



Electronics

Tyco Electronics Corporation
300 Constitutional Drive
Menlo Park, CA 94025 USA
DCR: D020286

Raychem

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**Ferrule and Heat-Shrinkable Sleeve
Installation Procedure for HET-A-03X AND HET-A-03X-TAK
on Unshielded Cable**

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1. Introduction

HET-A-03X and HET-A-03X-TAK are used to route and strain relieve unshielded wires and cables in HexaShield™ Adapters. HET-A-03X parts are standard, and are used with most wire types. HET-A-03X-TAK parts are used with wires having very stiff conductors or jackets. Contact Tyco Electronics/Raychem for additional application information.

2. Application Equipment

2.1 Holding fixture: AD-1319-9 with the ferrule support ECE-0188.

2.2 Hot air tool: Equivalent tools may be used.

Raychem CV-1981 with PR-25D reflector, temperature control set to 7.5 / 8.5 with the vent open, **or** Steinel HL-1802E with PR-25D reflector and PR adapter, or Steinel 5/8" reflector, temperature control set to 11 / 12, high fan speed.

3. Cable Preparation

3.1 Cable type.

Single or multi-conductors unshielded cable.

3.2 Cable dimension.

øA MAX: 4.3 mm (.170")



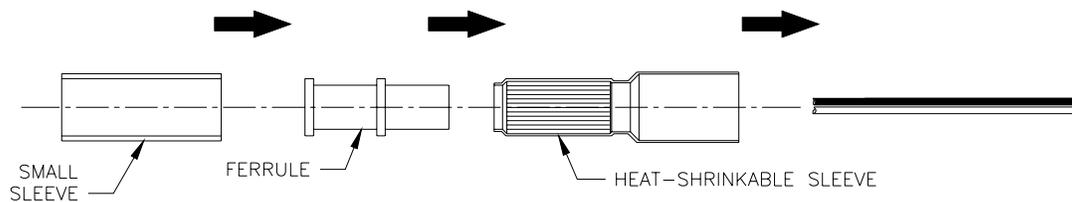
3.3 Strip the cable according to the following dimensions:

B: Refer to the crimp contacts manufacturer's instructions.

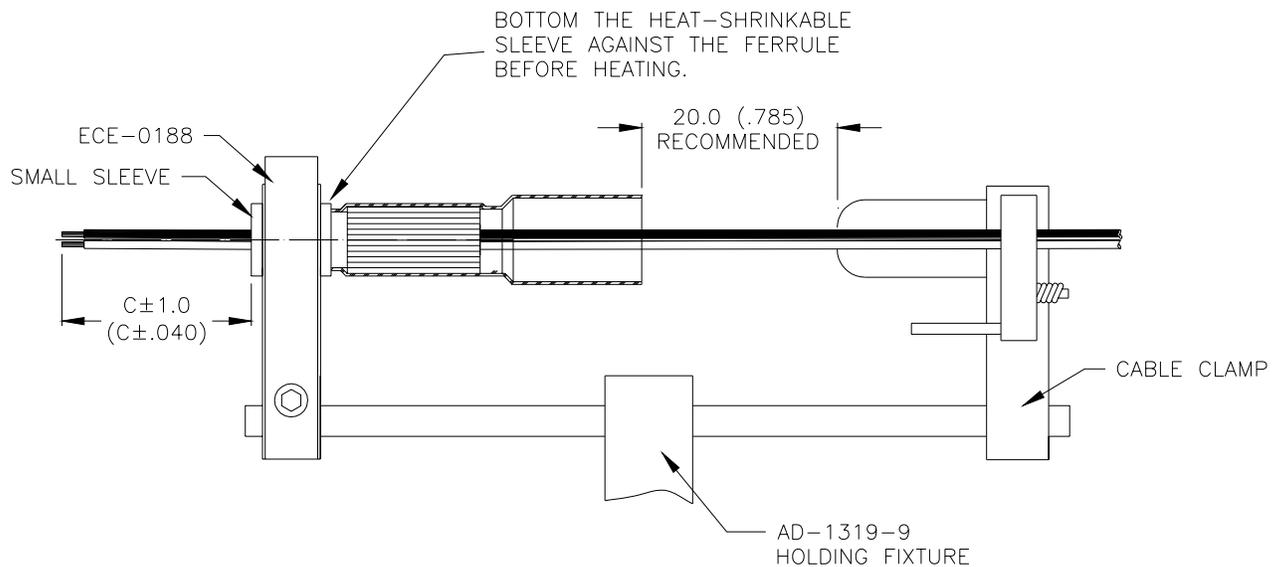


4. Assembly

- 4.1 Install the support ECE-0188 on the holding fixture AD-1319-9 (See Fig. 1)
- 4.2 Slide the heat-shrinkable sleeves and the ferrule over the cable in the order shown. (The adhesive-lined sleeve of the HET-A-03X-TAK may go on either end first).



