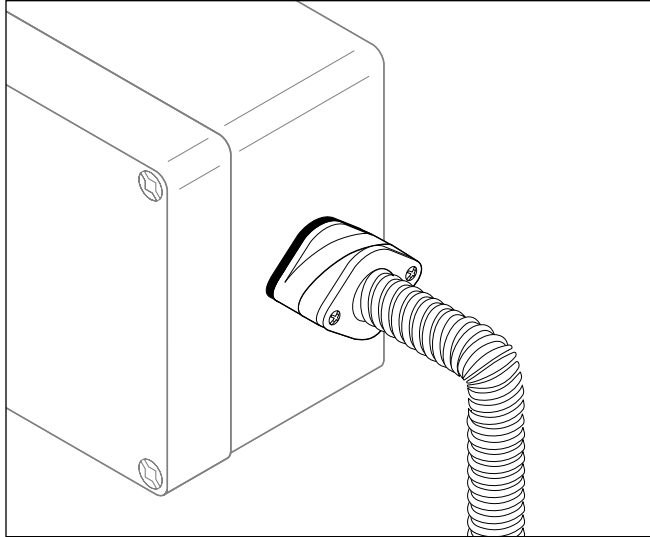


Installation Instructions



Description

The C75-100-A is a NEMA 4X rated gland kit used to transition heating cables into a junction box when making connections off of a pipe, tank or roof. It may be used for power, splice, or tee connections. The C75-100-A is for use with Raychem® BTV-CR, BTV-CT, QTVR-CT, XTV-CT, KTV-CT⁽¹⁾, LBTV2-CT⁽²⁾, VPL-CT industrial parallel heating cables and GM-XT roof and gutter de-icing heating cables. The kit does not include the junction box, flexible tubing, or tape, which are required to make a complete connection.

For technical support call Tyco Thermal Controls at (800) 545-6258.

Tools Required

- Utility knife
- Wire cutters
- No. 2 Phillips or 1/4" (6 mm) slotted screwdriver
- For LBTV2-CT only: Heat gun or mini-torch
- Needle nose pliers
- Adjustable pliers
- Marker
- 3/16" (4 mm) or smaller slotted screwdriver
- Wire stripper (for VPL)

Additional Materials Required

- Agency approved NEMA 4X rated junction box with 3/4" NPT threaded entry or through hole.
- Tape GT-66 Installation temperature above 40°F (5°C)
GS-54 Installation temperature above -40°F (-40°C)
- One length of flexible tubing, 6 ft (1 3/4 m) maximum, Raychem HCTE-1000-0 P/N 3679754004
- ⁽¹⁾ For KTV only: PMK-GP-10 grommet P/N 700823-000
- ⁽²⁾ For LBTV2-CT only: HCS-100-A heat shrink core sealer P/N 257649-000 and PMK-GK-10 grommet P/N 222724-000

Approvals

Hazardous Locations



Class I, Div. 2, Groups A, 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

For BTV and LBTV2 heating cable systems only.



Class I, Div. 2, Groups A, B, C, D
GM-XT heating cable system only

Non-Hazardous Locations



De-icing and Snow Melting
Equipment for GM-XT
heating cable system only

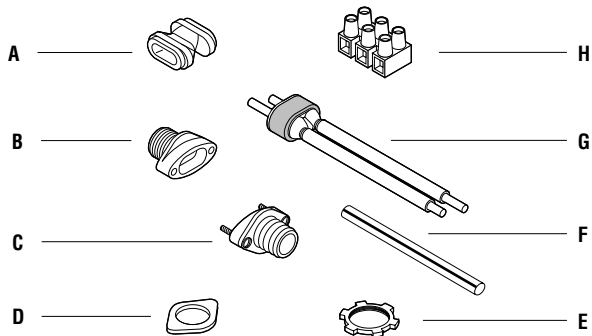


GM-XT heating cable
system only



Kit Contents

Item	Qty	Description
A	1	Red grommet
B	1	Gland with threaded inserts
C	1	Gland with screws
D	1	Gland gasket
E	1	Locknut
F	1	Green/yellow tube
G	1	CS-100 core sealer
H	1	Terminal block



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 Tyco Thermal Controls, agency certifications, and the 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 Tyco Thermal Controls-specified parts only. Do not use substitute parts or vinyl electrical tape.
- The black heating cable core and fibers are conductive and can short. They 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.
- Use only fire-resistant insulation materials, such as fiberglass wrap or flame-retardant foam.

CAUTION:

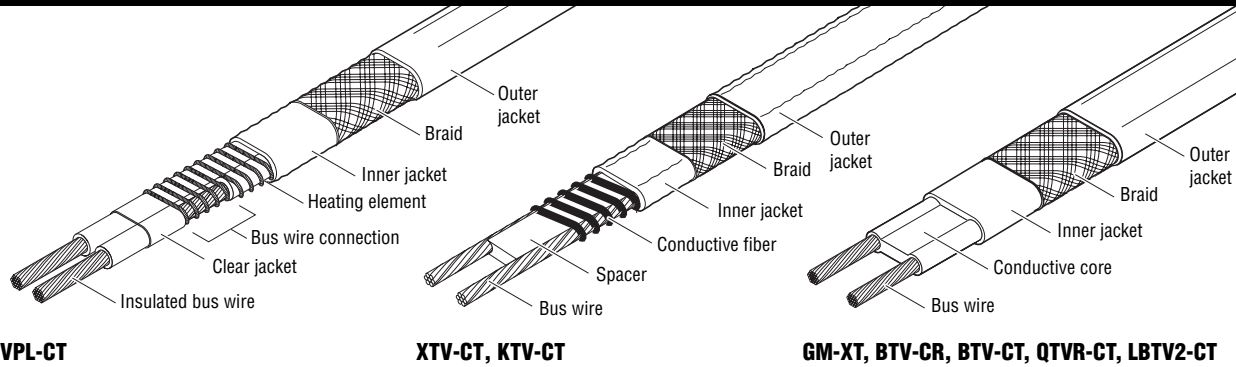
Health Hazard: Prolonged or repeated contact with the sealant in the core sealer may cause skin irritation. Wash hands thoroughly. Overheating or burning the sealant will produce fumes that may cause polymer fume fever. Avoid contamination of cigarettes or tobacco. Consult MSDS RAY5510 for further information.

