



Electronics

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**Raychem**

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**Termination Procedure for Subminiature SolderTacts® Contacts  
for Coaxial Cable: D-602-0218 & D-602-0219  
D-602-0278 & D-602-0279**

**1. Scope**

This standard contains the termination procedures, inspection requirements, and rework procedures for the SolderTacts® contacts covered herein.

**2. References**

2.1 Raychem Specification Control Drawings

1. D-602-0218 and D-602-0278 Subminiature Coax Contact, Inner Socket/Outer Pin.
2. D-602-0219 and D-602-0279 Subminiature Coax Contact, Inner Pin/Outer Socket.

2.2 Raychem Instructions

1. AA-400 Super Heater Instructions
2. AD-1319 Holding Fixture Instructions
3. CV-5300 MiniGun® 1 Heating Tool Instructions
4. IR-1044 Two-Station Heater Instructions

**3. Application Equipment and Tools**

Table 3-1. Heating Tool, Reflector, and Tooling Selection

Heating Tool	Reflector	Holding Fixture
AA-400 Super Heater  (Portable, compressed air)	#979663 SolderSleeve® Reflector	AD-1319 Holding Fixture with AT-1319-12 Adapter or
CV-5300 MiniGun® 1 	MG-1 Solder- Sleeve® Reflector	AD-1481 H Holding Fixture
IR-1044 Two-Station Heater (Bench-mounted focused infrared)	-----	Tooling set #9, AT-1044-11

 Preferred Hot Air Heating Tool.

 Replaces CV5700 MiniGun® 3 with MG-7 SolderSleeve Reflector. The CV5300 is preferred over the CV5700 if compressed air is not available.

**4. Termination Procedure**

**4.1 Contact Selection**

These four subminiature contacts can be terminated to the coaxial cable types and sizes described in Paragraphs 4.1.1 and 4.1.2. Other applications should be submitted to Raychem for evaluation.

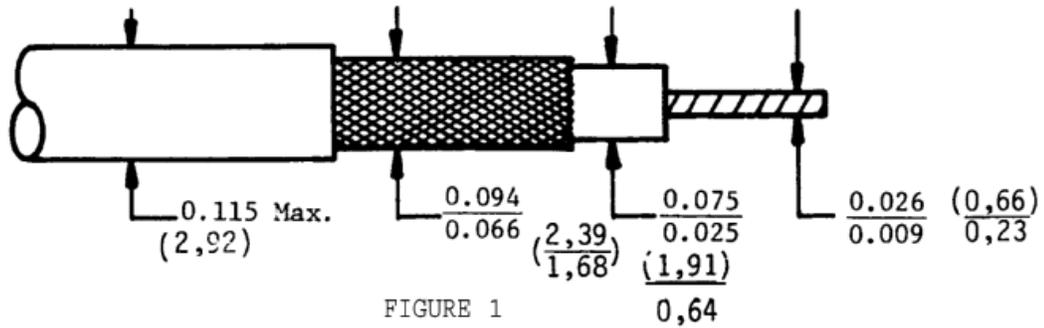
**4.1.1 Coaxial Cable Types by Number**

RG Cable	Stripping Method*	Raychem Cheminax Cable	Stripping Method*
RG-174/U	C	5024AIXIX	C
RG-178 B/U	F	5028AIXIX	F
RG-179 B/U	C	5030AIXIX	F
RG-316/U-	C	7528AIXIX 7530AIXIX 9532A1X1X	C C C

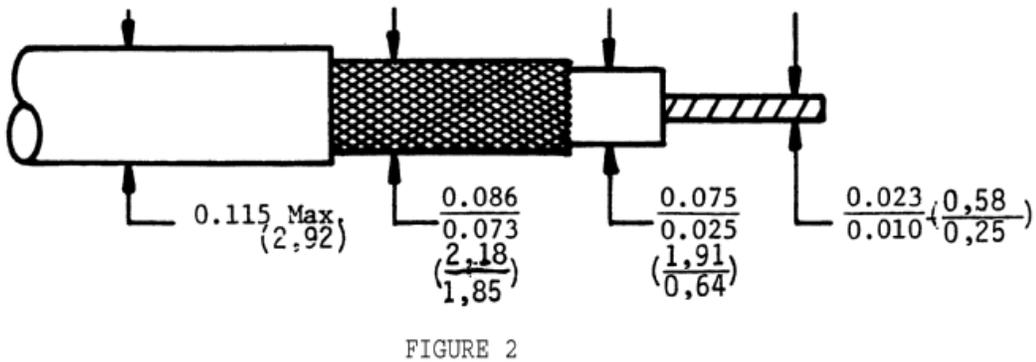
\*C = conventional stripping  
 F = Braid fold-back

