



Electronics

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**Termination Procedure for SolderTacts® Contacts
D-602-76, D-602-77**

1. Scope

This engineering standard covers the termination procedure and inspection requirements for the SolderTacts® contacts D-602-76 and D-602-77 for coaxial cable.

2. References

2.1 Raychem Specification Control Drawings

2.1.1 D-602-76 Pin contact for coaxial cable

2.1.2 D-602-77 Socket contact for coaxial cable

2.2 Other Specifications

Federal Standard QQ-S-571 Solder-Tin Alloy, Tin-Lead Alloy; and Lead Alloy.

2.3 Raychem Instructions

1. AA-400 Superheater Instructions

2. AD-1319 Holding Fixture Instructions

3. CV-5300 Mini-Gun® 1 Instructions

4. IR-1044 Two-Station Heater Instructions

2.4 Other Instructions

2.4.1 Visual Inspection Standards: "Verification Photos"

2.4.2 Video Tape: "SolderTack® Contacts Installation Procedures"

3. Application Equipment and Tools**3.1 Heating Tools**

Heating Tool	Reflector	Holding Fixture
AA-400 Superheater (Portable, compressed air)	#979663 Mini Solder Sleeve® Reflector	AD-1319 Holding Fixture with AT-1319-18 Adapter
CV-5300 MiniGun® ¹ (Portable, electric blower)	MG-1 Solder Sleeve® Reflector ¹	or AD-1486 Repair Holding Fixture
IR-1044 Two-Station Heater (Bench-Mounted, focused infrared)	----	Tooling Set #5, AT-1044-63

¹ CV-5300 MiniGun® 1 and MG-1 Replaces CV-5700 MiniGun® 3 and MG-7 respectively. Both CV-5300 and CV-5700 can be used, but CV-5300 is preferred over CV-5700.

4. General Information

4.1 Description

The referenced contacts are designed for use in the following connectors having size 16 cavities.

- a. MIL-C-28748 rectangular rack and panel connectors.
- b. Raychem RD-1 high-density circular connectors.

These single-piece contacts solder to coaxial cable by means of preinstalled solder preforms in heat-shrinkable insulating sleeves.

4.2 Coaxial Cable Accomodation

- 4.2.1 The referenced contacts will accommodate coaxial cable of the dimensions shown when conventionally stripped.

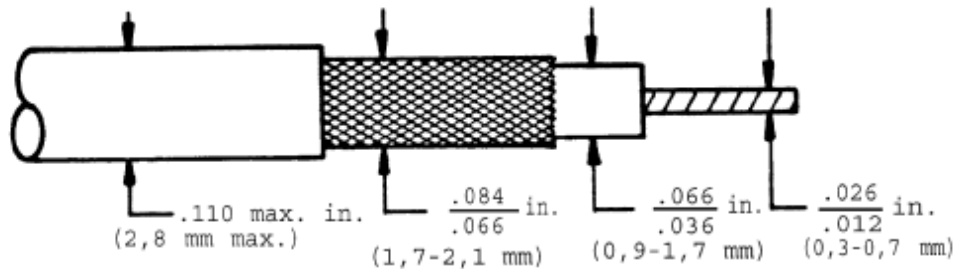


FIGURE 1

- 4.2.2 The referenced contacts will accommodate coaxial cable of the dimensions shown when the braid is folded back.

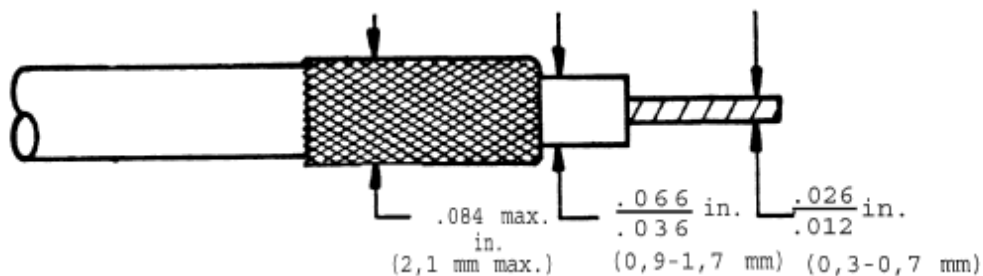
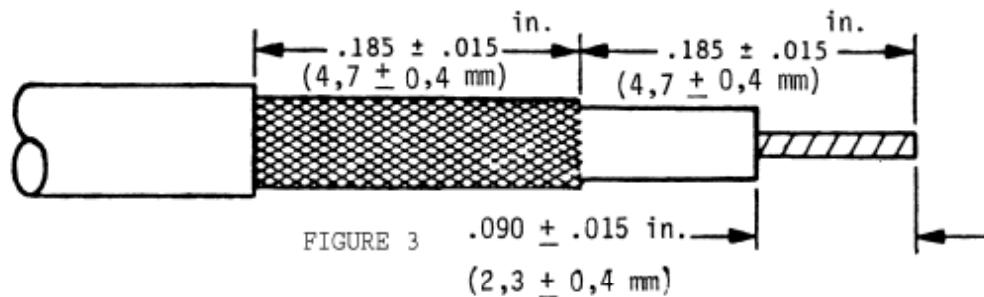


