

REV	REASON	COAXIAL SIZE 1 CONTACTS FOR ARINC 404 AND 600 APPLICATIONS	ENGINEERING RELEASE DATE
			5-23-90
			APPROVAL J. CABARLO

1. INTRODUCTION

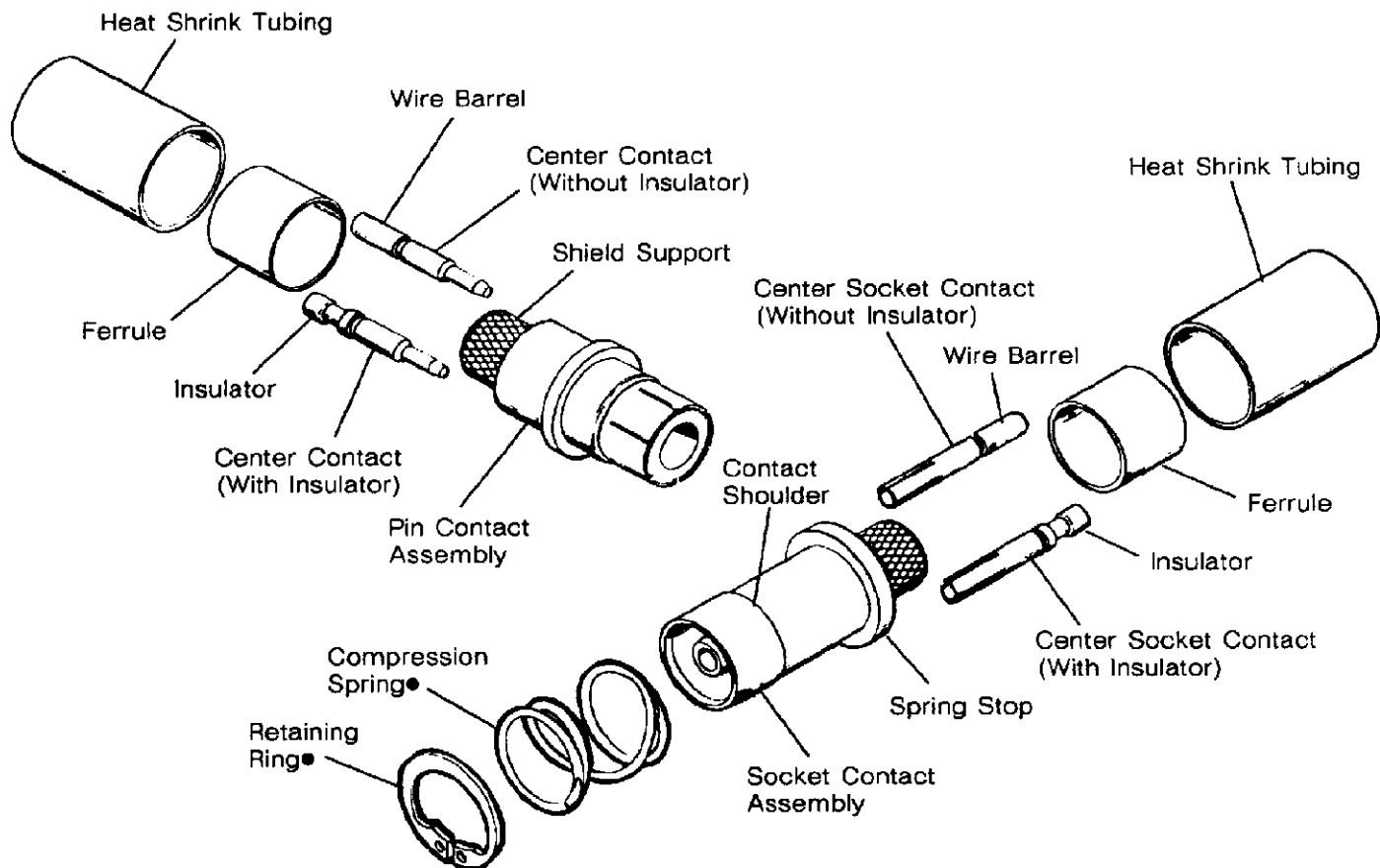
This specification covers the requirements for application of AMP* Size 1 Coaxial Socket and Pin Contacts that are designed for ARINC 404 and ARINC 600 Connectors. Various socket and pin contact kits are available to accommodate a wide size range of coaxial cable.

Each socket/pin contact kit consists of a socket/pin assembly, center contact, ferrule, and piece of heat shrink tubing. These socket/pin contacts are designed to be assembled by hand using military approved hand crimping tools and dies qualified to M/22520.

