# CHAMP* .050 Series I Connectors for 0.64 mm [.025 In.] Ribbon Cable

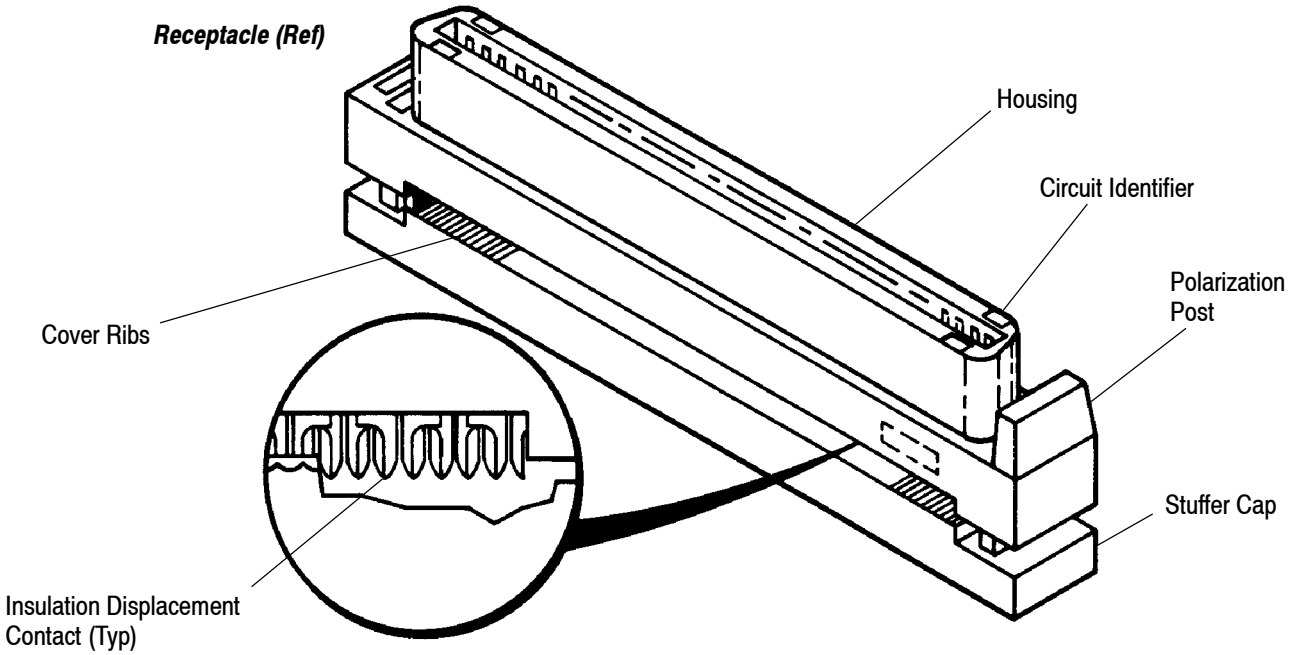
**NOTE**

*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 [±.005] 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 CHAMP .050 Series I Connectors. These connectors offer high-density "D" Type mating interfaces with 1.27 x 2.54 [.050 x .100] contact centerline spacing. The connectors terminate 0.64 [.025] centerline unshielded flat ribbon cable with insulation displacement contacts and are available in 40, 50, 68, 80, and 100 position sizes. Receptacle connectors are available in free-hanging unshielded all plastic configurations and are supplied with the termination cover pre-assembled.

When corresponding with TE personnel, use the terminology provided on this specification to help facilitate your inquiry for information. Basic terms and features of components are provided in Figure 1.




***NOTE:*** Polarization post is required for polarization of ribbon cable edge connector to pc board.

*Figure 1*

## 2. REFERENCE MATERIAL

### 2.1. Revision Summary

This paragraph is reserved for a revision summary covering the most recent additions and changes made to this specification which include the following:

- Updated document to corporate requirements

### 2.2. Customer Assistance

Reference Part Number 557089 and Product Code 0680 are representative of CHAMP .050 Series I Connectors. These numbers are used in the TE network of customer service to access tooling and product application information. This service is provided by your local TE representative (Field Sales Engineer, Field Application Engineer, etc) or, after purchase, by calling the Tooling Assistance Center or the Product Information number at the bottom of page 1.

