BARTEC

M20 cable gland kit (heat shrink technology)

C US

Installation Instructions

M20 cable gland kit with trace heater sealing and end seal
(heat shrink technology)
for use with BARTEC PSB trace heaters

Consignes d’installation

Raccord fileté M20 avec joint pour câble chauffant et joint d’extrémité (sys-téme de connexion à gaine thermorétractable) pour utilisation avec les câbles chauffants de type BARTEC PSB

Table of contents

Safety **2**

Overview **3**

Technical data 3

Certifications / Approvals 3

Kit contents **4**

Installation **5**

Required tools 5

Cautions and warnings 5

Preparation of the trace heater 5

Installation of the heat shrink tubes 8

Installation of the end seal 10

Safety

For safe installation of the M20 cable gland kit with trace heater sealing and end seal the technical requirements and instructions given in this manual must be followed.

⚠ WARNING

Risk of fire or electrical shock. Follow these guidelines to avoid personal injury or material damage.

- All electrical systems and installations must comply with BARTEC GmbH requirements and be installed in accordance with the relevant electrical codes and any other applicable national and local codes.
- BARTEC GmbH, the US and Canadian electrical codes require ground fault protection to be provided for all trace heating circuits.
- Note that the design guide that comes with each trace heater contains further important information and must be followed in addition to this manual.
- Install the connection system and trace heaters carefully.
- Use the trace heater and connection system in accordance with the intended purpose and strictly comply with the operational data specified in section *Technical Data*.
- The bending radius of the trace heater must be at least 1” (25 mm). Do not bend on the narrow axis.
- Any defective component of the kit must be replaced before installation.
- To avoid short circuits, do not connect the trace heater bus wires together.
- Keep all components and the trace heaters dry before and during installation.
- Beware of hot surfaces when using the heat gun.
- Never use vinyl adhesive tape.
- Keep these instructions for future reference. If applicable, leave them with the end user.
- De-energize before installation or servicing.
- Use only original BARTEC accessories.

NOTICE

The following instructions are provided in English only. Refer to www.bartec.us for the French version.

Sécurité

Afin de garantir la sécurité lors de l’installation et de l’utilisation du Raccord fileté M20 avec joint pour câble chauffant et joint d’extrémité, il est impératif de respecter les exigences ainsi que les consignes techniques mentionnées dans le présent manuel.

⚠ AVERTISSEMENT

Risque d’incendie ou d’électrocution. Suivez ces consignes pour éviter toute blessure ou dommage matériel.

- Tous les systèmes et installations électriques doivent satisfaire aux exigences imposées par la société BARTEC GmbH et doivent être installés conformément aux normes électriques en vigueur ainsi qu’aux autres prescriptions nationales et locales applicables.
- La société BARTEC GmbH ainsi que les normes électriques américaines et canadiennes imposent une protection contre les défauts à la terre pour tous les circuits de traçage électrique.
- Notez que le guide de conception fourni avec chaque câble chauffant contient des informations importantes additionnelles qu’il convient de respecter en plus du présent manuel.
- La pose du kit de raccordement, des câbles chauffants et des embouts d’étanchéité doit être réalisée avec soin.
- Utilisez le câble chauffant conformément à l’usage prévu et en respectant les caractéristiques de fonctionnement spécifiées à la section *Caractéristiques techniques*.
- Le rayon de courbure du câble chauffant ne doit pas être inférieur à 1” (25 mm). Ne pas courber le câble chauffant sur la tranche.
- Tout élément défectueux dans le kit doit être remplacé avant l’installation.
- Pour éviter un court-circuit, ne jamais raccorder ensemble les deux conducteurs du câble chauffant.
- Conservez tous les éléments et les câbles chauffants au sec avant et pendant l’installation.
- Faites attention aux surfaces chaudes en utilisant le décapeur thermique.
- N’utilisez jamais des rubans en vynile.
- Conservez ces instructions pour un usage ultérieur. Le cas échéant, remettez-les à l’utilisateur final.
- Mettez le système hors tension avant toute installation ou opération de maintenance.
- Utilisez exclusivement des pièces et accessoires d’origine BARTEC.

AVIS

Les instructions qui suivent sont fournies en anglais uniquement. Veuillez vous référer au site www.bartec.us pour la version française.

Notice Technical data subject to change without notice.
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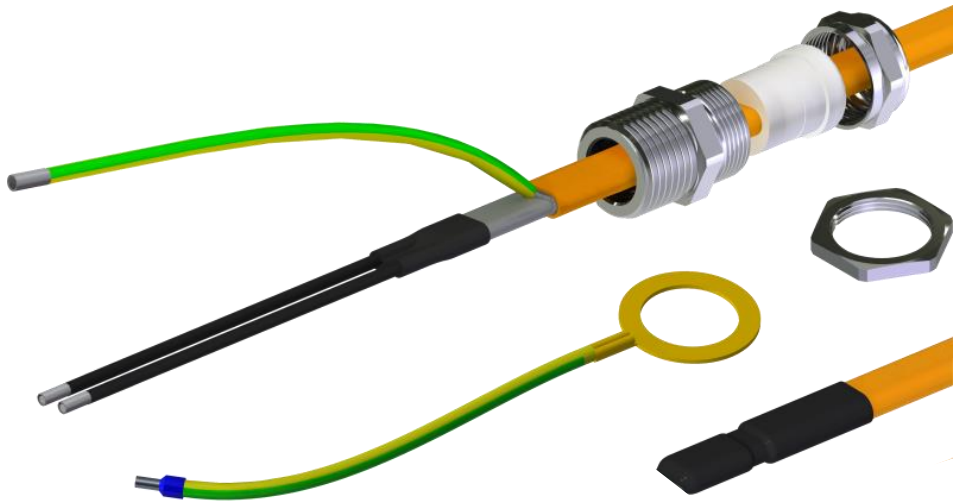
Overview

This manual covers the preparation of trace heaters for connection in a junction box, power box or end of line lamp using a cable gland with trace heater grommet.

