

NELSON™ HEAT TRACING SYSTEMS

PLT-LPS POWER CONNECTION KIT

INSTALLATION INSTRUCTIONS

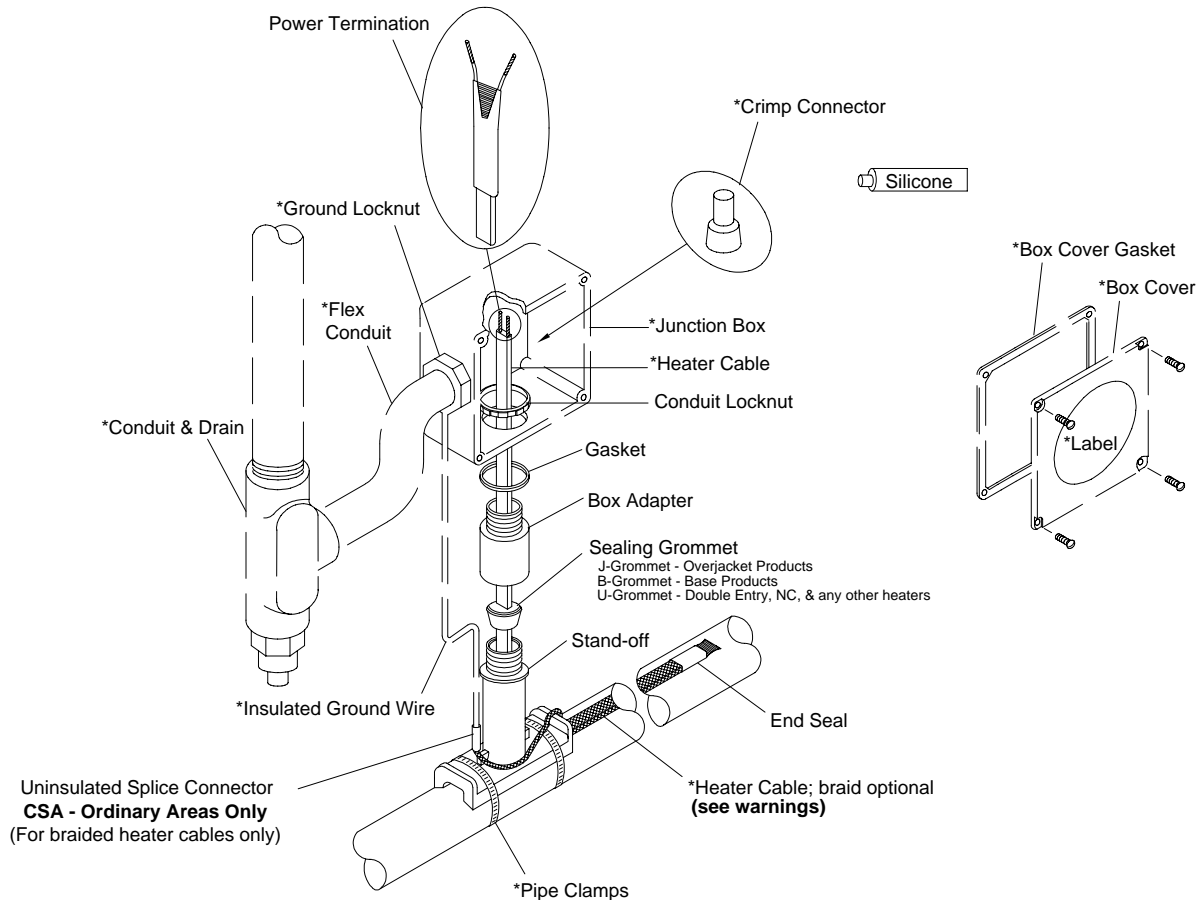
DESCRIPTION

The PLT-LPS Power Connection Kit is 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.

Note: For dual connections additional power terminations and end seals have been included in this kit.

