

EHVT Series Terminations 69kV Class



Example High Voltage
Termination for Copper
Tape/Wire Shield or Lead
Sheath Cable

General Instructions

Suggested Installation Equipment (not supplied with kit)

- | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Cable preparation tools • Tyco Electronics P63 cable preparation kit or cable manufacturer approved solvent | <ul style="list-style-type: none"> • Clean, lint-free cloths • Non-conducting abrasive cloth, 120 grit or finer • Electrician's tape | <ul style="list-style-type: none"> • Connector(s) and installation tools • Tyco Electronics recommended torch |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|

Recommended Tyco Electronics Torches

Install heat-shrinkable cable accessories with a "clean burning" torch, i.e., a propane torch that does not deposit conductive contaminants on the product.

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

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 during installation, always provide good ventilation of confined work spaces.

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.

Regulator Pressure

FH-2616A1	Full pressure
FH-2609	5 psig
FH-2629	15 psig

Cleaning the Cable

Use an approved solvent, such as the one supplied in the P63 Cable Prep Kit, to clean the cable. Be sure to follow the manufacturer's instructions. Failure to follow these instructions could lead to product failure.

Some newer solvents do not evaporate quickly and need to be removed with a clean, lint-free cloth. Failure to do so could change the volume resistivity of the substrate or leave a residue on the surface.

Please follow the manufacturer's instructions carefully.

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.
- Shrink tube by working flame around all sides of the tube to apply uniform heat.

To determine if a tube has completely recovered, look for the following, especially on the back and underside of the tube:

1. Uniform wall thickness.
2. Conformance to substrate.
3. No flat spots or chill marks.
4. Visible sealant flow if the tube is coated.

Note: When installing multiple tubes, make sure that the surface of the last tube is still warm before positioning and shrinking the next tube. If installed tube has cooled, re-heat the entire surface.

Installation Instructions

1. Product selection.

Check kit selection with cable diameter dimensions in Table 1.

Table 1

Kit	Conductor Size	Min/Max Insulation O.D.	Max Jacket O.D.
EHVT-691G(SG)		1.50-2.05" (38-52mm)	2.65" (67mm)
EHVT-692G(SG)		1.95-2.55" (50-65mm)	3.25" (82mm)
EHVT-693G(SG)		2.50-3.05" (63-77mm)	3.95" (100mm)

2. Prepare cables.

Choose the cable type (Choice 1 or 2) and follow the directions given.

Note: If using Kerite cable with A BONDED Permashield layer, the Permashield cable may be left in place. However, the Permashield cable MUST be cleaned and abraded to remove ALL traces and surface indentations resulting from any SEMI-CONDUCTIVE material (usually a semi-conductive cloth tape) over the Permashield cable. The Permashield cable layer must have a SMOOTH and CLEAN surface prior to installing the heat-shrink termination tubes. Follow the installation instruction. The semi-conductive tape should be treated in a similar manner to extruded semi-conductive layers. Fix the semi-conductive tape in place using the adhesive backed copper tape supplied.

CHOICE 1

If Copper Tape or Lead Sheath Cable

Go to Step 3.

CHOICE 2

If Wire Shield or Wire and Copper Tape Shield Cable

Go to Step 7, page 5.

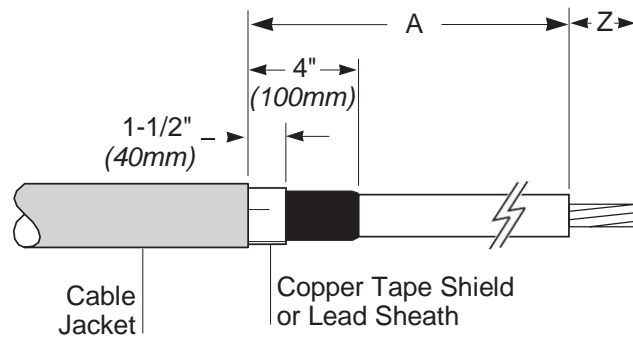
CHOICE 1

3. If Copper Tape or Lead Sheath Cable.

Refer to drawings at right and Table 2 below to prepare the cables.

Note: Use a round file at termination of semi-conductive layer.

Clean and abrade insulation. Ensure insulation is free of all conductive particles.



