

**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  $\pm 0.13$  [ $\pm .005$ ] 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 (Crimp-Snap Terminals) CST-100 II Connectors on 2.54 mm [.100 in.] centerline. These requirements are applicable to hand or automatic machine crimping tools. These connectors are available in 2 through 28 positions and are terminated to 22, 24, and 26 AWG conductors. The CST-100 II connectors provide an interconnection between wires and 0.64 mm [.025 in.] square post headers mounted on printed circuit (pc) boards.

These connectors will mate with specified MTA-100 headers, similar competitive notched headers, and CST-100 shrouded headers. CST-100 II Connectors are NOT interchangeable with CST-100 contacts and housings.

When corresponding with Tyco Electronics 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.

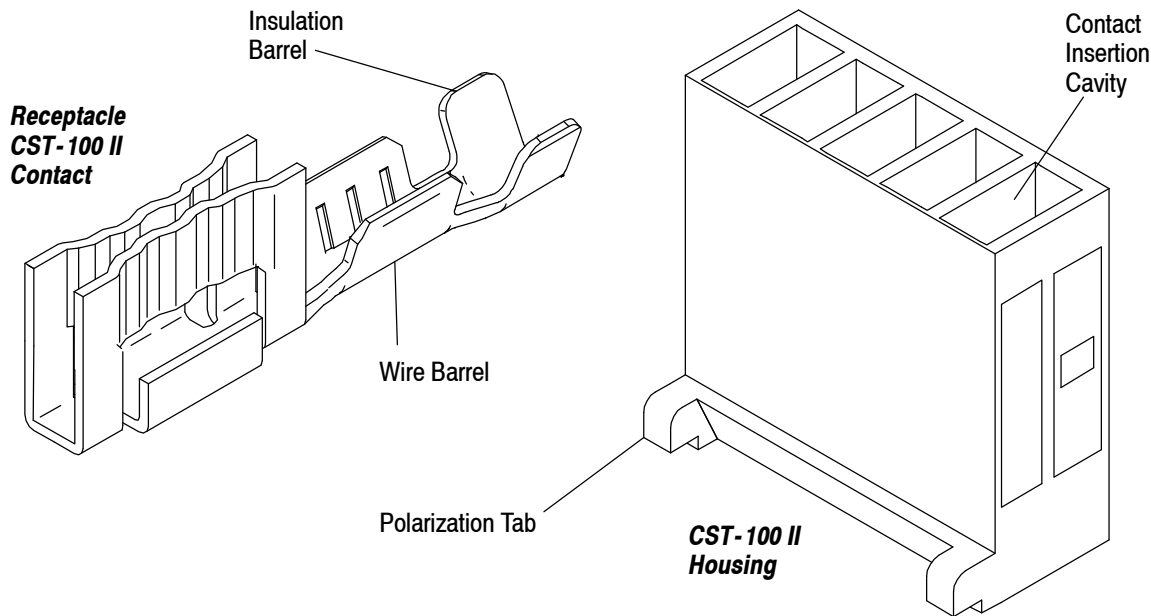


Figure 1

**2. REFERENCE MATERIAL**

**2.1. Revision Summary**

- Updated document to corporate requirements
- Changed text in Paragraphs 3.3 and 3.6

**2.2. Customer Assistance**

Reference Part Number 1375820 and Product Code 3234 are representative numbers of CST-100 II 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 Tyco Electronics Representative or, after purchase, by calling the Tooling Assistance Center or Product Information number at the bottom of this page.

## 2.3. Drawings

Customer Drawings for specific products 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 Tyco Electronics.

## 2.4. Specifications

Product Specification 108-1948 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, as well as setup and operation procedures of applicators; and customer manuals (409-series) that provides setup, operation, and maintenance of machines.

