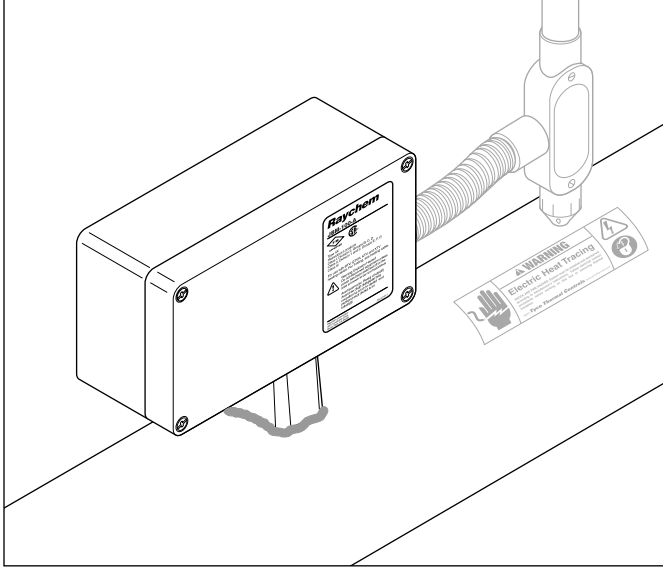


## JBM-100-A Power Connection, Powered Splice, Powered Tee, Dual Power Connection, Splice or Tee with Junction Box

### Installation Instructions



#### Description

The JBM-100-A is a NEMA 4X-rated connection kit. It is designed for use with Raychem® BTV-CR, BTV-CT, QTVR-CT, XTV-CT, KTV-CT and VPL-CT industrial parallel heating cables. The kit can be used to connect one, two, or three heating cables to power, to connect two separate heat-trace circuits, or to splice or tee up to three heating cables. Note: For two or more heating cables powered by one circuit, the total length of all heating cables entering the box must not exceed the maximum circuit length published in the applicable heating cable data sheet. 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 Tyco Thermal Controls at (800) 545-6258.

#### Tools Required

- Wire cutters
- Utility knife
- Needle nose pliers
- 3/8" hex key (required for splice and tee connections)
- Marking pen
- 1/4" or smaller slotted screwdriver
- Large slotted screwdriver
- Adjustable pliers
- Wire stripper (for VPL-CT)

#### Additional Materials Required

- Pipe strap
- GT-66 or GS-54 glass cloth tape

#### Optional Materials

- Recommended conduit drain: JB-DRAIN-PLUG-3/4IN P/N 278621-000
- Small pipe adapter for 1" (25 mm) and smaller pipes: Catalog number JBM-SPA P/N D55673-000

#### Approvals

##### Hazardous Locations

CL I, ZN1, AEx e II\* <sup>(1)</sup>

Ex e II T\*



Class I, Div. 2, Groups A, B, C, D  
Class II, Div. 1 and 2, Groups E, F, G  
Class III

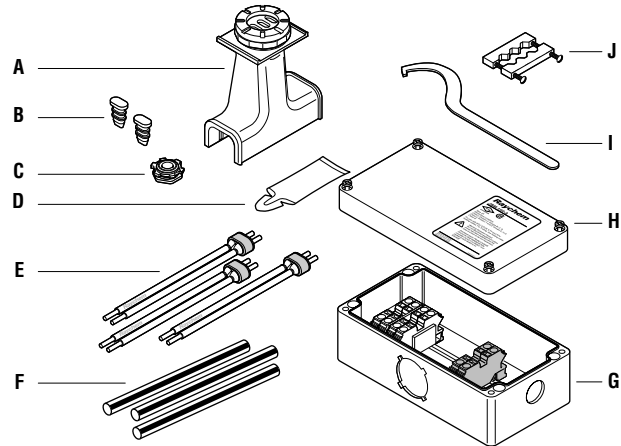
Temp Code\*

<sup>(1)</sup> Except VPL

\*For system Temperature Code, see heating cable or design documentation.

#### Kit Contents

Item	Qty	Description
A	1	Stand assembly
B	2	Grommet plugs
C	1	Box plug, o-ring, and locknut
D	1	Cable lubricant
E	3	Core sealers
F	3	Green/yellow tubes
G	1	Box with terminals (max: 3/4" conduit & 8 AWG wire)
H	1	Lid
I	1	Spanner
J	1	Strain relief



#### ⚠ 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 national electrical codes, ground-fault equipment protection must be used. Arcing may not be stopped by conventional circuit breakers.
- The power connection may be powered by more than one circuit. Be sure all power sources are de-energized before opening box.

- 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.