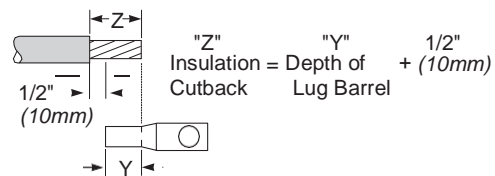
3054

Figure 1: Insulation Cutback Z

Table 2

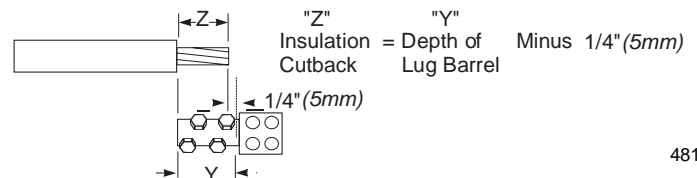
Application	"A"	"Z"
Indoor ("G" kit)	30" (750mm)	See figure 1
Outdoor ("SG" kit)	40" (1000mm)	at right

Crimped Lug



481

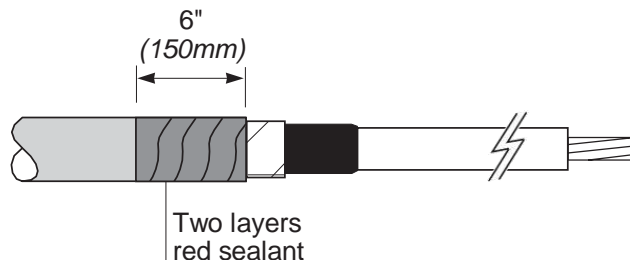
Mechanical Lug



481a

4. Clean cable jacket; apply red sealant.

Solvent clean and abrade cable jacket. Apply two layers of red sealant over 6" (150mm) of the cable jacket starting at the jacket cutback.

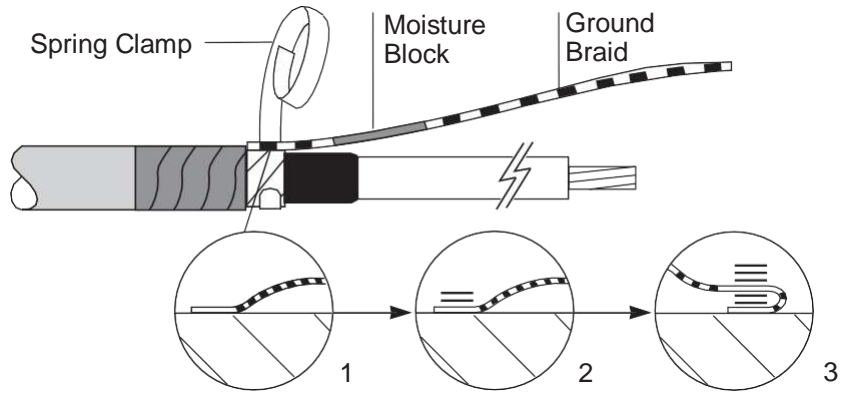


3057

5. Install ground braid.

a. Copper Tape Shield

(1) Flare the moisture blocked end of the large ground braid and place it onto the metallic tape butted up to the cable jacket. (2) Attach the braid to the shield by placing two wraps of the spring clamp over the braid. (3) Fold the braid back over the spring clamp wraps. Continue to wrap the remaining clamp over the braid. Tighten clamp by twisting it in the direction it is wrapped and secure with the copper foil tape provided.

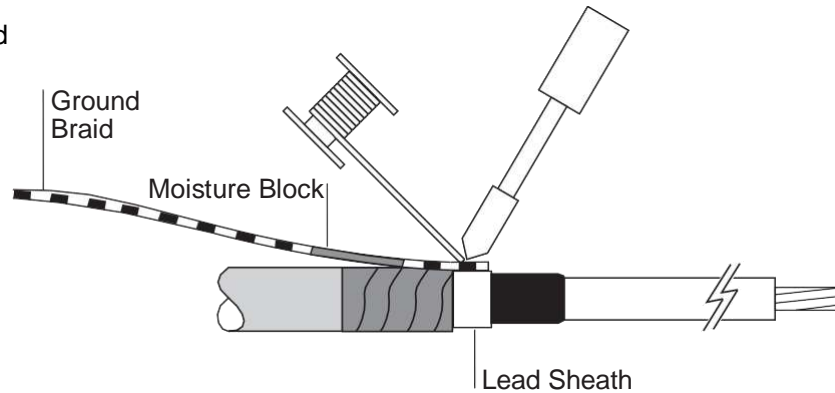


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b. Lead Sheath

Solder braid onto the lead sheath.

