

# NELSON™ HEAT TRACING SYSTEMS

## ALT-BC STANDARD POWER CONNECTION KIT

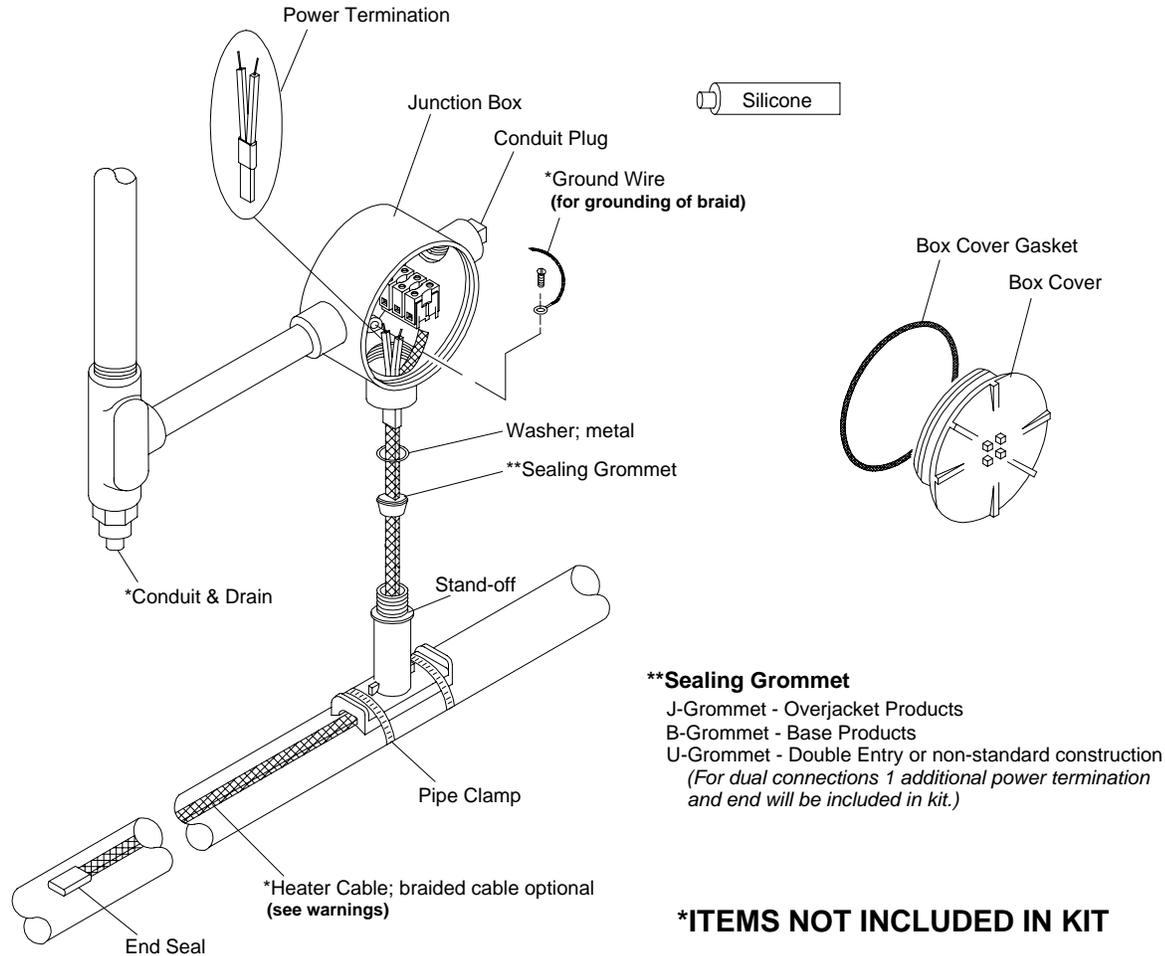
# INSTALLATION INSTRUCTIONS

### DESCRIPTION

The ALT-BC Standard Power Connection Kit is constructed of cast aluminum for use with all versions of Nelson Heat Tracing Systems' LT, CLT, HLT and NC heater cables. Compatible for use with any vendor's heater cables smaller than 11mm (0.44") diameter.

