

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 AMPLIMITE .050 Series Feed-Through Connectors. These connectors offer high-density “D” Type mating interfaces with 1.27 x 2.54 mm [.050 x .100 in.] contact centerline spacing, compatible with standards SCSI (Small Computer System Interface) and EIA RS-232 (Electronic Industries Association). The connectors terminate 0.64 mm [.025 in.] centerline unshielded flat ribbon cable with insulation displacement contacts and are available in 50 and 68 position sizes.

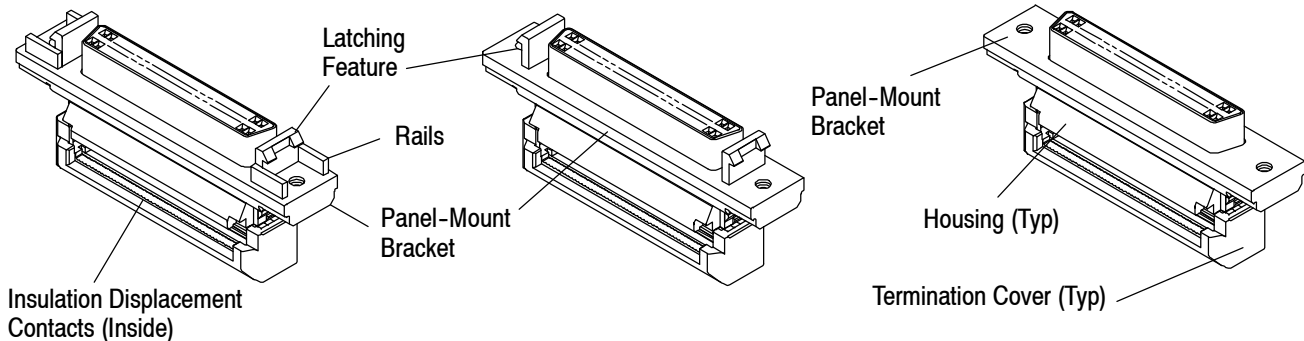
Plug and receptacle connectors are available in free-hanging unshielded all plastic and panel-mount shielded configurations. All are supplied with the termination cover pre-assembled. Panel mount connectors provide an interface from unshielded internal wiring to shielded connectors outside the system.

Refer to Figure 1 for connector features that will be used throughout this specification. Use these terms when corresponding with TE Connectivity Representatives to facilitate assistance.

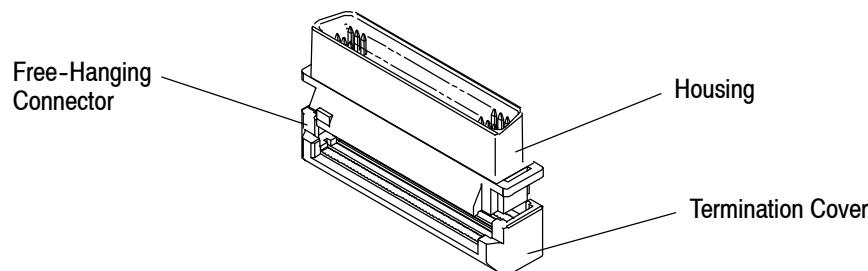
Latching Version (With Rails)

Latching Version (Without Rails)

Screwlock Version



Panel Mount Connectors (Receptacle Illustrated)



Unshielded All-Plastic Free-Hanging Connector (Plug Illustrated)

Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

This paragraph is reserved for a revision summary of changes and additions made to this specification. The following changes were made for this revision:

- Updated document to corporate requirements
- New logo

2.2. Customer Assistance

Reference Part Number 786090 and Product Code 1135 are representative numbers of AMPLIMITE .050 Series Feed-Through Connectors. 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 Product Information number at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from the service network. The information contained in 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 108-1359 covers test and performance requirements.

2.5. Instructional Material

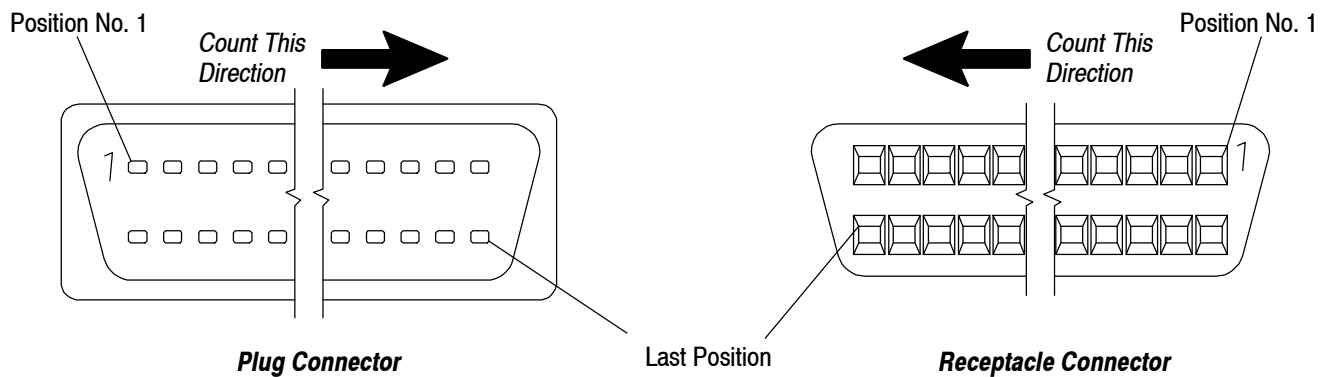
The following list includes available instruction sheets (408-series) that provide assembly procedures for product, operation, maintenance and repair of tooling.