Figure 1 shows the components of the kits and terms of their features. These terms will be referred to throughout this document and should be used when consulting with AMP Representatives.

NOTE

All dimensions in this specification are in inches and have a decimal tolerance of ± 0.005 and an angle tolerance of $\pm 2^\circ$ unless otherwise specified. Metric equivalents (mm) can be obtained by multiplying the given dimension by 25.4.



- The compression spring is not included in socket kit, but can be ordered under Part No. 205398-4 for the ARINC 600, and Part No. 205398-2 for the ARINC 404 Application. The retaining ring is available under Part No. 205385-2 for both applications.

Fig. 1. Product Features

2. REFERENCE MATERIAL

2.1. Customer Assistance

Product Part Numbers 447087 and 447095 and Product Code 3321 are representative of AMP Size 1 Socket and Pin Contacts. Use of these numbers will identify the product line and expedite your inquiries through an AMP service network established to help you obtain product and tooling information. Such information can be obtained through a local AMP Representative (Field Sales Engineer, etc) or, after purchase, by calling the CUSTOMER HOTLINE at the top of page 1.

2.2. Engineering Drawings

Customer Drawings for specified products are available from the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any technical documentation supplied by AMP Incorporated.

2.3. Specifications

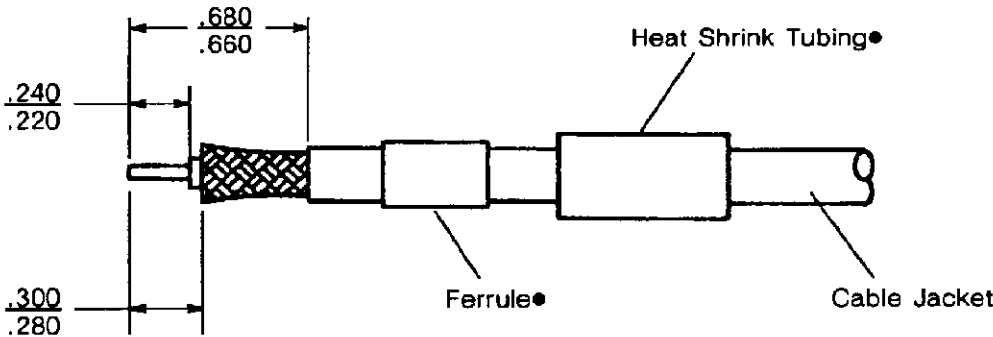
AMP Product Specification 108-1295 provides performance test information and quality requirements for these socket and pin contacts.

3. REQUIREMENTS

Pre-assembly procedures for cable socket and cable pin contacts are covered in the following text.

3.1. Cable Selection and Preparation

Socket Contact and Pin Contact Kits are available for the cables designated in Figure 2. Cable strip lengths and crimp dimensions are also given in Figure 2.



- Slide component over cable jacket BEFORE stripping cable.

Note: Not to scale

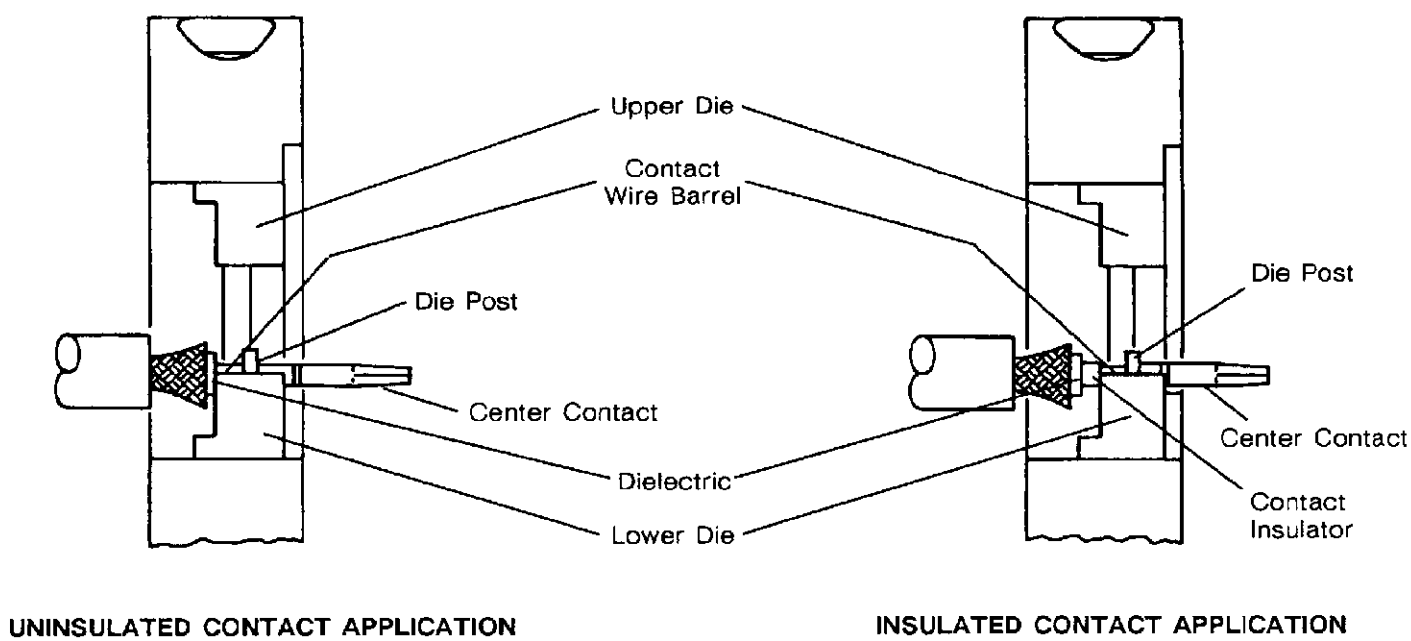
CABLE DESIGNATION	CRIMP DIMENSIONS●●	
	CONTACT	FERRULE
RG213/U	.100	.429
RG214/U		
RG393/U		
RG142/U	.068	.213
311201 ECS	.100	.324

