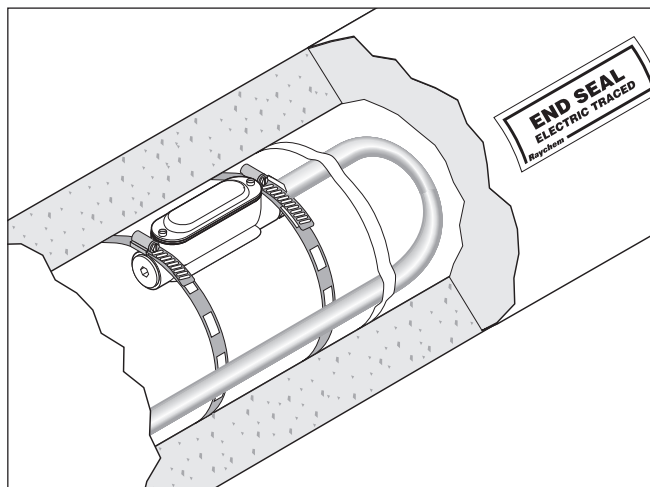




RAYCHEM

3SC-STC

End Termination Kit Installation Instructions



APPROVALS

Hazardous Locations



Class I, Div. 2, Groups B, C, D
Class II, Div. 2, Groups F, G
Class III



Class I, Div. 2, Groups A, B, C, D
Class II, Div. 2, Groups F, G
Class III
-W for Canada



Ex e II T ⁽¹⁾
-W for Canada

⁽¹⁾ for T-Rating, see design documentation

DESCRIPTION

The nVent RAYCHEM 3SC-STC is a NEMA 4 rated end termination kit designed for use with RAYCHEM 3SC30, 40, 50 (-CT), 3SC/H30, 40, 50 (-CT) and 3SC/F30, 40, 50 (-CR) series heating cables in hazardous locations.

This kit may be installed at temperatures as low as -40°F (-40°C). For easier installation, store above freezing until just before installation.

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

TOOLS REQUIRED

- Utility knife
- Wire strippers
- Disposable towel or rag
- Adjustable wrench
- Solder tool or torch (with small tip)
- Thomas & Betts WT2000 crimp tool or equivalent (P/N 273435-000)
- Diagonal cutters
- 1/4 in. hex key
- Slotted screwdriver

Crimp tools can be ordered from nVent.

ADDITIONAL MATERIALS REQUIRED

- Glass cloth tape:
 - GT-66 for installation temperature above 40°F (4°C)
 - GS-54 for installation temperature above -40°F (-40°C)

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 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 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.
- Component approvals and performance are based on the use of nVent-specified parts only. Do not use substitute parts or vinyl electrical tape.

- Damaged conductors can overheat or short. Do not break conductor wire strands when scoring the jacket or removing insulation.
- Keep components and heating cable ends dry before and during installation.
- Use only fire-resistant insulation materials, such as fiberglass wrap or flame-retardant foam.
- Soldering tools or torches can cause fire or explosion in hazardous areas. Be sure there are no flammable materials or vapors in the area before using these tools.
- Wrap exposed conductors with supplied tape strips to prevent shorts.

CAUTION:

HEALTH HAZARD: Hot solder can burn eyes and skin. Fumes during soldering are irritating to eyes and may cause headache and respiratory system irritation or damage. Prolonged or repeated exposure to rosin flux fumes during soldering may result in allergic reaction in a sensitive person, resulting in asthma symptoms. Consult MSDS VEN0043 for further information.

