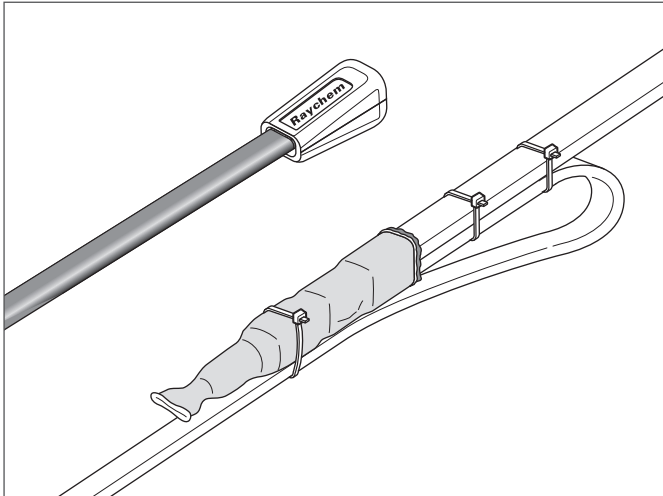


# Raychem H910

## WINTERGARD SPLICE AND TEE KIT WITH END SEAL INSTALLATION INSTRUCTIONS



### DESCRIPTION

The WinterGard H910 Splice and Tee Kit is for use with WinterGard self-regulating heating cables to make splice, tee, and end seal connections. The kit contains materials for one splice and one end seal, or one tee connection and one end seal. This kit does not provide a power connection; use an H900 or H908 power connection kit for a complete installation.

### APPLICATIONS

Use the H910 kit with the following WinterGard heating cables: H311, H611, H612, H621, and H622. All are designed for pipe freeze protection in dry locations, but H612 and H622 cables are designed for both wet and dry areas, as well as for roof and gutter de-icing. The cable type is printed on the outer jacket of the cable.

### TOOLS REQUIRED

- Diagonal Cutters
- Utility knife
- Crimp tools (Ideal 30-425 and T&B WT112M or WT2000)
- Hammer and nail (for gutter/downspout applications only)
- Needle nose pliers
- Heat gun or torch

### INSTALLATION AND SUPPORT

The minimum installation temperature for this kit is 0°F (-18°C). See the WinterGard Application and Design Guide (H53585), H900, or H908 installation instructions for design information. For additional technical support call Pentair Thermal Management at (800) 545-6258.

### APPROVALS

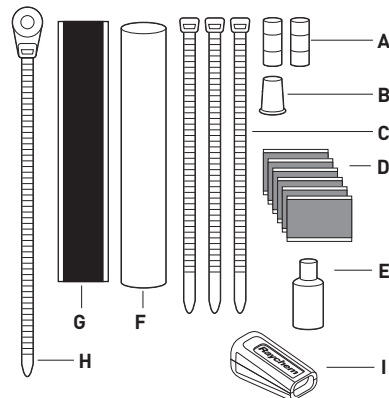


718K Pipe Heating Cable or  
877Z De-icing and Snow  
Melting Equipment



### KIT CONTENTS

Item	Qty	Description
A	2	Insulated bus wire crimps
B	1	Uninsulated braid crimps
C	3	Cable ties
D	6	Mastic strips
E	1	Heat-shrinkable cap
F	1	Heat-shrinkable tube (6 inch long, 1 inch dia.)
G	2	Black cloth tape (6 inch long)
H	1	Clamp tie
I	1	End seal



### WARNING:

This component 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 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 the requirements of Pentair Thermal Management, agency certifications, and national electrical codes, ground-fault equipment protection must be used. Arcing may not be stopped by conventional circuit breakers.

- Bus wires will short if they contact each other. Keep bus wires separated.
- Keep components and heating cable ends dry before and during installation.
- The black heating cable core is conductive and can short. It must be properly insulated and kept dry.
- 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.
- Leave these instructions with end user for reference and future use.

### 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.

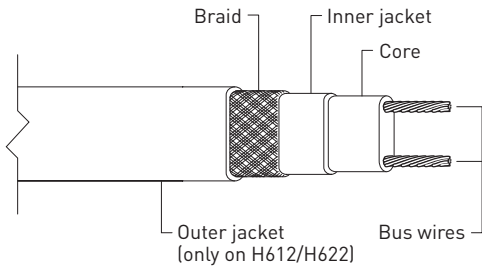
CHEMTREC 24-hour emergency telephone:  
(800) 424-9300

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

## Splice or Tee Connections

The instructions are shown for a tee connection. Splice connections are done the same way, without the third heating cable section.