FIGURE 2

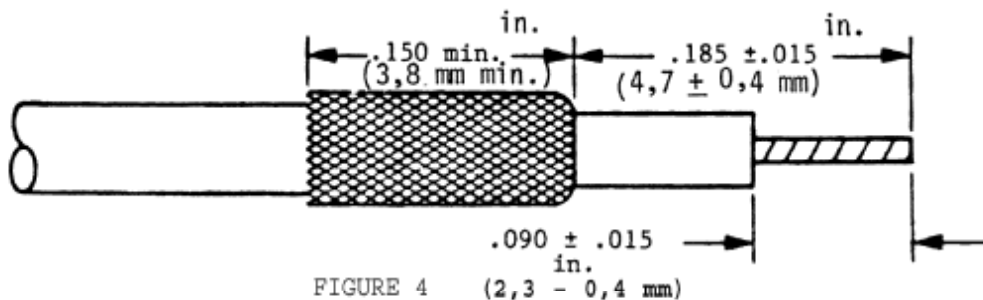
5. Termination Procedure

5.1 Coaxial Cable Preparation

5.1.1 If the cable falls within the dimensions given in Section 5.1.1 prepare it so as to expose the braid, dielectric, and center conductor as shown:



5.1.2 If the braid diameter is smaller than the dimension in Section 5.1.1, but falls within the dimension in Section 5.1.2, prepare the cable with the shield folded back over the outer jacket as shown below:



5.1.3 Straighten the center conductor and make sure that no strands are folded back to short across to the braid.

5.1.4 Pretinning is recommended for all stranded center conductors and for all solid center conductors with Sn63 solder and RMA Flux Per QQ-S-571.

5.1.5 Make sure that all strands of the braid are trimmed to the same length, and that no loose strands are extending out across the exposed dielectric.

5.1.6 Smooth the end of the braid flat against the dielectric or cable jacket.

5.2 Inserting Cable Into Contact

- 5.2.1 Slip the contact carefully over the end of the prepared cable and gently push the contact onto the cable until it stops.

NOTE

Rotating the contact slightly during cable insertion will help prevent the braid from catching.

- 5.2.2 Inspect for proper insertion:

5.2.2.1 The braid must be visible through the rear inspection window.

5.2.2.2 The center conductor must be visible through one of the forward inspection windows.

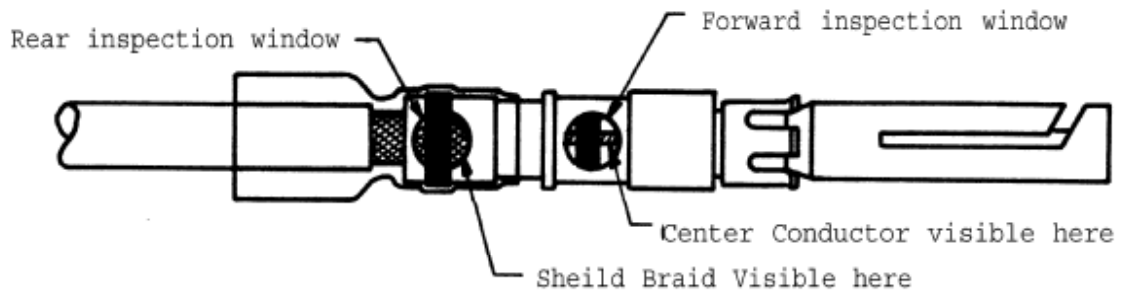
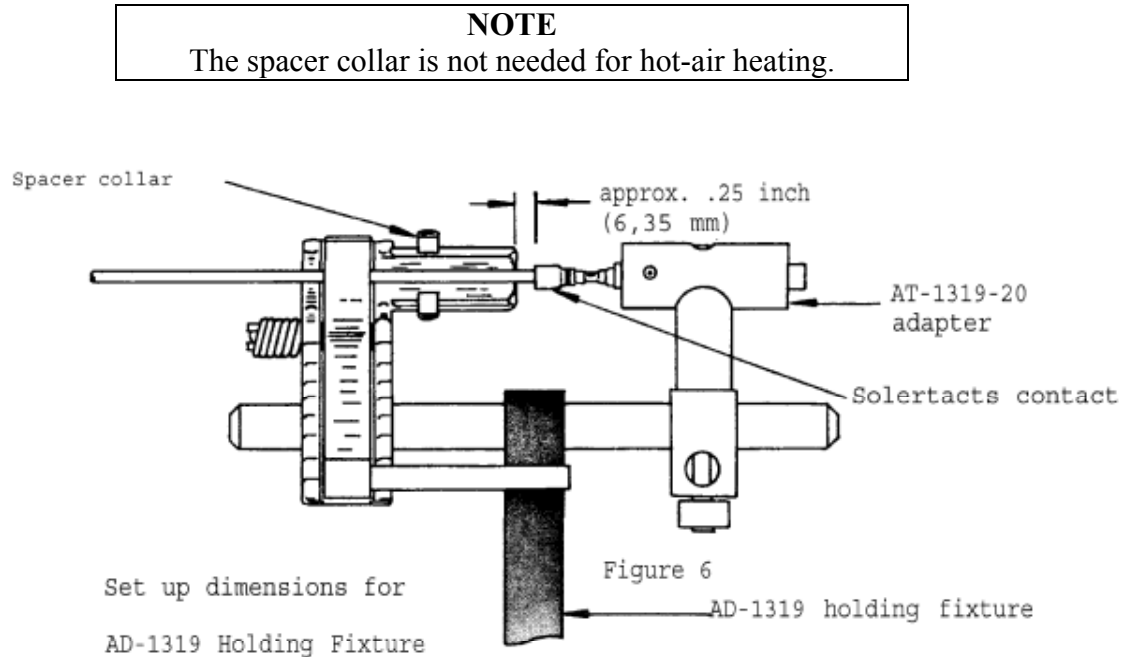


FIGURE 5

- 5.2.3 If the braid or center conductor is not visible as required, remove the contact from the cable and check for improper strip dimensions, splayed shield braid, or bent center conductor.

5.3 Heating Procedure -- Hot Air Heater (Mini-Gun or Superheater)

5.3.1 Set up the AD-4319 holding fixture with the AT-1319-20 adapter as shown below (if used):



NOTE
AD-1319 Holding Fixture and Adapter must be used to prevent damage to the contacts.

CAUTION
The AD-1554 tool is designed to be used during the replacement of contacts where access will not permit the use of the AD-1319 fixture. The AD-1554 tool is not designed for use as a production tool.

- 5.3.2 Insert the contact/cable assembly into the appropriate end of the AT-1319-20 adapter or AD-1544 fixture:
D-602-76 pin contacts: "P" end.
D-602-77 socket contacts: "S" end.

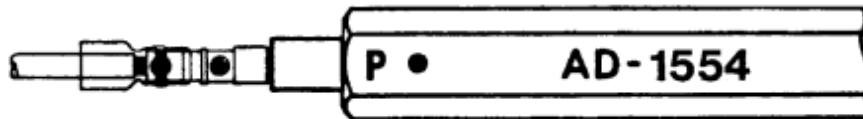


Figure 7

- 5.3.3 Clamp the coaxial cable in the AD-1319 holding fixture (if used).

NOTE

The cable must be fully inserted in to the contact.
The contact must be fully inserted in to the adapter.

- 5.3.4 Inspect per Step 2 of Section 5.3 to make sure that the cable is still fully inserted.
- 5.3.5 Set up the heating tool and attach the proper reflector:
AA-400 Superheater: Mini Solder Sleeve Reflector (See Figure 8).
Mini-Gun: MG-1 Solder Sleeve Reflector (See Figure 9).
- 5.3.6 Turn the heating tool on and allow to warm up (see instructions for tool used).
- 5.3.7 Using the AD-1319 or AD-1554 holding fixture, position the contact in the hot air stream within the reflector.