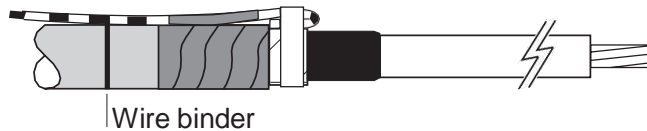
Deburr the connection before proceeding.



3058a

6. Secure with wire binder as shown.

Continue with Step 10, Page 6.



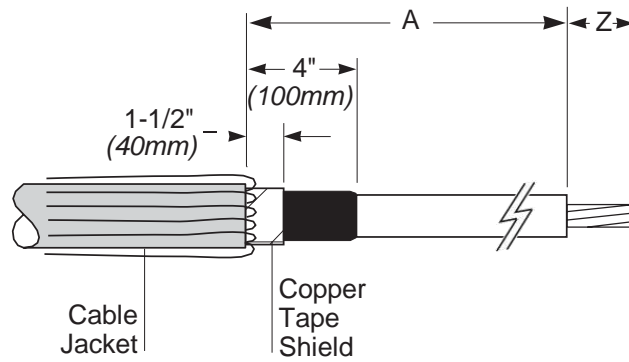
3059

CHOICE 2

7. If Wire Shield or Wire and Copper Tape Shield Cable.

Refer to drawings at right and Table 3 below to prepare the cables.

Note: Use a round file at termination of semi-conductive layer.



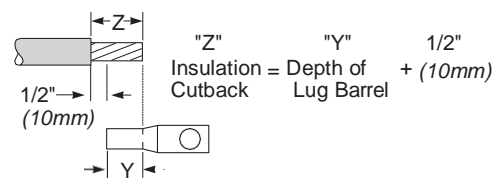
3056

Figure 1: Insulation Cutback Z

Table 3

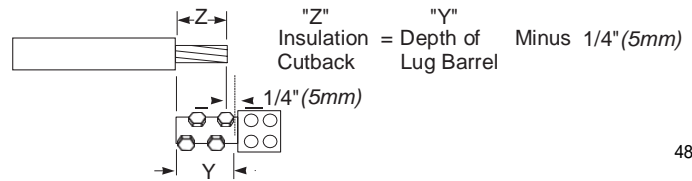
Application	"A"	"Z"
Indoor ("G" kit)	30" (750mm)	See figure 1
Outdoor ("-SG" kit)	40" (1000mm)	at right

Crimped Lug



481

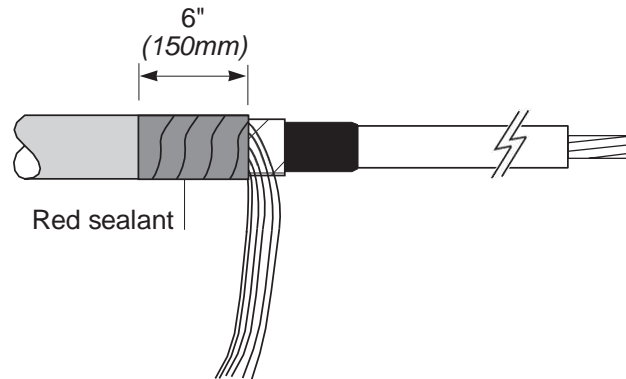
Mechanical Lug



481a

8. Clean cable jacket; apply red sealant.

Solvent clean and abrade cable jacket. Apply two layers of red sealant over 6" (150mm) of the cable jacket starting at the jacket cutback.

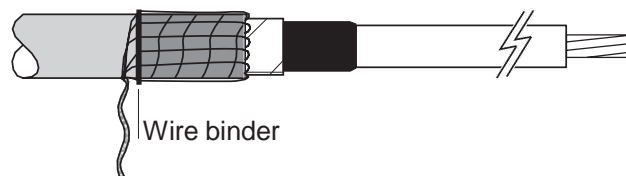


3060

9. Bind wires.

Pull wires back and tie with wire binder as shown.

Continue with Step 10, Page 6.