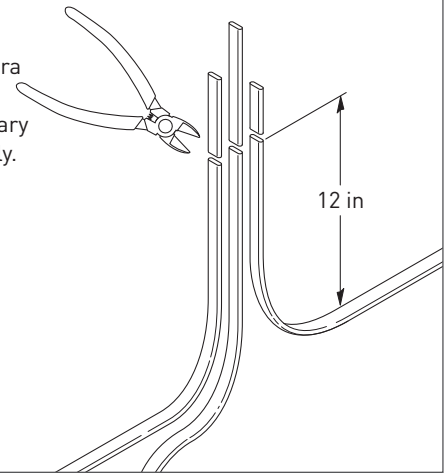
### HEATING CABLE CONSTRUCTION



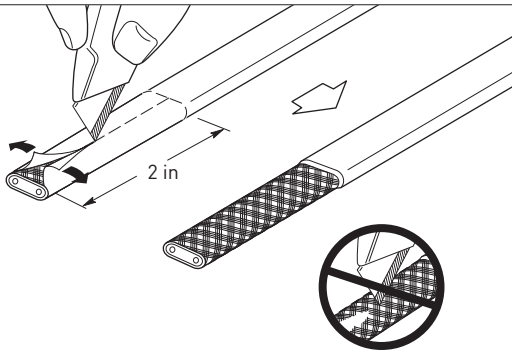
WinterGard Heating Cables

1

- Allow 12 in of extra heating cable as shown. If necessary trim cables evenly.



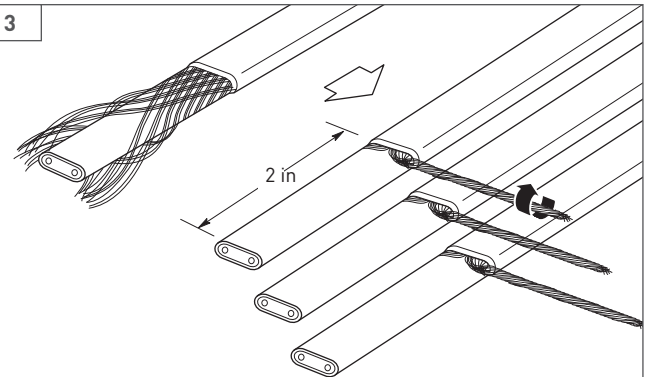
2



**Do not cut braid or inner jacket.**

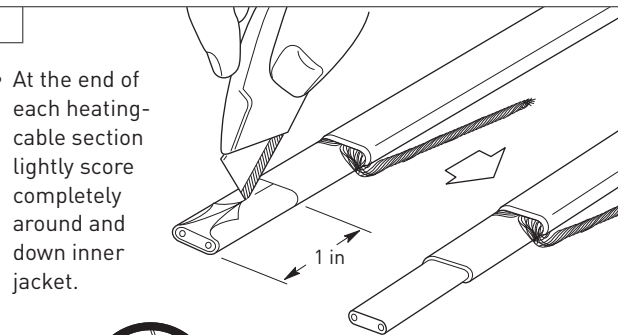
- H311, H611 and H621 do not have an outer jacket. Proceed to Step #3.
- Lightly score completely around and then down outer jacket.
- Bend heating cable to break jacket at score then peel off outer jacket.

3



- For H612 and H622, unravel the braid back to the outer jacket. For H311, H611 and H621, unravel the braid back 2 inches.
- Position braid on same side of each heating cable section.
- Straighten the braid and twist into a "pigtail".

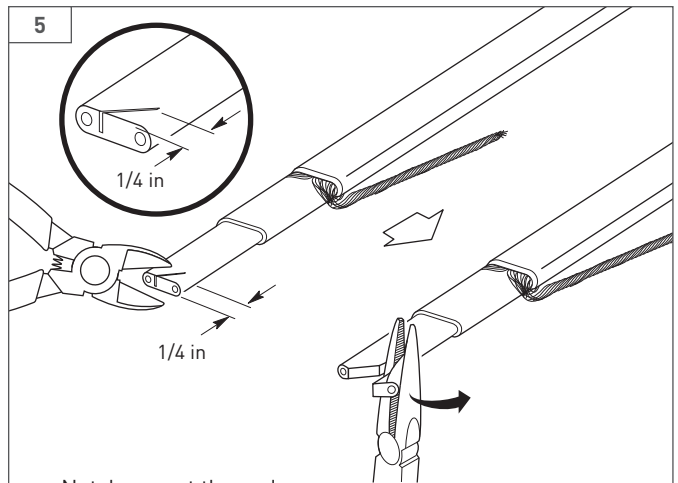
4



**Do not cut bus wires.**

- Bend heating cable to break jacket at score, then peel off inner jacket.