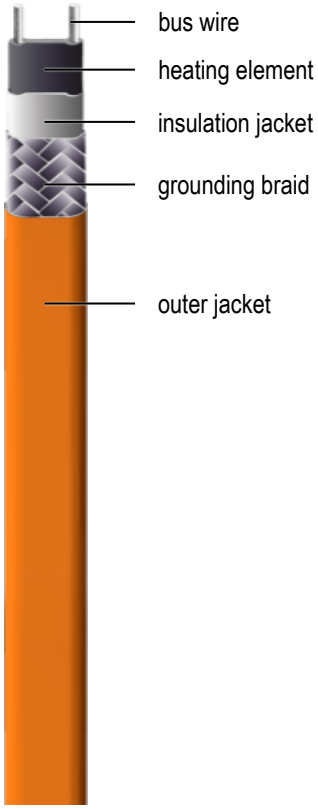


The manual applies for the following trace heaters:

- BARTEC PSB

To prepare the trace heater for connection the 2 bus wires are insulated with heat shrink tubes. A green/yellow heat shrink tube is provided for the grounding braid. Finally, the end of the trace heater is insulated by means of another heat shrink tube.

The following terms describe the parts of the trace heater within these instructions:



Technical data

Ambient temperatures	*see specifications of the trace heater used*
Operation temperatures	*see specifications of the trace heater used*
Minimum bending radius of trace heaters	1” (25 mm) Do not bend on the narrow axis.

Certifications / Approvals

C US

M20 cable gland kit with trace heater sealing and end seal
for BARTEC PSB trace heaters

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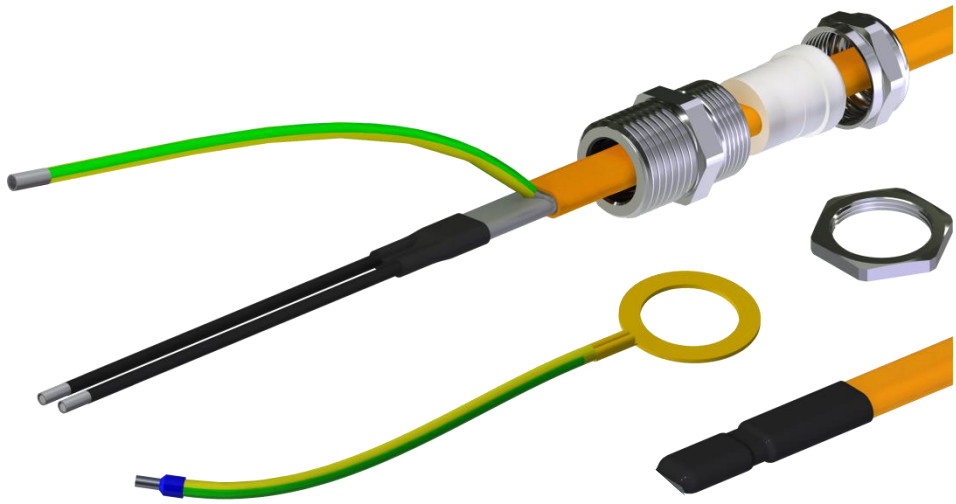
Kit contents

The following table lists the kit contents for the M20 cable gland kit with trace heater sealing and end seal for BARTEC PSB trace heaters:

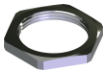


M20 cable gland kit with trace heater sealing and end seal for BARTEC PSB trace heaters

1 x
Metallic gland body

1 x
Grommet

1 x
Fixing nut



1 x
Lock nut for gland body

1 x
Bonding jumper

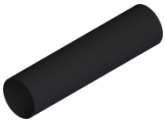
3 x
Ferrule

1 x
Heat shrink tube for grounding braid (green/yellow)

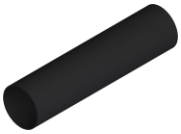
2 x
Heat shrink tube for bus wires (black)
length: 4" / 100 mm
ø 1/4" / 6 mm

1 x
Outer heat shrink tube for bus wires (black)
length: 1" / 25 mm
ø 1/2" / 12 mm

1 x
Inner heat shrink tube for end termination (black)
length: 3/4" / 20 mm
ø 1/2" / 12 mm



1 x
Outer heat shrink tube for end termination (black)
length: 2 3/4" / 70 mm
ø 3/4" / 19 mm



2 x
Protection heat shrink tube for end termination (black)
length: 2 1/3" / 60 mm
ø 3/4" / 19 mm

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Installation

Required tools

The following tools are required for installation of the cable gland kit:

- Wire cutters
- Flat screwdriver
- Heat gun
- Crimping pliers
- Utility knife
- Needle-nose pliers (2x)
- Tape measure

1

Cautions and warnings

⚠ WARNING

Risk of fire or electrical shock. De-energize all power circuits before installation or servicing. Always use ground fault equipment protection with the trace heating system.

- Double-check that all power circuits are de-energized before you begin your work.
- Make sure that you do not exceed the maximum heating circuit length for the trace heater type you use. Refer to the design guide of the heating system.