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

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

C75-100-A Installation Instructions

Heating cable types



1

- Select correct grommet from the chart below.

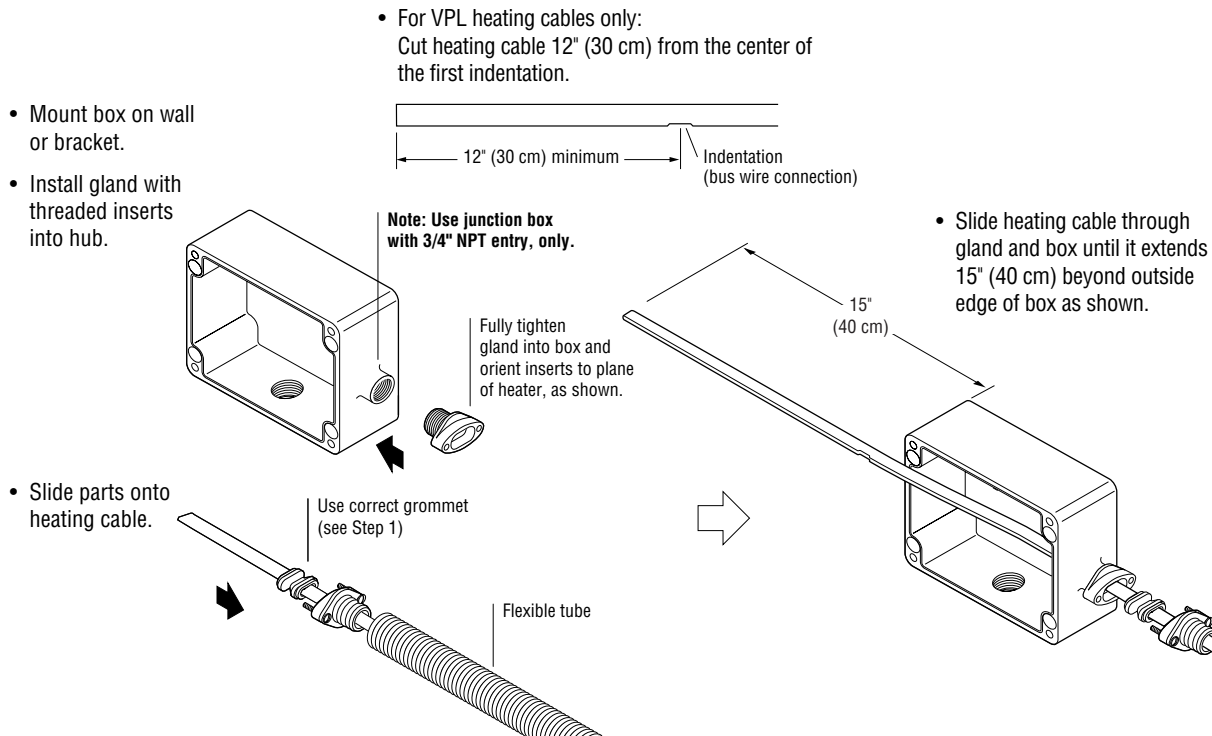
Heating Cable	Grommet
GM-XT, BTV-CR, BTV-CT, QTVR-CT, XTV-CT, VPL-CT	Red
KTV-CT	P*
LBTV2-CT	K*

* Order separately

⚠ WARNING: Use of the wrong grommet can result in leaks, cracked components, shock or fire, and will invalidate approvals and certifications.

- For LBTV2-CT a separate heat-shrinkable core sealer is required. Order one HCS-100 heat shrink core sealer.

2a For threaded junction boxes



2b For through hole junction boxes

- Mount box on wall or bracket.
- Install gland with gasket into box wall; secure with locknut.
- Slide parts onto heating cable.

• For VPL heating cables only:
Cut heating cable 12" (30 cm) from the center of the first indentation.

Labels in diagram: Lock nut, Gasket, Gland with inserts, Indentation (bus wire connection), 12" (30 cm) minimum, 15" (40 cm), Use correct grommet (see step 1), Flexible tube.

- Slide heating cable through gland and box until it extends 15" (40 cm) beyond outside edge of box as shown.

2c For GM-XT and threaded junction boxes (outdoor location)

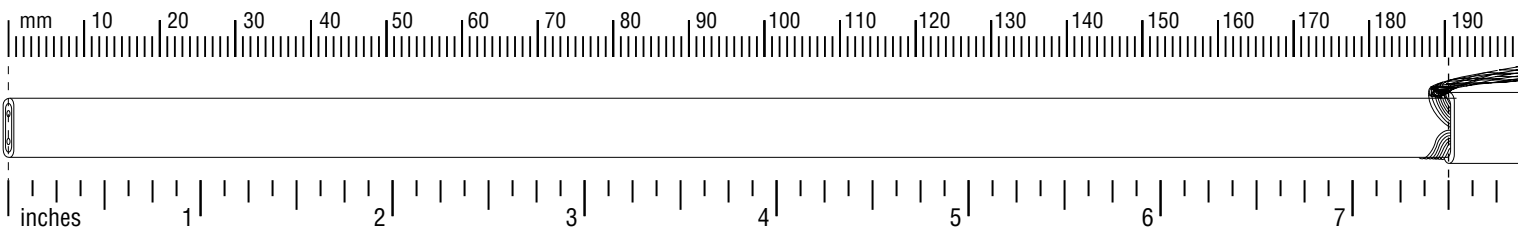
- Thread the cap of the Y fitting with 3/4" NPT entry.
- Thread the gland fitting without the captive screws into the cap of the Y fitting.
- Slide parts onto heating cable.

