

INSTRUCTION MANUAL

Power Connection Kit

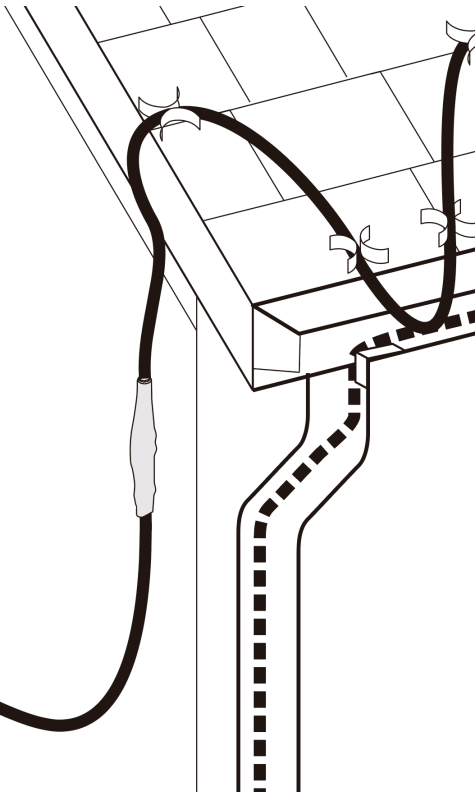
KYSF03

DESCRIPTION

This plug-in, ground-fault-protected power connection kit is designed for use with 120 V self-regulating heating cables. It provides equipment-level ground-fault protection to ensure compliance with NEC and CEC requirements. This device provides ground-fault protection for equipment only and does not protect people against shock hazards.

The kit includes all materials required to make one power connection, as well as one splice or one tee connection.

Self-regulating heating cable systems are designed for water-pipe freeze protection applications and roof and gutter de-icing applications.

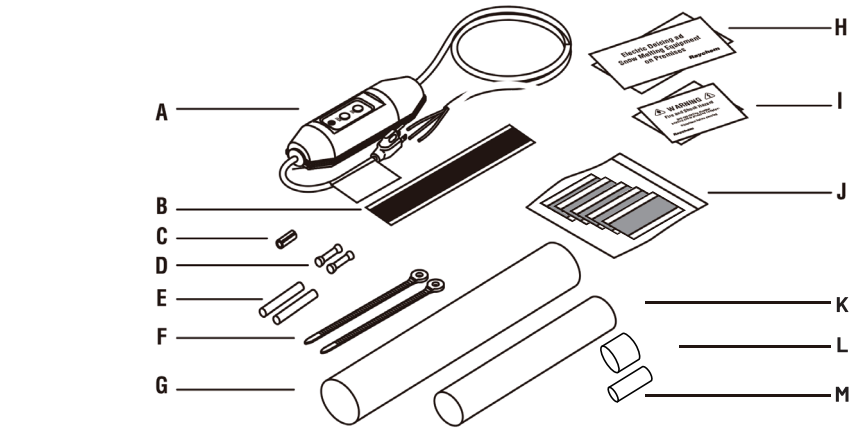


Tools Required

(Crimp tools, Utility Knife, Needle Nose Pliers, Scissors, Cutter, Heat Gun)

Additional Materials Required

- Grounded, UL Listed 15-A, 120-V receptacle (receptacle must be approved for wet locations if exposed to weather)
- Additional cable ties may be required for roof and gutter applications.

