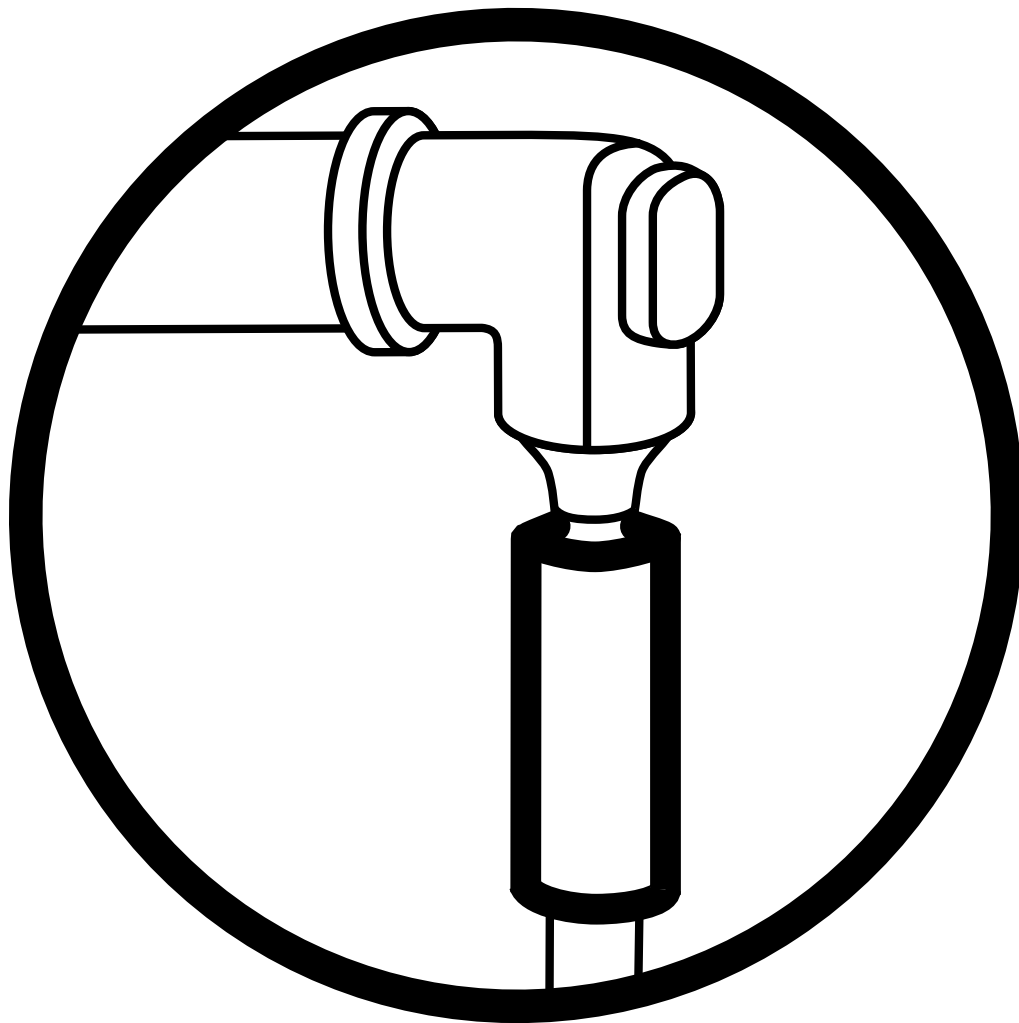


## ESA Elbow Sealing Adapter Kit

For resealing jacketed concentric neutral  
cable when installing elbows or other  
shielded cable accessories



### Suggested Installation Equipment (not supplied with kit)

- Cable preparation tools
- Elbow installation instructions
- Raychem P42 cable preparation kit or cable manufacturer approved solvent
- Clean, lint-free cloths
- Raychem recommended torch

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### Recommended Raychem Torches

Install heat-shrinkable cable accessories with a "clean burning" torch -- a propane fuel torch that does not deposit soot or contaminants on the product.

Clean burning torches include the Raychem FH-2609, FH-2629 (uses refillable propane cylinders) and FH-2616A1 (uses disposable cylinder).

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### Safety Instructions

**Warning:** When installing electrical power system accessories, failure to follow applicable personal safety requirements and written installation instructions could result in fire or explosion and serious or fatal injuries.

