

NOTE



All numerical values are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Unless otherwise specified, dimensions have a tolerance of ± 0.13 [$\pm .005$] and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of Modified Size 1 Coaxial Socket Contacts and Pin Adapters that are designed for ARINC Traffic Alert and Collision Avoidance Systems (TCAS). There are various socket contact kits available to accommodate a wide range of coaxial cable sizes. Pin adapters accept threaded SMA Coaxial Plugs and flexible or semi-rigid cable at one end and Size 1 Coaxial Socket Contacts at the other end.

Each socket contact kit consists of a socket body, center contact, ferrule, and a piece of heat shrink tubing. The socket contacts are designed to be assembled by hand, using military-approved hand crimping tools and dies qualified to M22520. The adapters are pre-assembled and ready for installation into a TCAS Connector.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

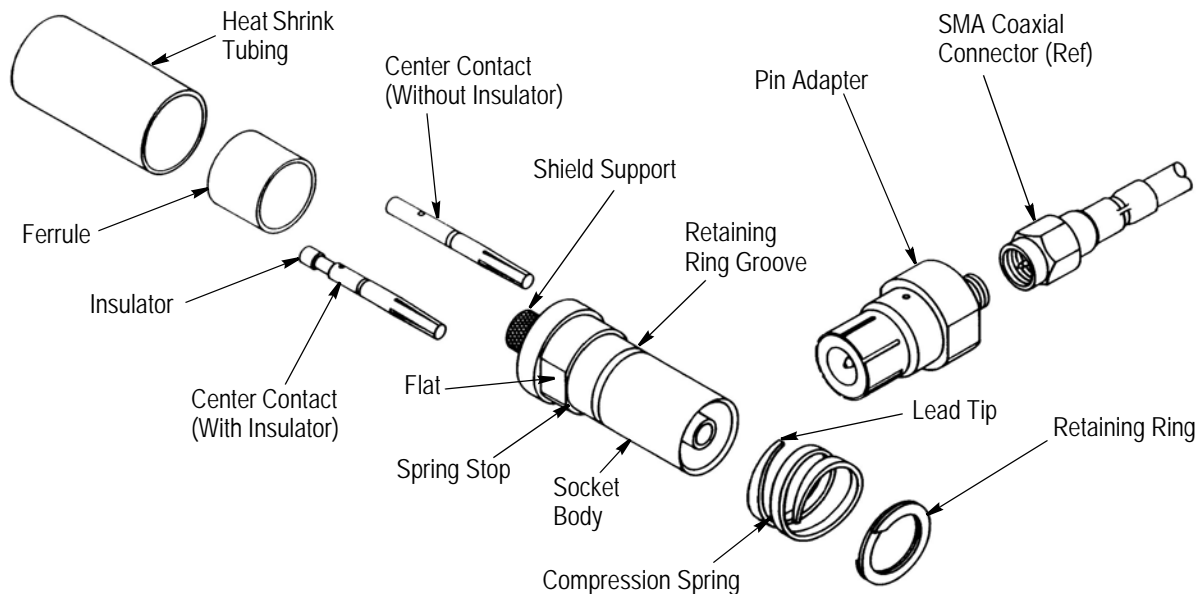


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements
- New logo

2.2. Customer Assistance

Reference Part Number 446748 and Product Code 3313 are representative numbers of Modified Size 1 Socket Contacts and Adapters for TCAS Applications. Use of these numbers will identify the product line and expedite your inquiries through a service network established to help you obtain product and tooling information. Such information can be obtained through a local TE Representative or, after purchase, by calling the TOOLING ASSISTANCE CENTER or the PRODUCT INFORMATION number at the bottom of this page.

†ARINC is a trademark of Aeronautical Radio, Incorporated.

2.3. Drawings

Customer drawings for specific products are available from the responsible TE Engineering Department via the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any other technical documentation supplied by TE.