<u>Document Number</u>	<u>Document Title</u>
408-4201	Base Assembly Universal Arbor Tool 768338-4
408-4233	Connector-Specific Kit 679235-2 for AMPLIMITE .050 Series Connectors
408-6732	Pneumatic Auto-Cycle Unit 91112-3
408-7777	Manual Arbor Frame Assembly 91085-2

3. REQUIREMENTS

3.1. Contact Position Identification

Mating connectors are a mirror image of each other and must be wired accordingly. The number 1 position is marked on the mating face on the top-left of the plug connector and on the top-right of the receptacle connector. Consecutive numbering continues on the top row of contacts and wraps around to the bottom row of contacts. See Figure 2.



NOTE: The connector views are the mating faces of the connectors.

Figure 2

3.2. Strain Relief

The termination cover will provide strain relief for the terminated contacts. No other strain relief is required; however, allow sufficient slack to avoid stress on connectors and cable when the cable assembly is connected in a system.

3.3. Attaching Hardware

Connectors with mounting brackets have threaded mounting holes. Those with a latching feature have 2–56 threaded holes for commercially available machine screw application and those without latches have 4–40 threaded holes for screwlock applications.

3.4. Connector Polarization

The keystone configuration of the mating faces provides polarization. See Figure 3.

3.5. Cable

The connectors are designed for unshielded flat ribbon cable with solid or 7-strand 30 AWG conductors on 0.64 mm [.025 in.] centers. Cable dimensions and conductor to contact position are provided in Figure 3.



All cable to be used with these connectors must be approved by TE Engineering. See bottom of page 1 for telephone numbers.

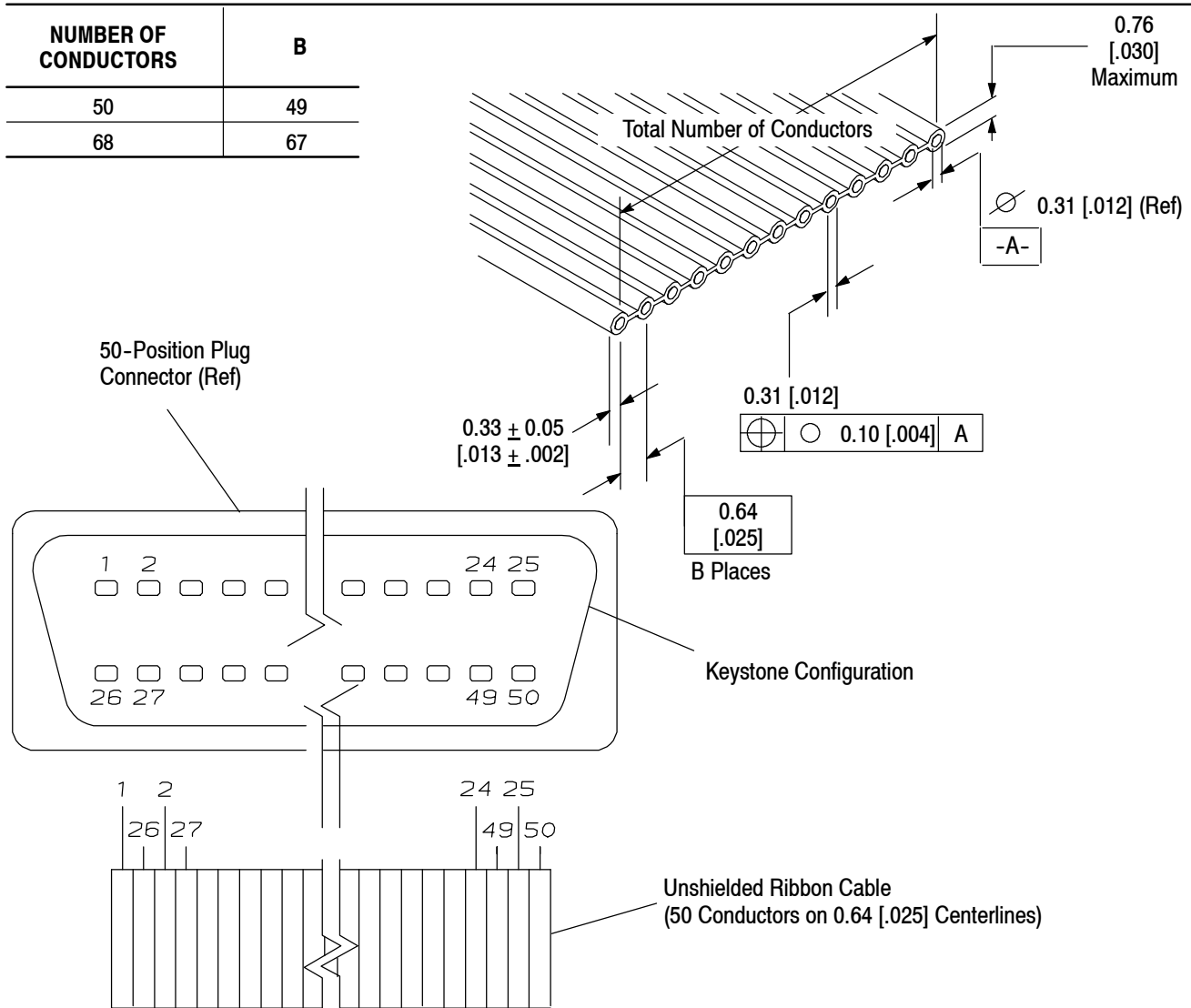
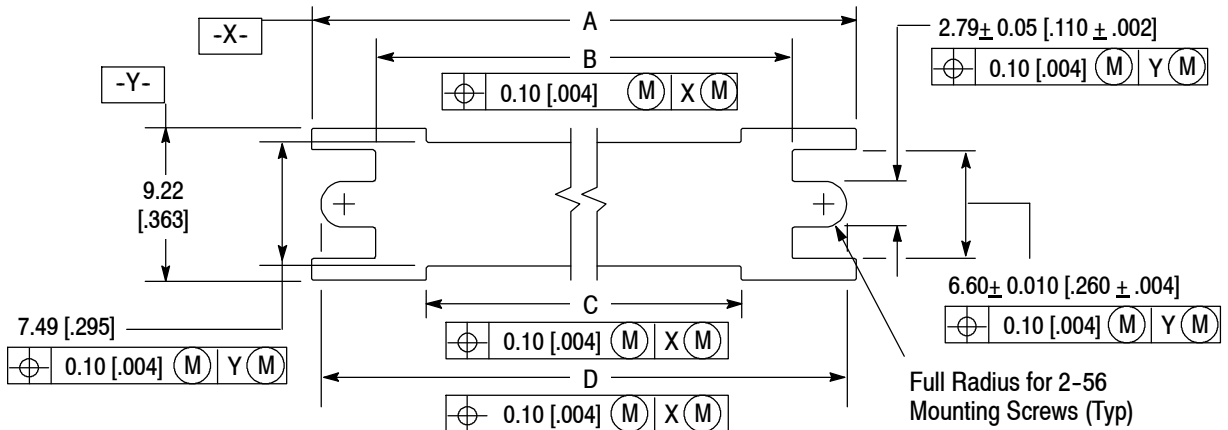


