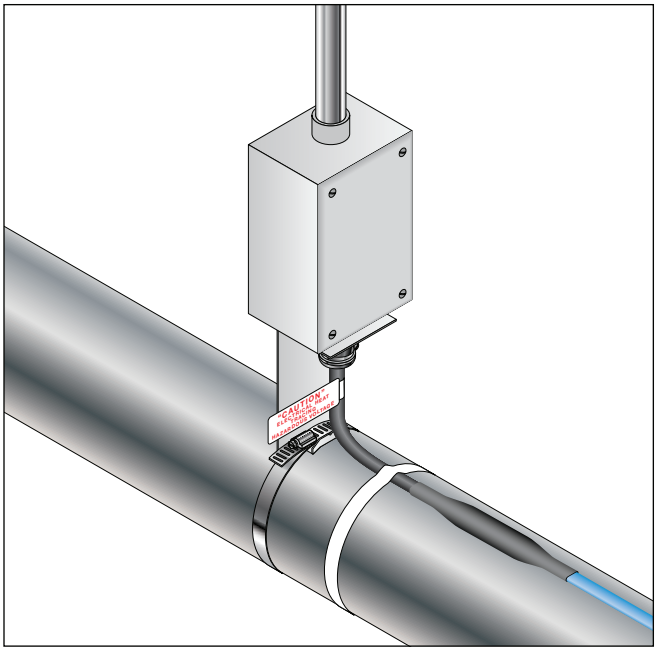
heat-line®
Freeze Protection Systems

1548-4000C Power Connection Kit

For use with Dekoron 2700 Family of Heating Cables



Installation Instructions

Kit Description

The Dekoron ® 1548-4000C electrical connection kit distirbuted by Heat-Line is used for making electrical and end-seal connections for the Dekoron 2700 Family of heating cables.

Tools Required

- Flat-head screwdriver
- Pliers
- Diagonal cutting pliers
- Utility knife or razor blade
- Wire stripper cutter
- Measuring tape
- Needle-nose pliers
- Crimp tool

Additional Materials Required (but not provided)

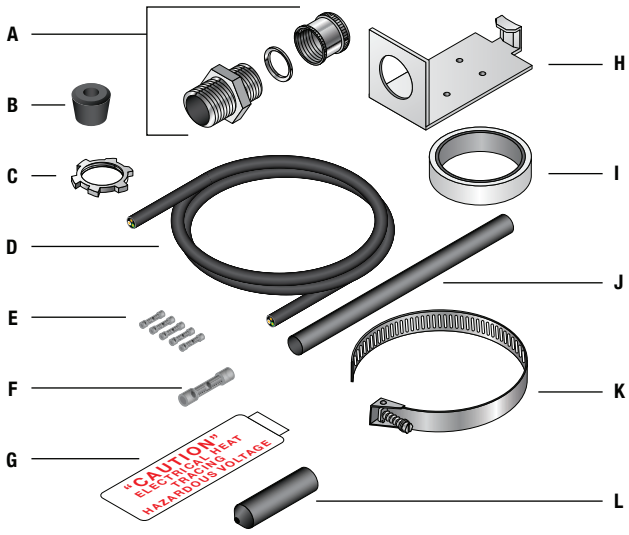
- Weather tight junction box (Damp or Wet Locations)
- Standard junction box (Ordinary location)
- Pipe strap (for pipe sizes other than 2 in. to 6 in. O.D.)
- Additional fiberglass tape or nylon cable ties

Approvals

Non-Hazardous Locations
Heating Cable Types 3A, 3B, 3C

Kit Parts

Item	Qty	Description
A	1	Connector Body
	1	Gland Washer
	1	Gland Nut
B	1	Grommet
C	1	Locknut
D	1	Cold Lead Cable – 14/3, 18"
E	5	Insulated Butt Connectors – 14-16 AWG
F	1	Insulated Butt Connector – 10-12 AWG
G	1	Caution Label
H	1	Standoff Bracket
I	1	Roll of Fiberglass Tape
J	1	Heat Shrink Tube (1/2" x 6")
K	1	Pipe strap (for 2" to 6" O.D. Pipes)
L	1	End Seal Boot



⚠ WARNING:

- **The Canadian Electrical Code and National Electric Code requires ground fault protection of equipment for each branch circuit supplying electrical heating cables or devices.**
- If the heating cable has a stainless steel ground braid, the following caution applies: The metal covering shall not be used as the bonding-to-ground means. Alternative means of protection shall be provided per CE Code part I.
- For cable installed in outdoor or wet indoor locations, use a suitable weather proofing cover (such as aluminum jacketing) to protect the thermal insulation.
- After thermal insulation is complete the insulation resistance of the entire branch circuit should not be less than 10M ohms.
- Ground metal structures used for support or on which the cable is installed in accordance with CE Code part 1, Section 10.
- Install at –22°F (–30°C) or above.
- Do not install heater closer than 1/2 inch to any exposed combustible surface unless the cable has a metal shield or sheath and is provided with a positive temperature control which will limit the surface temperature to a value not exceeding 162°F (72°C).
- Minimum bending radius for heating cable is 1/4 inch.

Technical Information 2703 / 2705 / 2708 / 2710 Dekoron Self-Regulating Heating Cables

Specifications

Part Number	Thermal Rating @ 50°F (10°C) (Watts/ft.)	Service Voltage (Volts)	Maximum Circuit Length (ft.)	Bus Wire Size (AWG)	Exposure Temperature °F (°C)	Maintenance Temperature °F (°C)
2703-1	3	120	330	16	150 (66)	185 (85)
2703-2	3	240	660	16	150 (66)	185 (85)
2705-1	5	120	270	16	150 (66)	185 (85)
2705-2	5	240	540	16	150 (66)	185 (85)
2708-1	8	120	210	16	150 (66)	185 (85)
2708-2	8	240	420	16	150 (66)	185 (85)
2710-1	10	120	180	16	150 (66)	185 (85)
2710-2	10	240	360	16	150 (66)	185 (85)

120 Volt Circuit Breaker Sizing vs. Max Circuit Length (ft.)

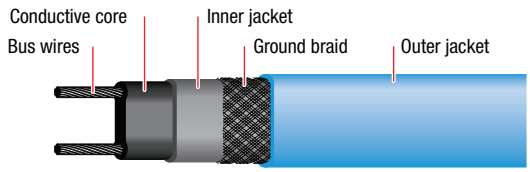
Max. Circuit Length (ft.)	15A	20A	30A	40A
2703-1 if started at: 50°F (10°C)	300	–	–	–
0°F (–20°C)	200	270	330	–
–20°F (–29°C)	180	230	330	–
2705-1 if started at: 50°F (10°C)	230	270	–	–
0°F (–20°C)	150	200	270	–
–20°F (–29°C)	130	175	260	270
2708-1 if started at: 50°F (10°C)	150	200	210	–
0°F (–20°C)	95	125	190	210
–20°F (–29°C)	85	100	170	210
2710-1 if started at: 50°F (10°C)	115	150	180	–
0°F (–20°C)	70	95	145	180
–20°F (–29°C)	60	85	120	165

240 Volt Circuit Breaker Sizing vs. Max Circuit Length (ft.)

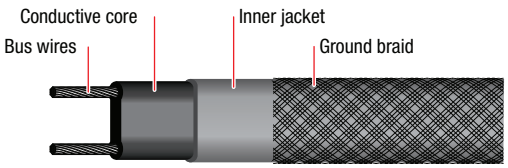
Max. Circuit Length (ft.)	15A	20A	30A	40A
2703-2 if started at: 50°F (10°C)	660	–	–	–
0°F (–20°C)	410	560	660	–
–20°F (–29°C)	360	480	660	–
2705-2 if started at: 50°F (10°C)	460	540	–	–
0°F (–20°C)	300	400	540	–
–20°F (–29°C)	260	345	520	540
2708-2 if started at: 50°F (10°C)	295	390	420	–
0°F (–20°C)	195	250	375	420
–20°F (–29°C)	170	225	340	420
2710-2 if started at: 50°F (10°C)	230	305	360	–
0°F (–20°C)	150	200	300	360
–20°F (–29°C)	130	175	260	360