To avoid risk of accidental fire or explosion when using gas torches, always check all connections for leaks before igniting the torch and follow the torch manufacturer's safety instructions.

To minimize any effect of fumes produced by gas torches, always provide good ventilation of confined work spaces.

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### Adjusting the Torch

Adjust regulator and torch as required to provide an overall 12-inch bushy flame. The FH-2629 will be all blue, the other torches will have a 3- to 4-inch yellow tip. Use the yellow tip for shrinking.

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### General Shrinking Instructions

- Apply outer 3- to 4-inch tip of the flame to heat-shrinkable material with a rapid brushing motion.
- Keep flame moving to avoid scorching.

- Unless otherwise instructed, start shrinking tube at center, working flame around all sides of the tube to apply uniform heat.

**Note:** Inspect installation. Reheat any flat spots or wrinkles, paying particular attention to the back of the splice.

## 1. Product selection.

Check kit selection with the jacketed concentric neutral cable dimensions in Table 1.

**Table 1**

| Kit                        | Outside Diameter          |                      | Voltage Class (kV)  | Conductor Size                               |
|----------------------------|---------------------------|----------------------|---------------------|----------------------------------------------|
|                            | Minimum Insulation Shield | Maximum Cable Jacket |                     |                                              |
| ESA-1<br>(Formerly ESA-02) | 0.65" (17mm)              | 1.50" (38mm)         | 5<br>15<br>25       | #2-500<br>#2-250<br>#1-3/0                   |
| ESA-2<br>(Formerly ESA-05) | 1.30" (33mm)              | 2.50" (63mm)         | 5<br>15<br>25<br>35 | 600-1000<br>350-1000<br>4/0-1000<br>1/0-1000 |

## 2. Choose application.

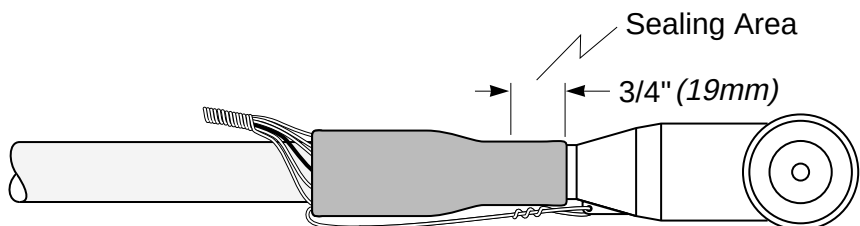
Choose the application type (Choice 1-3) and follow the directions given.

### CHOICE 1

#### If Elbow Seal

Sealing area on the elbow must have a constant diameter for at least 3/4" (19mm).

**Go to Step 3, page 4.**



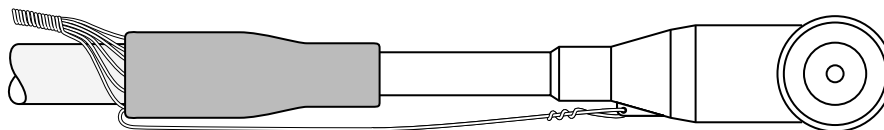
1019

### CHOICE 2

#### If Jacket Seal; Neutrals Down

Seal onto semi-con with neutral wires on jacket.

**Go to Step 11, page 5.**



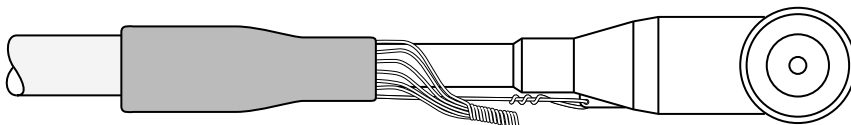
1020

### CHOICE 3

#### If Jacket Seal; Neutrals Up

Seal onto semi-con and neutral wires.

**Go to Step 19, page 7.**



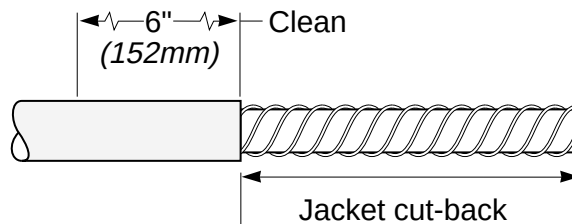
1021

## FOR CHOICE 1 ONLY

### 3. Remove cable jacket; clean as shown.

Remove cable jacket for desired dimension (Refer to elbow manufacturer's instructions).