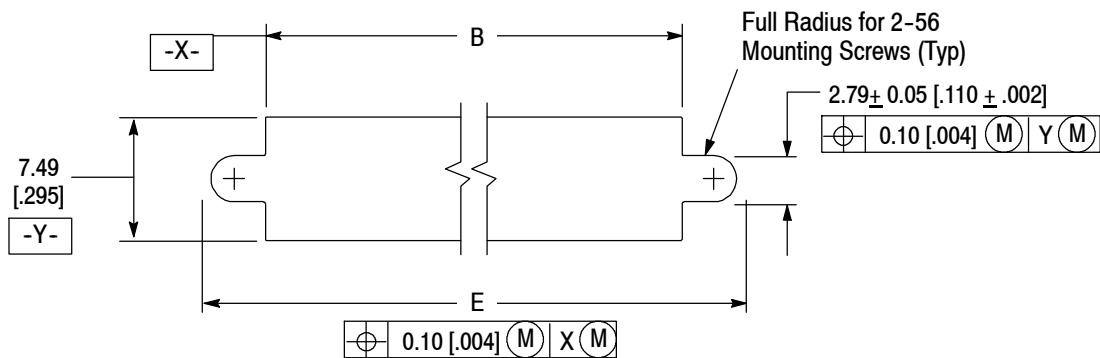
Figure 3

3.6. Panel Cutout

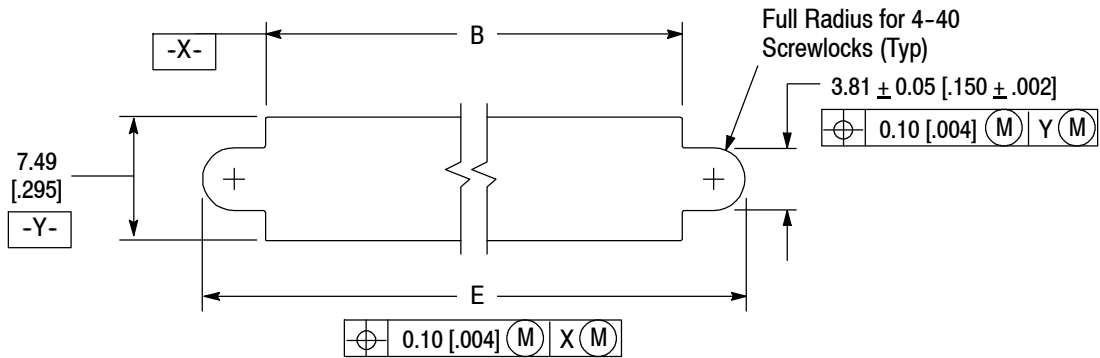
If connectors are to be mounted, they are to be rear mounted. The cutout location and cable routing must be determined before the cable assembly is made. The cutout dimensions for the three connector mounting flange designs are provided in Figure 4.



Cutout for Connectors with Latching Features and Rails



Cutout for Connectors with Latching Features



Cutout for Connectors with Screwlocks

CONNECTOR SIZE	DIMENSION				
	A	B	C	D	E
50	50.55 [1.990]	42.80 [1.685]	36.42 [1.434]	49.28 [1.940]	50.29 [1.980]
68	61.98 [2.440]	54.23 [2.135]	47.85 [1.884]	60.71 [2.390]	61.72 [2.430]

Figure 4

3.7. Inspecting Terminated Connector

External and internal inspections can be made on terminated connectors. All connectors can be inspected externally; however, a connector used for the internal inspection must be discarded after the inspection is complete.

A. External

1. Edge Alignment

Connectors must be perpendicular to edge of cable within the degree of tolerance specified in Figure 5.

2. End Alignment

When making an end-of-line termination, the cable end must be within the requirements specified in Figure 5.