Note: If your installation requires that the heating cable be installed in flexible conduit as shown in 14B, add the appropriate amount of heating cable.

⚠ WARNING: This configuration is supporting the junction box with a non-metal mounting gland. It may only be used where not exposed to a mechanical stress, impact, or static loading, such as protected by shield or out of the height range of people and moving equipment.

Labels in diagram: 15" (40 cm), Y fitting See 14b for details, Use correct grommet (see Step 1).

- Slide heating cable through gland and box until it extends 15" (40 cm) beyond outside edge of box as shown.
- Thread junction box onto gland fitting.



C75-100-A Installation Instructions

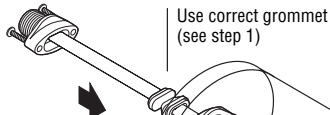
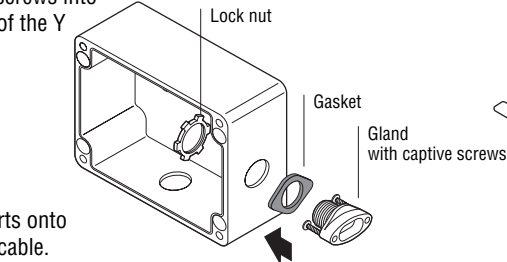
2d For GM-XT and through hole junction boxes (indoor dry location)

- Thread the cap of the Y fitting with 3/4" NPT entry.
- Thread the gland fitting without the captive screws into the cap of the Y fitting.

Note: If your installation requires that the heating cable be installed in flexible conduit as shown in 14C, add the appropriate amount of heating cable.

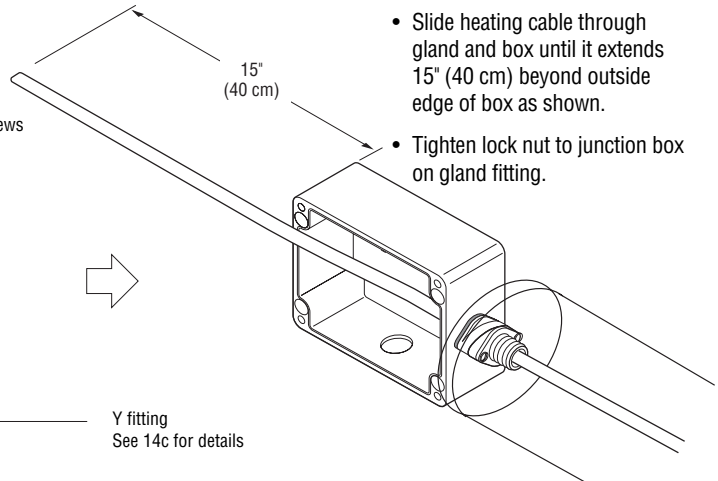
⚠ WARNING: This configuration is supporting the junction box with a non-metal mounting gland. It may only be used where not exposed to a mechanical stress, impact, or static loading, such as protected by shield or out of the height range of people and moving equipment.

- Slide parts onto heating cable.



Y fitting
See 14c for details

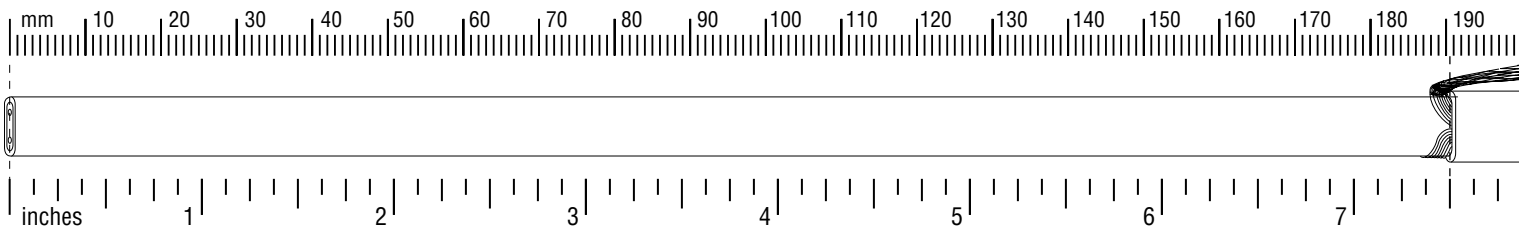
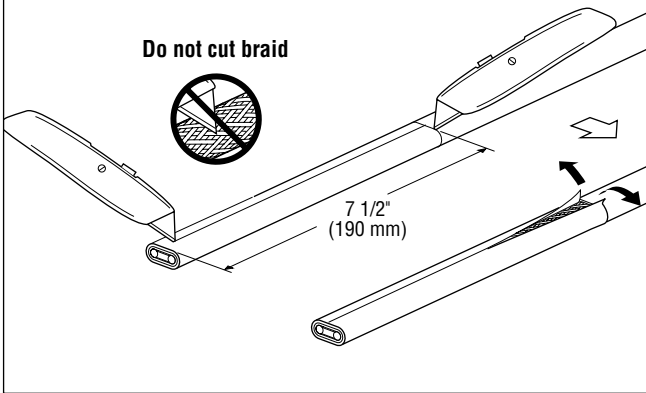
- Slide heating cable through gland and box until it extends 15" (40 cm) beyond outside edge of box as shown.
- Tighten lock nut to junction box on gland fitting.