4.1.2 Coaxial Cable Size Ranges

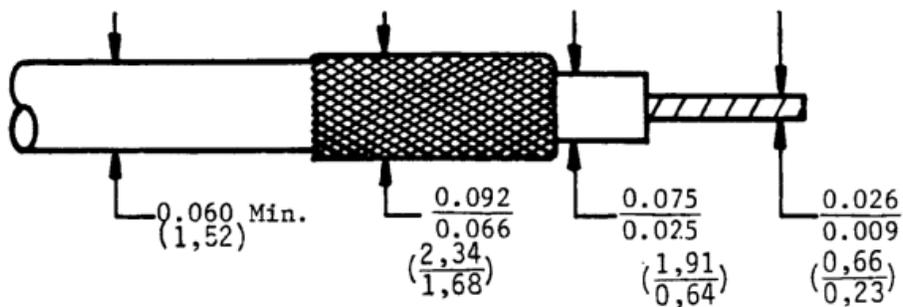
a. Conventional strip: silver plated conductor and shield.



b. Conventional strip: tin plated conductor and shield.



c. Braid folded back: silver plated conductor and shield.



d. Braid folded back: tin plated conductor and shield.

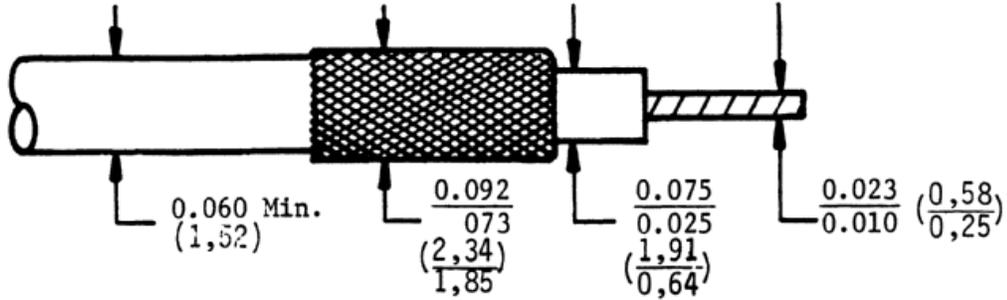


FIGURE 4

4.2 Coaxial Cable Preparation

4.2.1A Conventional stripping: Use if conventional stripping is called out in Section 4.1.1 or if the cable falls within the dimensions shown in Sections 4.1.2 A or B.

Prepare the cable so as to expose the braid, dielectric, and center conductor as shown.

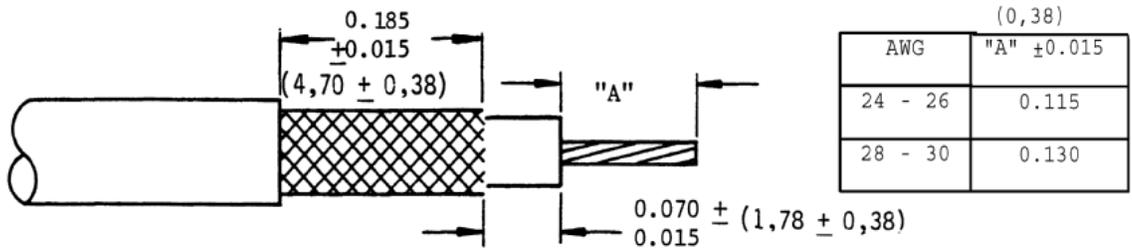


FIGURE 5

4.2.1B Braid fold-back: Use if braid fold-back is called out in Section 4.1.1, or if the braid diameter is too small for conventional stripping and the cable falls within the dimensions shown in paragraphs C and D of Section 4.1.2.

Prepare the cable with the shield folded back over the outer jacket as shown.

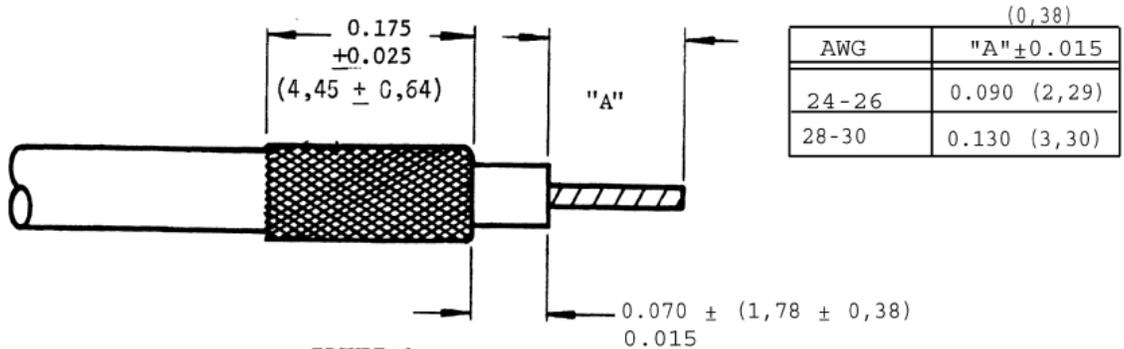


FIGURE 6

- 4.2.2 Straighten the center conductor and make sure the stranded center conductor is twisted into its original lay.
- 4.2.3 Pre-tin stranded center conductors and solid center conductors that are not plated.
- 4.2.4 Make sure that the braid is trimmed evenly and that no loose strands are extending across the exposed dielectric.
- 4.2.5 Smooth the ends of the braid flat against the dielectric or cable jacket.

