Termination Procedure for "748" Series SolderTacts Contact for Coaxial Cable D-602-0172, D-602-0173

1 Scope

This engineering standard covers the termination procedure and inspection requirements for the SolderTacts® contacts D-602-0172 and D-602-0173 for coaxial cable.

2. References

Raychem Specification Control Drawings
D-602-0172: Pin Contact for coaxial cable.
D-602-0173: Socket Contact for coaxial cable.

2.2 Other Specifications
Solder Sn63 Per ANSI/J-STD-006.

2.3 Raychem Instructions
AA-400 Super Heater: H50324.
AD-1319 Holding Fixture
Steinel Hot Air Gun HL-1802E-KIT-120.

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: H50324.	#979663 Mini SolderSleeve®	AD-1319 Holding Fixture with AT-1319-18 Adapter or AD-1486 Holding Fixture
Steinel Hot Air Gun HL-1802E-KIT-120.	5/8" SolderSleeve® reflector	

4. General Information

4.1 Description

The D-602-0172 and D-602-0173 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-I 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-602-0172 and D-602-0173 contacts will accommodate coaxial cable of the dimensions shown when conventionally stripped.

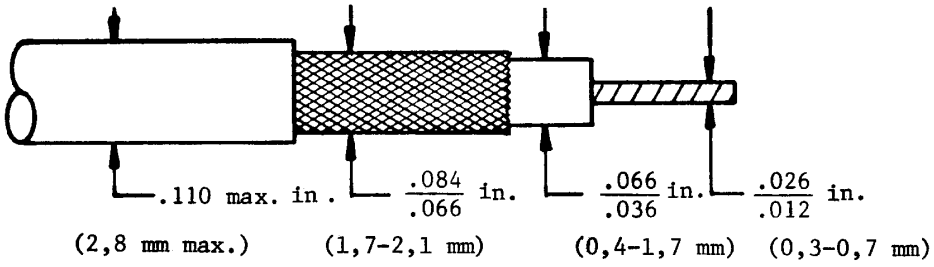


Figure 1

4.2.2 D-602-0172 and D-602-0173 contacts will accommodate coaxial cable of the dimensions shown when the braid is folded back.

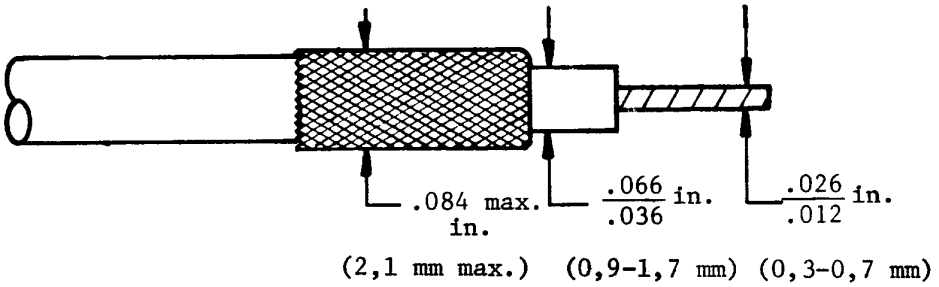


Figure 2

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:

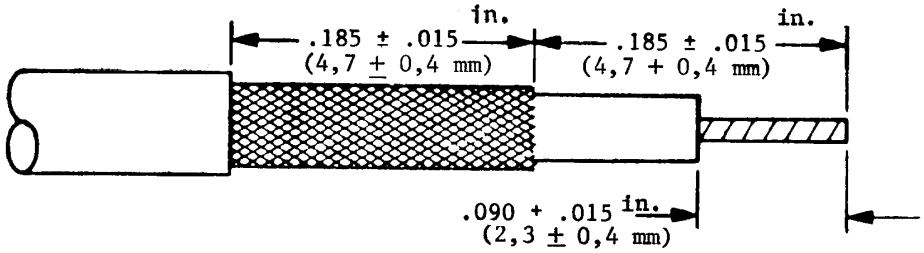


Figure 3

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,

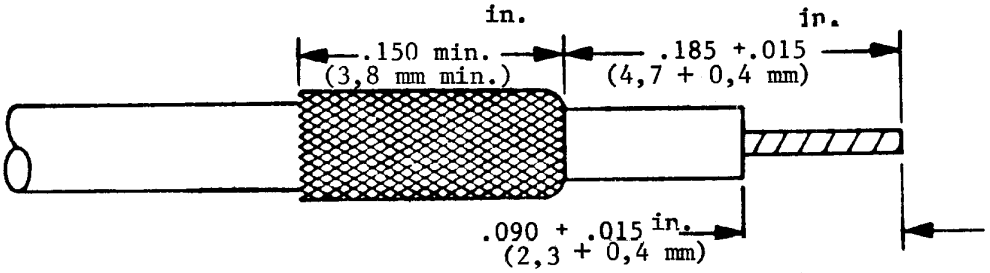


Figure 4

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 ROL1 Flux PER ANSI/J-STD-004.

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 windows.

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

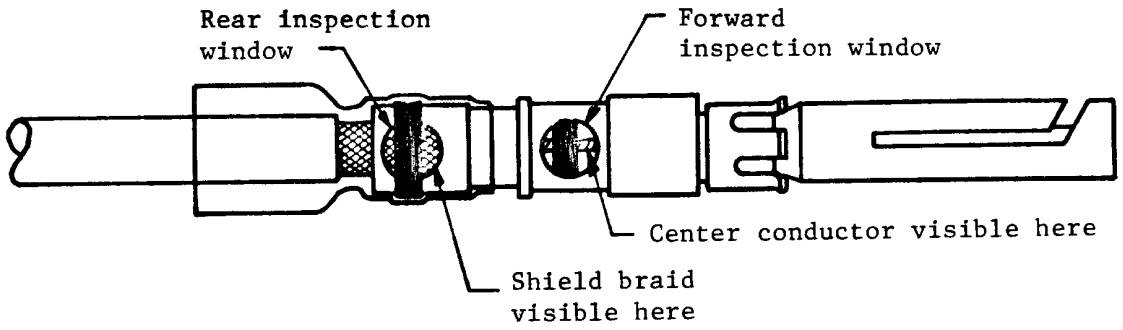


Figure 5

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 -- Steinel Hot Air Gun HL-1802E-KIT-120.

5.3.1 Set up the AD-1319 holding fixture with the AT-1319-18 adapter as shown below (if used):

NOTE
The spacer is not needed for hot-air heating.

