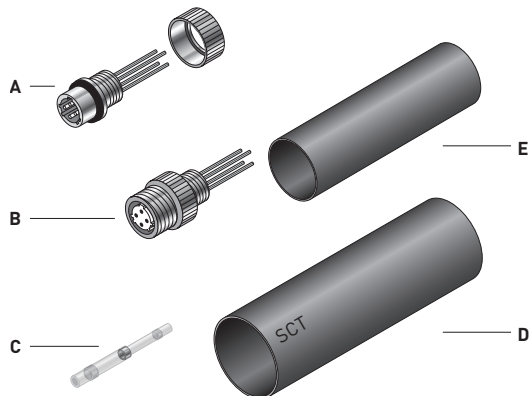
For technical support, call nVent at (800) 545-6258.

#### TOOLS REQUIRED

- Greenlee wire stripper (1917) or equivalent for 18 AWG wire
- Flameless heating tool (Ultratorch 200) or suitable heat gun with concentrator tip
- High impedance ohmmeter (Fluke 87 or equivalent; meter must be capable of measuring to at least 20 megohms)
- Needle nose pliers
- Small diagonal wire cutters
- Permanent ink marker
- TT-FET-MC (PN 383017-000)
- TT-TEST-TOOL-PIN&SOCKET (PN 986291-000)
- Razor blade or utility knife
- Masking tape
- TT-MET-MC (PN 571293-000)

#### NOTES

- Do not use an open flame heating tool.
- Use with TT-JC or TT-JC-BLACK jumper cable only. This kit is not compatible with other TraceTek cables.



#### ⚠ 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:

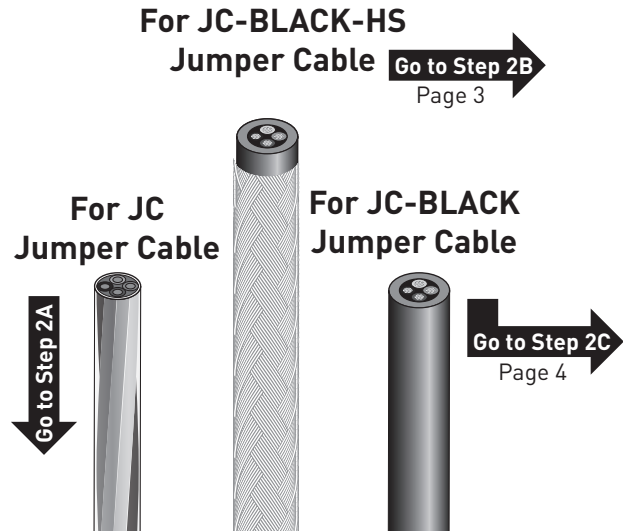
HEALTH HAZARD. Overheating heat-shrinkable tubing or SolderSleeves will produce fumes that may cause irritation. Use adequate ventilation and avoid charring or burning. Consult MSDS RAY3122 and RAY5103 for further information.

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

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

# 1

- Identify the specific type of jumper cable you are working with:
  - TT-JC has a clear see-through plastic jacket.
  - TT-JC-BLACK has a thick black jacket
  - TT-JC-BLACK-HS has a white rope overbraid with the TT-Black jumper cable inside.
- Jumper cable ends are different, and require a specific connector type at each end. Check the cable end before installation to ensure proper wire orientation as shown in step 3.
- In TraceTek leak detection systems, the socket connector end of jumper cable is oriented away from the alarm module while the pin connector end is oriented towards the alarm module. If a jumper cable is to be connected directly to the alarm module, a pin connector is not used.

