

# NELSON™ HEAT TRACING SYSTEMS

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

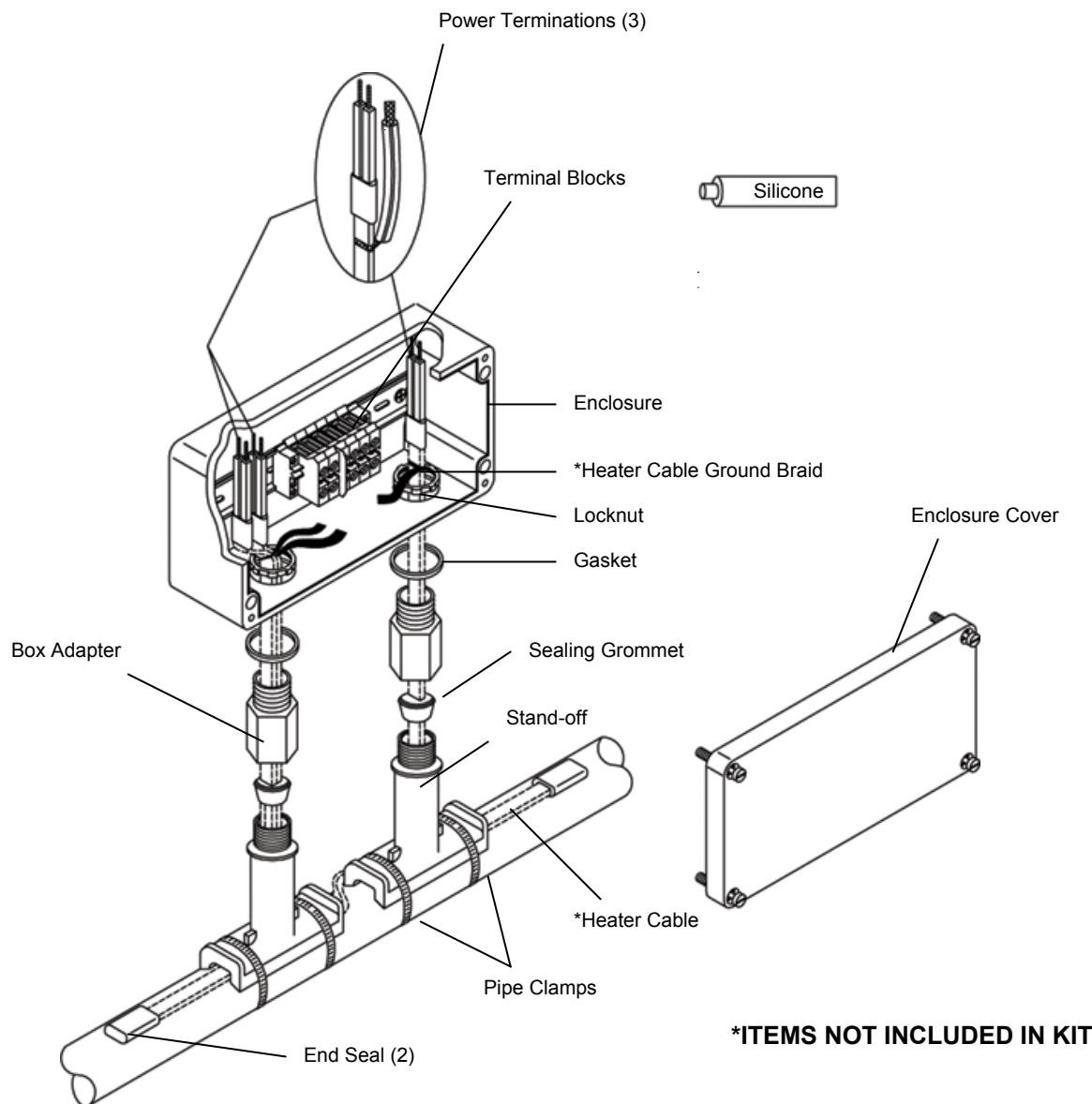
### INSTALLATION INSTRUCTIONS

#### 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		



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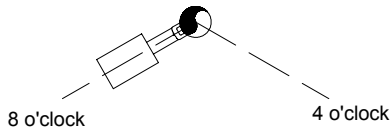
## Z1-ALT-BY-M25/-75NPT TEE SPLICE CONNECTION KIT