5



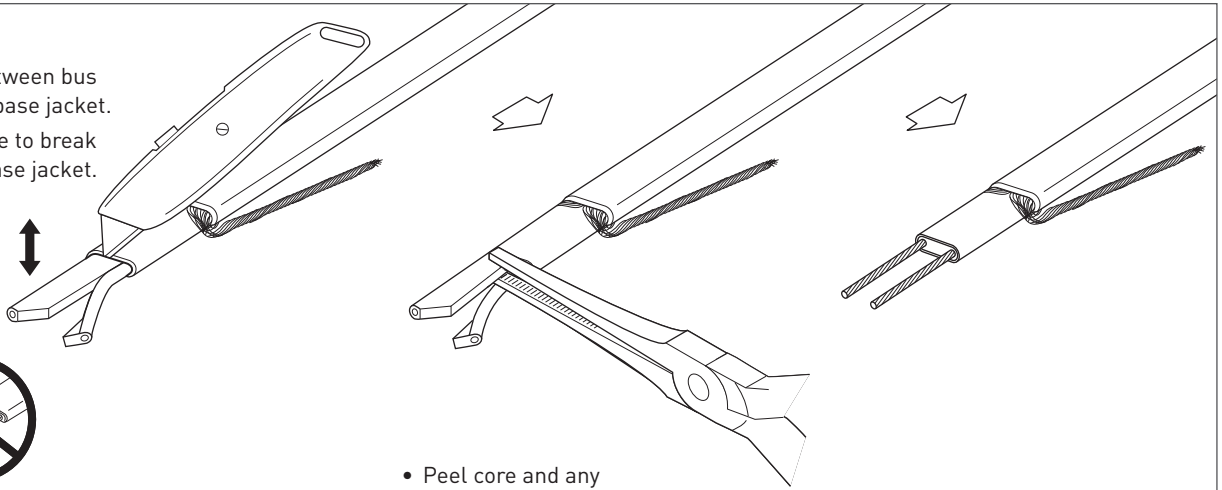
- Notch core at the end.
- Twist back and peel bus wires from core.

6

- Score between bus wires at base jacket.
- Bend core to break free at base jacket.



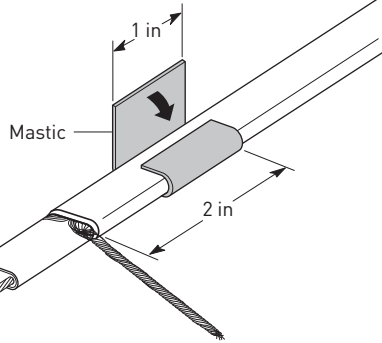
Do not cut bus wires.



- Peel core and any remaining material from bus wires.

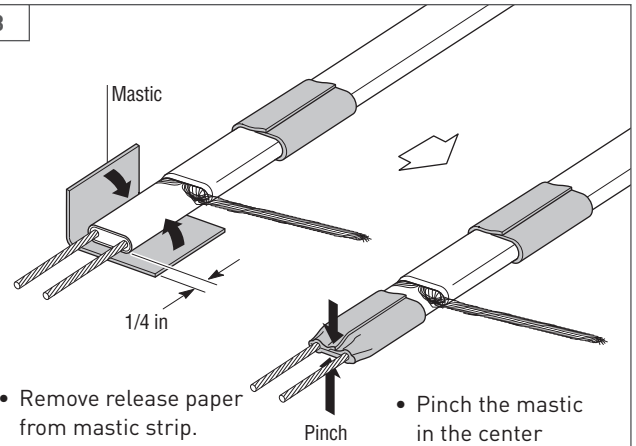
Repeat steps 2 through 6 for other heating cable sections.

7



- Remove release paper from mastic strip.
- Wrap a piece of mastic around the outer jacket on each heating cable section.

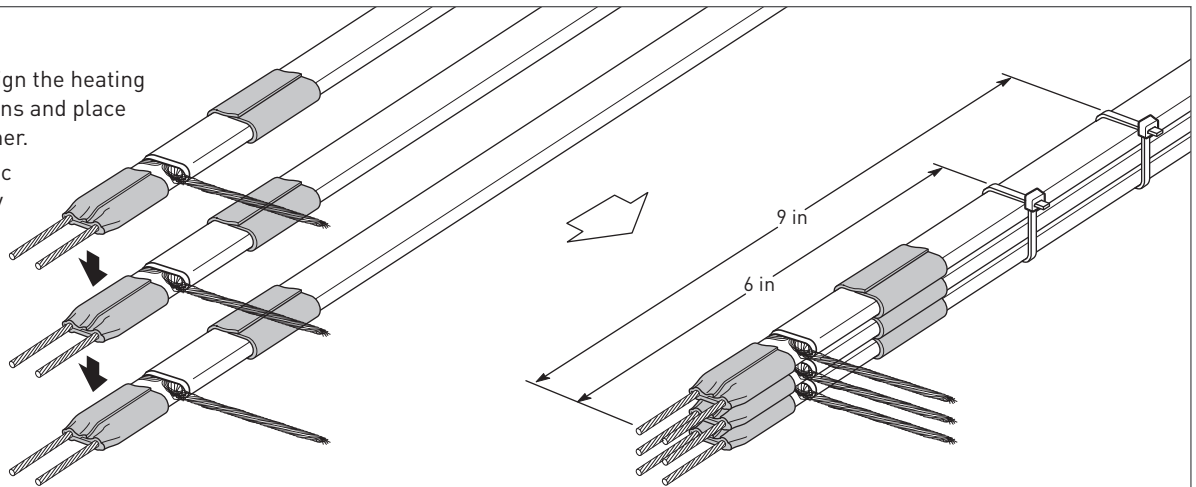
8



- Remove release paper from mastic strip.
- Wrap a piece of mastic around the end of each heating cable section and position as shown.
- Pinch the mastic in the center to completely seal the core at the end of each heating cable.