<u>Document Number</u>	<u>Document Title</u>
408-3295	Preparing Reel of Contacts for Application Tooling
408-4064	PRO-CRIMPER* III Hand Tool Assemblies 58517-[ ]
408-7424	Checking Terminal Crimp Height or Gaging Die Closure
408-8040	Heavy Duty Miniature Quick-Change Applicators (Side-Feed Type)
408-8053	Conversion Guide for Miniature Quick-Change Applicators
408-8493	CST-100 II Extraction Technique
408-9816	Handling of Reeled Products
408-9930	PRO-CRIMPER III Hand Crimping Tool Frame Assembly 354940-1
409-5128	AMP-O-LECTRIC* Model "K" Terminating Machine 565435-5
409-5842	AMP-O-LECTRIC Model "G" Terminating Machine 354500-[ ]
409-5852	AMPOMATOR* CLS III-G Lead-Making Machine 122500-[ ]
409-5878	AMPOMATOR CLS IV+ Lead-Making Machines 356500-1, -2
409-10012	AMP-O-MATIC* Side-Feed Stripper-Crimper III Machine No. 1320895-[ ]
409-10016	Entry Level Terminator (ELT) Machine 1338600-[ ]

## 3. REQUIREMENTS

### 3.1. Storage

#### A. Ultraviolet Light

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

#### B. Reel Storage

When using reeled contacts, store coil wound reels horizontally and traverse wound reels vertically.

#### C. Shelf Life

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

#### D. Chemical Exposure

Do not store contacts 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. Temperature


The operating temperature of these connectors is -55° to 105°C [-67° to 221°F].


### 3.3. Material

The crimp-snap (lanceless) contacts are made from phosphor bronze, pre-tinned or with gold over nickel; and the housings are made from white UL 94V-0 Rated Nylon.

**3.4. Wire Selection and Preparation**

CST-100 II Contacts will accept stranded copper wire sizes and insulation diameters as listed in Figure 2. The crimp heights and insulation barrel crimp widths are also provided.

**NOTE**  *The applied crimp dimension (within the functional range of the product) is dependent on the termination tooling being used. Refer to the documentation (applicator logs and instruction sheets) supplied with the termination tooling for the applied crimp height. See Section 5, TOOLING.*

**CAUTION**  *DO NOT nick, cut, or scrape the wire conductor during the stripping operation.*


RECEPTACLE TYPE	WIRE SIZE, AWG	INSULATION DIAMETER RANGE	STRIP LENGTH	WIRE BARREL CRIMP		INSULATION BARREL CRIMP WIDTH
				WIDTH	HEIGHT	
Strip	26	0.89-1.65 [.035-.065]	2.54-3.18 [.100-.125]	1.07 [.042]	0.81-0.71 [.032-.028]	1.78 [.070]
	24	0.89-1.65 [.035-.065]	2.54-3.18 [.100-.125]	1.07 [.042]	0.86-0.76 [.034-.030]	1.78 [.070]
	22	0.89-1.65 [.035-.065]	2.54-3.18 [.100-.125]	1.07 [.042]	0.91-0.81 [.036-.032]	1.78 [.070]
Loose Piece	26-22	0.89-1.65 [.035-.065]	2.54-3.18 [.100-.125]	1.07 [.042]	0.84-0.74 [.033-.029]	1.78 [.070]


Figure 2

**3.5. Crimped Contact Requirements**

Locate the contact to be crimped in the appropriate tooling according to the instructions packaged with that tooling. Detailed instructions covering the placement of contacts in the tooling and the use of such tooling is packaged with each tool.

Terminate the contact according to the directions shipped with the appropriate tooling. See Section 5, TOOLING.

**CAUTION**  *Wire insulation shall NOT be cut or broken during the crimping operation, nor shall the insulation be crimped into the contact wire barrel. Reasonable care should be taken by tooling operators to provide undamaged wire terminations.*


**NOTE**  *Periodic inspections must be made to ensure crimped contact formation is consistent as shown in Figure 3.*

**A. Crimp Height**

The crimp applied to the wire portion of the contact is the most compressed area and is most critical in ensuring optimum electrical and mechanical performance of the crimped contact. The crimp height must be within the dimensions provided in Figure 2.

**B. Crimp Length**

For optimum crimp effectiveness, the crimp must be within the area shown and must meet the crimp dimensions provided in Figure 2. Effective crimp length shall be defined as that portion of the wire barrel, excluding bellmouth(s), fully formed by the crimping tool. Instructions for adjusting, repairing, and inspecting tools are packaged with the tools. See Figure 7.

