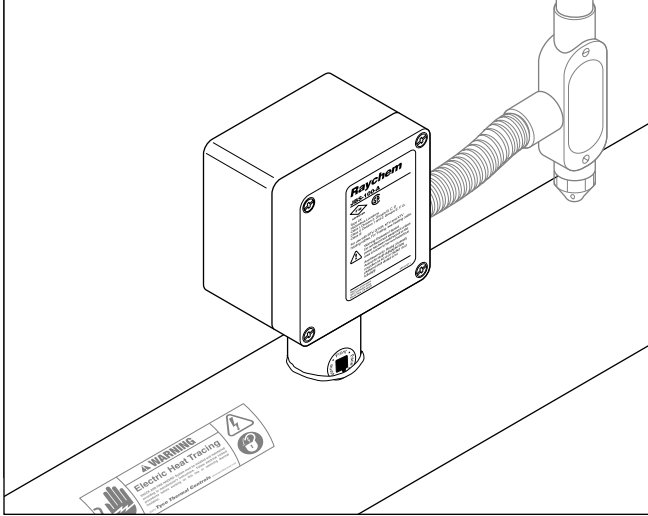


Installation Instructions



Description

The JBS-100-A is a NEMA 4X rated power 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 JBS-100-A6 utilizes larger terminal blocks to accommodate up to 6 AWG power wires.

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
- Marker
- Pliers or adjustable wrench
- 1/4" or smaller flat-blade screwdriver
- Large slotted screwdriver
- 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 JBS-SPA P/N E90515-000

Approvals

Hazardous Locations

CLI, ZN1, AEx e II* ⁽¹⁾

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



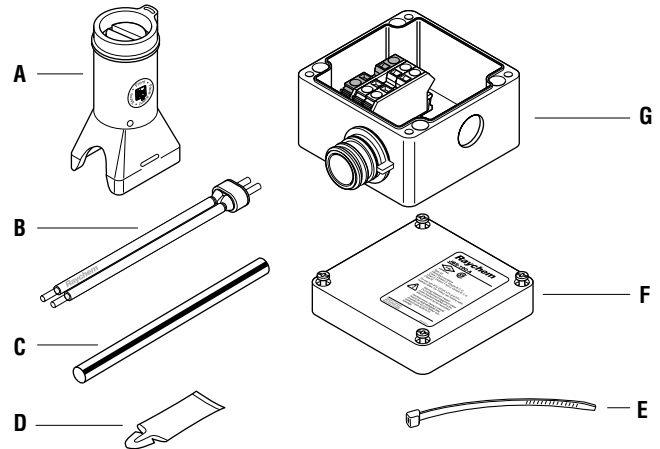
Temp Code*

⁽¹⁾ Except VPL

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

Kit Contents

Item	Qty	Description
A	1	Stand
B	1	Core sealer
C	1	Green/yellow tube
D	1	Cable lubricant
E	1	Cable tie
F	1	Lid
G	1	Box with 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 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 and flame-retardant foam.

⚠ CAUTION:

