

## 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.

Fire-resistant thermal insulation materials should be used.

For use with Nuheat R8P5, R13P8 and 13FP cables.

Rated: 277V; Max: 50A

Maximum continuous exposure temperature: 65°C (149°F)

## BEFORE YOU START:

- Read through entire installation instructions prior to beginning installation.
- All instructions available at [www.nuheat.com](http://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.

Nuheat Freeze  
Protection Products Nuheat®



# Nuheat Weather-Ready Heat Trace

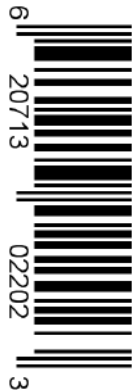
SPLICE/TEE KIT

MODEL #: RPST PART #: 0C0062



DE-ICING AND SNOW MELTING EQUIPMENT 3YH6  
PIPE HEATING CABLE 4YM1

1.800.778.WARM(9276)



DATE OF MANUFACTURE

[www.nuheat.com](http://www.nuheat.com)

Assembled in Canada



# Splice/Tee Kit

Model #: RPST

## EQUIPMENT REQUIRED:

- Utility knife
- Wire cutter
- Pliers (optional)
- Measuring tape/Ruler
- Scissors
- Crimp Tool - Tyco AD1522
- Heat gun - 1000°F

## KIT CONTAINS:

### Splice/Tee Kit

- 3 – Black heat shrink tubes
  - 3½" long
  - 8" long
  - 8½" long
- 2 – Blue heat shrink crimps
- 1 – Metal crimp sleeve
- 1 – Mastic strip
- 2 – Aluminum tape strips
- 3 – Cable ties
- 1 – Caution label

### End Seal Kit

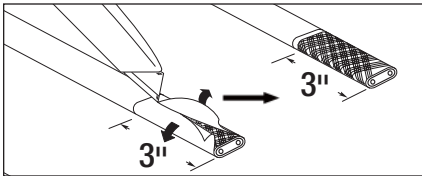
#### Two (2) kits with each containing:

- 1 – Heat shrink cap (½" x 1½" long)
- 1 – Heat shrink tube (¾" x 2" long)
- 1 – Aluminum tape strip
- 1 – Caution label

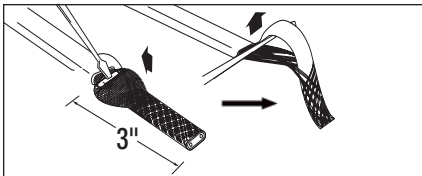
## HOW TO CREATE A SPLICE (COMBINING TWO CABLES)

### Preparing the heating cables:

1. Allow 6" of extra length on each heating cable. Trim cables evenly.
2. Slide the three black heat shrinks (3½" long, 8" long, 8½" long) down one of the cable lengths for use later.
3. From the end of the cable, strip away 3" of outer jacket using utility knife. Do not cut into inner jacket.



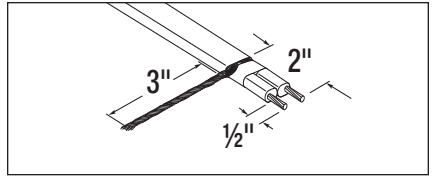
4. Push back braid to loosen. Spread apart braid, bend the heating cable and work it through the opening in the braid.



5. Twist the braid into a pigtail.
6. Using wire cutter, cut off approximately 1" of the exposed cable so that only 2" of the exposed cable remain.
7. Using utility knife, strip away 1¼" of the inner jacket.

8. Using scissors, cut down the middle of the conductive core lengthwise to separate into two parts. Do not cut into the inner jacket that remains.
9. Completely remove ½" of the conductive core from the tips to expose both of the bus wires.
 

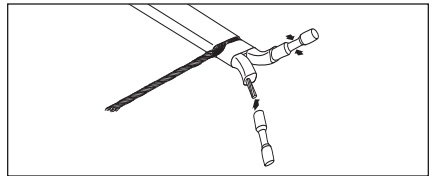
**TIP:** Lightly score the conductive core at the ½" mark. Be sure not to contact the bus wires while scoring. Using pliers, lightly hold the scored conductive core section and twist continuously until conductive core breaks at the score mark.



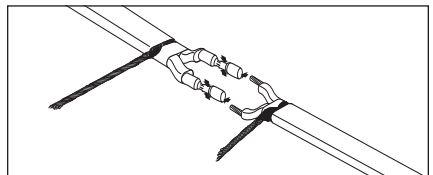
10. Repeat steps 1-9 on the other cable.

### Splicing the heating cables:

11. Insert a blue heat shrink crimp over each bus wire on the cables. Ensure the exposed bus wires are completely covered by the blue heat shrinks. If the blue heat shrinks do not cover the exposed wires, remove more of the conductive core.

