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 mm [±.005 in.] and angles have a tolerance of ±2°. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of In Line Quadrax/Twinax Connectors. These connectors consist of free-hanging plugs and panel-mount receptacles. Both three- and six-position connectors are available. An interfacial seal and wire seals attain sealing to meet 50,000 ft. altitude immersion requirements. Seal retainers (sold separately) are snapped onto the connectors to prevent seal backout. One hundred twenty degree, spring loaded, quick release hardware provides the means for mating and unmating the connectors. Dust covers are available to protect the interface when unmated. Keying plugs provide nine keying options.

These connectors are designed to accept Quadrax contacts referenced in Application Specification 114-13123 and 114-13163; Concentric Twinax Contacts referenced in Application Specification 114-12010; and Non-Concentric Twinax Contacts referenced in Application Specification 114-13188.

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.

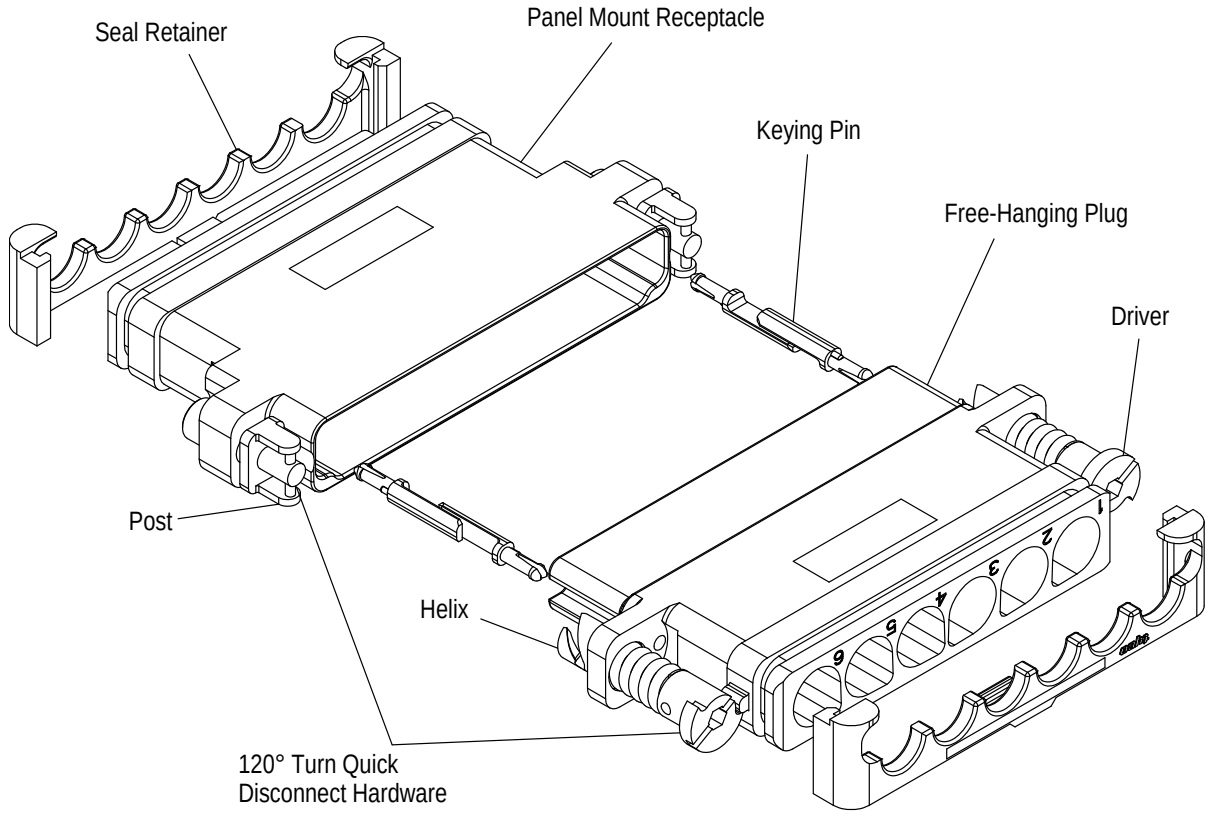


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification include:

- Updated document to corporate requirements and removed previous logos from art in Figure 9

2.2. Customer Assistance

Reference Product Base Part Number 1877900, Product Code L135, and Product Line Code 257-ARINC are representative of Quadrax Rectangular Connectors and Contacts. Use of these numbers will identify the product line and help you to obtain product and tooling information. Such information can be obtained through a local TE Representative, by visiting our website at www.te.com, or by calling PRODUCT INFORMATION or the TOOLING ASSISTANCE CENTER at the numbers at the bottom of page 1.

2.3. Drawings

Customer drawings for specific 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 other technical documentation supplied by TE. Contact the Product Information Center number at the bottom of page 1 if such a conflict is encountered.