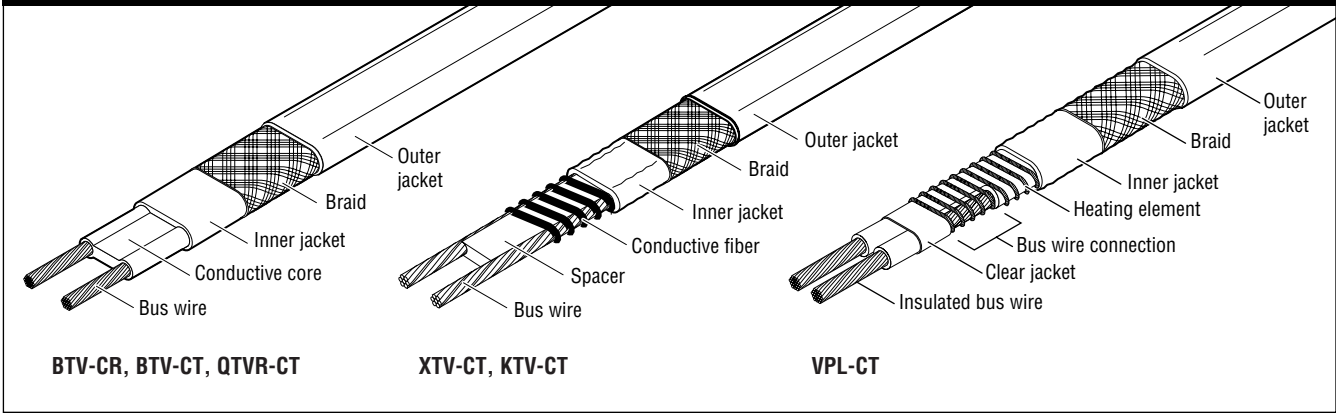
Health Hazard: Prolonged or repeated contact with the sealant in the core sealer may cause skin irritation. Wash hands thoroughly. Overheating or burning the sealant will produce fumes that may cause polymer fume fever. Avoid contamination of cigarettes or tobacco. Consult MSDS RAY5510 for further information.

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

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

JBS-100-A, A6 Installation Instructions

Heating cable types



1

- Allow approximately 24" (60 cm) of heating cable for installation. For VPL, cut cable 12" (30 cm) from bus indentation.
- Cut off heating cable end at about 45° for easier insertion.

Indentation (bus wire connection on VPL heating cables only).

12" (30 cm)

2

- Optional: If stand is to be installed on bottom side of pipe, knock out drain hole prior to inserting cable.
- With label on stand facing desired direction of box opening, push 18" (45 cm) of heating cable through stand. Use cable lubricant if needed.
- Square off cable end with 90° cut.

18" (45 cm)

Drain hole

Label on stand indicates direction of box opening.

- **Do not attach stand to pipe until step 12.**

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.

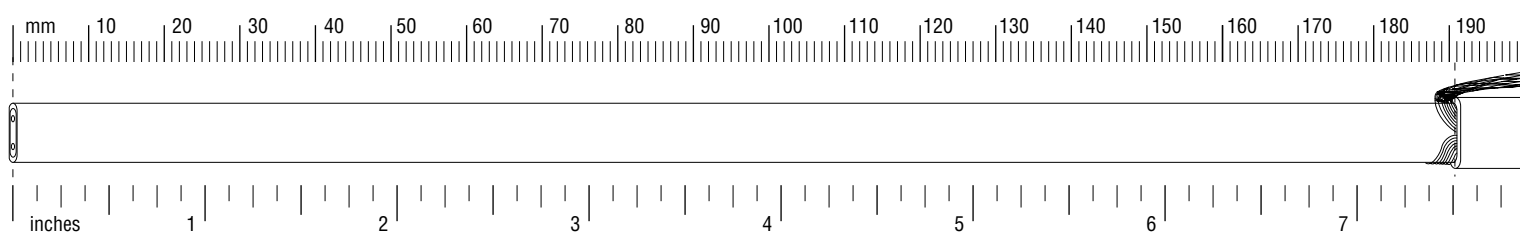
7 1/2" (190 mm)