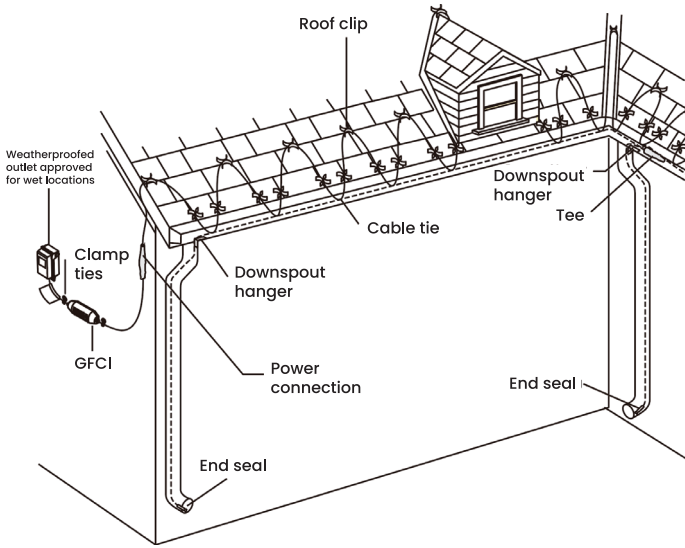


Kit Contents					
Item	Qty	Description	Item	Qty	Description
A	1	Plug in ground fault equipment protection device	H	2	Warming labels for pipe trace application
B	1	Black cloth tapes 12 in (long) x 1 in (width)	I	2	De-icing and snow melting equipment labels
C	1	Uninsulated braid crimp	J	5	Mastic strips
D	2	Insulated bus wire crimp	K	1	Black heat-shrinkable tube 5 in (Long) x 3/4 in (Dia.)
E	2	Black heat-shrinkable tube 1 in (long) x 1/8 in (dia.)	L	1	Black heat-shrinkable tube 1 in (Long) x 1/2 in (Dia.)
F	2	Clamp ties	M	1	Black heat-shrinkable tube 1 1/2 in (Long) x 1/3 in (Dia.)
G	1	Black heat-shrinkable tube 8 in (long) x 3/4 in (dia.)			

CAUTION:

These components are electrical devices. They must be installed correctly to ensure proper operation and to prevent shock or fire. Carefully follow all of the installation instructions and read these important warnings.

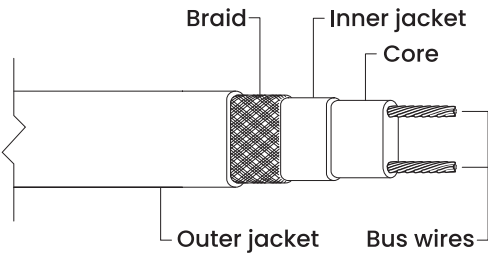
- To minimize the danger of fire from sustained electrical arcing if the heating cable is damaged or improperly installed, and to comply with the requirements of and the national electrical codes, ground-fault equipment protection must be used on each heating cable branch circuit. Arcing may not be stopped by conventional circuit protection.
- Component approvals and performance are based on the use of specified parts only. Do not substitute parts or use vinyl electrical tape.
- The black heating-cable core is conductive and can short. It must be properly insulated and kept dry.
- The cable should not be twisted during installation.
- Keep components and heating cable ends dry before and during installation.
- Damaged bus wires can overheat or short. Do not break braid or bus wire strands when scoring the jacket or core.
- Bus wires will short if they contact each other. Keep bus wires separated.
- Heat-damaged components can short. Use a heat gun or a torch with a soft, yellow, low-heat flame, not a blue focused flame. Keep the flame moving to avoid overheating, blistering, or charring the heat-shrinkable tubes. Avoid heating other components. Replace any damaged parts.
- Use only fire-resistant insulation materials such as fiberglass wrap.
- Leave these installation instructions with the user for future reference.
- De-energize all power circuits before installation or servicing.
- The conductive layer of this heating device must be connected to a suitable grounding/earthing terminal.
- Charring or burning the heat-shrinkable tubes in this kit will produce fumes that may cause eye, skin, nose, and throat irritation.



NOTE:

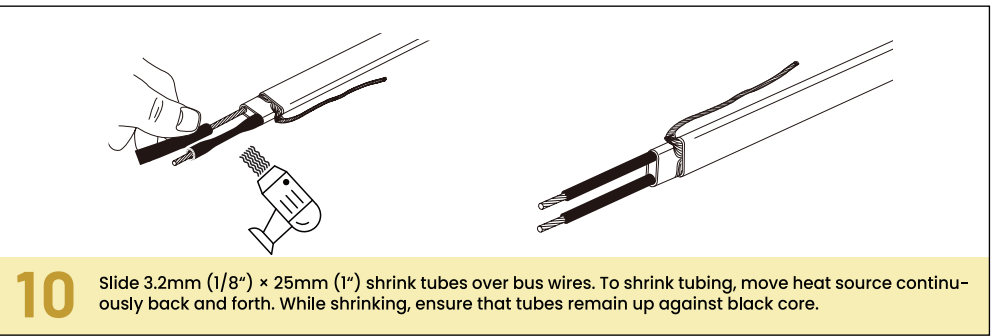
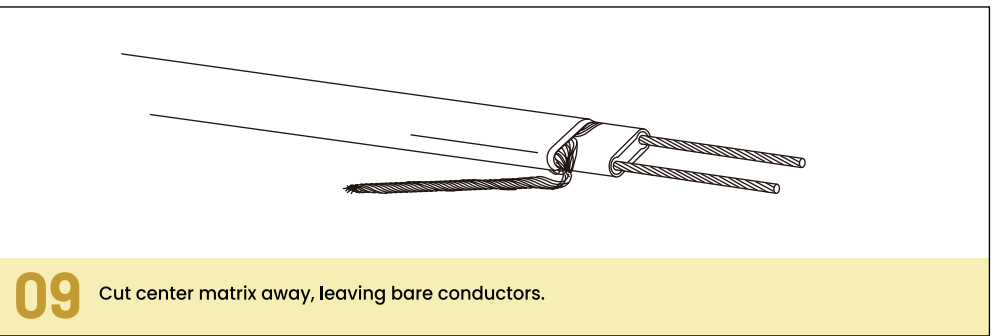
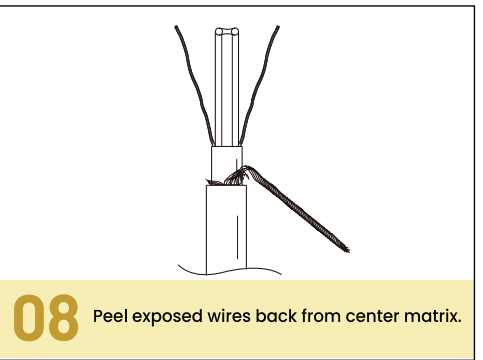
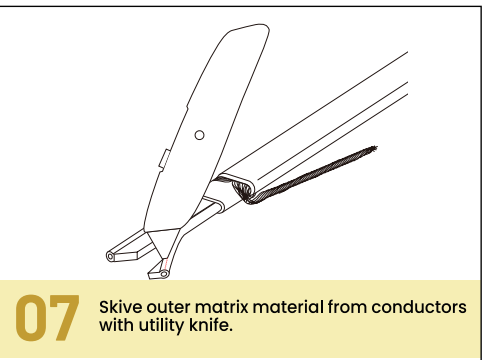
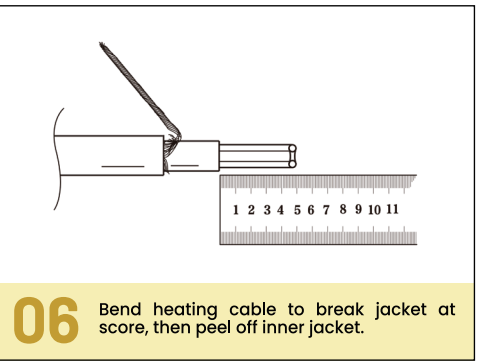
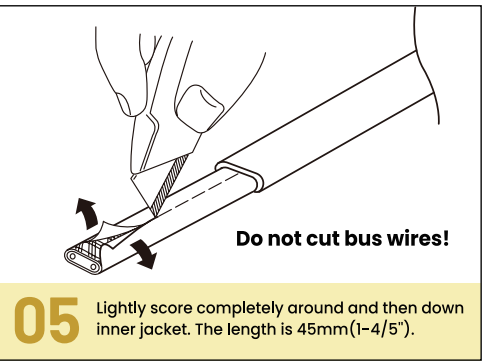
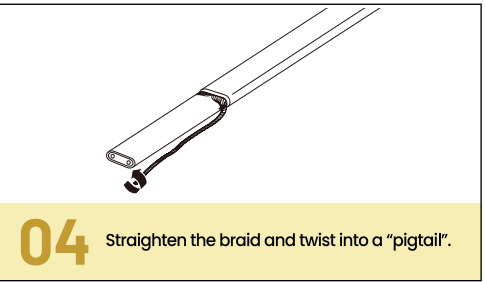
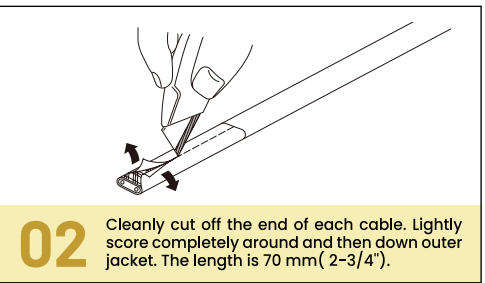
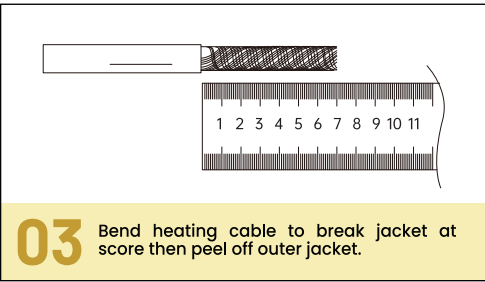
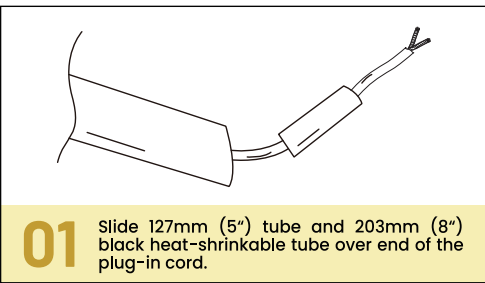
In all locations, route and secure cable to avoid possible mechanical damage, such as from ladders, etc. Neither the ground-fault unit nor the power connection splice can be submerged.