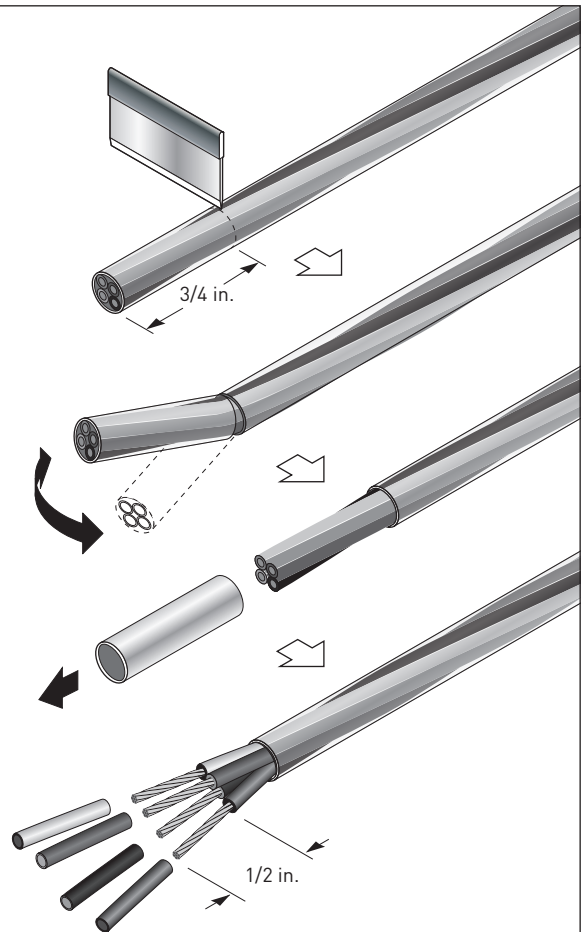


## 2A For JC Jumper Cable

- Use the razor to lightly score the cable jacket all the way around  $\frac{3}{4}$  in. (19 mm) from the end
- Do not cut through the jacket.
- Bend the jacket back and forth to break free the scored section.
- Remove the scored section of jacket.
- Flare the 4 wires apart to accommodate the wire stripper jaws.
- Use the 18 AWG slot of the wire stripper to strip  $\frac{1}{2}$  in. (13 mm) of insulation from each wire.
- For short jumper cable sections, be careful not to pull wires out of jacket.
- If any of the wire strands have separated, retwist the strands to form a tight bundle. Stray strands can damage SolderSleeves and cause shorts.

**Note: Subsequent illustrations show the JC-BLACK jumper cable for simplicity, but apply to JC and JC-BLACK-HS jumper cable also.**

**Proceed to Step 3**



**2B****For JC-BLACK-HS Jumper Cable**

- Grasp rope braid about 1 inch (25 mm) behind the taped end near the looped end of the pull rope. Feel for the sealed end of the jumper cable beneath the rope braid. Bend the rope braid to a 90 degree angle and locate sealed end of the jumper cable.