4

BTV and QTVR Go to Step 5a

XTV and KTV Go to Step 5b

VPL Go to Step 5c



5a **BTV and QTVR**

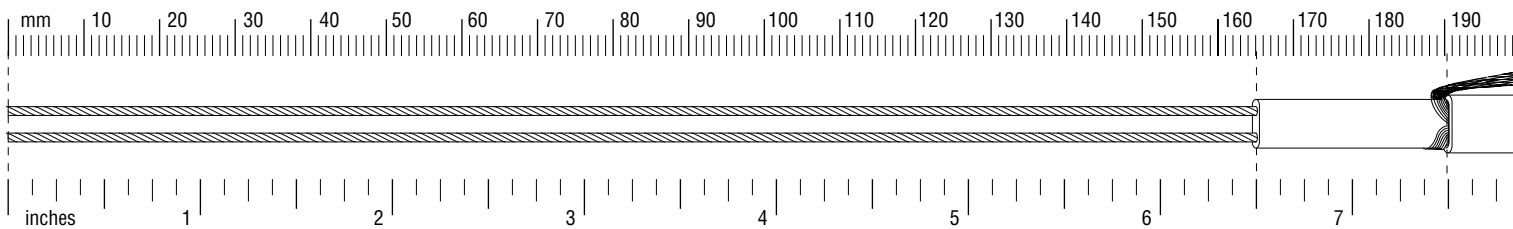
- Push braid back to create a pucker.
- At pucker use a screwdriver to open braid.
- Bend heating cable and work it through opening in braid.
- Lightly score inner jacket around and down as shown. **6 1/2" (165 mm)**
- Peel off inner jacket.
- Notch core. **1/4" (5 mm)**
- Peel bus wire from core.
- 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

5b **XTV and 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. **6 1/2" (165 mm)**
- 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

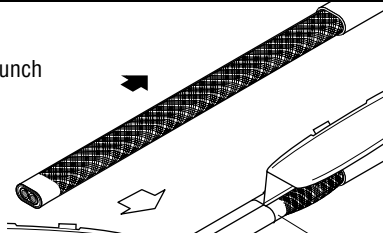


JBS-100-A, A6 Installation Instructions

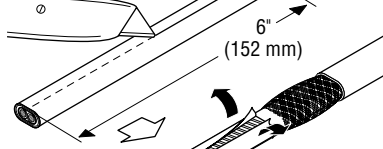
5c



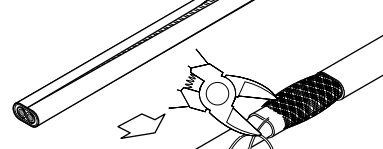
- Push braid back and bunch as tight as possible.



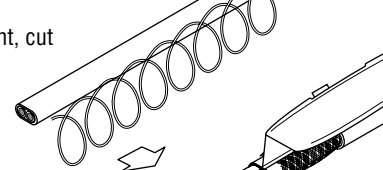
- Lightly score inner jacket around and down as shown.



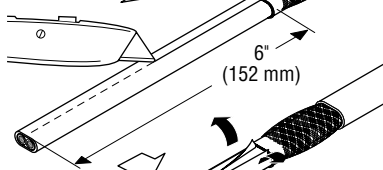
- Peel off inner jacket.



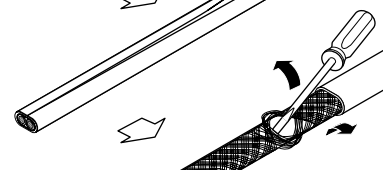
- Unwind heating element, cut and remove as shown.



- Lightly score clear jacket around and down as shown.



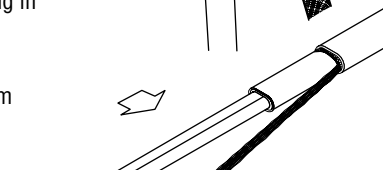
- Bend heating cable to break jacket at the score then peel off jacket.



- Push braid forward. Use a screwdriver to open braid as shown.

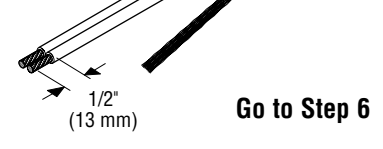


- Bend heating cable and work it through opening in braid.

