



**Termination Procedure for “723” Series SolderTacts® Contacts for  
Coaxial Cable: D-602-44, D-602-45**

**1. Scope**

This engineering standard contains the termination procedures, inspection requirements, and rework procedures for the SolderTacts® contacts D-602-44 and D-602-45.

**2. Reference**

**2.1 Raychem Specification Control Drawings**

- D-602-44: Shielded Contact, pin, Coaxial cable (Inner socket/Outer pin)
- D-602-45: Shielded Contact, Socket, Coaxial Cable, (Inner pin/Outer socket)
- D-600-0018: Dielectric Barrier

**2.2 Other Specifications**

Federal Standard QQ-S-571

**2.3 Raychem Instructions**

- AA-400 Super Heater Instructions
- AD-1319 Holding Fixture Instructions
- IR-550 Two-Station Heater Instructions

**2.4 Other Instructions**

- Visual inspection standards: "Verification Photos"
- Video Tape: "SolderTacts Contacts Installation Procedures"

**3. Application Equipment And Tools**

Heating Tool	Reflector	Holding Fixture
AA-400 Superheater (Compressed Air)	#979663 Mini SolderSleeve	AD-1319 Holding Fixture with AT-1319-14 Adapter or AD-1481-H Holding Fixture
Steinel Hot Air Gun HL1920E/HL2020E 	EH0600-000 HL-Solder- Sleeve® Reflector	
IR-550 Two-Station heater (Bench -mounted, focused infraed)	993770-000 RG-2 Solder-sleeve Reflector	Tooling set #2, AT-1044-15

 Steinel HL1920E / HL2020E Heat Gun® Replaces Steinel Hot Air Gun HL1802E-KIT-120 (includes nozzle) . But they still can be used.

**4. General Information**

**4.1 Description**

The D-602-44 and D-602-45 contacts are designed for use in the following connectors having size 16 cavities:

MIL-C-28748 rectangular rack and panel connectors and 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 Accommodation**

**4.2.1** D-602-44 and D-602-45 contacts will generally accommodate coaxial cable of the dimensions shown, when conventionally stripped. Construction and/or conductor plating other than tin or silver may inhibit solderability. Consult Raychem for further details.

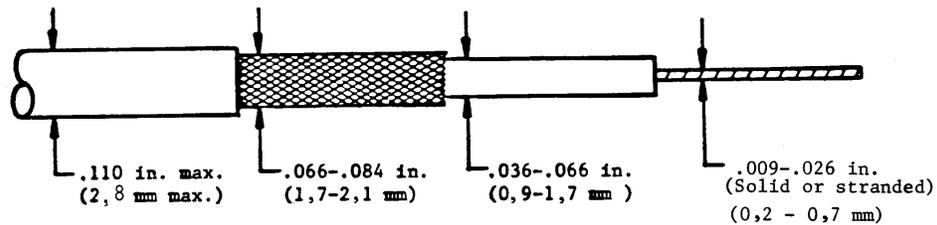


Figure 1

**4.2.2** D-602-44 and D-602-45 contacts will accommodate coaxial cable of the dimensions shown, when the braid is folded back.

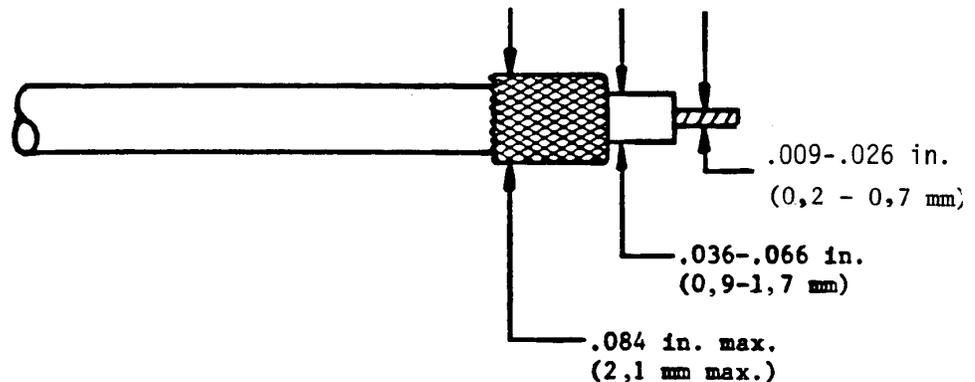


Figure 2

4.2.3 D-602-44 and D-602-45 contacts will accommodate RG-178B/U coaxial cable when the cable is prepared per paragraph 5.1.8.