2.4. Specifications

The following specifications provide application information, product performance and test information, solderability requirements and evaluation methods for the In Line Quadrax/Twinax Connectors:

Document Number	Document Title
108-2131	Quadrax Cable and PC Board Connectors
114-12010	ARINC* Size 8 Triaxial Connector
114-13123	Quadrax Rectangular Connectors and Quadrax Contacts
114-13163	Quadrax Circular Connectors and Quadrax Contacts
114-13188	Non-Concentric Pin and Socket Assemblies
501-574	Quadrax Cable and PC Board Connectors
502-1182	Quadrax Rectangular Connector
BPS-C-193	Boeing Part Specification

3. REQUIREMENTS

3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

3.2. Limitations

The connectors are designed to operate within a temperature range of -65° to 125°C [-85° to 257°F].

NOTE
Temperature rating of the cable must be considered when determining operating temperature of the connector and cable assembly.

3.3. Storage

A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition of components used in the contacts or connectors.

B. Shelf Life

The contacts and connector kits should remain in the shipping containers until ready for use to prevent damage. These products should be used on a first in, first out basis to avoid storage contamination.

C. Chemical Exposure

Do not store contacts or connector kits near any chemicals listed below, as they may cause stress corrosion cracking in the components.

Alkalies	Ammonia	Citrates	Phosphates Citrates	Sulfur Compounds
Amines	Carbonates	Nitrites	Sulfur Nitrites	Tartrates

3.4. Installation and Removal of Keying Pins

A. Installation

1. Install the keying pin by inserting the split tail into the housing from the mating side.

2. Orient the key to the proper location and align the location boss on the keying pin with the appropriate slot in the housing. Refer to the suggested keying codes provided in Figure 2.

