

# NELSON™ HEAT TRACING SYSTEMS

## Z1-ALT-BY-M25/-75NPT TEE SPLICE CONNECTION KIT

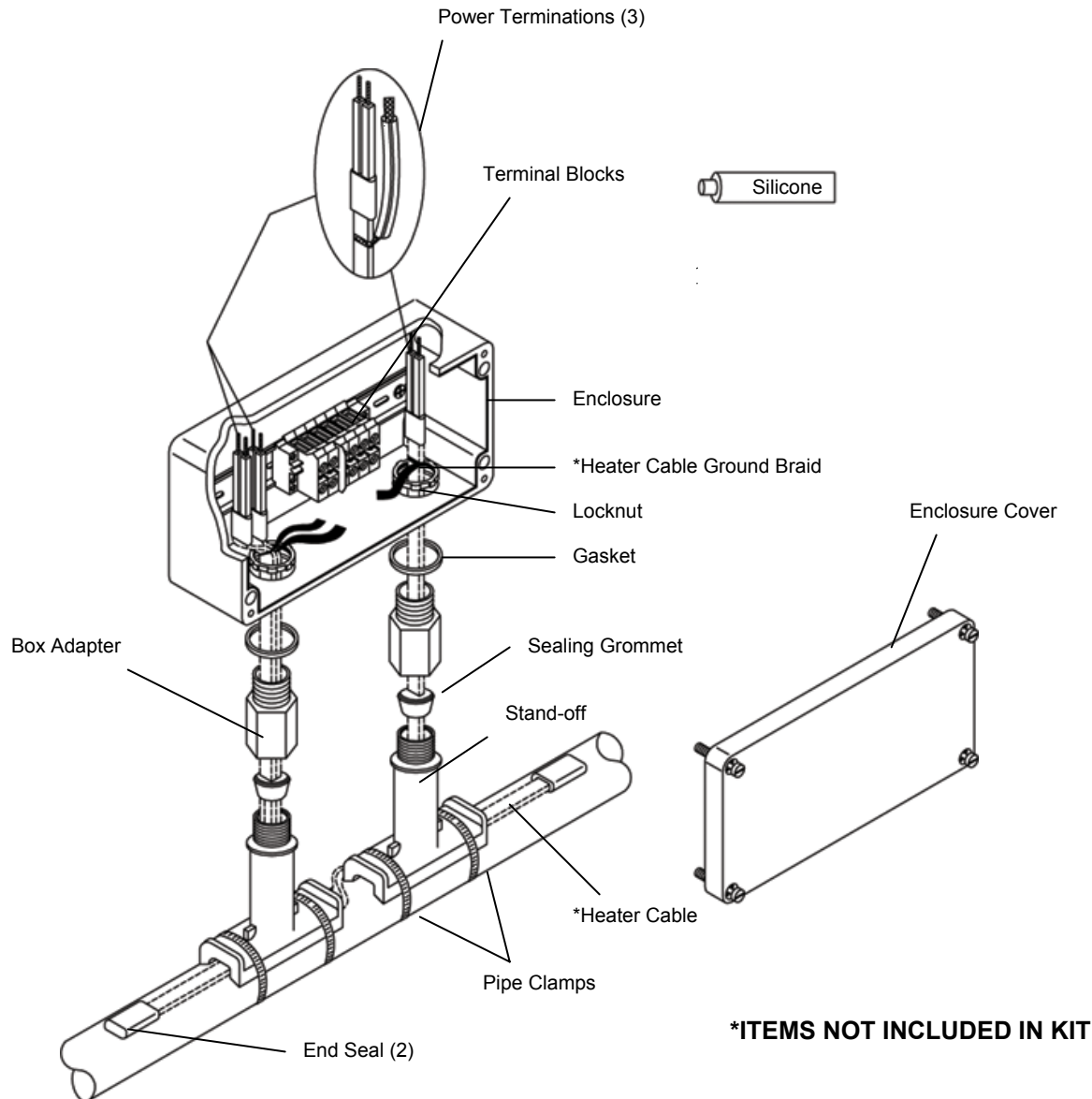
### INSTALLATION INSTRUCTIONS

#### DESCRIPTION

The Z1-ALT-BY Tee Splice Connection Kit is designed for splicing three heater cables in a tee configuration. This kit is designed for use with all wattages of Nelson Heat Tracing Systems' LT-J, LT-JT & HLT-J heater cables. The Z1-ALT-BY-M25 provides compatibility to M25 metric thread standard and the Z1-ALT-BY-75NPT provides compatibility to 0.75" NPT thread standard.