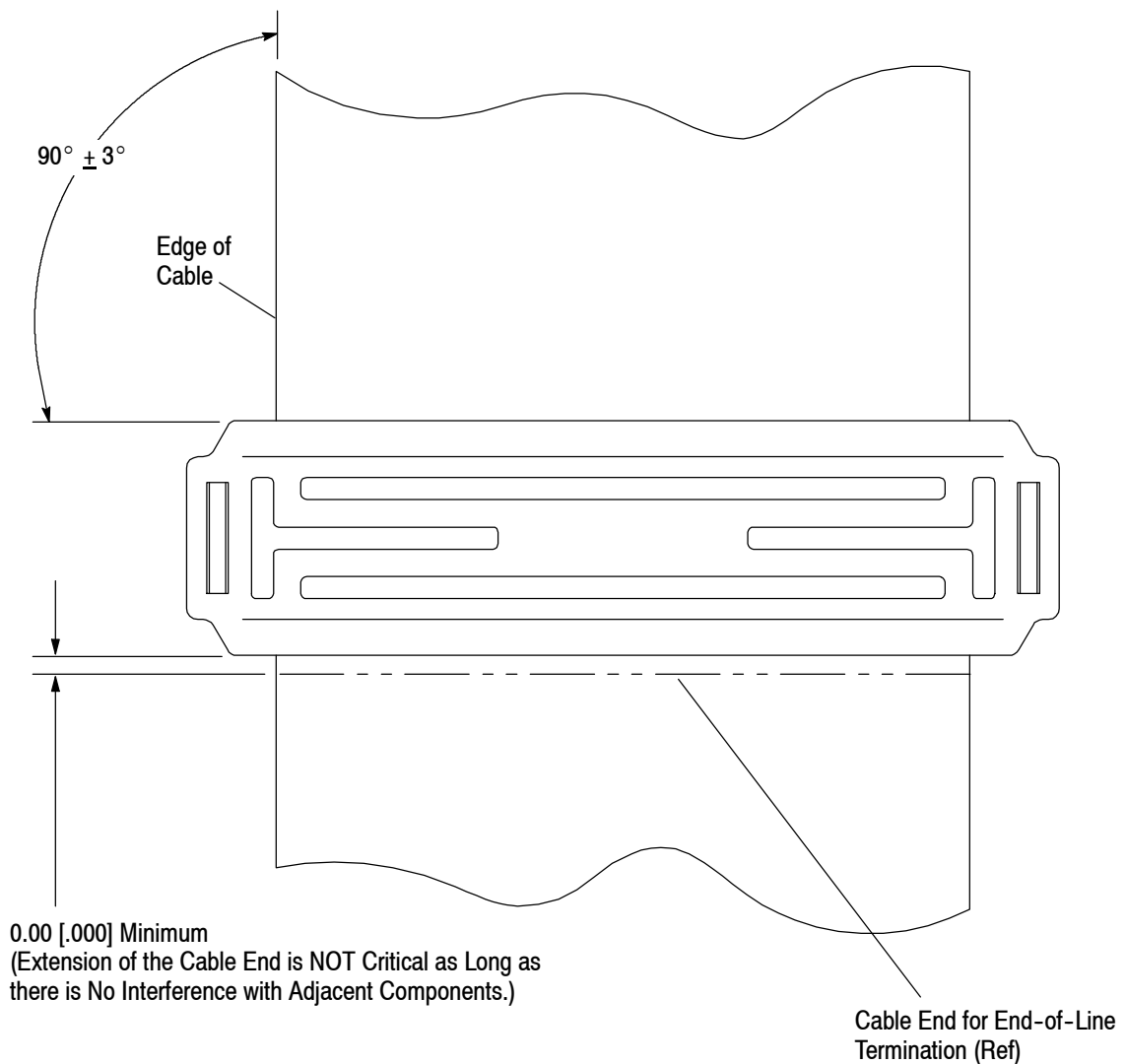


Figure 5

3. Cover Closure Dimensions

A terminated cover must be seated within dimensional width and height requirements. The width must be measured over the locking features and the height must be measured at the ends of the terminated connector. See Figure 6.