3. Insert the key until the split tail opens to lock the keying pin into the housing.

Suggested Keying Codes

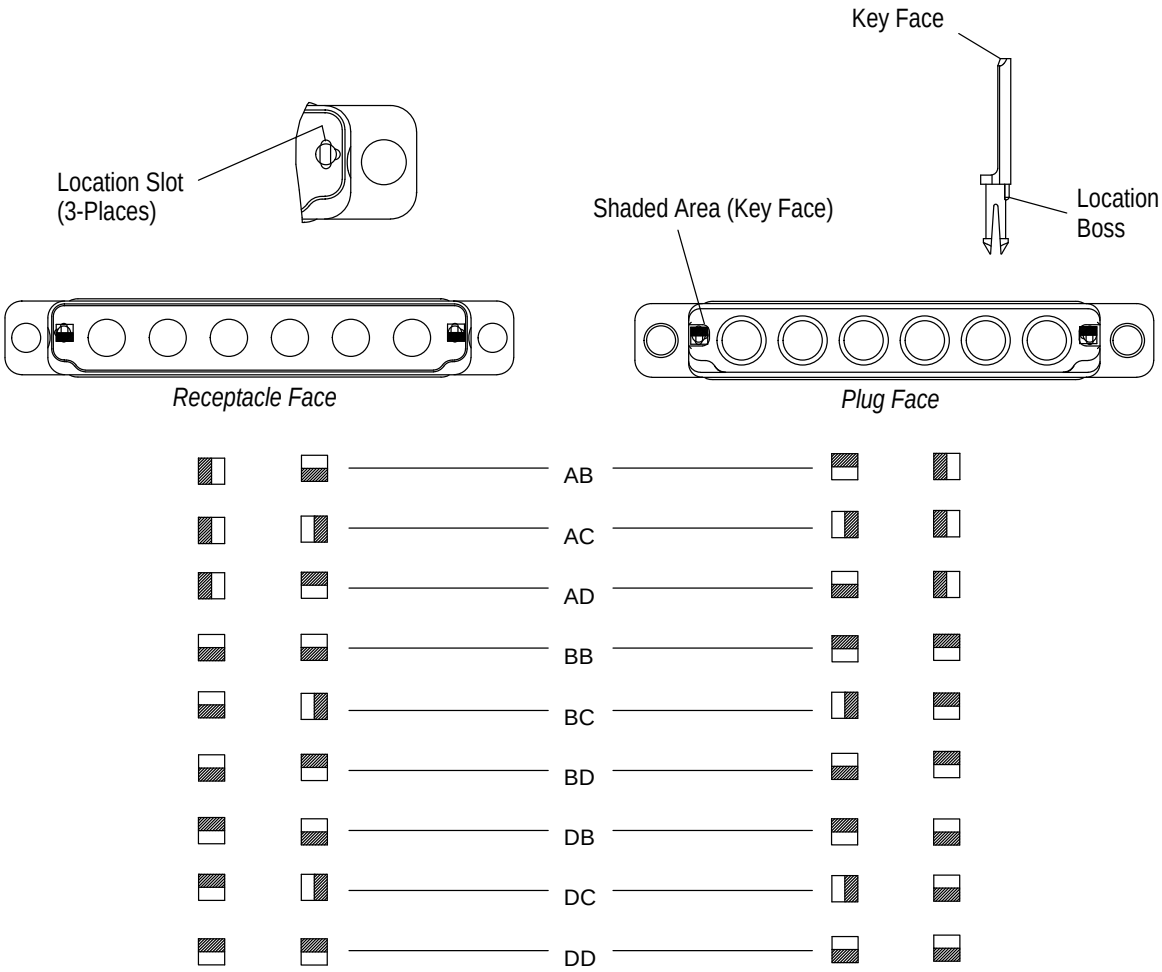


Figure 2

B. Removal

1. Remove the keying pin by compressing the split tail with fine tip tweezers and pushing the keying pin toward the mating face until the retention shoulder is inside the housing.

2. Remove the keying pin the rest of the way by hand.

3.5. Installation of Contacts Into Plug and Receptacle Connector Assemblies

The following paragraphs provide information on assembly procedures for the pin and socket contact assemblies installed in the receptacle and plug connectors.

A. Installation of Pin Contact Assemblies in Receptacle Connectors

1. Line up the positioning key with the internal key (Quadrax and Non-Concentric Twinax Connectors only) on the connector. See Figure 3.

2. Install the pin shell contact in the receptacle assembly until the pin shell snaps in place.

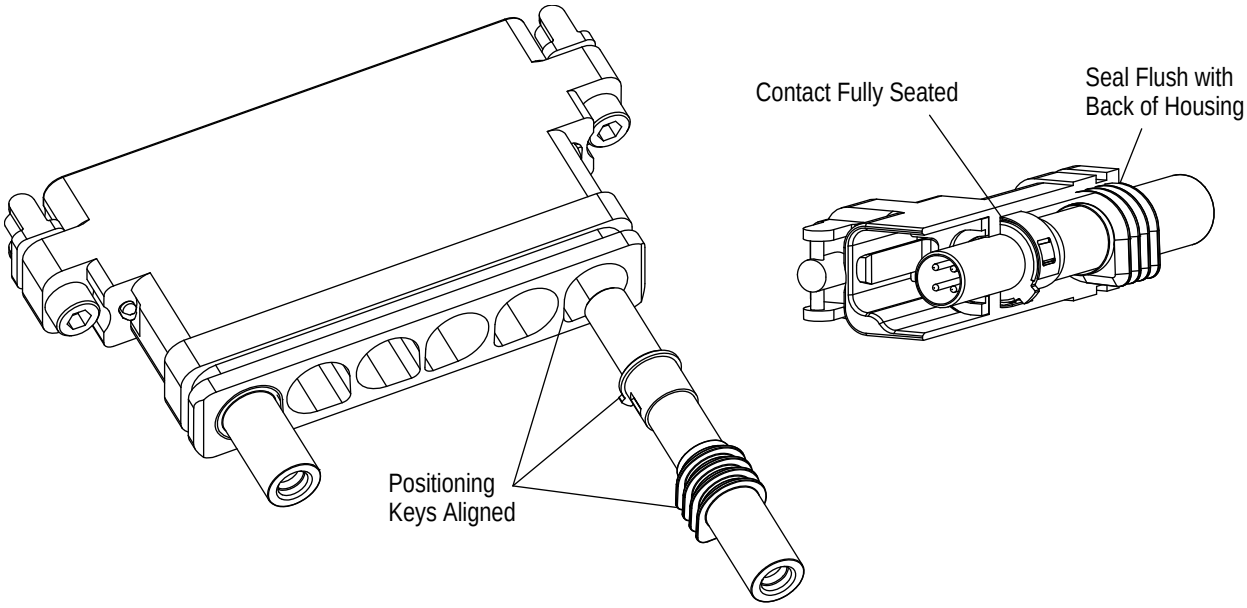


Figure 3

B. Installation of Quadrax Socket Contact Assemblies Into Plug Connectors

1. Line up the positioning key (Quadrax and Non-Concentric Twinax Connectors only) with the internal key on the connector. See Figure 3.