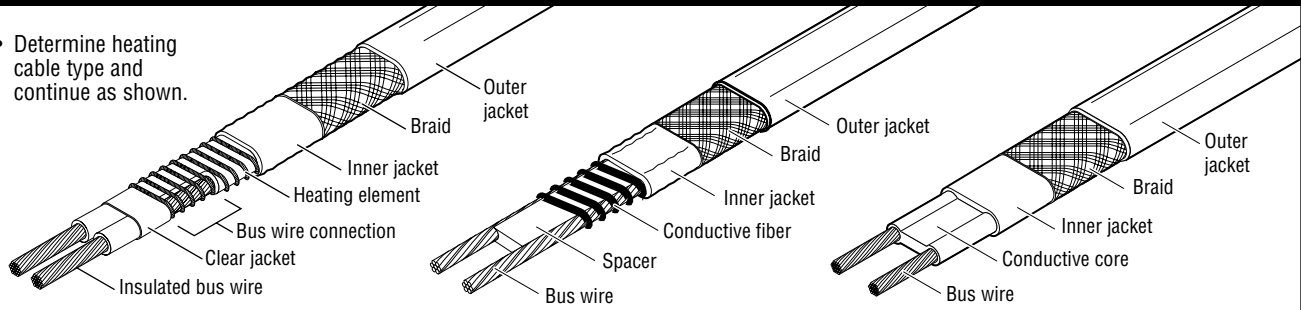
CHEMTREC 24-hour emergency telephone:  
(800) 424-9300.

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

**JBM-100-A Installation Instructions**

**Heating cable types**

- Determine heating cable type and continue as shown.



**VPL**  
Go to Step 1a

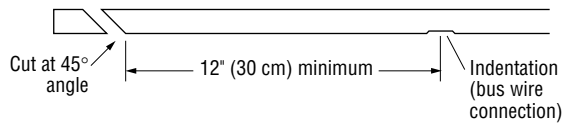
**XTV-CT, KTV-CT**  
Go to Step 1b

**BTV-CR, BTV-CT, QTVR-CT**  
Go to Step 1b

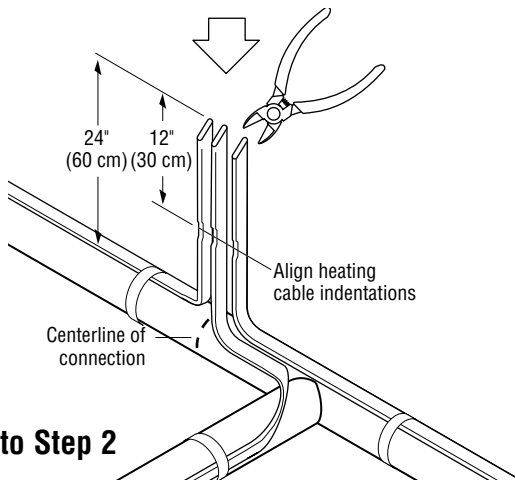
**1a**



- Cut each heating cable 12" (30 cm) from the center of the first indentation, cut at a 45° angle.

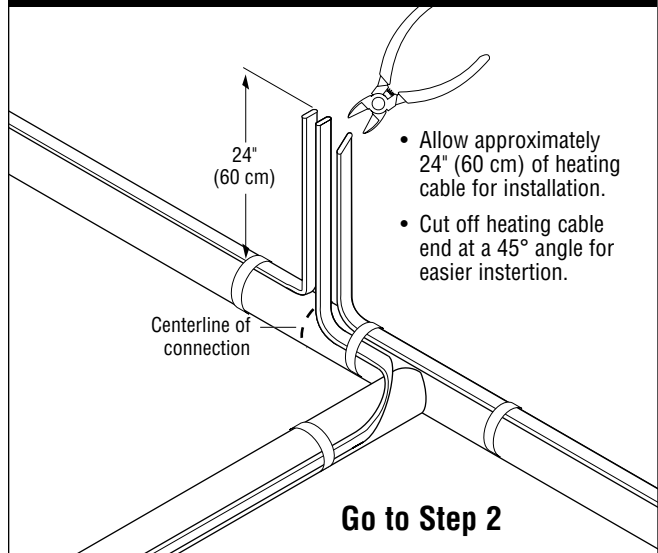


- After heating cable has been cut, align indentations. Allow approximately 24" (60 cm) of heating cable for installation.



**Go to Step 2**

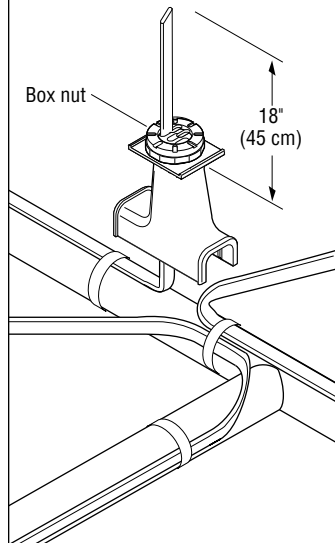
**1b**



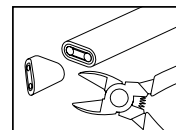
**Go to Step 2**

**2**

Complete steps 2 through 6 for each heating cable before going on to the next length of heating cable.



- **Do not remove box nut from stand.** Push heating cable through stand and nut as shown. Use cable lubricant if needed.
- Square off cable end with 90° angle cut.



- Do not attach stand to pipe until step 8.

**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.**

7 1/2" (190 mm)

**4**

- Determine heating cable type and continue as shown.