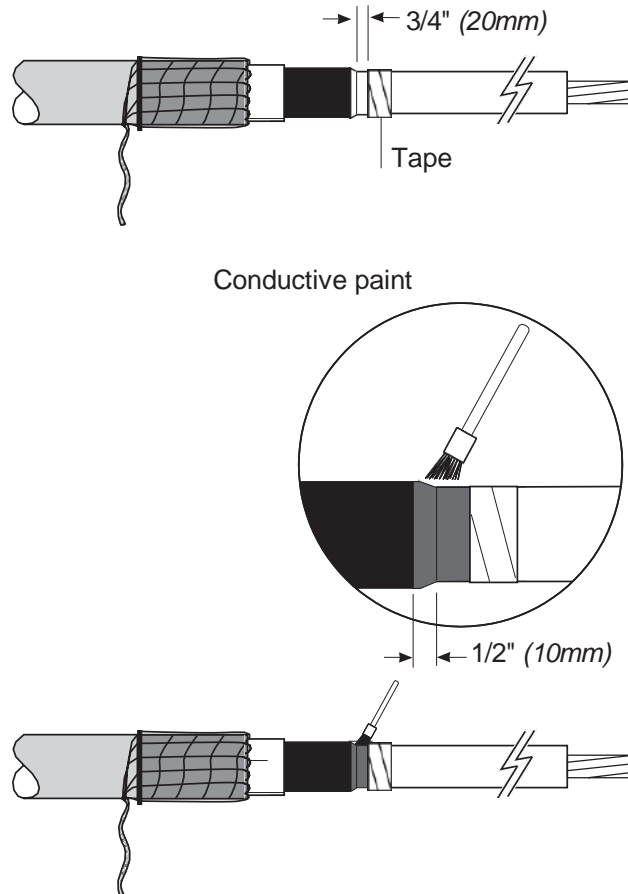
3061

10. Apply paint (All cable types).

Apply tape (adhesive side up) on insulation 3/4" (20mm) from semi-con cutback. The tape makes a straight edge for the 3/4" (20mm) of exposed insulation.

Shake bottle of conductive paint for 30 seconds. Apply conductive paint over insulation as shown and overlap semi-con shield by 1/2" (10mm). Do not splash paint on insulation between masking tape and connector.

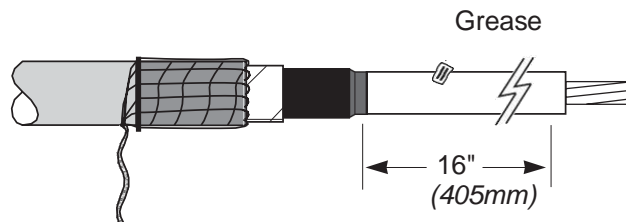
Allow paint to dry about 5 minutes, remove tape.



3062

11. Apply grease.

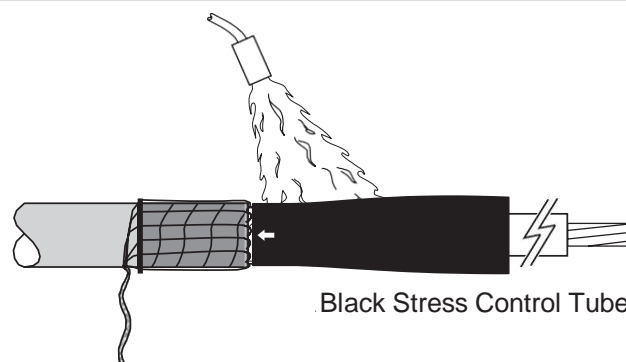
Apply silicon grease. Cover 1/4" (6mm) of the conductive paint and 16" (405mm) of the insulation.



3063

12. Position long black stress control tube; shrink in place.

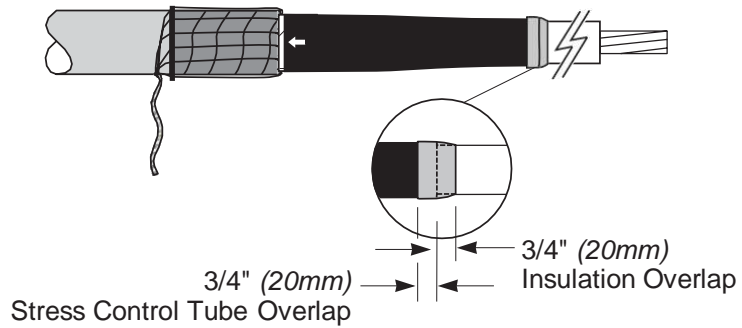
Butt the long black stress control tube against the jacket cutback, **with the arrow pointing down** toward the cable jacket. Begin shrinking at the ground end and work to the top of the tube.



