

NELSON™ HEAT TRACING SYSTEMS

HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

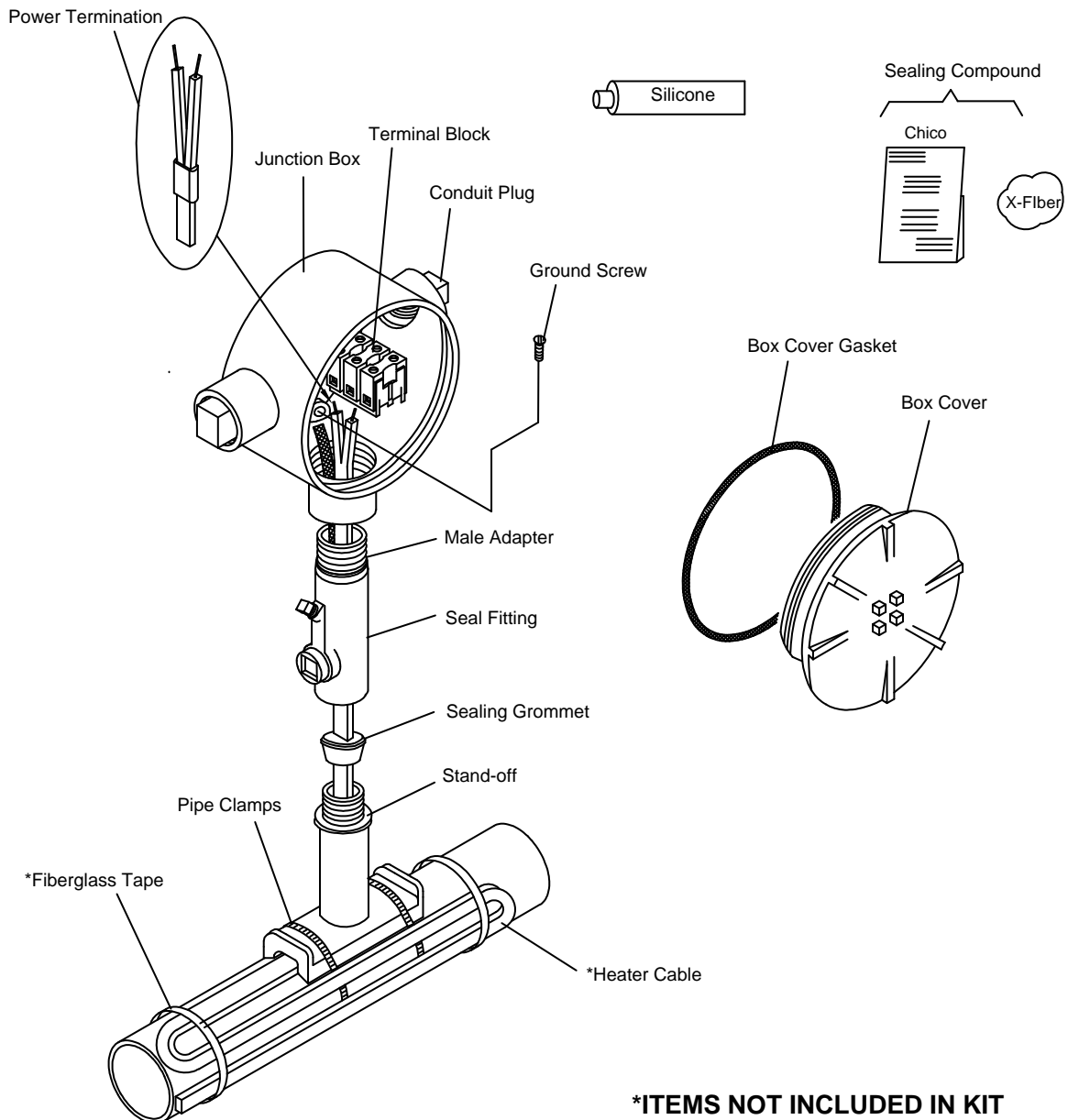
INSTALLATION INSTRUCTIONS

DESCRIPTION

The HASK-E Hazardous Area Seal Kit provides the cable termination and explosion proof seal parts needed to make the end of circuit electrical connections associated with Nelson Heat Tracing Systems' self-regulating heater cables. Minimum installation temperature -40°C (-40°F).

KIT CONTENTS

| | |
|--------------------|---------------------|
| 1 Junction Box | 1 Stand-off |
| 1 Tube of Silicone | 1 Power Termination |
| 1 Sealing Compound | 1 Terminal Block |
| 1 Sealing Grommet | 1 X Fiber |
| 2 Conduit Plugs | 1 Seal Fitting |
| 2 Pipe Clamps | 1 Male Adapter |



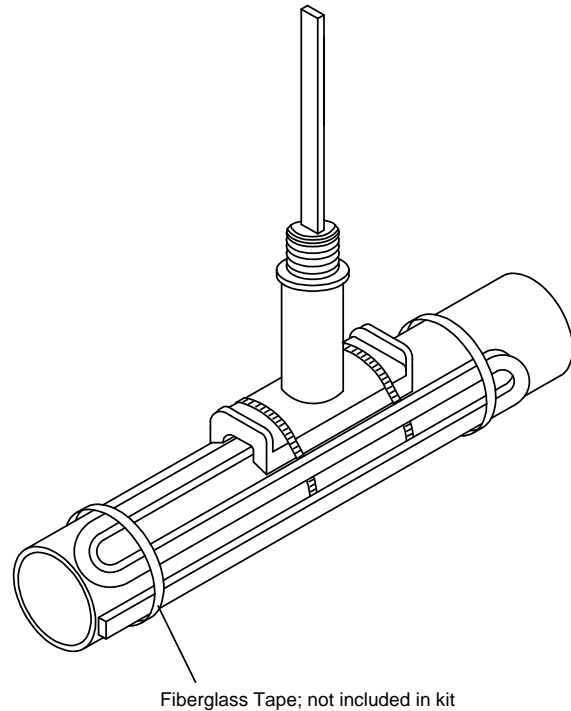
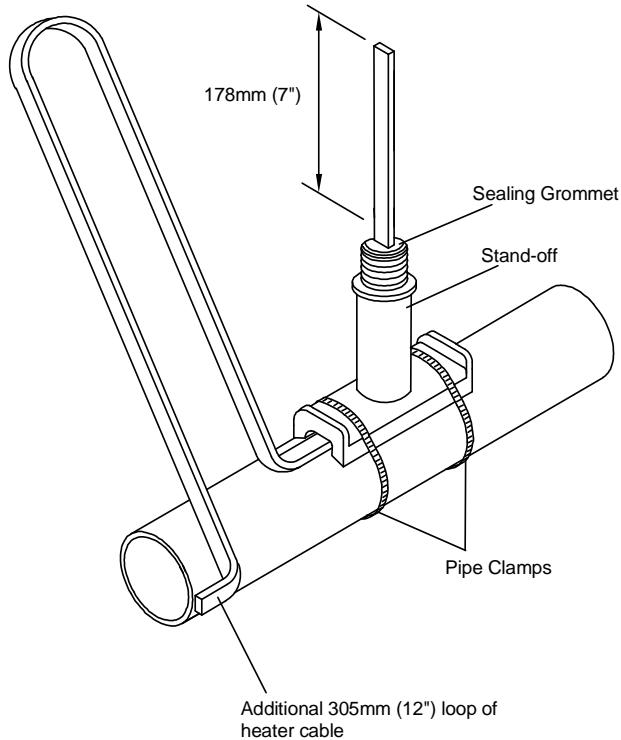
***ITEMS NOT INCLUDED IN KIT**

NELSON™ HEAT TRACING SYSTEMS

HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

STAND-OFF POSITIONING



⚠ WARNING:

Do not install pipe clamps over the heater cable.

- 1 Push heater cable through the bottom opening of the stand-off. Allow 178mm (7'') of heater cable for termination. Leave a 305mm (12'') loop of additional cable to be installed after the stand-off is secured.
- 2 Mount stand-off to pipe using the pipe clamps included in kit.
- 3 Slide the sealing grommet over heater cable and position at stand-off.

- 4 Secure the additional 305mm (12'') of heater to the pipe using fiberglass tape (not included in kit).
- 5 Prepare heater cable for termination. Proceed to "Overjacket Stripping Procedures" on sheet 3.

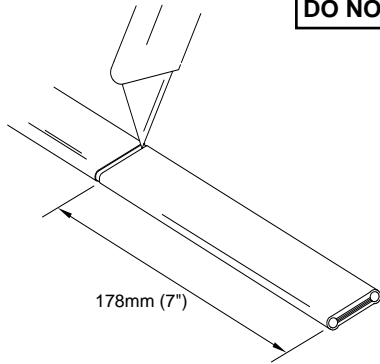
NELSON™ HEAT TRACING SYSTEMS

HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

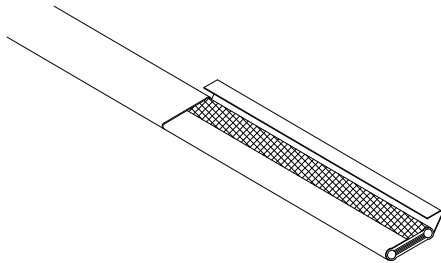
INSTALLATION INSTRUCTIONS

OVERJACKET STRIPPING PROCEDURES

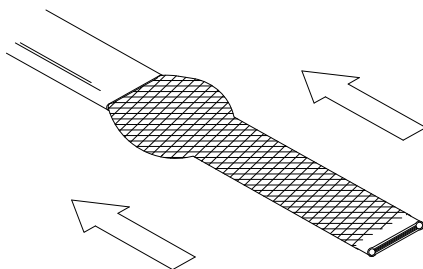
⚠ WARNING:
DO NOT CUT BRAID



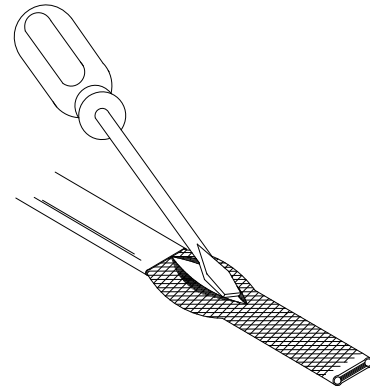
- 1 Lightly cut around heater overjacket 178mm (7") from the end. Bend cable to break overjacket.
- 2 Lightly cut overjacket up the center between first cut mark and the cable end. Bend cable to break overjacket.



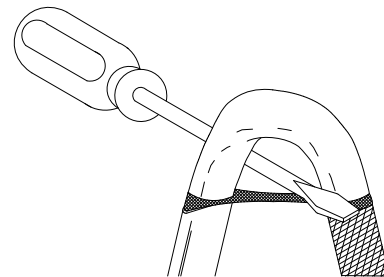
- 3 Remove overjacket from heater cable.



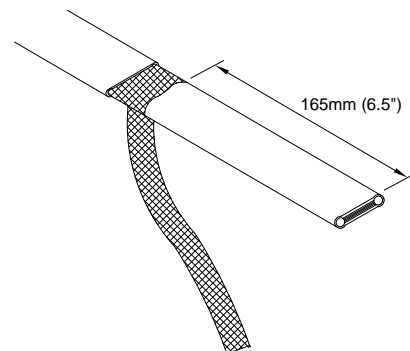
- 4 Move braid back toward the overjacket, creating a bulge.