	Go to Step 5a
	Go to Step 5b
	Go to Step 5c

**5a**

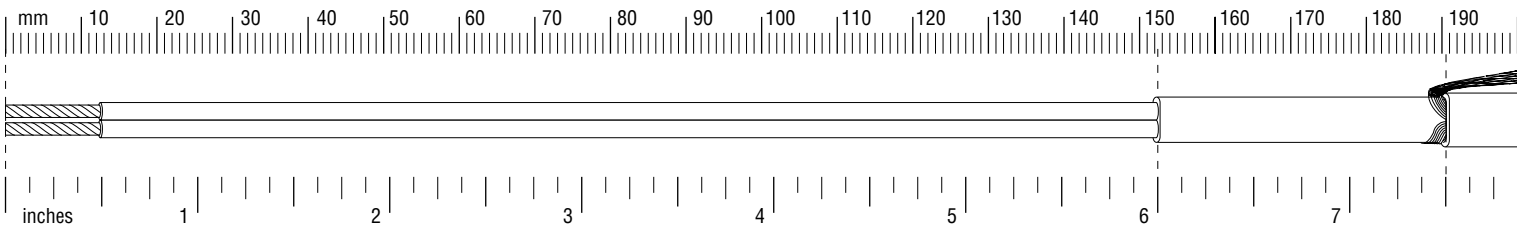
- Push braid back and bunch as tight as possible.
- Lightly score inner jacket around and down as shown.
- Peel off inner jacket.
- Unwind heating element, cut and remove as shown.
- Lightly score clear jacket around and down as shown.
- Bend heating cable to break jacket at the score then peel off jacket.
- Push braid forward. Use a screwdriver to open braid.
- Bend heating cable and work it through opening in braid.
- Remove insulation from ends of bus wires.
- Pull braid tight to make pigtail.

6" (152 mm)

6" (152 mm)

1/2" (13 mm)

**Go to Step 6**

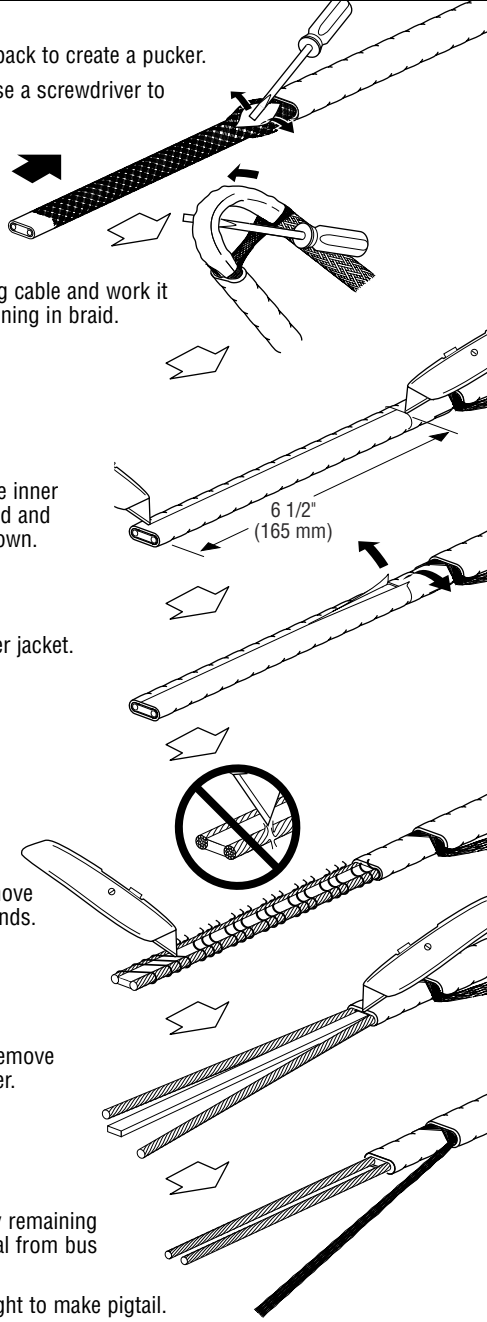


**JBM-100-A Installation Instructions**

**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 inner jacket around and down as shown.
- Peel off inner 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.