2.4. Specifications

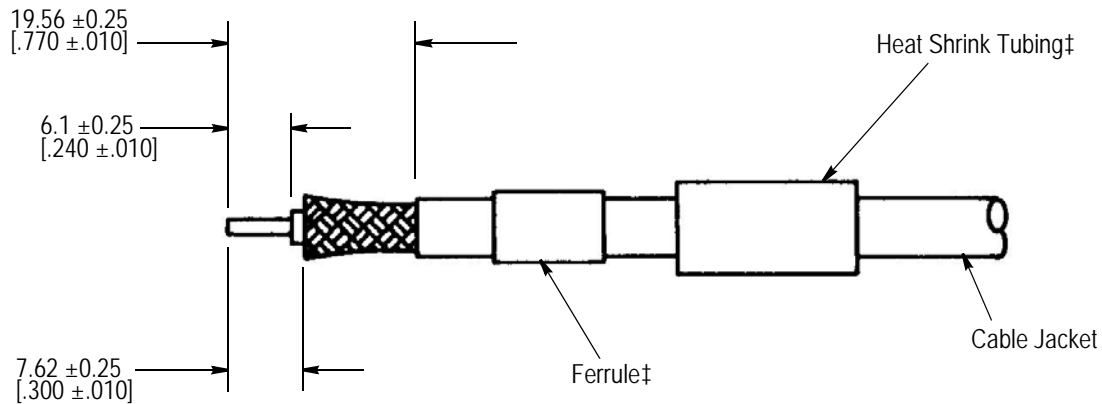
Product Specification 108-1427 provides performance tests for these socket contacts and adapters.

3. REQUIREMENTS

No pre-assembly procedure is required for the adapters. The pre-assembly procedure for the cable socket contacts is covered in the following text.

3.1. Cable Selection and Preparation

Socket contact kits are available for the cable sizes listed in Figure 3. The cable strip dimensions, and the center contact and ferrule crimp dimensions are provided in Figure 2.



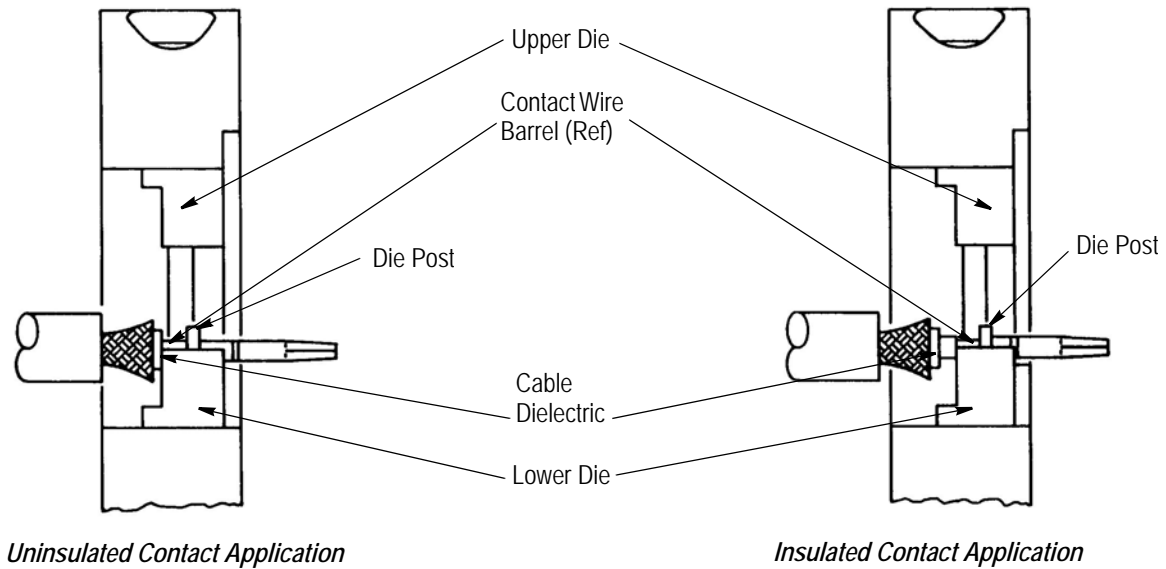
†Slide component over cable jacket BEFORE stripping cable.