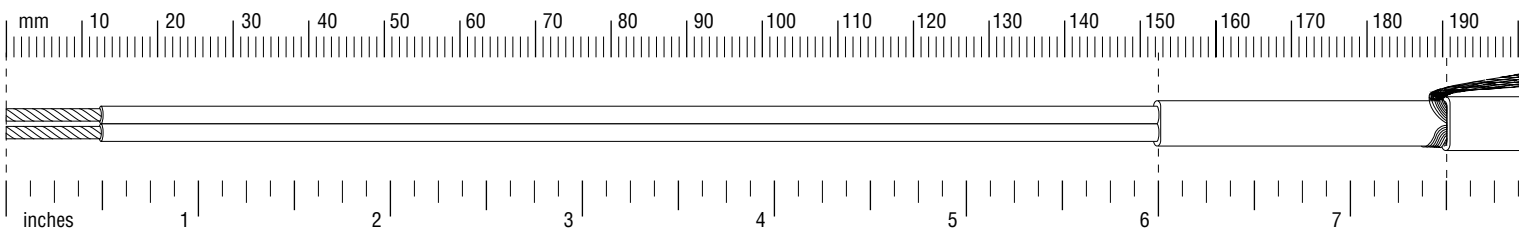


- Remove insulation from ends of bus wires.

- Pull braid tight to make pigtail.



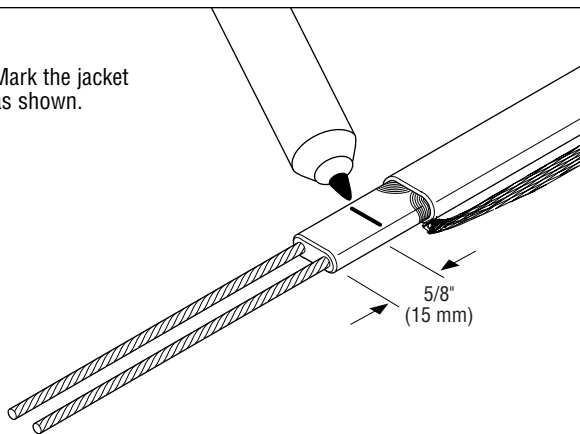
Go to Step 6



JBS-100-A, A6 Installation Instructions

6

- Mark the jacket as shown.



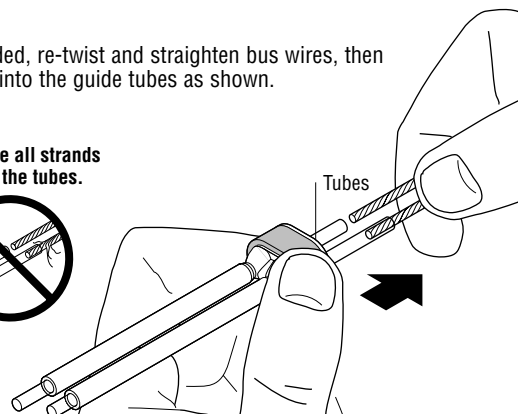
7

⚠ 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.

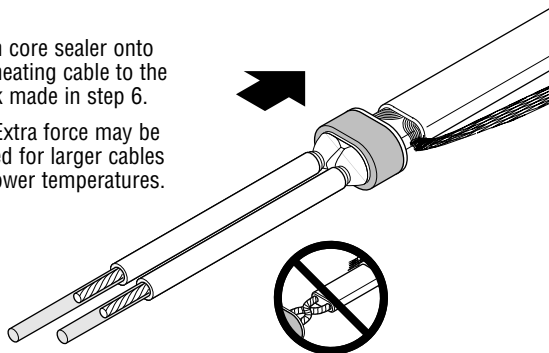
Make sure all strands go into the tubes.



8

- Push core sealer onto the heating cable to the mark made in step 6.