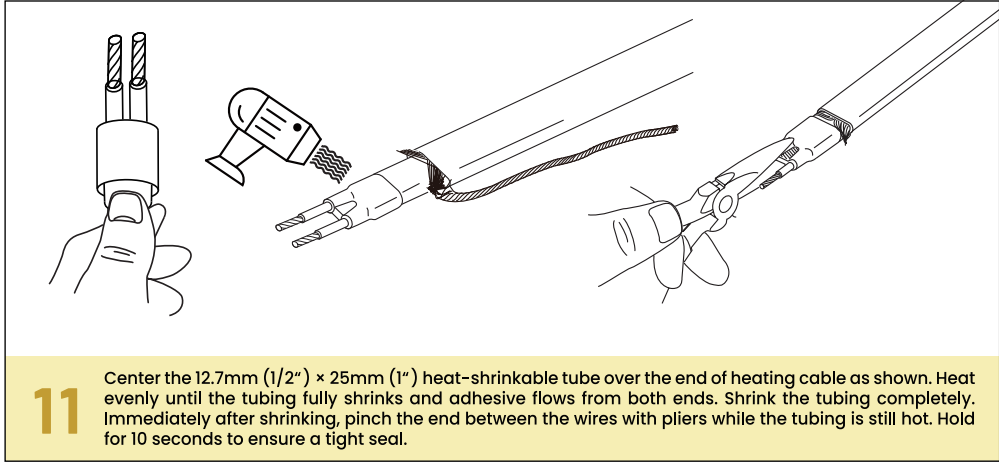
IDENTIFY HEATING CABLE



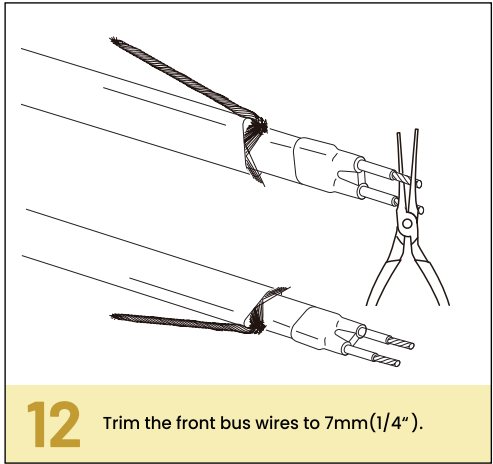
Installation Instructions

KYSF03

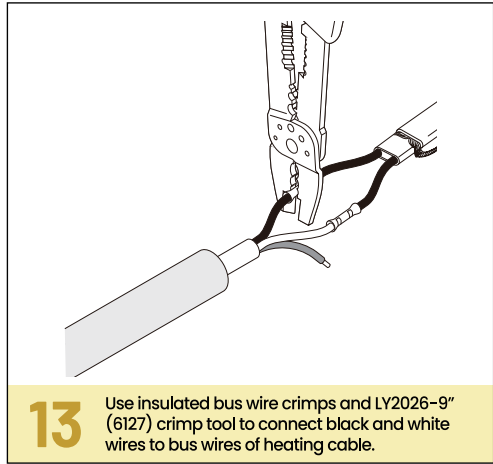




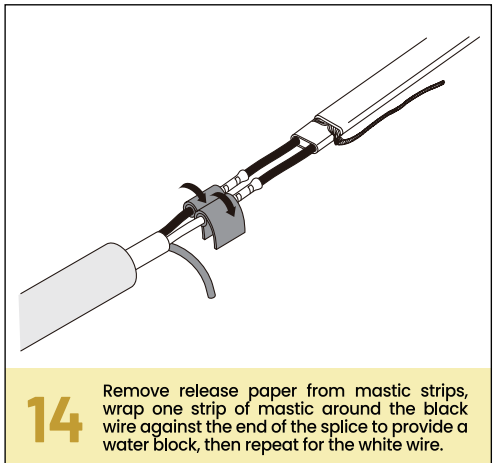
11 Center the 12.7mm (1/2") × 25mm (1") heat-shrinkable tube over the end of heating cable as shown. Heat evenly until the tubing fully shrinks and adhesive flows from both ends. Shrink the tubing