Heating Cable Configurations

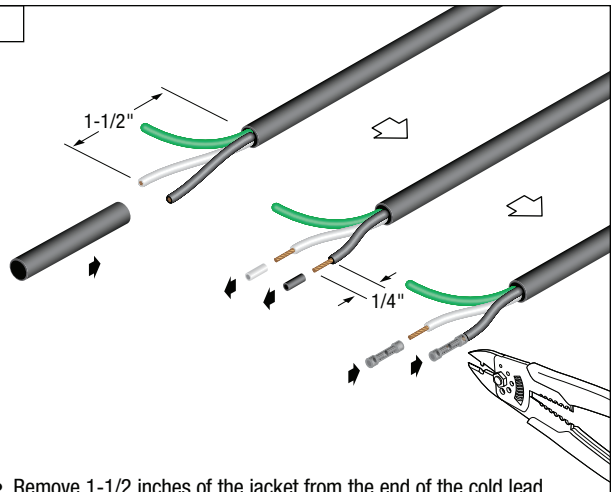
Heater with Ground Braid and Outer Jacket



Heater with Ground Braid

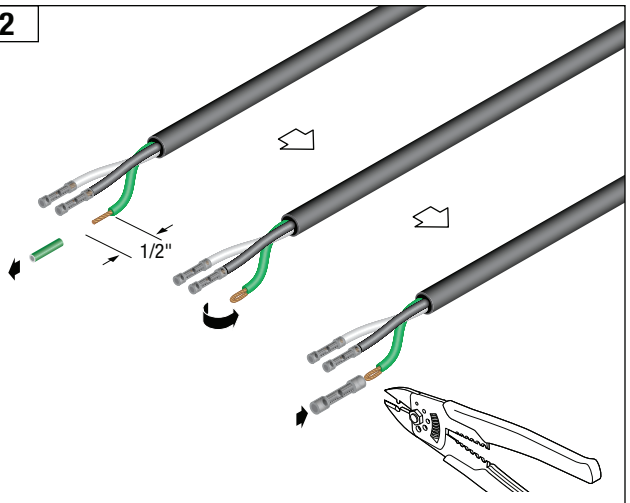


1



- Remove 1-1/2 inches of the jacket from the end of the cold lead, thereby exposing the white, black, and green conductor wires.
- Strip a 1/4 of an inch of insulation from the ends of the white and black conductors.
- Crimp the 14-16 AWG insulated butt connectors to the exposed white and black conductor ends.

2



- Strip a 1/2 inch of insulation from the green wire and fold back the bare wire to make it a 1/4 inch long and double the thickness.
- Crimp the 10-12 AWG butt connector to the green conductor.

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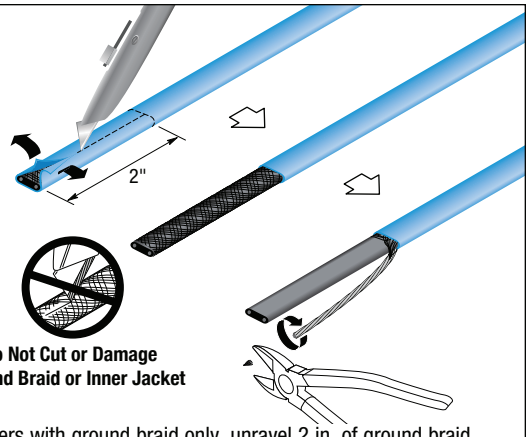

- For heaters with ground braid only, unravel 2 in. of ground braid from the end of the heater and twist ground braid into a pigtail.
- For heaters with a ground braid and over jacket, 2 in. of over jacket will need to be removed to expose the ground braid then twist ground braid into a pigtail.
- Trim the pigtail to remove the tapered end.

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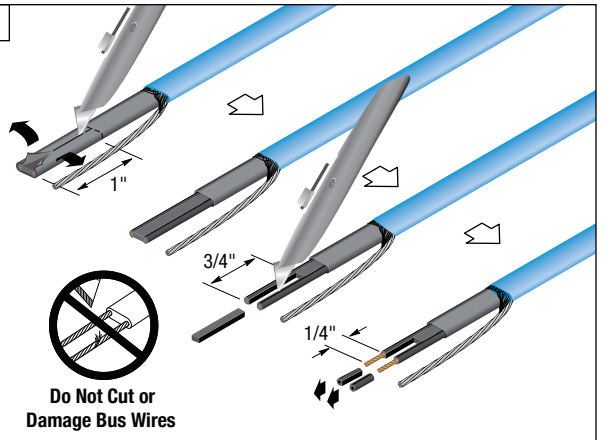

- Remove 1 inch of jacket from the end, exposing the core.
- Cut out a strip of core material 1/8 in. wide by 3/4 in. long.
- Using wire strippers, remove conductive core 1/4 in. from the end of each bus wire.