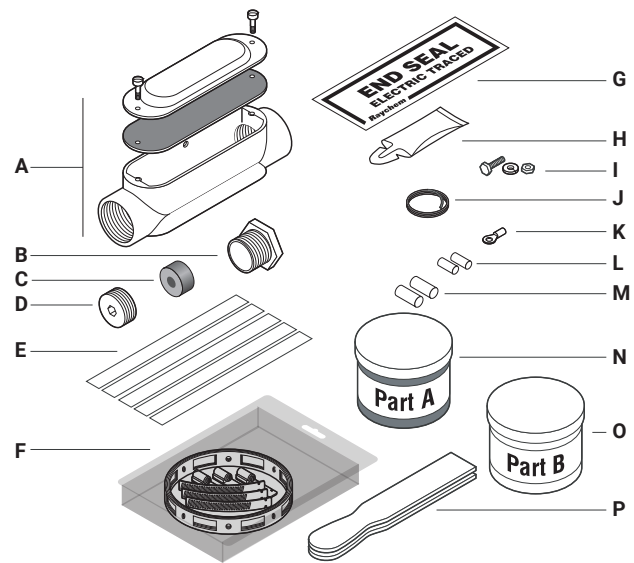
Silicone rubber compound, Part A and Part B, may generate flammable and explosive hydrogen gas if it comes in contact with an acidic, basic or oxidizing material. Personal contact with the silicone rubber compound may cause slight eye or skin irritation. Consult MSDS VEN0030 and VEN0031 for further information.

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

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

KIT CONTENTS:

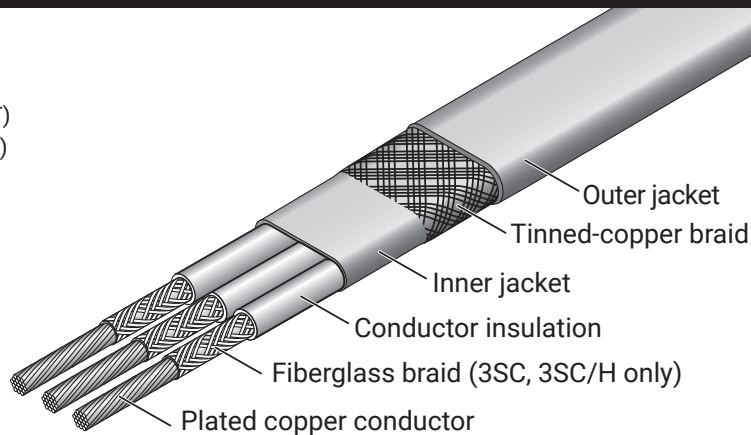
Item	Qty	Description
A	1	Box with cover, gasket, and 2 screws
B	1	Bushing
C	1	Grommet
D	1	Plug
E	5	Tape strips (3 required, 2 extra)
F	1	Pipe clamp banding kit
G	1	ETL-END Seal label
H	1	Cable lubricant
I	1	Bolt, lock washer and nut
J	1	Coil of Kester® 48 core LF solder for nickel
K	1	Thomas & Betts #C10-14 ring terminal
L	2	Parallel splices (small), spare included
M	2	Parallel splices (large), spare included
N	1	KE 1204 silicone rubber potting compound Part A
O	1	KE 1204 silicone rubber potting compound Part B
P	2	Stir sticks
Q	2	Material Safety Data Sheets (not shown)



Heating Cable Construction

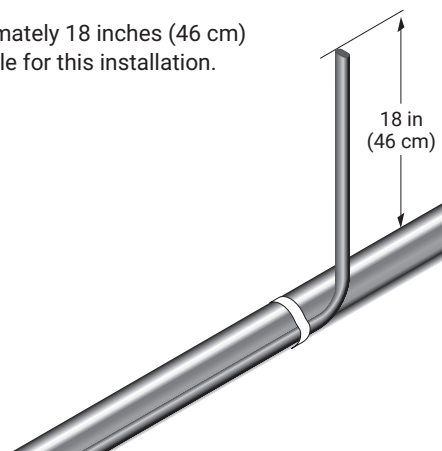
Heating cable types

3SC30, 40 and 50 (-CT)
 3SC/H30, 40 and 50 (-CT)
 3SC/F30, 40 and 50 (-CR)

