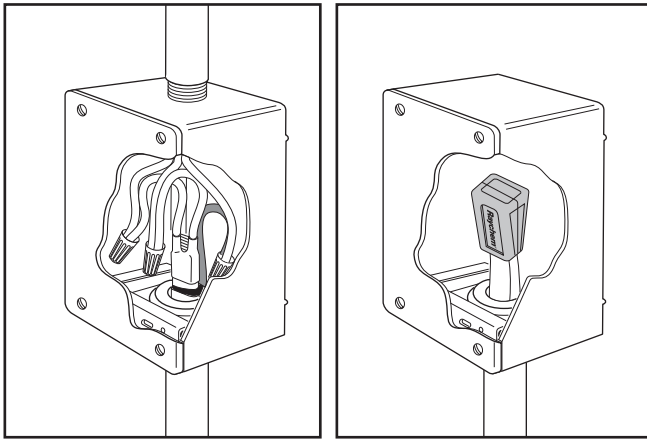




# RAYCHEM

# FTC-XC

## Power Connection and End Seal Kit Installation Instructions



### DESCRIPTION

The nVent RAYCHEM FTC-XC Power Connection and End Seal Kit is for use with XL-Trace-CR and -CT heating cables installed in conduit or in direct buried pipe applications, and for RaySol floor warming applications. Materials for one power connection and one end seal are included in this kit. These installation instructions must be used in conjunction with the XL-Trace and RaySol System Installation and Operation Manuals. For technical support contact your nVent representative or call nVent at 800-545-6258.

### TOOLS REQUIRED

- Utility knife
- Diagonal cutters
- Needle nose pliers
- Heat gun or propane torch

### ADDITIONAL MATERIALS REQUIRED (not provided in this kit)

- Two UL Listed or CSA Certified junction boxes suitable for the location, with a clearance hole for 1/2-inch conduit or 1/2-inch NPT threaded hub. (For RaySol applications, the power connection end seal may be terminated in a single box, if desired.)

### APPROVALS



718K Pipe Heating Cable, 9J8 6 Radiant Heating Cable



Certified with XL-Trace, and RaySol heating cables



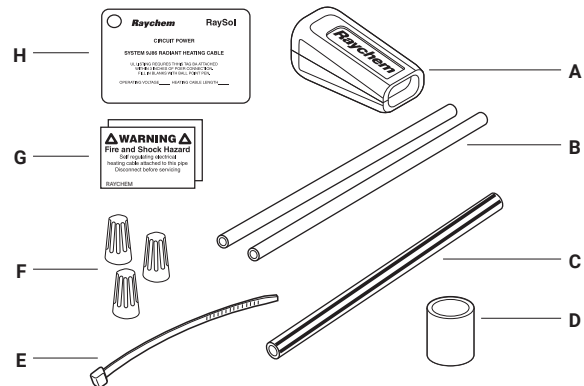
For XL-Trace only



For 12XL2-CT, -CR only

### KIT CONTENTS

Item	Qty	Description
A	1	Gel-filled end seal
B	2	Black heat-shrinkable tubes (1/8 in x 51/2 in)
C	1	Green/yellow heat-shrinkable tube (1/4 in x 6 in)
D	1	Black heat-shrinkable tube (1/2 in x 1 in)
E	1	Cable tie
F	3	Wire nuts
G	2	Warning labels
H	1	RaySol circuit tag



### 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 nVent, 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 nVent-specified parts only. Do not use substitute parts or vinyl electrical tape.
- Leave these instructions with end user for reference and future use.