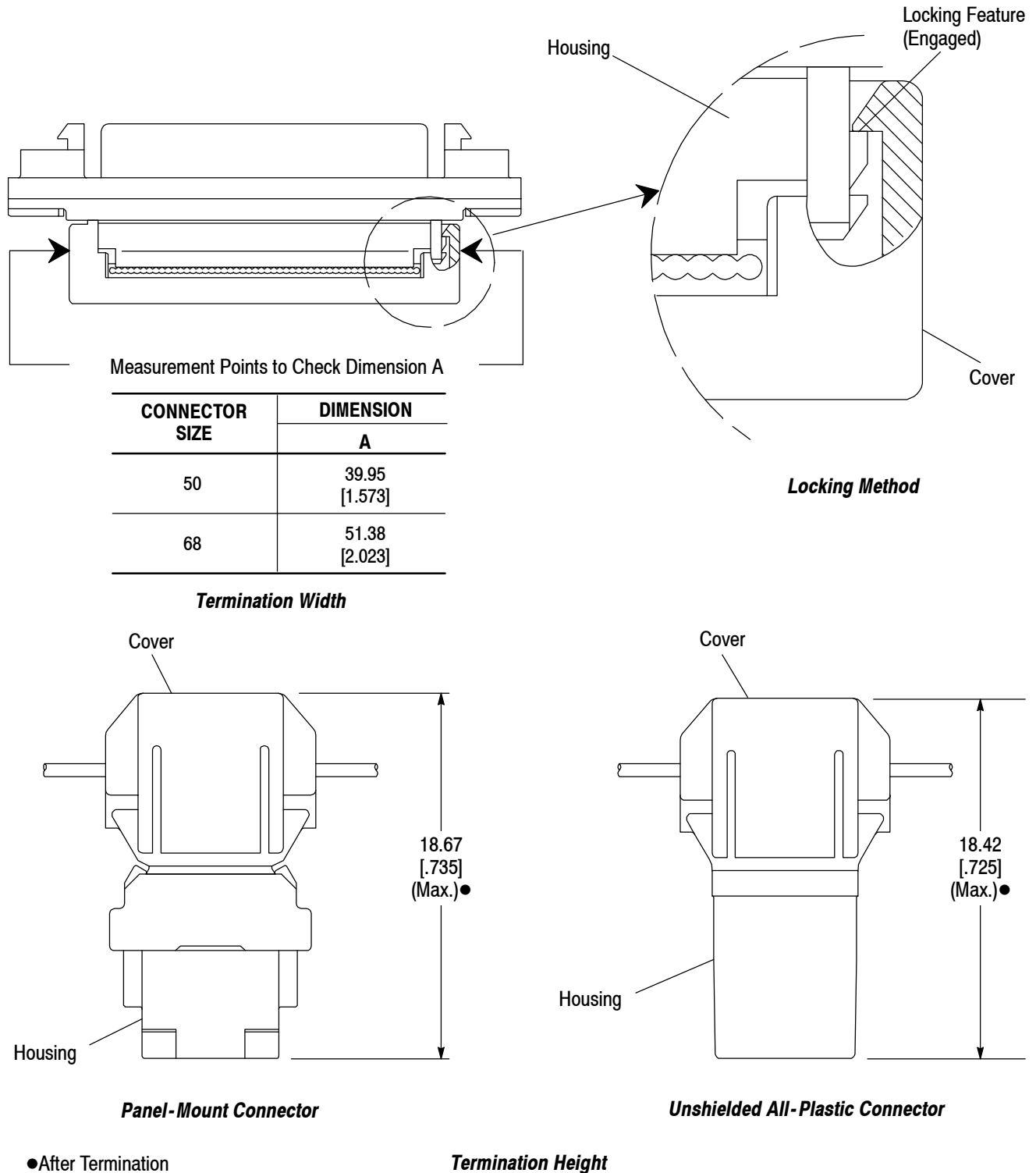


Figure 6

B. Internal

NOTE

Use a sample connector and discard it after inspection is complete.



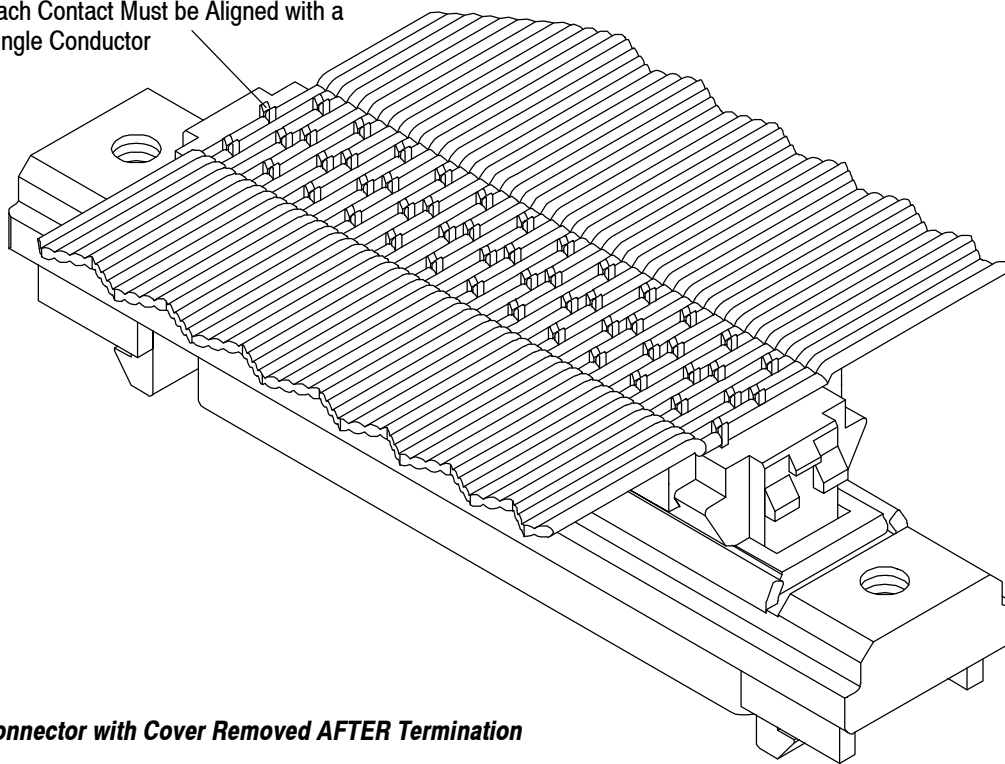
1. Cover Removal

Terminate the connector in accordance with the dimension provided in Figure 5; then, using a small screwdriver, carefully disengage the locking features at both ends of the connector. Remove the cover and inspect the termination.

2. Contact-To-Conductor Alignment

Each conductor must be terminated and aligned with its respective contact, and all contacts must penetrate the cable. See Figure 7.

Each Contact Must be Aligned with a Single Conductor



Sample Connector with Cover Removed AFTER Termination

Figure 7

NOTE

If the connector passes all aspects of this inspection, the tooling is properly set up and the method of terminating is correct. **DISCARD** any connectors used for internal inspection.