### KIT CONTENTS

1 Junction Box	1 Power Termination
1 Label	1 Washer
1 Terminal Block	1 Ground Screw
1 Conduit Plug	1 End Seal
1 Sealing Grommet	1 Tube of Silicone
1 Stand-off	2 Pipe Clamps



**Note:** This detail shows Braided "CB" Product only. For Overjacket "J" or "JT" Products, see diagram on sheet 8.

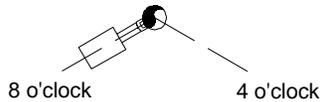
### ⚠ WARNINGS:

- Article 427 of the National Electric Code requires that all heaters shall have metal coverings and be provided with branch circuit ground-fault protection.
- If nuisance tripping of ground fault breakers occurs due to condensation in the junction box, electrical connections should be moisture proofed by use of a coating or sealant.

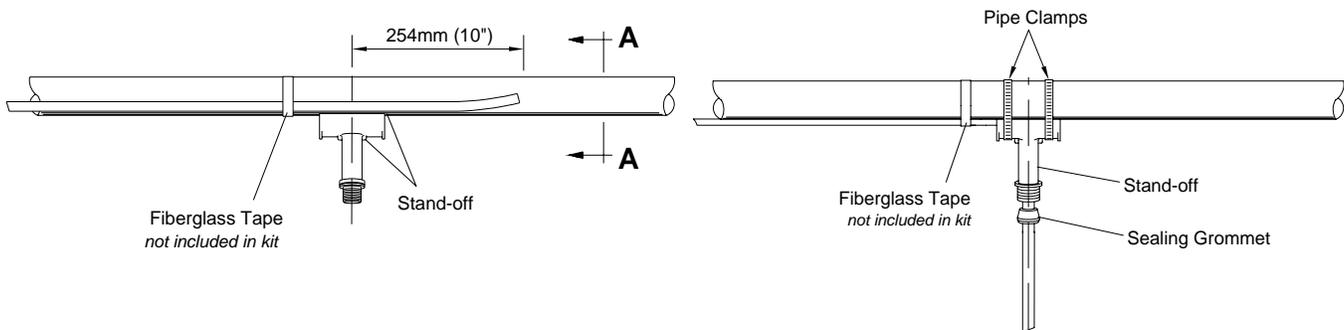
## STAND-OFF POSITIONING

### Section View A A

(recommend installing at the  
4 or 8 o'clock positions.)



**⚠ WARNING:**  
Do not place pipe clamps  
over the heater cable.



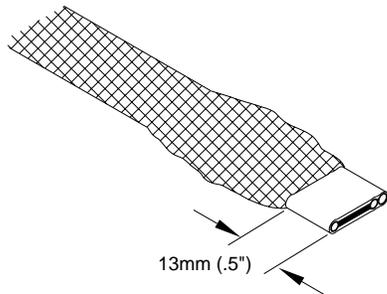
- 1 Mark pipe where stand-off will be mounted. See drawing above.
- 2 Push heater cable through bottom opening of stand-off.
- 3 Place stand-off on pipe and fasten with pipe clamps included.
- 4 Slide the sealing grommet over the heater cable and position inside stand-off opening:

**For Braided “CB” Products only:**

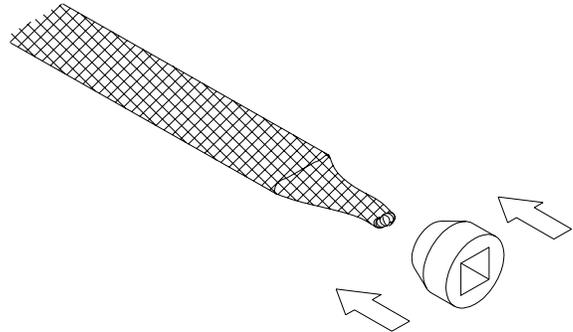
See “Sealing Grommet Installation for Braided “CB” Products” on sheet 3.