●● Crimp dimensions are measured across flats of Hex-Crimp.

Fig. 2. Cable Strip and Crimp Dimensions

3.2. Special Handling and Assembly Procedure

- 1. Obtain a socket/pin contact kit specified for your cable type.
- 2. Slide shrink tubing and ferrule over cable end as shown in Figure 2.
- 3. Strip the outer jacket and center conductor to the length provided in Figure 2, using care not to cut, nick, or scrape the center conductor or shield strands.
- 4. Flare shield so that it will fit evenly over the crimp end of the contact body.
- 5. Twist strands of cable center conductor tightly together and insert into the center contact until the cable dielectric butts against the wire barrel.
- 6. Obtain Hand Tool M22520/5-01 and specified die assembly for the cable size to be crimped. See chart in Figure 3.
- 7. Place the lower die (die with post) in tool base and the upper die (die with hole) in head of tool. See Figure 3 and 8.



CABLE DESIGNATION	M22520 TOOLING	
	DIE ASSEMBLY	HAND TOOL
RG213/U	5-25	5-01
RG214/U		
RG393/U	5-11	
RG142/U	5-29	
311201 ECS		

Fig. 3. Tool Selection and Contact Placement in Dies

8. With the tool handles fully opened, position the contact in the lower die as shown in Figure 3.

A. Uninsulated Contact

The cable dielectric for uninsulated contacts should be butted on the contact wire barrel and die.

B. Insulated Contact

The insulator should be against the die but not in the crimp area; the cable dielectric should be butted against the contact wire barrel.

9. Holding the cable and contact in place, close the tool handles until they bottom and disengage the ratchet. Allow the handles to open fully and remove crimped contact.