completely. Immediately after shrinking, pinch the end between the wires with pliers while the tubing is still hot. Hold for 10 seconds to ensure a tight seal.



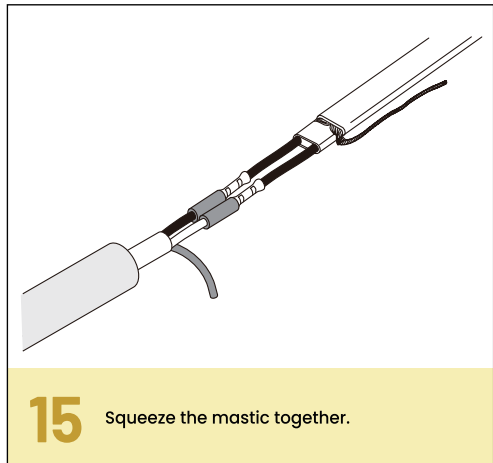
12 Trim the front bus wires to 7mm(1/4").



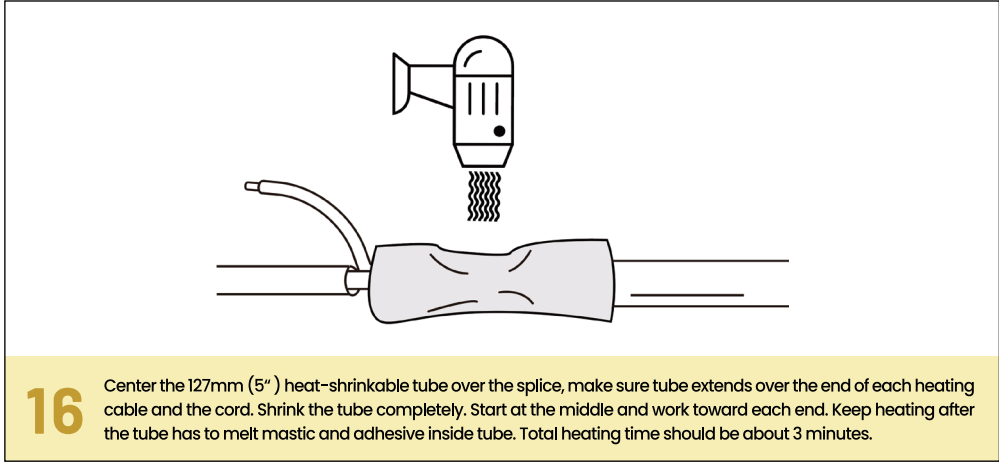
13 Use insulated bus wire crimps and LY2026-9" (6127) crimp tool to connect black and white wires to bus wires of heating cable.