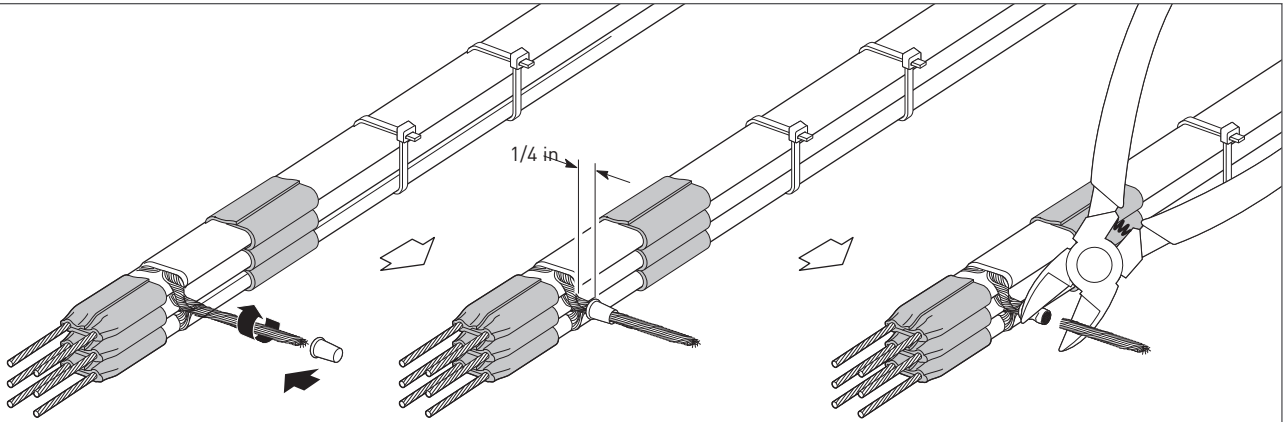
9

- Carefully align the heating cable sections and place them together.
- Press mastic strips firmly together.



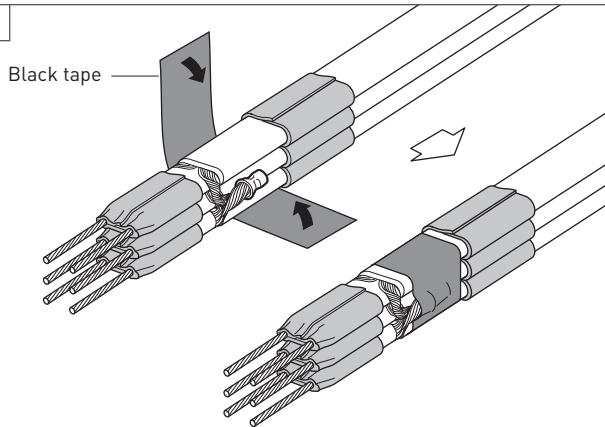
- Fasten with a cable tie at each of the two positions shown.

10



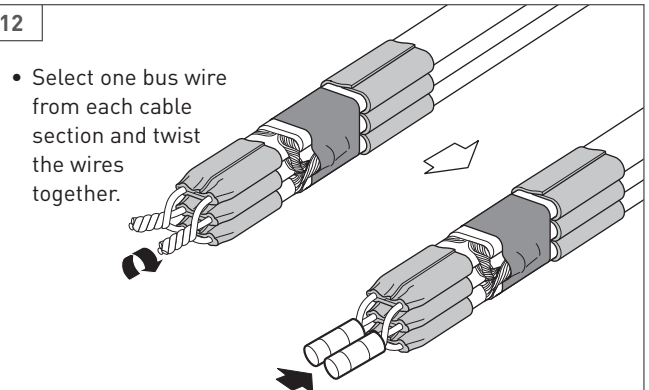
- Twist the braid pigtails together.
- Slide insulated crimp over braid to within 1/4 inch of heating cable as shown.
- Crimp the braid, using the Ideal crimp tool.
- Cut off the extra braid.

11



- Fold the crimped braid back against the heating cables.
- Wrap black cloth tape evenly around crimp and heating cables. Cover crimp completely.

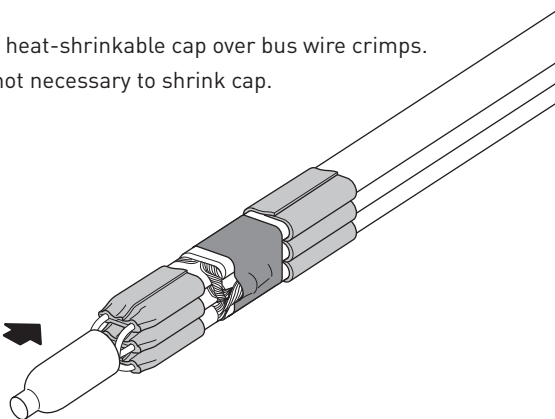
12



- Select one bus wire from each cable section and twist the wires together.
- Repeat with remaining bus wires.  
**Be careful not to twist together bus wires from the same heating cable.**
- Use insulated bus wire crimps and T&B crimp tool to crimp each set of bus wires together.