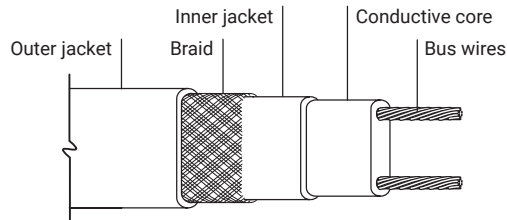
### CAUTION:

**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.

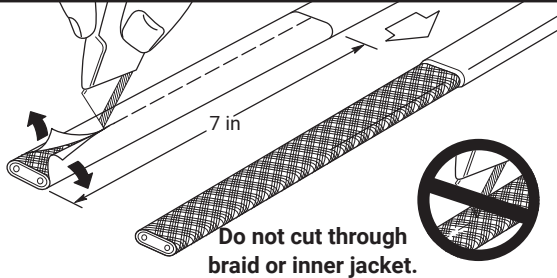
## Heating Cable Construction



XL-Trace -CR and -CT  
RaySol heating cable

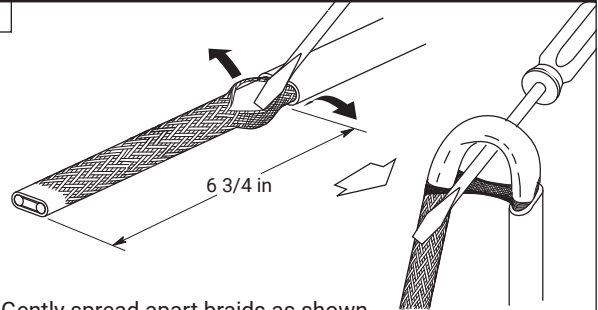
## Power Connection Installation for XL-Trace -CR and -CT, and RaySol Heating Cables

1



- Lightly score completely around and then down outer jacket.
- Bend heating cable to break jacket at score; peel off outer jacket.

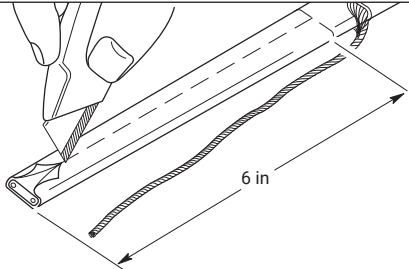
2



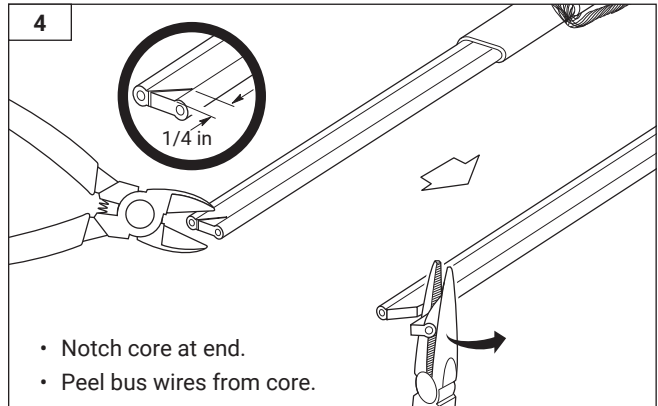
- Gently spread apart braids as shown.
- Bend heating cable and work it through the opening in the braid.

3

- Position the braid on one side of the heating cable.
- Straighten the braid and twist into a "pigtail".
- Lightly score completely down and around the inner jacket.
- Bend heating cable to break jacket and score; peel off inner jacket.



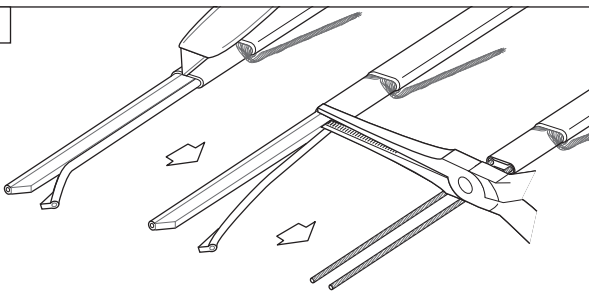
4



- Notch core at end.
- Peel bus wires from core.