KIT CONTENTS

- | | |
|---|--------------------------------|
| 1 Conduit Locknut | 1 Box Adapter |
| 1 Sealing Grommet | 1 Gasket |
| 1 Stand-off | 1 Uninsulated Splice Connector |
| 1 Tube of Silicone | |
| 2 Shrink Tubes, 3mm (0.125") diameter, 25mm (1") length | |
| 2 Shrink Tubes, 13mm (0.5") diameter, 51mm (2") length | |
| 1 Shrink Tube, 16mm (0.63") diameter, 76mm (3") length | |



*ITEMS NOT INCLUDED IN KIT

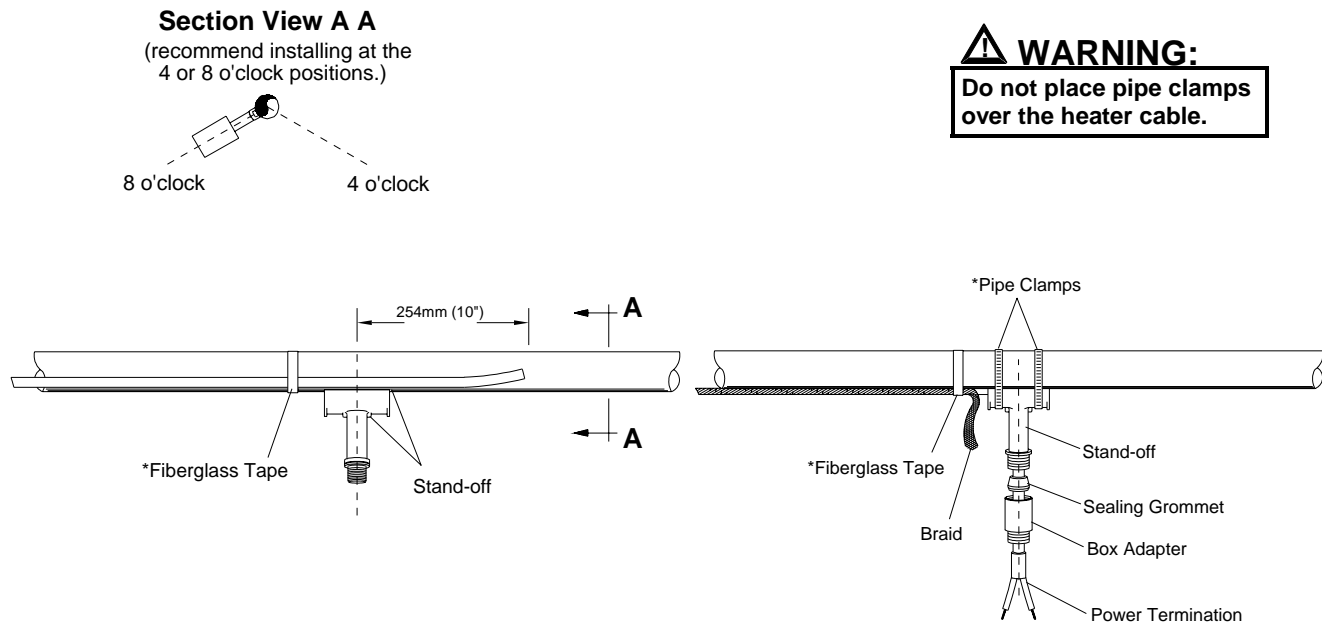
(customer supplied junction box must be approved for the application.)

Note: This detail shows external grounding of braid. For internal grounding of braid (overjacket products), see sheet 9.

WARNINGS:

- Canadian Div. 2 Hazardous installations must use internal ground connection of braid. See sheet 9.
- 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



*ITEMS NOT INCLUDED IN KIT

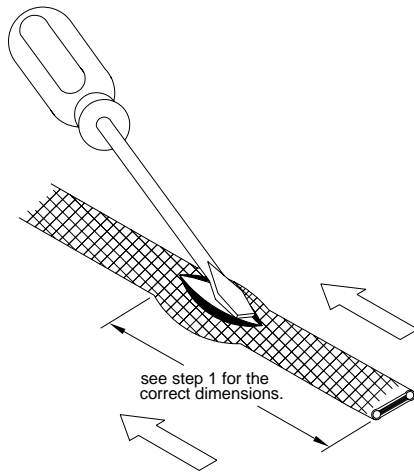
- ❶ Mark pipe where stand-off will be mounted.
- ❷ **External Braid Connection - CB Products only:**
 - Remove braid from heater cables, back to the point the cables leave the pipe. See Sheet 3.
 - Proceed to step 3 below.

Internal Braid Connection - CB, J or JT Products:

- Proceed to step 3 below.