CABLE DESIGNATION	CRIMP DIMENSION	
	CONTACT	FERRULE
RG214/U	2.54 [.100]	10.90 [.429]
RG142/U	1.73 [.068]	5.41 [.213]
RG393/U	2.54 [.100]	10.90 [.429]
AA-5886 TIMES	3.00 [.118]	10.90 [.429]
AA-5887 TIMES	2.54 [.100]	8.23 [.324]
311201 ECS	2.54 [.100]	8.23 [.324]

Figure 2

3.2. Special Handling and Assembly Procedure

1. Obtain a socket contact kit specified for your cable size.
2. Slide shrink tubing and ferrule over the cable end as shown in Figure 2.
3. Strip the outer jacket and center conductor to the length provided in Figure 2. Use care to avoid cutting, nicking, or scraping of the center conductor or shield strands.
4. Flare shield to fit evenly over the crimp end of the socket body. See Figure 2.
5. Insert the center conductor into the contact until the dielectric butts against the contact wire barrel.



CABLE DESIGNATION	M22520 TOOLING	
	DIE ASSEMBLY	HAND TOOL
RG214/U	5-25	5-01 TE Part Number 608650-1)
RG142/U	5-11	
RG393/U	5-25	
AA-5886 TIMES	5-04 & 5-25	
AA-5887 TIMES	5-29	
311201 ECS	5-29	

Figure 3

6. Obtain the hand tool and die assembly specified 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 the head of the tool. See Figure 3.
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, and the dielectric of the cable should be butted against the contact wire barrel.
9. Holding the cable and contact in place, close the tool handles until they bottom, and the ratchet disengages.



The crimp will appear at one of three locations - depending on the type of cable selection and the die assembly used (see table in Figure 3).

10. Check the crimped center contact to be sure the crimp is properly located.
11. Using care to prevent deformation of the shield, insert the crimped center contact into the contact body until bottomed. Pull back lightly on the cable to be sure the center contact is locked in place.
12. Make sure the shield is evenly positioned around the support, then slide the ferrule over the shield until bottomed on the contact body.