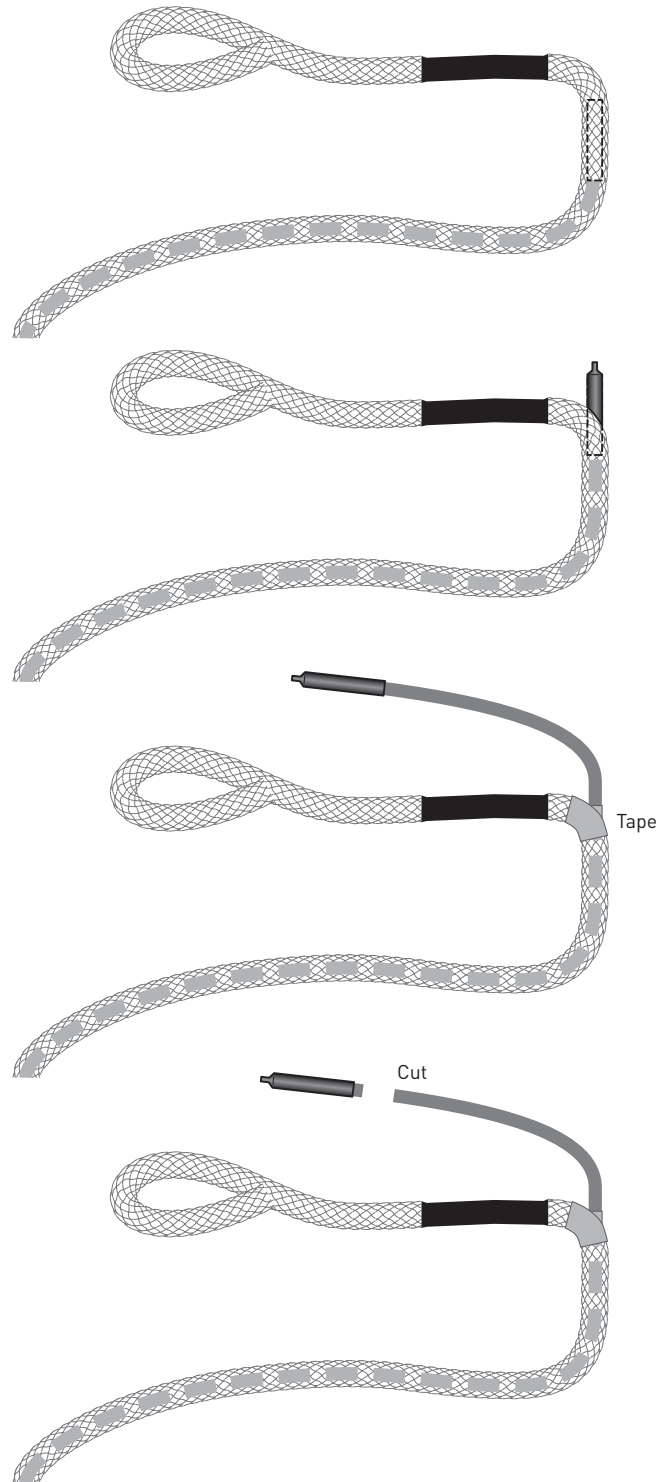
- Spread the rope braid fibers apart to expose the sealed end of the jumper cable.

- Grasp the sealed end and pull about 12 inches (300 mm) of sensor cable out while holding the rope braid in place.
- Tape the rope braid to jumper cable to prevent the rope from springing back.

- Using Greenlee strippers, cut off the sealed end of cable about 1/4 inch (6 mm) from the seal itself.

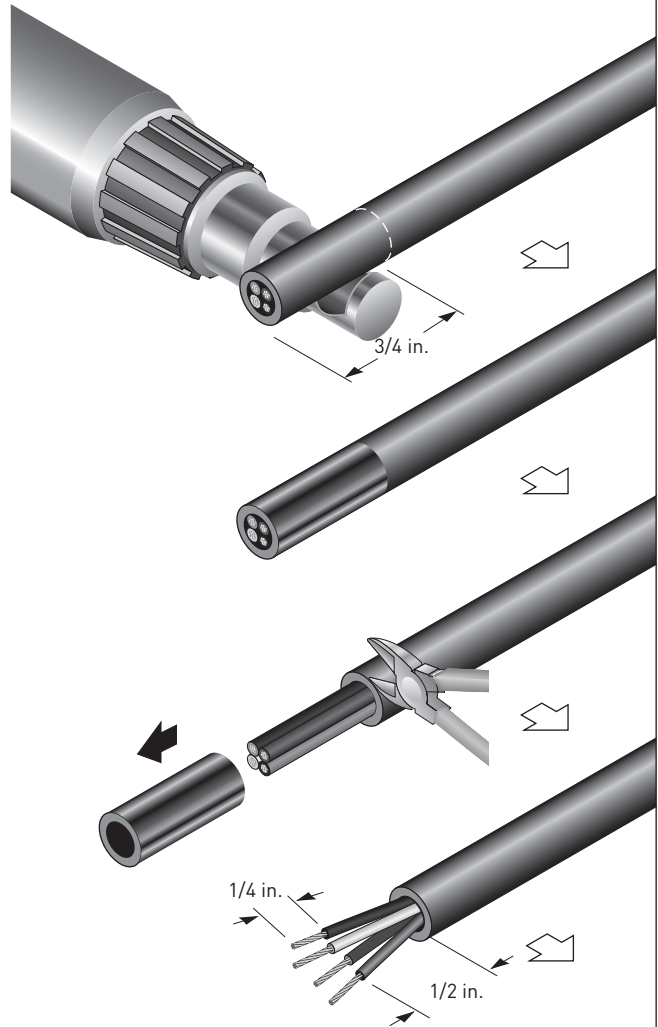
**Note:** Subsequent illustrations show the JC-BLACK jumper cable for simplicity, but apply to JC and JC-BLACK-HS jumper cable also.