2. Install the socket contact in the plug assembly until the socket shell snaps in place. See Figure 4.

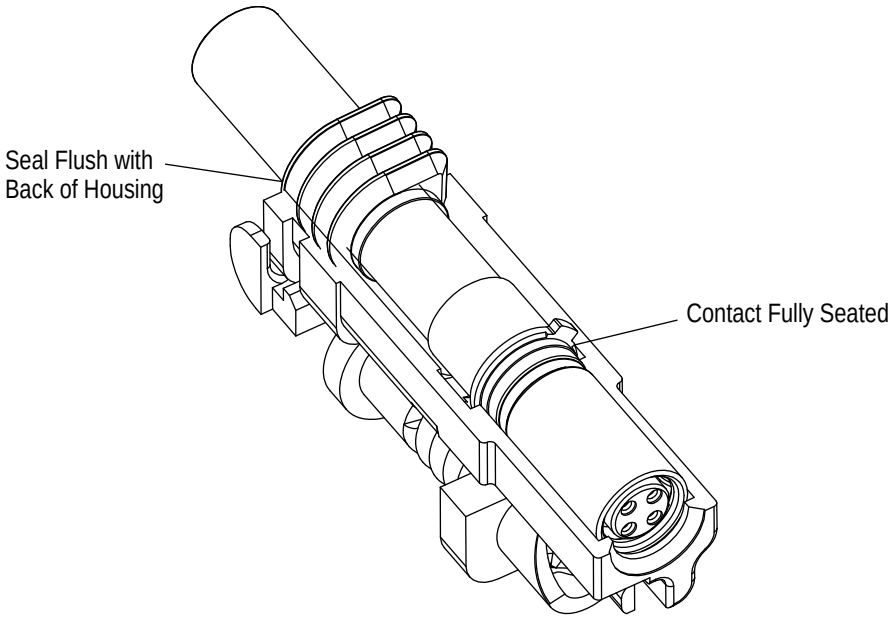


Figure 4

3.6. Installation of Seal Retainers Onto Connector Assemblies

The following paragraphs provide information on assembly procedures for the 3- and 6-position seal retainers.

A. Installation

1. Place the seal retainer down onto the back of the connector shell with the ribs of the retainer between the wire seals as shown in Figure 5A.

2. Snap one end of the seal retainer into the groove of the connector shell, and then the other end.

B. Removal

1. Using a small screwdriver, pry one end of the seal retainer up and out of the groove in the shell as shown in Figure 5B.