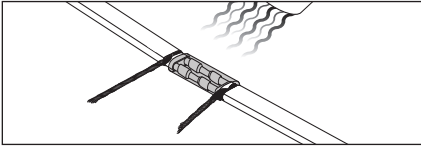


12. Bend one bus wire up and the other down to create more room for crimp tool. Using crimp tool, crimp the blue heat shrinks down so that they hold the bus wires in place.
13. Insert the bus wires of the second cable into the crimps. Ensure the exposed bus wires are completely covered by the blue heat shrinks.



14. Ensure the exposed bus wires are inside the metal crimp portion of the blue heat shrinks.
15. Using crimp tool, crimp the blue heat shrinks down so that they hold the bus wires in place. Use heat gun to shrink down crimps.

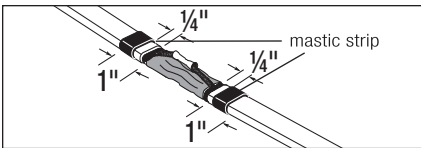
- Slide the 3½" long black heat shrink to cover the crimps and partially cover the inner jacket on both ends of the splice connection. Ensure the ground braids are not inside the heat shrink. Using the heat gun, fully heat shrink the tube until inner sealant appears and no more shrinkage is apparent.



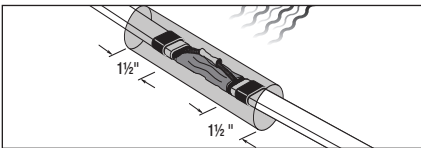
- Slide the metal crimp sleeve onto one of the two ground braids. Bend the cables together to allow some slack so that two ground braids can easily overlap.
- Slide the metal crimp sleeve over the overlapped ground braids and crimp twice to make sure the connection is secured. Use the 14AWG slot on the crimp tool (Tyco AD1522 or equivalent) to crimp the metal crimp sleeve.

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

- Locate the piece of mastic strip and cut the strip into two equal halves. Stretch and wrap each piece onto the outer jacket of the heating cable approximately ¼" away from the ground braid.



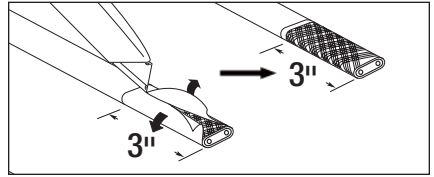
- Twist crimped braid connection to ensure it lays flat against flat side of cable. Slide the 8" long black heat shrink over the entire splice connection so that it covers the mastic strip on both sides. The heat shrink should overlap the splice connection by 1½" on both sides of the splice connection. Using heat gun, fully heat shrink the tube.



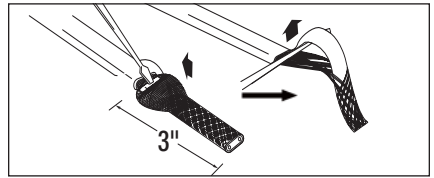
- Wrap one end of the connection with the 4" long aluminum tape ½" away from end of heat shrink tube toward center of connection. Repeat if necessary to find best lay angle to ensure mastic tape under the heat shrink is fully covered by aluminum tape. Smooth tape with fingers to ensure no sharp edges.
- Slide the 8½" long black heat shrink over entire splice connection so that it overlaps the previous heat shrink equally on both sides. Using heat gun, fully heat shrink tube.

## HOW TO CREATE A TEE SPLICE (COMBINING THREE CABLES)

- Allow 6" of extra length on each heating cable.
- From the end of the cable, strip away 3" of outer jacket using utility knife. Do not cut into inner jacket.

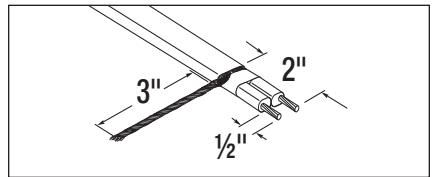


- Push back braid to loosen. Spread apart braid, bend the heating cable and work it through the opening in the braid.



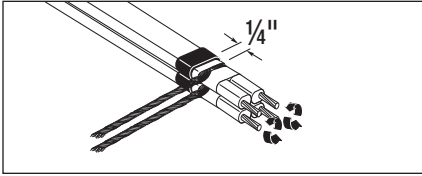
- Twist the braid into a pigtail.
- Using wire cutter, cut off approximately 1" of the exposed cable so that only 2" of the exposed cable remain.
- Using utility knife, strip away ¼" of the inner jacket.
- Using scissors, cut down the middle of the conductive core lengthwise to separate into two parts. Do not cut into the inner jacket.
- Completely remove ½" of the conductive core from the tips to expose both of the bus wires.

**TIP:** Light score the conductive core at the ½" mark. Be sure not to contact the bus wires while scoring. Using pliers, lightly hold the scored conductive core section and twist continuously until conductive core breaks at the score mark.