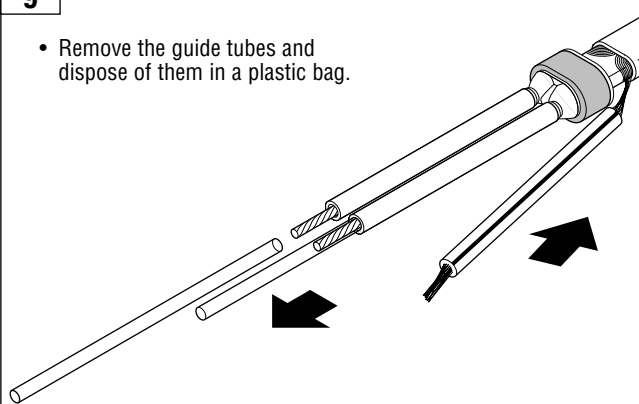
Note: Extra force may be required for larger cables or at lower temperatures.



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

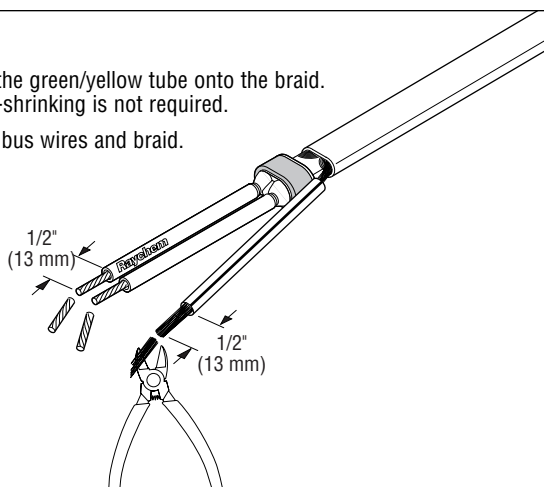
9

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



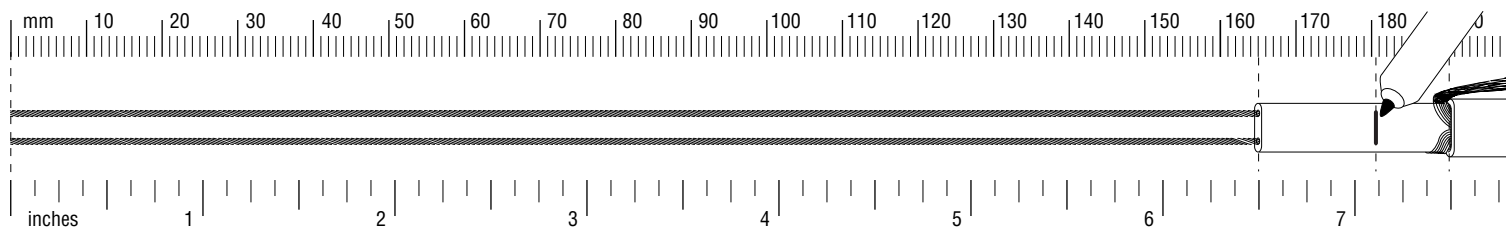
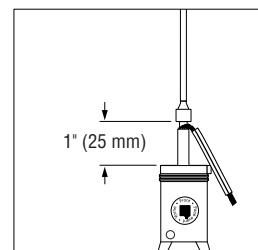
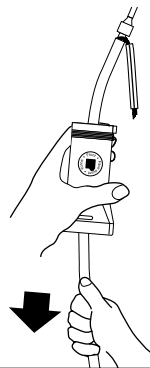
10

- Slip the green/yellow tube onto the braid. Heat-shrinking is not required.
- Trim bus wires and braid.