### INSTALLATION INSTRUCTIONS

#### STAND-OFF POSITIONING

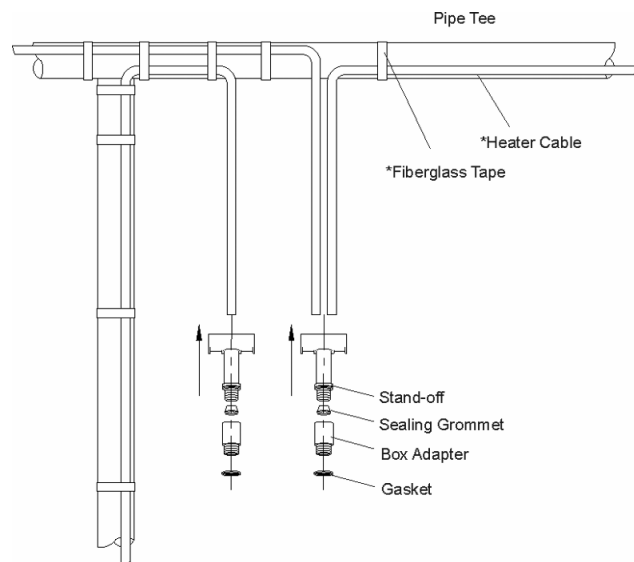
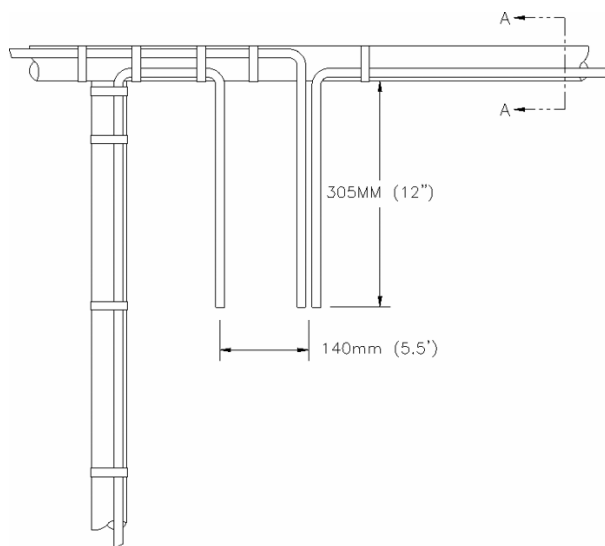
##### Section View A A

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



##### WARNING:

Do not place pipe clamps  
over heater cable.



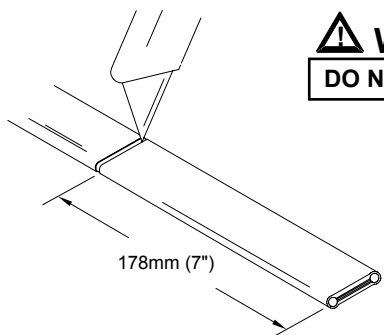
- 1) Mark pipe where stand-offs will be mounted. See diagram above.
- 2) Cut heater cables to lengths shown above.
- 3) Push the two 305mm (12") length heater cables through the bottom opening of the stand-off.
- 4) Place stand-off on pipe and fasten with pipe clamps.
- 5) Slide the large opening sealing 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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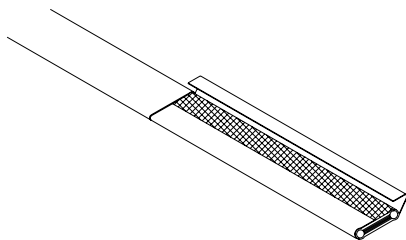
### INSTALLATION INSTRUCTIONS

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

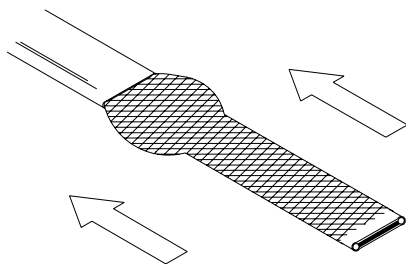


**⚠ WARNING:**  
**DO NOT CUT BRAID**

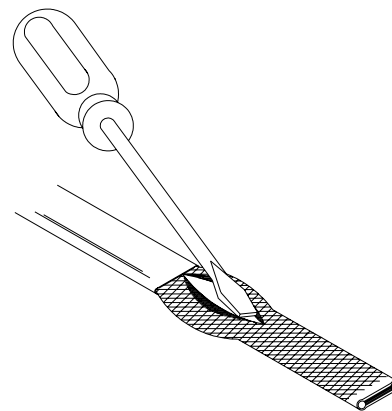
- 1) Lightly cut around heater overjacket 178mm (7") from the end. Bend cable to break the overjacket.
- 2) Lightly cut overjacket up the center between first cut mark and the cable end. Bend cable to break the overjacket.



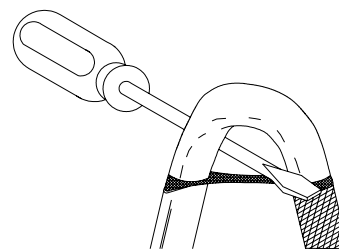
- 3) Remove overjacket from heater cable.