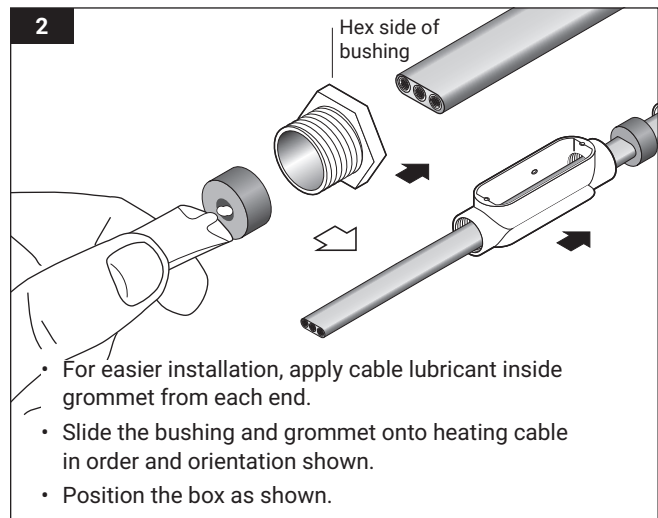


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- Allow approximately 18 inches (46 cm) of heating cable for this installation.

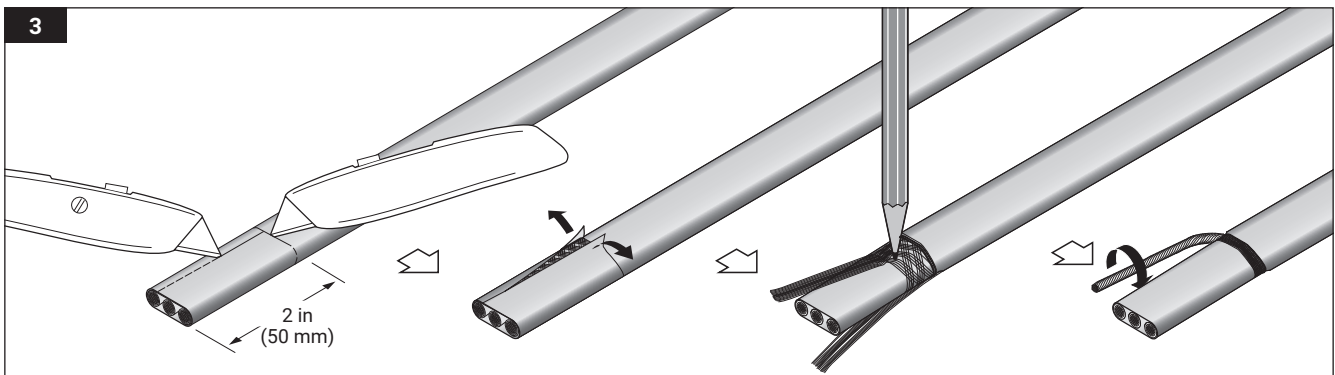


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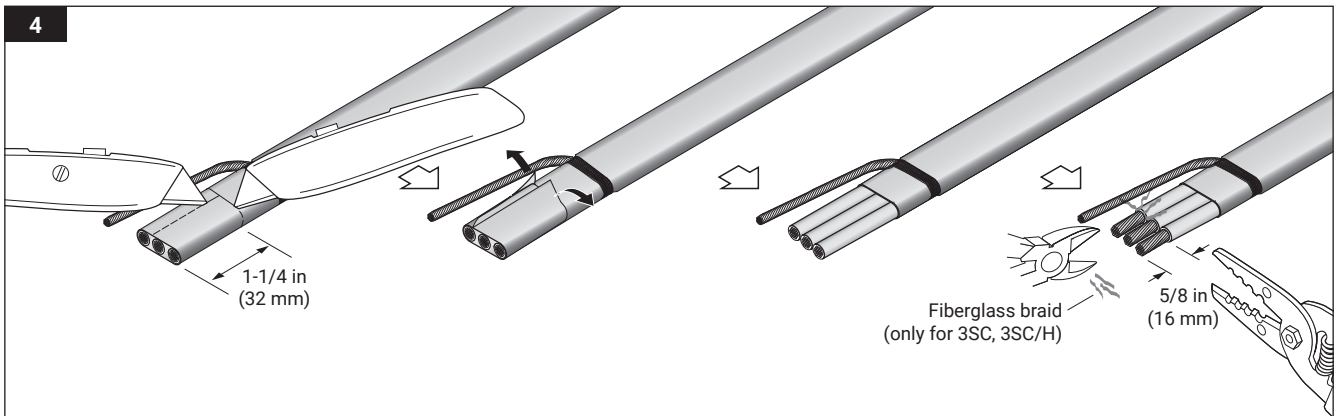
- For easier installation, apply cable lubricant inside grommet from each end.
- Slide the bushing and grommet onto heating cable in order and orientation shown.
- Position the box as shown.