11

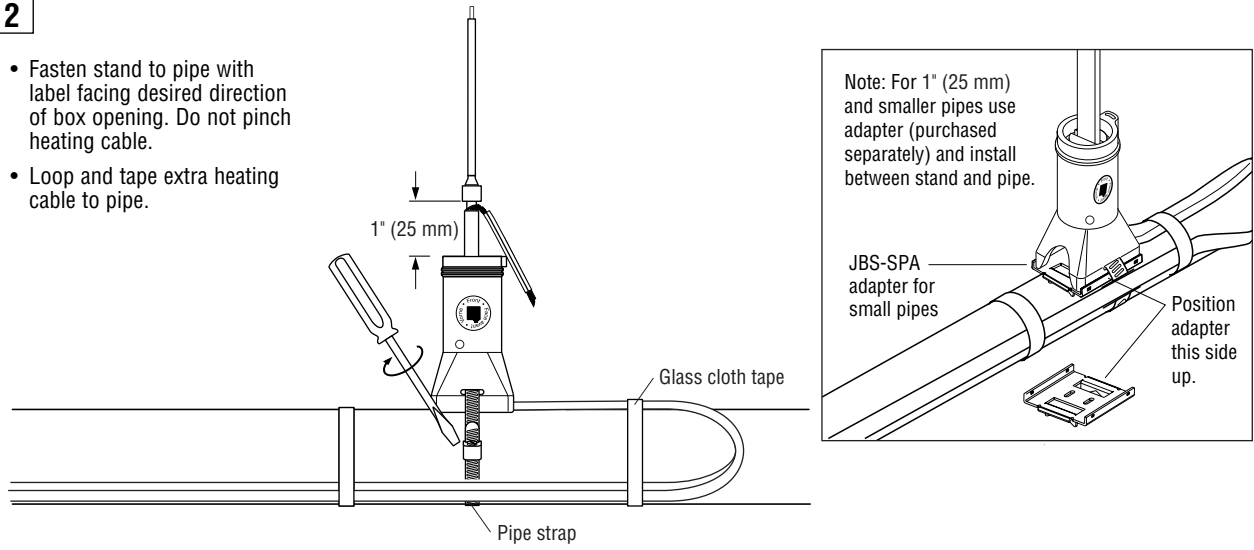
- Pull heating cable back into stand so 1" (25 mm) is exposed as shown. Use cable lubricant if needed.



JBS-100-A, A6 Installation Instructions

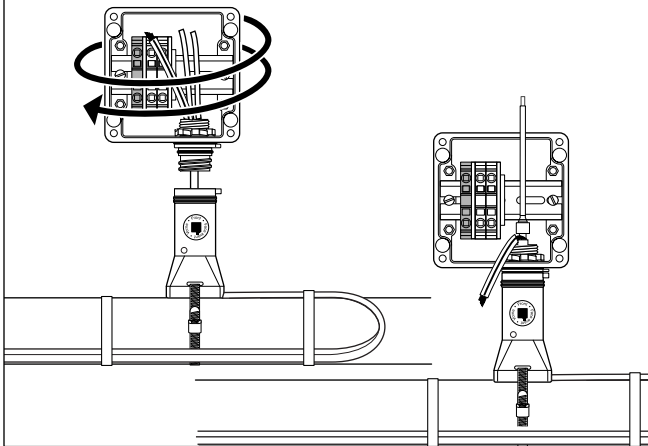
12

- Fasten stand to pipe with label facing desired direction of box opening. Do not pinch heating cable.
- Loop and tape extra heating cable to pipe.



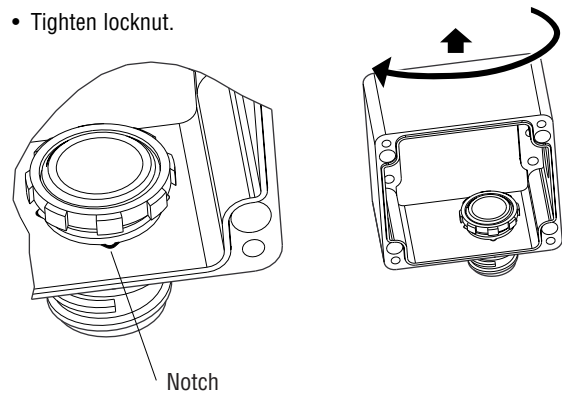
13

- Screw box onto stand until it stops. Do not overtighten.