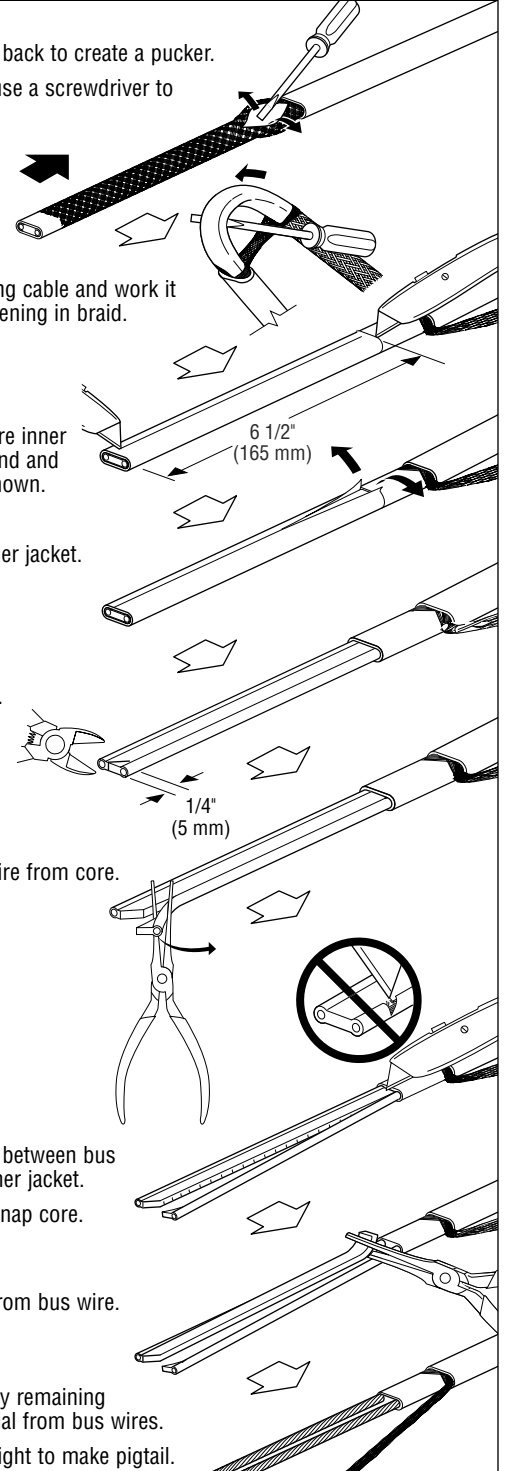


**Go to Step 6**

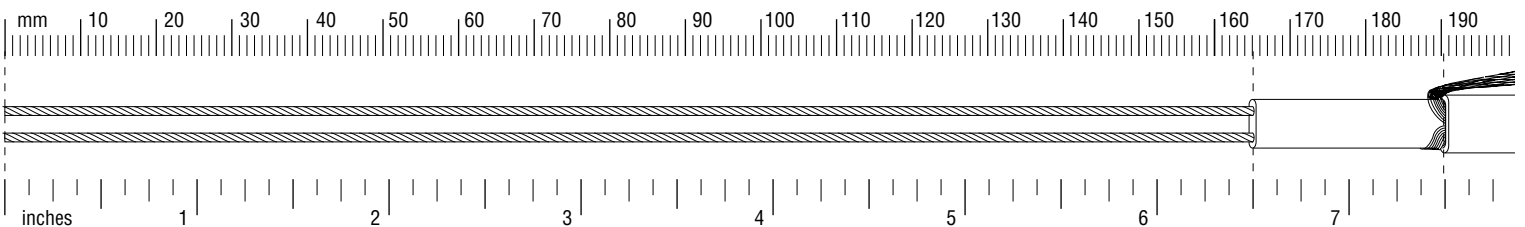
**5c**

**BTV, QTVR**

- 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 inner jacket around and down as shown.
- Peel off inner 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**



**JBM-100-A Installation Instructions**

**6**

- Mark the jacket as shown.

5/8" (15 mm)

**7**

- Pull heating cable back into stand as shown. Use cable lubricant if needed.

1 1/4" (32 mm)

- Repeat steps 2 through 7 for other heating cables before continuing to step 8.

**8**

- Fasten stand to pipe. Do not pinch heating cables.
- Loop and tape extra heating cable to pipe.

Note: For 1" (25 mm) and smaller pipes, use adapter (purchased separately) and install between stand and pipe.

JBM-SPA adapter for small pipes

Position adapter this side up.

Pipe strap

Glass cloth tape

**9**

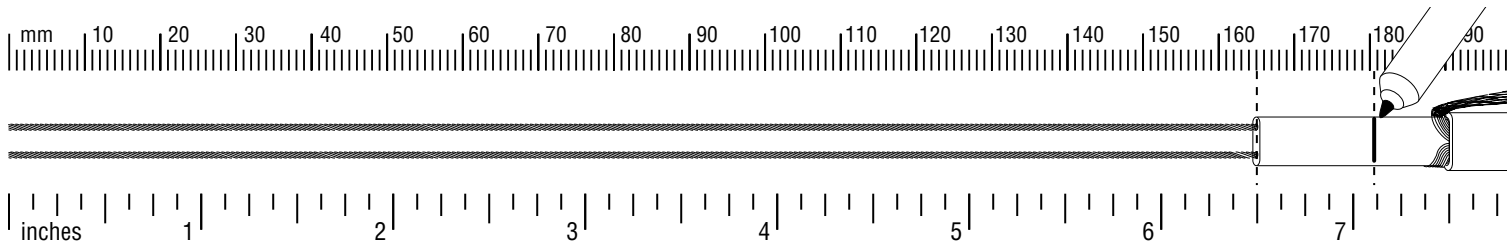
- Remove box nut.

- Install grommet plugs in unused openings.