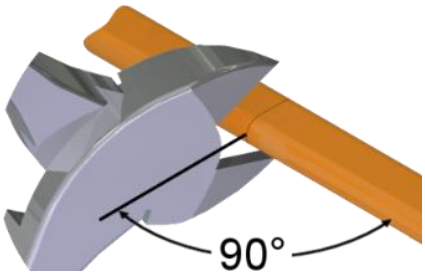
2

Preparation of the trace heater

⚠ WARNING

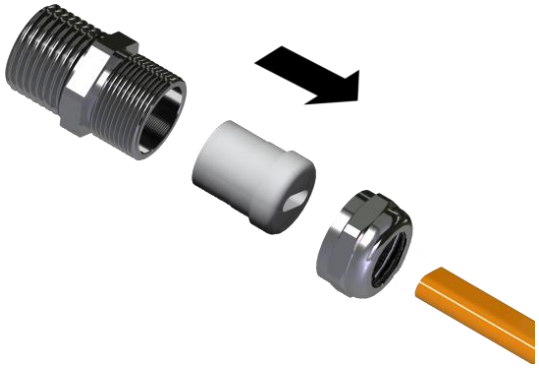
Risk of short circuit and/or material damage. Keep the trace heater ends dry before and during installation. Observe the trace heater's installation instructions.

- Cut off the trace heater ensuring a straight cut.



3

- Slide the fixing nut, the sealing and the gland body onto the trace heater.



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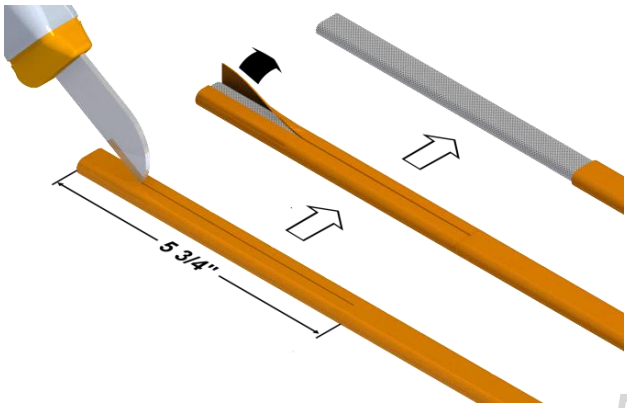
- Remove 5 3/4" (145 mm) of the outer jacket on the end of the trace heater.



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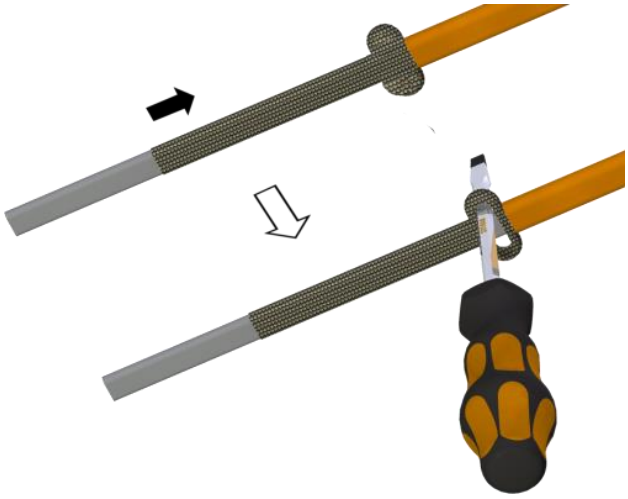
- Push the grounding braid back. Use the screwdriver to form an eyelet. Be careful not to damage the internal insulation jacket.



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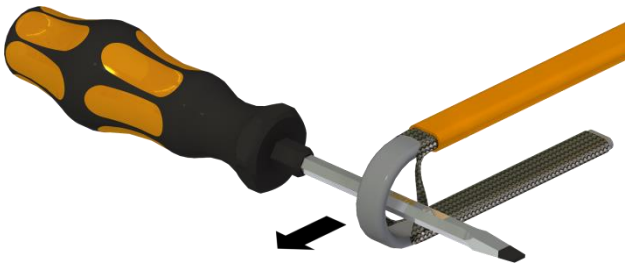
- Bend the trace heater and pull the heating element out of the grounding braid.



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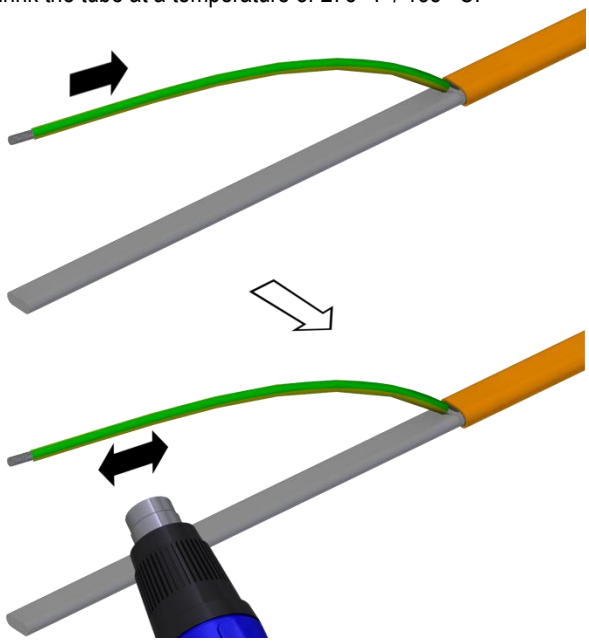
- Twist the grounding braid in order to form a pigtail.

8

- Push the green/yellow heat shrink tube (*length: 4 3/4" / 120 mm; diameter: 1/4" / 6 mm*) onto the twisted grounding braid.
- Shrink the tube at a temperature of 275 °F / 135 °C.