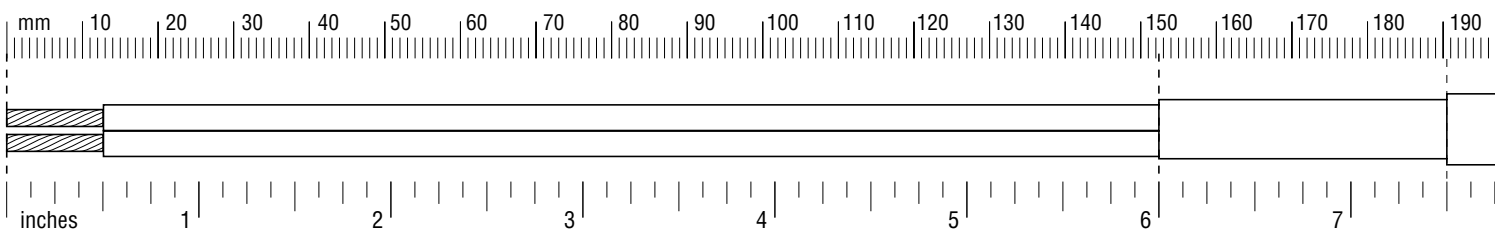
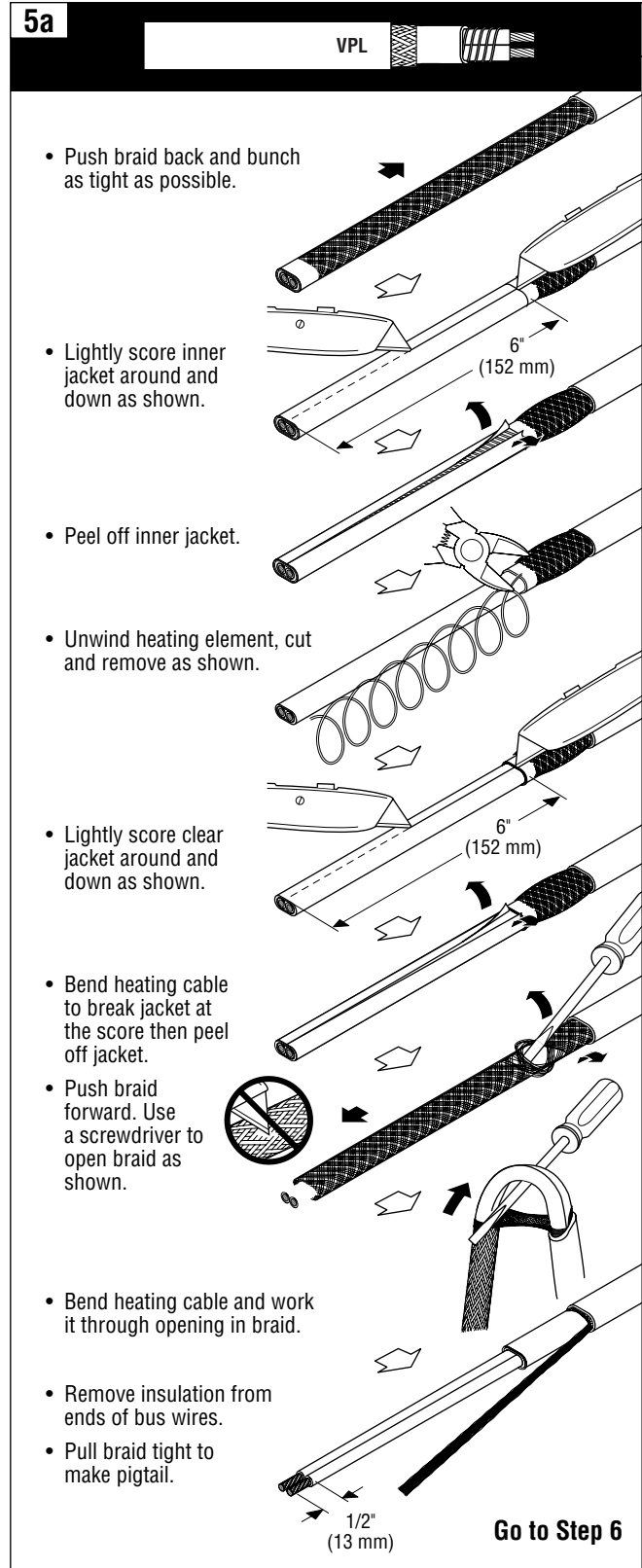
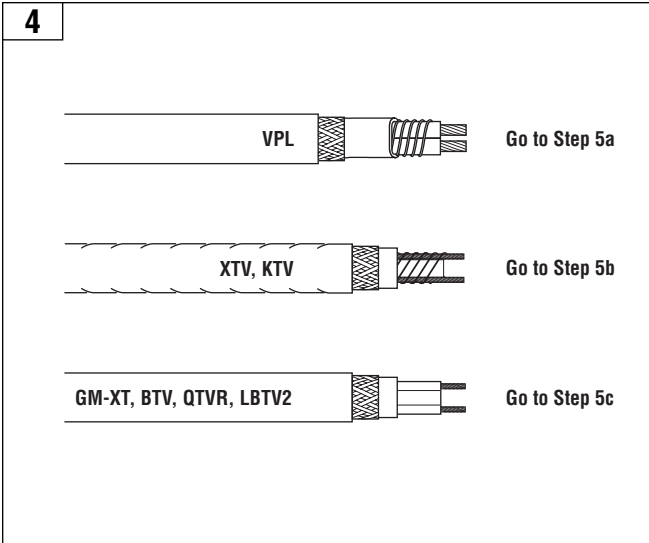


3

- Lightly score outer jacket around and down as shown.
- Bend heating cable to break jacket at score, then peel off jacket.