10. Check crimped contact to assure conformance to requirements specified in Figure 4.

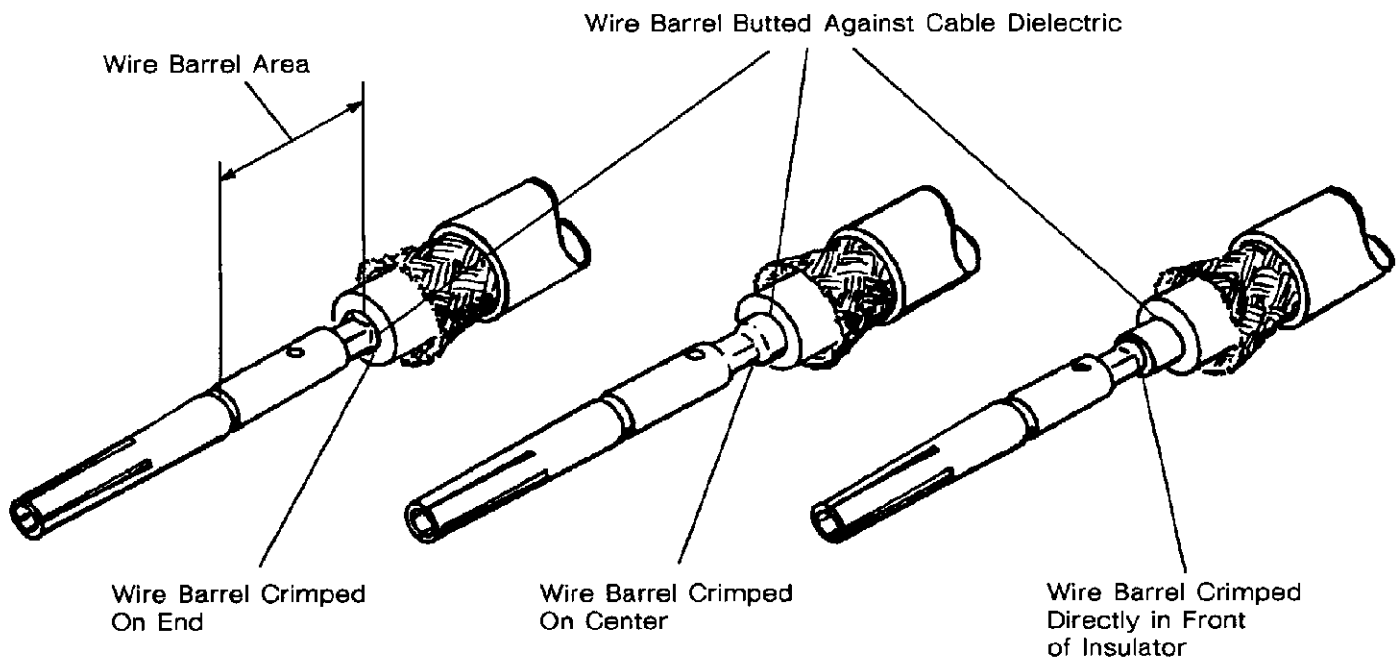


Fig. 4. Crimped Center Contacts

11. Using care to prevent deformation of the shield, insert crimped center contact into contact body until bottomed. Pull back lightly on cable to be sure center contact is locked in place.

12. Making sure shield is evenly positioned around support, slide ferrule over shield until it butts against contact body.

13. With tool handles fully open, position ferrule in lower die; then close tool handles until they bottom and disengage ratchet. Allow tool handles to open fully and remove crimped contact. See Figure 5.

14. Slide heat shrink tubing over ferrule until it butts against contact body. Using a hot air heat gun or other safe heat source, apply heat to the tubing until it is formed evenly around ferrule and cable jacket.