3064

13. Apply red sealant.

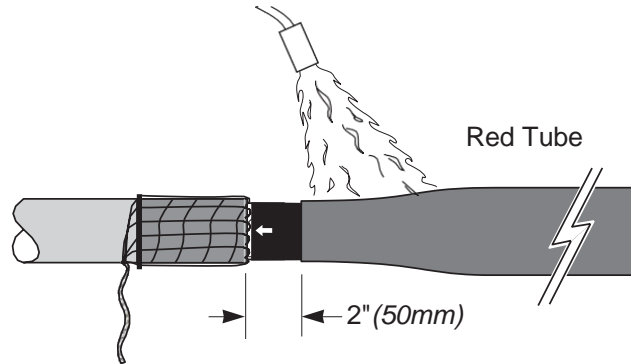
Apply red sealant at the lug end of the stress control tube using only slight tension and a small overlap. Cover 3/4" (20mm) of the stress control tubing and 3/4" (20mm) of the insulation.



3065

14. Position short red tube; shrink in place.

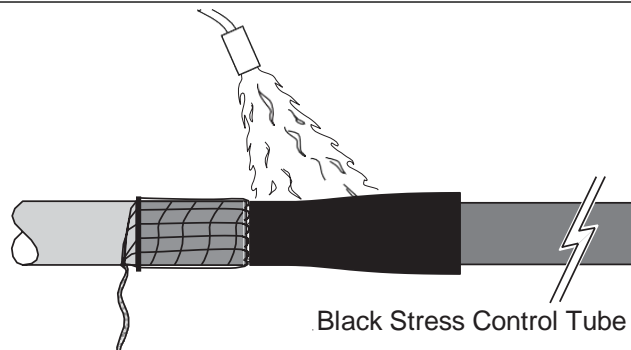
Position tube 2" (50mm) from jacket cutback as shown. Begin shrinking at the ground end and work to the top of the tube.



3066

15. Position short stress control tube; shrink in place.

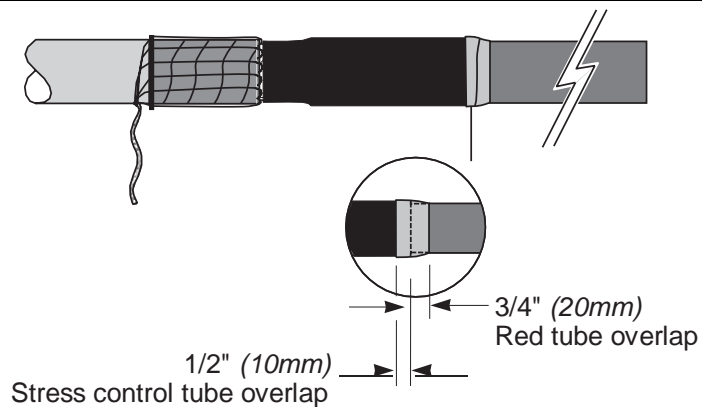
Butt the short black stress control tube against the jacket cutback. Begin shrinking at the ground end and work to the top of the tube.



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16. Apply red sealant.

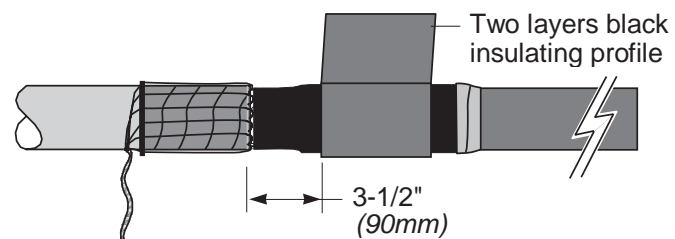
Apply red sealant using only slight tension and a small overlap. Cover 3/4" (20mm) of the red tube and 1/2" (10mm) of the stress control tube.



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17. Apply insulating profile.

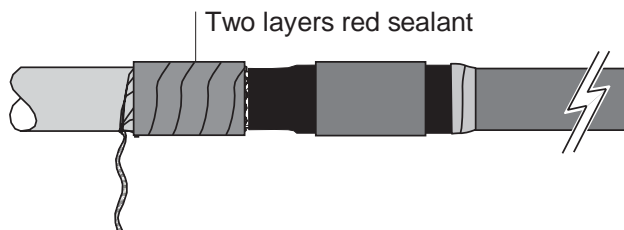
Wrap two layers of black insulating profile one on top of the other, as shown. Cut off excess profile material.



3069

18. Apply red sealant

Wrap two layers of red sealant over the shield wires or ground strap (same area as previously applied red sealant).