### 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 Drawing takes priority if there is a conflict with this specification or any other technical documentation supplied by TE.

### 2.4. Specifications

Product Specification 108-1514 provides product performance requirements and test information for these connectors.

### 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, and customer manuals (409-series) that provide setup, operation, and maintenance of TE machines.

| Document Number | Document Title |
|---|---|
| 408-4201 | Base Assembly Universal Arbor Tool 768338-4 |
| 408-4232 | Connector-Specific Kit 679177-2 for CHAMP .050 Series I Receptacle Connectors |
| 408-6732 | Pneumatic Auto-Cycle Unit 91112-3 |
| 408-7777 | Manual Arbor Frame Assembly 91085-2 |

## 3. REQUIREMENTS

### 3.1. Storage

#### A. Ultraviolet Light

Prolonged exposure to ultraviolet light may deteriorate the chemical composition used in the housing material.

#### B. Shelf Life

The connectors should remain in the shipping containers until ready for use to prevent deformation to those components. The connectors should be used on a first in, first out basis to avoid storage contamination that could adversely affect signal transmissions.

#### C. Chemical Exposure

Do not store connectors near any chemicals listed below as they may cause stress corrosion cracking in the contacts.

| | | | | |
|---|---|---|---|---|
| Alkalies | Ammonia | Citrates | Phosphates Citrates | Sulfur Compounds |
| Amines | Carbonates | Nitrites | Sulfides Nitrites | Tartrates |

### 3.2. 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-right of the plug connector and on the top-left of the receptacle connector. Numbering alternates on the top and bottom row. See Figure 2.

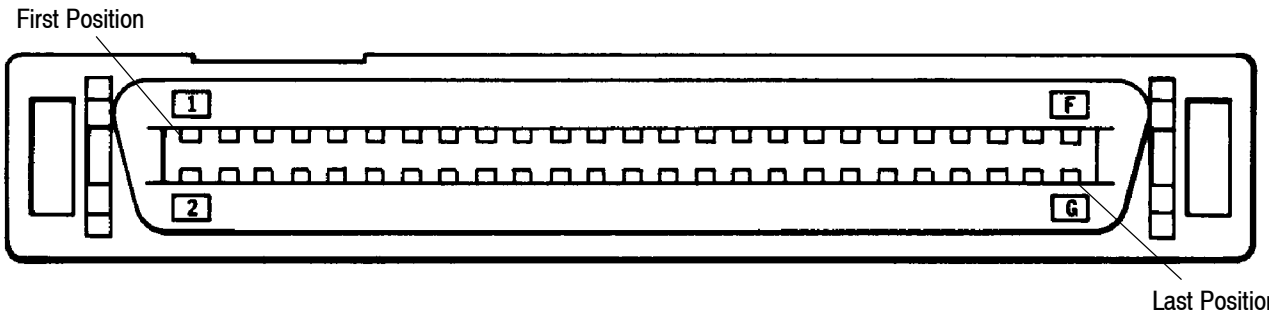



*Figure 2*

### 3.3. Stuffer Cap

The stuffer cap 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.

### 3.4. Connector Polarization

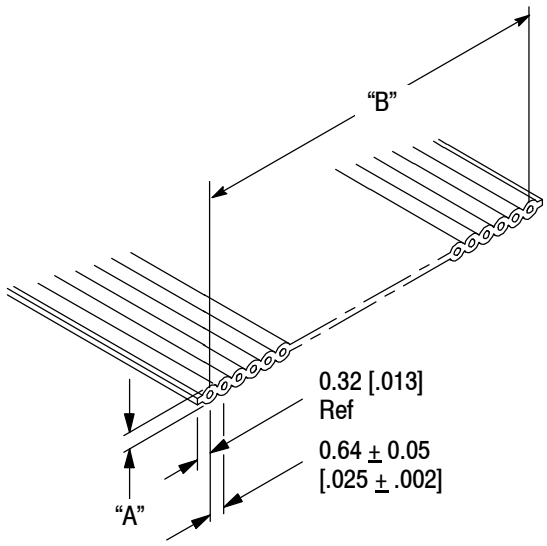
The configuration of the mating faces provides polarization.