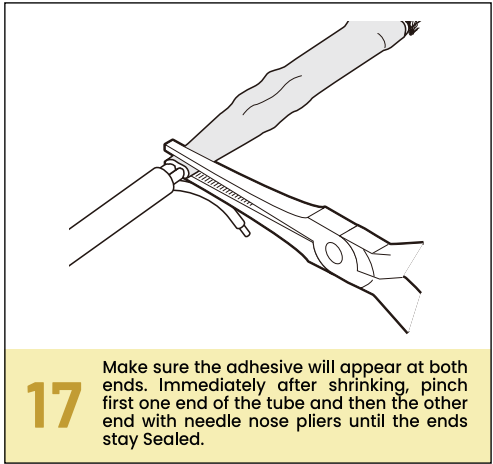
14 Remove release paper from mastic strips, wrap one strip of mastic around the black wire against the end of the splice to provide a water block, then repeat for the white wire.



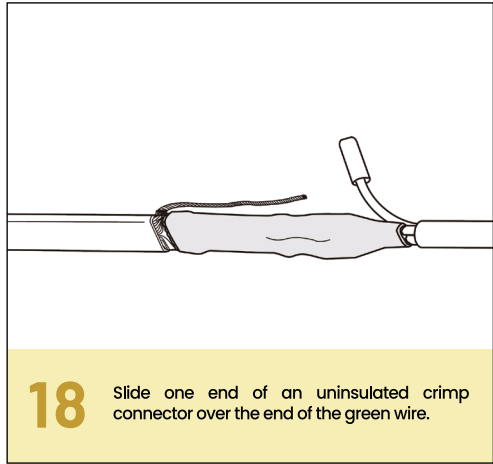
15 Squeeze the mastic together.



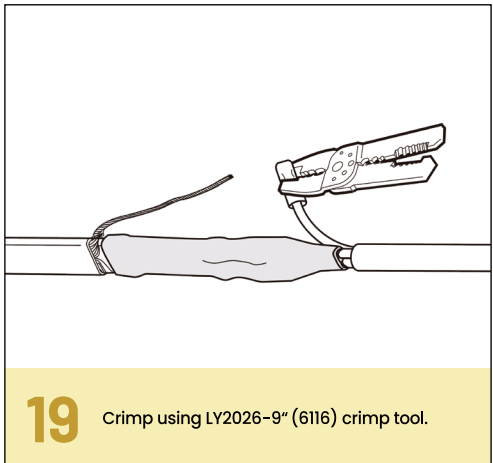
16 Center the 127mm (5") heat-shrinkable tube over the splice, make sure tube extends over the end of each heating cable and the cord. Shrink the tube completely. Start at the middle and work toward each end. Keep heating after the tube has to melt mastic and adhesive inside tube. Total heating time should be about 3 minutes.



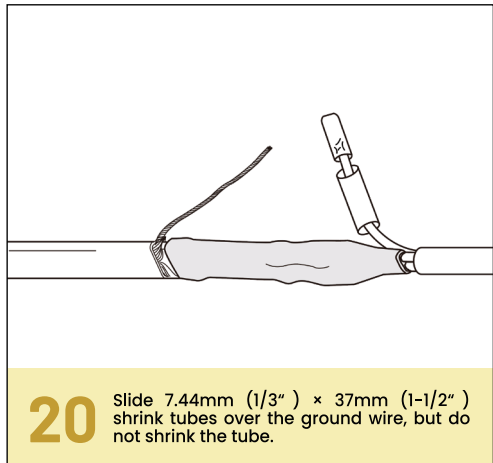
17 Make sure the adhesive will appear at both ends. Immediately after shrinking, pinch first one end of the tube and then the other end with needle nose pliers until the ends stay sealed.



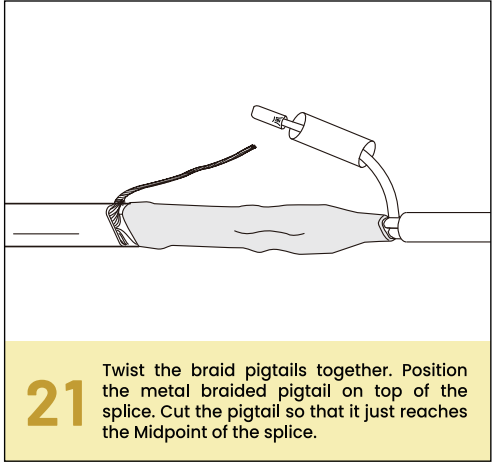
18 Slide one end of an insulated crimp connector over the end of the green wire.