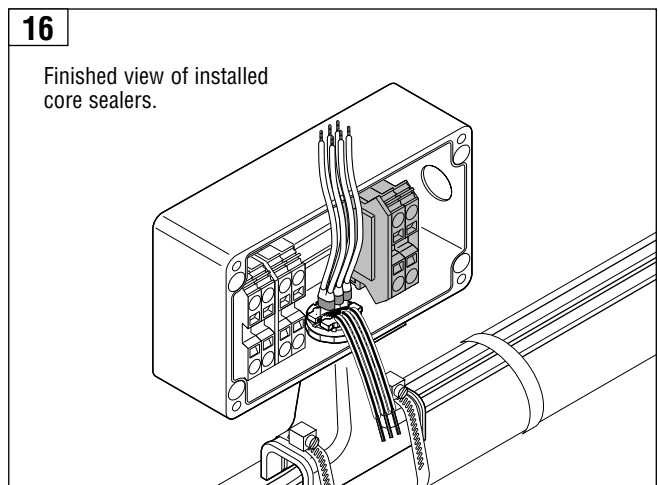
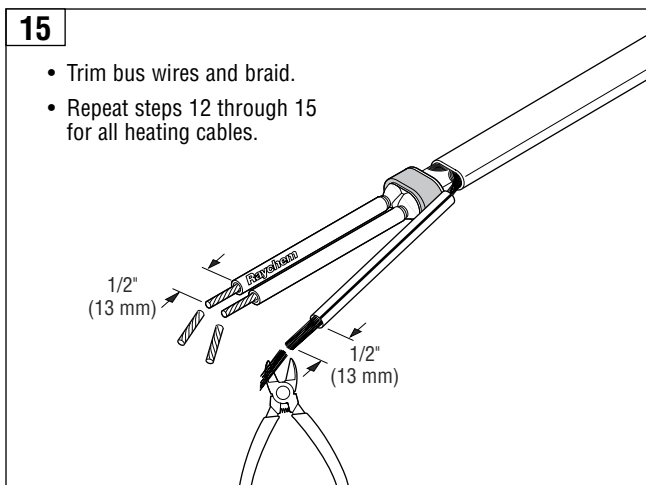
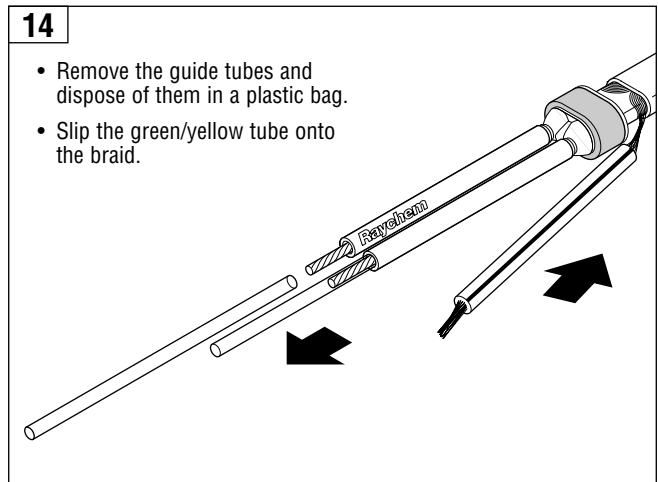
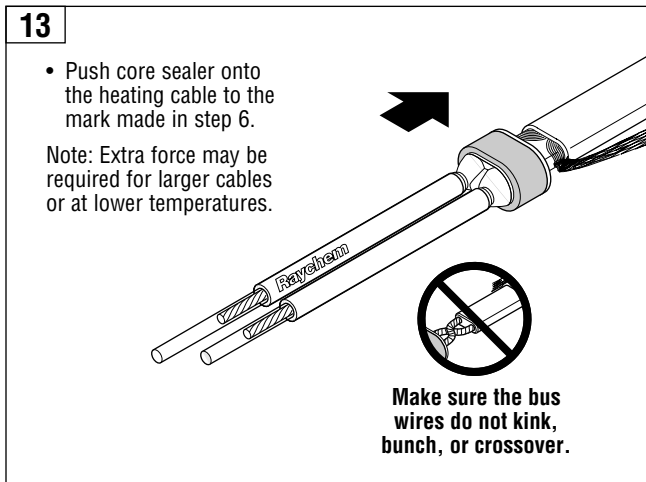
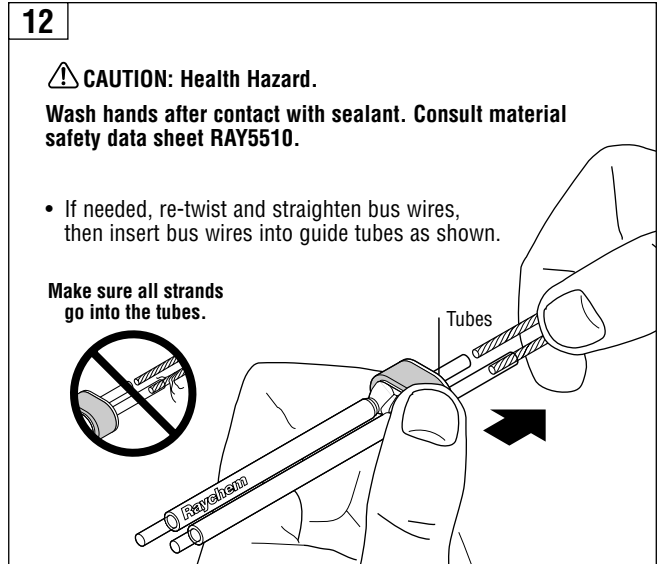
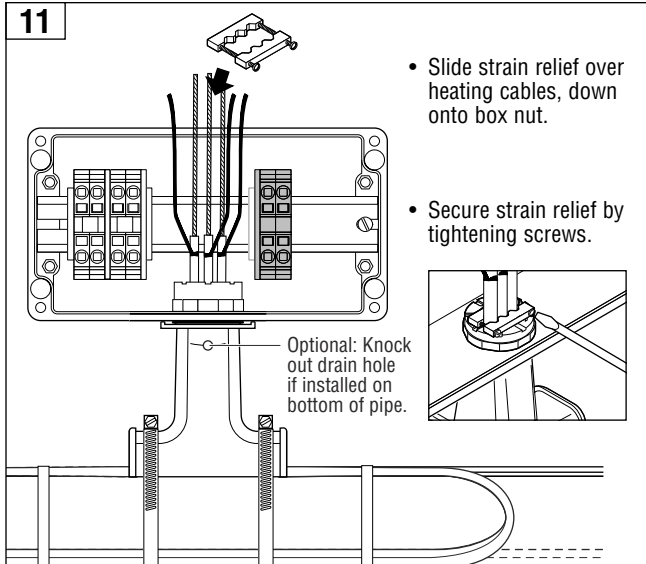
O-ring