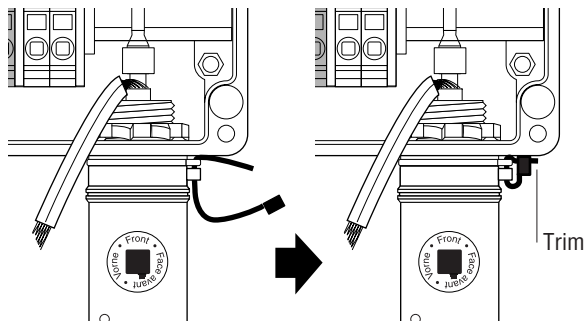
14 (Optional) To change direction of box opening:

- Loosen locknut.
- Lift box and rotate. Make sure tab on threaded piece fits into one of the four notches in box.
- Tighten locknut.



15

- Insert cable tie through slots on stand and box, and tighten firmly to prevent box rotation.

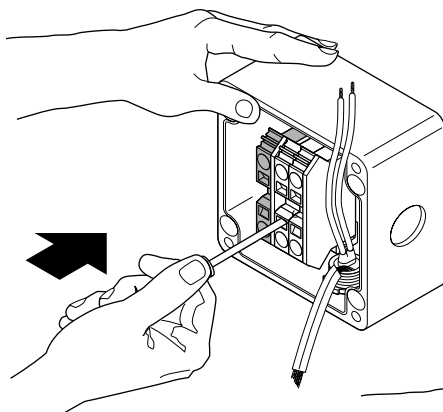
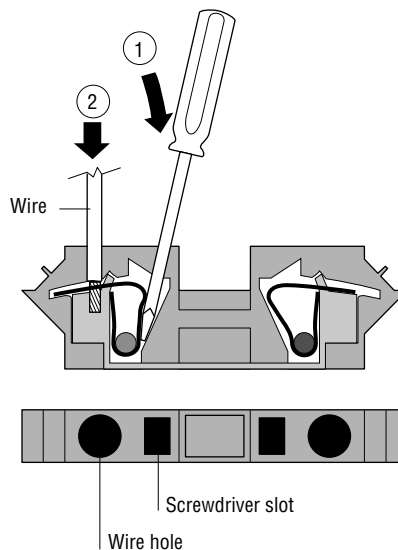


16

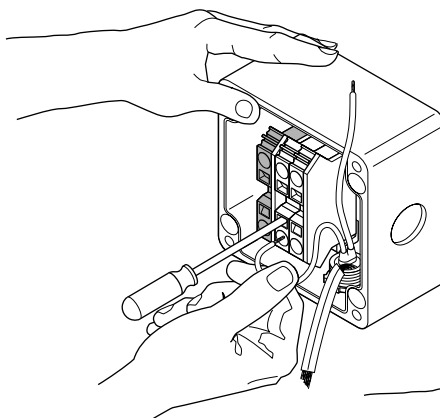
This kit uses spring clamp style terminals.

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

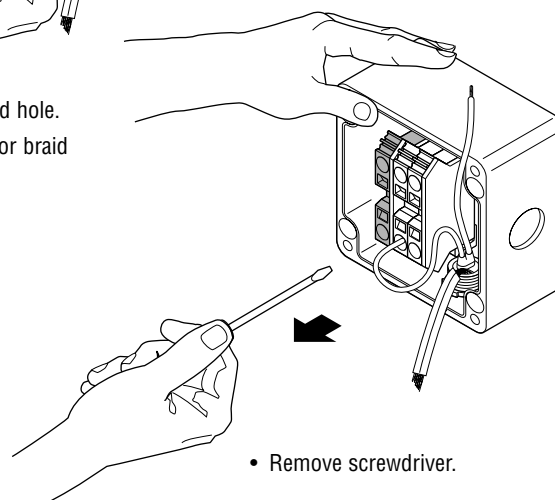
To connect wires, firmly insert a slotted screwdriver into the square hole (⊙) to open the spring. When fully inserted, the screwdriver will lock into place, allowing you to remove your hand and insert the wire into the round hole (⊚). Remove the screwdriver to clamp the wire. The wire is held securely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



- Push screwdriver FIRMLY into square hole.