Do not cut braid





C75-100-A Installation Instructions

5b XTV, KTV

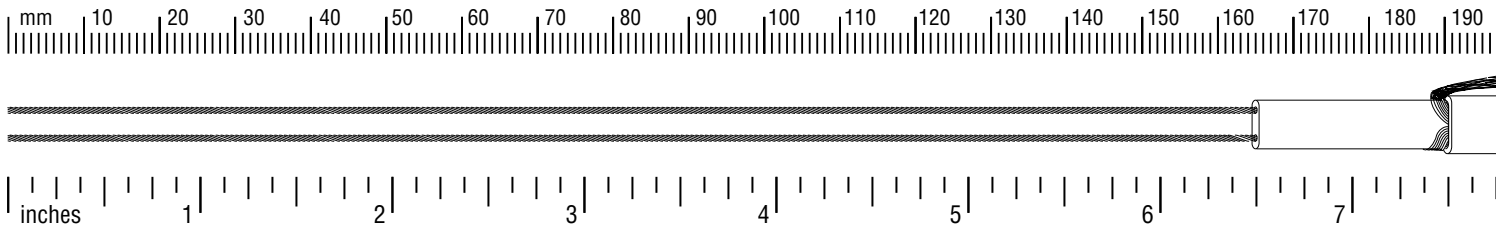
- Push braid back to create a pucker.
- At pucker use a screwdriver to open braid.
- Bend heating cable and work it through opening in braid.
- Lightly score base jacket around and down as shown.
- Peel off base jacket.
- Cut and remove all fiber strands.
- Score and remove center spacer.
- Remove any remaining fiber material from bus wires.
- Pull braid tight to make pigtail.

Go to Step 6

5c GM-XT, BTV, QTVR, LBTV2

- Push braid back to create a pucker.
- At pucker use a screwdriver to open braid.
- Bend heating cable and work it through opening in braid.
- Lightly score base jacket around and down as shown.
- Peel off base jacket.
- Notch core.
- Peel bus wire from core.
- Score core between bus wires at inner jacket.
- Bend and snap core.
- Peel core from bus wire.
- Remove any remaining core material from bus wires.
- Pull braid tight to make pigtail.

Go to Step 6

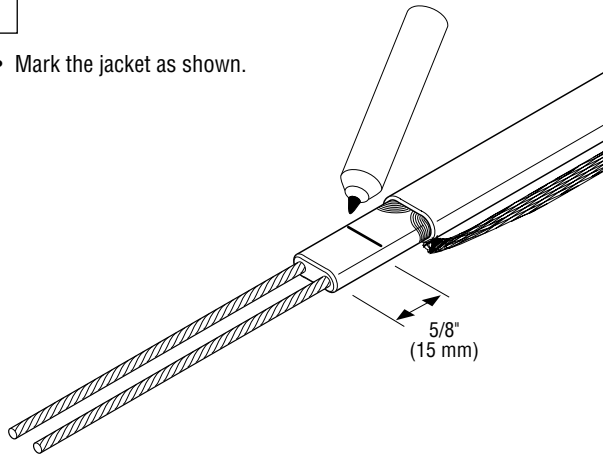


C75-100-A Installation Instructions

C75-100-A Installation Instructions

6

- Mark the jacket as shown.



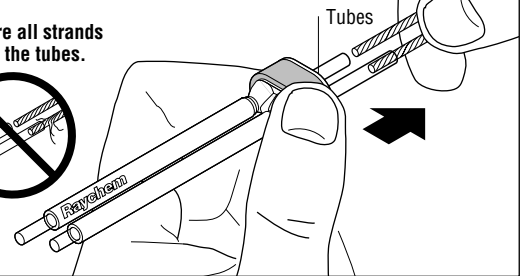
7

CAUTION: Health Hazard.

Wash hands after contact with sealant. Consult material safety data sheet RAY5510.

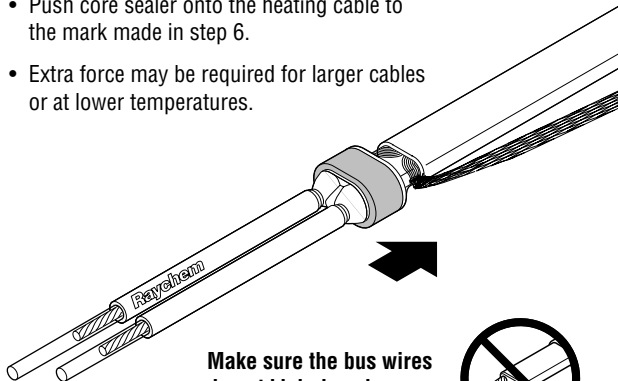
- If needed, re-twist and straighten bus wires, then insert into the guide tubes as shown.

Make sure all strands go into the tubes.



8

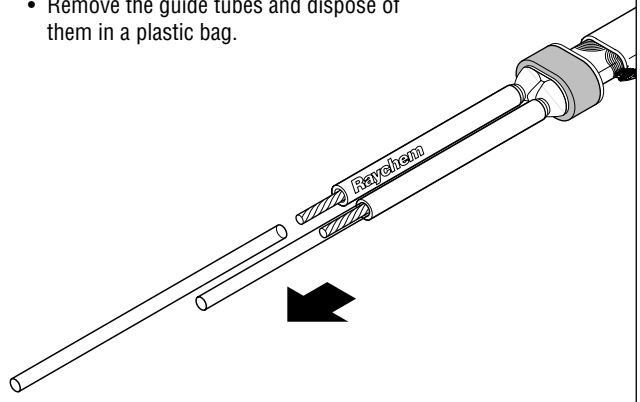
- Push core sealer onto the heating cable to the mark made in step 6.
- Extra force may be required for larger cables or at lower temperatures.