2. In the same manner, release the side latch from the groove.

3. Slide the seal retainer toward the remaining latched end and remove.

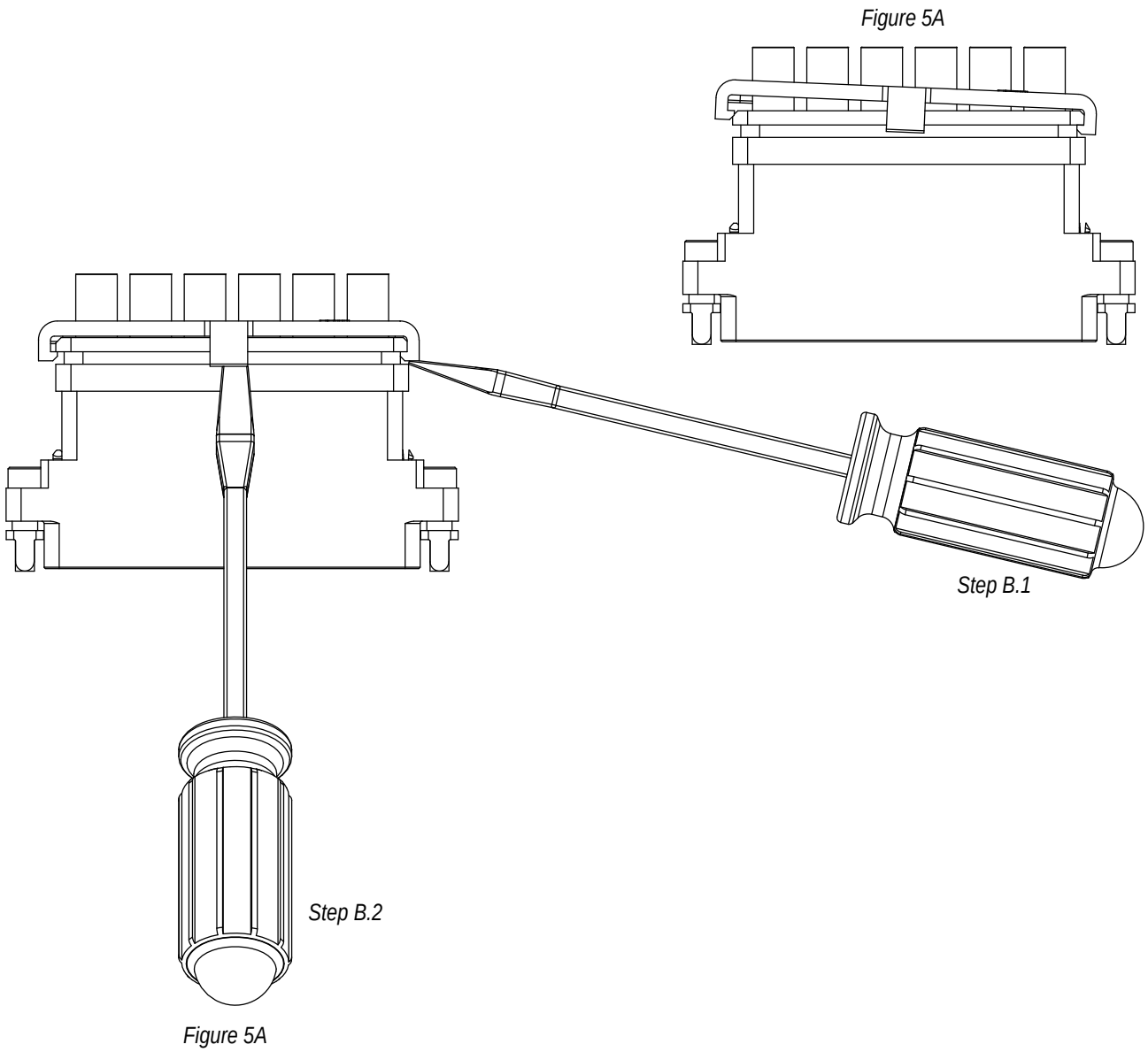


Figure 5

3.7. Removal of Contacts from Plug and Receptacle Connector Assemblies

Use recommended Extraction Tool 1738894-1 for removal of the pin or socket contacts from the plug or receptacle connector assemblies. Refer to Figure 6.

1. Remove seal retainer per paragraph 3.6.B.
2. Slide sealing boot back up the cable and out of the way.
3. Insert extraction tool over wire insulation and bottom the tool in the cavity hole.
4. Pull up while holding the tool and cable. Contact should easily come out.

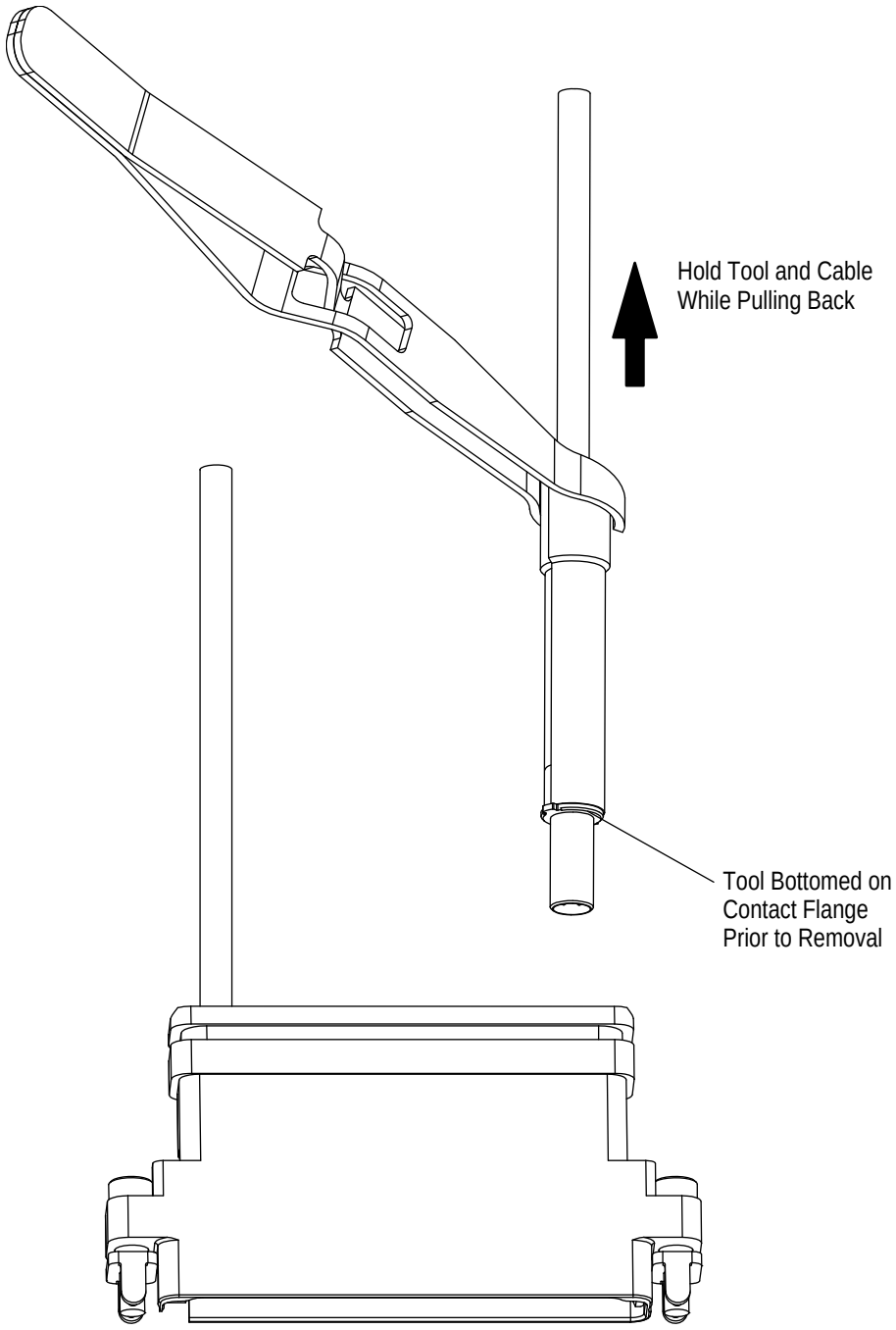
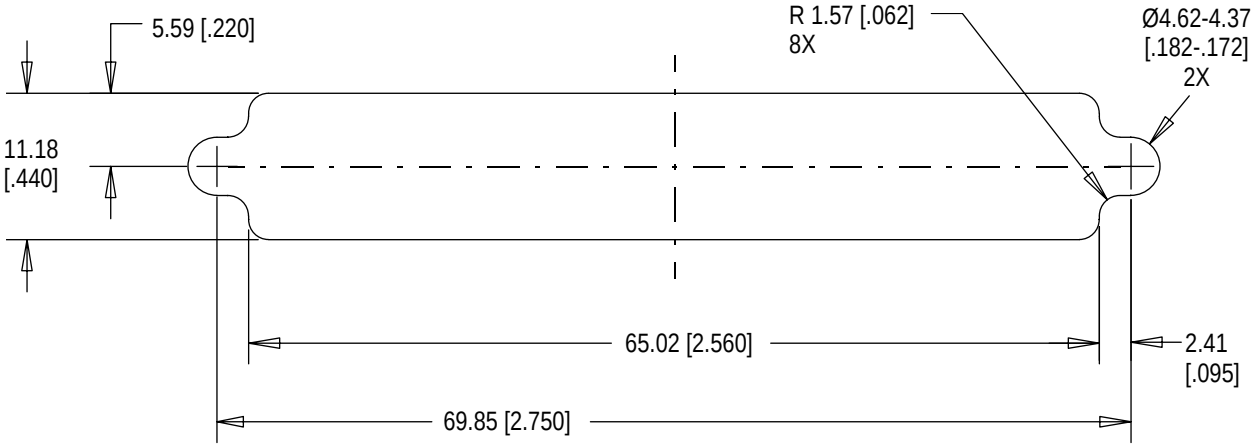