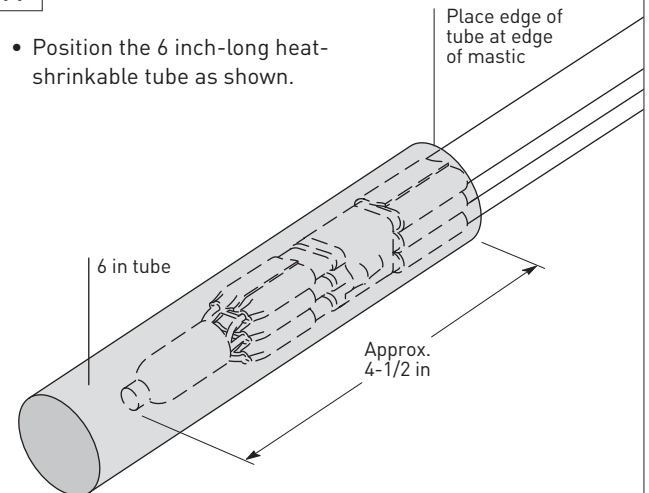
13

- Slide heat-shrinkable cap over bus wire crimps.
- It is not necessary to shrink cap.

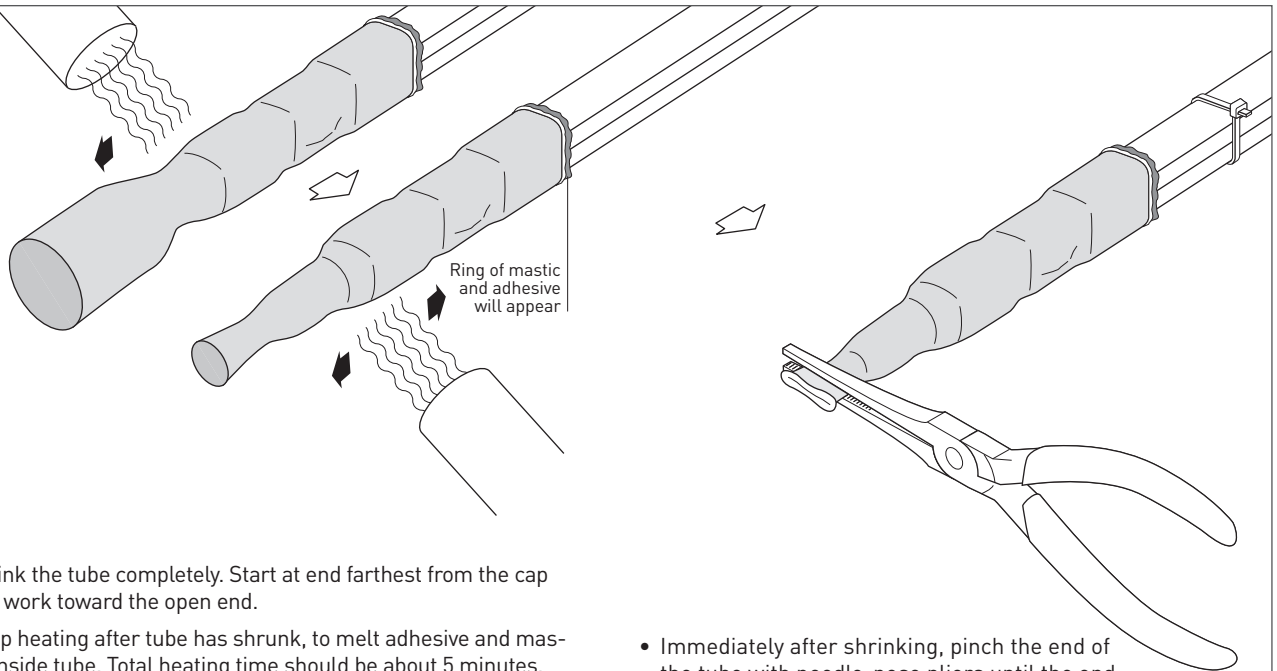


14

- Position the 6 inch-long heat-shrinkable tube as shown.