### 3.5. Cable

The connectors are designed for unshielded flat ribbon cable with 30 AWG solid conductors on 0.64 [.025] centers. Cable dimensions are provided in Figure 3.

**NOTE**

*All cable to be used with these connectors must be approved by TE Engineering.*




| CONDUCTOR | | DIMENSION | |
|---|---|---|---|
| SIZE (AWG) | TYPE | "A" | "B" |
| 30 | Solid | 0.76 [.030] | 0.64 [.025] x (Total No. of Conductors Minus One) |

*Figure 3*

### 3.6. Inspecting Terminated Connector

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

#### A. External Inspection

1. Edge Alignment

Connectors must be perpendicular to edge of cable within the degree of tolerance specified in Figure 4.

2. End Alignment

When making an end-of-line termination, the cable end must be within the requirements specified in Figure 4.

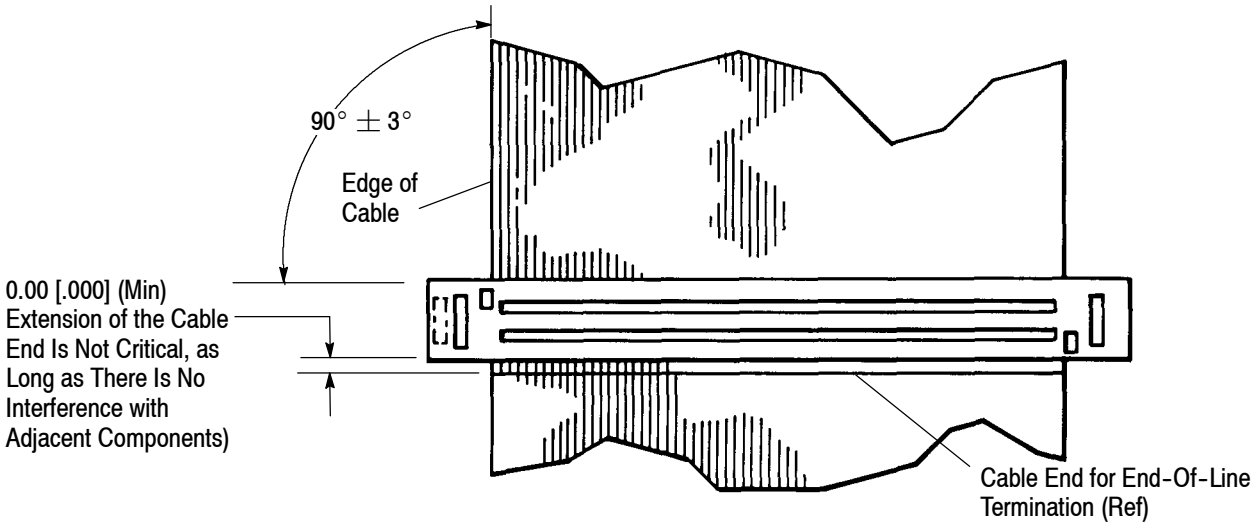



*Figure 4*

3. Terminated Dimension

A terminated stuffer cap must be seated within dimensional height requirements. The height must be measured at the ends of the terminated connector. See Figure 5.