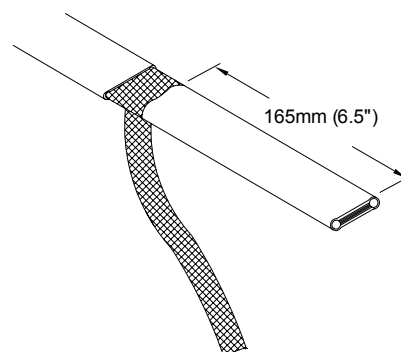
- 4) Move braid back toward the overjacket, creating a bulge.



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



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



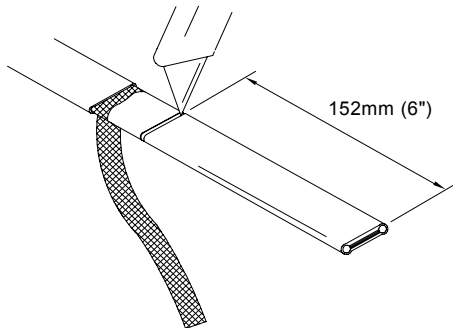
- 7) Pull the braid tight.
- 8) Proceed to sheet 4.

# NELSON™ HEAT TRACING SYSTEMS

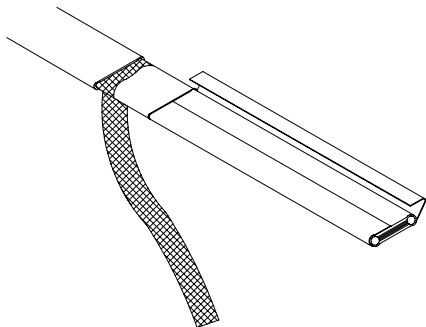
## INSTALLATION INSTRUCTIONS

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

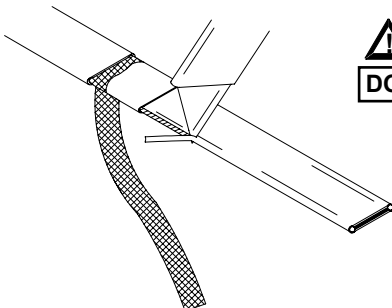
#### HEATING CABLE PREPARATION FOR NELSON LT-J, LT-JT & HLT PRODUCTS



- 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.

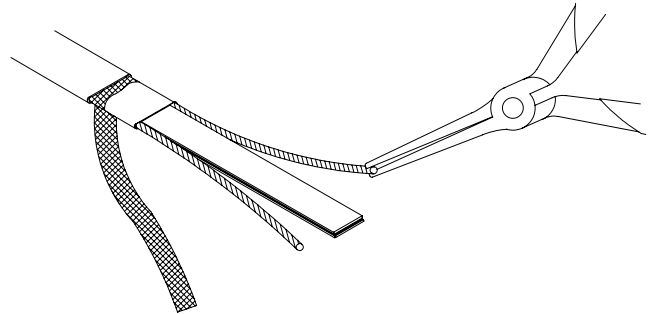


- 3) Remove the jacket from the heater cable.

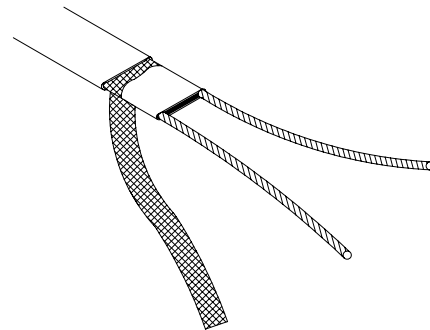


- 4) Shave the core material from the outside of each bus wire.

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



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



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

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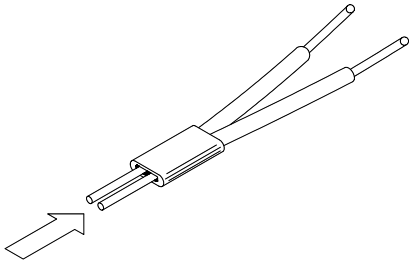
## Z1-ALT-BY-M25/-75NPT TEE SPLICE CONNECTION KIT

### INSTALLATION INSTRUCTIONS

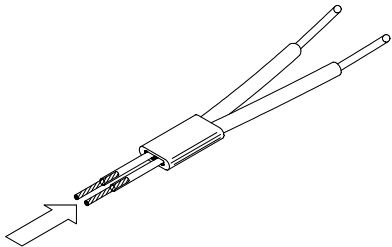
#### POWER TERMINATION FOR NELSON LT-J, LT-JT & HLT-J PRODUCTS

##### WARNINGS

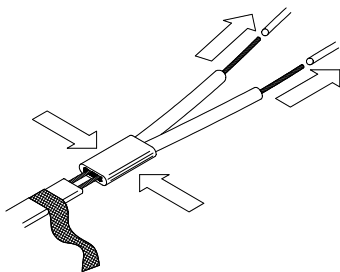
- Bus wires must not touch or cross while inserting into power termination.
- Only power terminations / end seals specifically approved for the vendors' style and type of heater cable must be used.