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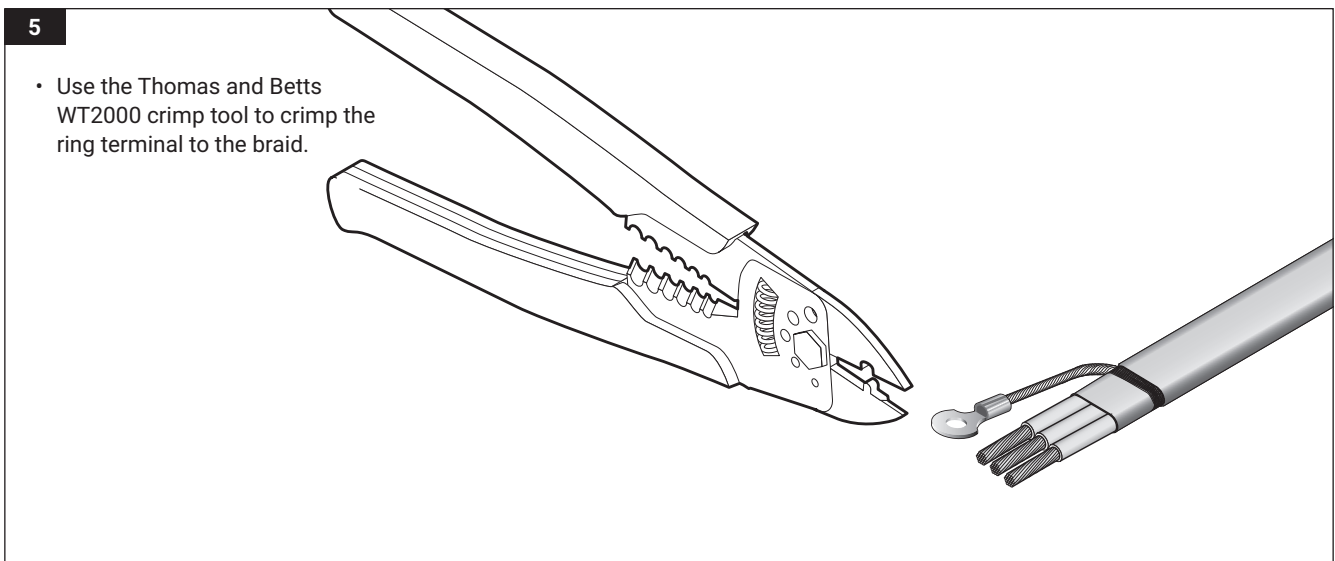
- Lightly score outer jacket around and down as shown.
- Bend heating cable to break jacket at score, then peel off jacket.
- Use a pointed object to separate the braid from the heating cable.
- Pull braid to the same side as small hole in side of box.
- Twist the braid to make a pigtail.

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- Lightly score inner jacket around and down as shown.
- Bend heating cable to break jacket at score then peel off jacket.
- Remove 5/8-inch (16 mm) of the insulation and fiberglass braid to expose the bare conductors.