15



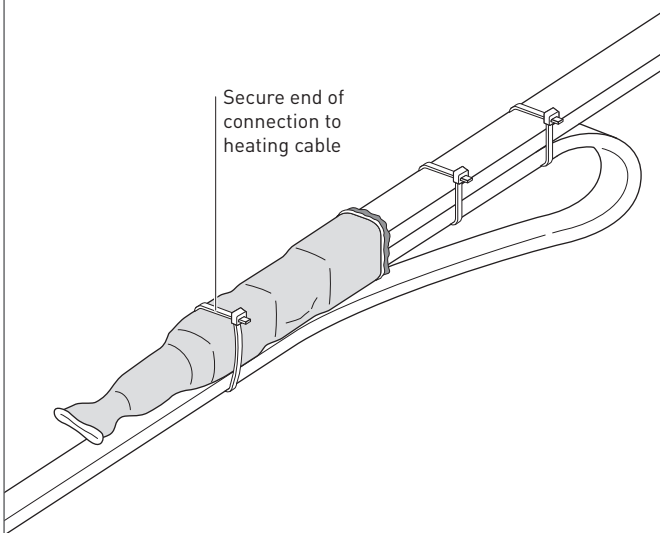
- Shrink the tube completely. Start at end farthest from the cap and work toward the open end.
- Keep heating after tube has shrunk, to melt adhesive and mastic inside tube. Total heating time should be about 5 minutes.

**⚠ CAUTION: To avoid burns allow heated sections to cool before touching.**

- Immediately after shrinking, pinch the end of the tube with needle-nose pliers until the end stays sealed; this normally takes 10 seconds.

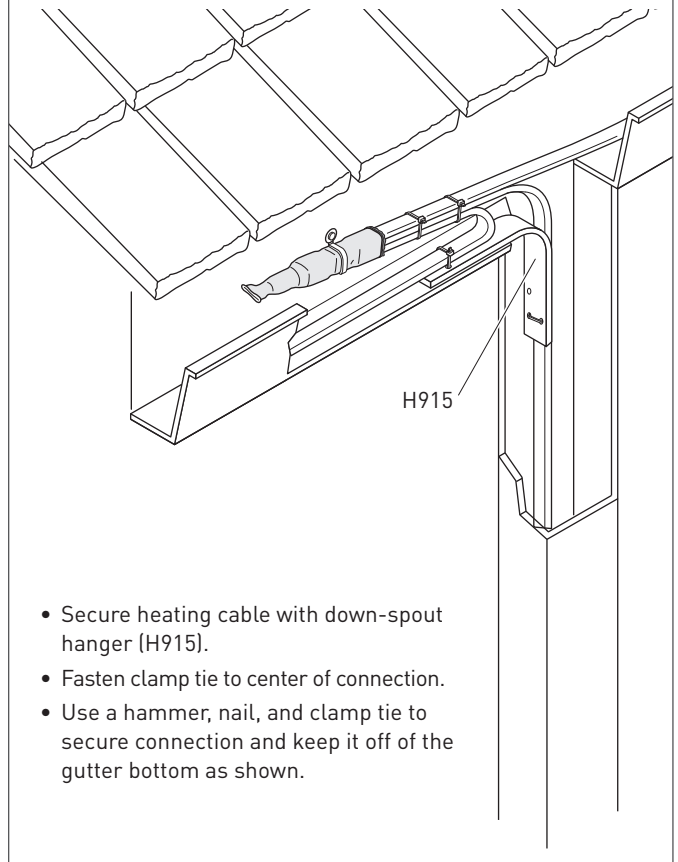
Important: Additional heat is needed after the tube is shrunk to melt mastic and adhesive inside.

#### 16A For all applications except WinterGard Wet in gutters and downspouts



- After the connection has cooled, fold over the connection and fasten it with the third cable tie.