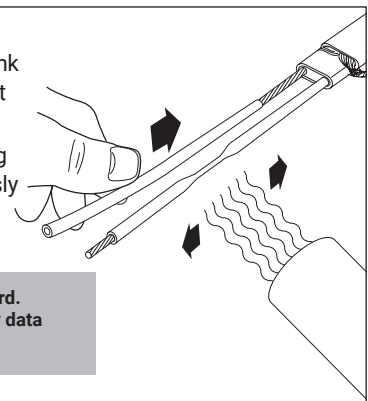
5

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



6

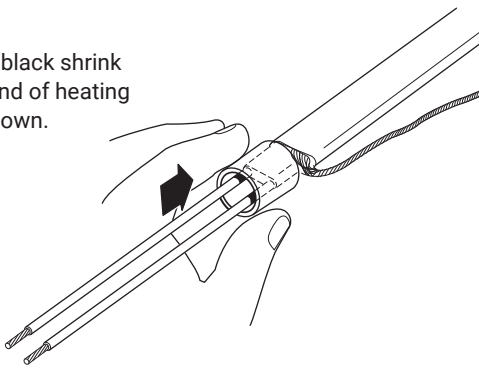
- Slide 5 1/2 in black shrink tubes into place against conductive core.
- Shrink tubing by moving heat source continuously from side to side.



**CAUTION: Health Hazard.**  
Consult material safety data  
sheet RAY3122.

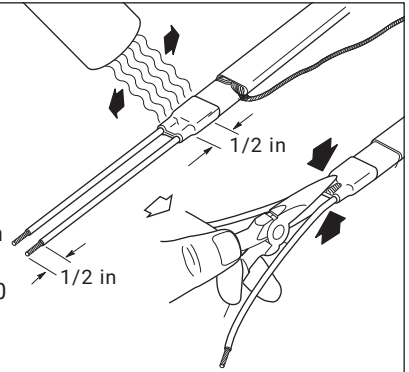
7

- Center 1 in black shrink tube over end of heating cable as shown.



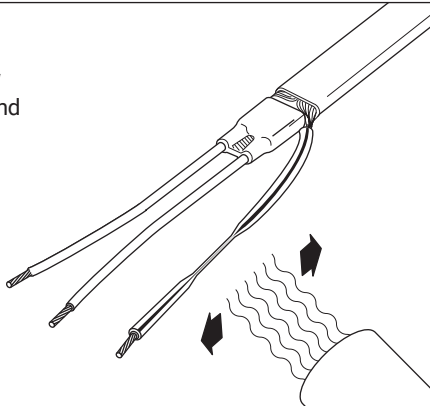
8

- Heat tube evenly until it shrinks and adhesive flows out both ends.
- Immediately pinch with pliers between wires while tube is still hot. Hold for 10 seconds to ensure seal.



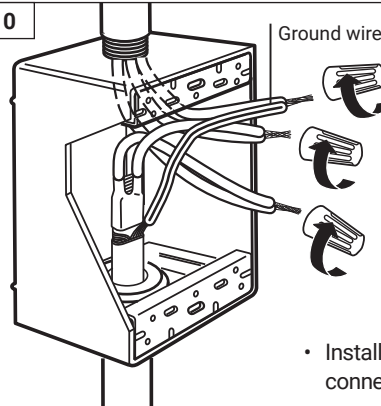
9

- Slip green/yellow tube over braid and shrink.



10

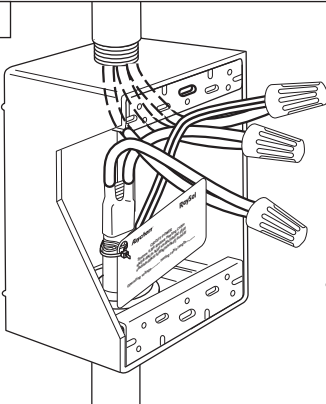
Ground wire



- Install junction box and make connection as shown.

11

- Attach circuit tag to heating cable using cable tie provided (RaySol only).