3.8. Proper Termination

A proper termination has the connector insulation displacement contact and conductor positioned as shown in Figure 8.

NOTE

A sample with a view of this type can only be prepared under closely controlled conditions. Contact TE Engineering by calling one of the numbers at the bottom of page 1.



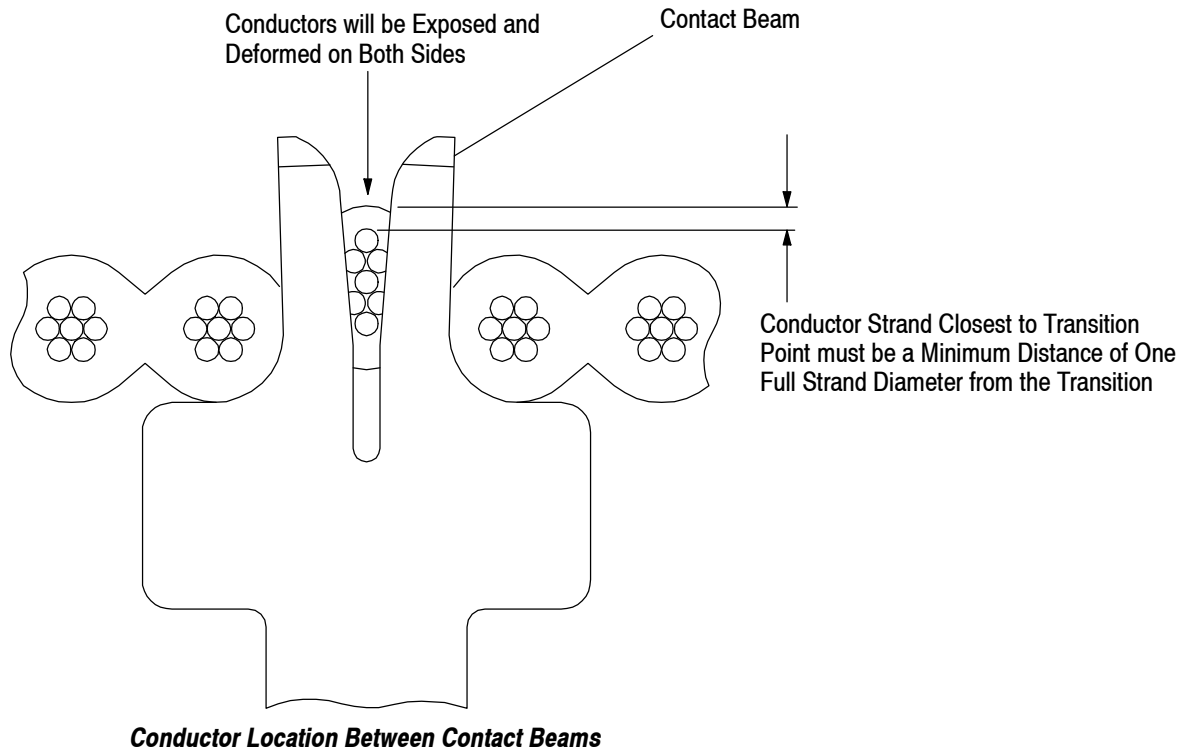


Figure 8

3.9. Accessories

Backshells with spring latches and strain relief with a pull tab slot have been designed for the unshielded, all-plastic plug and receptacle connectors. Either or both can be installed on the same connector.

A. Backshells

The backshells provide strain relief on the cable and the spring latches enable the connector to be secured to a mating connector with latching features. The backshell consists of two symmetrically designed, friction fit halves requiring no hardware to lock them together. They have slots in both ends to accommodate the spring latches. When the spring latches are installed, the latch tips must be toward the connector mating face. See Figure 9.

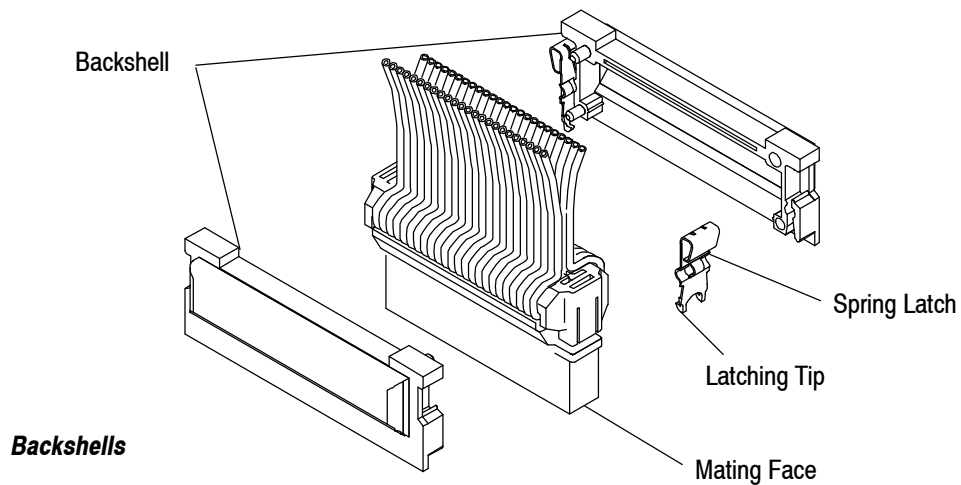


Figure 9

B. Strain Relief

The strain relief is designed to relieve stress on the contacts and conductors at the point of termination and provide for a pull-tab (customer supplied). It is a one-piece, symmetrical design that requires no special orientation and has locking latches that engage the locking tab on the housing. Use of a pull tab will assure even pressure when unmating connectors. The cable must be formed over the housing and the pull-tab placed in the strain relief slot *before* the strain relief is installed. See Figure 10.