- ❸ Push heater cables through the bottom opening of stand-off.
- ❹ Place stand-off on the pipe and fasten with pipe clamps.
- ❺ Slide the sealing grommet over the heater cables and position inside stand-off opening.
- ❻ Apply silicone around the cables on top of the sealing grommet.
- ❼ Slide the box adapter over heater cables and tighten securely to stand-off.
- ❽ Prepare heater cables for power termination:
 - for braided products, see sheet 3.
 - for overjacket products, see sheet 4.
 - for base products, see sheet 5.
- ❾ Terminate heater cable, see sheet 7.

BRAIDED PRODUCTS



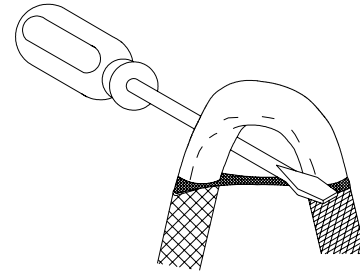
1 External Braid Connection:

Move braid back 305mm (12") to create a bulge.

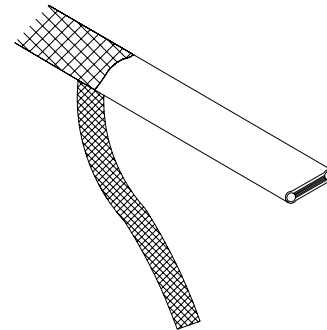
Internal Braid Connection:

Move braid back 127mm (5") to create a bulge.

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



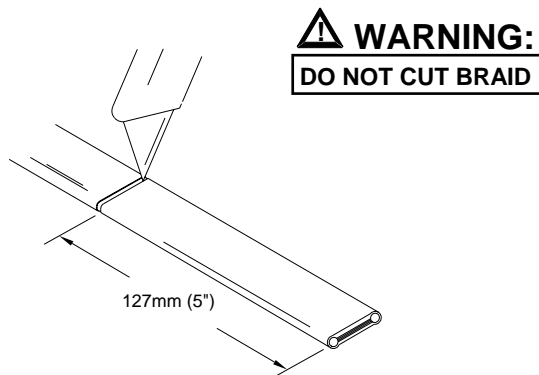
- 3** While bending the heater cable, work it through the braid opening.



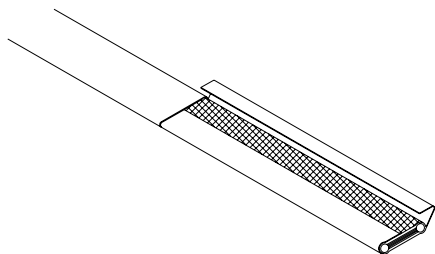
- 4** Pull the braid tight.

- 5** Proceed to "LT, CLT & HLT Products", sheet 5.

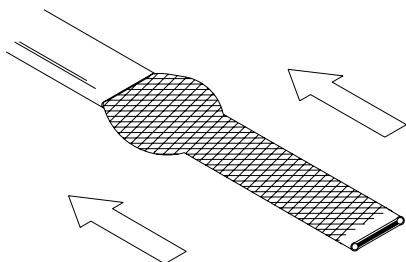
OVERJACKET PRODUCTS



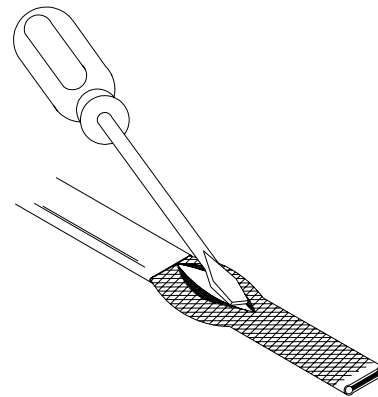
- ❶ Lightly cut around heater overjacket 127mm (5") from the end. Bend cable to break the overjacket.
- ❷ Lightly cut overjacket up the center between first cut mark and the cable end. Bend cable to break the overjacket.



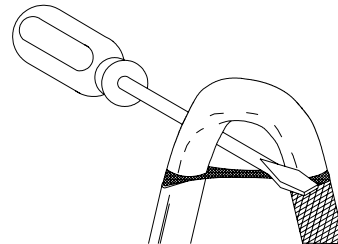
- ❸ Remove overjacket from heater cable.



