Heat Shrink Power Connection Kit

Model #: SMPC

EQUIPMENT REQUIRED:

- Utility knife
- Wire cutter
- Pliers
- Measuring tape/Ruler
- Scissors
- Heat gun - 1000°F

MATERIALS REQUIRED:

- UL Listed/CSA certified junction box suitable for outdoor use - rated 90°C/194°F or higher
  - approximately 400 cubic inches per heating cable circuit (power connection and end seal)
- UL Listed/CSA certified rigid metallic conduit and bushings
- Leads rated at 75°C or higher

KIT CONTAINS:

Power Connection Kit:

3 – Red wire connectors

2 – Black heat shrink tubes for bus wires (¼" x 6" long)

1 – Black heat shrink tubes for junction seal (¾" x 1½" long)

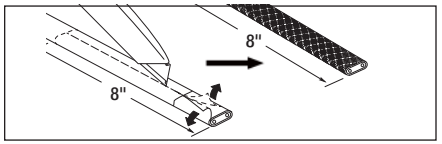
1 – Caution label

End Seal Kit:

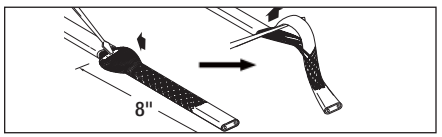
1 – Heat shrink cap (7/8" x 2½" long) **1** – Caution label

HOW TO CREATE A POWER CONNECTION:

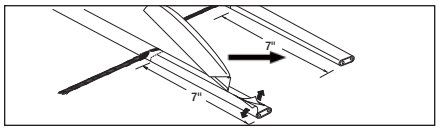
1. Install 1" rigid conduits for heating wire and connect junction box where electrical connections will be made. Lightly score around and down outer jacket 8" from the end of the heating cable. Bend heating cable to break jacket at score; peel off outer jacket.



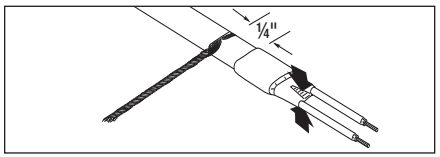
2. Push back braid to loosen. Spread apart the braid, bend the heating cable and work it through the opening in the braid.



3. Position braid on one side of cable and twist into a pigtail.
4. Lightly score around and down the translucent inner jacket 7" from the end of the heating cable and remove.



5. Separate the two bus wires from the conductive core one at a time. With the bus wires pointing up, use pliers to grab hold of the edge of the cable where the bus wire is located and pull downwards. The bus wire should separate easily from the conductive core. Repeat on the other side of the cable to separate the second bus wire. Ensure bus wire strands remain intact.
6. Snap off the conductive core that remains in the middle of the cable.
7. Slide the ¼" x 6" long heat shrink tube onto each exposed bus wire and shrink with a heat gun.
8. Slide the ¾" x 1½" long heat shrink tube onto the cable. Position the heat shrink tube so that it partially overlaps the translucent inner jacket. Heat shrink the tube until inner sealant flows from both ends. Using pliers, pinch tube between the two bus wires and hold for 15 seconds. This will from a Y-junction between the two bus wires.



9. Route the power connection through the metal conduit leading to the junction box. Use the red wire connectors to connect each bus wire to the supply wiring. Use wire connector to connect the braided ground to the ground wire.
10. Ensure the junction box is sealed in accordance with the manufacturer's instructions and apply warning label.

Heat Shrink End Seal Kit

Model #: SMES

EQUIPMENT REQUIRED:

- Utility knife
- Wire cutter
- Measuring tape/Ruler
- Heat gun - 1000°F

MATERIALS REQUIRED

- UL Listed/CSA certified junction box suitable for outdoor use - rated 90°C/194°F or higher
  - approximately 400 cubic inches per heating cable circutit (power connection and end seal)
- UL Listed/CSA certified rigid metallic conduit and bushings

KIT CONTAINS:

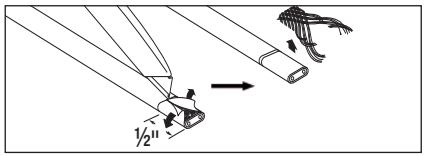
End Seal Kit:

1 – Heat shrink cap (7/8" x 2½" long)

1 – Caution label

HOW TO CREATE AN END SEAL:

1. Using a wire cutter, cut a short piece off the end of the cable to ensure a clean cut.
2. Strip and remove ½" of the outer jacket from the end of the cable. Unravel ground braid and remove. Do not cut into the translucent inner jacket.