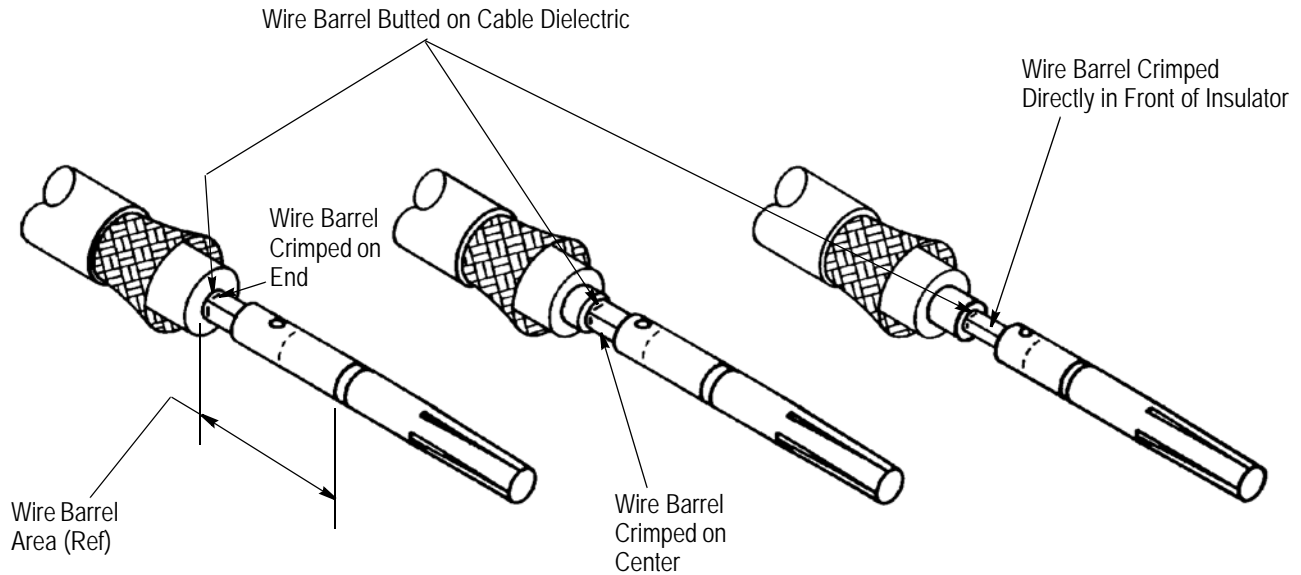


Figure 4

13. With the tool handles fully opened, position the ferrule in the lower die and close the tool handles until the ratchet disengages. Allow the tool handles to open fully and remove the crimped contact.

14. Slide the heat shrink tubing over the ferrule until it butts against the contact body. Using a hot air heat gun or other safe heat source, apply heat to the tubing until it is formed evenly around the ferrule and cable jacket. See Figure 5.

15. Place the compression spring over the front of contact body with the lead tip oriented $90^\circ (\pm 20^\circ)$ to the flat on the contact body. Hold the spring in position and slide the retaining ring over the contact body until it seats in the retaining ring groove.

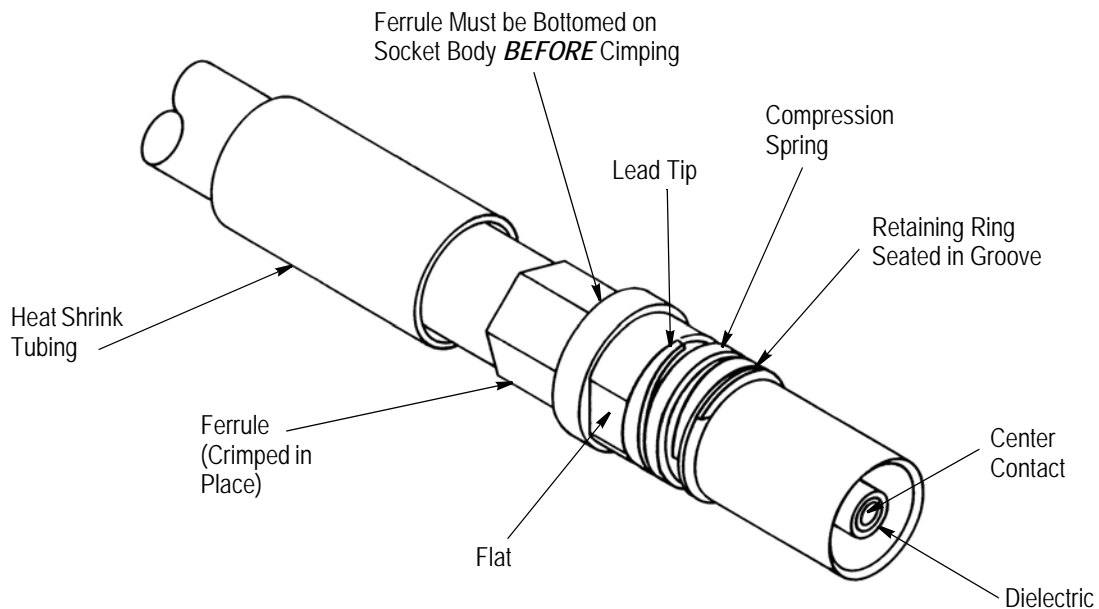


Figure 5

3.3. Installing Adapters and Socket Contacts in TCAS Housings (See Figure 6)

A. Pin Adapters

Remove the adapter retaining plate, insert adapters (pin first) into cavities, and replace retaining plate and secure screws.

B. Crimping Socket Contact

Remove the retaining plate, place contact flats between the guides, and holding the components in place, guide them into the housing until seated. Replace and secure the retaining plate screws.

