



AEROSPACE INFORMATION REPORT

AIR1329™**REV. C**

Issued 1975-01
Revised 2014-08
Reaffirmed 2025-09

Superseding AIR1329B

(R) Electrical Connectors and Wiring,
Compatibility of

RATIONALE

Revision is required to improve drawing quality, to update connector specification references, to remove crimp tool part numbers, to add AS95234 and AS29600 sealing information, to add additional wire detail sheets referenced in AS50881, and to update document format with current SAE guidelines.

AIR1329C has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Aerospace Information Report (AIR) defines the areas where incompatibility may exist between the selected wire and the electrical connector in which it is terminated and how to design for compatibility. Refer to ARP914 for a glossary of connection terms.

1.1 Purpose

This AIR documents the need for a system compatibility analysis between the wire, its termination within the electrical connector, and the associated contact insertion/extraction tool.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

ARP914 Glossary of Electrical Connection Terms

AS50881 Wiring Aerospace Vehicle

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3. GENERAL

Connectors covered by the Military Specifications listed in Table 1 incorporate crimp rear release contacts and an integral wire sealing grommet.

The inserts of these connectors are usually made up of two basic materials (see Figure 1):

- a. a hard dielectric section which incorporates the contact retaining mechanism in each contact cavity and
- b. a rear grommet with wire sealing rings in each contact cavity.

Contact insertion and removal methods are common for the connectors listed in Table 1 and employ a tool to release the contact retaining device as shown in Figure 1. Most tools are made of a plastic material, inexpensive but fragile especially for the small size contacts. Caution must be exercised when using these tools to avoid broken tool chips which could remain in the connector. Correct tool alignment and the avoidance of excessive force will extend tool life as well as protecting the connector from damage to the rear grommet or retaining clip.

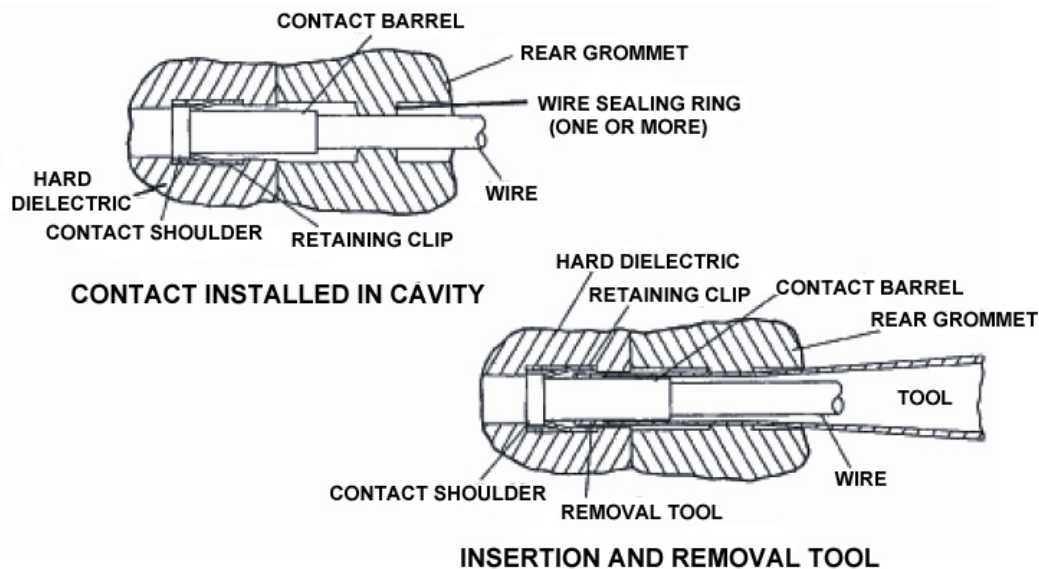


FIGURE 1 - TYPICAL CROSS SECTION OF CONNECTOR CONTACT CAVITY

3.1 Variations in Connector Types

The following defines the areas where variations may exist between one connector specification and another:

- a. Contact cavity diameter* hard dielectric: This diameter is slightly larger for a given contact than the shoulder of that contact.

*rear of cavity

- b. Wire seal cavity - sealing area: The sealing cavity accommodates a given contact size, and range of finished wire diameters.
- b. Contact geometry - barrel - shoulder diameters: The barrel plus the thickness of the tool must be compatible with the shoulder diameter of that contact.
- d. Insertion/extraction tool - thickness: The O.D. of the wire plus tool thickness must be compatible with the rear I.D. of the contact cavity.