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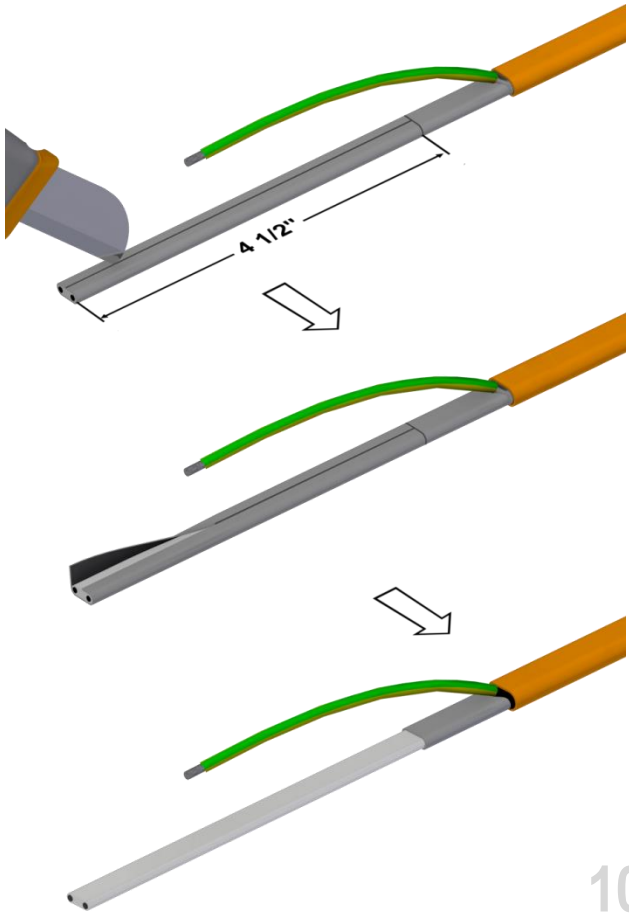
- Remove 4 1/2" (115 mm) of the internal insulation jacket.



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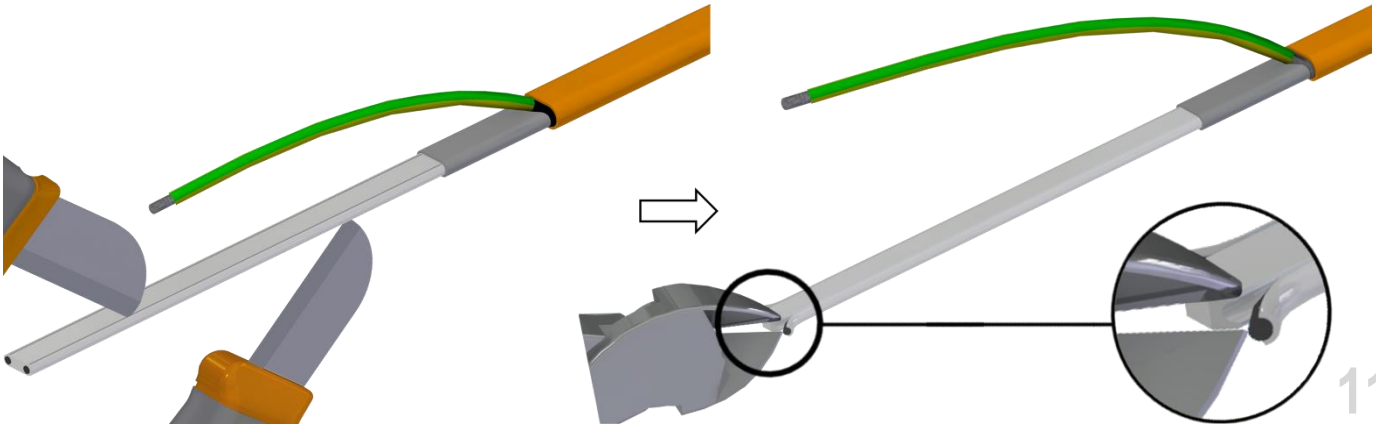
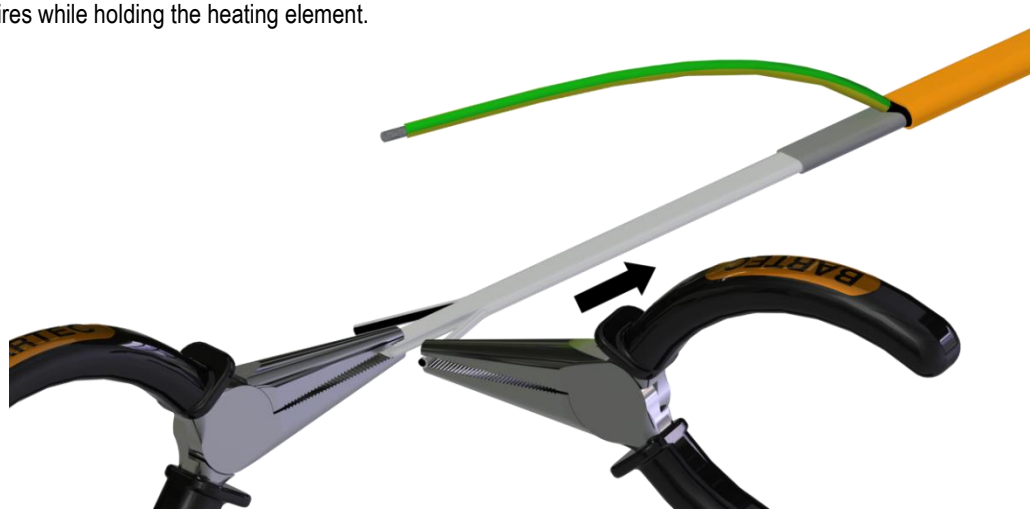
- Make a small cut **over and under** each bus wire. Take care not to damage the bus wires.
- Carefully make an incision into the edges of the heating element. Take care not to damage the bus wires.



- Pull off the bus wires while holding the heating element.