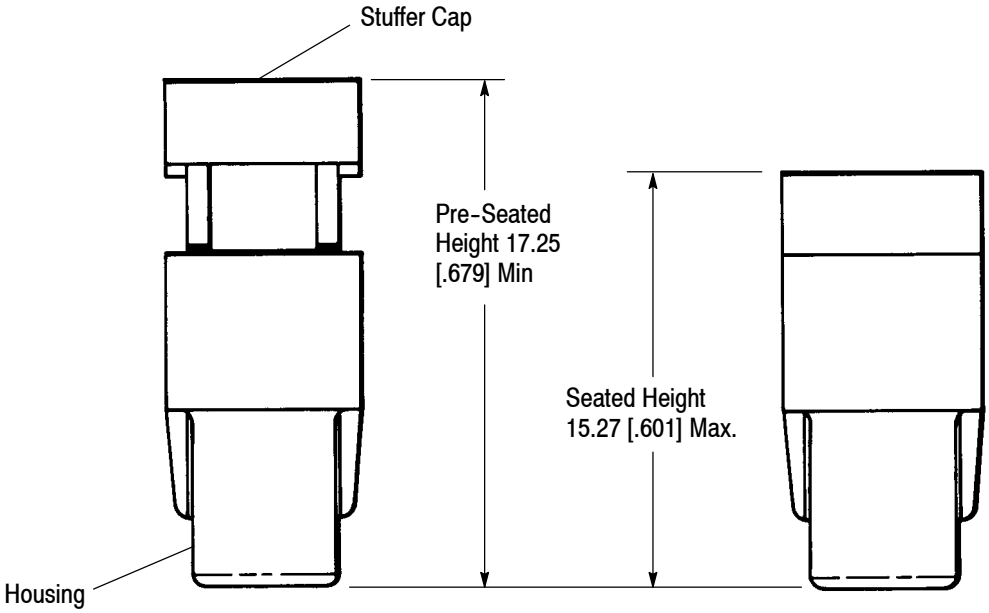



*Figure 5*

## B. Internal Inspection

**NOTE**

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

1. Termination Check

Connector setup may be inspected by removing the latches of the stuffer cap. This will allow the stuffer cap to be removed after 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 6.

**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.*

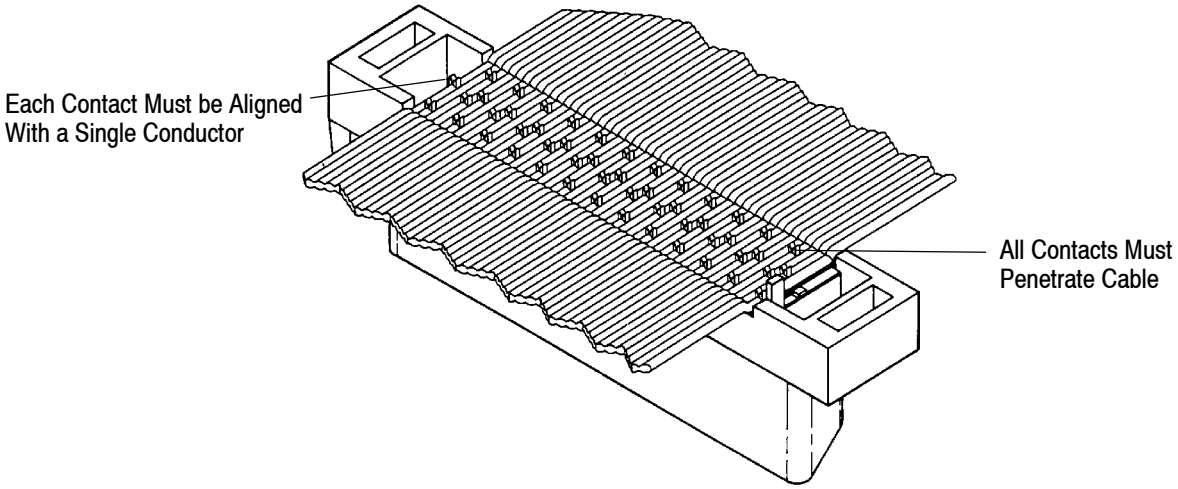



*Figure 6*

### 3.7. Proper Termination

A proper termination has the connector insulation displacement contact and conductor positioned as shown in Figure 7.