**Proceed to Step 2C**



## 2C For JC-BLACK Jumper Cable

- Use the heat gun to heat black cable jacket until it looks shiny. Heat only the portion of jacket to be removed. Target 3/4 inch (19 mm) of jacket removal. Rotate the heat gun around the black cable jacket to uniformly heat all surfaces around the cable to the same amount of shininess.



- Use diagonal wire cutters with open jaws to gently pull off outer black jacket.
- Trim rough edges, do not nick wire insulation.

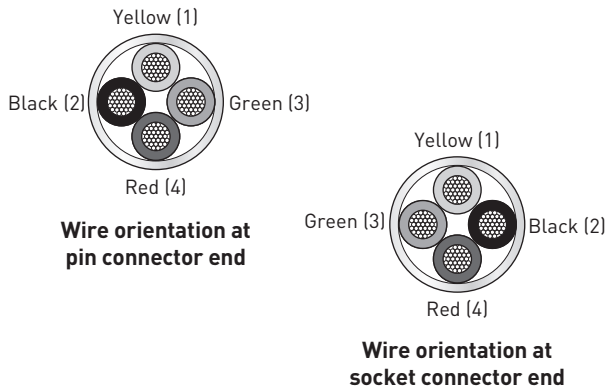
- Flare the 4 wires apart to accommodate the wire stripper jaws.
- Use the 22 AWG slot of the wire stripper to strip 1/4 inch (6 mm) of insulation from each wire.
- For short jumper cable sections, be careful not to pull wires out of jacket.
- If any of the wire strands have separated, retwist the strands to form a tight bundle. Stray strands can damage SolderSleeves and cause shorts.

**Note:** Subsequent illustrations show the JC-BLACK jumper cable for simplicity, but apply to JC and JC-BLACK-HS jumper cable also.

**Proceed to Step 3**

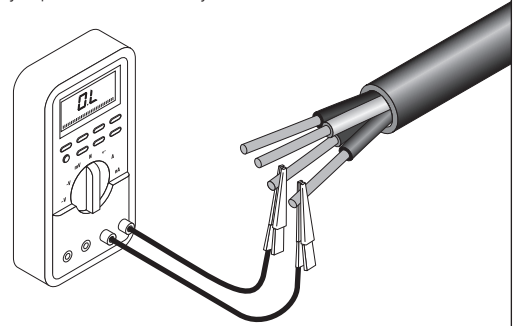
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- View the jumper cable from the end and arrange the wires as shown.