#### KIT CONTENTS

- |   |                        |   |   |
|---|------------------------|---|---|
| 1 | Enclosure              | 3 | Power End Termination, 101.6mm (4.0")                 |
| 4 | Power Terminal Blocks  | 2 | G/Y Tubing, 9.5mm (0.38") Diameter, 152mm (6") length |
| 2 | Ground Terminal Blocks | 2 | End Seals   |
| 2 | Stand-off              | 1 | Tube of Silicone                                      |
| 2 | Box Adapter            | 4 | Pipe Clamps   |
| 2 | Locknut                |   |   |
| 2 | Gasket                 |   |   |
| 2 | Sealing Grommet        |   |   |



**\*ITEMS NOT INCLUDED IN KIT**

#### **⚠ WARNING:**

**If nuisance tripping of ground fault breakers occurs due to condensation in the enclosure, electrical connections should be moisture proofed by use of a coating or sealant.**

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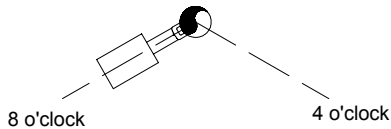
## Z1-ALT-BY-M25/-75NPT TEE SPLICE CONNECTION KIT

INSTALLATION  
INSTRUCTIONS

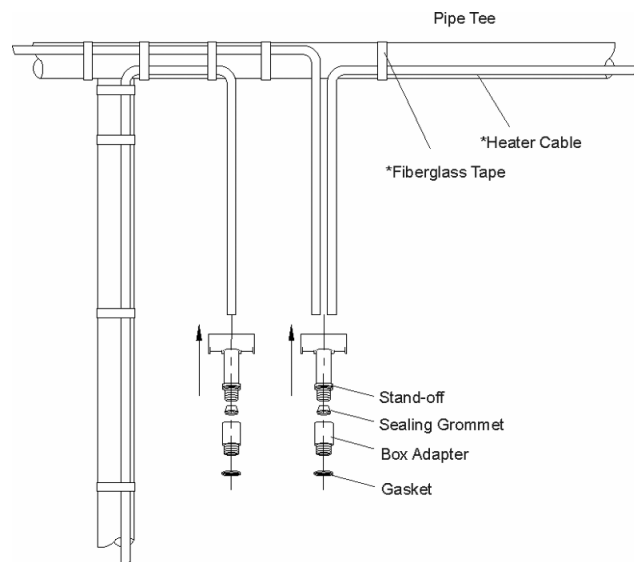
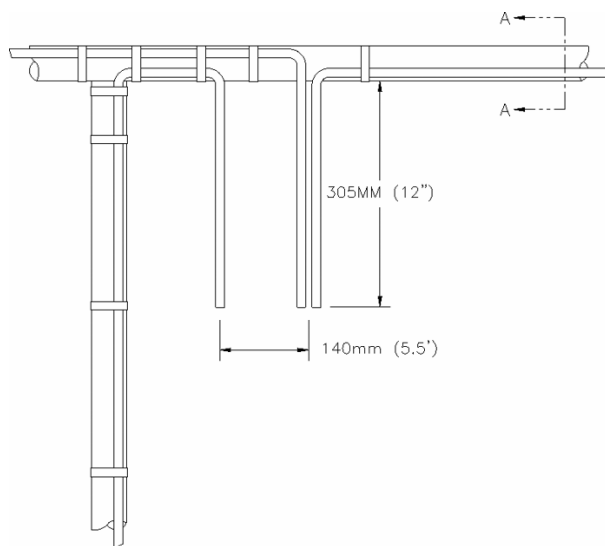
### STAND-OFF POSITIONING

#### Section View A A

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



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



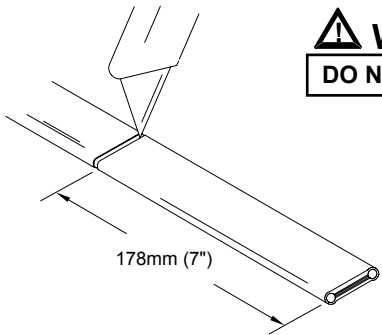
- 1) Mark pipe where stand-offs will be mounted. See diagram above.
- 2) Cut heater cables to lengths shown above.
- 3) Push the two 305mm (12") length heater cables through the bottom opening of the stand-off.
- 4) Place stand-off on pipe and fasten with pipe clamps.
- 5) Slide the large opening sealing grommet over the two heater cables and position inside stand-off opening.
- 6) Apply silicone around the heater cables at top of sealing grommet and fill any voids in sealing grommet.
- 7) Slide the box adapter over the two heating cables and tighten securely to stand-off.
- 8) Push the single 305mm (12") length heater cable through the bottom opening of the second stand-off.
- 9) Place stand-off on pipe at proper spacing shown above and fasten with pipe clamps.
- 10) Slide the small opening sealing grommet over the single heater cable and position inside stand-off opening.
- 11) Slide the box adapter over the single heating cable and tighten securely to stand-off.
- 12) Prepare heater cables for power termination. Proceed to sheet 3.