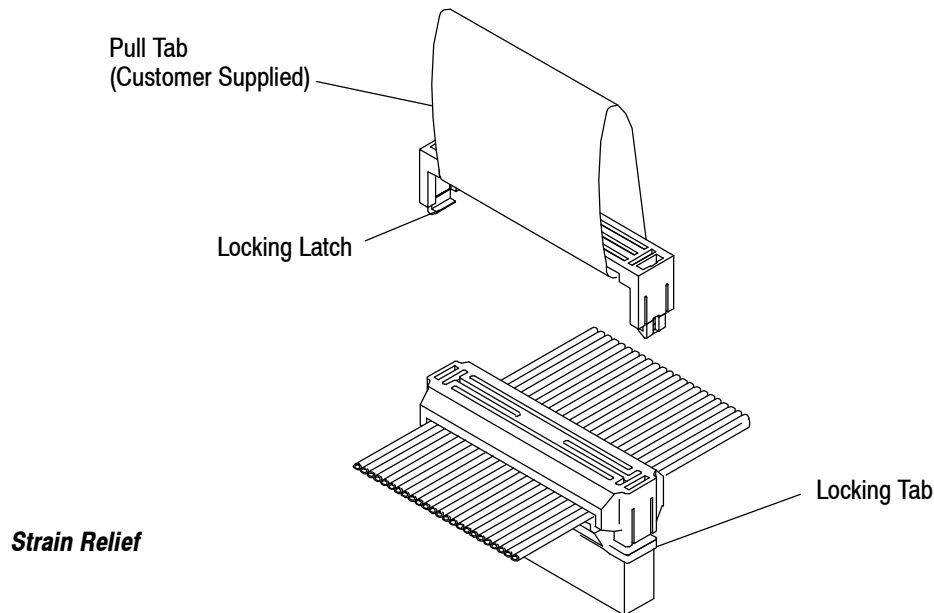


Figure 10

4. QUALIFICATIONS

AMPLIMITE .050 Series Feed-Through Connectors are Listed by Underwriters Laboratories Inc. (UL) in File E28476; and Certified by CSA International in File Number LR7189A-207.

5. TOOLING

TE Tool Engineers have designed machines for a variety of application requirements. For assistance in setting up prototype and production line equipment, contact TE through your local TE Engineering Representative or call the Tooling Assistance Center number at the bottom of page 1.

Tools recommended for installation of these connectors are:

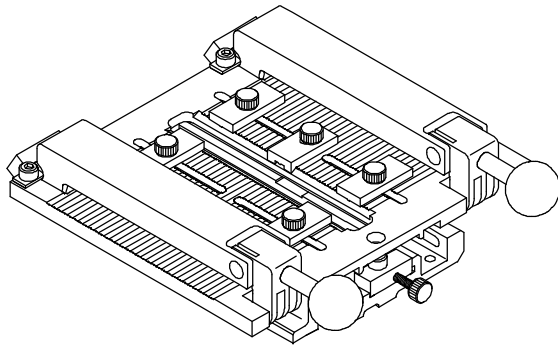
- Universal Base Assembly
- AMPLIMITE .050 Series Connector Specific Kit
- Manual or Auto-Cycle Arbor Frame Assembly

A. Tooling Assembly

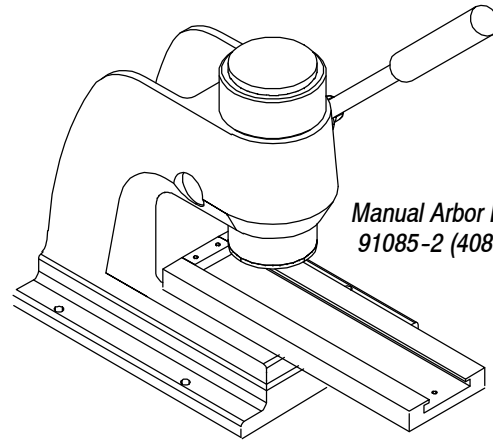
The tooling assembly consists of upper and lower tooling which is designed to terminate all sizes of connectors and cables. The upper tool will apply pressure evenly on the connector termination cover and seat it on the housing. The lower tooling features adjustable locators to accommodate all connector sizes and a cable clamp to hold ribbon cable in place during termination. They are designed to be used in conjunction with manual and auto-cycle arbor frame assemblies. See Figure 11.

B. Arbor Frame Assemblies

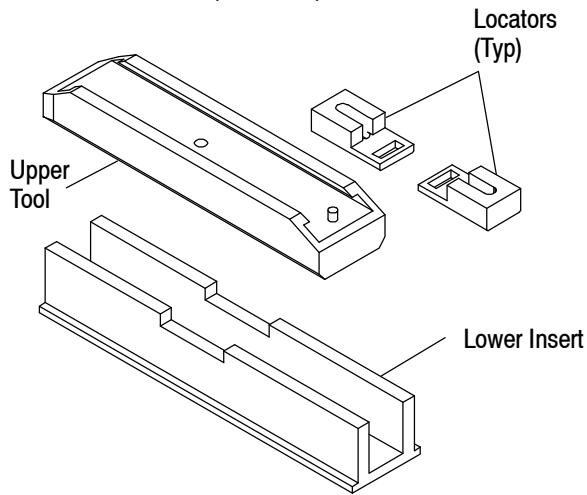
The manual and the pneumatically-operated auto-cycle arbor frame assemblies feature a common ram, a base plate, and a slide track that will accommodate the tooling assembly. Both can be adjusted to apply the right pressure that will assure proper termination. See Figure 11.