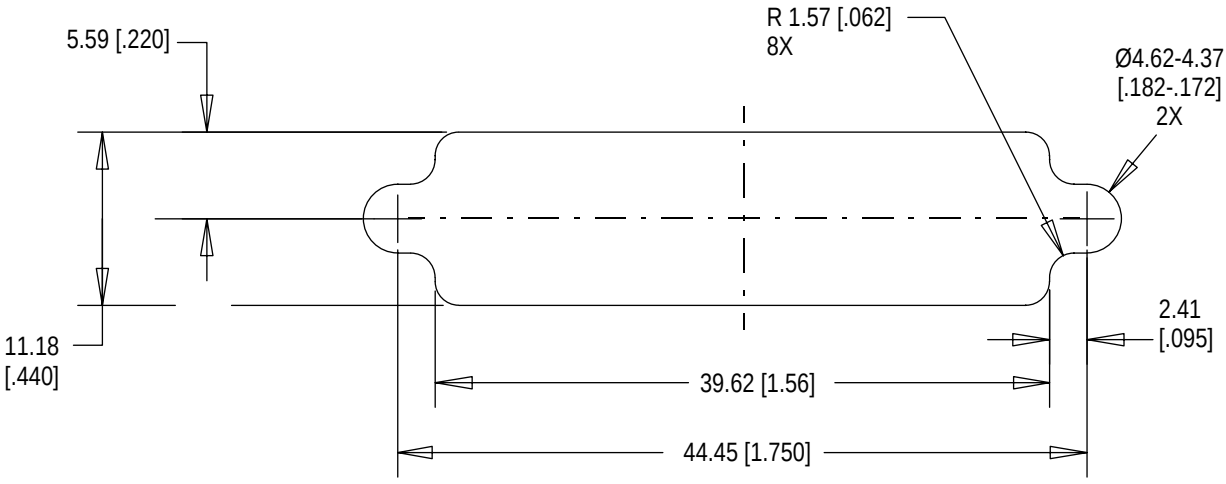
Figure 6

3.8. Panel Cutouts

Panel cutout dimensions for the 3- and 6-position In Line Quadrax/Twinax Connectors are shown in Figure 7. The panel-mount connectors are attached to the panels with the 120° quick turn hardware posts supplied with the connector.