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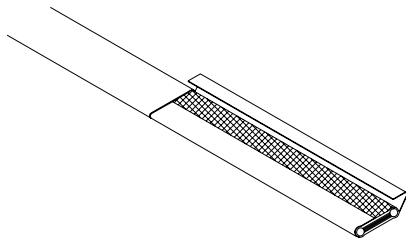
INSTALLATION  
INSTRUCTIONS

### HEATING CABLE PREPARATION FOR NELSON LT-J, LT-JT & HLT PRODUCTS

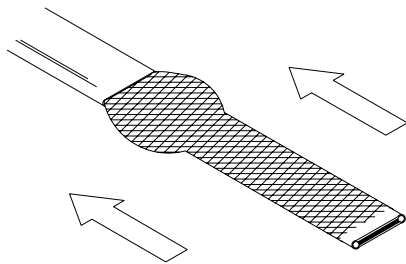


**⚠ WARNING:**  
**DO NOT CUT BRAID**

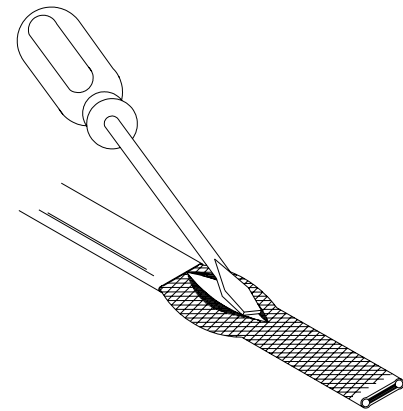
- 1) Lightly cut around heater overjacket 178mm (7") from the end. Bend cable to break the overjacket.
- 2) Lightly cut overjacket up the center between first cut mark and the cable end. Bend cable to break the overjacket.



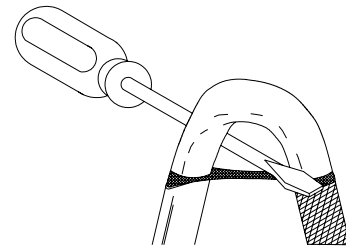
- 3) Remove overjacket from heater cable.



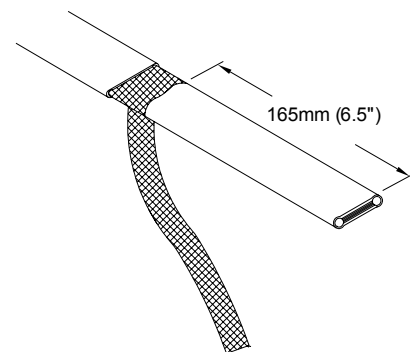
- 4) Move braid back toward the overjacket, creating a bulge.



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

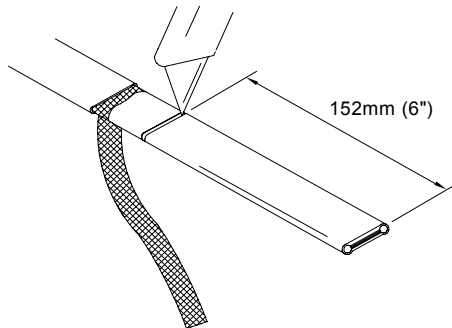


- 6) While bending the heater cable, work it through the braid opening.

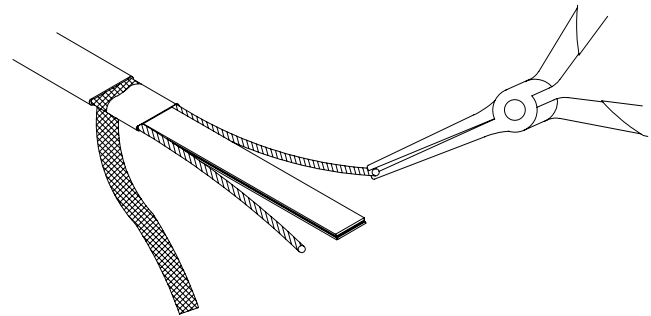


- 7) Pull the braid tight.
- 8) Proceed to sheet 4.