Make sure the bus wires do not kink, bunch, or crossover.

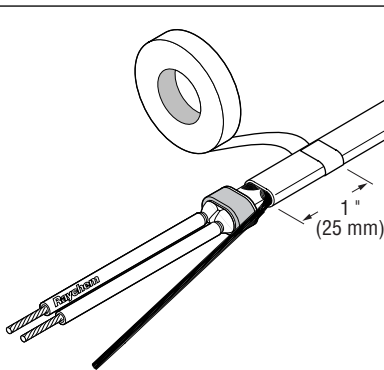
9

- Remove the guide tubes and dispose of them in a plastic bag.

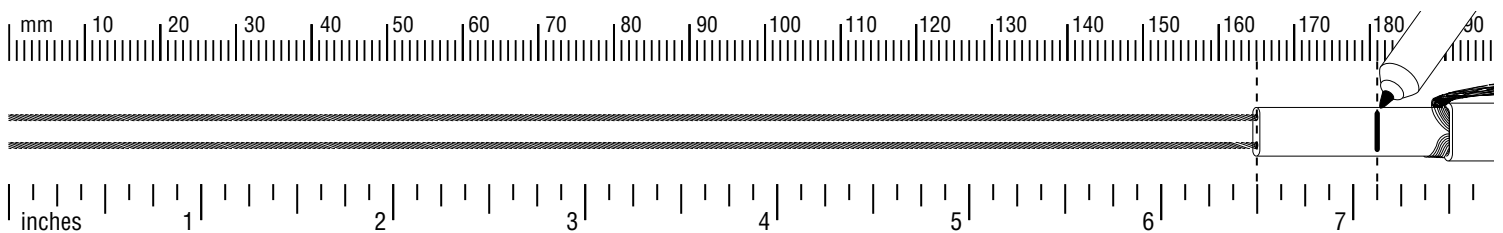
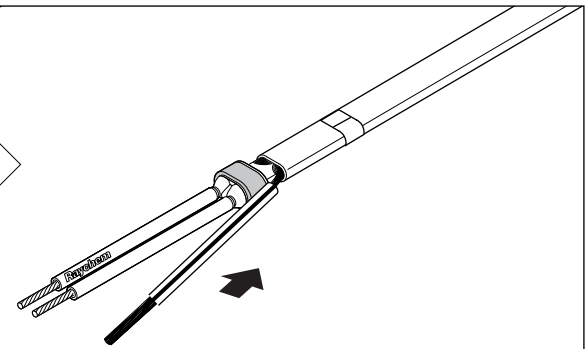


10

- Apply 3 wraps of glass tape (Raychem GT-66 or GS-54).



- Slip the green/yellow tube onto the braid. Heat shrinking is not required.

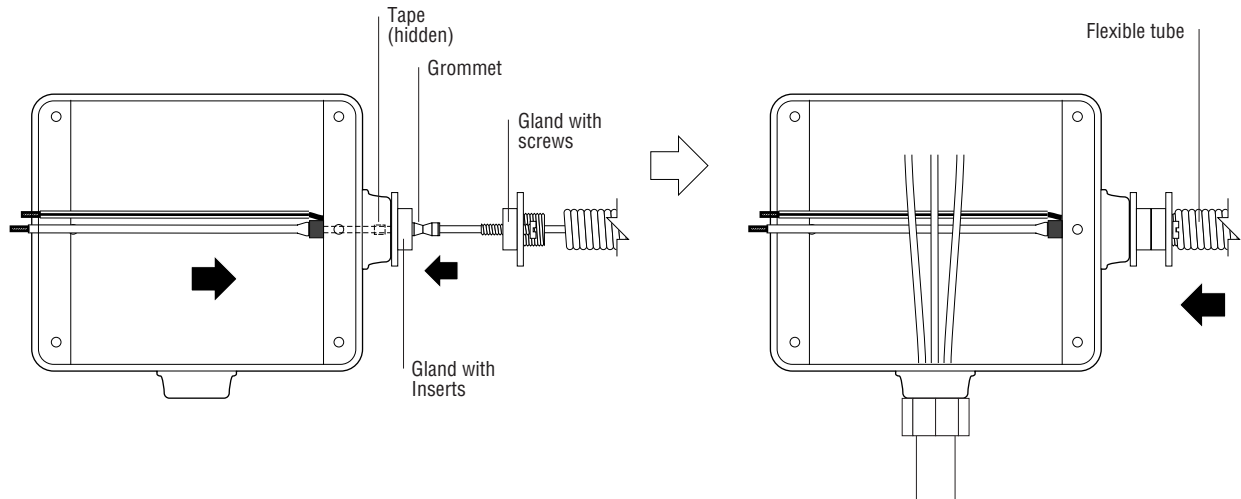


C75-100-A Installation Instructions

11a For threaded junction boxes

- Pull cable back through gland and box until tape is located just inside hub.
- Seat grommet in gland as shown.