- 5 At the bulge, separate the braid to make an opening.



- 6 While bending the heater cable, work it through the braid opening.



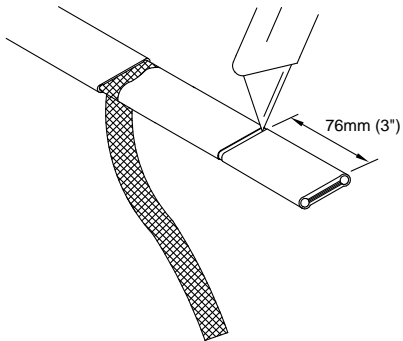
- 7 Pull the braid tight.
- 8 Proceed to "Outer Jacket Stripping Procedures" on sheet 4.

NELSON™ HEAT TRACING SYSTEMS

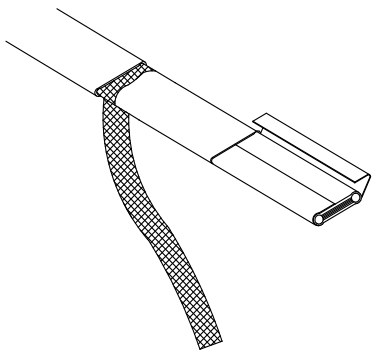
HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

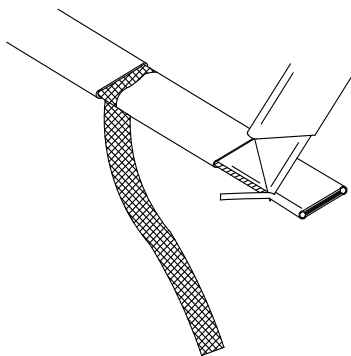
OUTER JACKET STRIPPING PROCEDURES



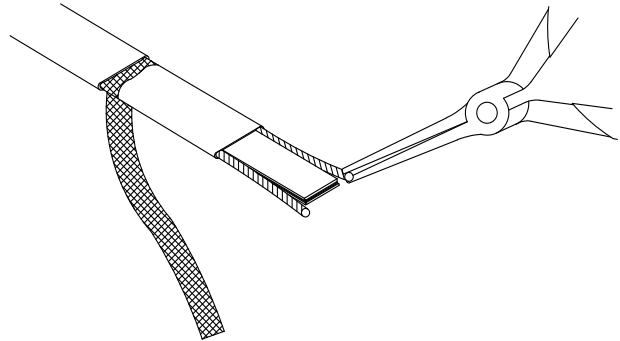
- 1 Lightly cut around heater outer jacket 76mm (3") from the end. Bend cable to break outer jacket.
- 2 Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



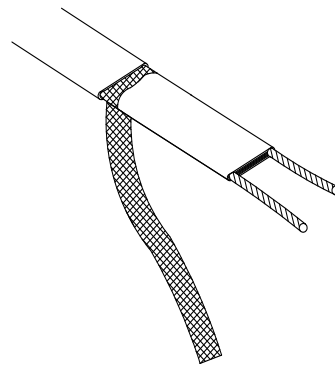
- 3 Remove the jacket from the heater cable.



- 4 Shave the core material from the outside of each bus wire.



- 5 Starting at the end, pull each bus wire away from the core material.
- 6 Remove exposed core material.



- 7 Cut 6mm (0.25") off the end of each bus wire.
- 8 Proceed to "Power Termination" on sheet 5.

⚠ WARNING:
DO NOT CUT BUS WIRES

NELSON™ HEAT TRACING SYSTEMS

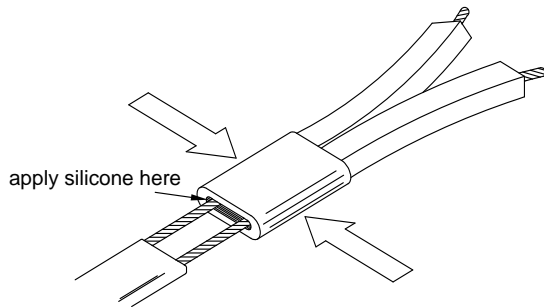
HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

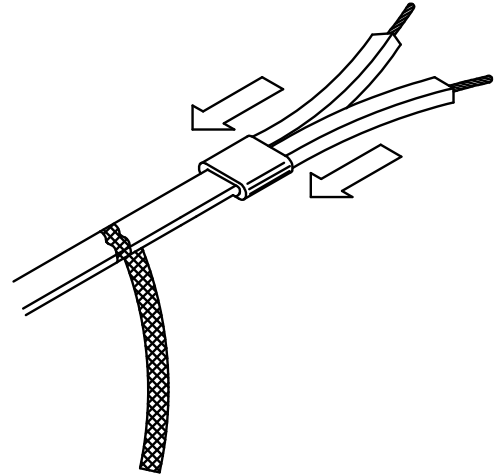
POWER TERMINATION

WARNING:

- Bus wires must not touch or cross while inserting into power termination.
- Only power terminations specifically approved for the vendors style and type of heater cable must be used.



- 1 Insert bus wires into power termination.
- 2 Squeeze power termination opening and fill with silicone.



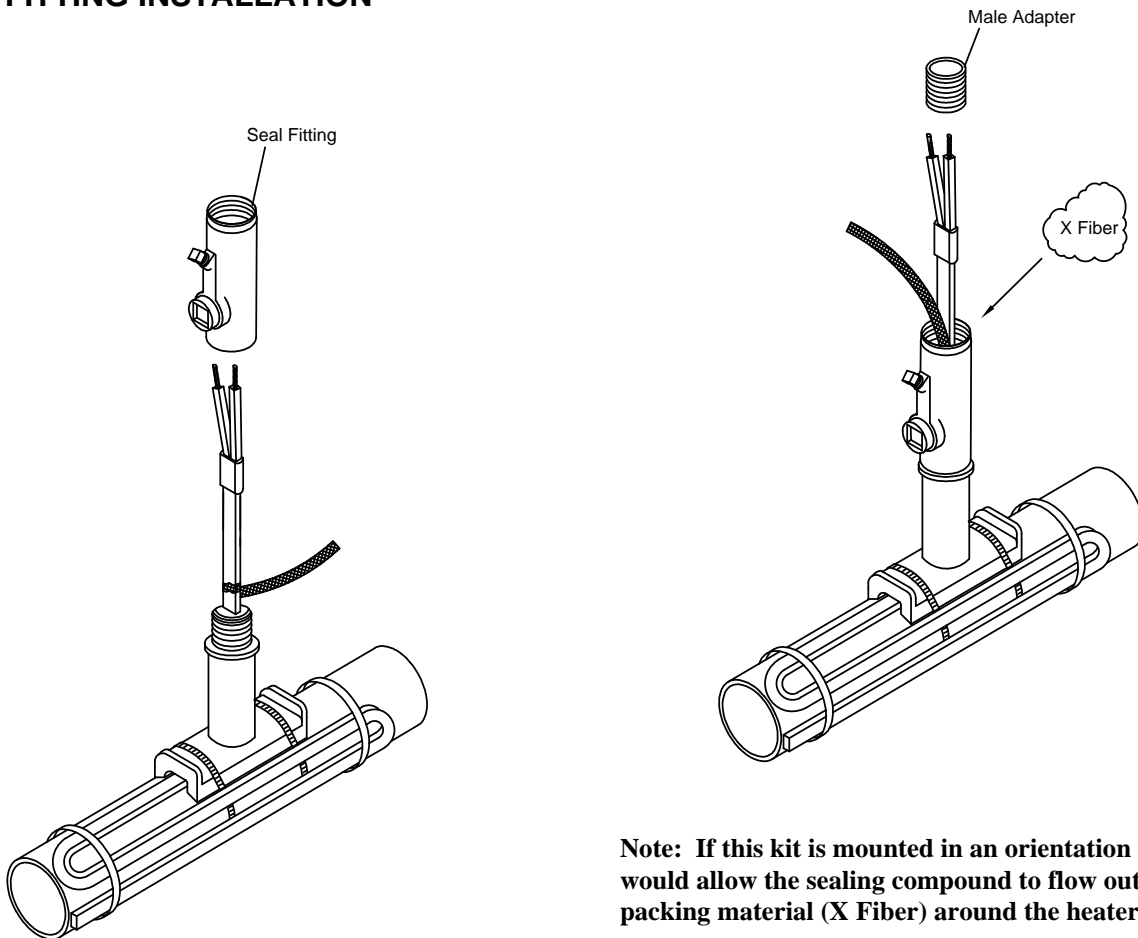
- 3 Push power termination to overlap jacket.
- 4 Proceed to "Seal Fitting Installation" on sheet 6.

NELSON™ HEAT TRACING SYSTEMS

HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

SEAL FITTING INSTALLATION



- 1 Slide seal fitting over the heater cable and braid, screw onto the stand-off by hand until snug fit.

Note: The heater cable must be positioned in the seal fitting so the braid transition point is visible through the seal fitting opening. See Detail "A" on sheet 8.

Note: If this kit is mounted in an orientation that would allow the sealing compound to flow out, place packing material (X Fiber) around the heater cable.

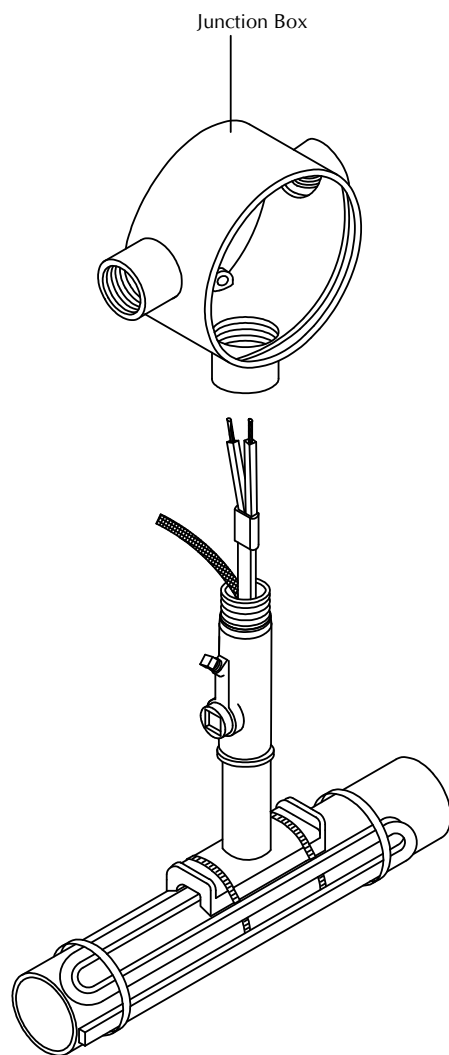
- 2 Slide male adapter over the heater cable and braid, screw into seal fitting by hand until snug fit.
- 3 Proceed to "Sealing Compound Procedure" on sheet 7.