- 5 Apply silicone around the heater cable on top of the sealing grommet and fill any voids in sealing grommet.
- 6 Prepare heater cable for power termination:  
for Braided “CB” Products, see sheet 3.  
for Overjacket “J” or “JT” Products, see sheet 4.
- 7 Terminate heater cable, see sheet 7.

### SEALING GROMMET INSTALLATION FOR BRAIDED “CB” PRODUCTS

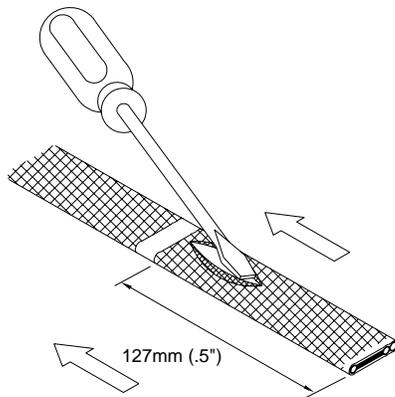


- 1 Slide braid back, allowing at least 13mm (.5”) of heater cable exposed.
- 2 Cut and remove the exposed heater cable.

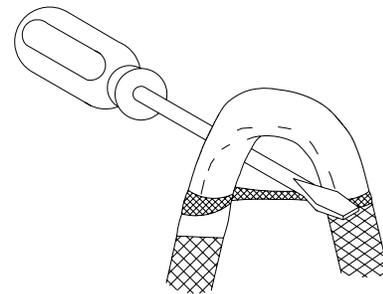


- 3 Slide braid back over heater cable and twist excess braid into a pigtail.
- 4 Slide the sealing grommet over the heater cable and position inside stand-off opening.
- 5 Continue with step 5 on sheet 2.

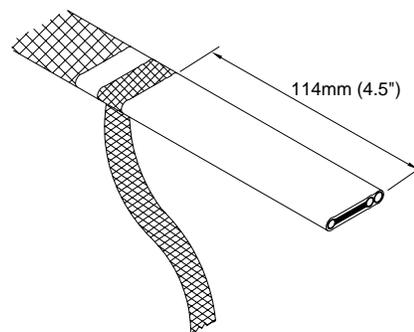
### BRAIDED “CB” PRODUCTS



- 1 Secure heater cable braid with fiberglass tape, allowing 127mm (5”) of cable for stripping.
- 2 Slide braid back towards the fiberglass tape creating a bulge.
- 3 At the bulge, separate the braid to make an opening.



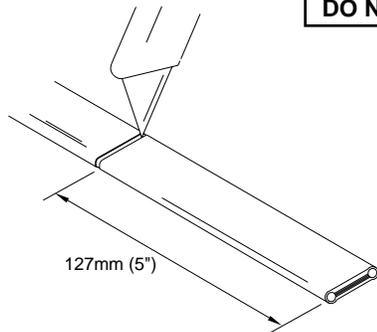
- 4 Bend heater cable and work it through the braid opening.



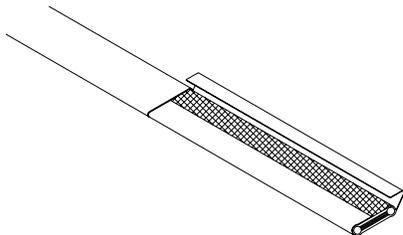
- 5 Pull the braid tight.
- 6 Proceed to “LT, CLT & HLT Products” on sheet 5.