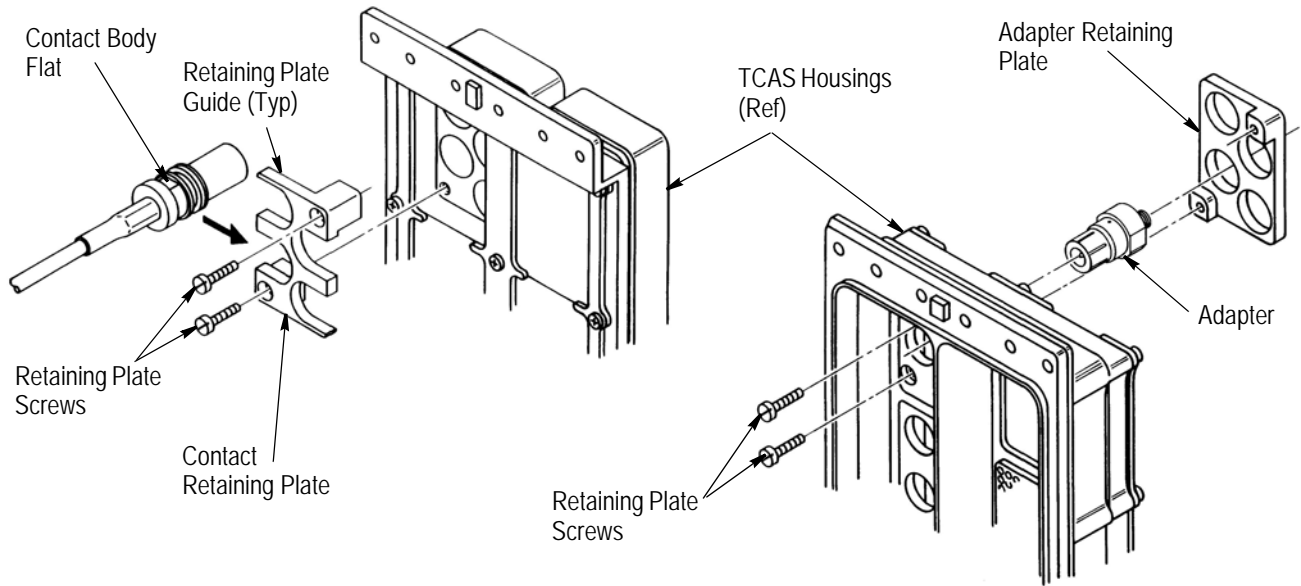


Figure 6

4. QUALIFICATION

Modified Size 1 Coaxial Socket Contacts and Adapters are Qualified to the ARINC Specification 600 and Product Specification 108-1295.

5. TOOLING

The tooling recommended for crimping the Modified Size 1 Coaxial Contacts is the Military Qualified M22520 standard hand tool (608650-1) and die assemblies. Determine your cable designation, then refer to Figure 3 and select the appropriate tool and die assembly.

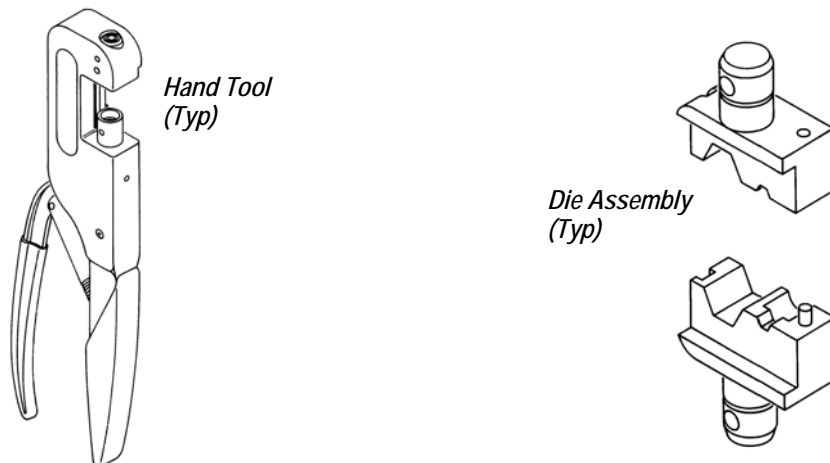


Figure 7

6. VISUAL AID

The illustration below shows a typical application of this product. This illustration should be used by production personnel to ensure a correctly applied product. Applications which DO NOT appear correct should be inspected using the information in the preceding pages of this specification and in the instructional material shipped with the product or tooling.