#### 4.3 Inserting Cable Into Contact

- 4.3.1 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.

- 4.3.2 Inspect for proper insertion (see figure below):
- The braid must be visible through the rear inspection window.
  - The center conductor must be inserted into the inner contact.
  - The distance from the rear of the contact body to the cable jacket insulation should not exceed 0.125 inch (3.17 mm).

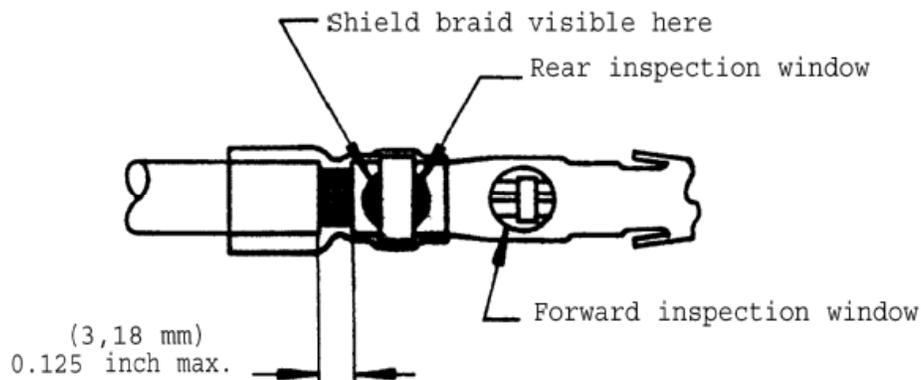


FIGURE 7

4.3.3 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.

#### 4.4 Heating Procedure

##### 4.4.1 IR-1044 Two Station Heater

- a. Set up the IR-1044 heater according to the IR-1044 instructions.
- b. Heat the contacts according to the IR-1044 Instructions.
- c. Inspect the completed termination according to Section 5 of this standard.

##### 4.4.2 Manually Operated Heating Tools.

#### CAUTION

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

- a. Set up the AD-1319 holding fixture with the AT-1319-12 adapter as shown.

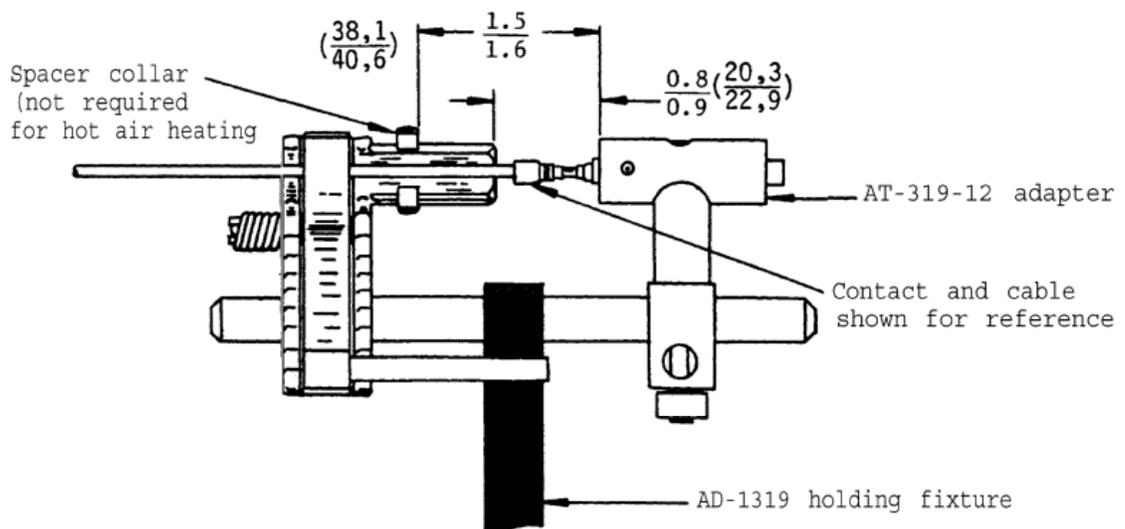


FIGURE 8

- b. Fully insert the contact/cable assembly into the appropriate end of the AT-1319-12 adapter or AD-1481 H holding fixture.

D-602-0218 & D-602-0278 contacts (inner socket/outer pin): "P" end.