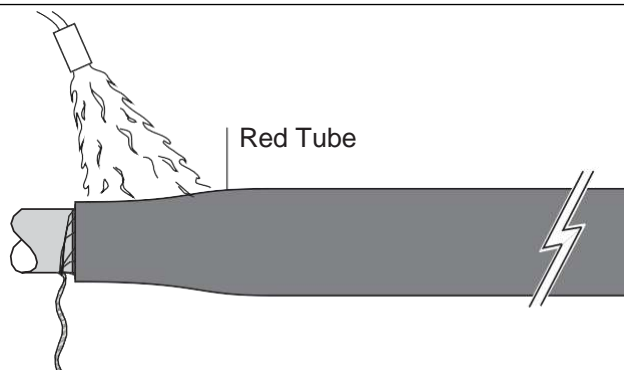


3070

19. Position long red tube; shrink in place.

Position the long red tube over the previously applied red sealant

Begin shrinking at the ground end and work to the top of the tube.



3071

20. Install connector.

Choose the termination lug type (crimped or mechanical) to be installed.

CHOICE 1

Crimped Lug

Go to step 21

CHOICE 2

Mechanical Lug

Go to step 25, page 10

CHOICE 1

21. Cut back tubing; install crimp lug.

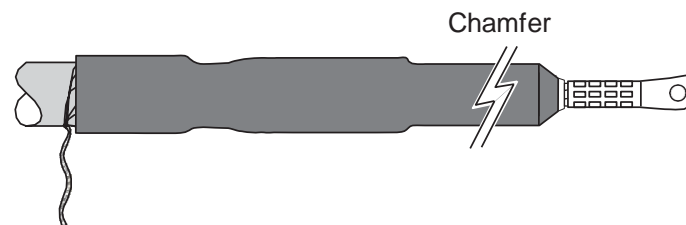
When cool, trim excess red tube to insulation cutback to expose conductor. Install, clean and degrease cable lug.



3072

22. Chamfer tube and insulation.

Chamfer the insulation to the diameter of the cable lug to achieve a smooth transition.

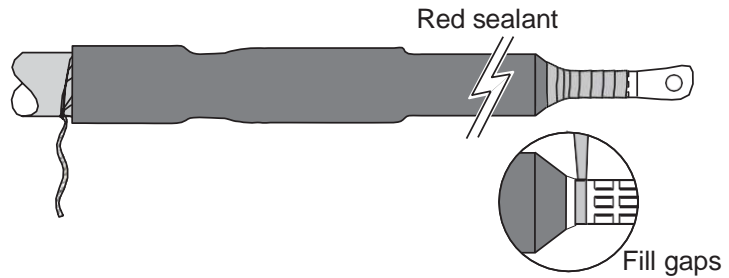


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Installation Instructions

23. Apply red sealant.

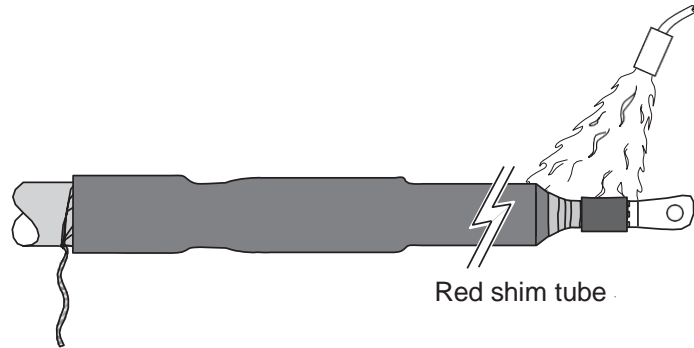
Wrap red sealant around the insulation and cable lug. Fill up any gaps between insulation and cable lug. Apply two layers of sealant over the lug body.



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Note for EHVT-692-G(SG) kits:

If using **600 kcmil or less** lugs, position the red shim tube overlapping the top end of the installed sealant and shrink down.



3074a

Apply two layers of red sealant over the installed shim tube.

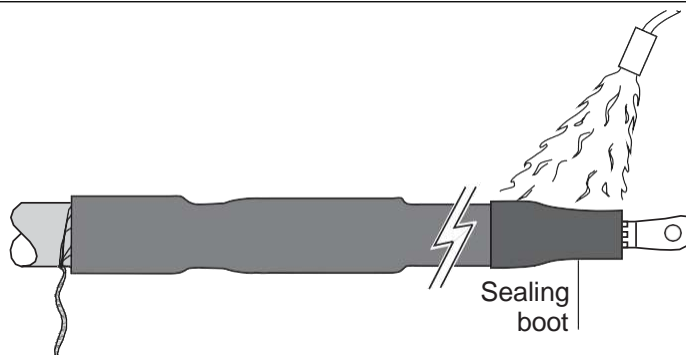


3074b

24. Position sealing boot; shrink in place.

Position the sealing boot so that it covers the core and connector equally and shrink it into place, starting at the lug end.