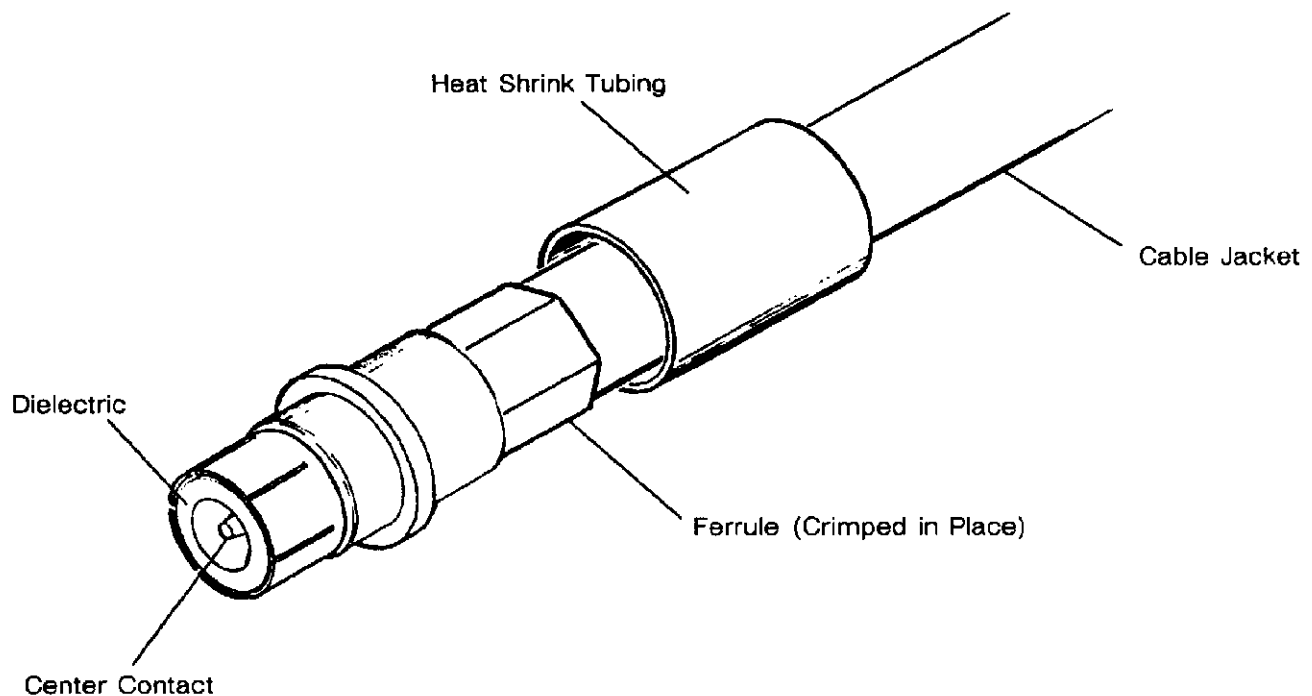


Fig. 5. Assembly

3.3. Installing Contact Assemblies in ARINC 404 Connectors (See Figure 6)

A. Socket Contact Assemblies

1. Remove retainer plate from back of connector plug shell and slide over contact assemblies.
2. Insert contacts into rear insert.
3. Slide compression spring over front of contacts.
4. Using retaining ring tool, place retaining ring over front of contacts and push until it locks behind contact shoulder.
5. Slide rear insert, containing contact assemblies, into connector shell, seating contacts in front insert.
6. Slide retainer plate over cables and position it on back of connector shell. Secure plate with screws.

B. Pin Contact Assemblies

1. Remove retainer plate from back of connector shell and slide over contact assemblies.
2. Insert contacts into cavities of front insert. Be sure they seat in recessed cavities.
3. Slide rear insert down over the rear portion of contact assemblies. Push insert into shell until it is flush with rear of shell.
4. Slide retainer plate over cables and position on back of shell. Secure plate with screws.