**NOTE**

*A sample with a view of this type can only be prepared under closely controlled conditions. Contact TE Engineering for specific details.*

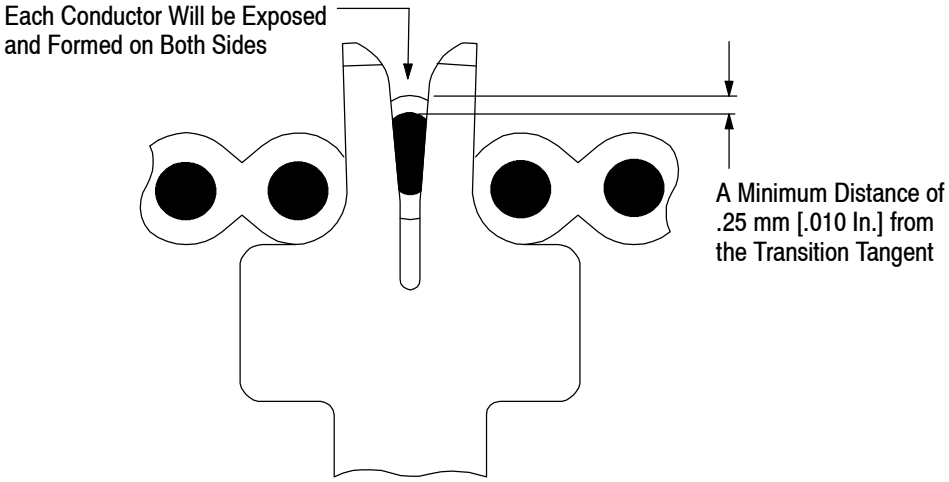



*Figure 7*

## 4. QUALIFICATIONS

CHAMP .050 Series I Connectors are listed by Underwriters Laboratories Inc. (UL) under UL File Number EA 1956, E28478, and certified by Canadian Standards Association (CSA) International, in File Number LR7189A-211.

## 5. TOOLING

This section provides a selection of tools for various application requirements. Modified designs and additional tooling concepts may be available to meet other application requirements. For additional information, contact one of the service groups at the bottom of page 1.

The connector-specific kit is used in conjunction with the base assembly universal arbor tool and manual arbor frame assembly to terminate connectors to cable. Refer to tooling part numbers and reference material listed in Figure 8.