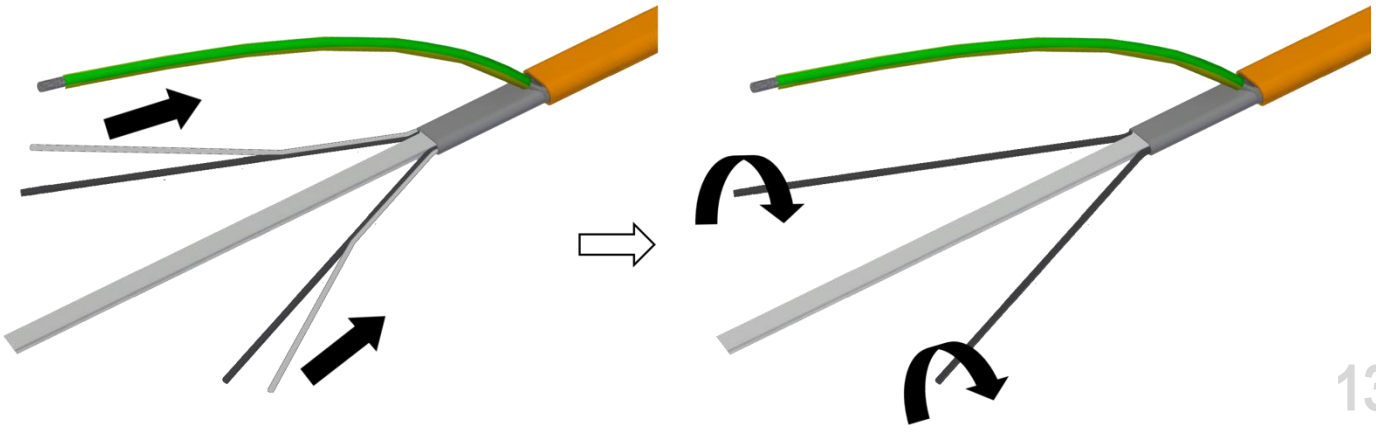


- Remove any remaining heating element that sticks to the bus wires.

NOTICE

Risk of malfunction of the heating system. Before you continue, make sure that the bus wires are intact and not nicked or damaged.

- Twist the bus wires.



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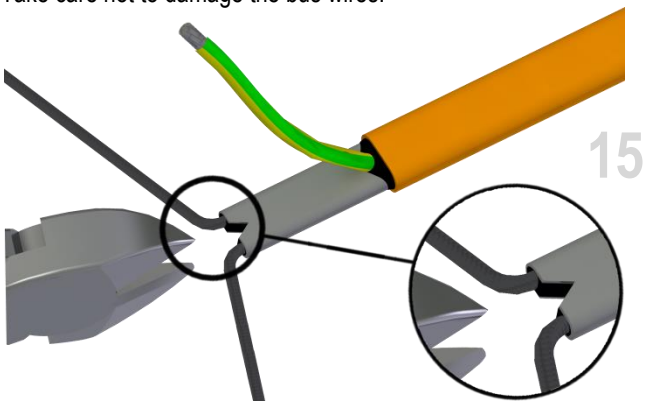
- Remove the remaining heating element. Take care not to damage the bus wires.

- Carefully cut in a triangle (1/5" / 5 mm) between the bus wires. Take care not to damage the bus wires.



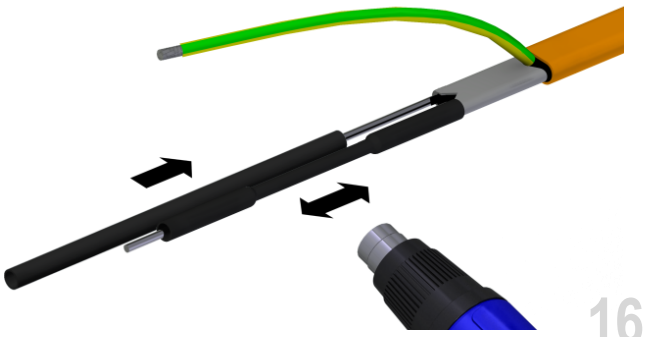
Installation of the heat shrink tubes

- Slide the bus wire heat shrink tubes *(length: 4" (100 mm); diameter: 1/4" (6 mm))* onto the bus wires.