OVERJACKET PRODUCTS

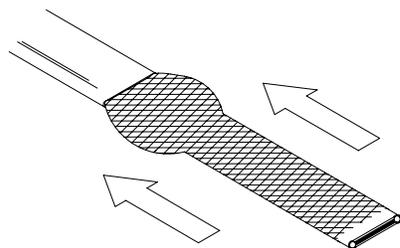
**⚠ WARNING:**  
**DO NOT CUT BRAID**



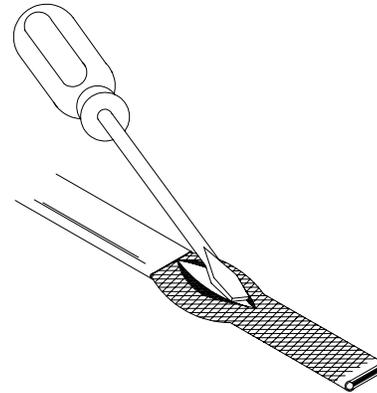
- 1 Lightly cut around heater overjacket 127mm (5") from the end. Bend cable to break overjacket.
- 2 Lightly cut overjacket up the center between first cut mark and the cable end. Bend cable to break overjacket.



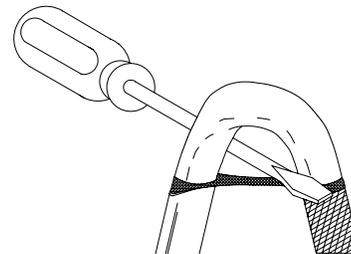
- 3 Remove overjacket from heater cable.



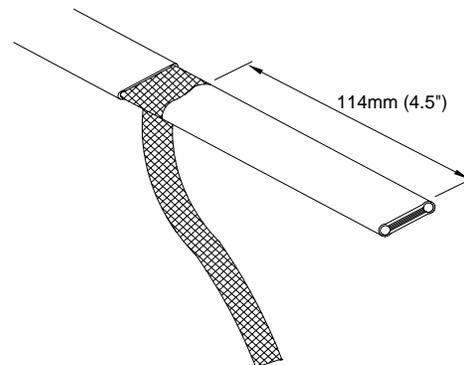
- 4 Move braid back toward the overjacket, creating a bulge.



- 5 At the bulge, separate the braid to make an opening.



- 6 While bending the heater cable, work it through the braid opening.



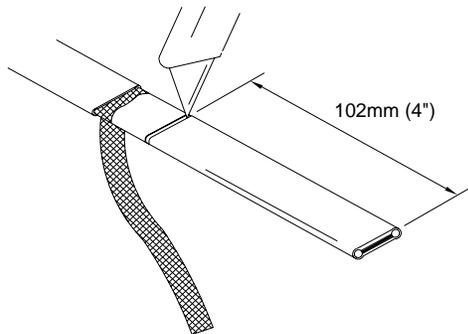
- 7 Pull the braid tight.
- 8 Proceed to "LT, CLT & HLT Products" on sheet 5.

# NELSON™ HEAT TRACING SYSTEMS ALT-BC STANDARD POWER CONNECTION KIT

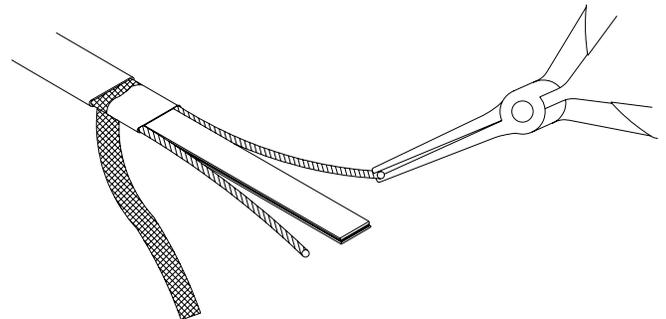
## INSTALLATION INSTRUCTIONS

### FOR ALL NELSON LT, CLT & HLT PRODUCTS

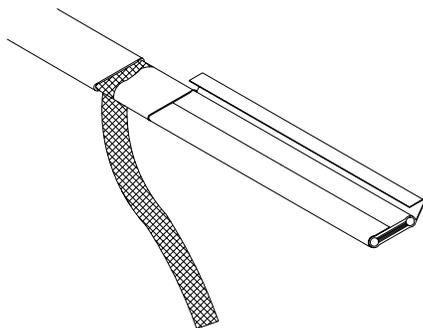
(See sheet 6 for an alternate stripping method for HLT products.)