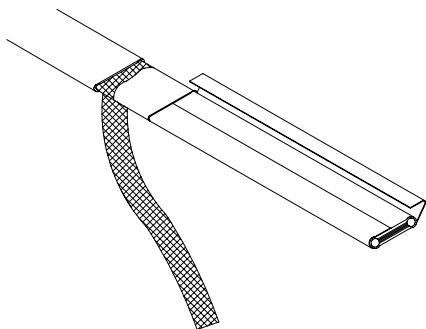
#### HEATING CABLE PREPARATION FOR NELSON LT-J, LT-JT & HLT PRODUCTS



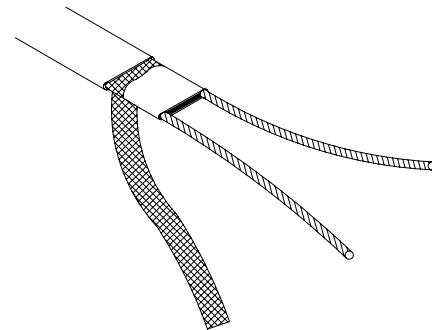
- 1) Lightly cut around cable outer jacket 152mm (6") from the end. Bend cable to break outer jacket.
- 2) Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



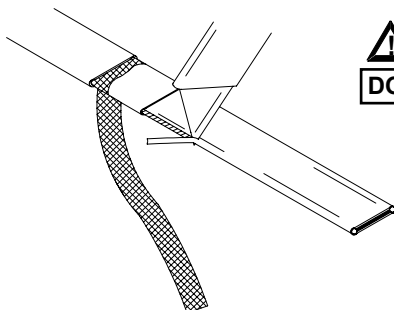
- 5) Starting at the end, pull each bus wire away from the core material.
- 6) Remove exposed core material.



- 3) Remove the jacket from the heater cable.



- 7) Cut 6mm (0.25") off the end of each bus wire.
- 8) Proceed to sheet 5.



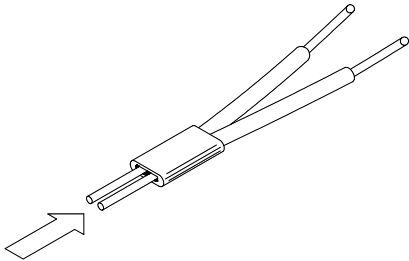
**⚠ WARNING:**  
**DO NOT CUT BUS WIRES**

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

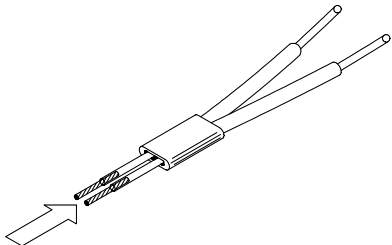
#### POWER TERMINATION FOR NELSON LT-J, LT-JT & HLT-J PRODUCTS

#### WARNINGS

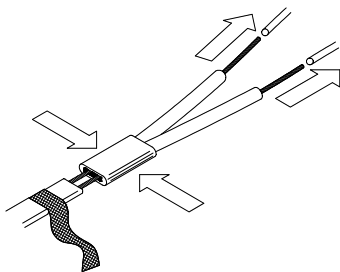
- Bus wires must not touch or cross while inserting into power termination.
- Only power terminations / end seals specifically approved for the vendors' style and type of heater cable must be used.



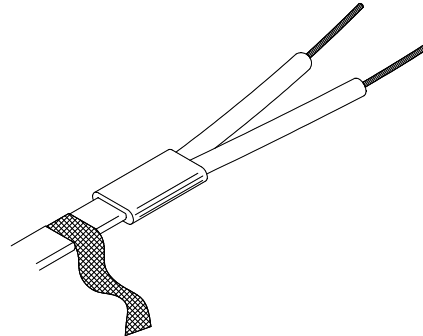
- 1) Insert bus wires into power termination fitting.



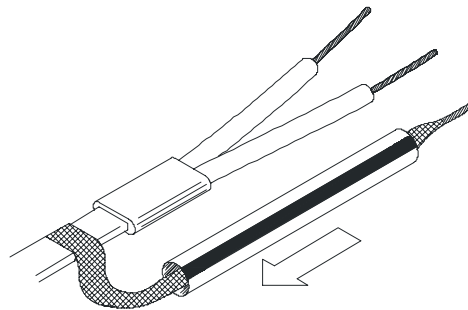
- 2) Insert bus wires into guide tubes.