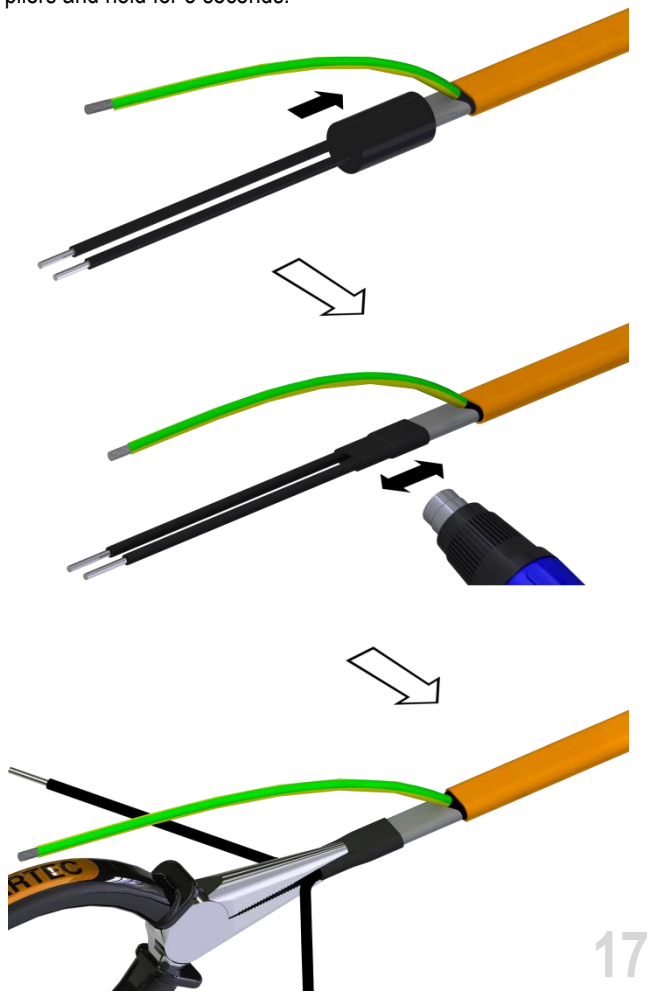
⚠ CAUTION

Risk of burns. Beware of hot surfaces when using the heat gun.

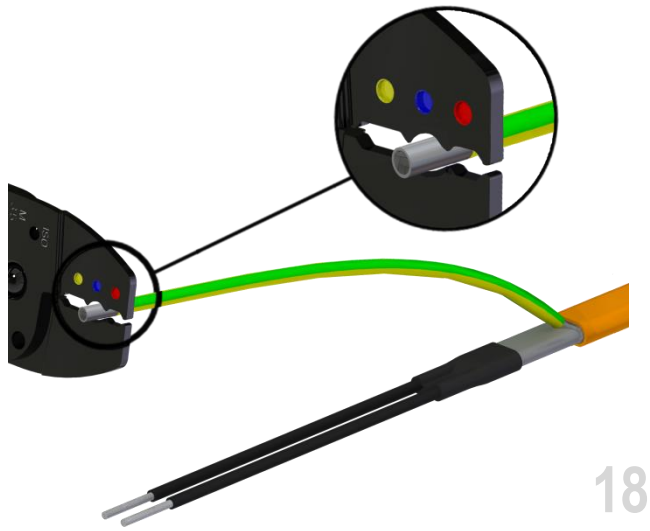
- Shrink the tubes at a temperature of 275 °F / 135 °C.



- Push the outer heat shrink tube *(length: 1" (25 mm); diameter: 1/2" (12 mm))* over the end of the trace heater.
- Shrink the tube at a temperature of 275 °F / 135 °C.
- While still hot, compress the tube between the bus wires using pliers and hold for 5 seconds.



- Crimp a ferrule onto the twisted grounding braid.



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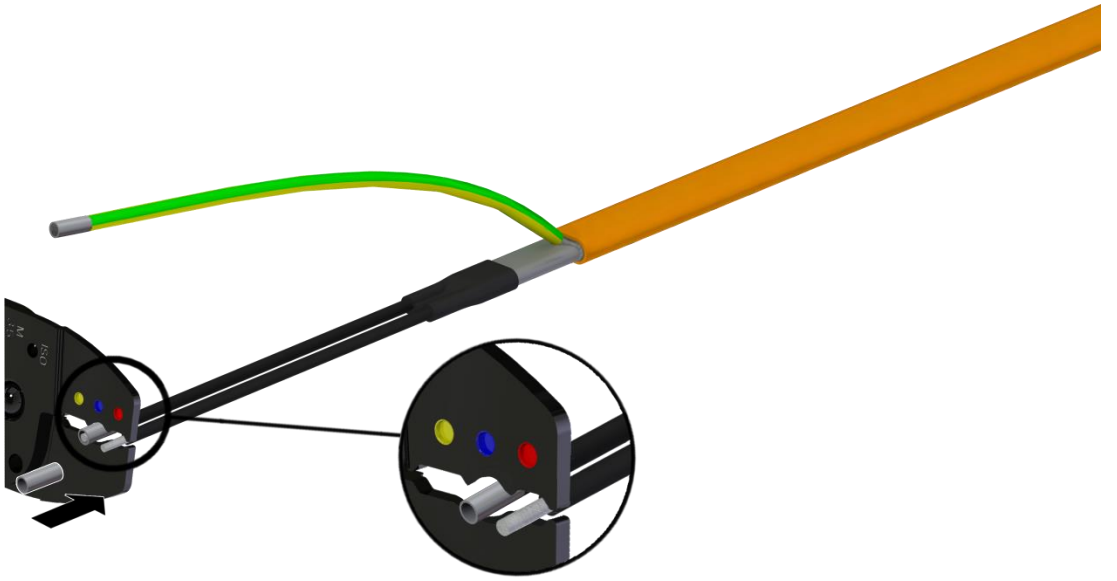
- Crimp a ferrule onto each of the bus wires.
- Keep ready the bonding jumper and the lock nut. They will be required for connecting the trace heater. Follow the installation instructions of the connection equipment.



19

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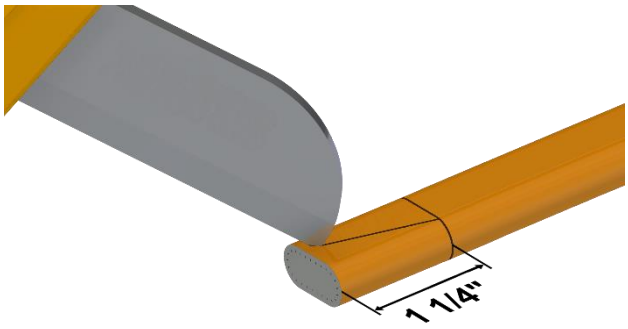
Installation of the end seal

- Cut the trace heater off straight.
- Remove 1 1/4“ (30 mm) of the outer jacket on the trace heater.