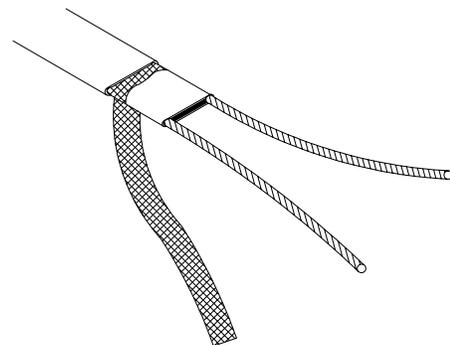
- 1 Lightly cut around cable outer jacket 102mm (4") from the end. Bend cable to break outer jacket.
- 2 Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



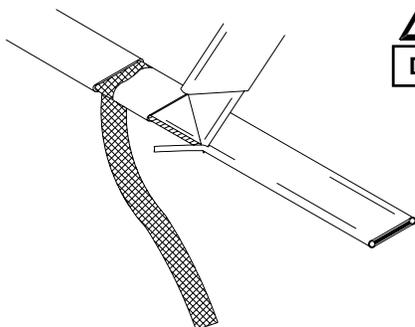
- 5 Starting at the end, pull each bus wire away from the core material.
- 6 Remove exposed core material.



- 3 Remove the jacket from the heater cable.



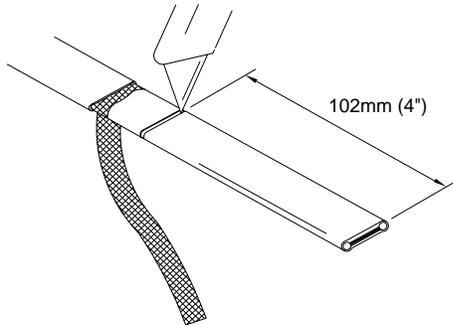
- 7 Cut 6mm (0.25") off the end of each bus wire.
- 8 Proceed to "Power Termination" on sheet 7.



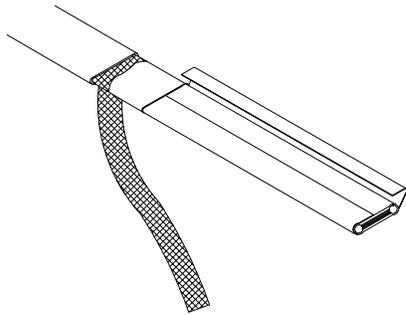
**⚠ WARNING:**  
**DO NOT CUT BUS WIRES**

- 4 Shave the core material from the outside of each bus wire.

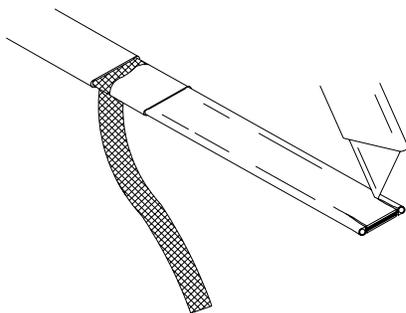
HLT PRODUCTS ALTERNATE STRIPPING METHOD



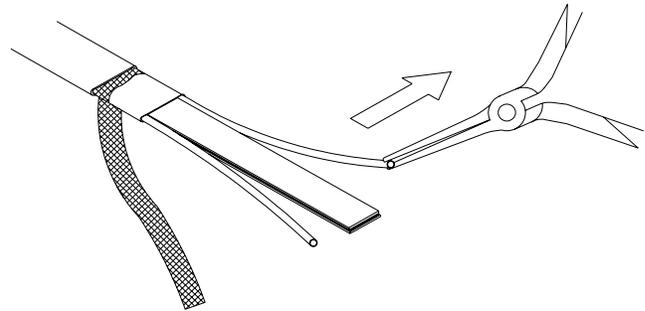
- 1 Lightly cut around cable outer jacket 102mm (4") from the end. Bend cable to break outer jacket.
- 2 Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



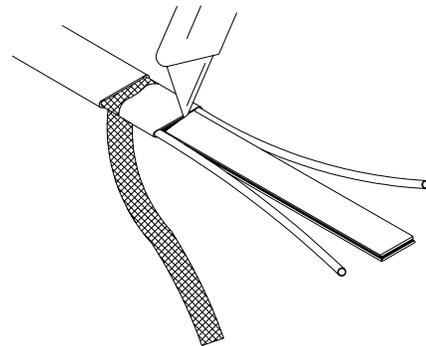
- 3 Remove the jacket from the heater cable.