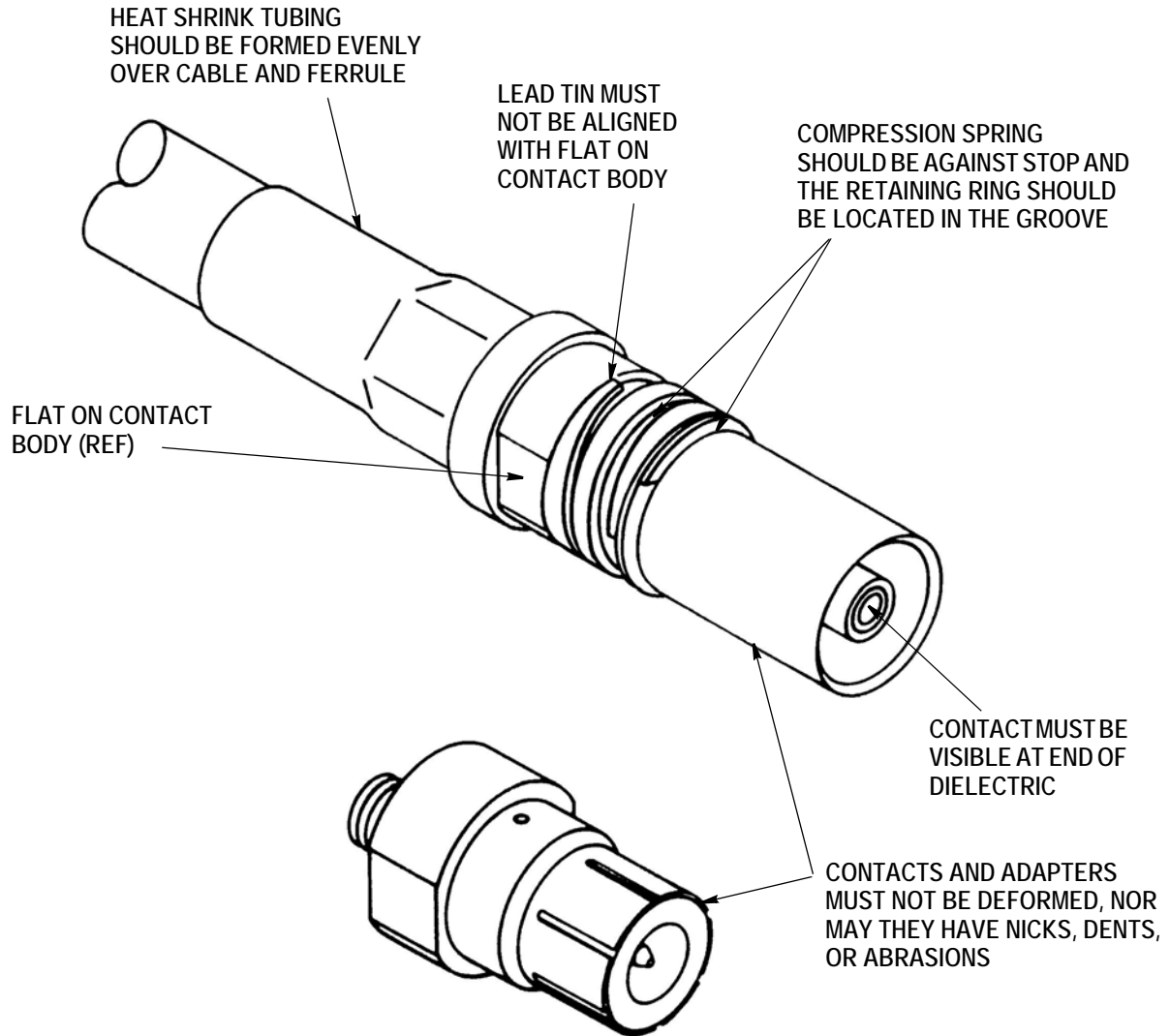


FIGURE 8. VISUAL AID