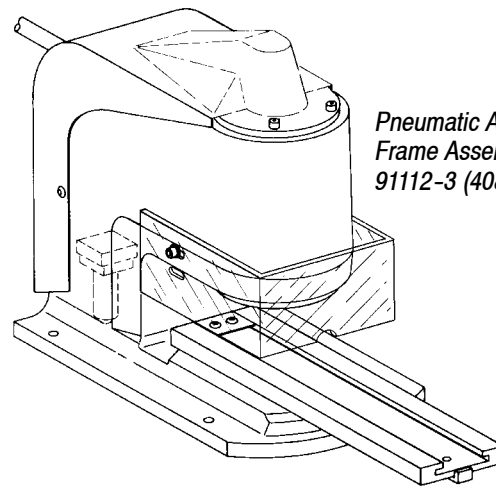
*Universal Base Assembly
768338-4 (408-4201)*



*Manual Arbor Frame Assembly
91085-2 (408-7777)*



*AMPLIMITE .050 Series Connector
Specific Kit 679235-2 (408-4233)*



*Pneumatic Auto-Cycle Arbor
Frame Assembly
91112-3 (408-6732)*

Figure 11

6. VISUAL AID

Figure 12 shows a typical application of AMPLIMITE .050 Series Feed-Through Connectors. 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.

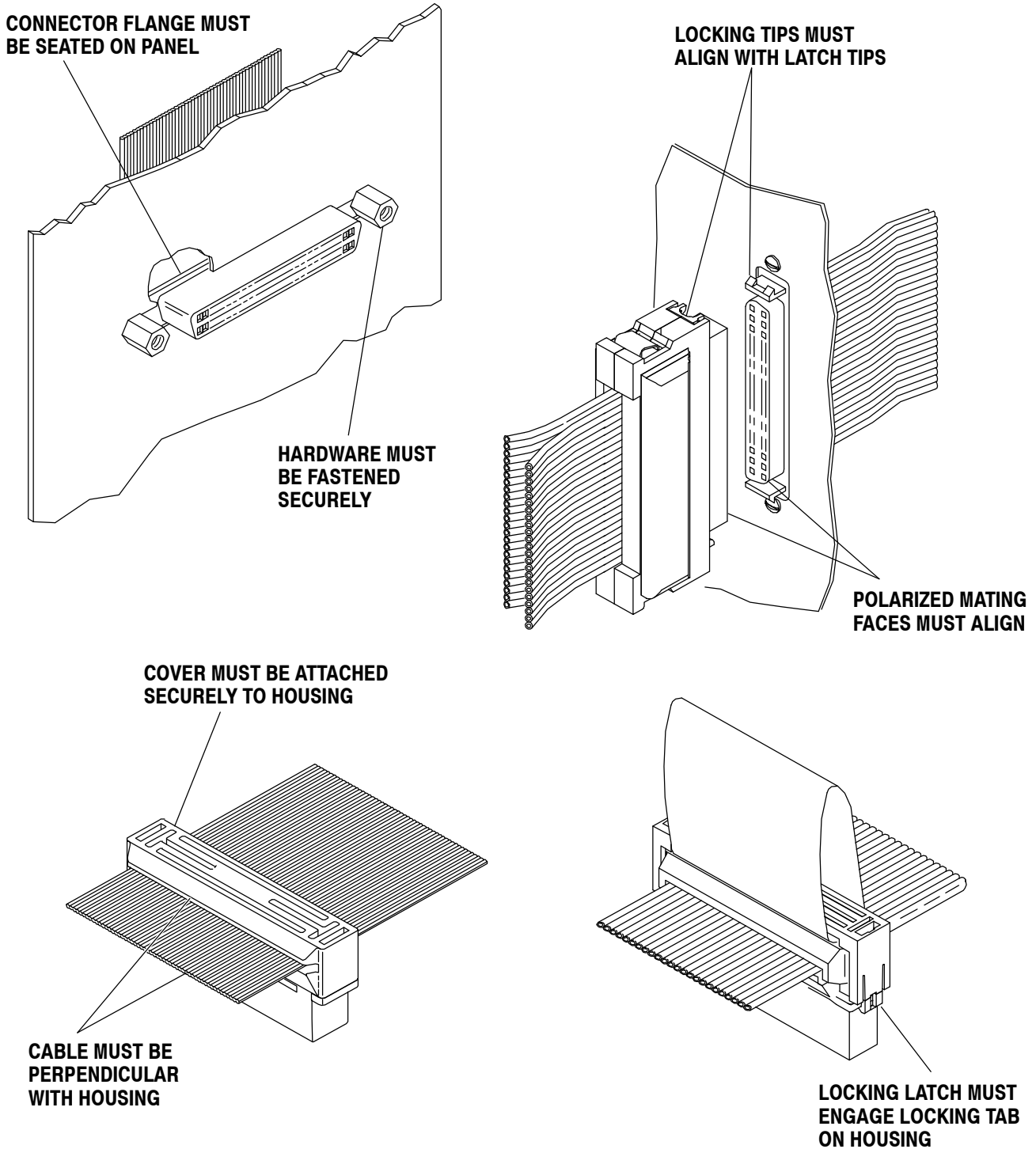


FIGURE 12. VISUAL AID