NELSON™ HEAT TRACING SYSTEMS

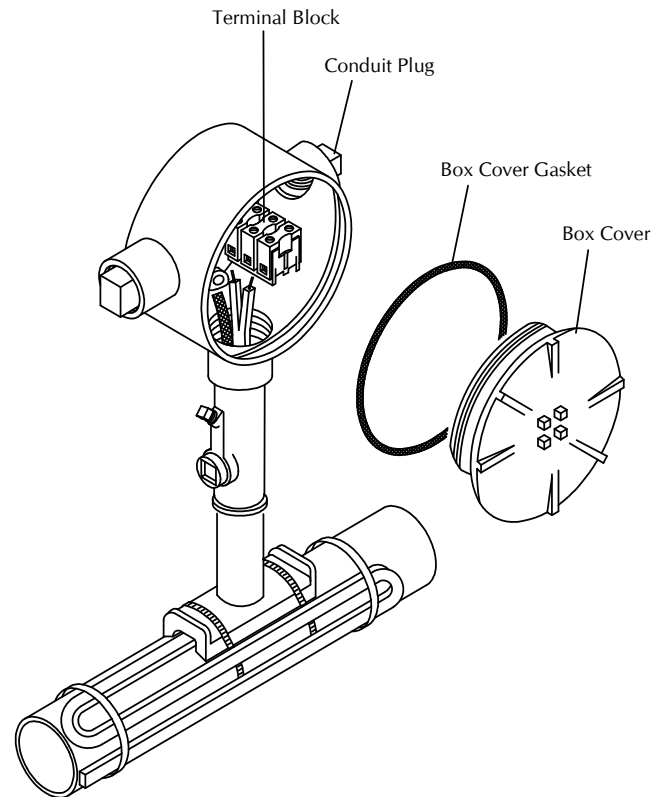
HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

SEALING COMPOUND PROCEDURE



- 1 Place junction box over the heater cable and braid, screw onto male adapter until secure.



- 2 Connect bus wires to terminal block, one per terminal. Connect braid to green ground screw.
- 3 Place the box cover gasket and box cover onto junction box. Plug the unused conduit openings with the conduit plugs.
- 4 Mix sealing compound according to the instructions on the pouch (knead to mix liquid and powder in pouch). Snip off a corner of the pouch and fill the seal fitting.

⚠ WARNING:

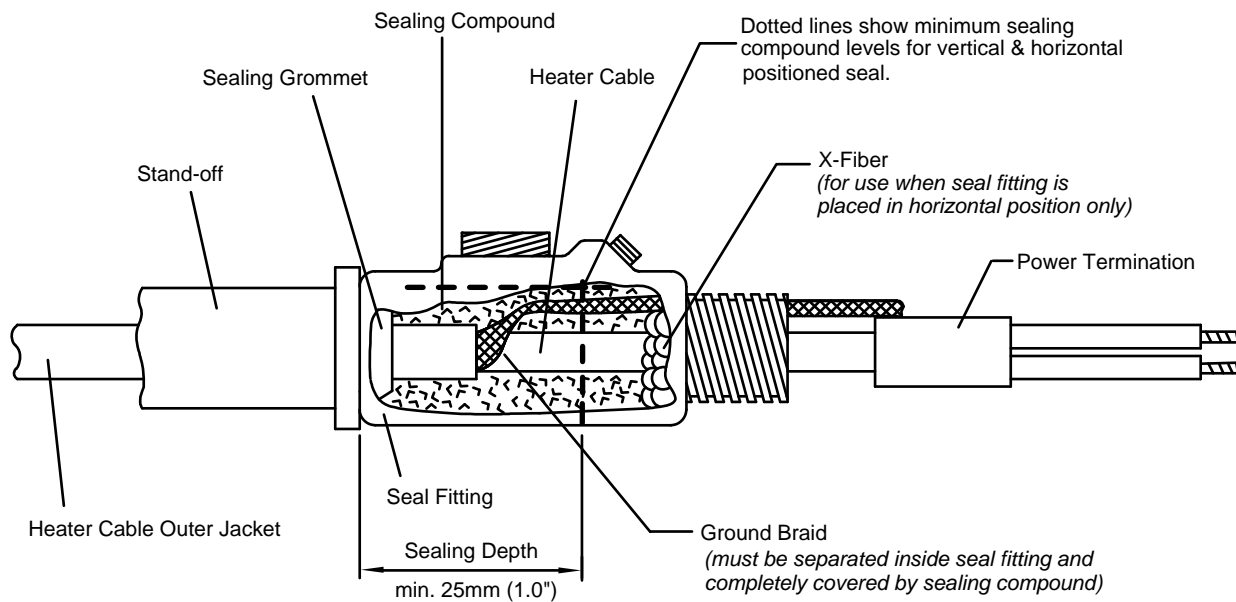
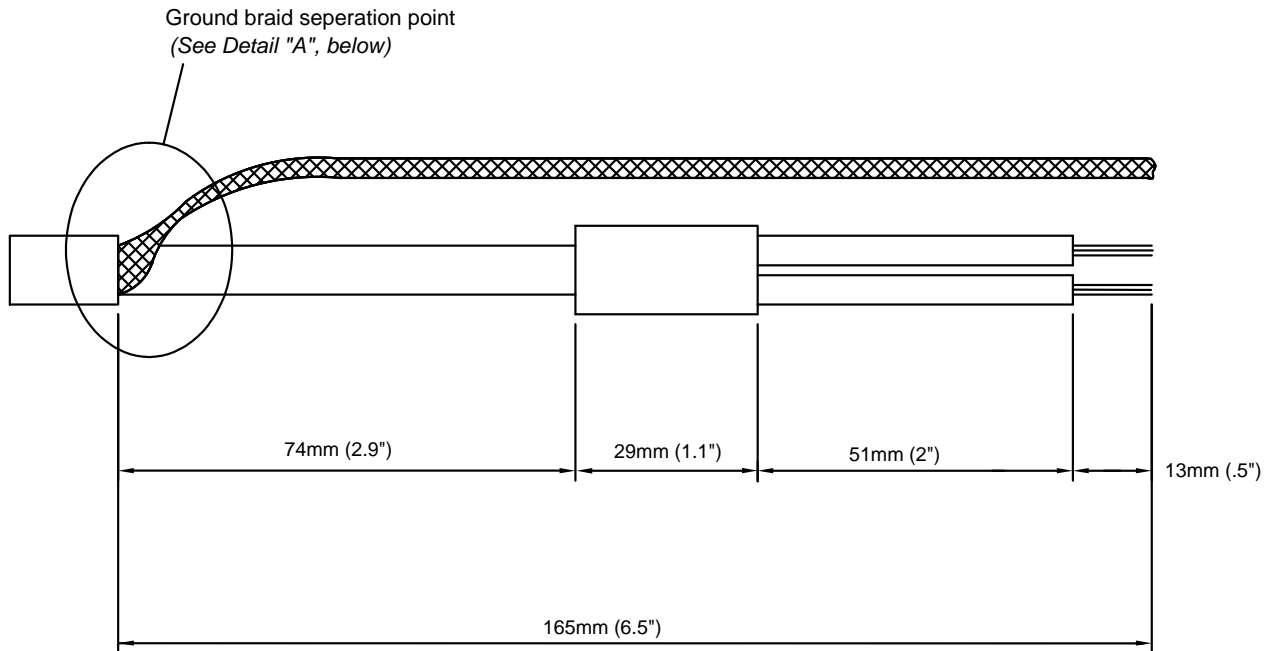
Sealing compound must completely cover the braid transition point. See Detail "A" on sheet 8 for reference.

NELSON™ HEAT TRACING SYSTEMS

HASK-E HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

TEMPLATE



DETAIL "A"

Nelson Heat Tracing Systems products are supplied with a limited warranty. Complete Terms and Conditions may be found on Nelson's website at www.nelsonheaters.com.

NELSON™

FM Division 1 Checklist for D1-LT and D1-HLT

Self-Regulating Heater Cable

As required by the Factory Mutual approval process, fill out this form and return to:

Nelson Heat Trace (or) **Nelson Heat Trace**
P.O. Box 726 **Fax Number (918) 622-9308**
Tulsa, OK 74101

Company Name

Purchase Order No.

Circuit Reference (ID Number)

Area Classification

Auto Ignition Temperature

Group

Substance

Heater Information

Cable Type

Voltage

Temperature Identification Number (T-rating)

Termination Kits

Power Connection

End Seal

Splice Connection

Tee Connection

Ground Fault Equipment Protection (Required)

Make and Model

Device Trip Level (mA)

Installation per Manufacturers Installation Instructions | Initials:

System Certification

| Prepared By | Company | Date |
|-------------|---------|------|
| | | |
| Prepared By | Company | Date |
| | | |

This completed form must be returned to Nelson to complete the certification process. A copy of this completed form should be kept for installation record retention purposes.



NELSON HEAT TRACING SYSTEMS

P.O. Box 726 • Tulsa, OK 74101 • 918-627-5530 • Fax: 918-641-7336 • www.nelsonheaters.com

Form EQR-04-70103-D

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NELSON™ HEAT TRACING SYSTEMS

HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

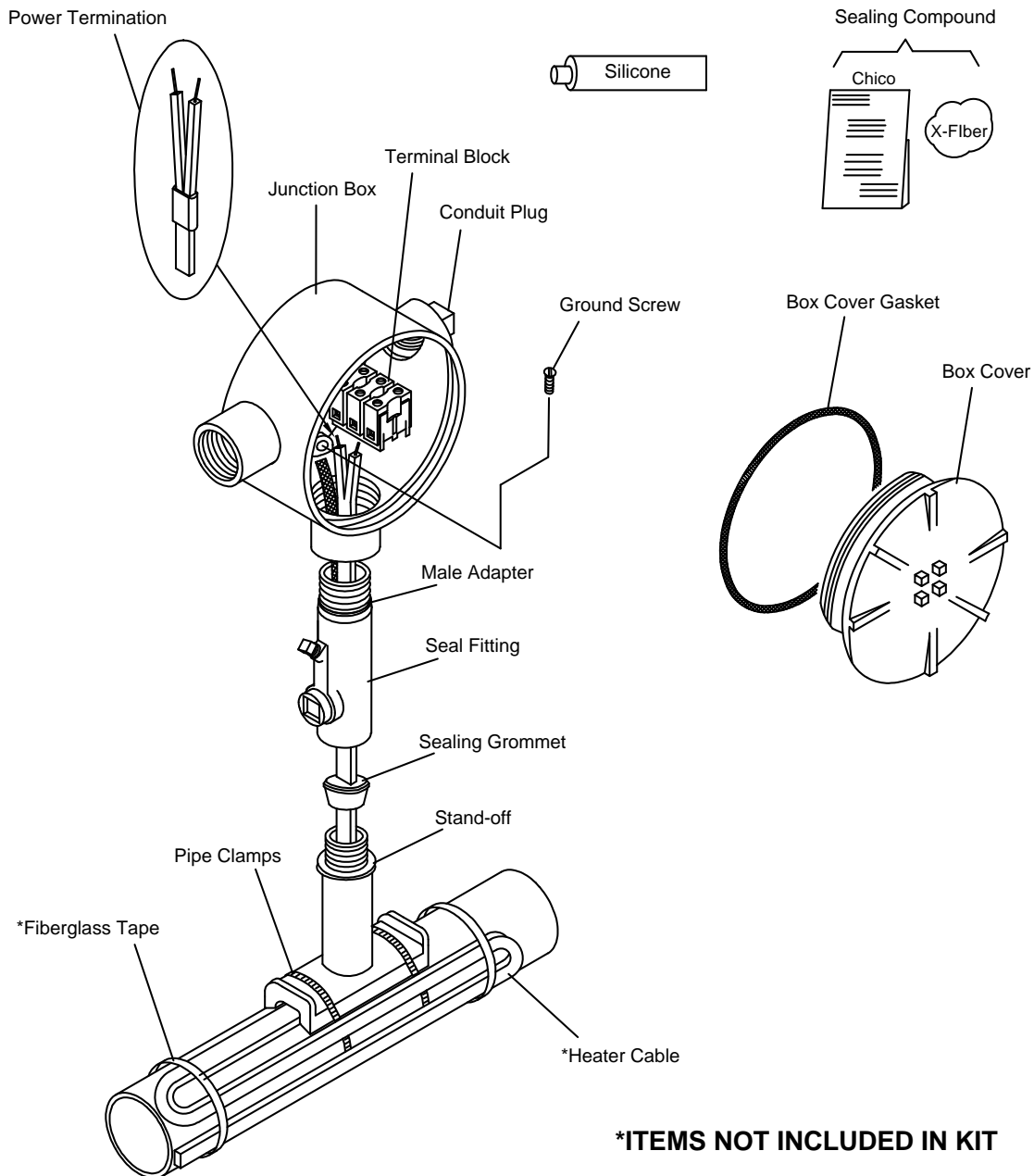
INSTALLATION INSTRUCTIONS

DESCRIPTION

The HASK-P Hazardous Area Seal Kit provides the cable termination and explosion proof seal parts needed to make the power end electrical connections associated with Nelson Heat Tracing Systems' self-regulating heater cables. Minimum installation temperature -40°C (-40°F).