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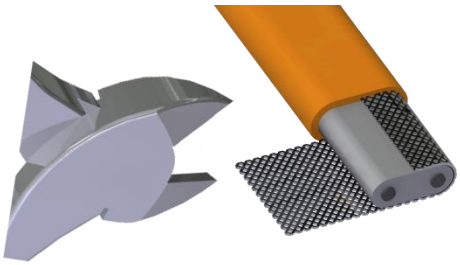
- Remove the exposed grounding braid. Make sure that the insulation jacket is not damaged.



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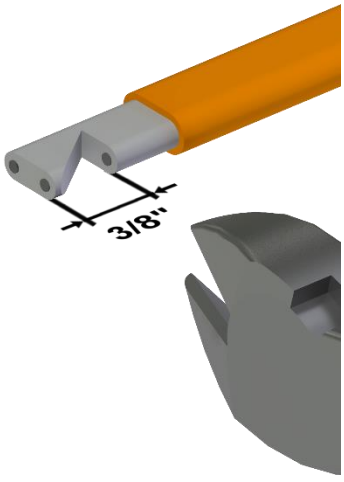
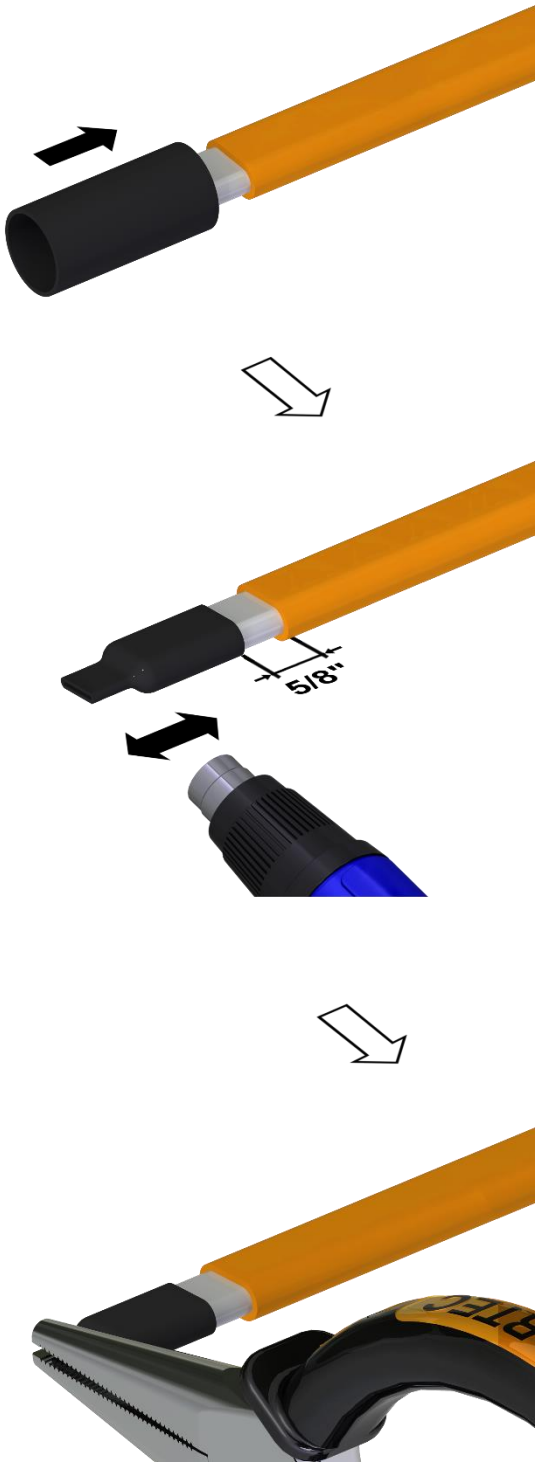
- Cut a triangle into the heating element as shown.



22

- Slide the inner heat shrink tube for the end termination *(length: 3/4" (20 mm); diameter: 1/2" (12 mm))* over the end of the trace heater.
- Leave an overlap of 5/8" (15 mm).
- Beginning at the end of the trace heater, shrink the tube at a temperature of 275 °F / 135 °C.
- While still hot, compress the end of the tube using pliers and hold for 5 seconds.