D-602-0219 & D-602-0279 contacts (inner pin/outer socket): "S" end.

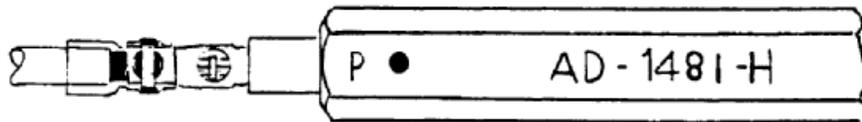


FIGURE 9

- c. Clamp the coaxial cable in the holding fixture.
- The cable must be fully inserted into the contact.
- The contact must be fully inserted into the adapter.
- The cable must be straight between the contact and the cable clamp.
- d. Check to make sure that the cable and contact are properly assembled.
- The braid must be visible through inspection windows (Section 4.3.2).

- e. To apply heat with hot air heating tool (MiniGun® 1 or Super Heater):

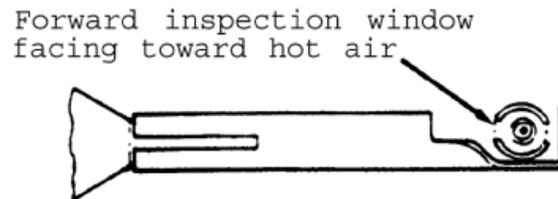
Attach the appropriate reflector to the heating tool (Section 3).

Turn the heating tool on and allow to warm up.

Position the contact in the hot air stream within the reflector.

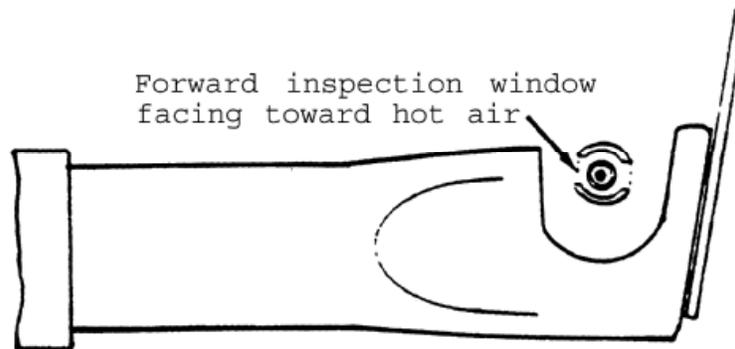
Center the forward inspection window in the reflector.

For optimum heating, position the contact as shown.



REFLECTOR FOR AA-400 OR M83521/5 HEATING TOOL

Figure 10



MG-1 REFLECTOR FOR CV-5300 MINIGUN

Contact Position in Heating Tool Reflector

Figure 11

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

- f. Allow the completed termination to cool for at least 10 seconds before removing it from the holding fixture.
- g. Inspect the completed termination according to Section 5 of this standard.

**5. Inspection**

5.1 Assembly Inspection Inspect the completed termination for correct assembly according to the following criteria:

The distance from the rear end of the contact body to the cable jacket insulation should not exceed 0.125 inch (3,17 mm).

The slots on the inner contact may be visible through the forward inspection windows, and solder may be seen in the slots.

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

5.2 Heating Inspection. Visually inspect the completed termination for proper heating according to the following criteria:

The small solder preform in the forward inspection window must be melted and flowed so that:

- a. Preform shows no trace of its original form.
- b. Solder fillet may be visible in the slots of the inner contact.

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

- a. Preform shows no trace of its original form.
- b. Solder fillet is visible between braid and contact body.

The insulating sleeve must be shrunk over the area of braid visible between the cable jacket and the contact. (Insulating sleeve may remain flared at end).

The insulating sleeve must not be darkened so as to obscure the solder joints or hinder inspection.

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

**6. Repair and Rework****6.1 Underheated Terminations**

If the termination is underheated, follow the procedure in Section 4.4.

After the reheating process is complete, inspect the termination following steps in Section 5.

**6.2 Overheated Terminations**

Remove the contact from the cable as directed in Section 6.4 and install a new contact. If the cable is damaged, cut off the damaged portion of the cable.

**6.3 Improperly Assembled Terminations**

Remove the contact from the cable as directed in Section 6.4 and install a new contact. If the cable is damaged, cut off the damaged portion and strip the undamaged cable. **Retermine** the undamaged portion of the cable.

**6.4 Removing Contacts From Cable**

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

**CAUTION**

Avoid cutting into cable jacket.

- 2A. AA-400 Or MiniGun® 1 Heating Tool. Without using the holding fixture, heat the contact until the solder melts, and then quickly pull the heated contact off the cable with pliers.

- 2B. IR-1044. Heat the contact as for termination, but without closing the wire clamp. As soon as the heating lamp goes out, pull the cable out of the contact. If necessary, hold the contact with pliers while pulling the cable.