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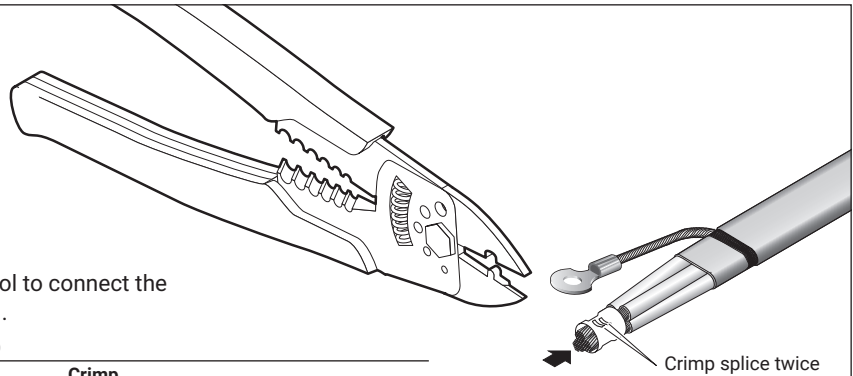
- Use the Thomas and Betts WT2000 crimp tool to crimp the ring terminal to the braid.

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- Twist the three conductors together.
- Use the Thomas & Betts WT2000 crimp tool to connect the three heating cable conductors (see table).

Heating cable ⁽¹⁾	Heating cable conductor size	Thomas & Betts (T&B)		
		Splice Catalog no.	Splice size	Crimp tool die
3SC30-CT	18 AWG	B14-PS-M	Small	Non-Insul
3SC40-CT	16 AWG	C10-PS-D	Large	Non-Insul
3SC50-CT	14 AWG	C10-PS-D	Large	Non-Insul

⁽¹⁾ The above table is also applicable for 3SC/H30, 40, 50 (-CT) and 3SC/F30, 40, 50 (-CR) heating cables. For replacement crimps, call nVent at (800) 545-6258.



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WARNING: Fire and Health Hazard

Soldering tools or minitorches 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.

Refer to solder material safety data sheet packaged with kit.

Do not overheat or char the conductor insulation. Inhalation of fumes can cause polymer fume fever, flu-like symptoms, irritation and difficulty breathing.

- Use only solder provided with kit. Only Kester 48 core LF has been qualified with SC kits.
- Heat splice using a soldering tool, or propane or MAPP gas torch. **Note:** MAPP gas may be required if the connections are being soldered at temperatures below -4°F (-20°C). Heat the center of the splice until it is hot enough to melt the solder placed at both ends.

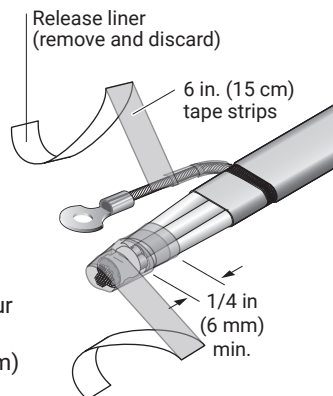
Allow the connection to cool before proceeding to the next step.



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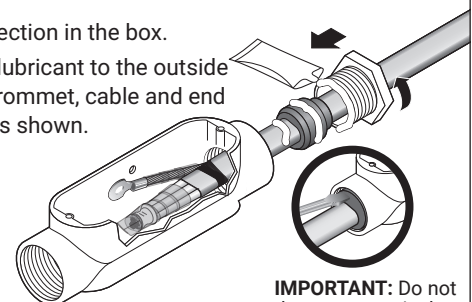
IMPORTANT: To ensure proper electrical insulation, use the specified high temperature Teflon® tape provided with the kit. Do not use common vinyl tape that does not have adequate temperature rating.

- Wrap connection with four strips of tape, covering splice and 1/4-inch (6 mm) of conductor insulation (approximately three overlapped layers).
- Wrap the braid with two tape strips.



