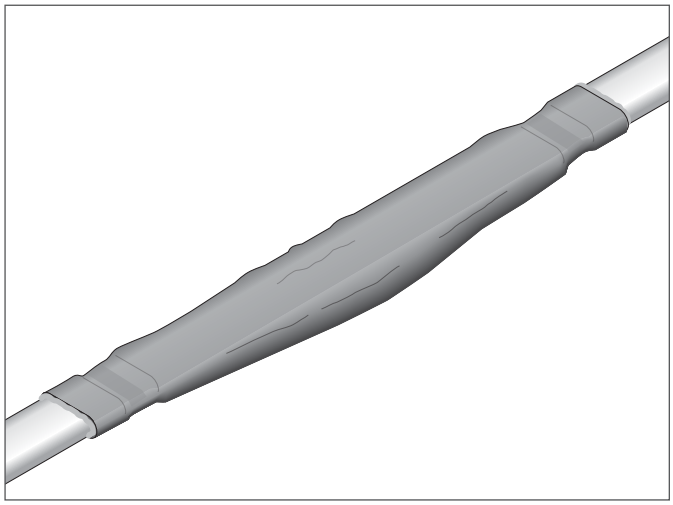
PENTAIR

Raychem EMK-XS

ELECTROMELT SPLICE KIT INSTALLATION INSTRUCTIONS



DESCRIPTION

The EMK-XS Splice Kit is for use with EM2-XR heating cable. Materials for one splice are included in the kit. This document should be used in conjunction with the ElectroMelt System Design Guide (H53393) and ElectroMelt System Installation and Operation Manual (H58086).

For technical support call Pentair Thermal Management at (800) 545-6258.

TOOLS REQUIRED

- Needle-nose pliers
- Utility knife
- Diagonal cutters
- Panduit CT-100 crimp tool
- Ideal 30-425 crimp tool
- Heat gun or propane torch

APPROVALS

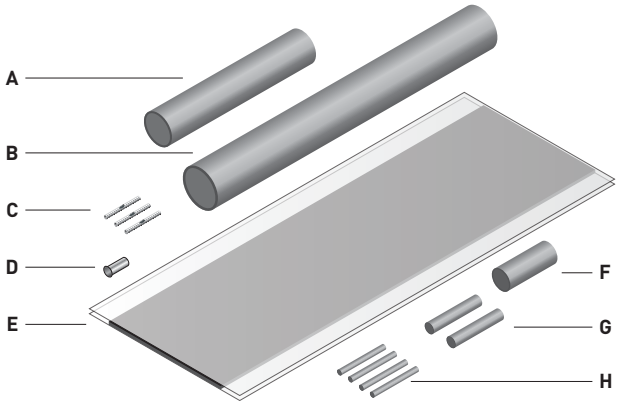
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LISTED 877Z

De-icing and snow melting equipment

KIT CONTENTS

Item	Qty	Description
A	1	Heat-shrinkable tube: 1 x 6 in (25 x 152 mm)
B	1	Heat-shrinkable tube: 1 1/2 x 10 in (38 x 254 mm)
C	3	Noninsulated 18–14 AWG butt splices (1 spare)
D	1	Noninsulated wire connector
E	1	Mastic sheet: 3 x 12 in (76 x 305 mm)
F	1	Heat-shrinkable tube 1/2 x 1 3⁄8 in (13 x 35 mm)
G	2	Heat-shrinkable tubes 1/4 x 1 3⁄8 in (6 x 35 mm)
H	4	Heat-shrinkable tubes 1⁄8 x 1 1/4 in (3 x 32 mm)



⚠ WARNING:

The heating cable is an electrical device that must be installed correctly to ensure proper operation and to prevent shock or fire. Read these important warnings and carefully follow all of the installation instructions.

- To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with Pentair Thermal Management, agency certifications, and national electric codes, ground-fault equipment protection must be used. Arcing may not be stopped by conventional circuit breakers.
- Component approvals and performance are based on the use of Pentair Thermal Management specified parts only. Do not use substitute parts or vinyl electrical tape.
- The black heating-cable core is conductive and can short. It must be properly insulated and kept dry.
- Damaged bus wires can overheat or short. Do not break bus wire strands when scoring the jacket or core.
- Keep components and heating-cable ends dry before and during installation.
- Bus wires will short if they contact each other. Keep bus wires separated.
- Heat-damaged components can short. Use a heat gun or a torch with a soft, yellow, low-heat flame, not a blue focused flame. Keep the flame moving to avoid overheating, blistering, or charring the heat-shrinkable tubes. Avoid heating other components. Replace any damaged parts.
- Megohmmeters operate at high voltage. This voltage is hazardous and possibly lethal. Read and follow all instructions included with the instrument you are using.