- 4.3 Position the small transparent blue sleeve according to dimension C in the tables on next page. Shrink the sleeve in this position on the wires.
- 4.4 Position the metal ferrule so it is even with the end of the installed sleeve on the wire bundle. Place the assembly in the holding fixture and position the large heat shrinkable sleeve as shown in figure 1. Check that dimension C is maintained before heating.

**Fig.1**

HexaShield Adaptor
with straight body

HexaShield Code	*C±1.0 (C±.040)
ARINC 600	54.0 (2.125)
Code 40	48.0 (1.890)
Code 41	48.0 (1.890)
Code 54	48.0 (1.890)

HexaShield Adaptor
with 45° or 90° body

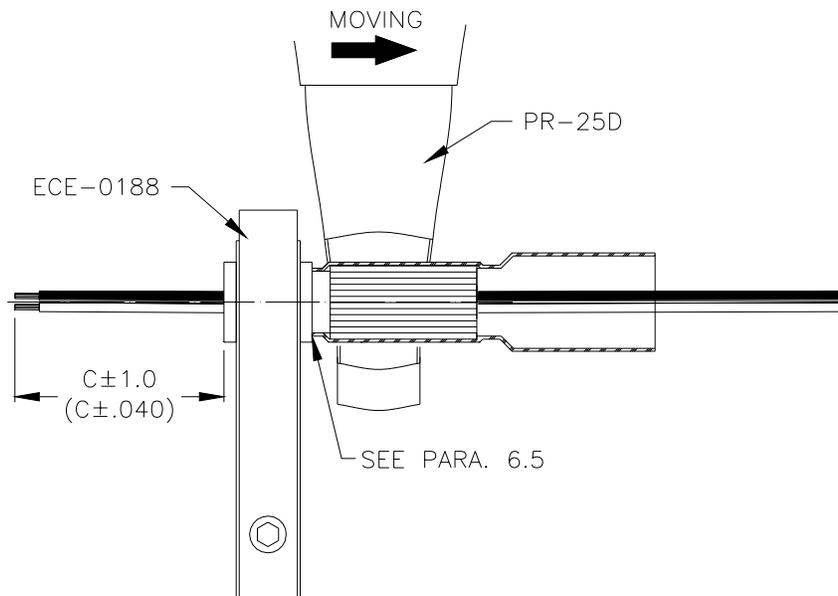
HexaShield Size	*C±1.0 (C±.040) Codes 40, 41, 54
09	50.0 (1.970)
11/13	60.0 (2.362)
15/17	70.0 (2.756)
19	75.0 (2.953)
21	85.0 (3.346)
23	90.0 (3.543)
25	95.0 (3.740)

*Dimension C allows for a minimum of one repair for the crimp contacts.

Unless otherwise specified dimensions are in millimeters
Inches dimensions are in between brackets

5. Termination Procedure

- 5.1 Allow the hot air tool to warm up and reach the operating temperature.
- 5.2 Position the assembly in the reflector, as shown.
- 5.3 Heat the until the sleeve shrinks, and the blue adhesive inside the sleeve melts and flows around the ferrule and wires, and in between individual wires.
- 5.4 Allow the assembly to cool down before removing it from the holding fixture.



6. Inspection

- 6.1 The dimension C must be maintained.
- 6.2 The adhesive must have completely melted and flowed between individual wire or cable jackets.

- 6.3 Visible remnants of the original shape of the adhesive insert indicates an underheated termination.
- 6.4 A completely discolored dark brown sleeve indicates an overheated termination.
- 6.5 The gap between the end of the sleeve and shoulder of the ferrule must not exceed 2.54 mm (.100 in.)
- 6.6 Inspection for damage:
- The sleeve must not be cut or split.
 - The cable jacket termination must not show signs of mechanical damage or overheating such as cuts, melting, charring.

7. Repair

- 7.1 Repair of underheated termination.
Reheat underheated termination to properly melt and flow the adhesive insert.
- 7.2 Repair of overheated or damaged termination: See dismantling operation on section 8.

8. Dismantling

- 8.1 If the cable jacket is not damaged, remove the termination as follows:
- Reheat the heat-shrinkable sleeve at the cable end to soften it.
 - Remove the ferrule and sleeve assembly by gripping the ferrule with pliers, then gently pull it off the cable.
 - Apply heat, as necessary, to remove any remaining sleeve material. It is not necessary to remove remnants of the adhesive from the wires.
 - It is not necessary to remove the small blue sleeve unless it is damaged. To remove it, apply heat until soft. Gently pull it off with pliers.
- 8.2 Install a new ferrule and heat-shrinkable sleeve(s) in accordance with this procedure.