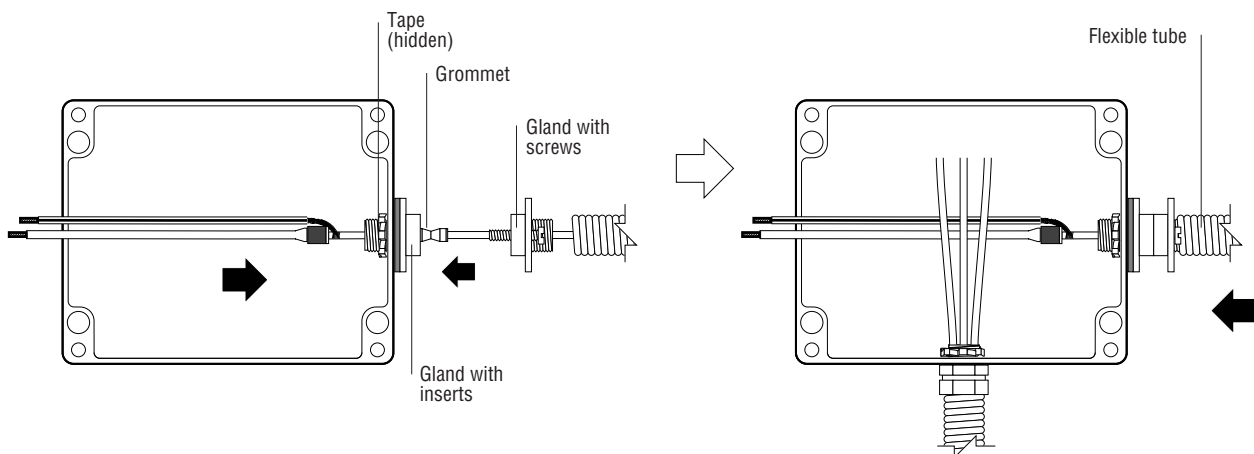
- Position gland with screws next to grommet and tighten screws.
- Thread flexible tube onto gland.
- Install conduit and pull in power and ground wires for power connections.



11b For through hole junction boxes

- Pull cable back through gland and box until tape is located just inside gland with inserts.
- Seat grommet in gland as shown.

- Position gland with screws next to grommet and tighten screws.
- Thread flexible tube onto gland.
- Install conduit and pull in power and ground wires for power connections.

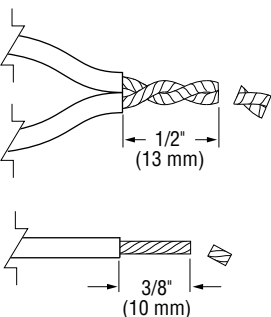


12

Note the following instructions on bus wire preparation:

For tee, install two wires in one terminal:

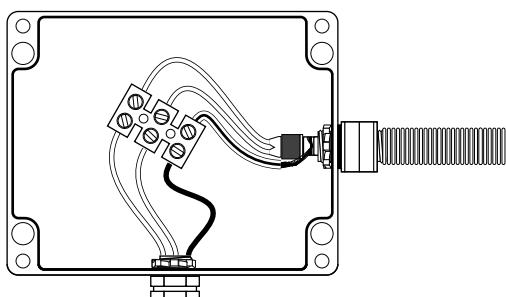
- Twist appropriate wire pair together.
- Trim twisted wires to 1/2" (13 mm).



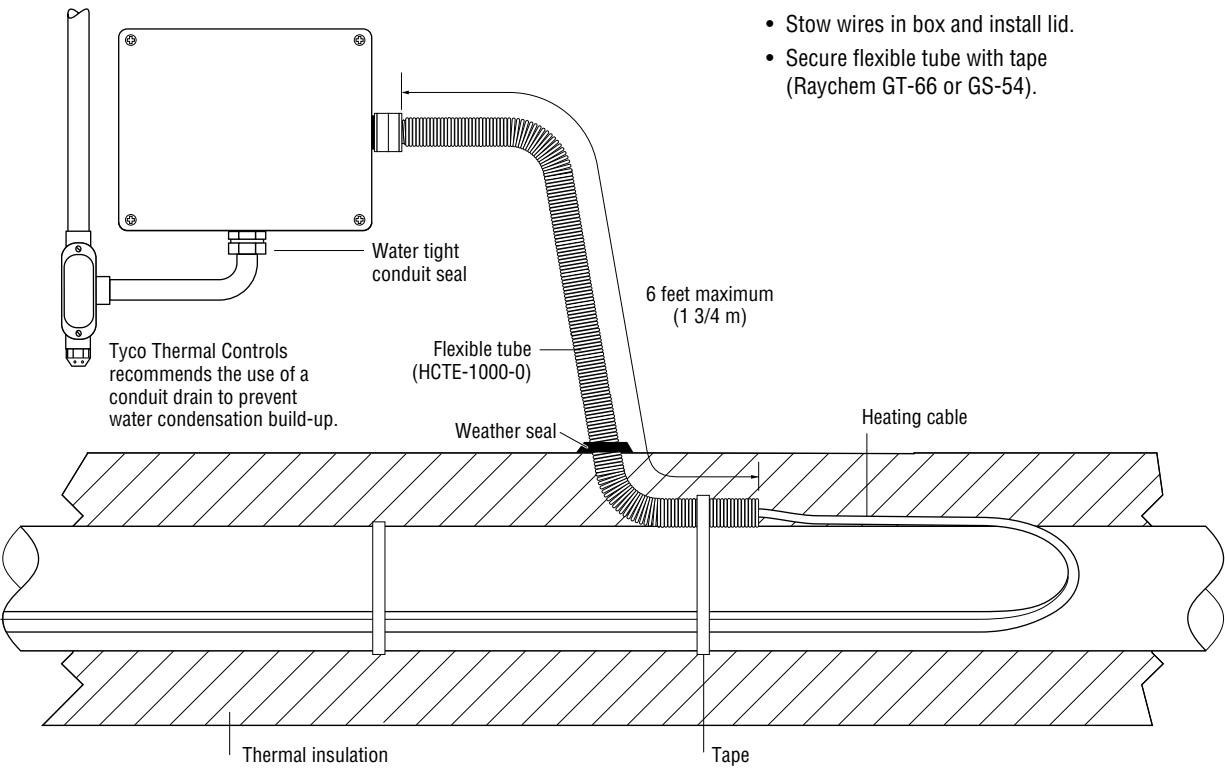
Otherwise, trim single wires to 3/8" (10 mm).