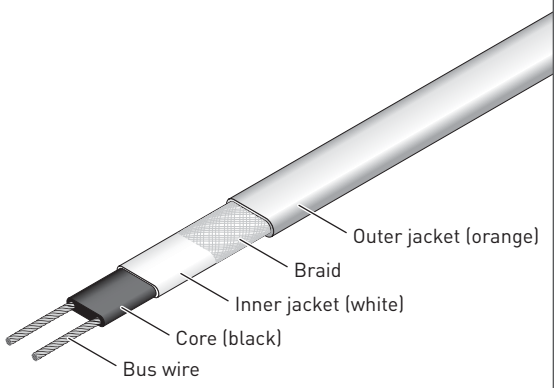
⚠ CAUTION:

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

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

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

HEATING CABLE CONSTRUCTION

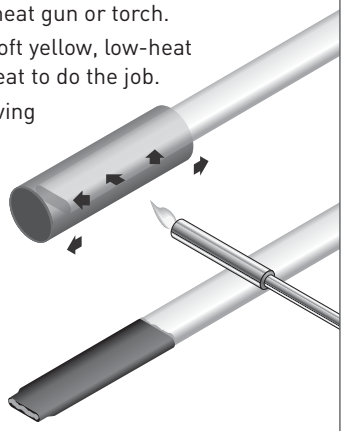


EM2-XR Heating Cable

1

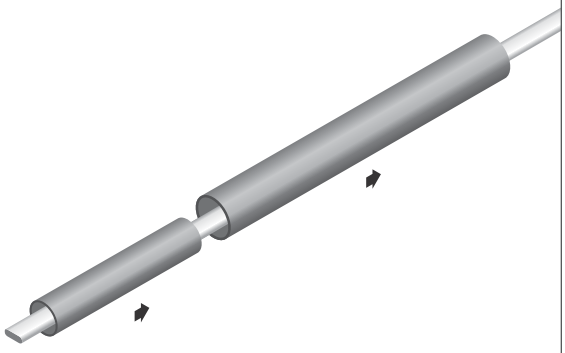
Instructions for using a heat gun or torch:

- Read important warnings on page 1 and follow safety precautions provided with heat gun or torch.
- When using a torch use a soft yellow, low-heat flame. Apply just enough heat to do the job.
- Keep torch or heat gun moving continuously to distribute the heat evenly to avoid overheating, blistering or charring the heating cable and heat-shrinkable tubes.
- Replace any heat-damaged parts.



2

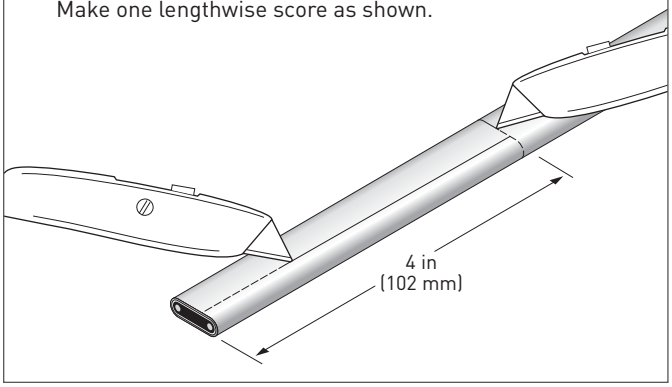
- Slide 10-inch (254 mm) (Item B) and then 6-inch (152 mm) (Item A) heat-shrinkable tubes over the end of one heating cable.



3

⚠ **WARNING: Do not cut into braid or inner jacket. This could result in a short circuit.**

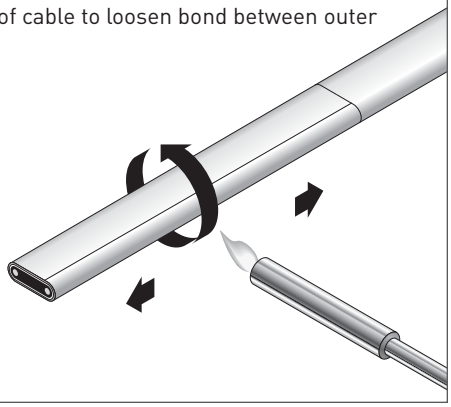
- Score around outer jacket 4 inches (102 mm) from end. Make one lengthwise score as shown.