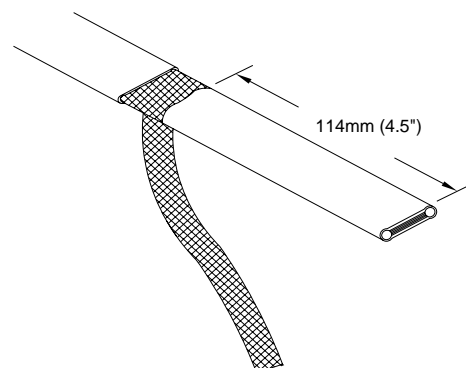
- ❹ Move braid back toward the overjacket, creating a bulge.



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

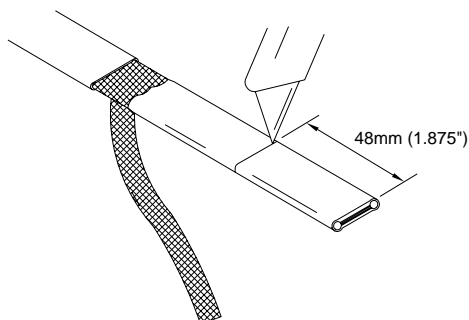


- ❻ While bending the heater cable, work it through the braid opening.



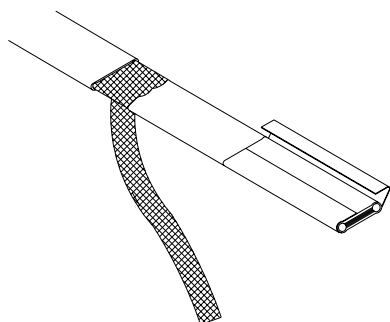
- ❼ Pull the braid tight.
- ❽ Proceed to "LT, CLT & HLT Products", sheet 5.

FOR ALL NELSON LT, CLT & HLT PRODUCTS
(See sheet 6 for an alternate method of HLT products.)

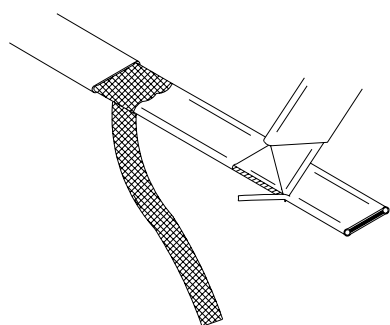


- ❶ Lightly cut around heater outer jacket 48mm (1.875") from the end. Bend cable to break outer jacket.

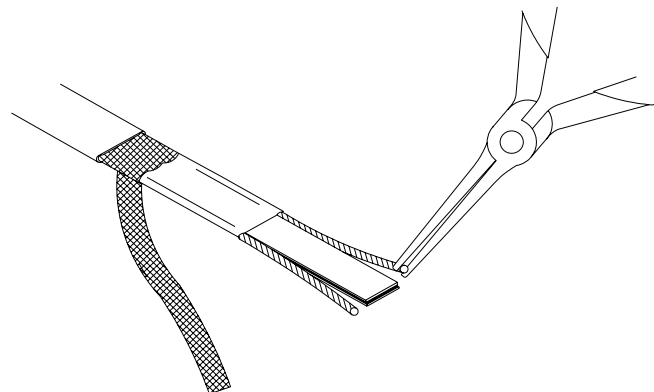
- ❷ Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



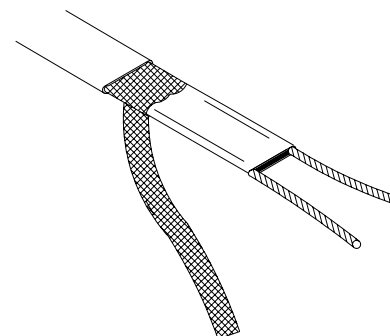
- ❸ Remove the jacket from the heater cable.



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



- ❺ Starting at the end, pull each bus wire away from the core material.

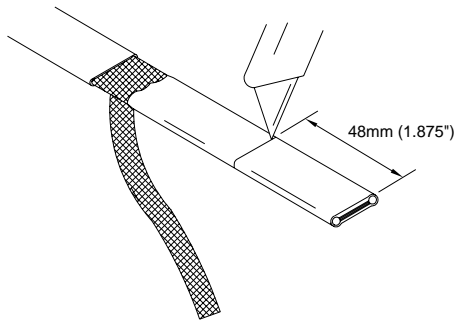


- ❻ Remove exposed core material.