Go to step 28, page 11



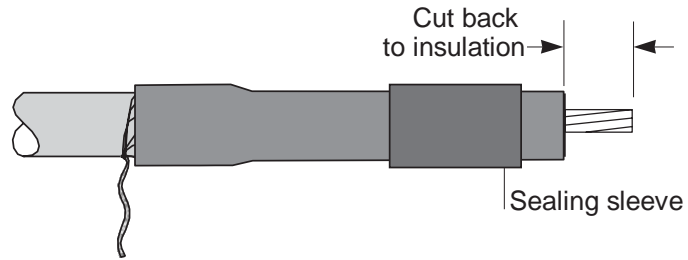
3075

CHOICE 2

25. Cut back tubing, install lug.

Cut back the tubing to match the cable insulation cutback.

Position the short sealing sleeve over the cable.

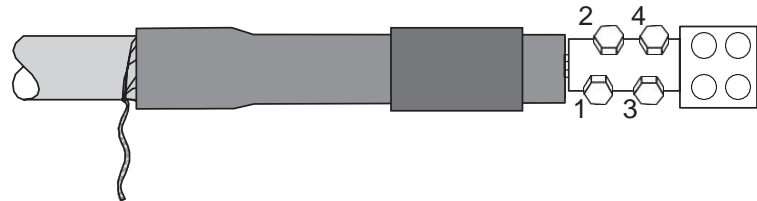


13

26a. Insert condutor.

Insert the conductor completely into the lug barrel hole. Tighten all screws with the right tool, according to the sequence given in the drawing, until the screwheads shear off.

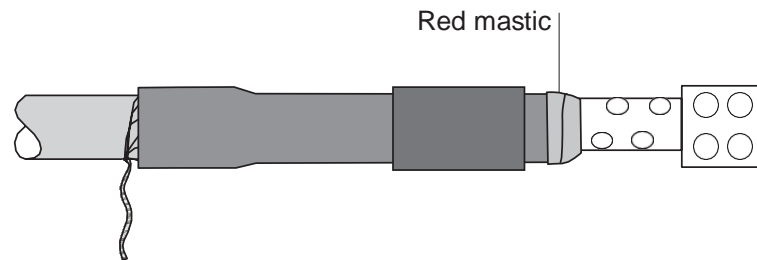
Clean and degrease the cable lug.



14

26b. For connections with cable lug diameter smaller then cable core only.

Wrap red mastic with slight tension around the insulation and connector to achieve a smooth transition.

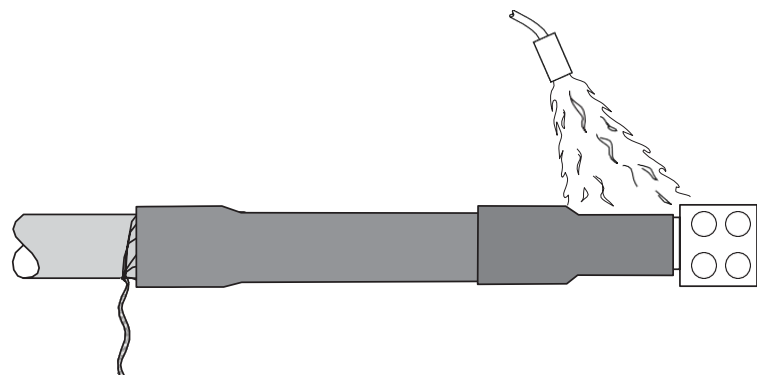


19

27. Preheat cable lug.

Preheat the cable lug. Position the sealing sleeve so that it covers the connector barrel. Shrink it into place, starting at the top.