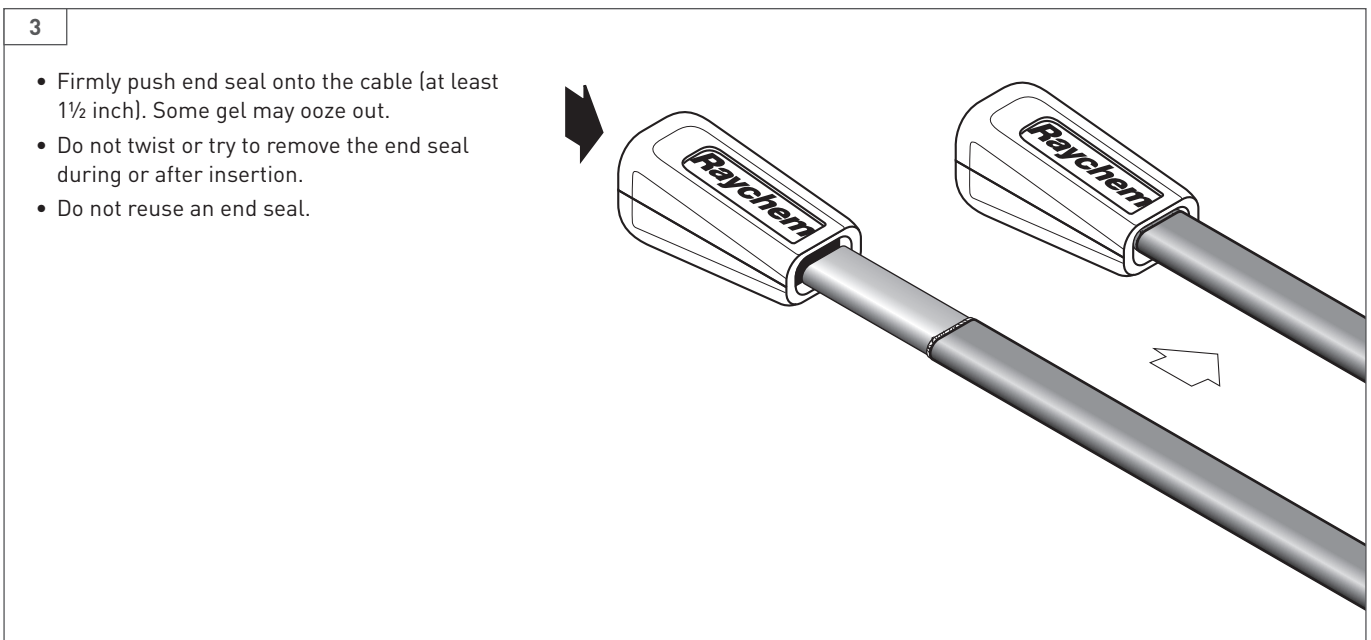
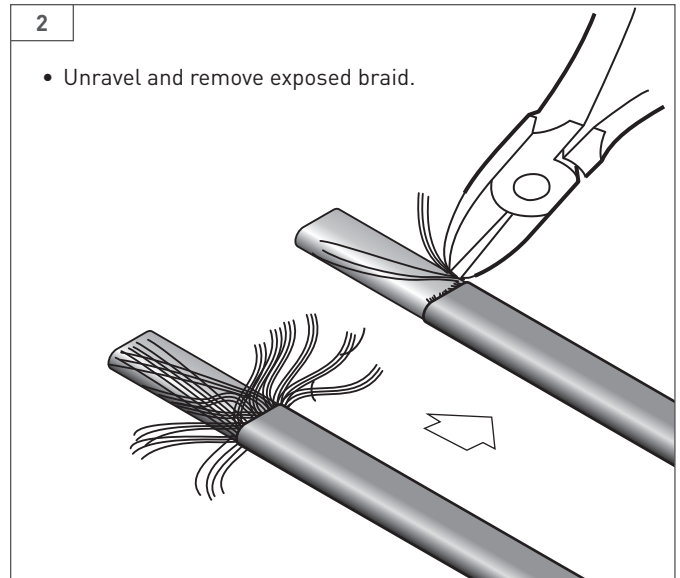
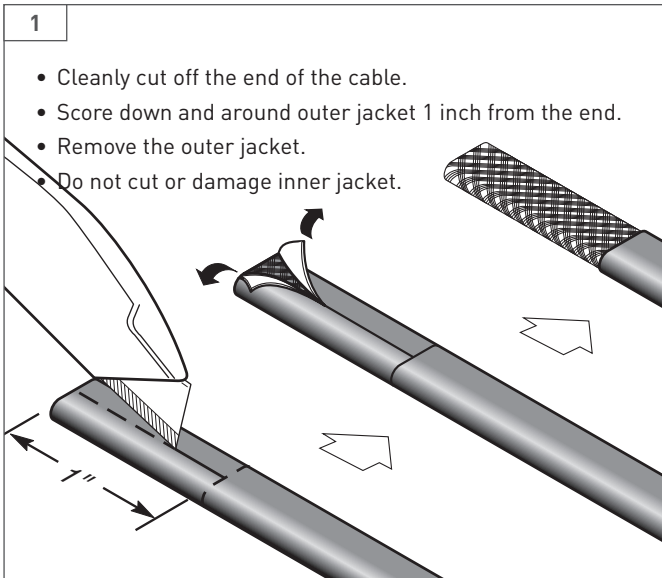
#### 16B WinterGard Wet gutter and downspout applications



- Secure heating cable with down-spout hanger (H915).
- Fasten clamp tie to center of connection.
- Use a hammer, nail, and clamp tie to secure connection and keep it off of the gutter bottom as shown.