**5. Termination Procedures**

**5.1 Coaxial Cable Preparation**

5.1.1 For cable conforming to Section 4.2.1: Strip the cable as shown below. For 28 thru 32 AWG center conductors see optional strip method (preferred) of paragraph 5.1.7.

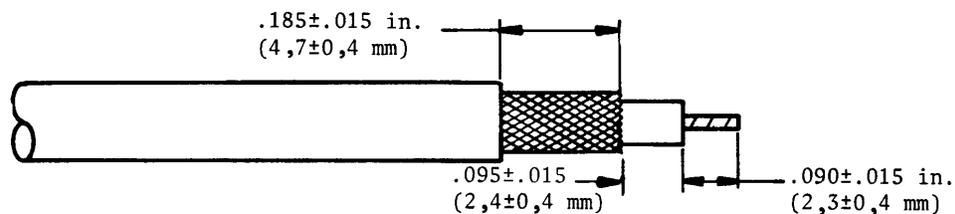


FIGURE 3

5.1.2 For cable with braid diameter smaller than 0.066 inch (1.7 mm) and conforming to Section 4.2.2: Strip the cable as shown below.

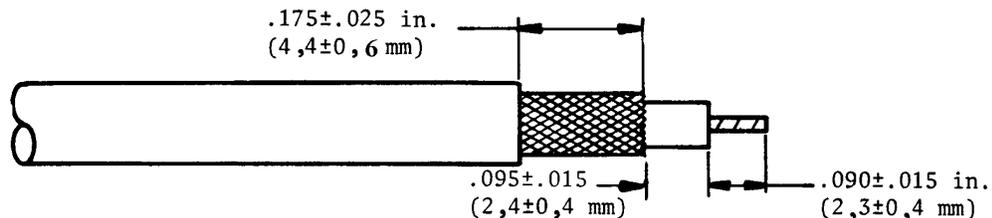


FIGURE 4

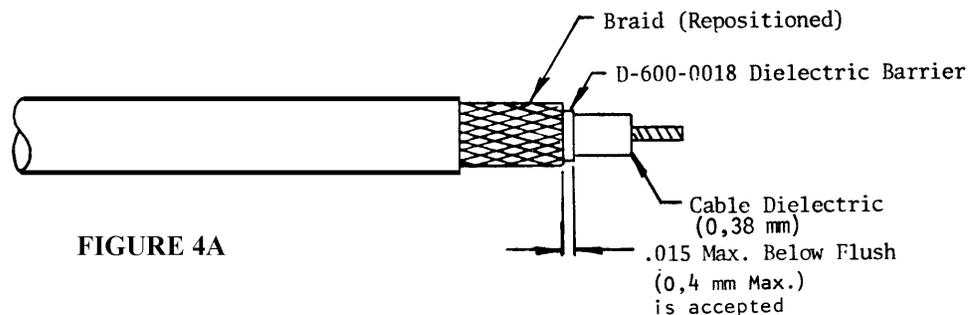
5.1.3 Straighten the center conductor and make sure that stranded center conductor is twisted into its original lay.

5.1.4 Pre-tin stranded center conductors and unplated solid center conductors with Sn63 solder and RMA flux per QQ-S-571.

5.1.5 Make sure that the shield braid is trimmed evenly, and that no loose strands are extended out across the exposed dielectric.