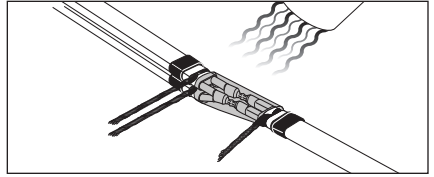
- Remove as much of the conductive core from the middle without exposing any more bus wire. This will allow the heating cable to fit easily into the blue heat shrink crimps in Step 14.
- Repeat steps 1-9 on the other two cable lengths.
- Locate the piece of mastic strip and cut the strip into three equal pieces. Stretch and wrap each piece onto the outer jacket of the heating cable approximately ¼" away from the ground braid.

12. Ensure mastic is significantly thicker on one side of the flat sides of both cables. Align ends of cable and place flat side of both cables together with the sides with the thicker mastic tape in contact. Work mastic with fingers and stretch mastic until there are no voids between the cables and there is a continuous strip of mastic around both cables.
13. Tightly twist the bus wires from each side together.



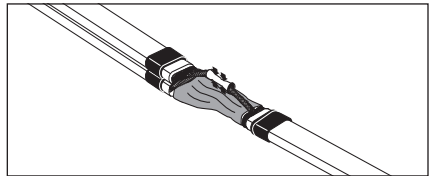
14. Bend one bus wire up and the other down to create more room for crimp tool. Insert a blue heat shrink crimp over each bus wire bundle. Ensure the exposed bus wire bundles are completely covered by the blue heat shrinks. If blue heat shrinks do not cover the exposed bus wire bundles, remove more of the conductive core.
15. Ensure the exposed bus wires are inside the metal crimp portion of the blue heat shrinks.
16. Using crimp tool, crimp the blue heat shrinks down so that they hold the bus wire bundles in place.
17. Using cable ties, secure the two cable lengths together 3" and 6" away from the end of the braid.
18. Slide the three black heat shrinks (3½" long, 8" long, 8½" long) down the third cable length.
19. Position the third cable length so that the ground braid is on the same side and the two cable lengths.
20. Insert the bus wires of the third cable unto the blue heat shrinks. Ensure the exposed bus wires are completely covered by the blue heat shrinks.
21. Ensure the exposed bus wires are inside the metal crimp portion of the blue heat shrinks.
22. Bend one bus wire up and the other down to create more room for crimp tool. Using crimp tool, crimp the blue heat shrink down so that they hold the bus wires in place.

23. Slide the 3½" 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 heat gun, fully heat shrink the tube until inner sealant appears and no more shrinkage is apparent.

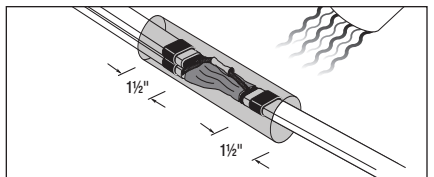


24. Slide the metal crimp sleeve onto the ground braid. Bend the cables together to allow some slack so that all three ground braids can easily overlap.
25. Slide the metal crimp sleeve over the overlapped ground braids and crimp twice to make sure the connection is secured. Use the 14AWG slot on the crimp tool (Tyco AD1522 or equivalent) to crimp the metal crimp sleeve. Lay the ground braid flat on top of the connection to mark the overlap.

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



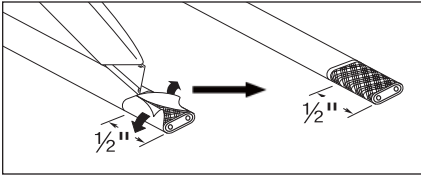
26. Slide the 8" long black heat shrink over the entire splice connection so that it covers the mastic strip on both sides. The heat shrink should overlap the splice connection by 1½" on both sides of the splice connection. Using heat gun, fully heat shrink the tube.



27. Wrap one end of the connection with the 4" long aluminum tape ½" away from end of heat shrink tube toward center of connection. Repeat if necessary to find best lay angle to ensure mastic tape under the heat shrink is fully covered by aluminum tape. Smooth tape with fingers to ensure no sharp edges.
28. Slide the 8½" long black heat shrink over entire splice connection so that it overlaps the previous heat shrink tube equally on both sides. Using heat gun, fully heat shrink tube.

## HOW TO CREATE AN END SEAL

1. Strip and remove outer jacket  $\frac{1}{2}$ " from the end. Cut off exposed ground braid. Do not cut into inner jacket.



2. Place the heat shrink cap over the end of the cable as far as it can go.
3. Hold the cable vertical with the cap upwards. Using heat gun, shrink the cap onto the cable.
4. Wrap the entire cap including the 4" long aluminum tape. Repeat if necessary to find the best lay angle to ensure entire heat shrink cap is covered. Smooth tape with fingers to ensure no sharp edges.
5. Slide heat shrink tube to cover the cap. Line end of heat shrink tube with top of heat shrink cap. Shrink tube. Hold for 15 seconds.



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[info@nuheat.com](mailto:info@nuheat.com)

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Printed in Canada  
April 2013