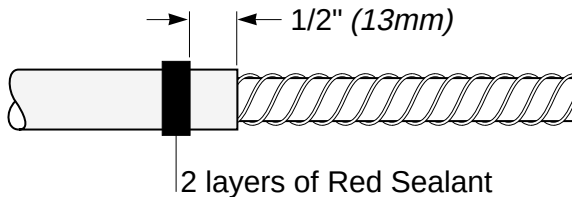
Clean cable jacket as shown, using an approved solvent.



1022

### 4. Apply red sealant.

Apply two complete layers of red sealant around cable as shown. Do not stretch sealant while applying.

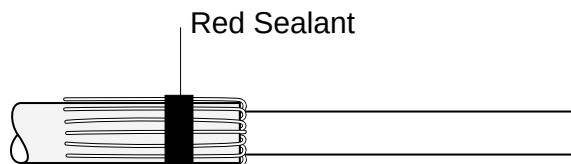


1023

### 5. Position neutral wires; apply red sealant.

Untwist neutral wires and bend back tightly over cable jacket. Press individual wires into sealant keeping wires separated.

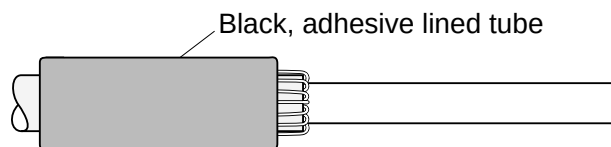
Wrap one complete layer of sealant over the neutral wires and previously applied sealant. Do not stretch sealant while applying.



1005

### 6. Position black tube.

Place the black, adhesive lined tubing on cable as shown.

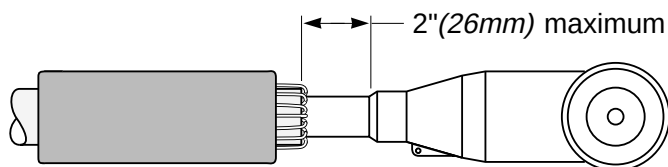


1024

### 7. Prepare cable and install elbow.

Prepare balance of cable and install elbow per manufacturer's instructions. **Do not ground elbow yet.**

Make sure the gap between the cable jacket cutback and the end of the elbow does not exceed 2" (50mm).

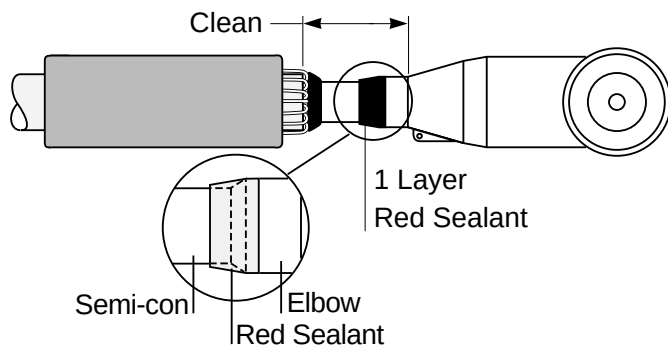


1025

### 8. Clean cable and apply red sealant.

Clean from the elbow grounding eye to the cable jacket cutback using an approved solvent capable of removing silicone grease.

Wrap one complete layer of sealant centered half on elbow and half on semi-con.



1026

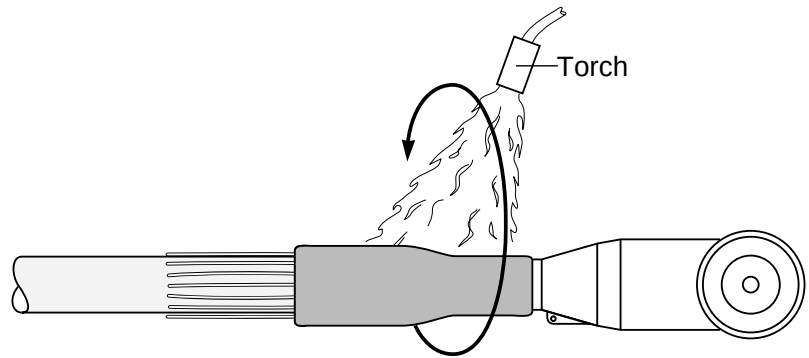
## 9. Position Black tube; shrink in place.