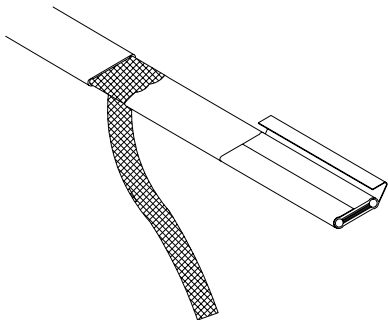
- ❼ Proceed to "Power Termination", sheet 7.

⚠ WARNING:
DO NOT CUT BUS WIRES

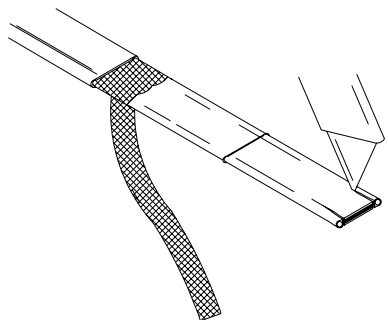
HLT PRODUCTS ALTERNATE METHOD



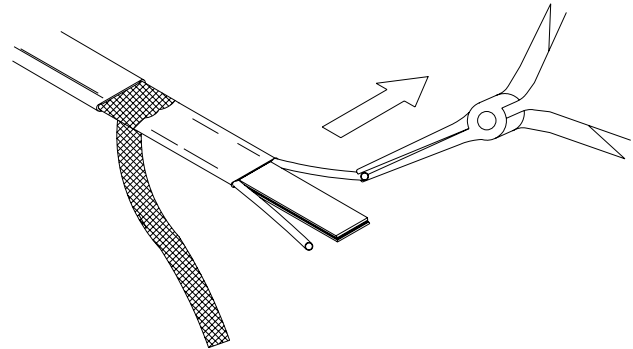
- ❶ Lightly cut around heater outer jacket 48mm (1.875") from the end. Bend cable to break outer jacket.
- ❷ Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



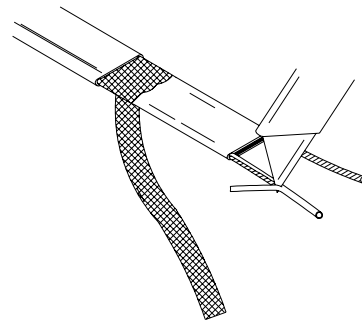
- ❸ Remove the jacket from the heater cable.



- ❹ Make a cut inside each bus wire.

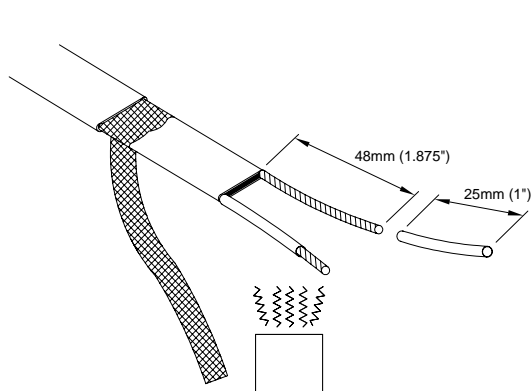


- ❺ Starting at the end, in the same plane as the cable, pull each bus wire away from the core material.
- ❻ Remove exposed core material.

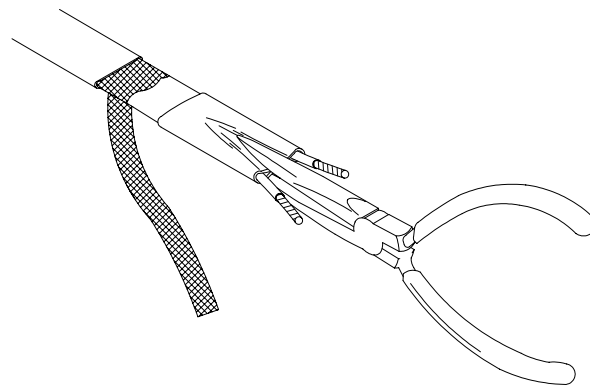


- ❼ Remove the remaining core material off the outside of each bus wire.
- ❽ Proceed to "Power Termination", sheet 7.