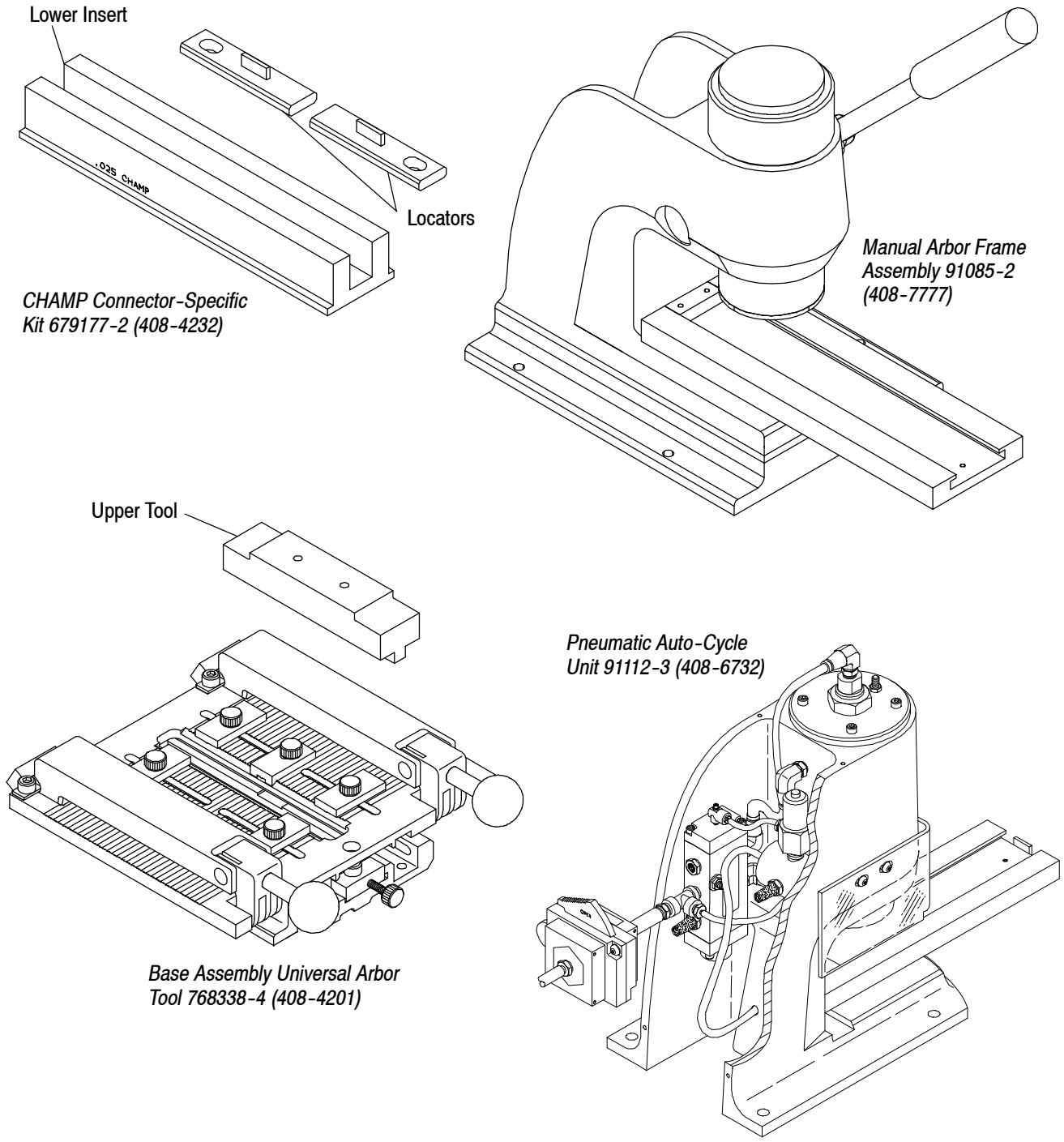



*Figure 8*

## 6. VISUAL AID

Figure 9 shows a typical application of a CHAMP .050 Series I Connector. 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.

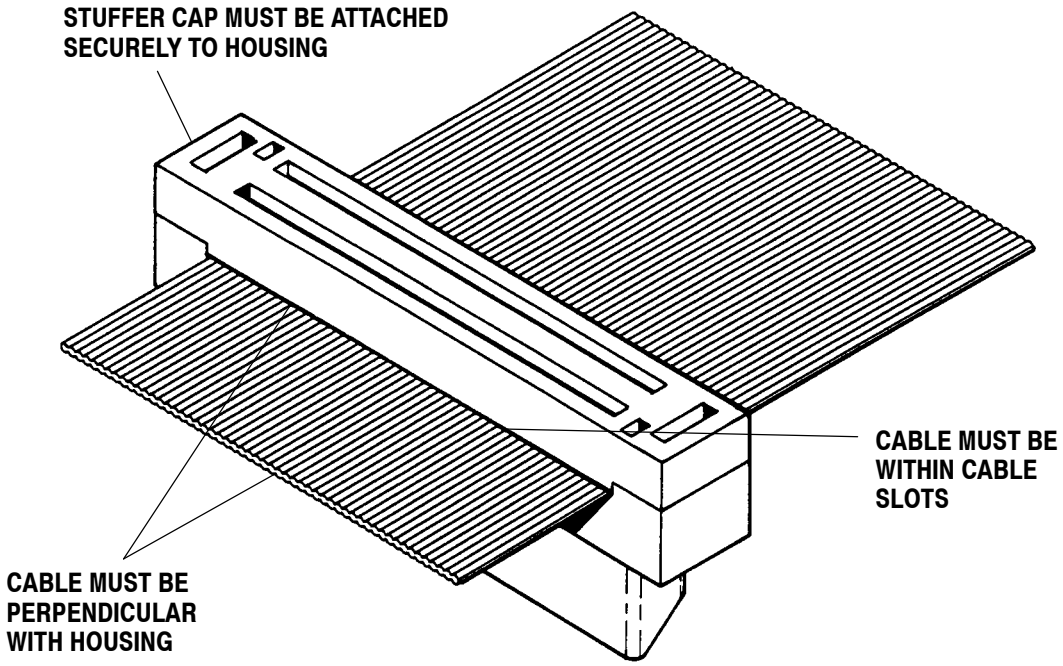



*FIGURE 9. VISUAL AID*