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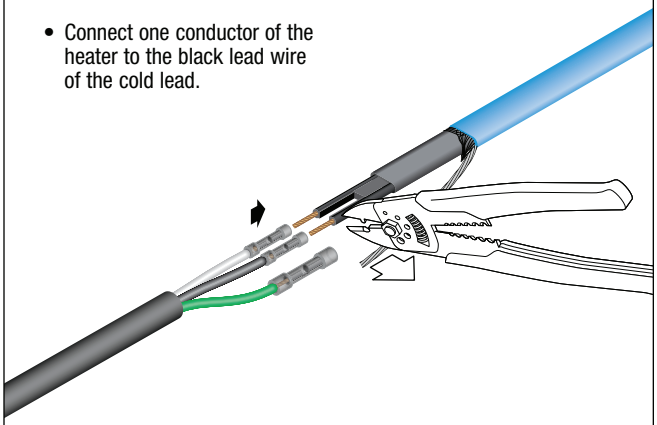
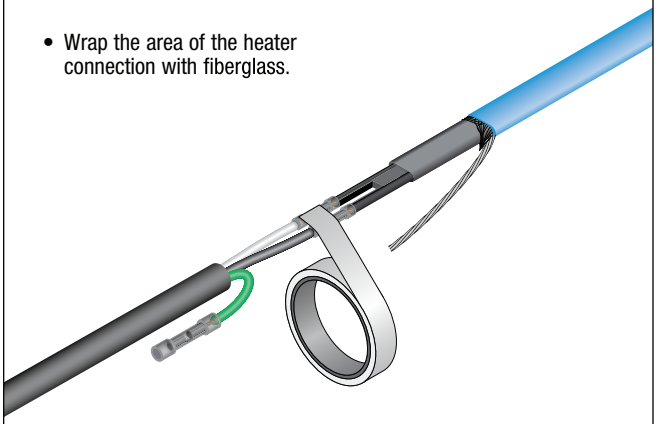
- Connect one conductor of the heater to the black lead wire of the cold lead.



- Connect the other conductor of the heater to the white lead wire of the cold lead.

6

- Wrap the area of the heater connection with fiberglass.



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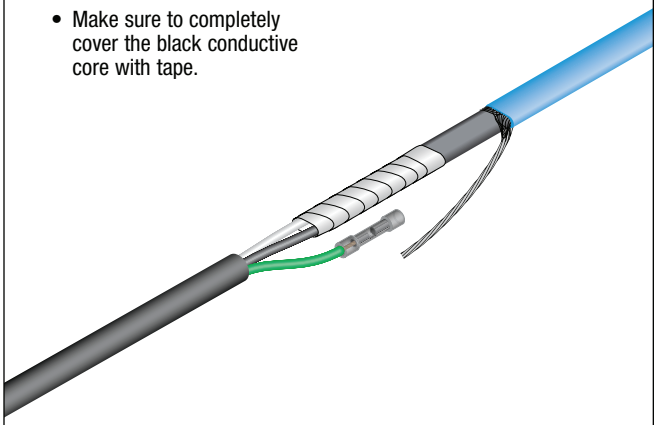
- Make sure to completely cover the black conductive core with tape.



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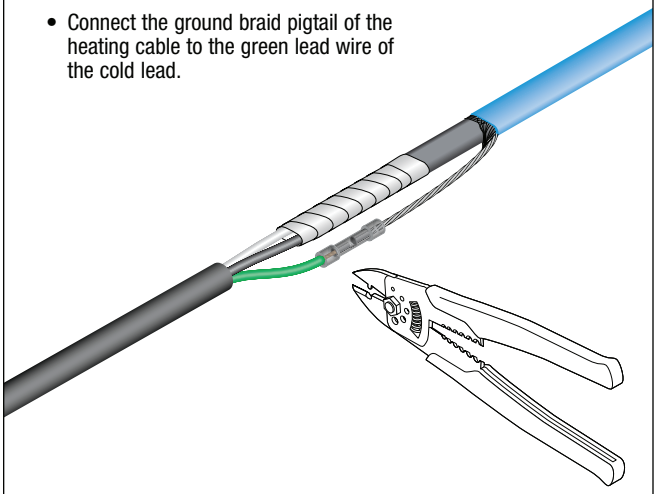
- Connect the ground braid pigtail of the heating cable to the green lead wire of the cold lead.