23

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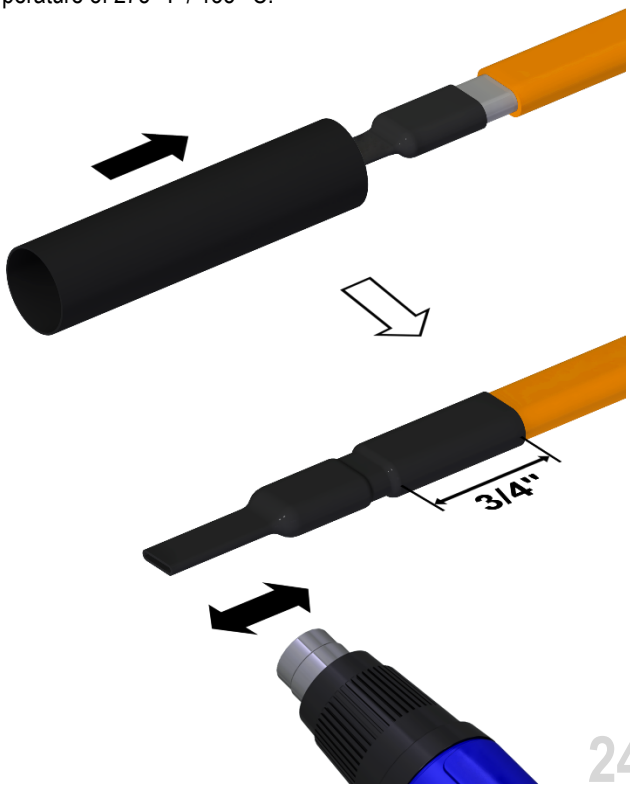
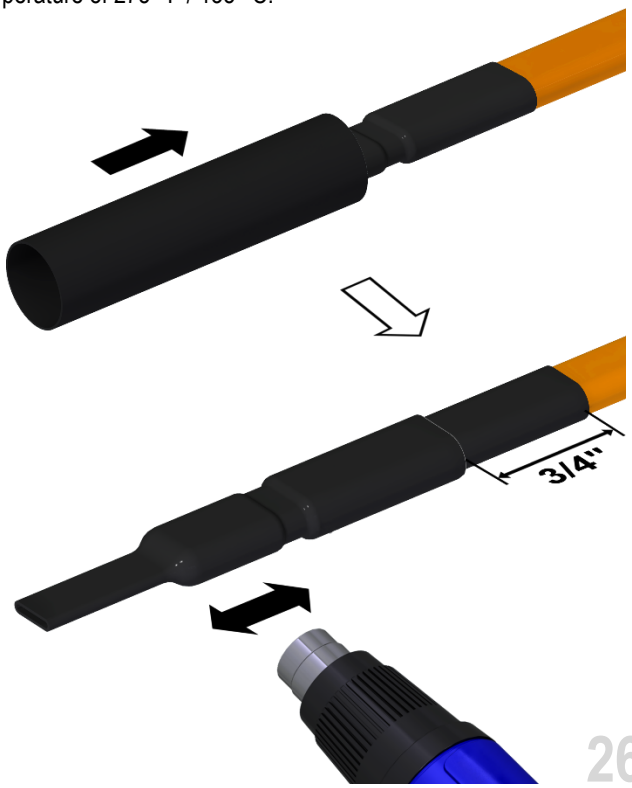
- Slide the outer heat shrink tube *(length: 2 3/4" (70 mm); diameter: 3/4" (19 mm))* over the end of the trace heater.
- Make sure to overlap the trace heater outer jacket 3/4" (20 mm).
- Beginning at the end of the trace heater, shrink the tube at a temperature of 275 °F / 135 °C.



- Slide the first protection heat shrink tube *(length: 2 1/3" (60 mm); diameter: 3/4" (19 mm))* over the end of the trace heater.
- Leave a gap to the outer heat shrink tube of 3/4" (20 mm).
- Beginning at the end of the trace heater, shrink the tube at a temperature of 275 °F / 135 °C.



- Fold over the overlapping end of the heat shrink tube 3/8" (10 mm).
- Slightly press the end using pliers.

- Fold over the overlapping end of the heat shrink tube 3/8" (10 mm).
- Slightly press the end using pliers.

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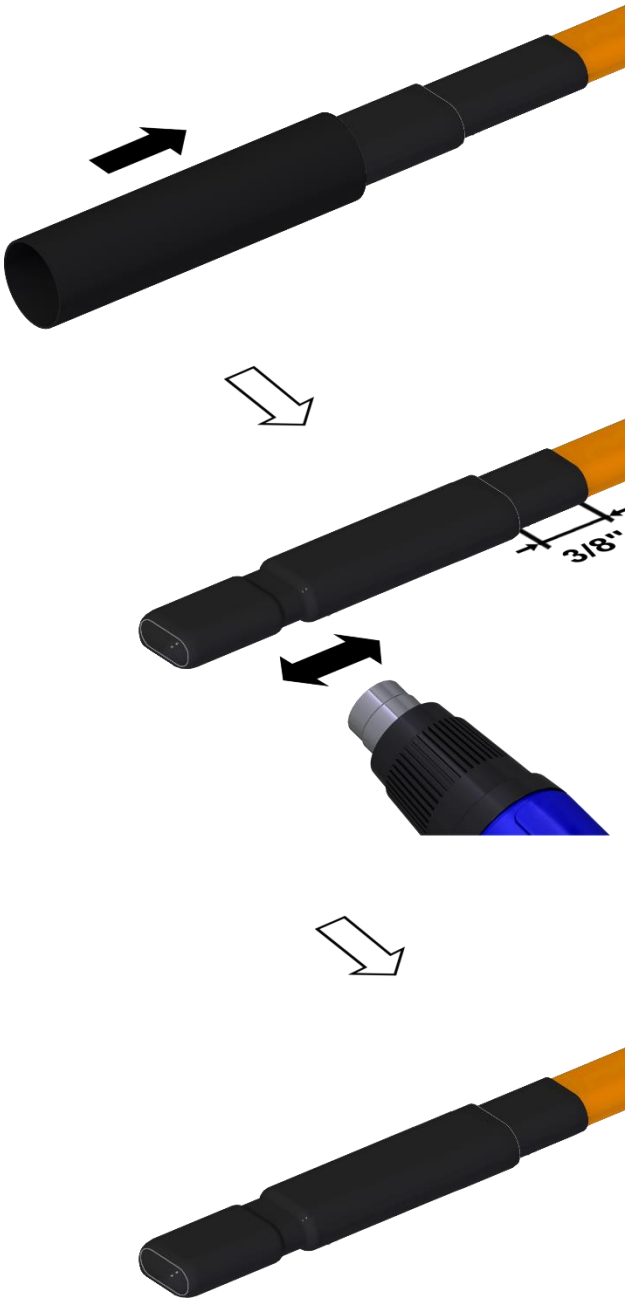
- Slide the second protection heat shrink tube *(length: 2 1/3" (60 mm); diameter: 3/4" (19 mm))* over the end of the trace heater.
- Leave a gap to the very first heat shrink tube of 3/8" (10 mm).
- Beginning at the end of the trace heater, shrink the tube at a temperature of 275 °F / 135 °C.



28

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