NOTE

Center the forward inspection window in the reflector.

For optimum heating, position the contact as shown below.

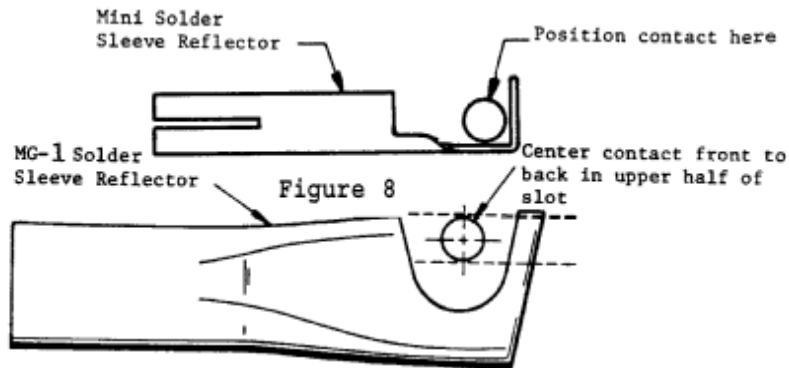


Figure 9

- 5.3.8 Continue to direct hot air around the forward inspection window while watching the small solder preform.

NOTE

As soon as the small solder preform has melted and flowed, remove the assembly from the hot air. Check to see that the large solder preform in the rear inspection window has melted and flowed. If it has not, direct hot air against the rear inspection window until the solder preform melts and flows. The insulating sleeve should be shrunk down over the exposed braid. If it is not, heat the sleeve carefully.

- 5.3.9 Allow the completed termination to cool for at least 15 seconds before removing it from the holding.
- 5.3.10 Inspect the completed termination according to Section 6 of this standard.
- 5.4 Heating Procedure: IR-1044 Two-Station Heater
- 5.4.1 Set-up the IR-1044 heater according to the IR-1044 Instructions.
- 5.4.2 Heat the contacts according to the IR-1044 Instructions.

5.4.3 Inspect the completed termination according to Section 6 of this standard.

6. Inspection

6.1 Heating Inspection

Visually inspect the completed termination for proper heating according to the following criteria:

6.1.1 Small solder preform in forward inspection window melted and flowed so that:

6.1.1.1 Preform shows no trace of its original form.

6.1.1.2 Solder fillet is visible between center conductor and inner-contact soldering surface.

6.1.2 Large solder preform in rear inspection window melted and flowed, so that:

6.1.2.1 Preform shows no trace of its original form.

6.1.2.2 Solder fillet is visible between braid and contact body.

6.1.3 Insulating sleeve shrunk over the area of braid visible between the cable jacket and the contact.

NOTE

Insulating sleeve may remain flared at end.

6.1.4 Insulating sleeve not darkened so as to obscure the solder joints or hinder inspection.

6.1.5 No melting or burning of coaxial cable insulation.

6.2 Assembly Inspection

Inspect the completed termination for correct assembly as follows:

6.2.1 The distance from the rear of the contact body to the cable insulation should not exceed 0.125 inch (3,2 mm).

6.2.2 The center conductor must be visible through the forward inspection window.

6.2.3 The shield braid must be visible through the rear inspection window.

6.3 Visual Inspection Standards (“Verification Photos”) are available from Raychem.

7. Repair and Rework**7.1 Underheated Terminations**

Reheat as directed in Paragraph 5.4, and reinspect per Section 6.

7.2 Overheated Terminations

Remove the contact from the cable as directed in Section 7.4, and install a new contact. If the cable is damaged, cut off the damaged portion and, restrip.

7.3 Improperly Assembled Terminations

Remove the contact from the cable as directed in Paragraph 7.4, and install a new contact. If the cable is damaged, cut off the damaged portion and restrip.

7.4 Removing Contact From Cable**7.4.1** Use a sharp knife or razor blade to score the insulating sleeve full length on opposite sides of the contact.**CAUTION**

Avoid cutting into cable jacket.

CAUTION

Safety glasses must be used during this operation.

7.4.2 AA-400 Mini-Gun

Without using the holding fixture, heat the contact until the solder melts, and then quickly pull the heated contact off the cable with pliers.

7.4.3 IR-1044 Heating Tool

Heat the contact the same as for termination, but without closing the wire clamp. As soon as the heating lamp goes out, pull the cable out of the contact.

NOTE

If necessary, hold the contact with pliers while pulling the cable.