4

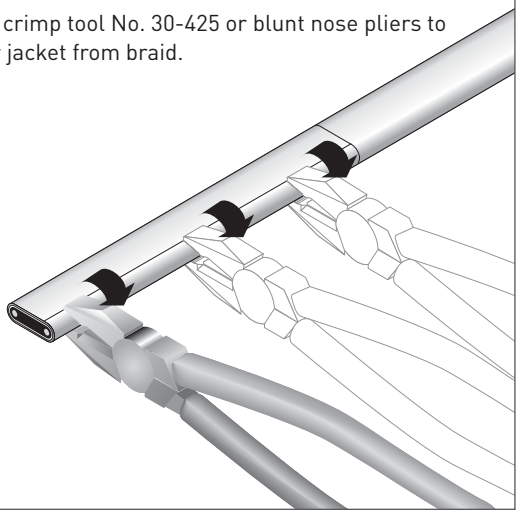
⚠ **WARNING: Fire or Shock Hazard.**
See Step 1 for proper heating techniques.

- Gently heat end of cable to loosen bond between outer jacket and braid.



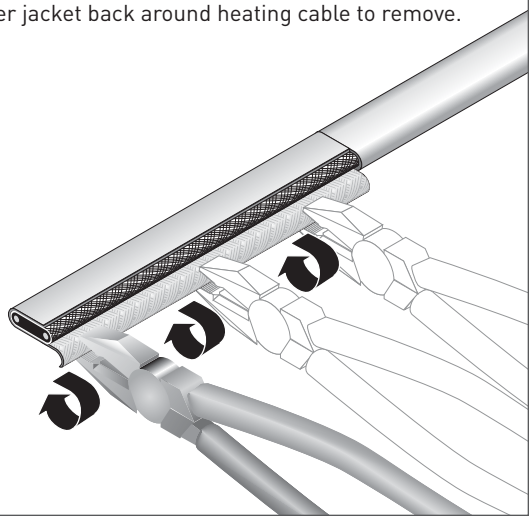
5

- Use Ideal crimp tool No. 30-425 or blunt nose pliers to pull outer jacket from braid.



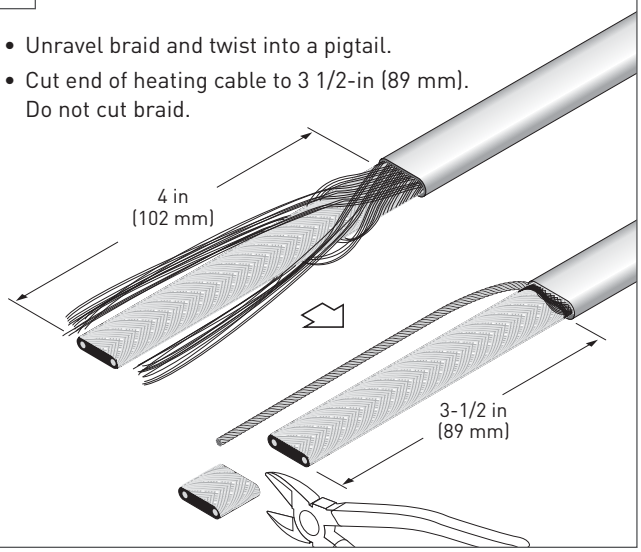
6

- Roll outer jacket back around heating cable to remove.



7

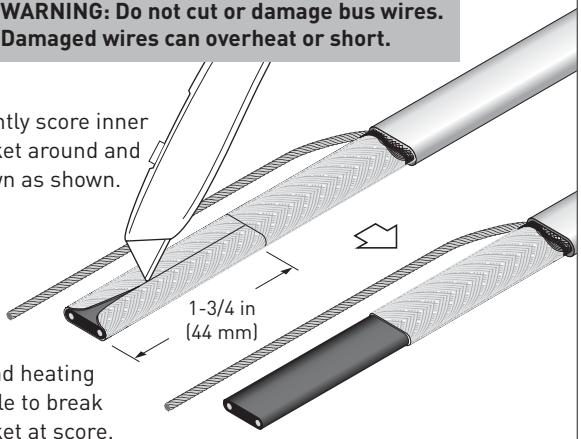
- Unravel braid and twist into a pigtail.
- Cut end of heating cable to 3 1/2-in (89 mm). Do not cut braid.