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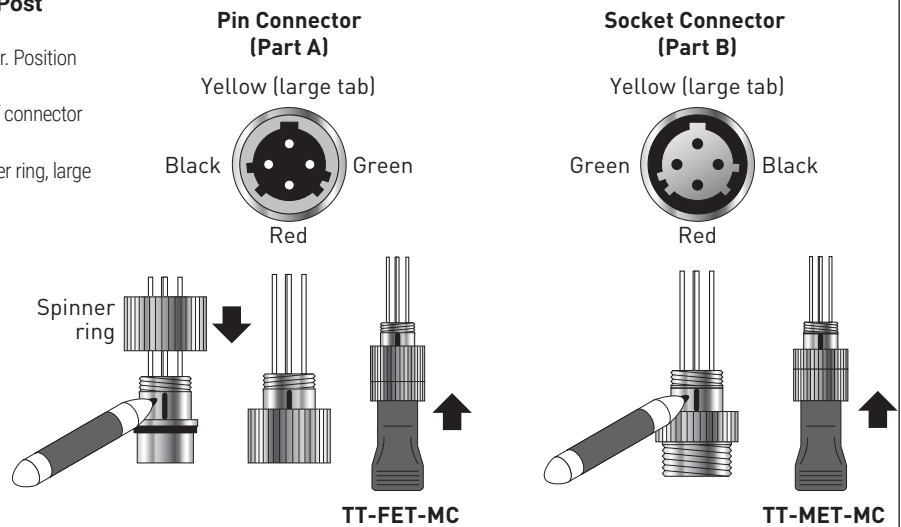
- Use the ohmmeter to measure the resistance between each combination of 2 wires.
- The resistance between any 2 wires must be greater than 20 megohm (meter may read: ∞, O.L., etc.).
- If lower resistance is found, check the opposite cable end to see if the wire tips are touching.
- Replace the jumper cable if necessary.



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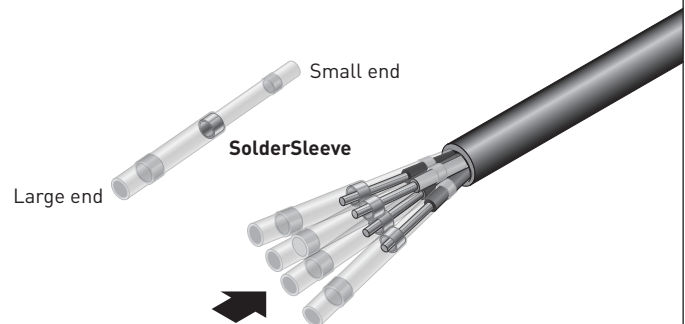
### Locate the Yellow Wire Connector Post

- 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 to socket and pin connector (Parts B and A) to use as a holder to avoid burning fingers while applying heat.



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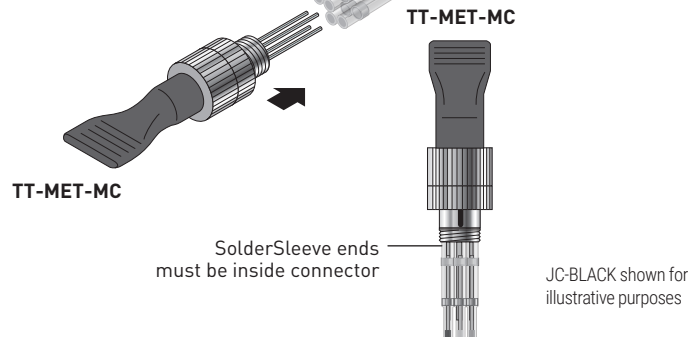
- Keep wires in the same order that they exit from the cable end.
- Slide a Solder Sleeve splice (small end first) onto each wire, all the way to the cable end.
- The solder ring must lie over bare conductor, not insulation.
- Wire ends must extend beyond the solder rings.



JC-BLACK shown for illustrative purposes

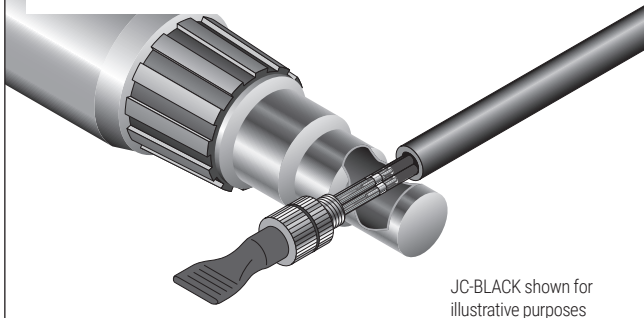
7

- 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.
- Check that wire strands are not kinked, and solder bands are in contact with connector posts and the wires.