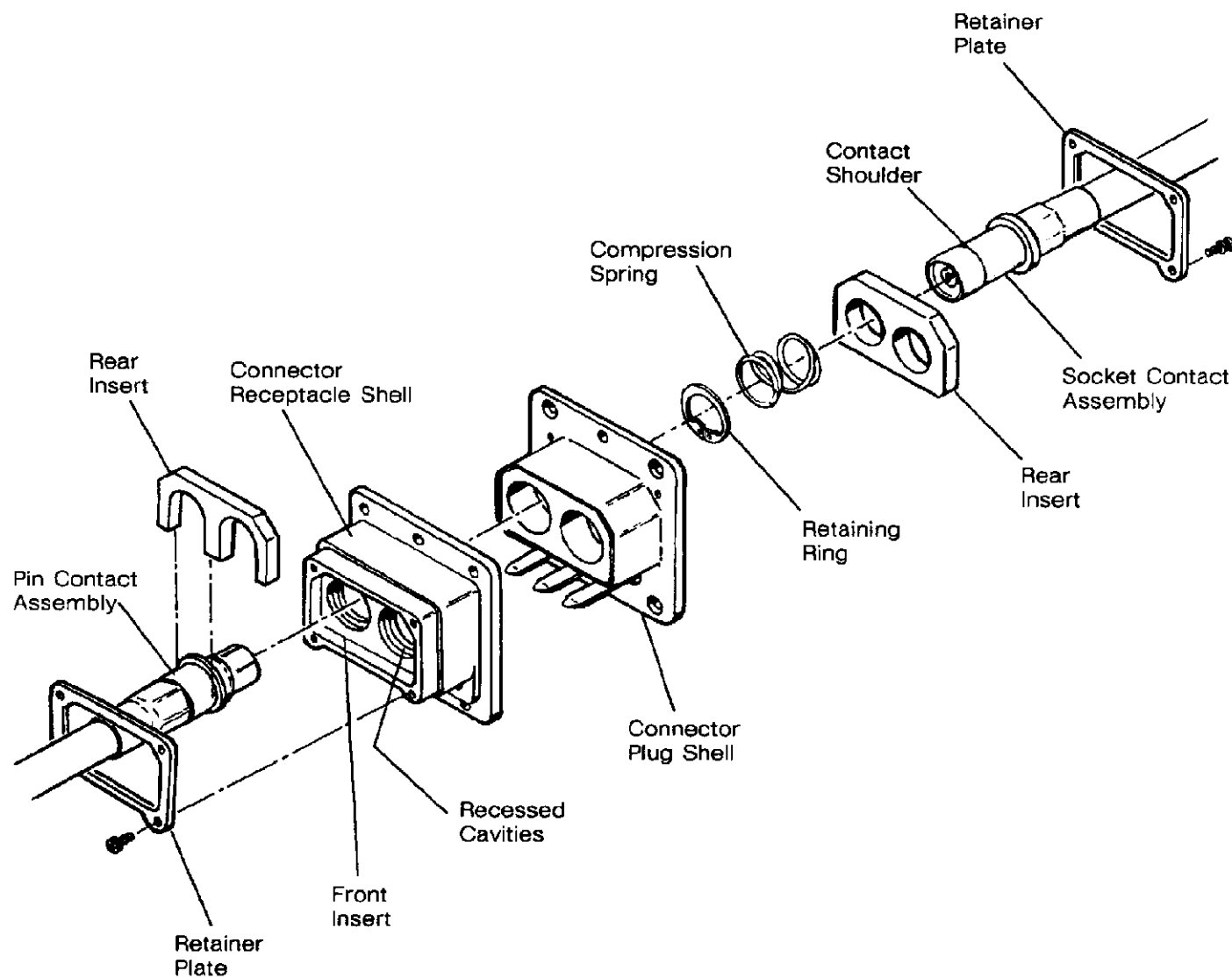


Fig. 6. Installation in ARINC 404 Connector

3.4. Installing Contact Assemblies in ARINC 600 Connectors (See Figure 7)

A. Socket Contact Assembly

1. Remove rear insert from back of connector plug shell.
2. Push contact assembly through rear insert and slide compression spring over front of contact.
3. Using retaining ring tool, place retaining ring over front of contact and push until it locks behind the contact shoulder.
4. Place rear insert, containing contact assembly, in connector shell and secure with screws.

B. Pin Contact Assembly

1. Remove rear insert from back of connector receptacle shell.
2. Seat collar of pin contact assembly in recess of rear insert.
3. Place rear insert, containing contact, in connector receptacle shell and secure with screws.