8

⚠ **WARNING: Do not cut or damage bus wires. Damaged wires can overheat or short.**

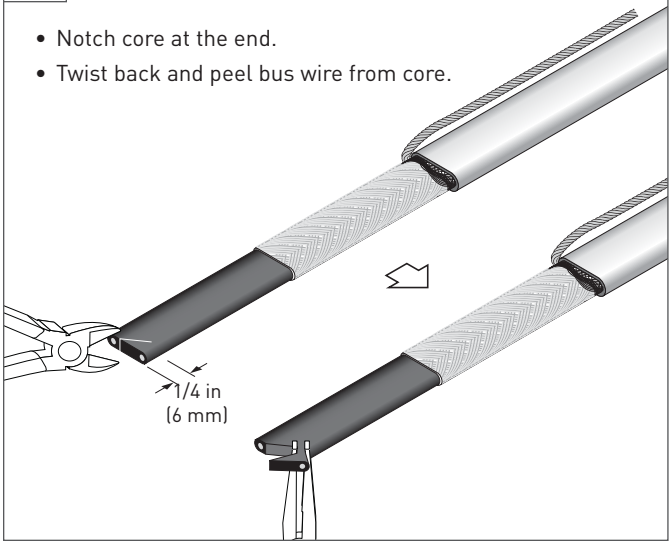
- Lightly score inner jacket around and down as shown.



- Bend heating cable to break jacket at score.
- Peel off jacket.

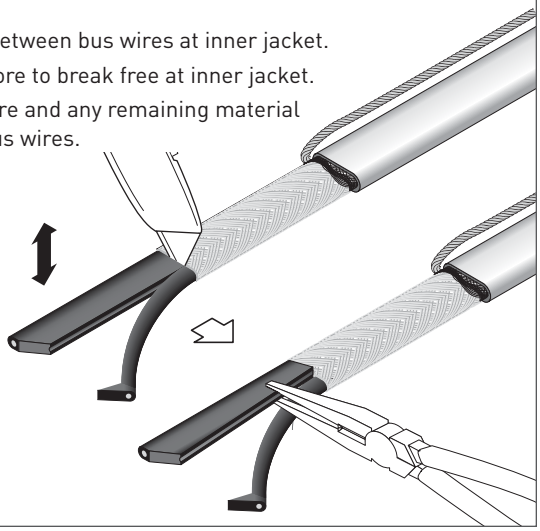
9

- Notch core at the end.
- Twist back and peel bus wire from core.



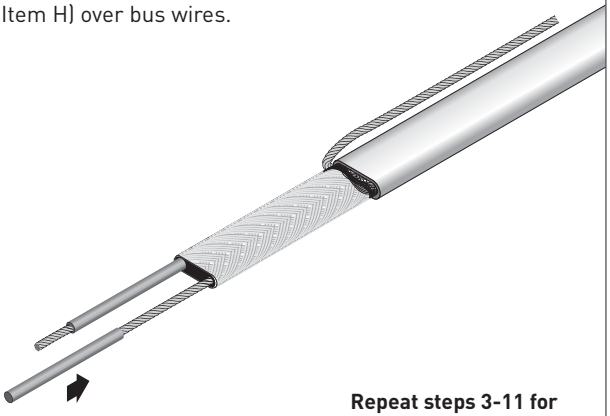
10

- Score between bus wires at inner jacket.
- Bend core to break free at inner jacket.
- Peel core and any remaining material from bus wires.



11

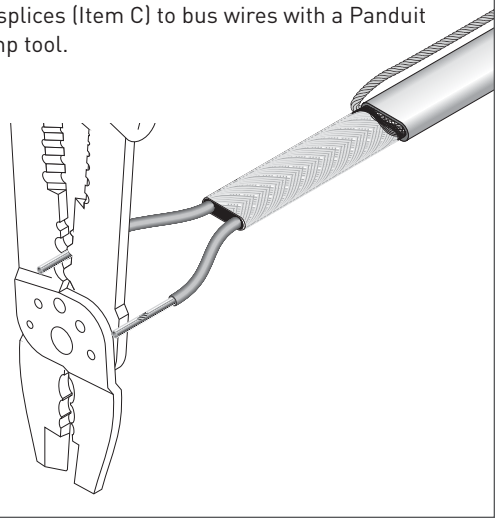
- Slide 1/8-in (3 mm) diameter tubes (Item H) over bus wires.



Repeat steps 3-11 for second heating cable.