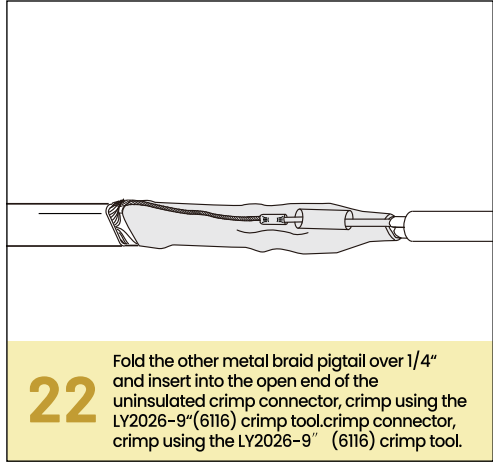
19 Crimp using LY2026-9" (6116) crimp tool.



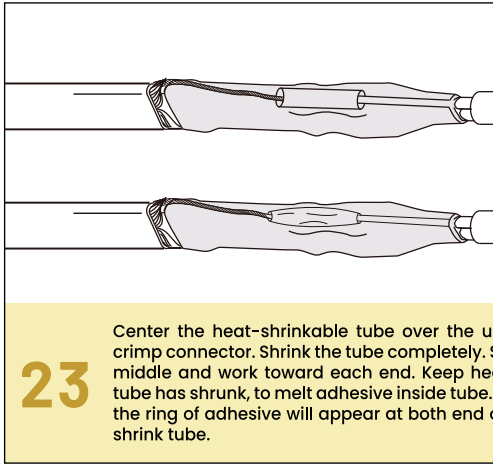
20 Slide 7.44mm (1/3") × 37mm (1-1/2") shrink tubes over the ground wire, but do not shrink the tube.



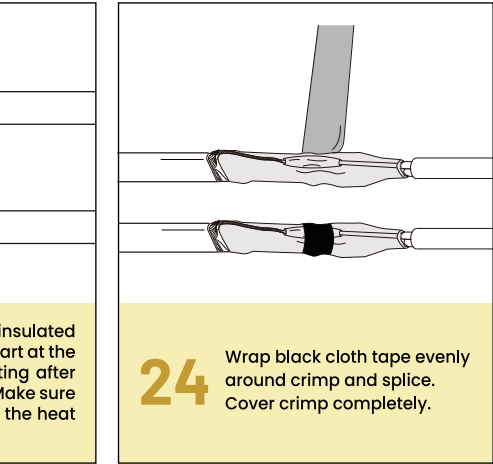
21 Twist the braid pigtail together. Position the metal braided pigtail on top of the splice. Cut the pigtail so that it just reaches the Midpoint of the splice.



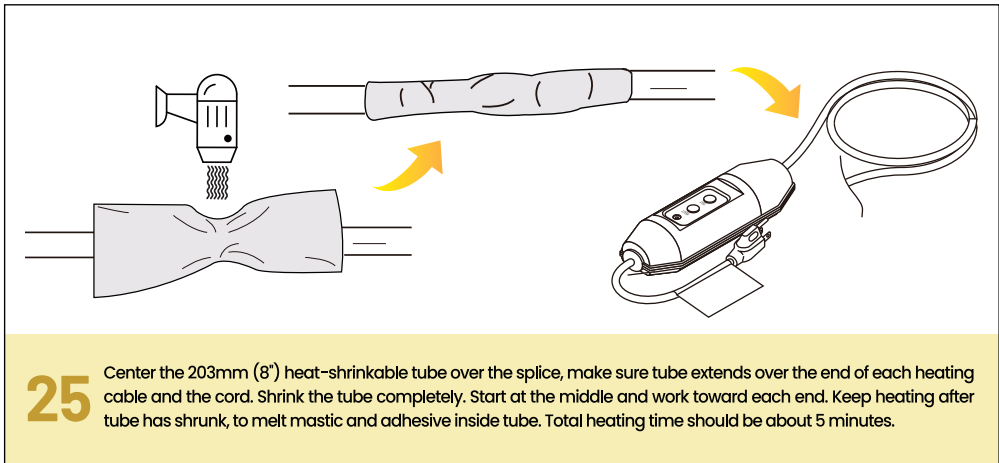
22 Fold the other metal braid pigtail over 1/4" and insert into the open end of the uninsulated crimp connector, crimp using the LY2026-9" (6116) crimp tool.