12

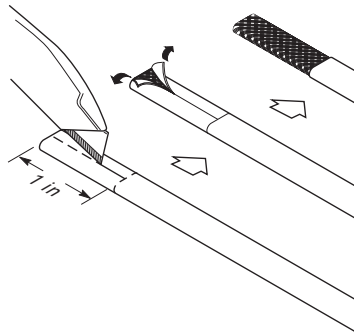
- Attach warning label on junction box cover.



## End Seal Installation for XL-Trace -CR and -CT, and RaySol Heating Cables

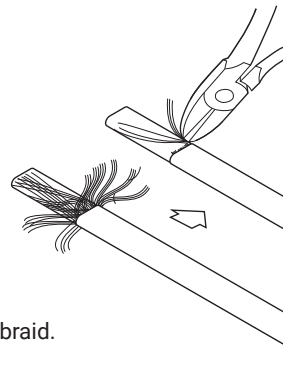
1

- Clearly cut off the end of cable.
- Score down and around outer jacket 1 inch from the end.
- Remove the outer jacket.
- Do not cut or damage inner jacket. If damaged, remove damaged section and repeat step 1.



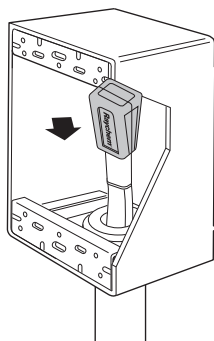
2

- Remove exposed braid.



3

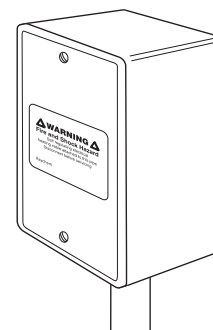
- Insert end of cable in junction box.
- Install junction box.
- Firmly push end seal completely onto heating cable (at least 1 1/2 inches). Some gel may ooze out.
- Do not twist or try to remove the end seal during or after insertion. Do not reuse an end seal.



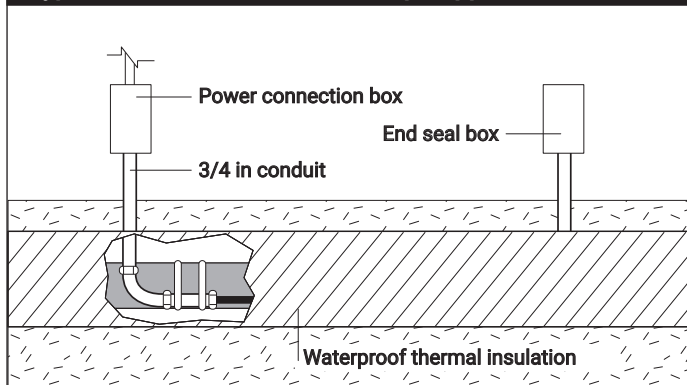
**Note:** The end seal is designed to be installed only once; it cannot be removed from the heating cable once installed.

4

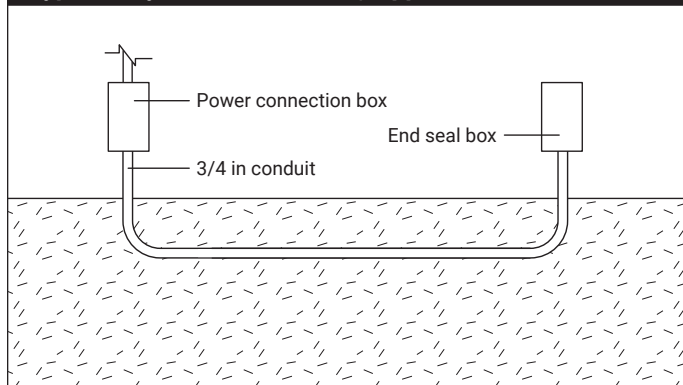
- Attach Warning label to junction box cover.



### Typical XL-Trace Direct Buried Pipe Application



### Typical RaySol Floor Warming Application



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