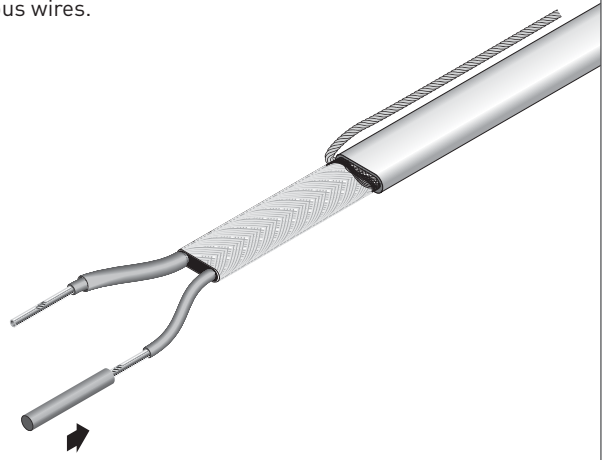
12

- Crimp butt splices (Item C) to bus wires with a Panduit CT-100 crimp tool.



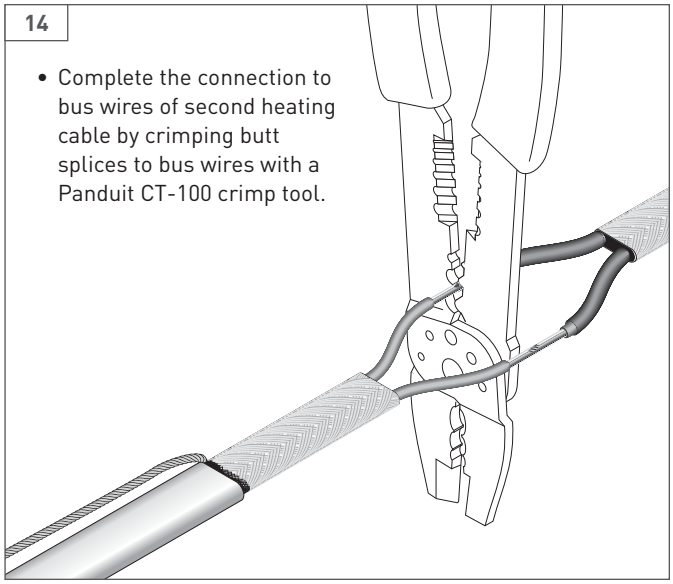
13

- Slide 1/4-in (6 mm) diameter tubes (Item G) over crimped bus wires.



14

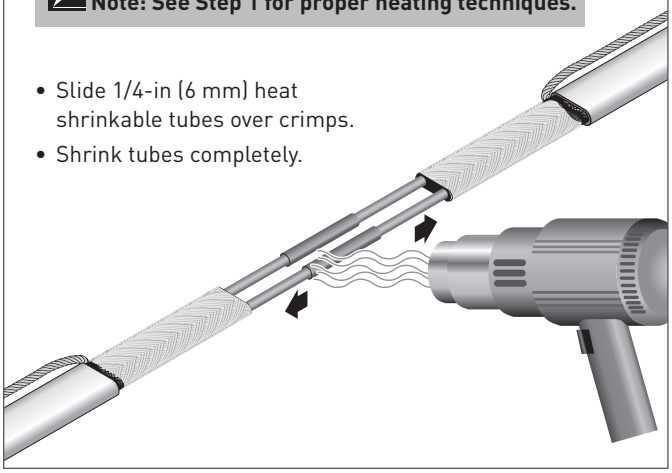
- Complete the connection to bus wires of second heating cable by crimping butt splices to bus wires with a Panduit CT-100 crimp tool.



15

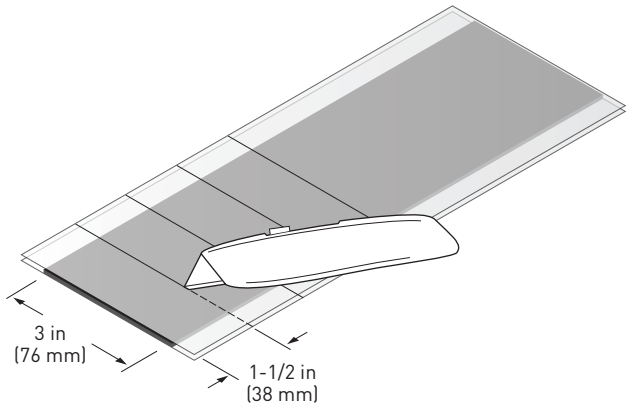
Note: See Step 1 for proper heating techniques.

- Slide 1/4-in (6 mm) heat shrinkable tubes over crimps.
- Shrink tubes completely.