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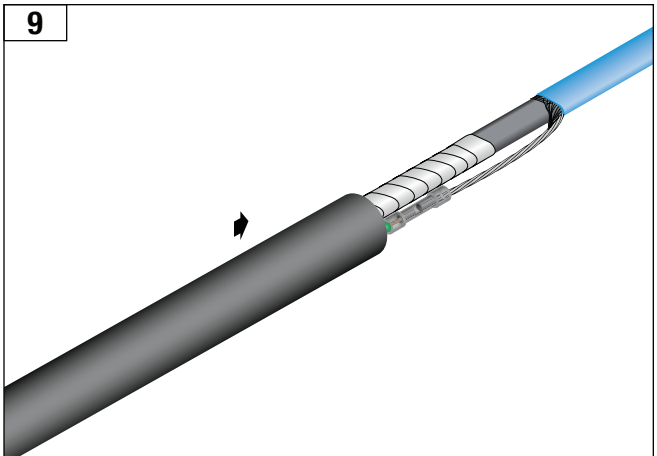

- Slide the shrink sleeve over the splice allowing it to cover the cold lead cable and heater jacket, ground braid or over jacket, as appropriate.

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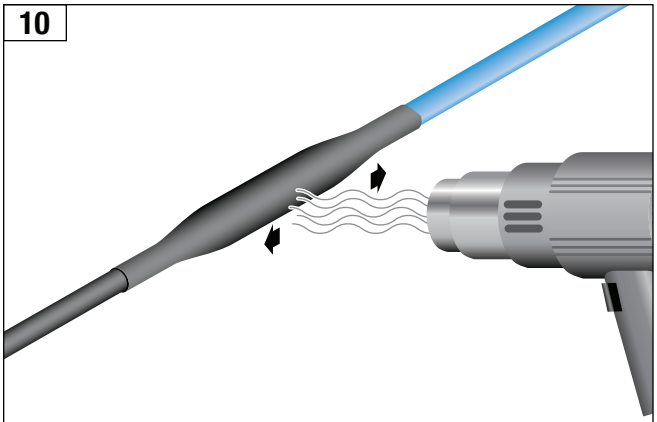
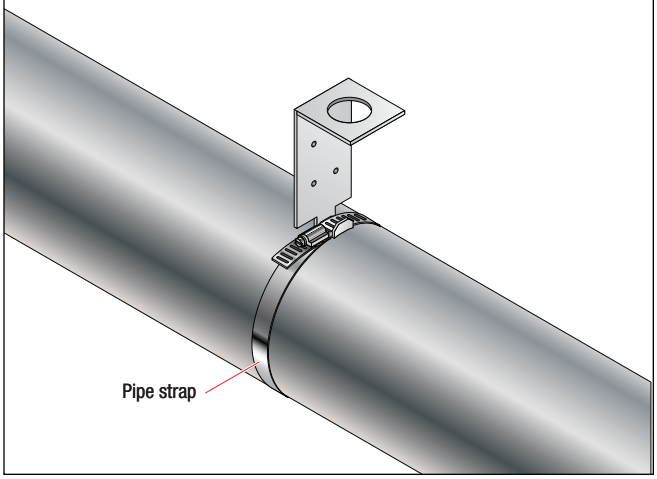


- Apply heat to shrink sleeve into place.

CAUTION: Do not expose the heating cable and or cold lead to excessive heat.

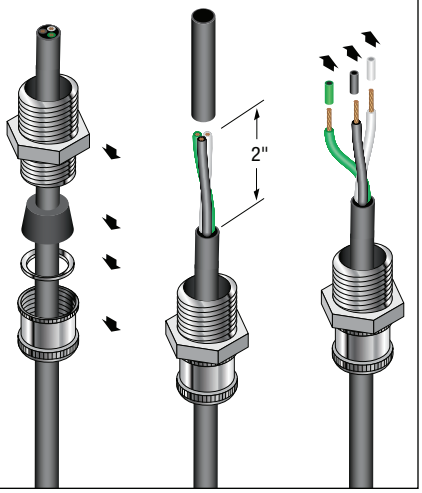
11

- Fasten the standoff bracket to the pipe using the pipe strap.