KIT CONTENTS

- | | |
|--------------------|---------------------|
| 1 Junction Box | 1 Stand-off |
| 1 Tube of Silicone | 1 Power Termination |
| 1 Sealing Compound | 1 Terminal Block |
| 1 Sealing Grommet | 1 X Fiber |
| 1 Conduit Plug | 1 Seal Fitting |
| 2 Pipe Clamps | 1 Male Adapter |



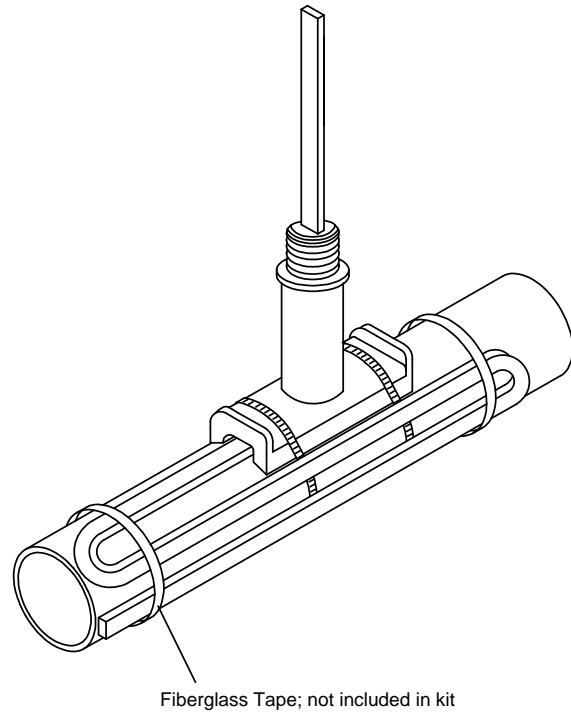
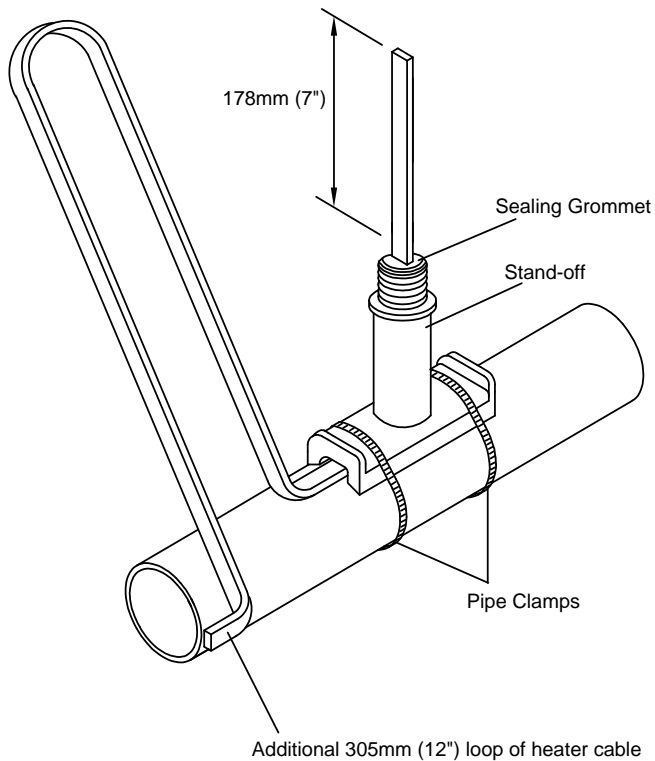
***ITEMS NOT INCLUDED IN KIT**

NELSON™ HEAT TRACING SYSTEMS

HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

STAND-OFF POSITIONING



⚠ WARNING:

Do not install pipe clamps over the heater cable.

- 1 Push heater cable through the bottom opening of the stand-off. Allow 178mm (7'') of heater cable for termination. Leave a 305mm (12'') loop of additional cable to be installed after the stand-off is secured.
- 2 Mount stand-off to pipe using the pipe clamps included in kit.
- 3 Slide the sealing grommet over heater cable and position at stand-off.

- 4 Secure the additional 305mm (12'') of heater to the pipe using fiberglass tape (not included in kit).
- 5 Prepare heater cable for termination. Proceed to "Overjacket Stripping Procedures" on sheet 3.

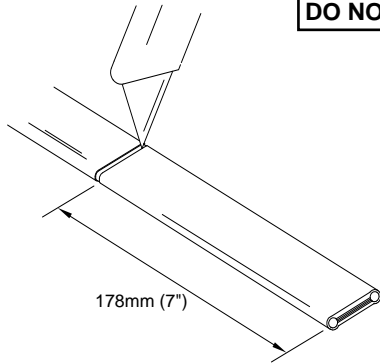
NELSON™ HEAT TRACING SYSTEMS

HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

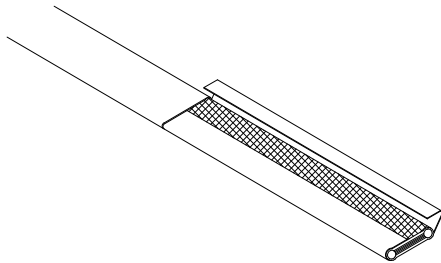
INSTALLATION INSTRUCTIONS

OVERJACKET STRIPPING PROCEDURES

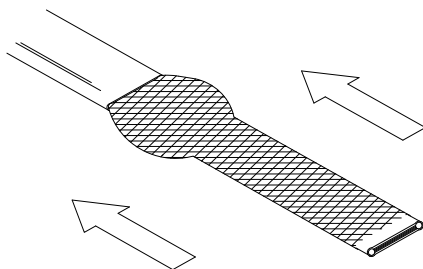
⚠ WARNING:
DO NOT CUT BRAID



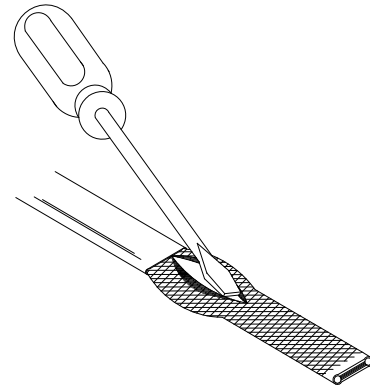
- 1 Lightly cut around heater overjacket 178mm (7") from the end. Bend cable to break overjacket.
- 2 Lightly cut overjacket up the center between first cut mark and the cable end. Bend cable to break overjacket.



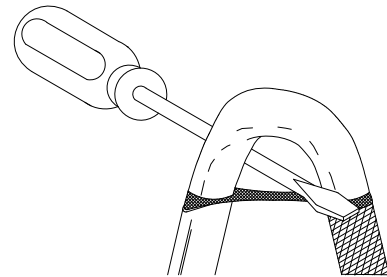
- 3 Remove overjacket from heater cable.



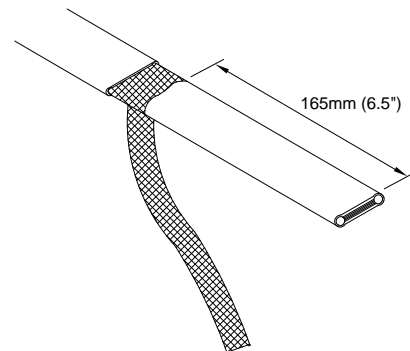
- 4 Move braid back toward the overjacket, creating a bulge.



- 5 At the bulge, separate the braid to make an opening.



- 6 While bending the heater cable, work it through the braid opening.



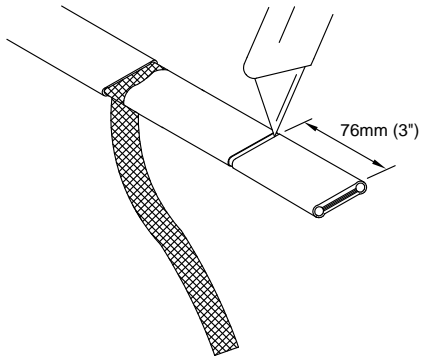
- 7 Pull the braid tight.
- 8 Proceed to "Outer Jacket Stripping Procedures" on sheet 4.

NELSON™ HEAT TRACING SYSTEMS

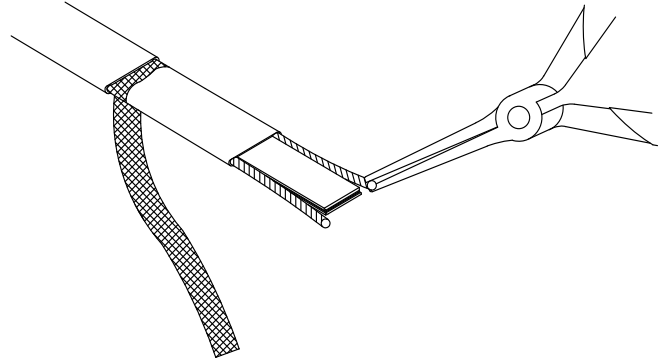
HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

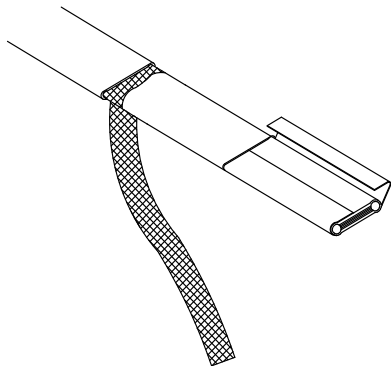
OUTER JACKET STRIPPING PROCEDURES



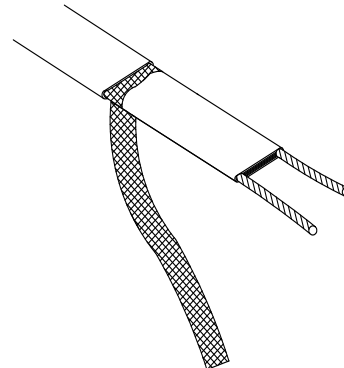
- 1 Lightly cut around heater outer jacket 76mm (3") from the end. Bend cable to break outer jacket.
- 2 Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



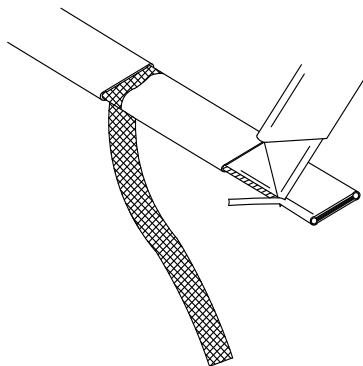
- 5 Starting at the end, pull each bus wire away from the core material.
- 6 Remove exposed core material.