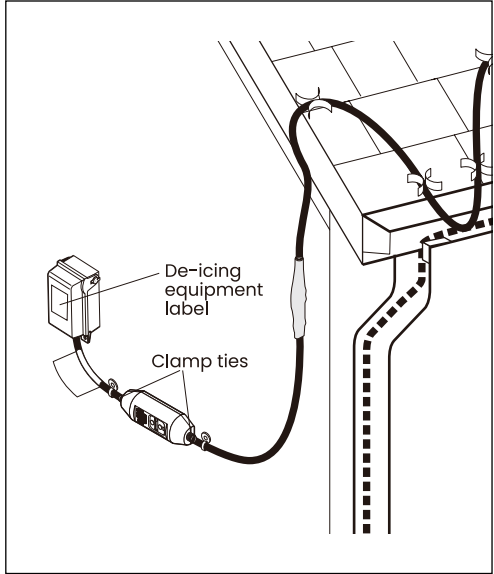
23 Center the heat-shrinkable tube over the uninsulated crimp connector. Shrink the tube completely. Start at the middle and work toward each end. Keep heating after tube has shrunk, to melt adhesive inside tube. Make sure the ring of adhesive will appear at both end of the heat shrink tube.



24 Wrap black cloth tape evenly around crimp and splice. Cover crimp completely.



25 Center the 203mm (8") heat-shrinkable tube over the splice, make sure tube extends over the end of each heating cable and the cord. Shrink the tube completely. Start at the middle and work toward each end. Keep heating after tube has shrunk, to melt mastic and adhesive inside tube. Total heating time should be about 5 minutes.

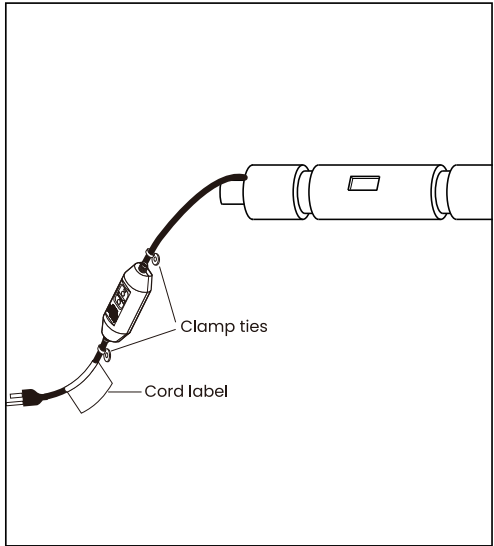


For roof and gutter de-icing

- To prevent damage to the ground-fault equipment protection device and to provide strain relief, use clamp ties to secure the device to the wall near the receptacle. Be careful not to damage either the cord or the ground-fault unit.
- The KYSF03 should be mounted high up, away from passersby to prevent damage to the unit and the risk of shock.
- Place label on a flat surface within 3inches of the supply connections.
- Plug the heating cable into a 15-A, 120-Vac grounded outlet approved for wet locations.

• Make sure that:

- a) Cord label is readily visible.
- b) Indicator light on the ground-fault equipment protection device is on.
- c) Receptacle is properly weatherproofed.
- d) Ground-fault equipment protection device and power connection splice will not be submerged.



For pipe freeze protection

- To prevent damage to the ground-fault equipment protection device and to provide strain relief, use clamp ties to secure the device to the wall near the receptacle. Be careful not to damage either the cord or the ground-fault unit.
- Plug the heating cable into a 15-A, 120-Vac grounded outlet approved for wet locations.

• Make sure that:

- a) Cord label is readily visible.
- b) Indicator light on the ground-fault equipment protection device is on.
- c) Receptacle is properly weatherproofed.
- d) Ground-fault equipment protection device and power connection splice will not be submerged.

Note: Pipe must be fully insulated.



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