5.1.6 Smooth the braid ends flat against the dielectric of cable jacket.

- 5.1.7 Optional Method Preferred For Center Conductors 28 Thru 32 AWG.G
- 5.1.7.1 Strip the center conductor to  $.190 \pm .015$  (4,83  $\pm$  0,38 mm) length in place of  $.090 \pm .015$  (2,29  $\pm$  0,38 mm) length.
- 5.1.7.2 Pretin the center conductor to  $.190 \pm .015$  (4,83  $\pm$  0,38 mm) length in place of  $.090 \pm .015$  (2,29  $\pm$  0,38 mm) length.
- 5.1.7.3 Fold the center conductor back on itself to meet the  $.090 \pm .015$  (2,29  $\pm$  0,38 mm) length.
- 5.1.8 RG-178B/U Coaxial Cable Preparation
- 5.1.8.1 Strip the cable per the dimensions shown in Figure 3. Then flare the braid to expose the inner conductor dielectric.
- 5.1.8.2 Install the dielectric barrier tube, D-600-0018 and smooth the braid back over the barrier tube per Figure 4A.



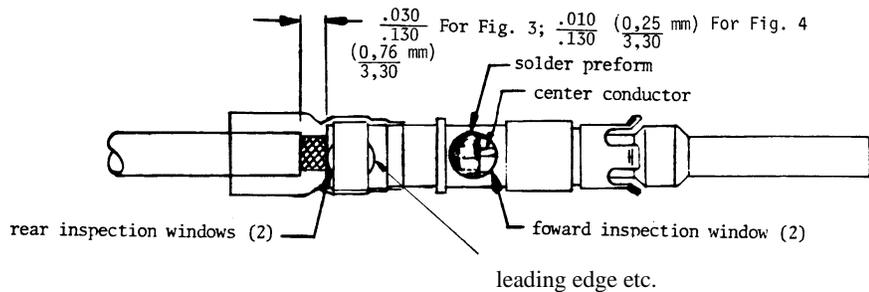
- 5.2 Inserting Cable Into Contact
- 5.2.1 Slip the contact carefully over the end of the prepared cable and gently push the contact onto the cable until it stops.

**NOTE**

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

- 5.2.2 Inspect for proper insertion (see Figure 5). The center conductor must be visible through one of the forward inspection windows.

The distance from the rear of the contact body to the cable jacket insulation must be as shown on Figure 5.



**Figure 5**

- 5.2.3 If the cable cannot be inserted 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:

5.3.1 Heating Procedure: Hot Air Heating Tools

**NOTE**

Either the AD-1319 holding fixture and adapter or the AD-1480 repair holding fixture must be used during termination to prevent damage to the contacts.

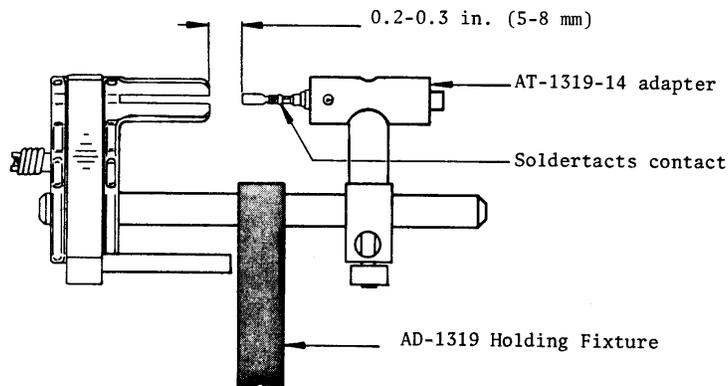
**G****CAUTION**

The AD-1480 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-1480 Tool is not designed for use as a production tool.

- 5.3.1.1 If the AD-1319 holding fixture is to be used, install the AT-1319-14 adapter, insert a contact, and set up the dimensions as shown in Figure 6.

Make sure that the contact is inserted in the appropriate end of the adapter.

D-602-44 contacts (Inner socket/Outer pin): "P" end.  
D-602-45 contacts (Inner pin/Outer socket): "S" end.