- 3 Remove the jacket from the heater cable.



- 7 Cut 6mm (0.25") off the end of each bus wire.
- 8 Proceed to "Power Termination" on sheet 5.



⚠ WARNING:
DO NOT CUT BUS WIRES

- 4 Shave the core material from the outside of each bus wire.

NELSON™ HEAT TRACING SYSTEMS

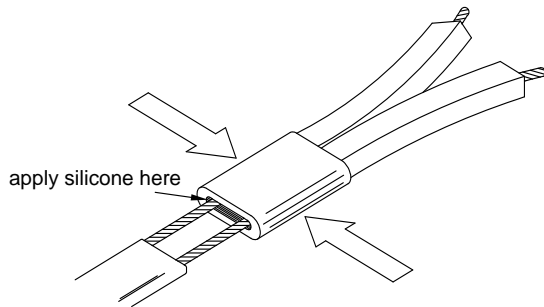
HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

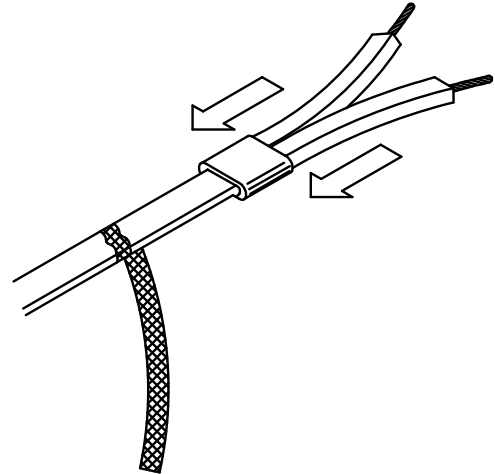
POWER TERMINATION

WARNING:

- Bus wires must not touch or cross while inserting into power termination.
- Only power terminations specifically approved for the vendors style and type of heater cable must be used.



- 1 Insert bus wires into power termination.
- 2 Squeeze power termination opening and fill with silicone.



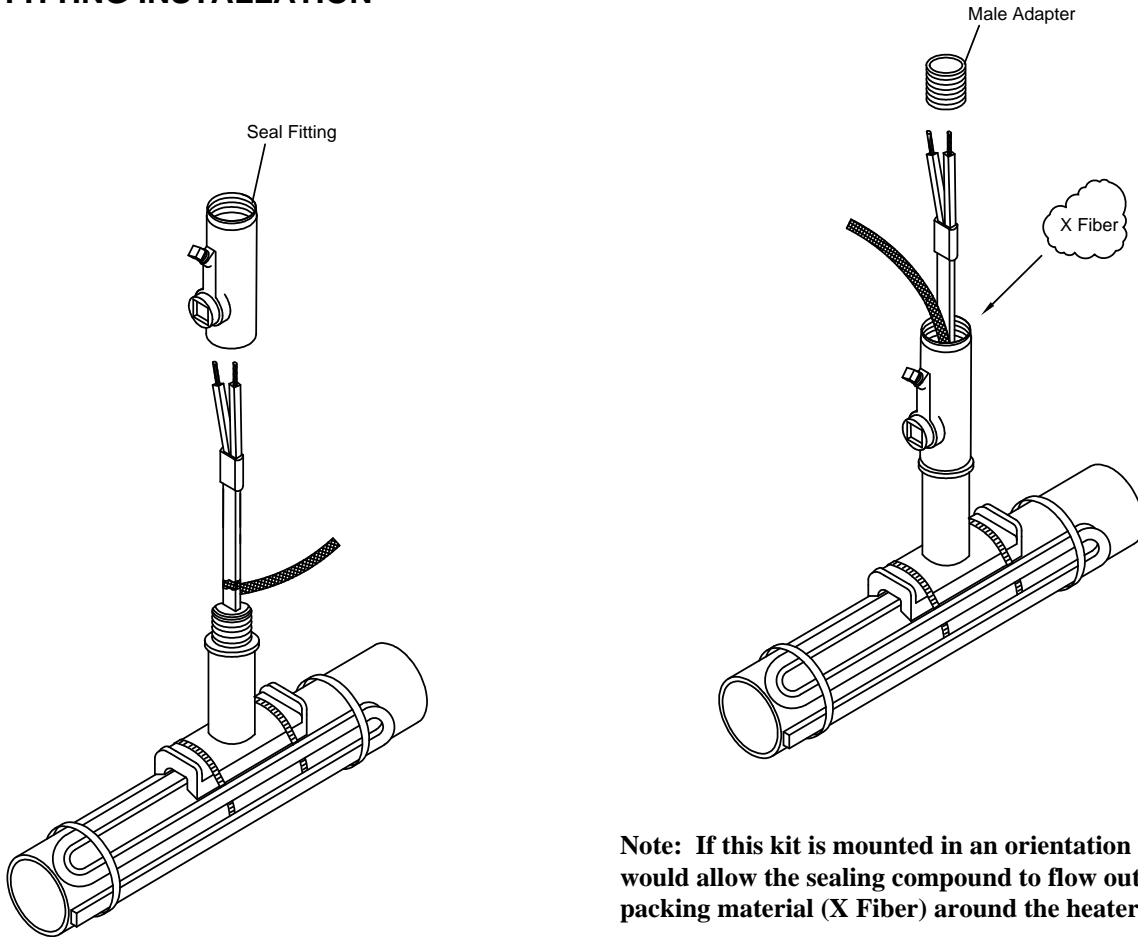
- 3 Push power termination to overlap jacket.
- 4 Proceed to "Seal Fitting Installation" on sheet 6.

NELSON™ HEAT TRACING SYSTEMS

HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

SEAL FITTING INSTALLATION



- 1 Slide seal fitting over the heater cable and braid, screw onto the stand-off by hand until snug fit.

Note: The heater cable must be positioned in the seal fitting so the braid transition point is visible through the seal fitting opening. See Detail "A" on sheet 8.

Note: If this kit is mounted in an orientation that would allow the sealing compound to flow out, place packing material (X Fiber) around the heater cable.

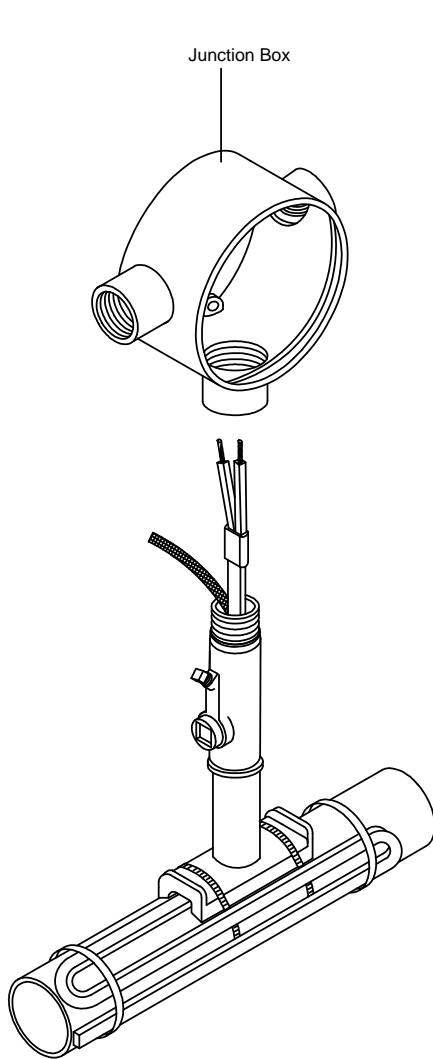
- 2 Slide male adapter over the heater cable and braid, screw into seal fitting by hand until snug fit.
- 3 Proceed to "Sealing Compound Procedure" on sheet 7.

NELSON™ HEAT TRACING SYSTEMS

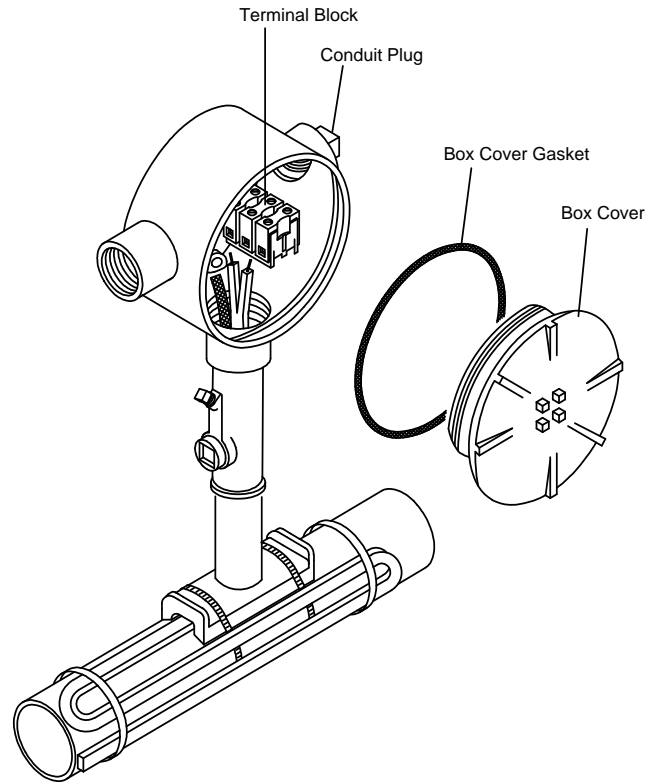
HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

SEALING COMPOUND PROCEDURE



- 1 Place junction box over the heater cable and braid, screw onto male adapter until secure.



- 2 Connect bus wires to terminal block, one per terminal. Connect braid to green ground screw.
- 3 Place the box cover gasket and box cover onto junction box. Plug the unused conduit opening with the conduit plug.
- 4 Mix sealing compound according to the instructions on the pouch, (knead to mix liquid and powder in pouch). Snip off a corner of the pouch and fill the seal fitting.