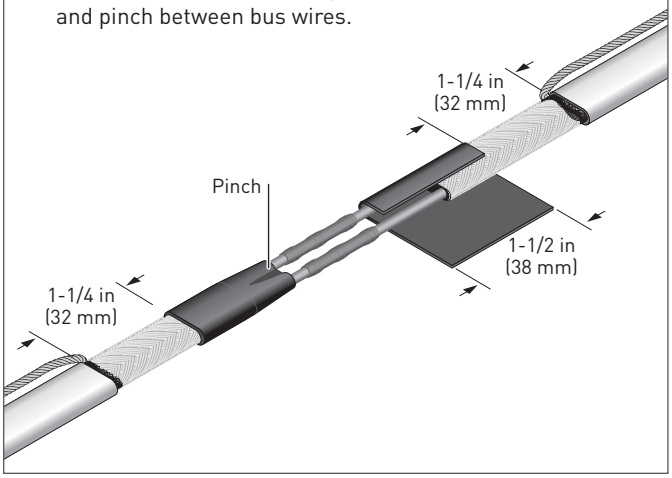
16

- Cut four 1 1/2 x 3-in (38 x 76 mm) pieces from mastic sheet (Item E). Discard extra mastic.



17

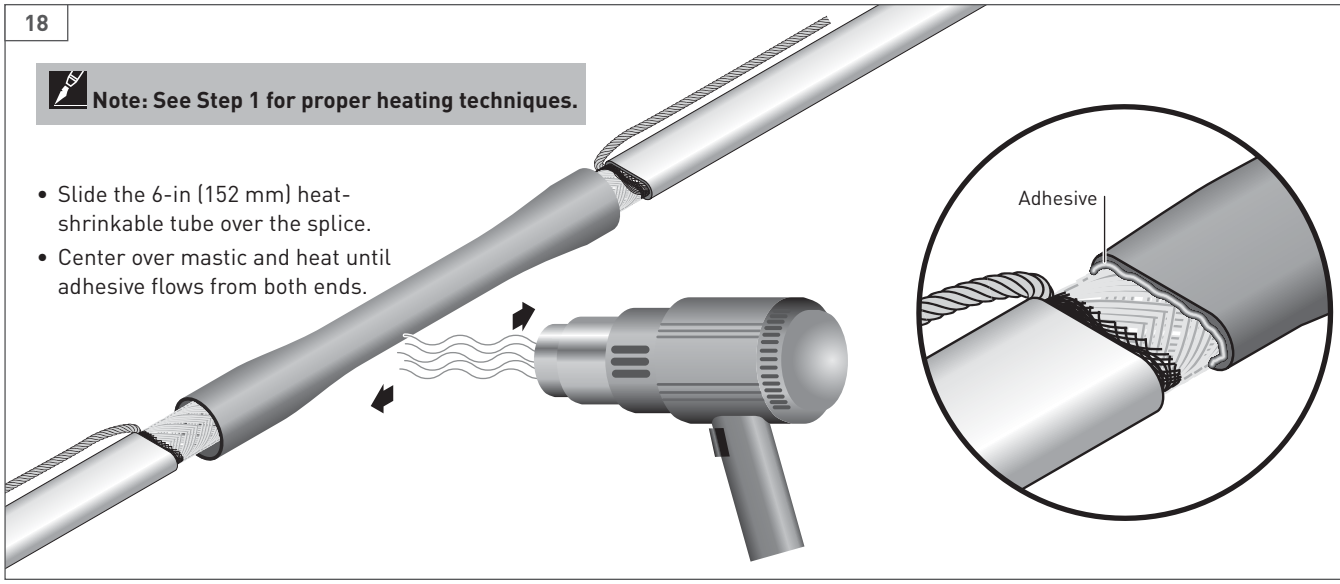
- Wrap mastic around heating cable. Squeeze mastic area and pinch between bus wires.



18

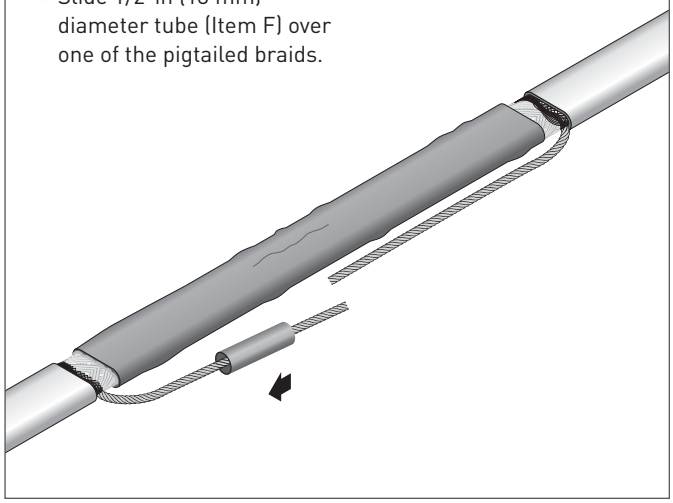
Note: See Step 1 for proper heating techniques.