SET-UP DIMENSIONS FOR AD-1319 HOLDING FIXTURE

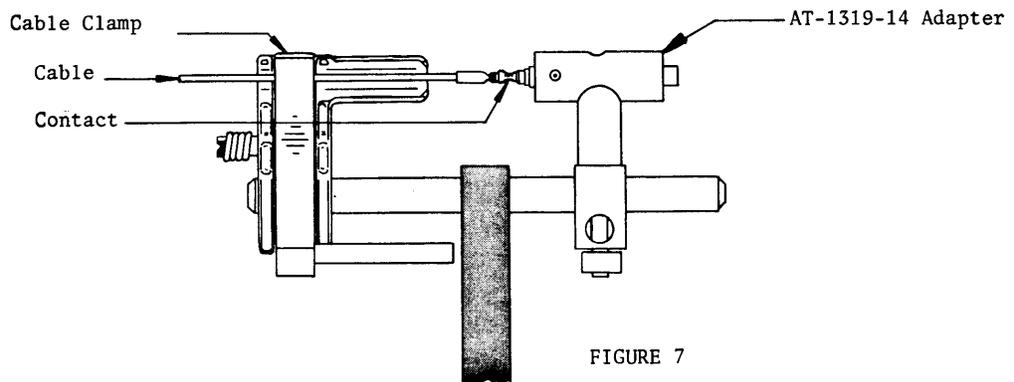
**Figure 6**

Rev. G

5.3.1.2 Insert the contact/cable assembly into the appropriate end of the AT-1319-14 adapter or AD-1480 repair holding fixture as shown in Figure 7 or 8. Push contact in until it is stopped by the bottom of the fixture.

D-602-44 contacts (Inner socket/Outer pin): "P" end.

D-602-45 contacts (Inner pin/Outer socket): "S" end.



**AD-1319 Holding Fixture and AT-1319-14 Adapter with Contact/Cable Assembly**



**AD-1480 Repair Holding Fixture with -Contact/Cable Assembly  
(Outer Pin Contact Shown for Reference)**

Figure 8

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

**NOTE**

The cable must be fully inserted in the contact (see Section 5.2.2).

The contact must be fully inserted in the adapter.

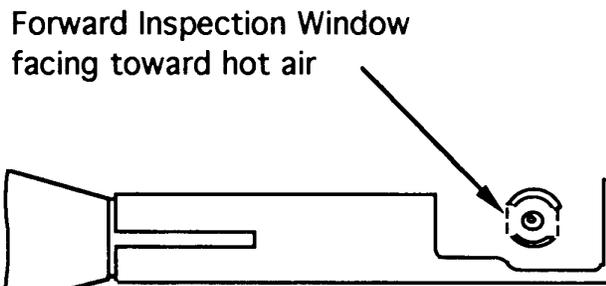
The cable must be straight between the contact and the cable clamp.

5.3.1.4 Applying heat with hot air heating tool  
Attach the appropriate reflector to the heating tool (see Section 3 for reflector selection)

Turn the heating tool on and allow to warm up to. (see instructions for tool used)  
Steinel settings: 700°F ± 50°F, setting Air Flow Stage II, Duration-20 to 30 Secs

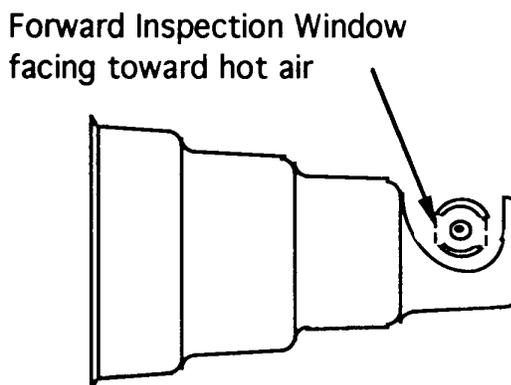
Using one of the required holding fixtures, position the contact in the hot air stream within the reflector.

For optimum heating, position the contact as shown in Figure 9 or 10. Center the forward inspection window in the reflector. Position the forward inspection window toward the hot air stream such that the inner solder preform is still visible during termination.