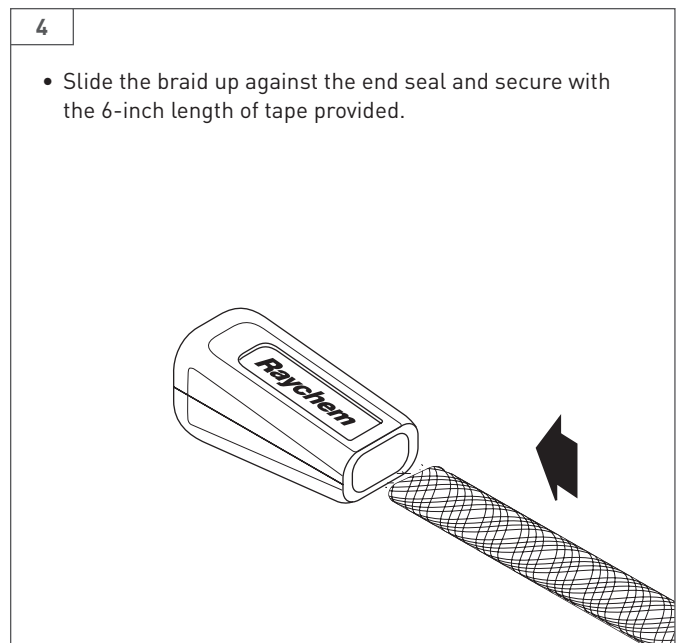
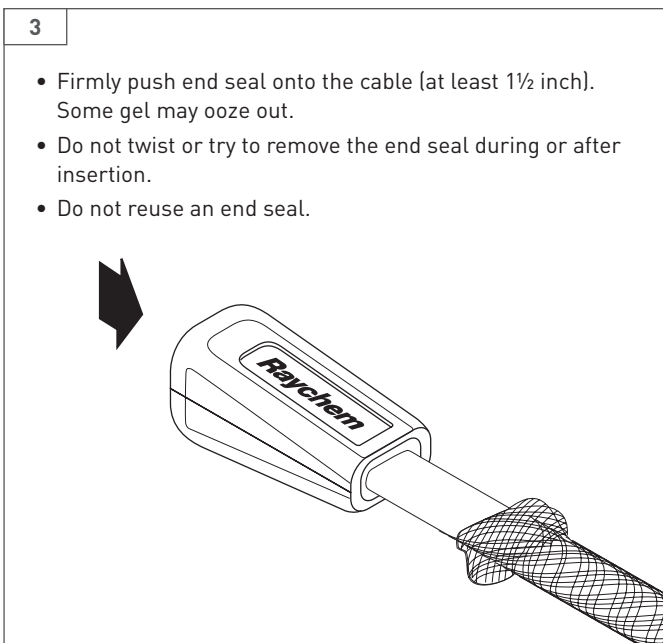
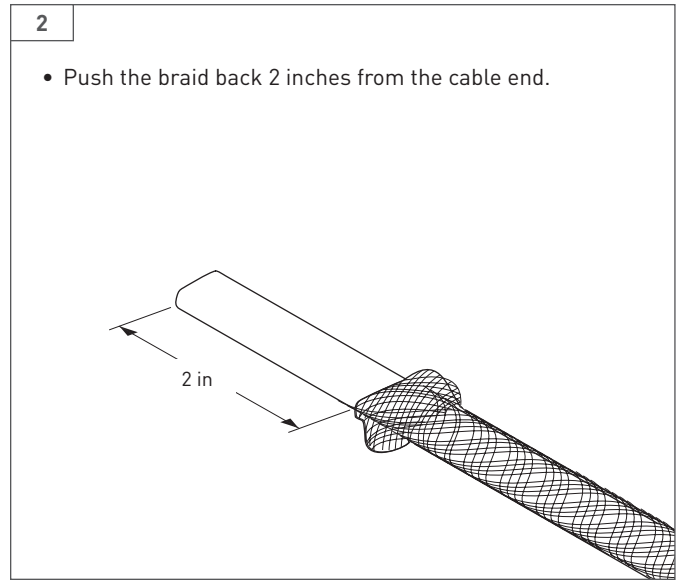
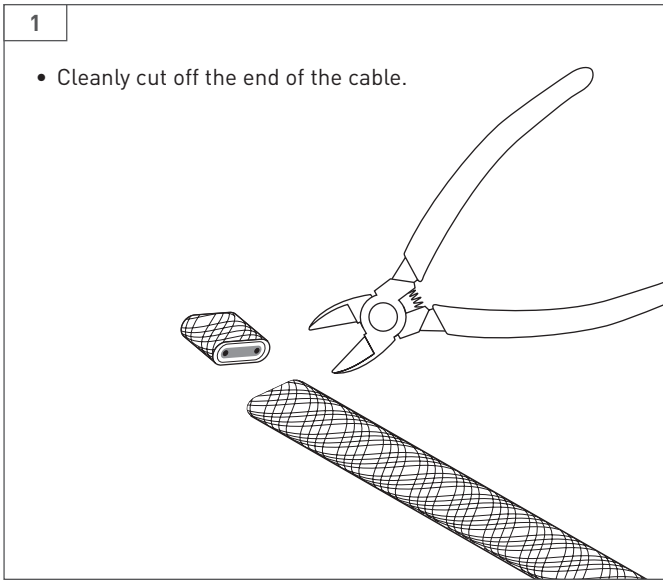
## End Seal Installation Instructions for H612 and H622 Heating Cables

**Note:** The end seal is designed to be installed only once. It cannot be removed from the heating cable once it is installed. Do not install it until instructed to do so in Step 3



## End Seal Installation Instructions for H311, H611 and H621 Heating Cables

**Note:** The end seal is designed to be installed only once. It cannot be removed from the heating cable once it is installed. Do not install it until instructed to do so in Step 3





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