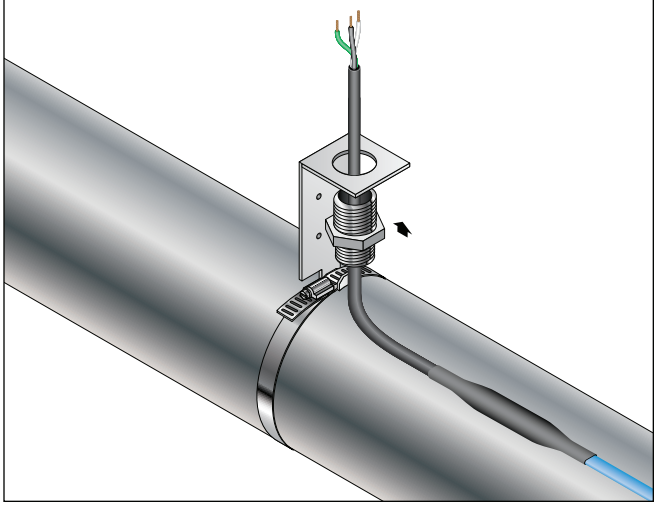
12

- Insert the cold lead cable through the gland nut, gland washer, grommet and connector body.
- Pull enough cold lead through the connection fitting to strip 2 inches of the outer jacket exposing the black, white and green conductors.
- Strip 1/4 of an inch of insulation from each conductor.



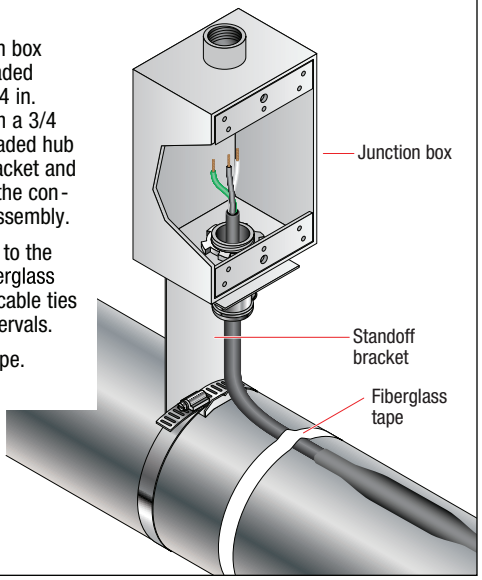
13

- Pass connector body through standoff bracket.



14

- Attach junction box with non threaded opening for 3/4 in. conduit or with a 3/4 in. inside threaded hub to standoff bracket and pass through the connector body assembly.
- Secure heater to the pipe using fiberglass tape or nylon cable ties at one foot intervals.
- Insulate the pipe.