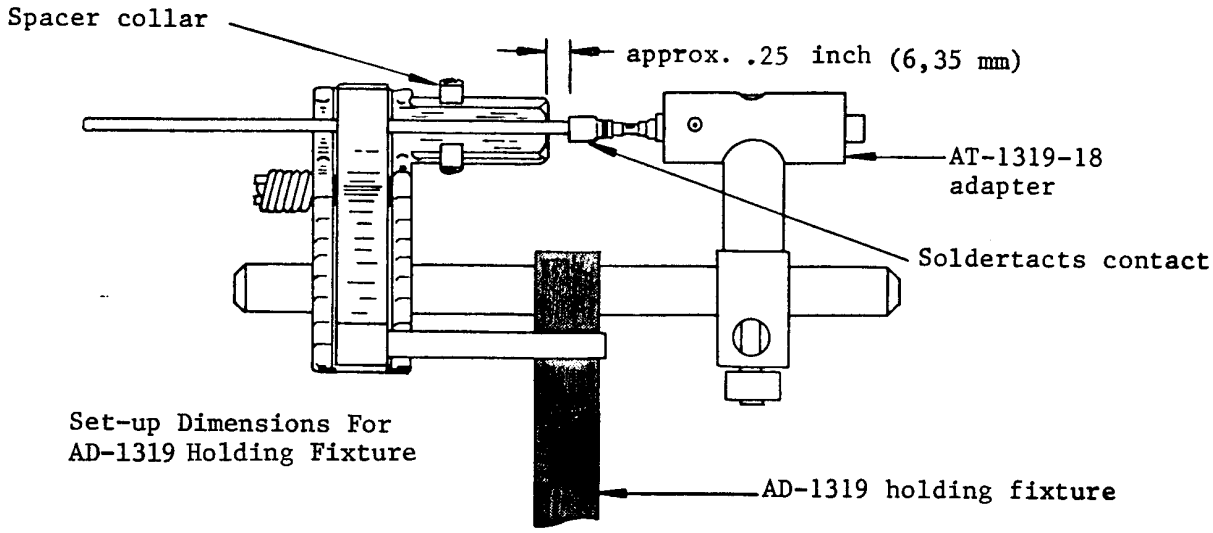


Figure 6

NOTE
AD-1319 holding fixture and adapter must be used to prevent damage to the contacts.

CAUTION
The AD-1486 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-1486 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-1319-18 adapter or AD-1486 fixture:

D-602-0172 pin contacts: "P" end.

D-602-0173 socket contacts: 'S' end.

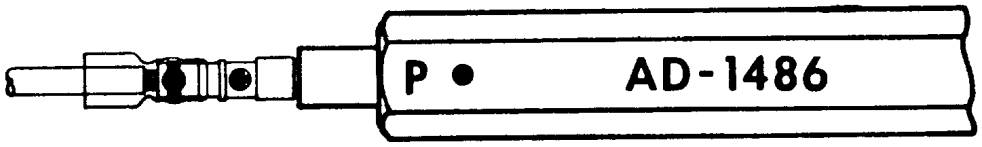


Figure 7

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 H50324: Mini SolderSleeve® reflector (See Figure 8).

Steinel Hot Air Gun HL-1802E-KIT-120. 5/8" SolderSleeve® reflector (See Figure 9).

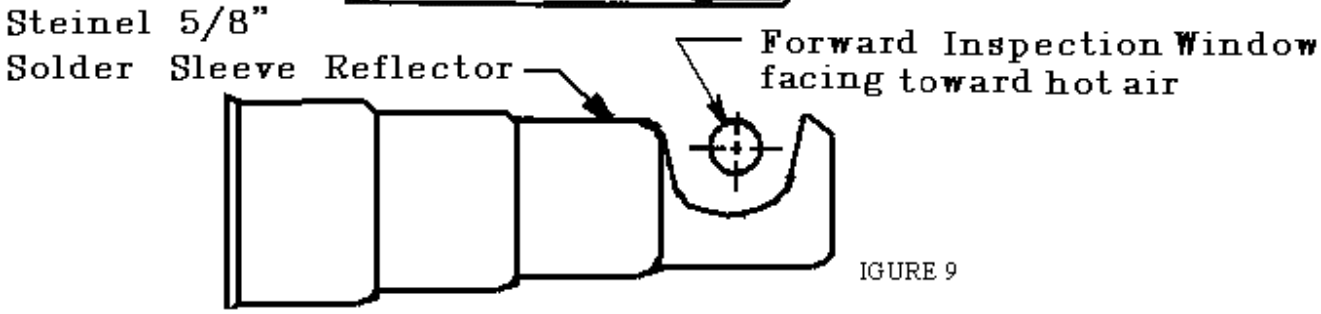
5.3.6 Turn the heating tool on and allow to warm up (see instructions for tool used).

5.3.7 Using the AD-1319 or AD-1486 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 8



IGURE 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 fixture.

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

6. Inspection

6.1 Heating Inspection. Visually inspect the completed termination 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.

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 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, out 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
Safety glasses must be used during this operation.

CAUTION
Avoid cutting into cable jacket.

7.4.2 AA-400 Super Heater: H50324 and Steinel Hot Air Gun HL-1802E-KIT-120. Without using the holding fixture, heat the contact until the solder melts, and then quickly pull the heated contact off the cable with pliers.