⚠ WARNING:

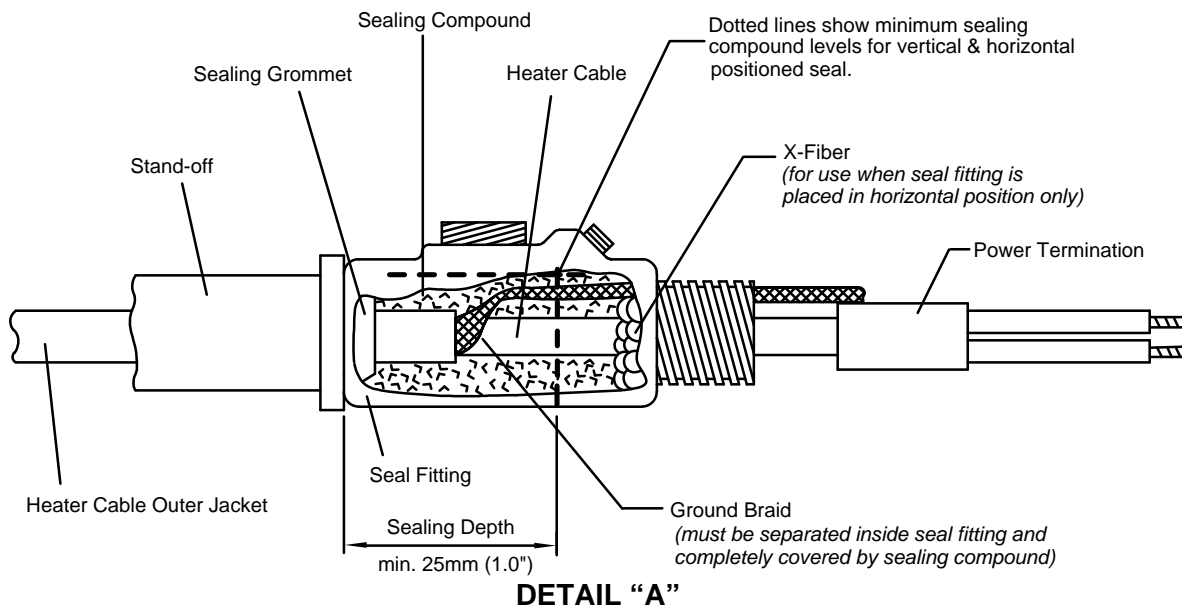
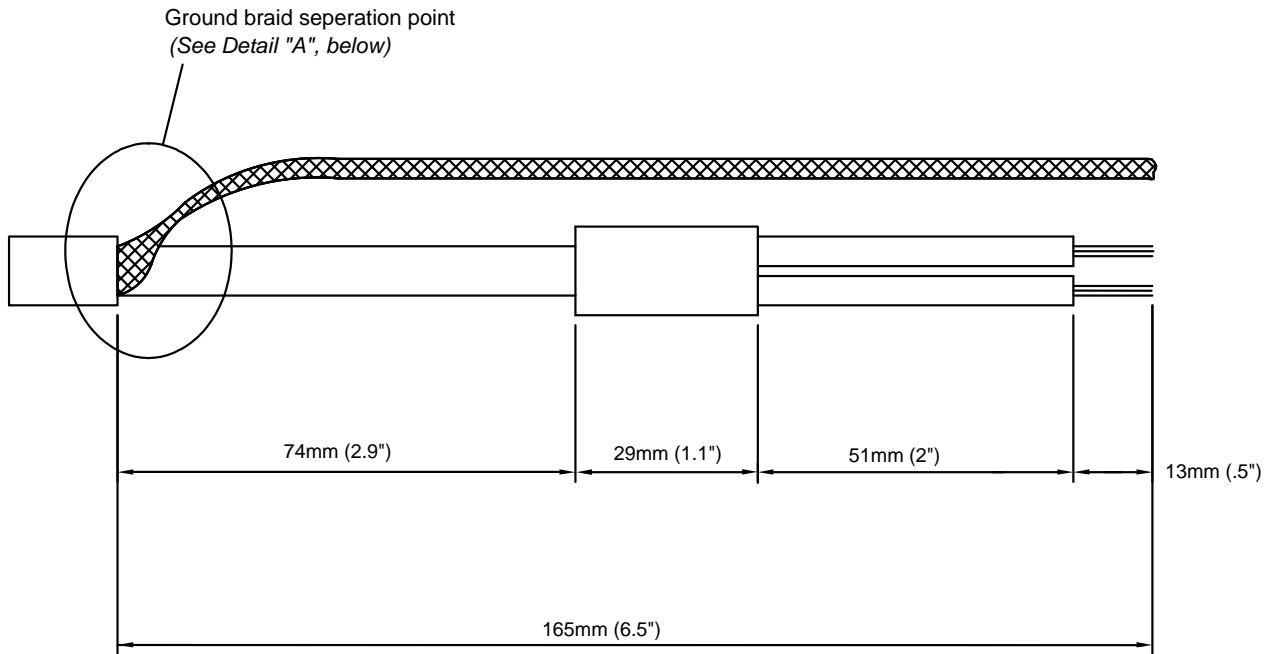
Sealing compound must completely cover the braid transition point. See Detail "A" on sheet 8 for reference.

NELSON™ HEAT TRACING SYSTEMS

HASK-P HAZARDOUS AREA SEAL KIT FOR DIV. 1 CABLE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

TEMPLATE



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PO BOX 726 ■ TULSA, OK 74101 ■ (918) 627-5530 ■ FAX (918) 641-7336 ■ www.nelsonheaters.com

NELSON™

FM Division 1 Checklist for D1-LT and D1-HLT

Self-Regulating Heater Cable

As required by the Factory Mutual approval process, fill out this form and return to:

Nelson Heat Trace
P.O. Box 726
Tulsa, OK 74101

(or)

Nelson Heat Trace
Fax Number (918) 622-9308

Company Name

Purchase Order No.

Circuit Reference (ID Number)

Area Classification

Auto Ignition Temperature

Group

Substance

Heater Information

Cable Type

Voltage

Temperature Identification Number (T-rating)

Termination Kits

Power Connection

End Seal

Splice Connection

Tee Connection

Ground Fault Equipment Protection (Required)

Make and Model

Device Trip Level (mA)

Installation per Manufacturers Installation Instructions

Initials:

System Certification

| Prepared By | Company | Date |
|-------------|---------|------|
| | | |
| Prepared By | Company | Date |
| | | |

This completed form must be returned to Nelson to complete the certification process. A copy of this completed form should be kept for installation record retention purposes.



NELSON HEAT TRACING SYSTEMS

P.O. Box 726 • Tulsa, OK 74101 • 918-627-5530 • Fax: 918-641-7336 • www.nelsonheaters.com

Form EQR-04-70103-D

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NELSON™ HEAT TRACING SYSTEMS

HASK-S HAZARDOUS AREA SEAL KIT

FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

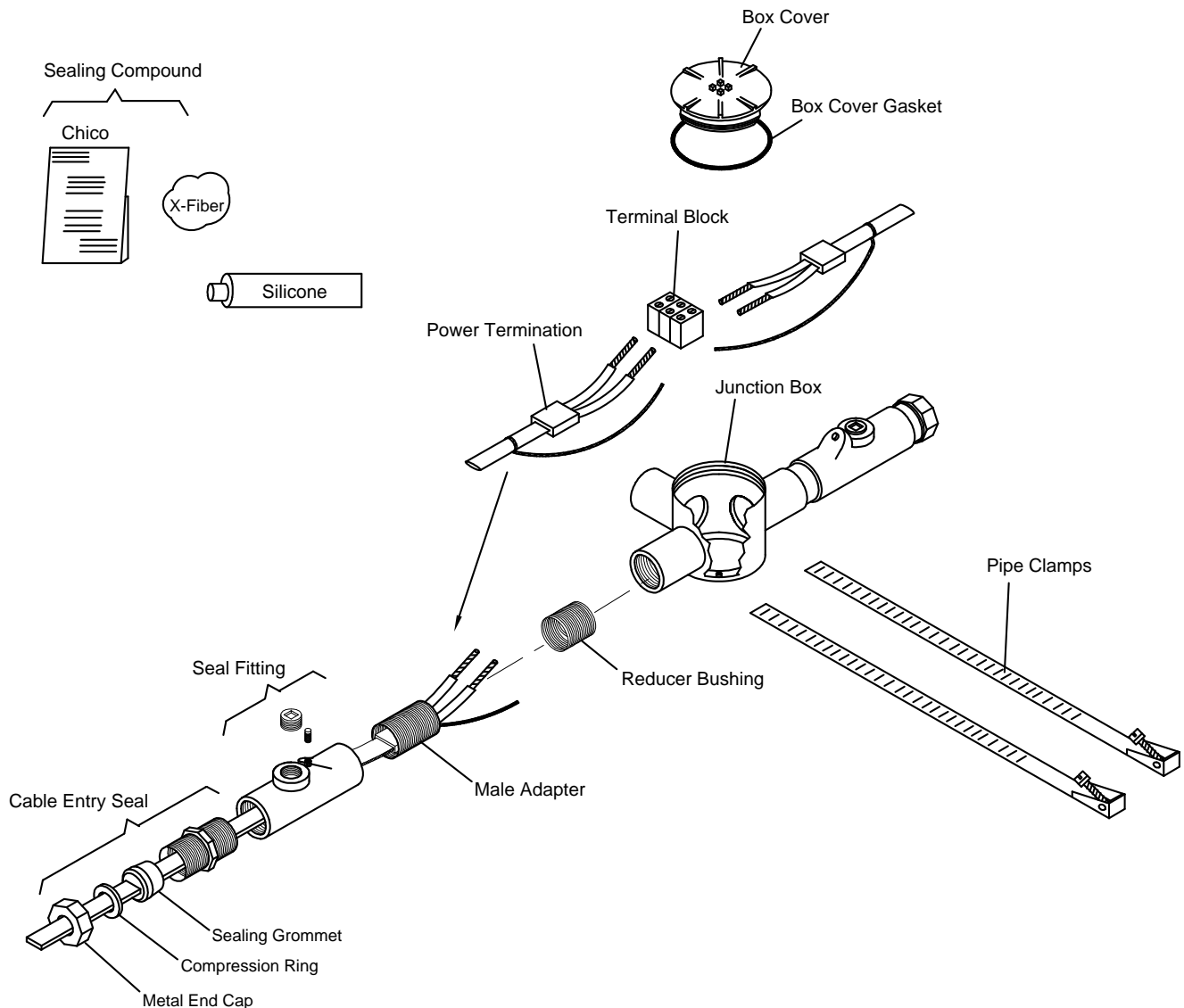
INSTALLATION INSTRUCTIONS

DESCRIPTION

The HASK-S Hazardous Area Seal Kit provides the cable termination and explosion proof seal parts needed to make all the in-line splice electrical connections associated with all Nelson Heat Tracing Systems' self-regulating heater cables. Minimum installation temperature -40°C (-40°F).