Go to step 28, page 11



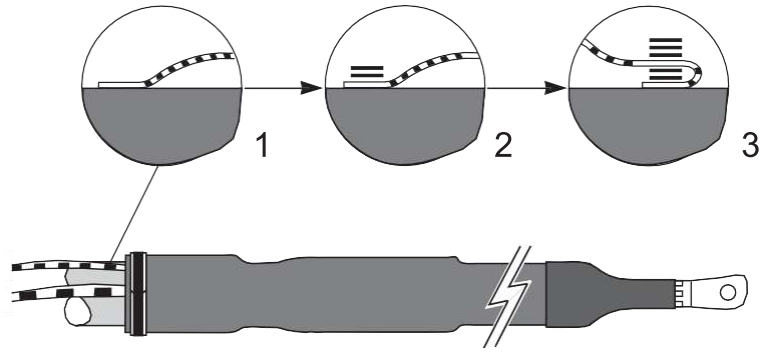
20

Installation Instructions

28. Apply spring clamp at end of outer red tube.

Cables with tape shield or lead sheath

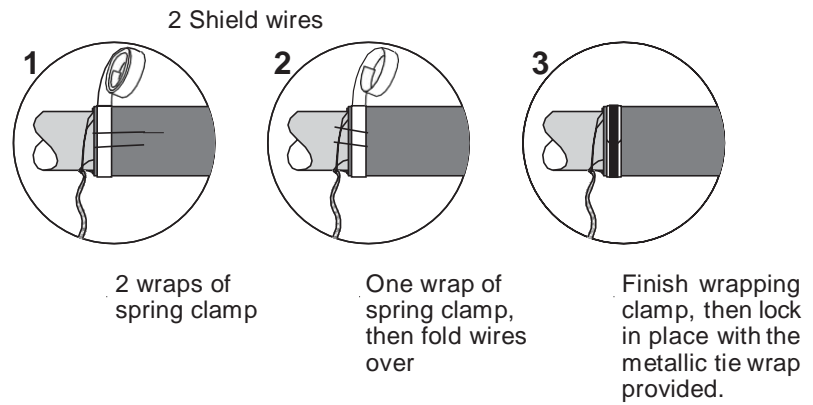
At the edge of the red tube wrap the spring clamp over the tube similar to the figure at right. Attach the small copper braid as shown. Fix in place with the metallic tie wrap. Attach both braids to main grounding system.



3076a

Wire shield or wire & tape shield cables

(1) Wrap the spring clamp twice over the red tube. (2) Position two of the shield wires onto the spring clamp. (3) Wrap the spring clamp once over the shield wires. Fold the shield wires back over the spring clamp and (4) wrap the rest of the spring clamp over the shield wires. Tighten the spring clamp by twisting in the direction in which it is wrapped and fix it into place with the metallic tie wrap. Attach shield wires to main grounding system.

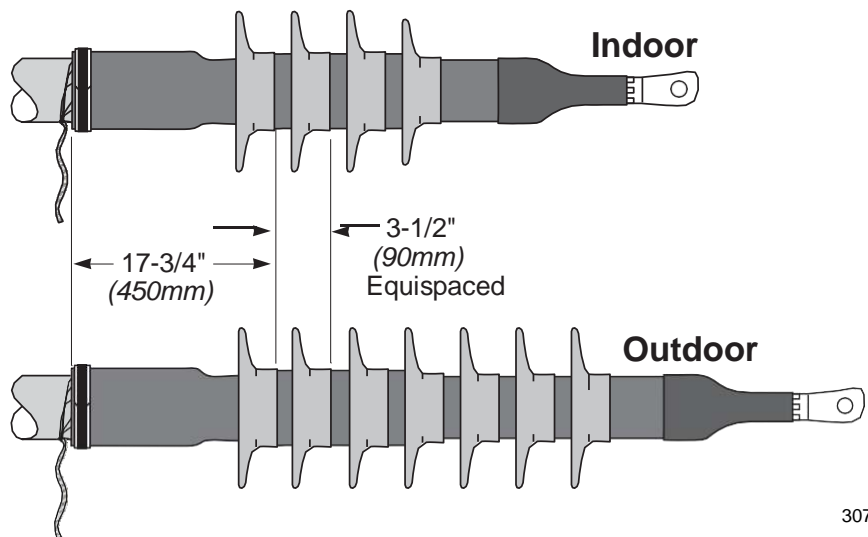


3076

29. Position skirts; shrink in place.

Shrink the skirts into place according to the dimensions shown at right.

This completes the termination.



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The Information contained in these installation instructions is for use only by installers trained to make electrical power installations and is intended to describe the correct method of installation for this product. However, Tyco Electronics has no control over the field conditions which influence product installation. It is the user's responsibility to determine the suitability of the installation method in the user's field conditions. Tyco Electronics' only obligations are those in Tyco Electronics' standard Conditions of Sale for this product and in no case will Tyco Electronics be liable for any other incidental, indirect or consequential damages arising from the use or misuse of the products. Raychem is a trade mark of Tyco Electronics Corporation.