Panel Cutout
(6-Position)



Panel Cutout
(3-Position)

Figure 7

3.9. Mating/Unmating

To properly mate and unmate the two halves of a connector system, the free-hanging plug must be properly keyed with the same polarization code as its' mating receptacle. Refer to Figure 2.

1. To mate the connectors, bring them together by hand until the helix on the plug engages the post of the panel mount receptacle. Refer to Figure 8.

2. Using a 7/64" Allen wrench, turn the jackscrew until the post rests in the detent on the helix. Push the connectors together again until the remaining helix engages the post.

3. Using the 7/64" wrench, turn the second jackscrew until the post rests in the detent.

4. To unmate the connectors, turn the jackscrews counter-clockwise until they are disengaged.

5. Separate the connectors the rest of the way by hand.

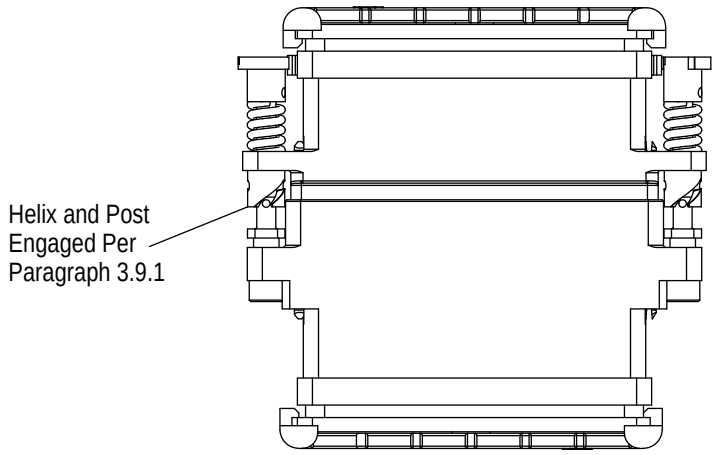


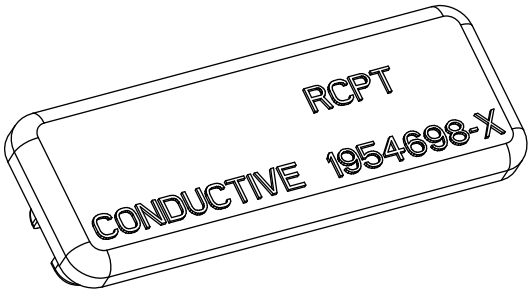
Figure 8

3.10. Ancillary Items

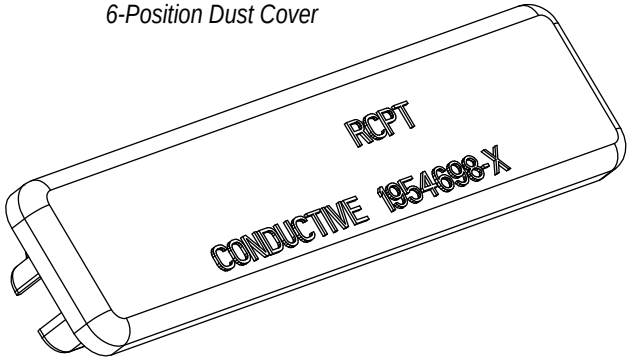
Optional dust covers for the 3- and 6-position In Line Quadrax/Twinax Connectors are available for purchase through your local TE Representative or by calling PRODUCT INFORMATION number at the bottom of page 1. See Figure 9.

NOTE
If a dust cover is supplied with the connector, it can easily be removed by prying it off by hand. It can be placed back on by hand and is used to protect the connector and installed contacts while they are not in use. See Figure 9.

3-Position Dust Cover



6-Position Dust Cover



NOTE: Receptacle Dust Covers Shown, Plug Dust Covers Also Available

Figure 9

3.11. Repair/Replacement

CAUTION
Damaged components must not be used. If a damaged component is evident, it must be removed and replaced with a new one. Terminated contacts and ferrules must not be re-terminated.

4. QUALIFICATIONS

In Line Quadrax/Twinax Connectors are not required to be agency evaluated and approved.

5. TOOLING

In Line Quadrax/Twinax Connectors require no special tooling except for an extraction tool which is used to extract the contacts from the plug and receptacle assemblies. See Figures 6 and 10.