- Slide the 6-in (152 mm) heat-shrinkable tube over the splice.
- Center over mastic and heat until adhesive flows from both ends.



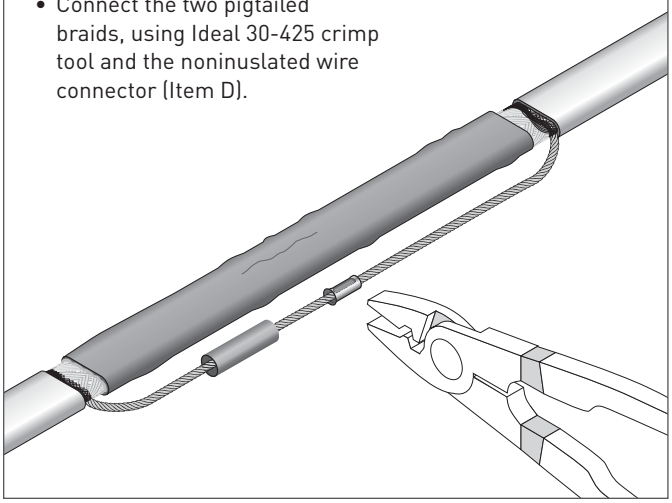
19

- Slide 1/2-in (13 mm) diameter tube (Item F) over one of the pigtailed braids.



20

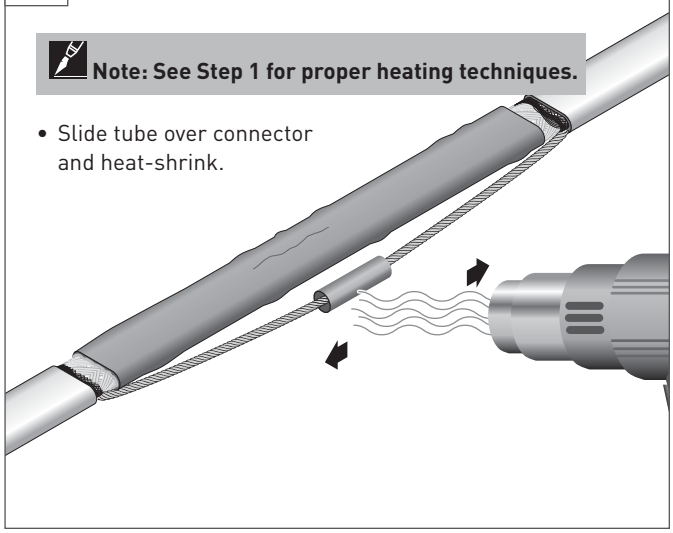
- Connect the two pigtailed braids, using Ideal 30-425 crimp tool and the noninuslated wire connector (Item D).



21

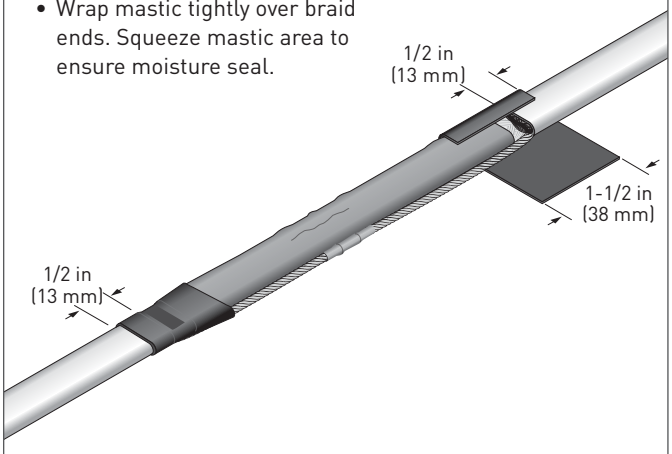
Note: See Step 1 for proper heating techniques.

- Slide tube over connector and heat-shrink.