3. Hold cable vertical with the cap upwards. Place heat shrink cap as far over the cable as it will go. Using heat gun, shrink cap onto the cable until the cap does not shrink down further.
4. Route the end seal through the metal conduit leading to the junction box.

Heat Shrink Splice Kit

Model #: SMSK

EQUIPMENT REQUIRED:

- Utility knife
- Wire cutter
- Pliers
- Measuring tape/Ruler
- Scissors
- Heat gun - 1000°F
- Crimp Tool (Raychem AD-1522 or equivalent)

KIT CONTAINS:

Splice Kit:

2 – Blue heat shrinkable crimps

4 – Heat shrink tube (¼" x 1 ½" long)

1 – Metal crimp sleeve for ground braid connection

1 – Black heat shrink tube (¾" x 5" long)

1 – Black heat shrink tube w/ inner sealant (1" x 10" long)

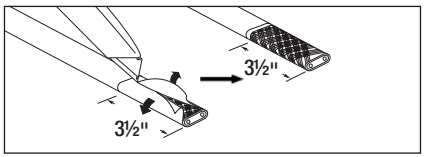
1 – Black heat shrink tube (1" x 10½" long)

1 – Caution label

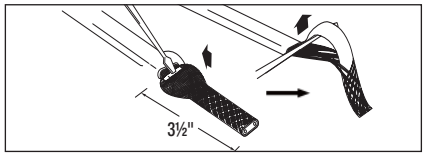
HOW TO CREATE A SPLICE:

Preparing the heating cables:

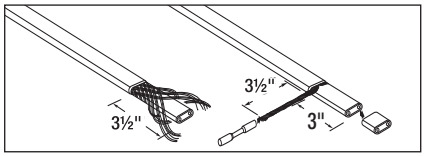
1. Allow 6" of extra length on each heating cable.
2. Slide the three black heat shrinks in this order (10½" long, 10" long, 5" long) down one of the cable lengths for use later.
3. From the end of the first cable, strip away 3½" of outer jacket. Do not cut into inner jacket.



4. Push back braid to loosed. Spread apart braid, bend the heating cable and work it through the opening in the braid.



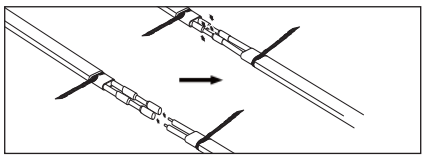
5. Twist the braid to form a 3½" bundle.
6. Using a wire cutter, cut off the exposed cable so that only 3" of the exposed cable remain.



7. Using utility knife, strip away 1¾" of the translucent inner jacket.
8. Separate the two bus wires from the conductive core one at a time. With the bus wires pointing up, use pliers to grab hold of the edge of the cable where the bus wire is located and pull downwards. The bus wire should separate easily from the conductive core. Repeat on the other side of the cable to separate the second bus wire. Ensure bus wire strands remain intact.
9. Snap off the conductive core that remains in the middle of the cable.
10. Slide the ¼" X 1½" long heat shrink tube over each exposed bus wire and shrink with a heat gun. Ensure 3/8 " of bus wire remains exposed. Trim heat shrink tube if necessary.
11. Repeat steps 1-10 on the other cable.

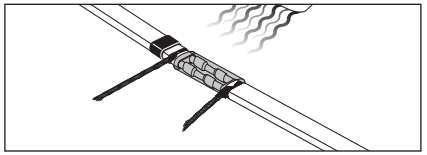
Splicing the heating cables:

12. Insert the exposed bus wire from each cable into the blue heat shrinkable crimps.

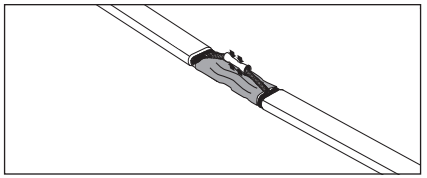


13. Using a crimp tool (Tyco AD1522 or equivalent), crimp down on both sides of each crimp to ensure each of the bus wires are securely held in place.
14. Using a heat gun, heat shrink both crimps.

15. Slide the 5” long black heat shrink to cover the crimps and partially cover the inner jacket on both ends of the splice connection. Ensure the ground braids are NOT inside the heat shrink. Using the heat gun, fully heat shrink the tube.