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

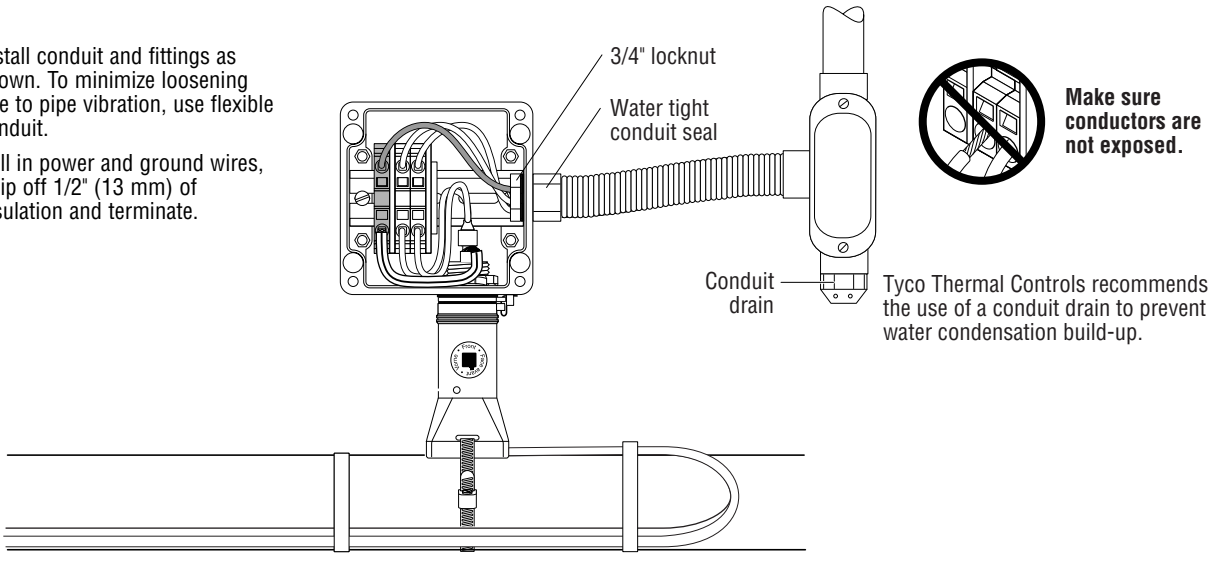


- Remove screwdriver.

JBS-100-A, A6 Installation Instructions

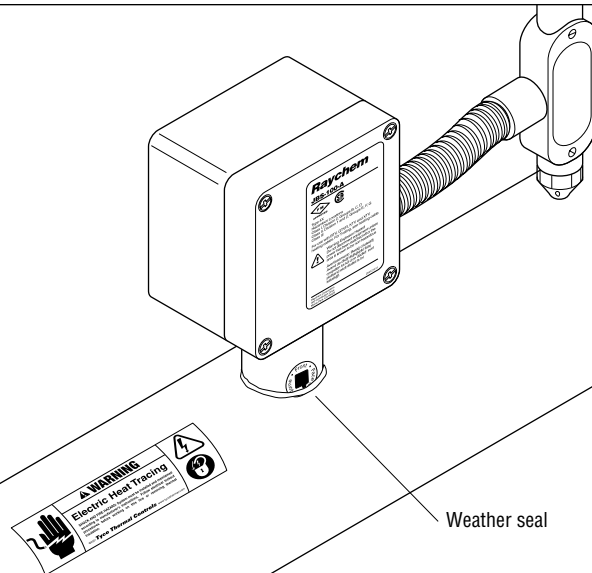
17

- Install conduit and fittings as shown. To minimize loosening due to pipe vibration, use flexible conduit.
- Pull in power and ground wires, strip off 1/2" (13 mm) of insulation and terminate.



18

- 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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