**10**

- Place junction box onto stand. Align key ways in large box hole with alignment feature on stand.
- Put box nut back onto stand.
- Tighten box nut with spanner.



## JBM-100-A Installation Instructions

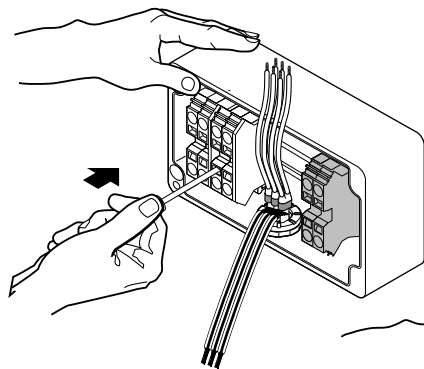


17

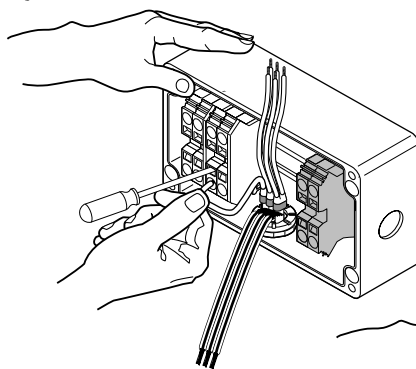
This kit uses spring clamp style terminals.

Terminals use a steel spring to clamp the wire to provide improved vibration resistance, reduced maintenance and faster installation.

To connect wires, firmly insert a slotted screwdriver into the square hole (①) to open the spring. When fully inserted, the screwdriver will lock into place, allowing you to remove your hand and insert the wire into the round hole (②). Remove the screwdriver to clamp the wire. The wire is held securely against the bus bar for low contact resistance over time without the need to periodically retighten screws.

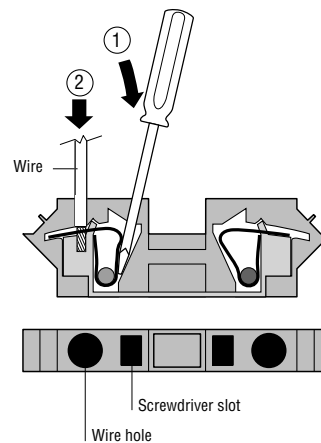
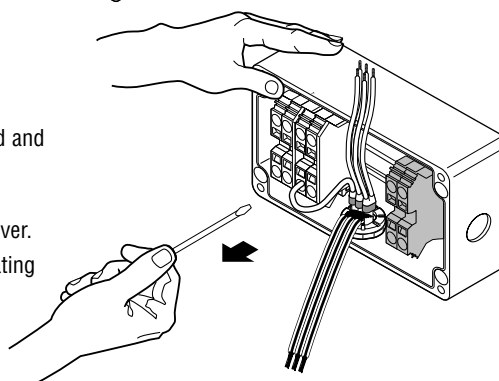


- Refer to wiring diagram, step 18a, 18b, or 18c.
- Push screwdriver FIRMLY into square hole.