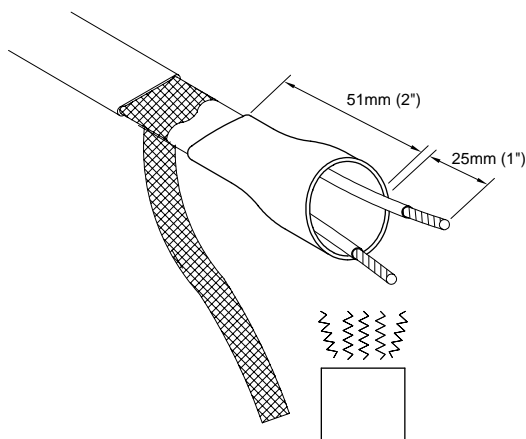
POWER TERMINATION



- 1 Slide one 3mm (0.125") diameter, 25mm (1") length shrink tube over each bus wire, leaving approximately 13mm (0.5") of each bus wire exposed. Shrink with heat gun until completely shrunk.

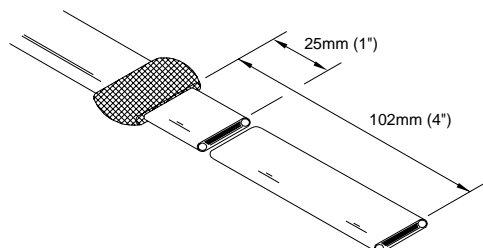


- 3 While still warm, spread bus wires and squeeze between them using needle-nose pliers, hold for 5 seconds.
- 4 At this point, if you're installing the end seal, proceed to "End Seal", sheet 8. Otherwise, proceed to "Power Connection", sheet 9.

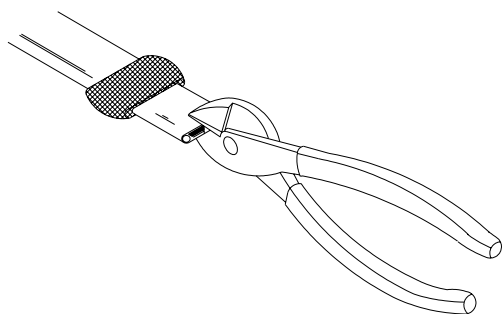


- 2 Slide a 13mm (0.5") diameter, 51mm (2") length shrink tube over both pigtail leads leaving approx. 25mm (1") of each pigtail lead exposed. Shrink with heat gun until completely shrunk.

END SEAL

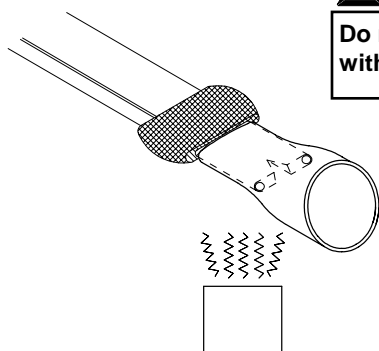


- ❶ If applicable, strip overjacket and braid back 102mm (4") from the end. Slide braid back over the overjacket portion of the heater cable.
- ❷ Cut off excess heater cable leaving 25mm (1").

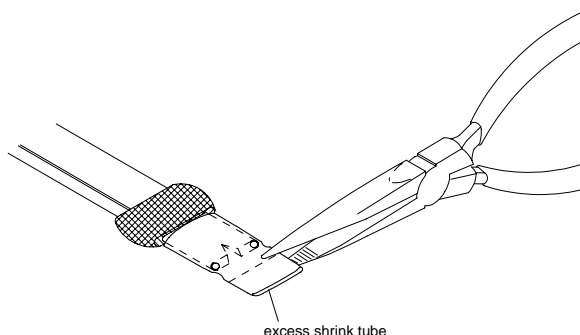


- ❸ At the end of the heater cable, snip a 10mm (0.4") slit between the bus wires. Slightly spread wires apart.

⚠ WARNING:
Do not overlap braid with shrink tube.



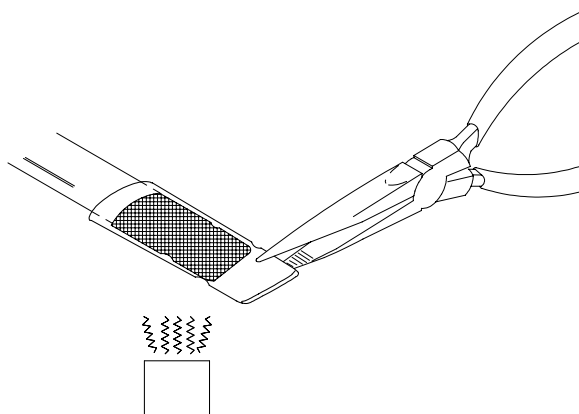
- ❹ Slide a 13mm (0.5") diameter, 51mm (2") length shrink tube over the heater cable leaving approximately 25mm (1") of shrink tube past the heater cable. Shrink with heat gun until completely shrunk.