Position black tube to overlap sealant applied to cable jacket and elbow.

Shrink in place beginning at the elbow end of the tube and work toward the cable jacket end. Apply the torch with a smooth, brushing motion around all sides of the tube.

When shrinking is complete, the outline of underlying parts should be visible.

Allow to cool enough to touch before proceeding to Step 10.

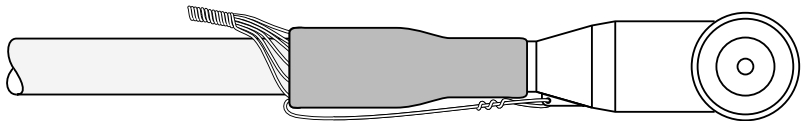


1027a

## 10. Connect neutral wires.

Connect neutral wires to system ground or neutral and ground cable accessory per manufacturer's instructions.

**Installation of Choice 1 is complete.**



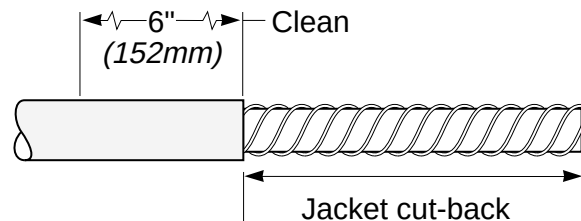
1027b

## FOR CHOICE 2 ONLY

## 11. Remove cable jacket; clean as shown.

Remove cable jacket for desired dimension (Refer to elbow manufacturer's instructions).

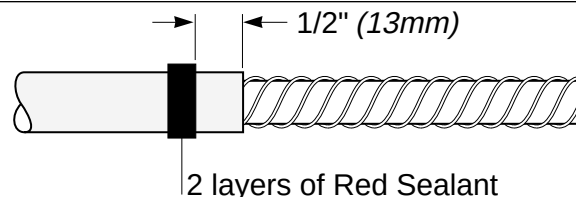
Clean cable jacket as shown, using an approved solvent.



1022

## 12. Apply red sealant.

Apply two complete layers of red sealant around cable as shown. Do not stretch sealant while applying.

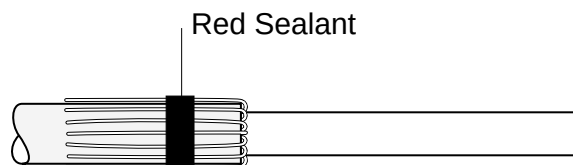


1023

## 13. Position neutral wires; apply red sealant.

Untwist neutral wires and bend back tightly over cable jacket. Press individual wires into sealant keeping wires separated.

Wrap one complete layer of sealant over the neutral wires and previously applied sealant. Do not stretch sealant while applying.

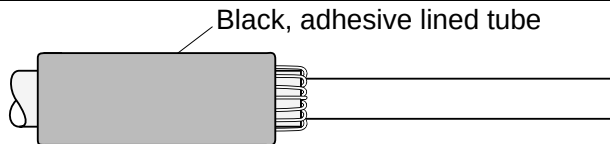


1005

## Installation Instructions

### 14. Position black tube.

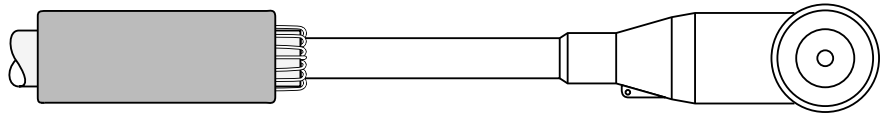
Place the black, adhesive lined tubing on cable as shown.



1024

### 15. Prepare cable and install elbow.

Prepare balance of cable and install elbow per manufacturer's instructions. **Do not ground elbow yet.**

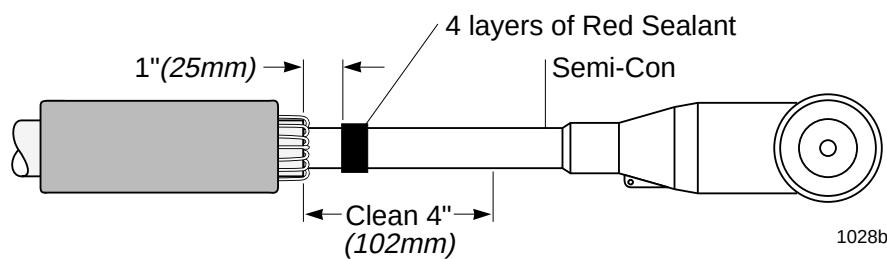


1028a

### 16. Clean semi-con and apply sealant.

Clean semi-con, as shown, using approved solvent.