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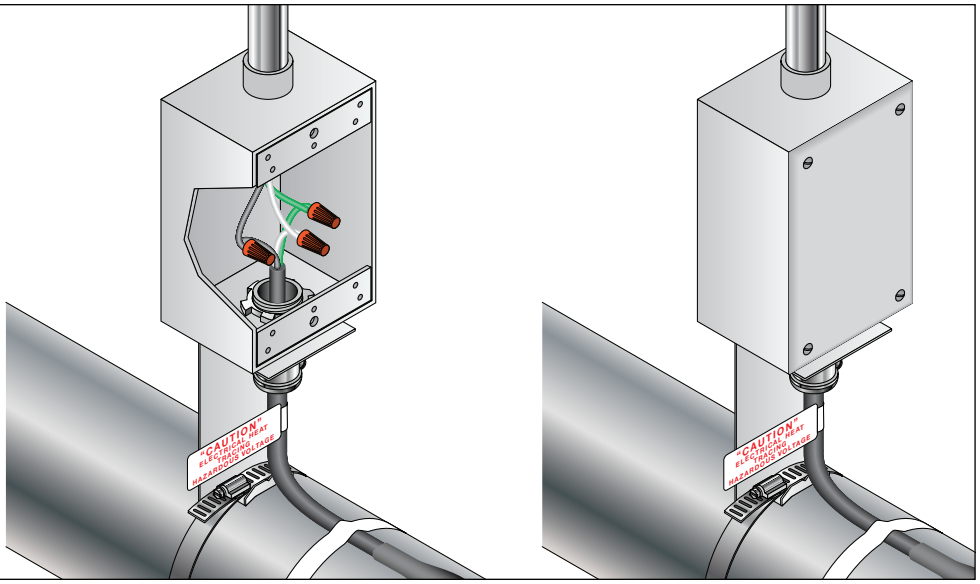
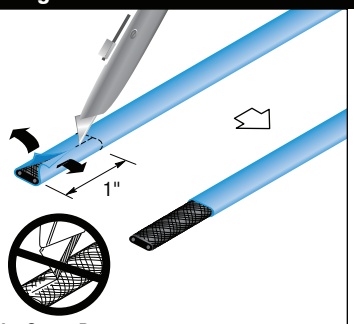
- Connect the cold lead wire to the incoming power.
- Install junction box cover.
- Affix caution label in plain view near the pipe standoff assembly.



End Seal Installation for Heating Cable with Ground Braid and Over Jacket

1A

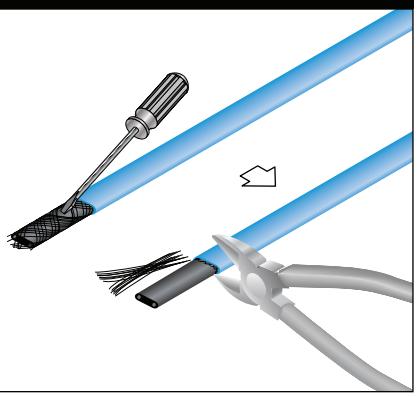
- Trim end of heating cable square.
- Strip over jacket back 1 inch from the end of the heating cable.



Do Not Cut or Damage Ground Braid or Inner Jacket

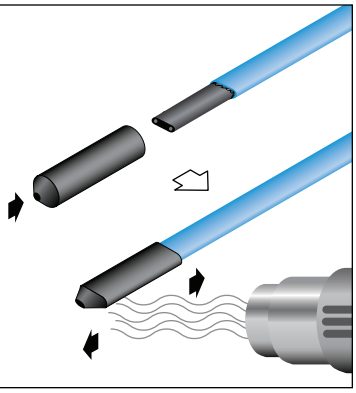
2A

- Unravel and trim ground braid to within 1 inch of the heating cable end, even with over jacket.



3A

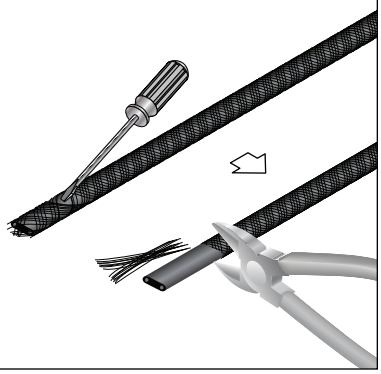
- Slide heat shrink boot all the way onto the end of the heating cable.
- Apply heat carefully to the heat shrink end seal to shrink into place.
- Concentrate heat on the end-seal, do not expose the heating cable to excess heat.



End Seal Installation for Heating Cable with Ground Braid ONLY

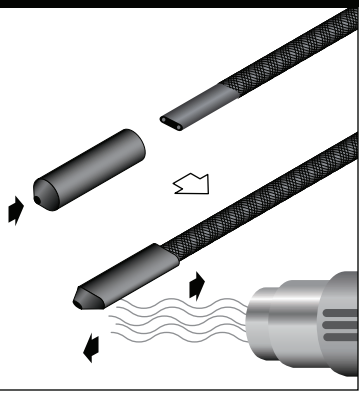
1B

- Trim end of heating cable square.
- Unravel and trim ground braid to within 1 inch of the heating cable end.



2B

- Slide heat shrink boot all the way onto the end of the heating cable.
- Apply heat carefully to the heat shrink end seal to shrink into place.
- Concentrate heat on the end-seal, do not expose the heating cable to excess heat.



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