KIT CONTENTS

- | | |
|--------------------|----------------------|
| 1 Junction Box | 2 Male Adapters |
| 1 Box Cover Gasket | 2 Reducer Bushings |
| 1 Tube of Silicone | 2 Power Terminations |
| 1 Sealing Compound | 1 Terminal Block |
| 1 X Fiber | 2 Cable Entry Seals |
| 2 Pipe Clamps | 1 Conduit Plug |
| 2 Seal Fittings | |



NELSON™ HEAT TRACING SYSTEMS

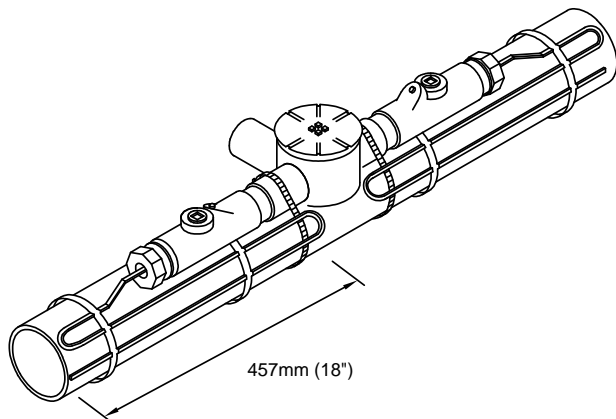
HASK-S HAZARDOUS AREA SEAL KIT

FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

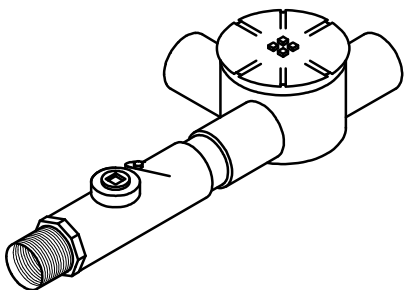
INSTALLATION

INSTRUCTIONS

JUNCTION BOX CONNECTION



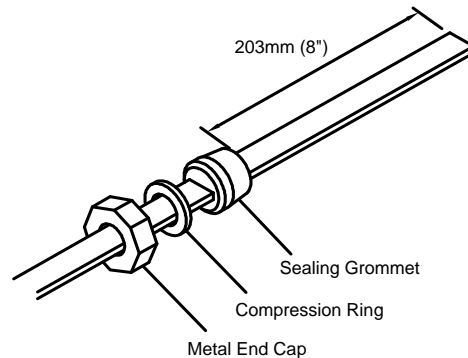
- 1 Allow 457mm (18") of heater cable for each side to compensate for heat loss of the termination kit.



- 2 Thread the reducer bushing into the junction box. Then thread the male adapter into the reducer bushing. Finally, thread the seal fitting into the male adapter. Tighten to a minimum of 5 full threads of engagement.

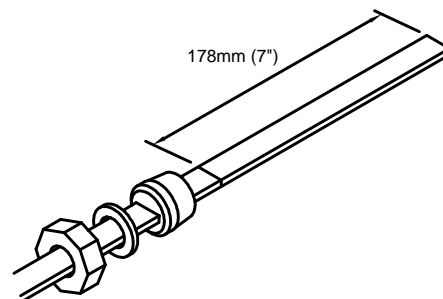
Note: If the seal fitting is to be mounted in vertical position, mount with the slanted small hole plug upwards.

- 3 Remove the metal end cap, black compression ring and sealing grommet from the cable entry seal and thread the cable entry seal into the seal fitting. Tighten to a minimum of 5 full threads of engagement.
- 4 Repeat steps 2-3 for the other seal fitting.



- 5 Slide a metal end cap, compression ring and sealing grommet over each heater cable. Position each sealing grommet 203mm (8") from each heater cable end.

Note: Each metal end cap, compression ring and sealing grommet must be oriented to fit correctly into each cable entry seal.



- 6 Prepare all heater cables for termination. Proceed to "Overjacket Stripping Procedures" on sheet 3.

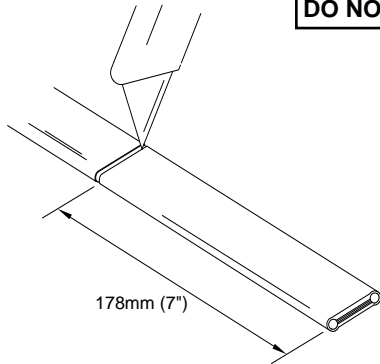
NELSON™ HEAT TRACING SYSTEMS

HASK-S HAZARDOUS AREA SEAL KIT FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

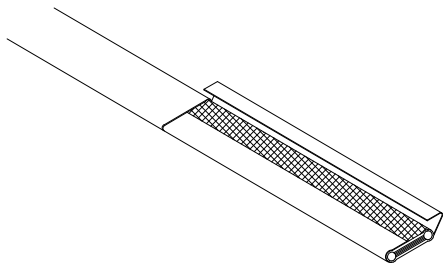
INSTALLATION INSTRUCTIONS

OVERJACKET STRIPPING PROCEDURES

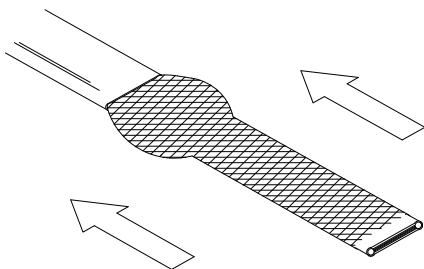
⚠ WARNING:
DO NOT CUT BRAID



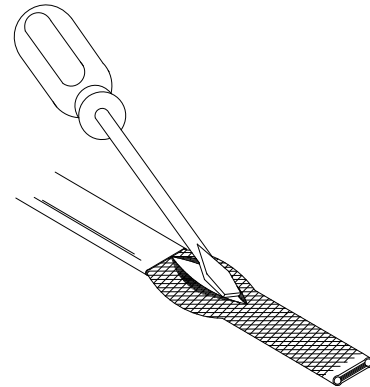
- 1 Lightly cut around heater overjacket 178mm (7") from the end. Bend cable to break overjacket.
- 2 Lightly cut overjacket up the center between first cut mark and the cable end. Bend cable to break overjacket.



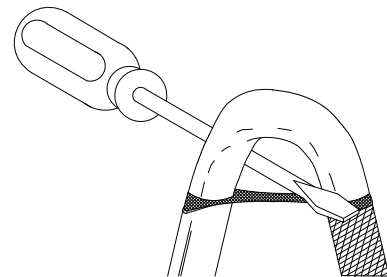
- 3 Remove overjacket from heater cable.



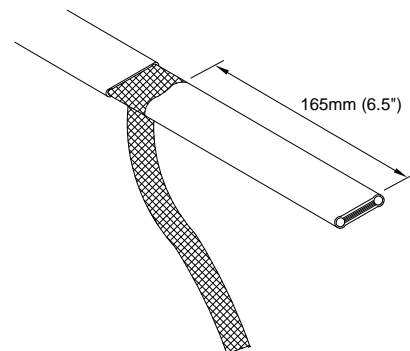
- 4 Move braid back toward the overjacket, creating a bulge.



- 5 At the bulge, separate the braid to make an opening.



- 6 While bending the heater cable, work it through the braid opening.



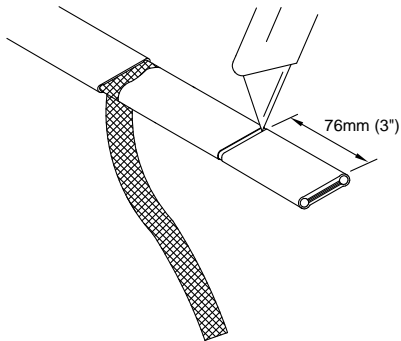
- 7 Pull the braid tight.
- 8 Proceed to "Outer Jacket Stripping Procedures" on sheet 4.

NELSON™ HEAT TRACING SYSTEMS

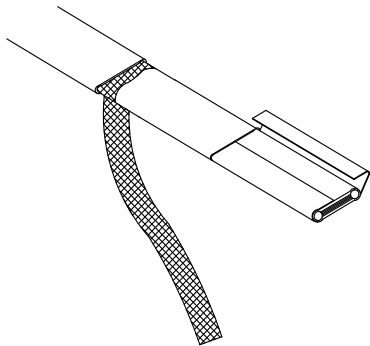
HASK-S HAZARDOUS AREA SEAL KIT FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

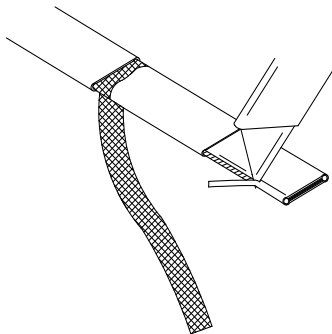
OUTER JACKET STRIPPING PROCEDURES



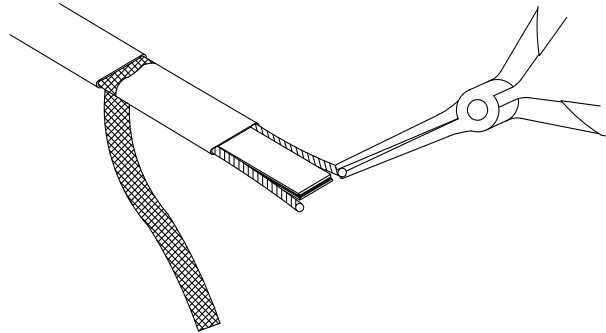
- 1 Lightly cut around heater outer jacket 76mm (3") from the end. Bend cable to break outer jacket.
- 2 Lightly cut the outer jacket up the center between the first cut mark & the cable end. Bend cable to break outer jacket.



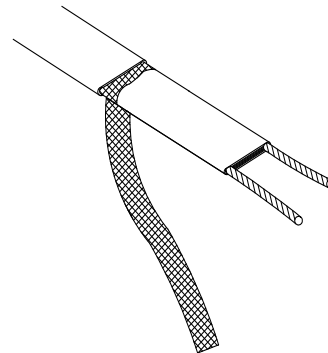
- 3 Remove the jacket from the heater cable.



- 4 Shave the core material from the outside of each bus wire.



- 5 Starting at the end, pull each bus wire away from the core material.
- 6 Remove exposed core material.



- 7 Cut 6mm (0.25") off the end of each bus wire.
- 8 Proceed to "Power Termination" on sheet 5.

⚠ WARNING:
DO NOT CUT BUS WIRES

NELSON™ HEAT TRACING SYSTEMS

HASK-S HAZARDOUS AREA SEAL KIT

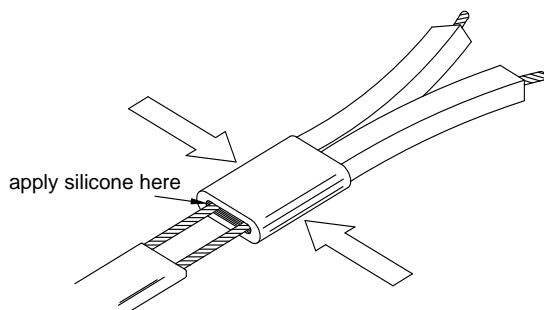
FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

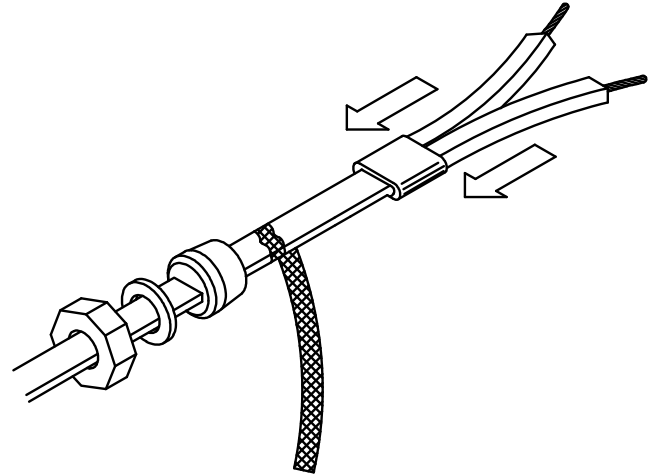
POWER TERMINATION

⚠ WARNING:

- Bus wires must not touch or cross while inserting into power termination.
- Only power terminations specifically approved for the vendors style and type of heater cable must be used.



- 1 Insert bus wires into power termination.
- 2 Squeeze power termination opening and fill with silicone.



- 3 Push power termination to overlap jacket.
- 4 Proceed to "Seal Fitting Installation" on sheet 6.