Mini solder Sleeve Reflector  
for SuperHeater

FIGURE 9



Steinel Nozzle

FIGURE 10



Continue to direct hot air around the contact until the small solder preform in the forward inspection window has melted and flowed. The large solder preform in the rear inspection window should have melted and flowed by this time if it has not, direct hot air around the rear inspection window until it does.

**NOTE**

Be sure to allow the solder to solidify before removing the contact from the holding fixture or disturbing the cable position.

- 5.3.1.5 After the termination has cooled at least 15 seconds, remove it from the holding fixture.
- 5.3.1.6 Inspect the completed termination according to Section 6 of this standard.
- 5.3.2 Heating Procedure: IR-550 Two-Station Heater
  - 5.3.2.1 Set up the IR-550 heater according to Section 2 of the IR-550 instructions.
  - 5.3.2.2 Heat the contacts according to Section 3 of the IR-550 instructions.
  - 5.3.2.3 Inspect the completed termination according to Section 6 of this engineering standard.
  - 5.3.2.4 The IR-550 may require readjustment when a cable change is made.
- 6. Inspection**
  - 6.1 Assembly Inspection. Inspect the completed termination for correct assembly according to the following criteria:
    - 6.1.1 If the distance from the rear end of the contact body to the cable jacket does not meet the requirements of 5.2.2 improper strip lengths and/or improper cable insertion is indicated.
    - 6.1.2 The center conductor must be visible through one of the forward inspection windows.
    - 6.1.3 The shield braid must be visible through the rear inspection windows.
  - 6.2 Heating Inspection. Visually inspect the completed termination for proper heating according to the following criteria:
    - 6.2.1 The small solder preform in the forward inspection window must be melted and flowed G so that:



- H** Preform shows no trace of its original form (underheated condition).  
A trace of solder band which is wetted to the substrate is acceptable.

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

**NOTE**  
Insufficient visible solder indicates  
overheated condition.

- 6.2.2 The large solder preform in the rear inspection window must be melted and flowed, so that:

- H** Preform shows no trace of its original form (underheated condition)  
Trace of solder band which is wetted to the substrate is acceptable.

Solder fillet is visible between braid and contact body.

**NOTE**  
Insufficient visible solder indicates  
overheated condition.

- 6.2.3 The insulating sleeve must be shrunk over the area of braid visible between the cable jacket and the contact.

**NOTE**  
Insulating sleeve may remain flared at end.

- 6.2.4 The insulating sleeve must not be darkened so as to obscure the solder joints or hinder inspection (overheated condition).

- 6.2.5 The coaxial cable jacket must not show signs of damage or overheating outside of the insulating sleeve.

- 6.3 Visual inspection standards ("Verification Photos") are available from Raychem.

## 7. **Repair and Rework**

### 7.1 Underheated Terminations

Reheat underheated areas as directed in Section 5.3 and reinspect per Section 6. Avoid reheating areas that have been properly heated.



6900 Paseo Padre Pkwy Fremont, CA,  
94555-3641 United States

- 
- 7.2 Overheated or Improperly Assembled Terminations
  - 7.2.1 Remove the contact from the cable as directed in Section 7.3.



- 7.2.2 Check the cable for damage and incorrect stripping.

**NOTE**

If the cable is damaged, cut off the damaged portion and restrip per Section 5.1.

If stripping is incorrect, restrip as required (Section 5.1.)

- 7.2.3 Install a new contact (Sections 5.2 and 5.3).

7.3 Removing Contacts From Cable

**CAUTION**

Safety glasses must be used during this operation.

- 7.3.1 Use a sharp knife or razor blade to score the insulating sleeve full length on opposite sides of the contact.

**CAUTION**

Avoid cutting into wire insulation.

- 7.3.2 Hot air heating tools. Holding the contact with pliers, heat the contact until the solder melts, and quickly pull the heated contact off the cable.

- 7.3.3 IR-550 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.