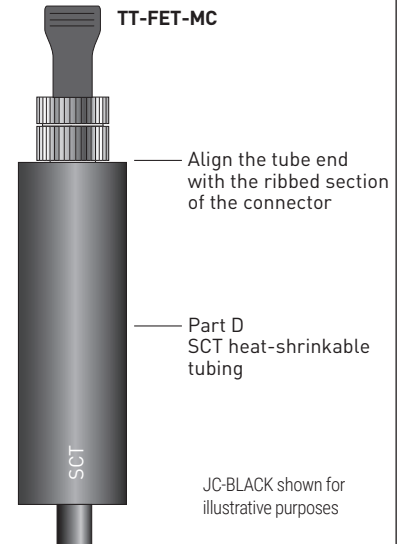
8

- 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.**
- Allow the assembly to cool before handling. Hold connector and cable steady and allow to cool. Moving solder joint when hot can weaken the connection.



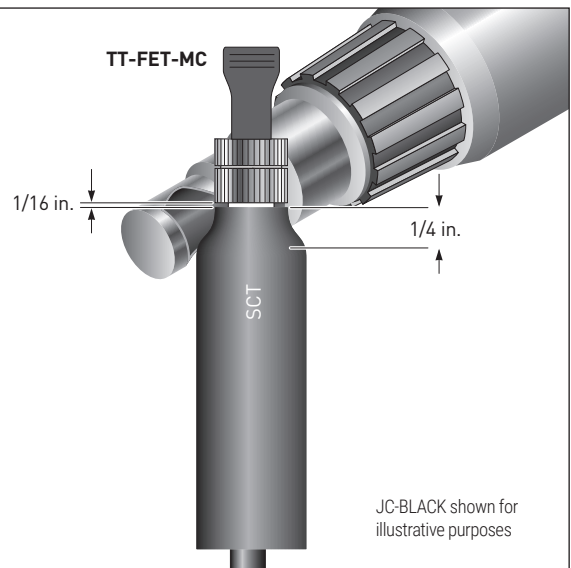
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- Slide an SCT labeled, heat-shrinkable tube over the assembly.
- Orient assembly vertically and keep SCT tube in proper position.



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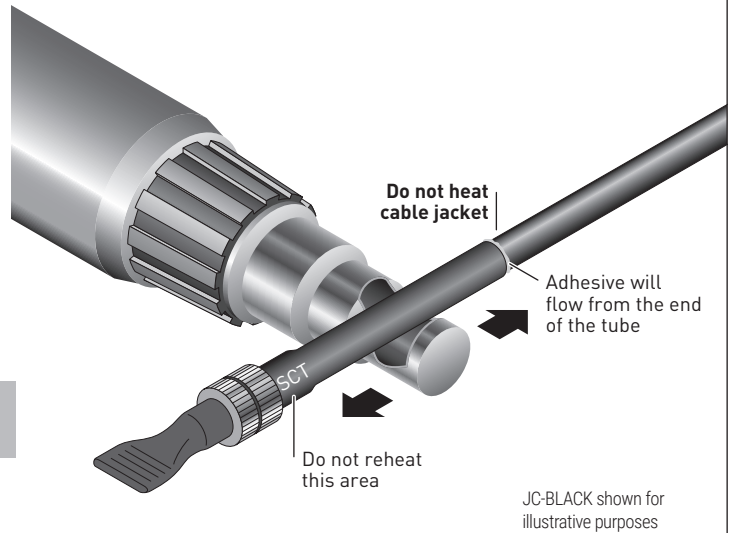
- Heat shrink 1/4 inch (6 mm) of the tube onto the connector. Leave a small 1/16 inch (1.5 mm) gap between the tube and the ribbed section of the connector. For both connector types, heat just until the tube is smooth.
- **Do not overheat.** The tube may slip off of the connector if it is overheated.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



# 11

- Heat shrink the rest of the tube, avoiding the already shrunk section.
- Do not apply heat directly to the cable jacket.
- Apply heat uniformly around the tube, keeping the heat source moving.
- Heat the tubing end until adhesive melts and beads on the jumper cable.
- Keep heating the tubing section in the middle of the tube until fully recovered.
- 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.