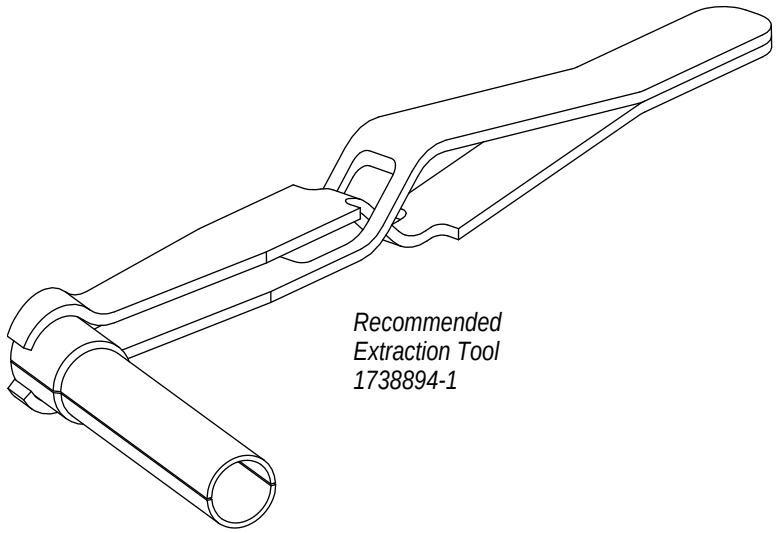


Figure 10

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.

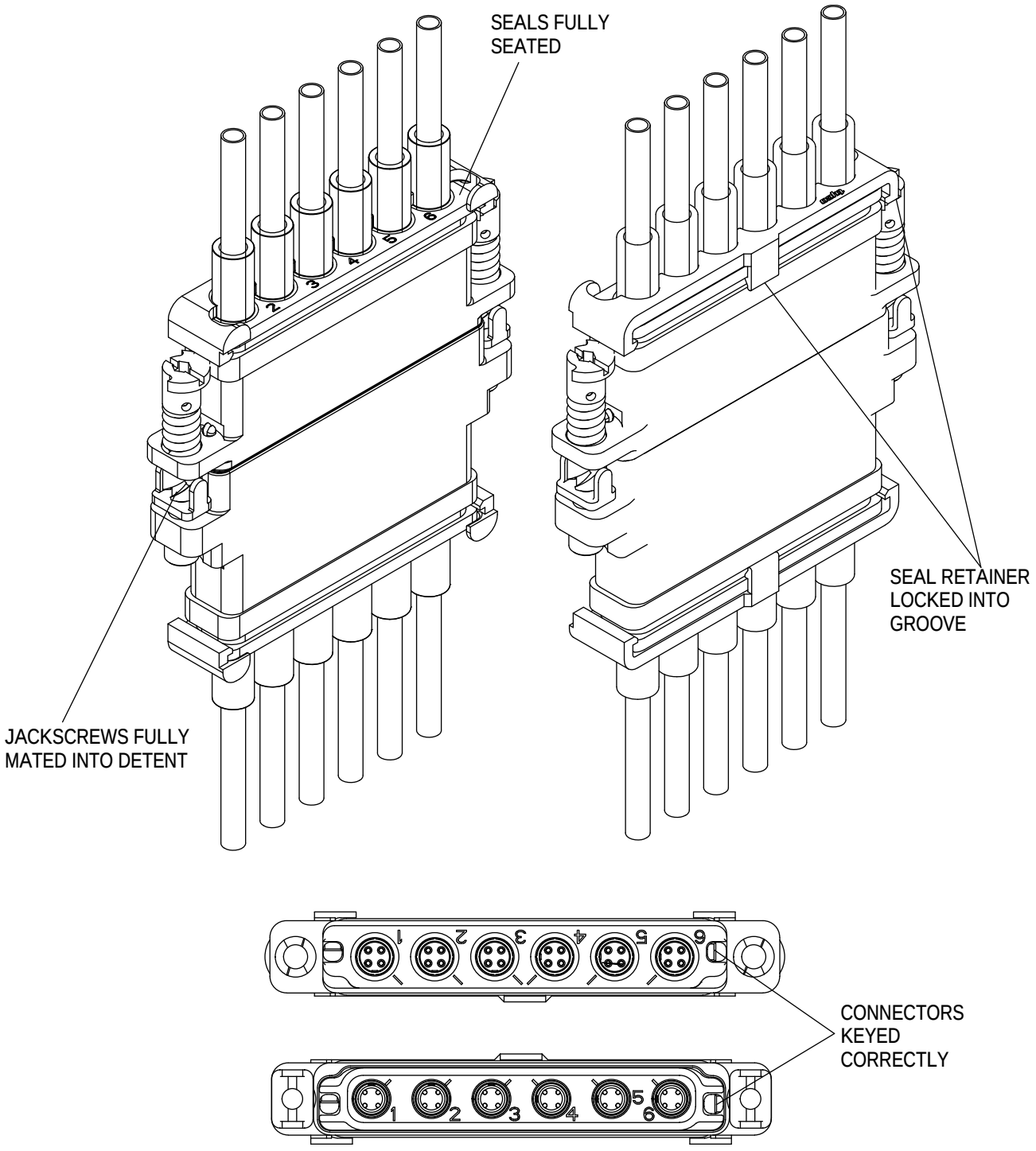


FIGURE 11. VISUAL AID