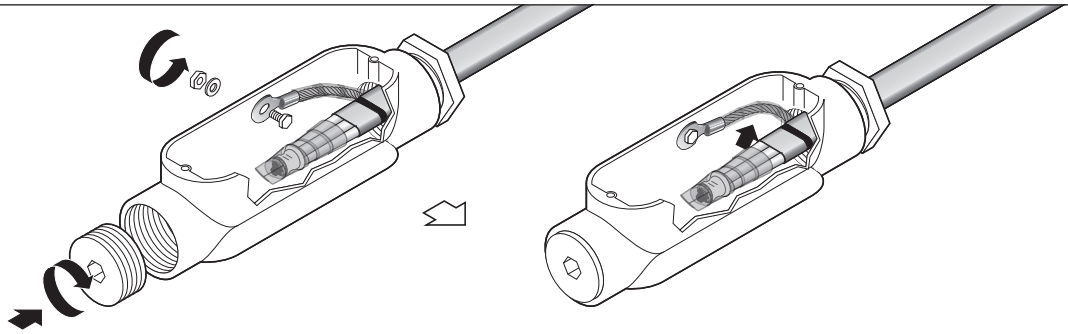
9

- Center connection in the box.
- Apply cable lubricant to the outside surface of grommet, cable and end of bushing as shown.
- Slide grommet into end of box and seat to the bottom of the threaded section using a screwdriver or blunt instrument.
- Slide bushing into end of box. Screw into threaded section and tighten with a wrench.



IMPORTANT: Do not damage outer jacket of heating cable

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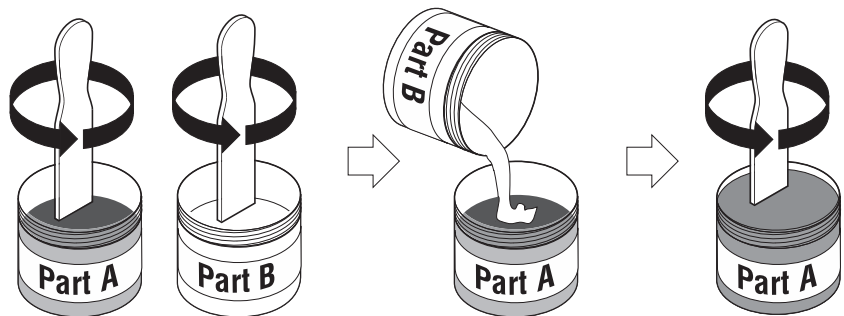


- Position lock washer and nut on outside of box. Fasten braid ring terminal using bolt.
- Install the plug.

- Push braid wire as far away from connection as possible.
- Position taped connection so it is centered and not touching the surface of enclosure, braid wire or ground screw.
- All braid wires must be fully contained within box. Reposition connection if necessary.

11

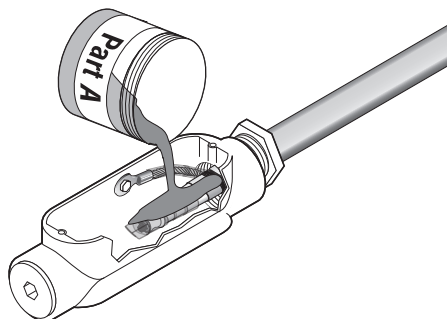
WARNING: Health Hazard
Refer to silicone rubber material safety data sheet packaged with kit.



- Open the two containers: one labeled Part A, and the other Part B.
- Use separate wooden sticks to stir the contents of each container until smooth and homogeneous.

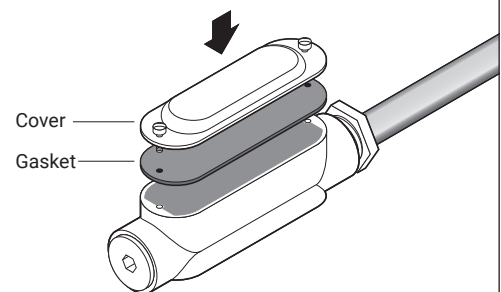
- Pour all the contents of the container labeled Part B into the container labeled Part A and mix thoroughly until the color is uniform.

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- Pour the potting compound mixture into the box.
- Potting compound must fill the box and cover all connections.