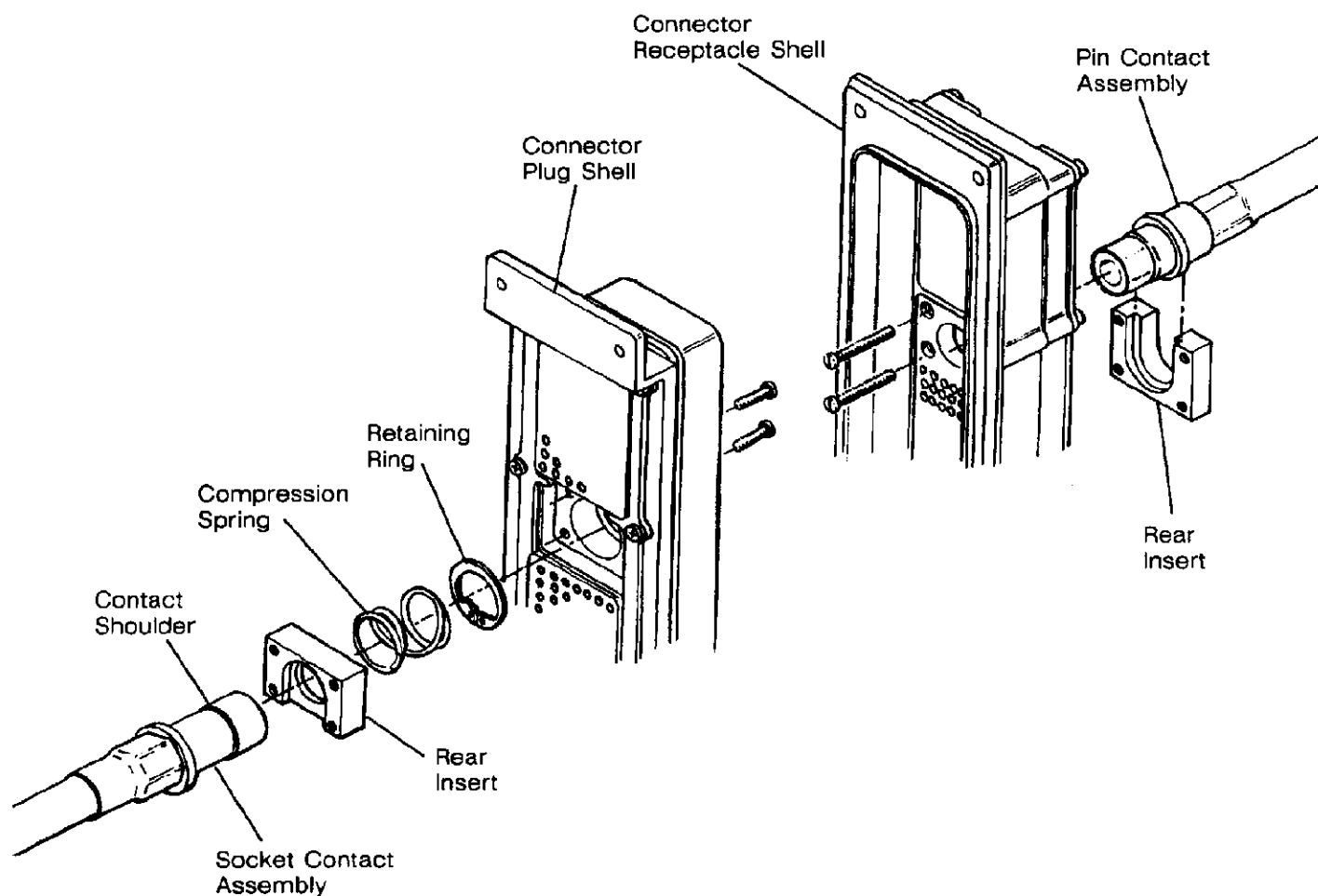


Fig. 7. Installation in ARINC 600 Connector

4. QUALIFICATION

The AMP Size 1 Coaxial Socket and Pin Contacts are qualified to the ARINC Specifications 600 and 404, and AMP Product Specification 108-1295.

5. TOOLING

The tooling recommended for crimping the AMP Size 1 Coaxial Contacts is the Military Qualified M22520 standard hand tool and die assemblies. Determine cable designation, then refer to Figure 3 and select the appropriate tool and die assembly.

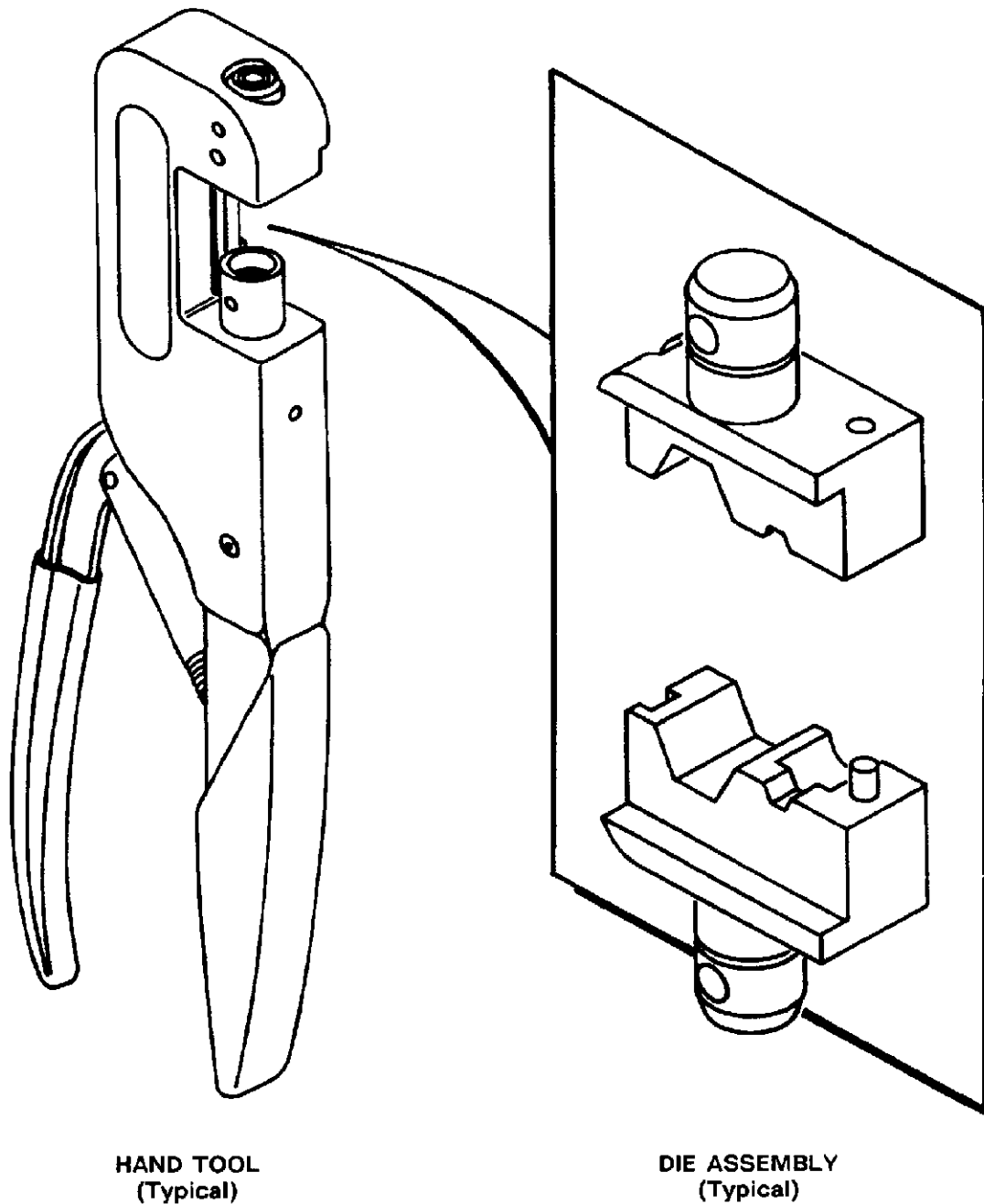


Fig. 8. Tooling

6. VISUAL AID

The following illustration provides features that will help an assembler to recognize a good termination. For dimensional inspection, refer to the details in the preceding pages of this specification.