Wrap four complete layers of sealant around semi-con 1" (25mm) from the cable jacket cutback. Do not stretch sealant while applying.



1028b

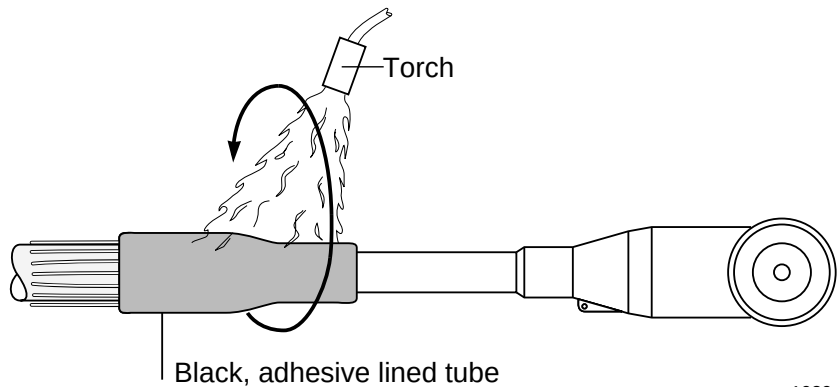
### 17. Position Black tube; shrink in place.

Position black tube to overlap sealant applied to semi-con and cable jacket.

Shrink in place beginning at the elbow end of the tube and work toward the cable jacket end. Apply the torch with a smooth, brushing motion around all sides of the tube.

When shrinking is complete, the outline of underlying parts should be visible.

Allow to cool enough to touch before proceeding to Step 18.



1029a

### 18. Connect neutral wires.

Connect neutral wires to system ground or neutral and ground cable accessory per manufacturer's instructions.

**Installation of Choice 2 is complete.**

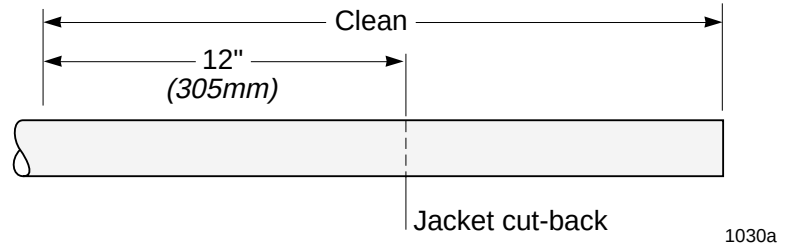


1029b

## FOR CHOICE 3 ONLY

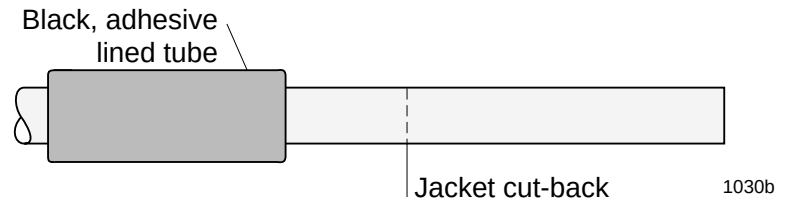
### 19. Clean cable jacket.

Clean cable jacket for length of jacket cut-back plus 12" (305mm) as shown using an approved solvent.



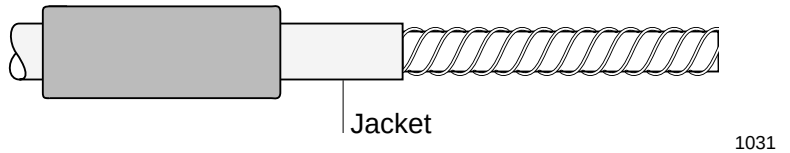
### 20. Position black tube.

Position black, adhesive lined tube over cable as shown.



### 21. Remove cable jacket.

Remove cable jacket for desired length.