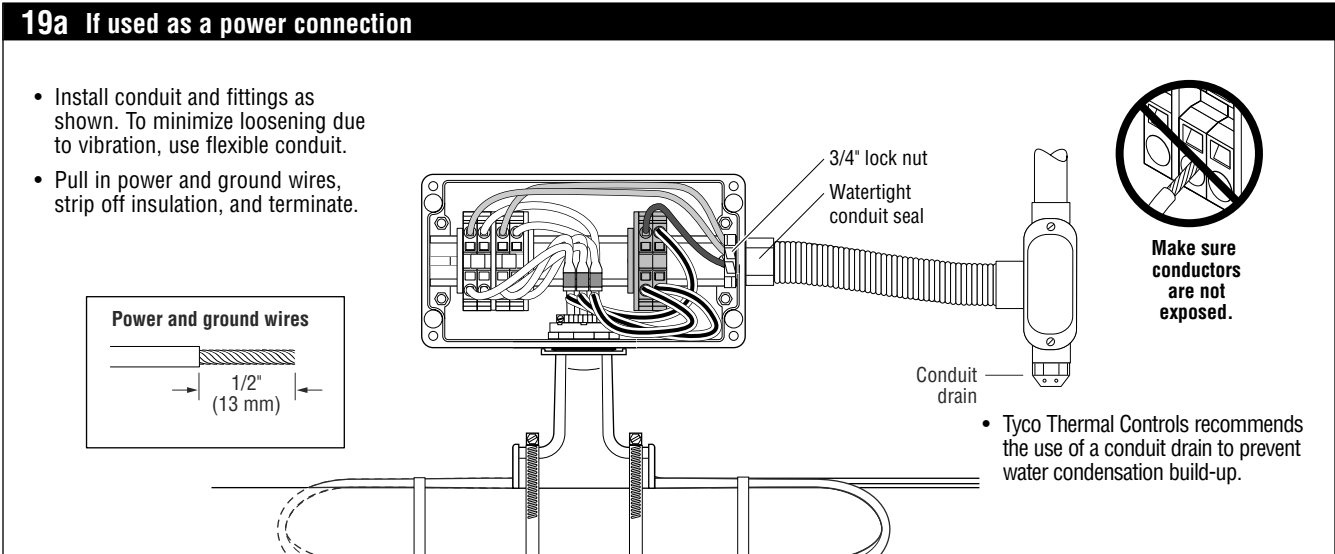
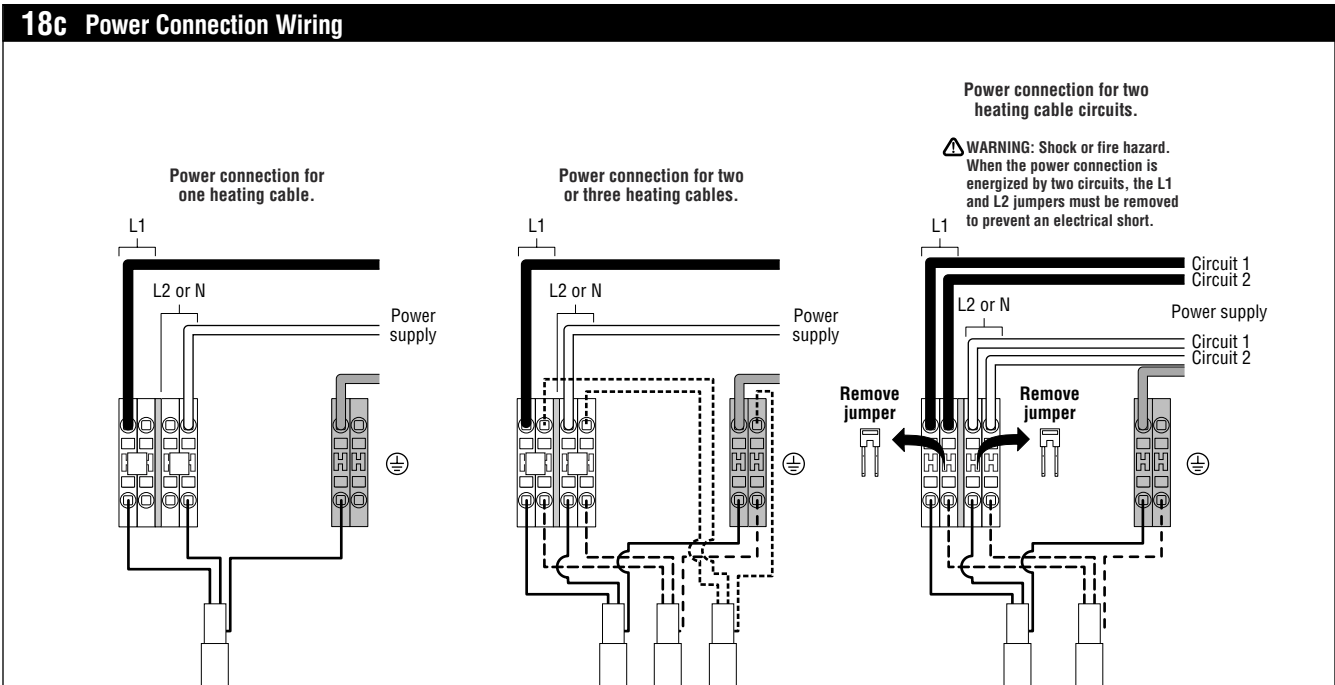
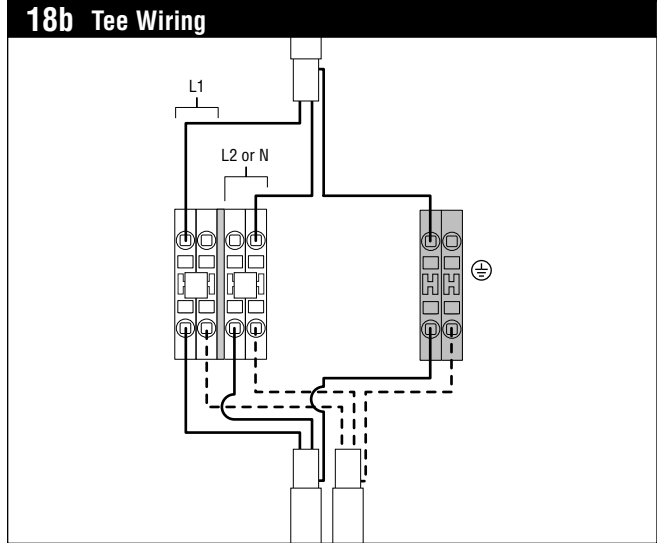
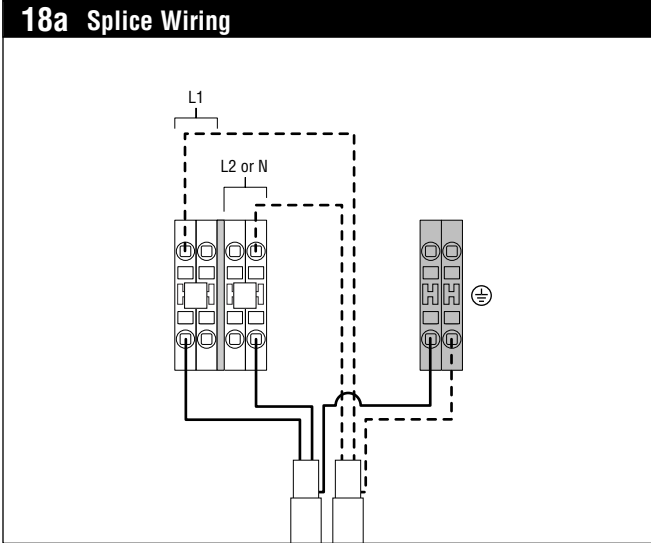