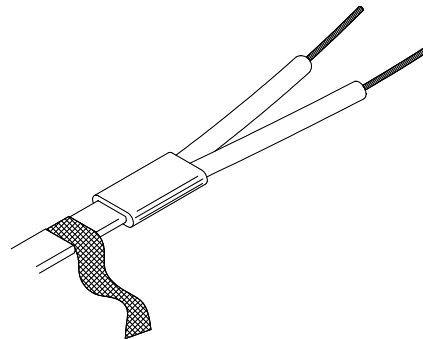
- 1) Insert bus wires into power termination fitting.



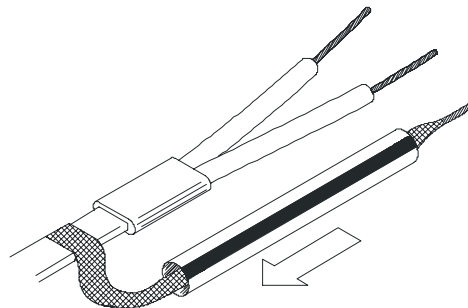
- 2) Insert bus wires into guide tubes.



- 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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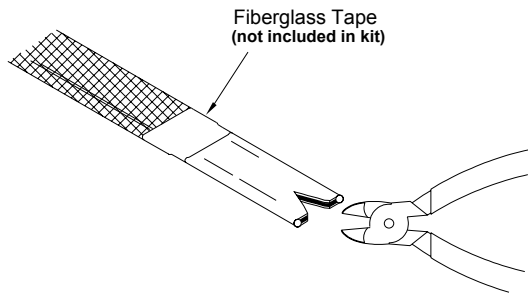
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### INSTALLATION INSTRUCTIONS

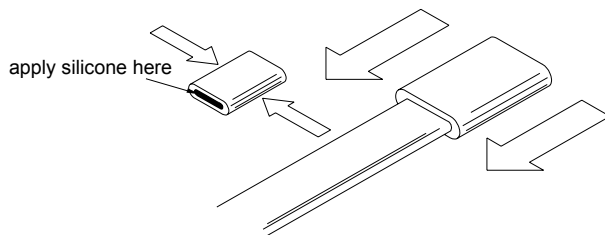
#### END SEAL INSTALLATION FOR NELSON LT-J, LT-JT & HLT-J PRODUCTS

##### **⚠ 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:**

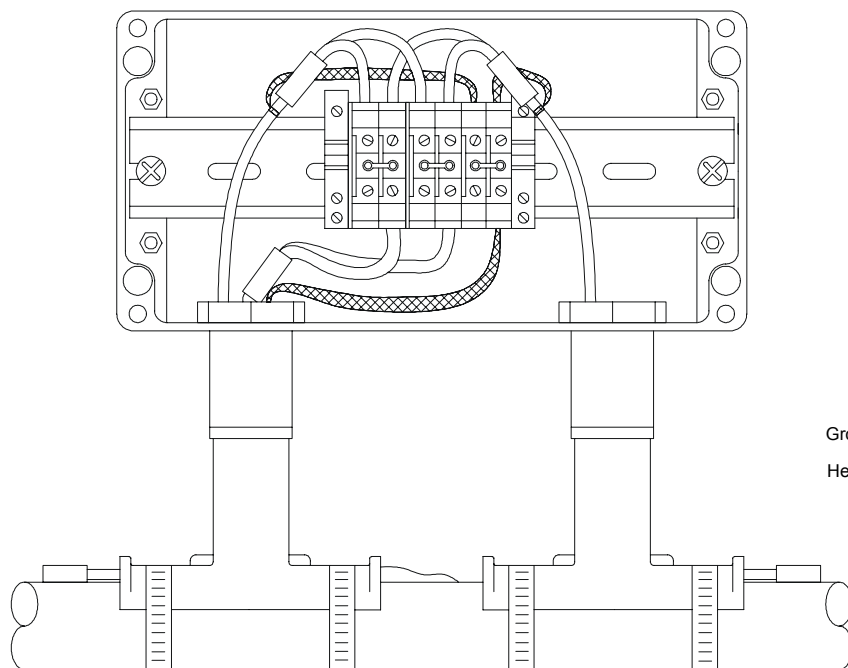
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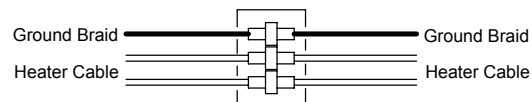
## Z1-ALT-BY-M25/-75NPT TEE SPLICE CONNECTION KIT

### 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).