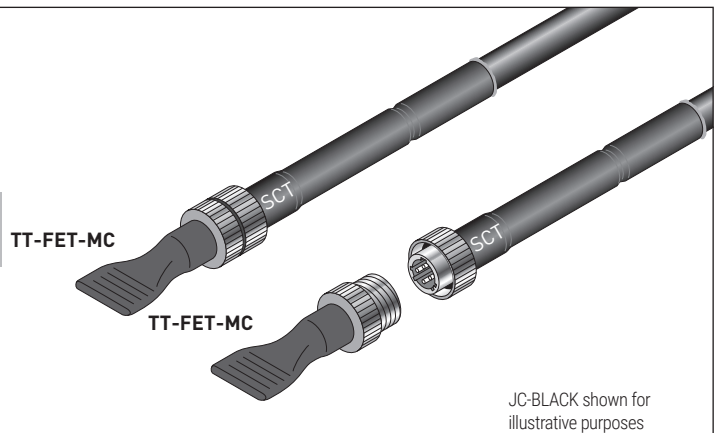


# 12

- While the tube is still hot, inspect the exposed adhesive at the tubing/cable interface.
- If a void is visible, use a glove or rag to squeeze the tube slightly and fill the void with molten adhesive.

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

- Let the assembly finish cooling.
- Remove the end termination.
- For the pin connector, the spinner ring must turn freely. If necessary, gently use pliers to break it free.



# 13 Test the Connector Assembly

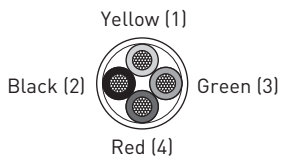
- If both cable ends have connectors, attach a mating end termination at the opposite end. If there is no connector on the opposite cable end, prepare it according to steps 1 thru 3. Then twist together wires 1 & 2 and wires 3 & 4.
- Use an ohmmeter to measure the resistance between the connector posts.
- The resistance between post 2 and 3 should be greater than 20 megohms.
- If the assembly fails any of the resistance tests;
  - 1) Check that the wires are not touching at the opposite cable end, if not connectorized.
  - 2) If necessary, cut off and discard the connector and install a new one.

**Note: (For TT-JC):**  
The resistance between post 1 & 2, or 3 & 4 should be about 15Ω per 1000 feet (303 m) of cable length (i.e. a 100 ft. (30 m) cable should measure approximately 1.5Ω between the posts).

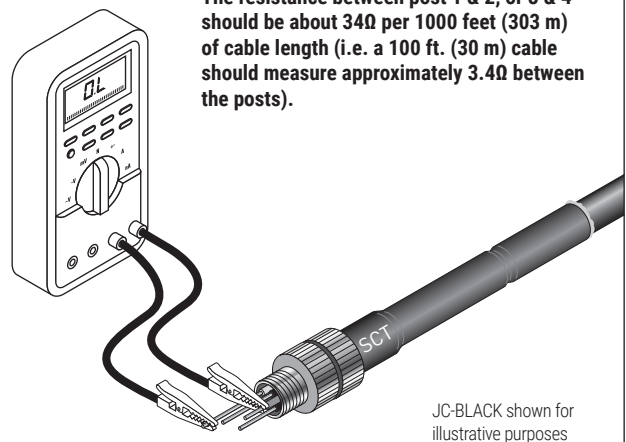
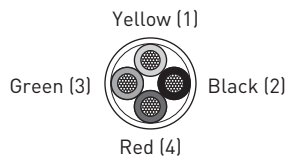
**Note: (For TT-JC-BLACK and TT-JC-BLACK-HS):**

The resistance between post 1 & 2, or 3 & 4 should be about 34Ω per 1000 feet (303 m) of cable length (i.e. a 100 ft. (30 m) cable should measure approximately 3.4Ω between the posts).