13

- Connect bus wires and braid to terminal block.
- Connect power wires and ground wire to terminal block for power connections. This connection must be protected by a ground-fault equipment protection device.



14a



- Stow wires in box and install lid.
- Secure flexible tube with tape (Raychem GT-66 or GS-54).

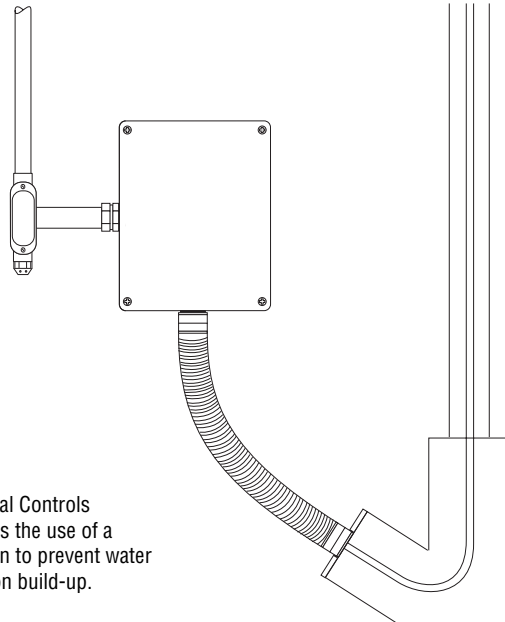
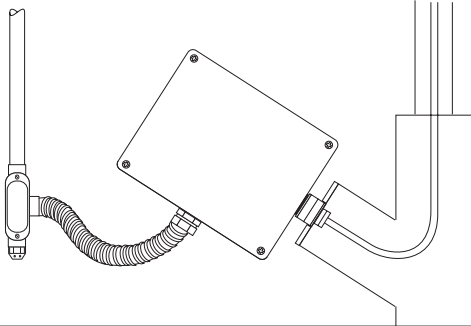
Labels in diagram: Tyco Thermal Controls recommends the use of a conduit drain to prevent water condensation build-up. Water tight conduit seal. Flexible tube (HCTE-1000-0). 6 feet maximum (1 3/4 m). Weather seal. Heating cable. Thermal insulation. Tape.

C75-100-A Installation Instructions

14b For GM-XT and threaded junction boxes (outdoor location)

- Install the junction box either directly to the gland fitting in the cap of the Y fitting or to the end of the flexible conduit as shown below.
- Stow wires in box and install lid.

⚠ WARNING: This configuration is supporting the junction box with a non-metal mounting gland. It may only be used where not exposed to a mechanical stress, impact, or static loading, such as protected by shield or out of the height range of people and moving equipment.

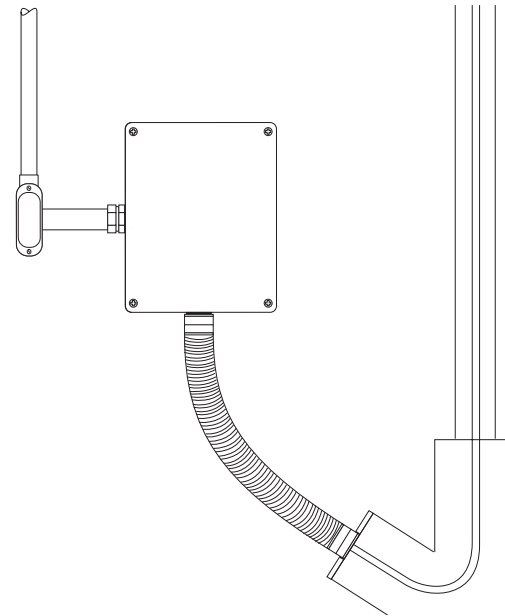
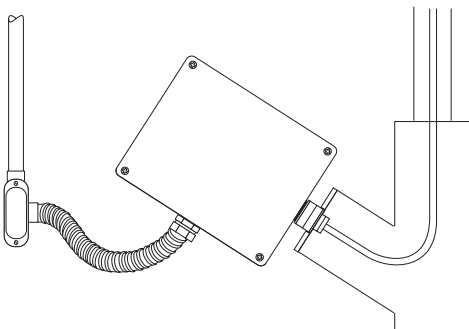


Tyco Thermal Controls recommends the use of a conduit drain to prevent water condensation build-up.

14c For GM-XT and through hole junction boxes (indoor dry location)

- Install the junction box either directly to the gland fitting in the cap of the Y fitting or to the end of the flexible conduit as shown below.
- Stow wires in box and install lid.

⚠ WARNING: This configuration is supporting the junction box with a non-metal mounting gland. It may only be used where not exposed to a mechanical stress, impact, or static loading, such as protected by shield or out of the height range of people and moving equipment.



Tyco and Raychem are trademarks or registered trademarks of Tyco Thermal Controls LLC or its affiliates.

Worldwide Headquarters
Tyco Thermal Controls
 300 Constitution Drive
 Menlo Park, CA 94025-1164
 USA
 Tel (800) 545-6258
 Fax (800) 527-5703
 info@tycothermal.com
 www.tycothermal.com

Canada
Tyco Thermal Controls
 250 West St.
 Trenton, Ontario
 Canada K8V 5S2
 Tel (800) 545-6258
 Fax (800) 527-5703

Important: All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their particular application. Tyco Thermal Controls makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Tyco Thermal Controls' only obligations are those in the Tyco Thermal Controls Standard Terms and Conditions of Sale for this product, and in no case will Tyco Thermal Controls or its distributors be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Specifications are subject to change without notice. In addition, Tyco Thermal Controls reserves the right to make changes—without notification to Buyer—to processing or materials that do not affect compliance with any applicable specification.