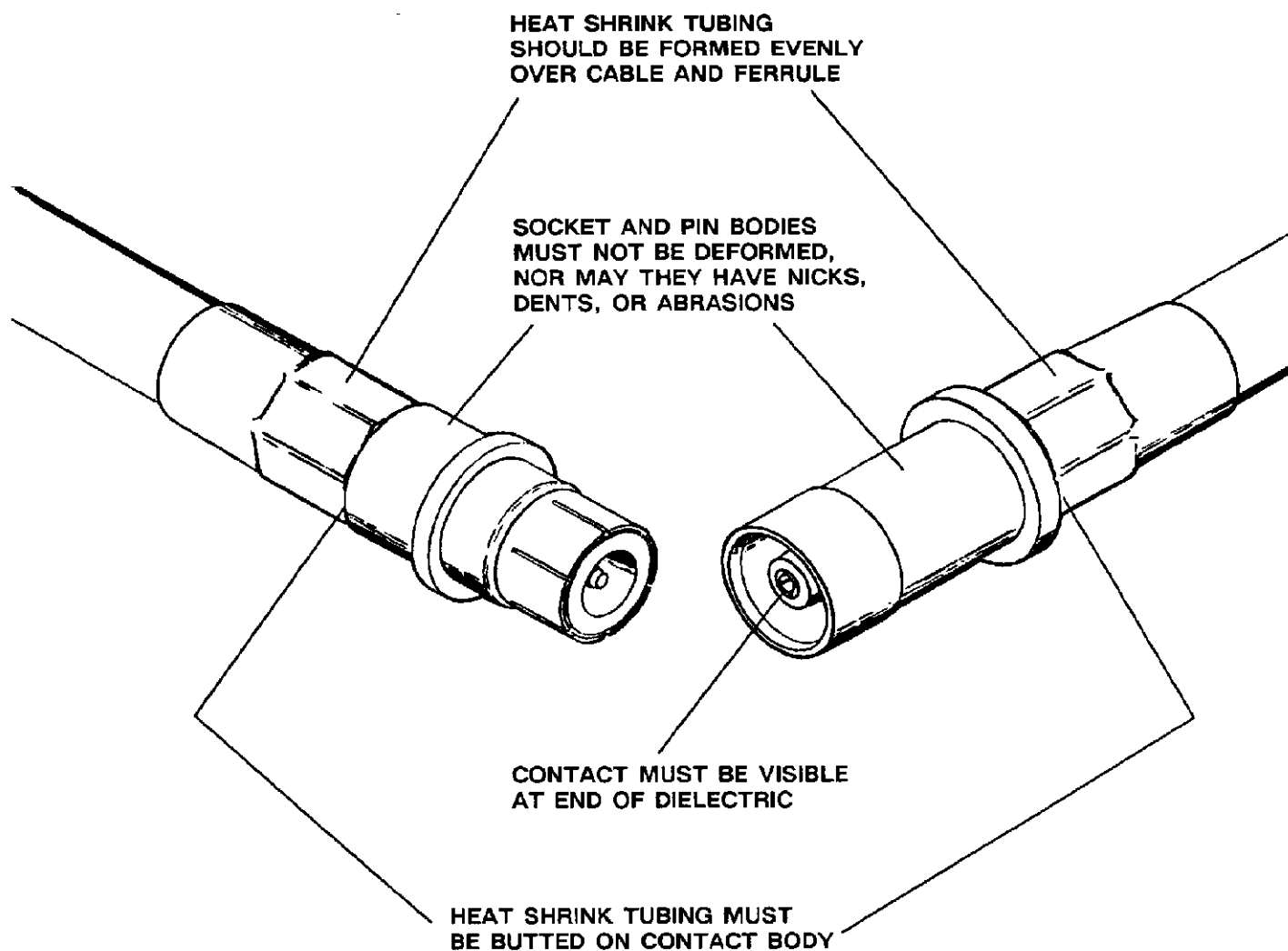


FIG. 9. VISUAL AID