- Insert wire into round hole.
- Use green terminal for braid and ground wires.

- Remove screwdriver.
- Repeat for all heating cables.

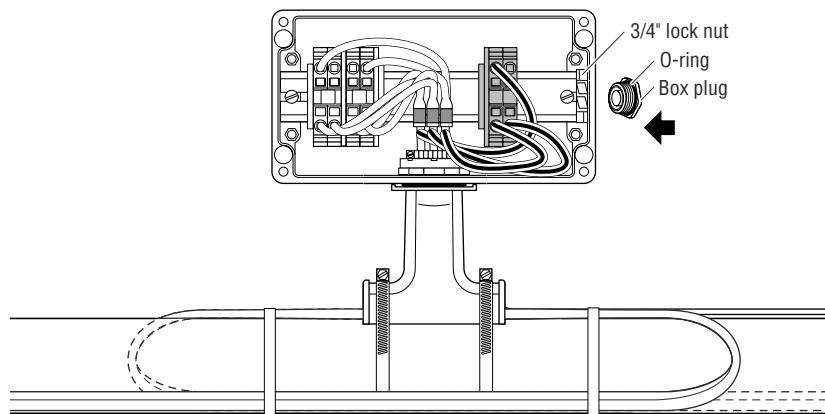


JBM-100-A Installation Instructions

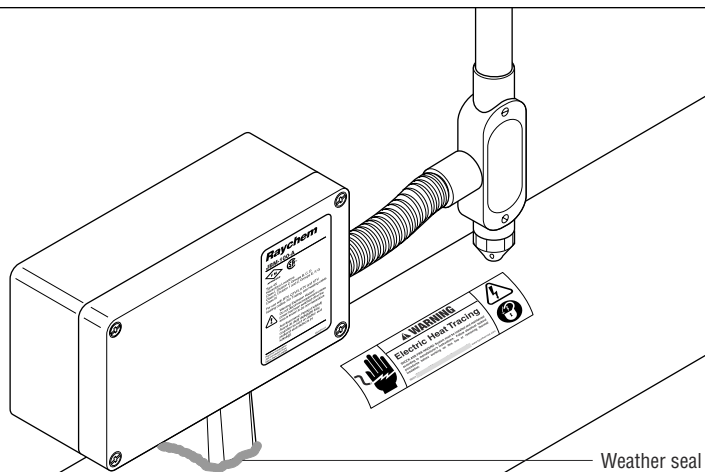


**19b If used as a splice or tee connection**

- Install box plug.

**20**

- Install lid.
- Apply insulation and cladding.
- Weather-seal the stand entry.
- Leave these instructions with the end user for future reference.



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