- 3) Remove guide tubes.
- 4) Squeeze power termination opening and fill with silicone.



- 5) Push power termination to overlap jacket.
- 6) The silicone will set up in about 30 minutes with a complete cure after 24 hours.



- 7) Slide green/yellow tubing over ground braid before terminating heater to supplied terminals.

#### WARNING:

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

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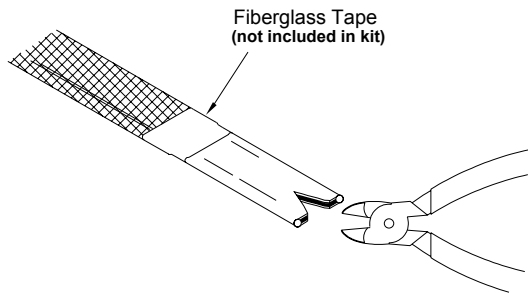
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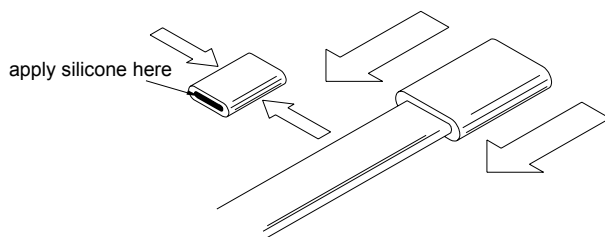
### END SEAL INSTALLATION FOR NELSON LT-J, LT-JT & HLT-J PRODUCTS

#### **⚠ WARNING:**

Only end seals specifically approved for the vendor's style and type of heater cable must be used.



- 1) 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 the end seal and fill with silicone.
- 4) Push end seal over the heater cable. The end seal should overlap the cable overjacket.
- 5) The silicone will set up in about 30 minutes with a complete cure after 24 hours.

#### **⚠ WARNING:**

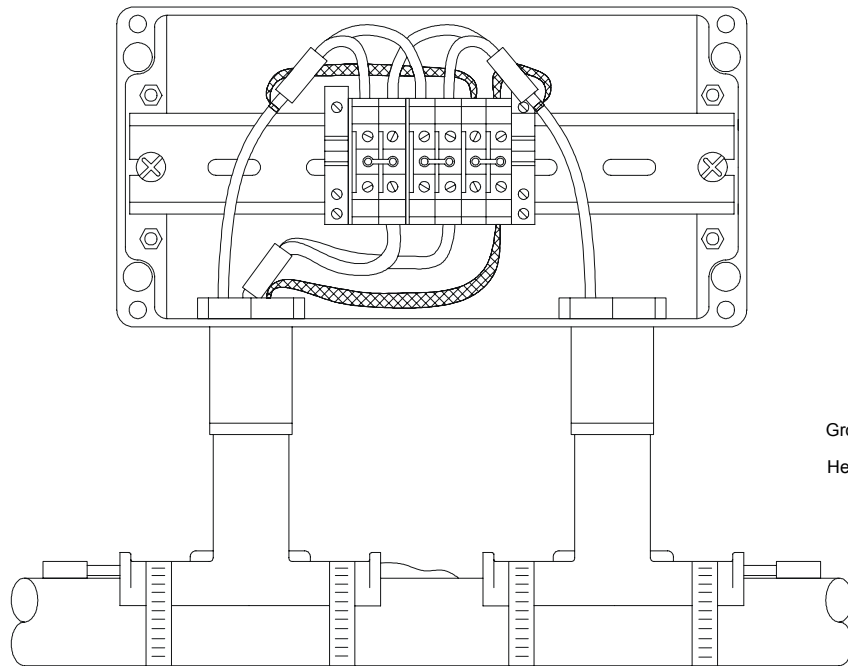
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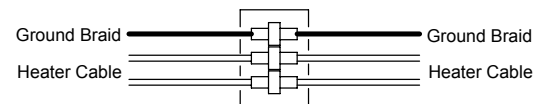
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INSTALLATION  
INSTRUCTIONS

### POWER CONNECTION FOR NELSON LT-J, LT-JT & HLT-J



#### TERMINAL BLOCK CONNECTION



- 1) Place gaskets on box adapters.
- 2) Position the enclosure on the box adapters and secure with conduit locknuts.
- 3) Connect bus wires and ground braid from heater cables to the terminal block. See diagram above.
- 4) Push all wires inside the enclosure.
- 5) Place the cover onto the enclosure.

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).