NELSON™ HEAT TRACING SYSTEMS

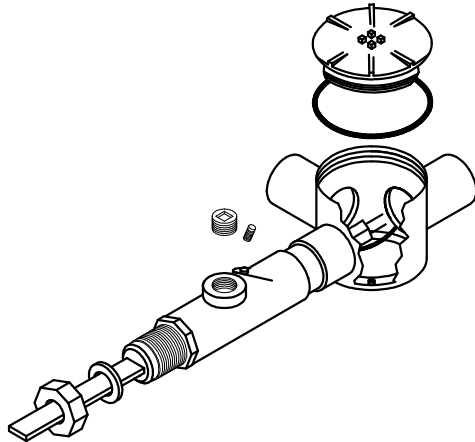
HASK-S HAZARDOUS AREA SEAL KIT

FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION

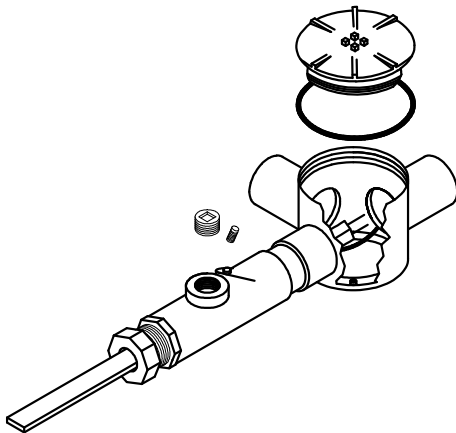
INSTRUCTIONS

SEAL FITTING INSTALLATION

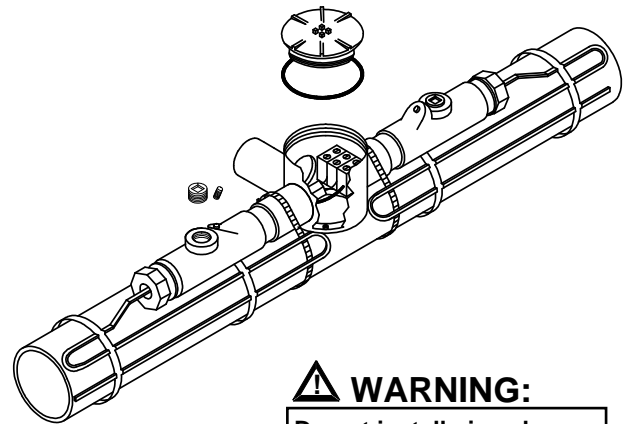


- 1 Remove box cover and box cover gasket from junction box; place a power termination through each cable entry seal and seal fitting. Slide forward until the sealing grommet is flush with the entry seal.

Note: The heater cable must be positioned in the seal fitting so the braid transition point is visible through the seal fitting opening. See Detail “A” on sheet 8 for example.



- 2 Slide the compression ring and metal end cap forward and thread onto the cable entry seal. Tighten to 51 foot pounds.
- 3 Repeat steps 1-2 for the other seal fitting.



⚠ WARNING:
Do not install pipe clamps over the heater cables.

- 4 Mount the junction box to pipe using pipe clamps.
- 5 Connect bus wires to the terminal block. Connect ground braid from both heater cables to green ground screw.
- 6 Place the box cover gasket and box cover onto the junction box and plug the unused conduit opening using the conduit plug.
- 7 Proceed to “*Sealing Compound Procedure*” on sheet 7.

NELSON™ HEAT TRACING SYSTEMS

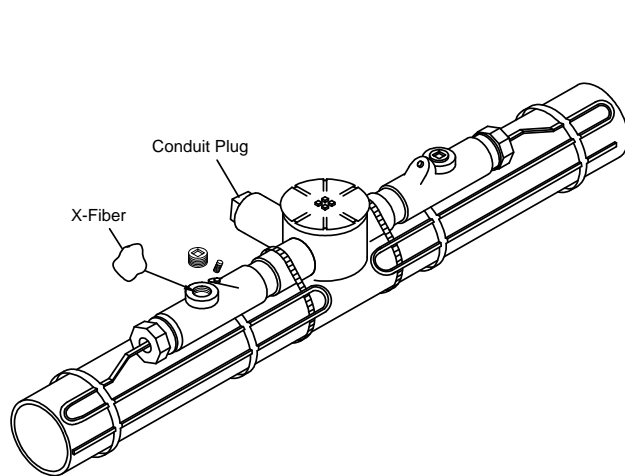
HASK-S HAZARDOUS AREA SEAL KIT

FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

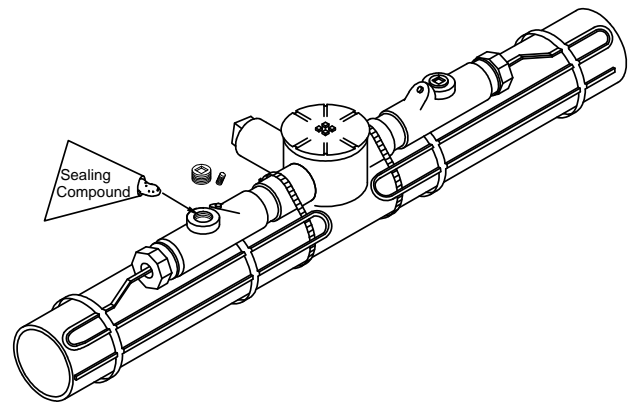
INSTALLATION

INSTRUCTIONS

SEALING COMPOUND PROCEDURE



- 1 Center the heater cable in the conduit opening. Using the X fiber, pack around the heater cable forming a dam to hold the sealing compound.



- 2 Mix the sealing compound according to instructions on the pouch, (knead to mix liquid and powder in pouch). Snip off a corner of the pouch and fill the seal.

⚠ WARNING:

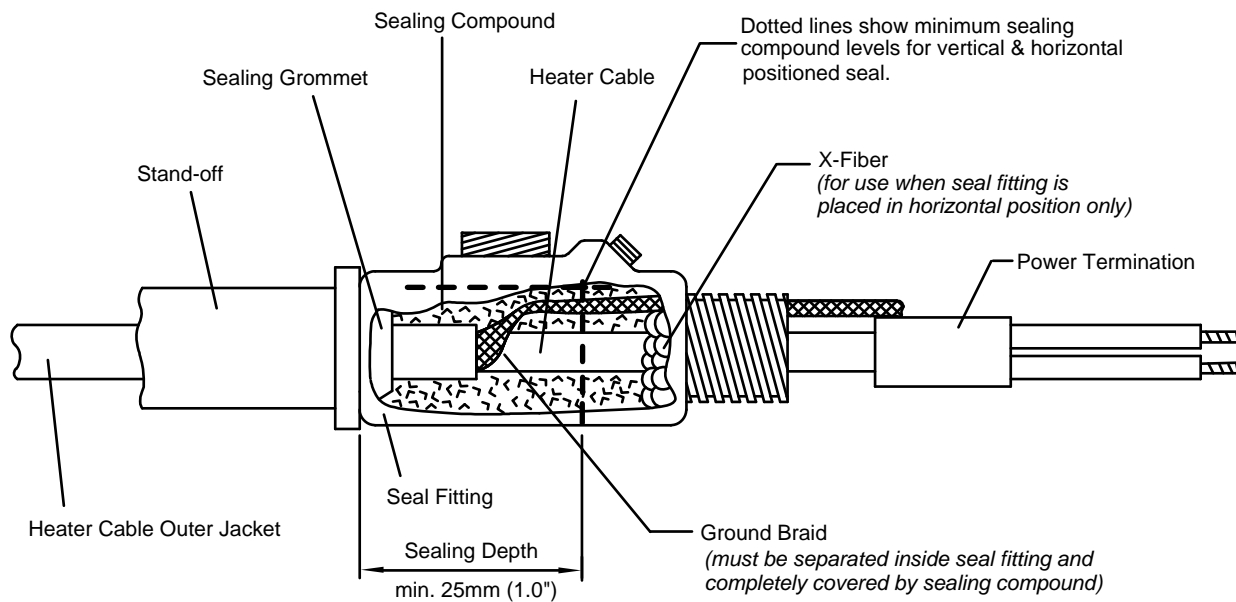
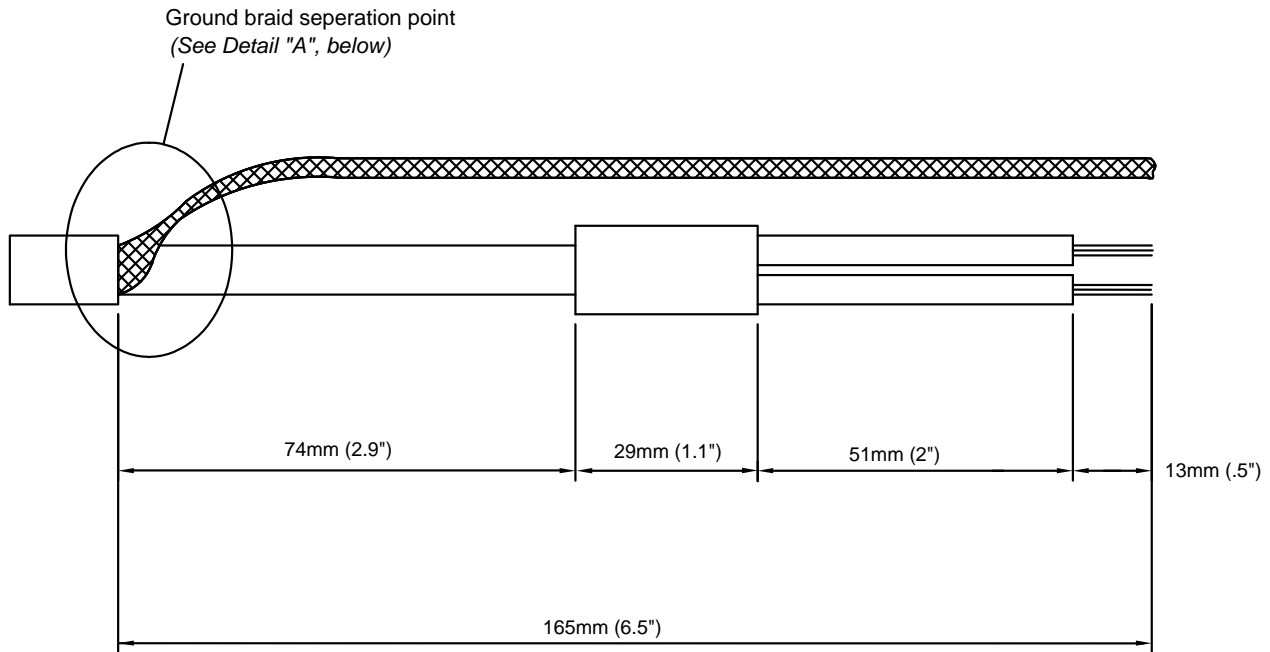
Sealing compound must completely cover the braid transition point. See Detail "A" on sheet 8 for reference.

NELSON™ HEAT TRACING SYSTEMS

HASK-S HAZARDOUS AREA SEAL KIT FOR DIVISION 1 CABLE SPLICE TERMINATION & EXPLOSION PROOF SEAL

INSTALLATION INSTRUCTIONS

TEMPLATE



DETAIL "A"

Nelson Heat Tracing Systems products are supplied with a limited warranty. Complete Terms and Conditions may be found on Nelson's website at www.nelsonheaters.com.

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