13

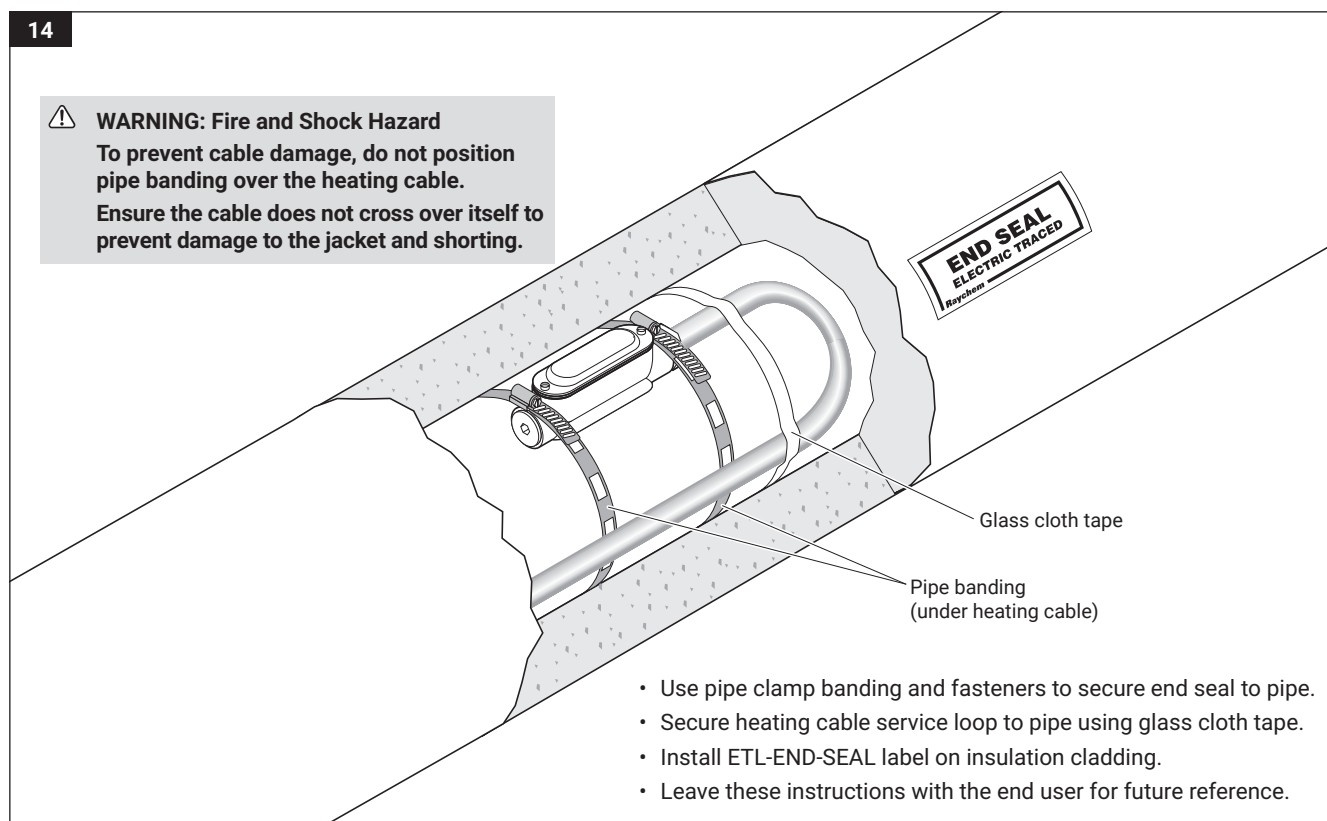


- Secure the cover and gasket using the two screws provided.


WARNING: Fire and Shock Hazard

To prevent cable damage, do not position pipe banding over the heating cable.

Ensure the cable does not cross over itself to prevent damage to the jacket and shorting.



- Use pipe clamp banding and fasteners to secure end seal to pipe.
- Secure heating cable service loop to pipe using glass cloth tape.
- Install ETL-END-SEAL label on insulation cladding.
- Leave these instructions with the end user for future reference.

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