16. Bend the cables together to allow some slack so that two ground braids can easily overlap.
17. Slide the metal crimp sleeve over the overlapped ground braids and crimp twice to make sure the connection is secured. Use the 14AWG slot on the crimp tool to crimp the metal crimp sleeve.



NOTE: Nuheat recommends conducting continuity testing at this point of the installation.

18. Twist the crimp connection so that it remains flat to the cable.
19. Slide the 10" long black heat shrink over the splice connection. There should be approximately 2” of overlap on each side. Using heat gun, fully heat shrink the tube until the inner sealant starts to appear and no more shrinkage is apparent.
20. Slide the 10½" long black heat shrink over the entire splice connection so that it overlaps the previous heat shrink on both sides. Using heat gun, fully heat shrink the tube.

Heat Shrink Expansion Joint Kit

Model #: SMEJ

EQUIPMENT REQUIRED:

- Measuring tape/Ruler

KIT CONTAINS:

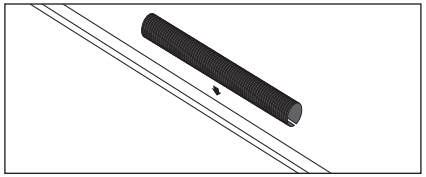
Expansion Joint Kit:

1 – Expansion joint tube w/ slit

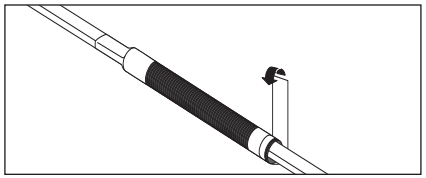
2 – Strips of electrical tape

HOW TO CREATE AN END SEAL:

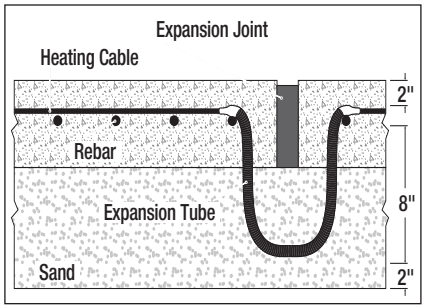
1. Locate the area of the heating cable that will be required to go under the expansion joint.
2. Open the slit of the expansion joint tube and wrap the expansion joint tube onto the heating cable. Rotate the expansion joint tube so that the slit is facing down.



3. On both ends of the expansion joint tube, wrap electrical tape to secure the expansion joint tube to the heating cable.



4. Position the heating cable under the as expansion joint as per the picture below.



WARNING: Electrical Device

In order to ensure proper operation and prevent shock or fire, all products must be installed correctly. Read all warnings and follow all installation instructions.

Ground-fault equipment protection must be used to minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed and to comply with Nuheat requirements, agency certifications and national electrical codes. Conventional circuit breakers may not stop arcing.

Do not substitute parts or use electrical tape. Component approvals and performance characteristics are based on Nuheat specific parts only. Substitution will void approvals, warranties and performance claims.

The heating cable core is conductive and can short if not properly insulated and kept dry.

Heating cable core bus wires can overheat and short when damaged. When cutting the cable jacket or core, do not break bus wire strands.

Component and heating cable ends must be kept dry before and during installation.

Nuheat-approved heat shrink power connection kits (SMPC), splice kits (SMSK), end seal kits (SMES) and expansion joint kits (SMEJ) are suitable for use with Nuheat SM32 heating cable only.

Rated: 277V; VAC 31.7A

Maximum continuous exposure temperature: 90˚C (194°F)

BEFORE YOU START:

- Read through entire installation instructions prior to beginning installation.
- All instructions available at www.nuheat.com
- **DO NOT** install Nuheat Freeze Protection products in direct contact with combustible surfaces or materials.
- **DO NOT** rest a hot heat gun on any Nuheat Freeze Protection Products.
- **DO NOT** make any modifications to Nuheat Freeze Protection Products while connected to power.
- THIS HEATING PRODUCT SHOULD ONLY BE INSTALLED BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE APPARATUS AND RISKS INVOLVED.
- THE INSTALLATION OF THIS HEATING PRODUCT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER’S INSTRUCTIONS AND REGULATIONS OF THE AUTHORITY HAVING JURISDICTION.