**Wire orientation at cable end opposite socket connector**



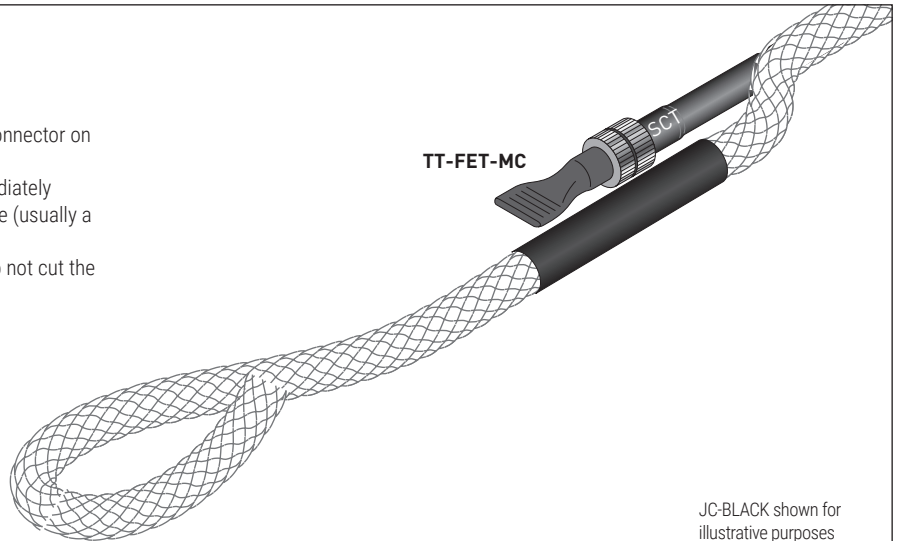
**Wire orientation at cable end opposite pin connector**



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**FOR HS cable only:**

- Remove tape from rope braid.
- Slide rope braid to about 1 inch (25 mm) from connector on end of jumper cable.
- Attach end termination to jumper cable or immediately proceed to make connection to next length of cable (usually a sensor cable) and apply environmental seal.
- Leave the looped end of pulling rope in place. Do not cut the pull rope, it may be needed in the future.



JC-BLACK shown for illustrative purposes

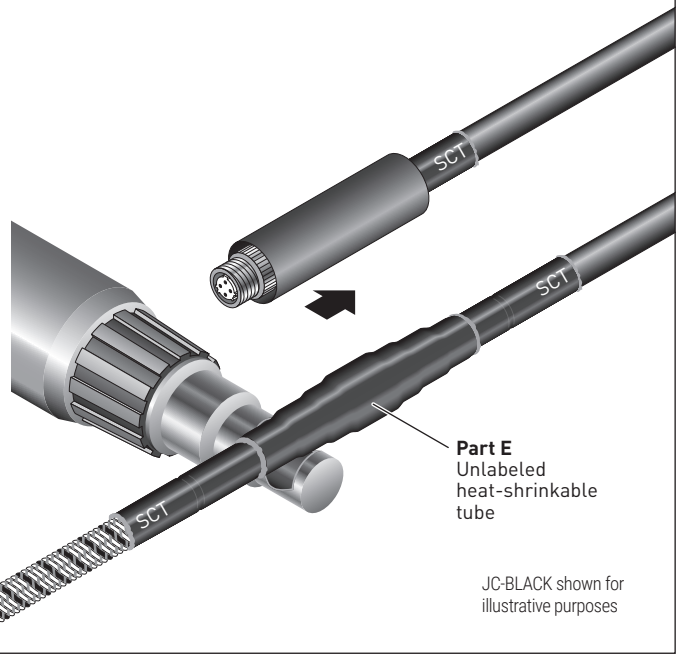
15

**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.**



Part E Unlabeled heat-shrinkable tube

JC-BLACK shown for illustrative purposes

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