- ❺ While still warm, squeeze the entire width of shrink tube closed. Cut off excess shrink tube.
- ❻ At this point, if you're using overjacket or braided products proceed to the next step. Otherwise, proceed to "Power Connection", sheet 8.

❷ For all Overjacket and Braided Products

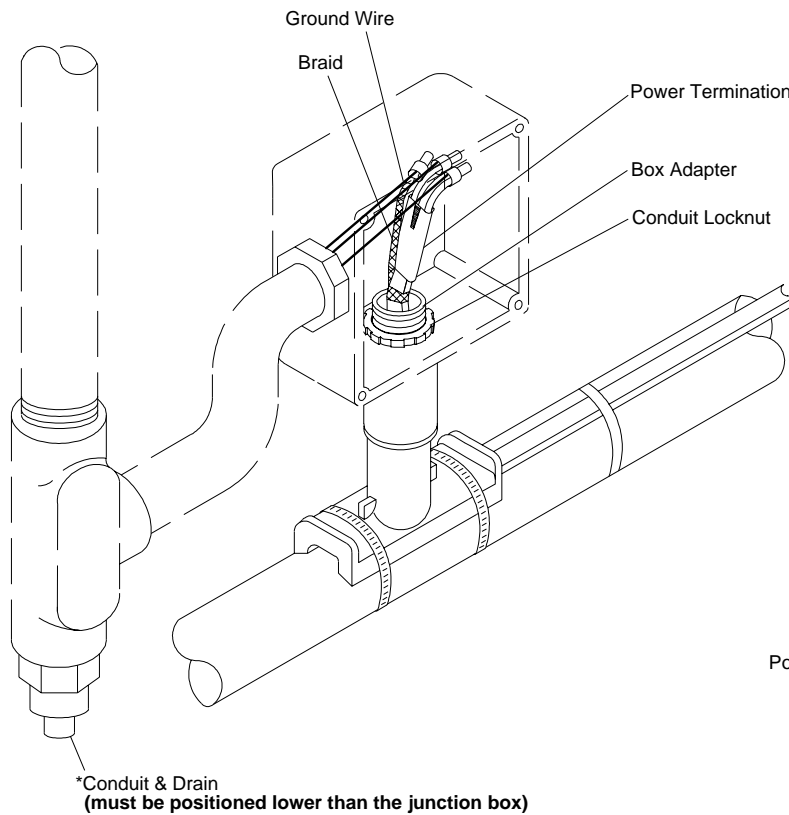
- Pull braid over the squeezed shrink tube, covering the entire end seal and twist closed.
- At this point, if you're using Overjacket JT products, proceed to the next step. Otherwise proceed to "Power Connection, sheet 8.



❸ For Overjacket JT Products only:

- ❹ Fold twisted braid back and slide the 16mm (0.63") diameter, 76mm (3") length shrink tube over the braid leaving 13mm (0.5") of shrink tube past the braid. Shrink with heat gun until completely shrunk.
- ❺ While still warm, squeeze shrink tube closed. Make sure to seal the entire width of tubing.
- ❻ Proceed to "Power Connection", sheet 9.

POWER CONNECTION



WIRING CONNECTION



Note: This detail shows internal grounding of braid.

- ❶ Place gasket on box adapter.
- ❷ Position junction box onto the box adapter and secure it with the conduit locknut.
- ❸ Connect bus and power wiring together using crimp connectors. *See diagram above.*
- ❹ Ground Connection:
External Ground Connected Heaters:
Connect ground braid to the ground wire using the uninsulated splice connector. *See diagram on sheet 1.*

Internal Ground Connected Heaters:
Connect ground wire and braid together using a crimp connector. *See diagram above.*
- ❺ **For Overjacket J or JT Products only:**
Apply silicone at point braid leaves the overjacket
- ❻ Push wires and cable inside junction box.
- ❼ Place the box cover and box cover gasket onto the junction box.

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.