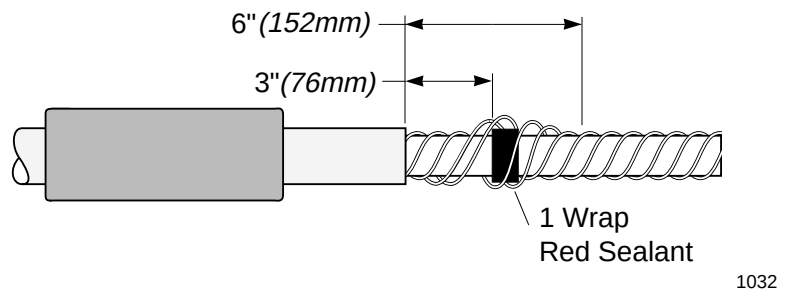


### 22. Lift neutral wires. Fold sealant strip. Apply sealant.

Lift neutral wires off semi-con for 6" (152mm) past cable jacket cutback.  
**Note:** Wires can be lifted by carefully twisting counter to lay on cable.

Fold length of one sealant strip in half to produce a 2-layer, 6" (152mm) length.

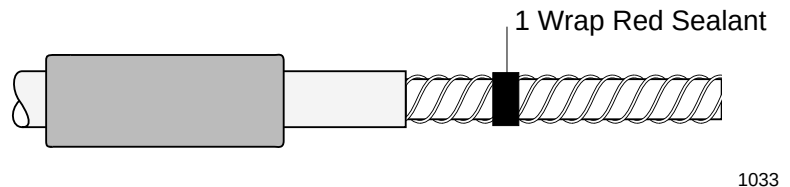
Wrap one complete layer of sealant under neutral wires and on semi-con 3" (76mm) from cable jacket cutback.



### 23. Replace neutral wires and apply sealant.

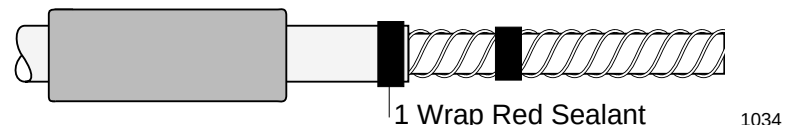
Replace neutral wires taking care to remove all bends. Press individual wires into sealant being certain that wires do not touch.

Wrap one complete layer of sealant over neutral wires and previously applied sealant. Do not stretch sealant while applying.



### 24. Apply sealant.

Wrap one complete layer of sealant over cable jacket at cable jacket cutback.



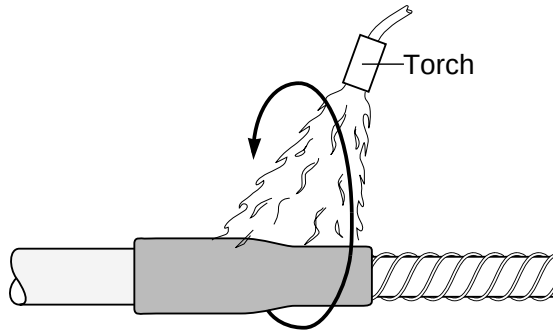
### 25. Position Black tube; shrink in place.

Position black tube to overlap sealant applied to semi-con and cable jacket.

Shrink in place beginning at the elbow end of the tube and work toward the cable jacket end. Apply the torch with a smooth, brushing motion around all sides of the tube.

When shrinking is complete, the outline of underlying parts should be visible.

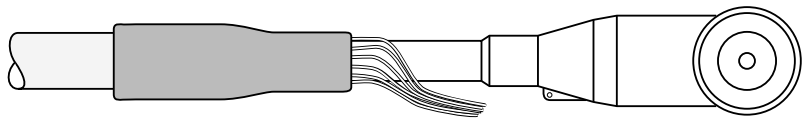
Allow to cool enough to touch before proceeding to Step 26.



1035a

### 26. Prepare cable and install elbow.

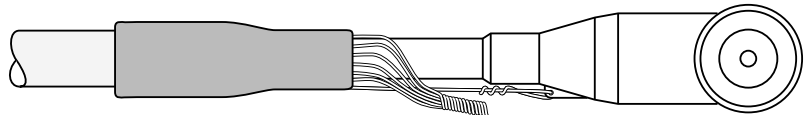
Prepare balance of cable and install elbow per manufacturer's instructions.



1035b

### 27. Connect neutral wires to system ground.

Connect neutral wires to system ground or neutral and ground cable accessory per manufacturer's instructions.



1035c

**Installation of Choice 3 is complete.**