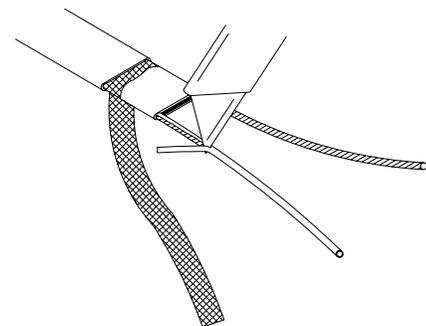
- 4 Make a cut inside each bus wire.



- 5 Starting at the end, in the same plane as the cable, pull each bus wire away from the core material.



- 6 Remove the exposed core material.

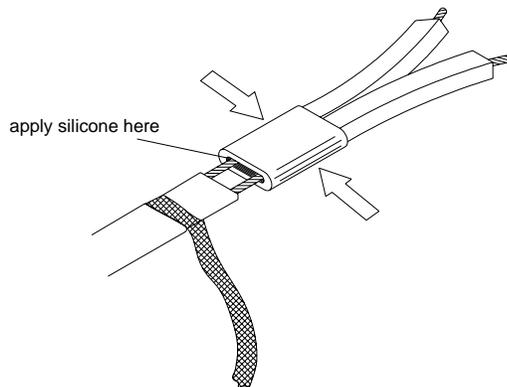


- 7 Remove the remaining core material off the outside of each bus wire.
- 8 Cut 6mm (0.25") off the end of each bus wire.
- 9 Proceed to "Power Termination" on sheet 7.

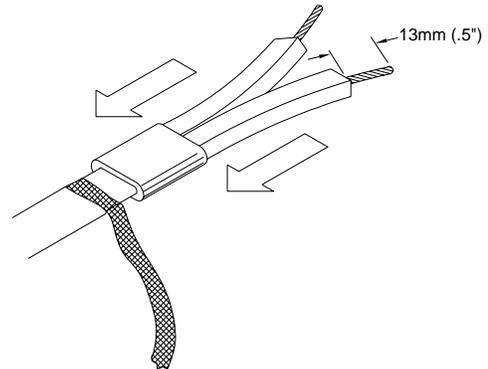
### POWER TERMINATION

#### **⚠ WARNING:**

- Bus wires must not touch or cross while inserting into power termination.
- Only power terminations / end seals specifically approved for the vendors style and type of heater cable must be used.

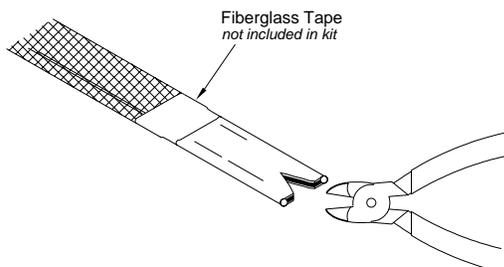


- 1 Insert bus wires into power termination.
- 2 Squeeze power termination opening and fill with silicone.

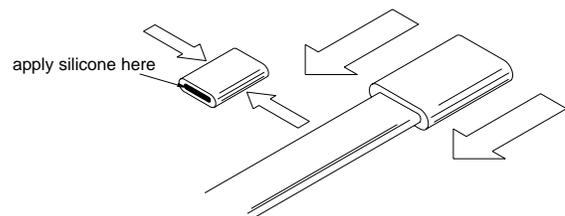


- 3 Push power termination to overlap jacket.
- 4 The silicone will set up in about 30 minutes with a complete cure after 24 hours.
- 5 Proceed to "Power Termination" on sheet 8.