22

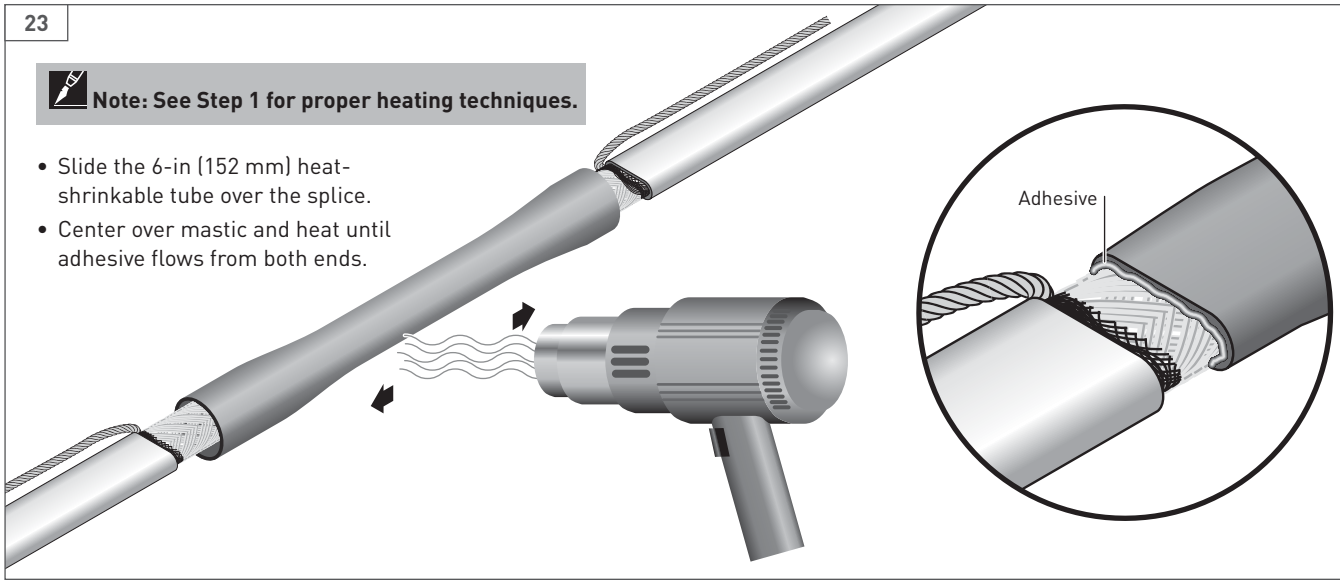
- Wrap mastic tightly over braid ends. Squeeze mastic area to ensure moisture seal.



23

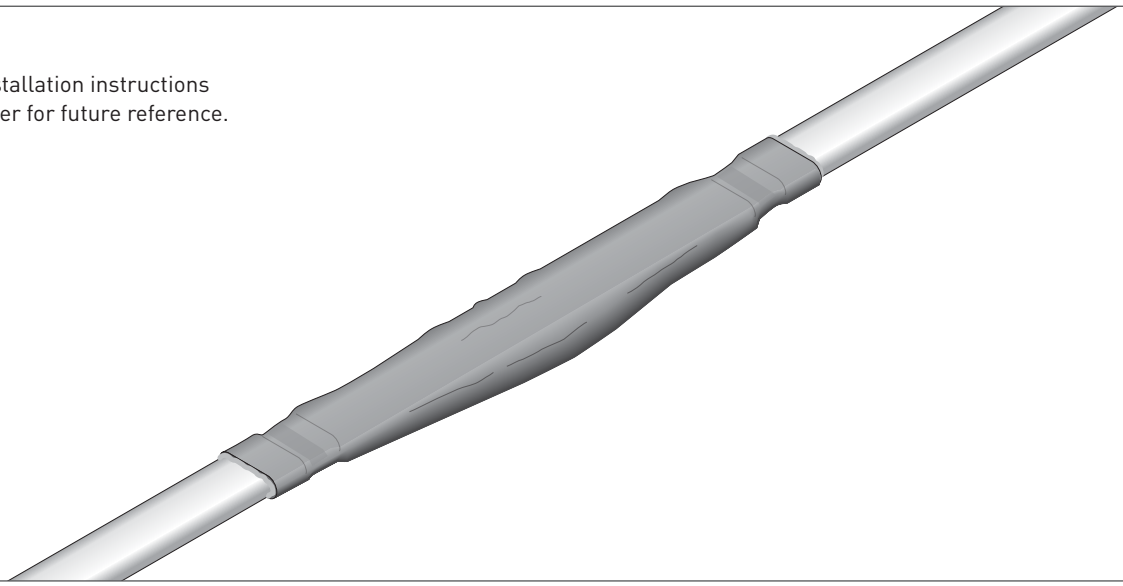
Note: See Step 1 for proper heating techniques.

- Slide the 6-in (152 mm) heat-shrinkable tube over the splice.
- Center over mastic and heat until adhesive flows from both ends.



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- Leave these installation instructions with the end user for future reference.



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