### END SEAL



- 1 **Braided "CB" Products only:**  
Cut braid back 25mm (1") & tape in place with fiberglass tape.
- 2 **Overjacket "J" or "JT" Products only:**  
Remove 13mm (0.5") of overjacket exposing the braid, then remove the 13mm (0.5") of exposed braid.
- 2 Make a 10mm (0.4") cut at the end of the heater cable.

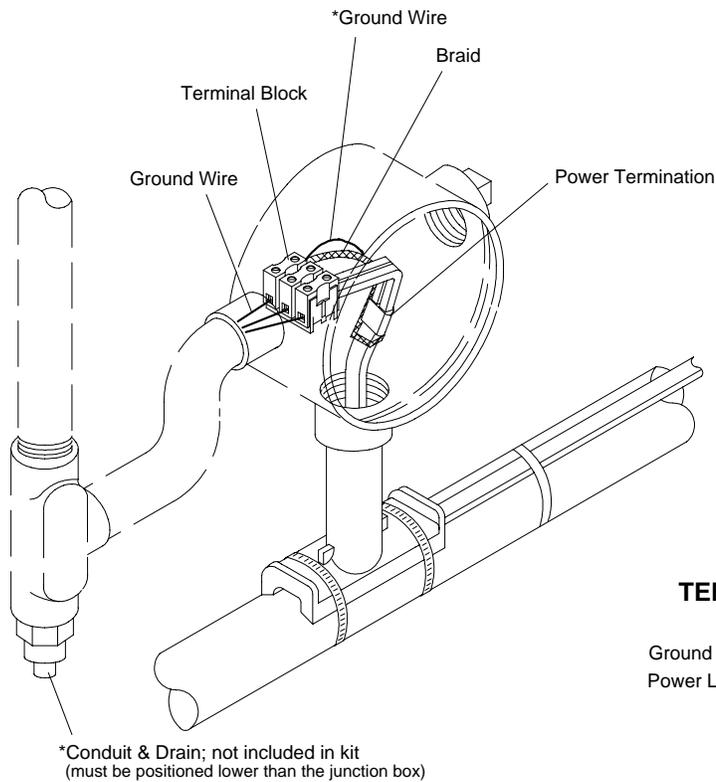


- 3 Squeeze end seal and fill with silicone.
  - 4 Push end seal over the heater cable.
- Overjacket "J" or "JT" Products only:**  
The end seal should overlap the overjacket.
- 5 The silicone will set up in about 30 minutes with a complete cure after 24 hours.
  - 6 Proceed to "Power Connection" on sheet 8

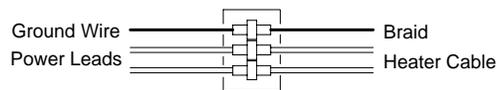
#### **⚠ WARNING:**

- Do not megger or hi-pot until silicone is completely secured.
- Braid must be kept away from bus wires or shorting will occur.

### POWER CONNECTION



### TERMINAL BLOCK CONNECTION



**Note: This detail shows Overjacket “J” or “JT” Products. For Braided “CB” Products, see diagram on sheet 1.**

- 1 Slide washer over heater cable and position at the sealing grommet.
- 2 Secure junction box onto stand-off until tightly fitted. **DO NOT OVER TIGHTEN.**
- 3 Connect the power wiring and heater cable to terminal block.
- 4 Connect ground wire to terminal block inside junction box using the ground screw. *See diagram on sheet 1.*
- 5 Connect ground wire and braid to terminal block. *See diagram above.*
- 6 **For Overjacket J or JT Products only:**  
Apply silicone at point braid leaves the overjacket.
- 7 Push all wires, cable and terminal block inside junction box.
- 8 Install box cover gasket and box cover onto junction box.
- 9 Apply label to the smooth side of junction; fill-in the Voltage, Catalog No. & Wattage blocks on the label with the actual field installed data.

Nelson Heat Tracing Systems products are supplied with a limited warranty. Complete Terms and Conditions may be found on Nelson's website at [www.nelsonheaters.com](http://www.nelsonheaters.com).