**NOTE**  *The effective crimp length is given for tooling design only, and should not be used for inspection criteria.*

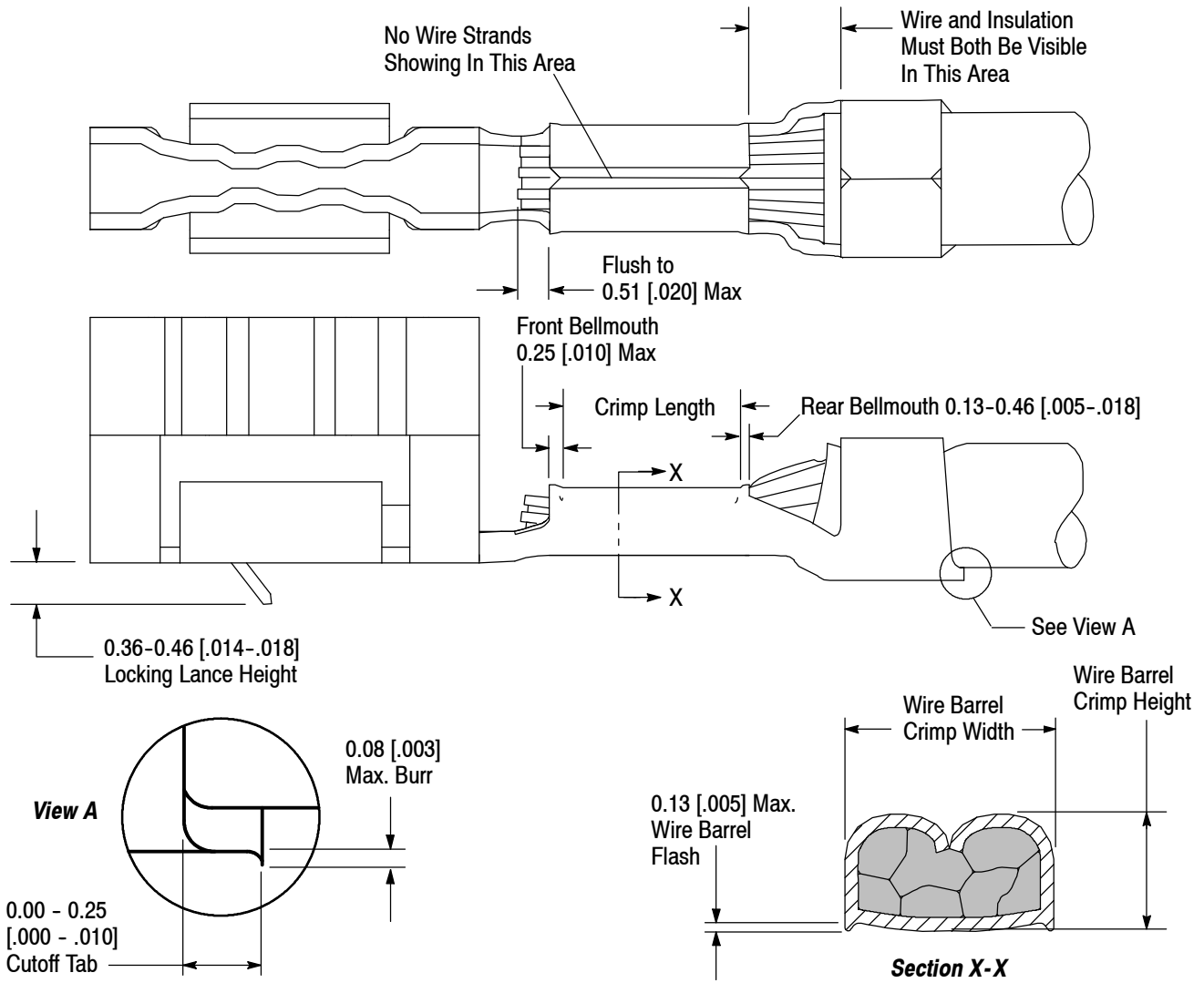


Figure 3

**C. Bellmouths**

Front and rear bellmouths shall be evident and conform to the dimensions given in Figure 3.

**D. Cutoff Tab**

The cutoff tab shall be cut to the dimensions shown in Figure 3 in View A.

**E. Burrs**

The cutoff burr shall not exceed the dimensions shown in Figure 3 in View A.

**F. Wire Barrel Flash**

The wire barrel flash shall not exceed the dimensions shown in Figure 3 in Section X-X.

**G. Wire Location**

After crimping, the wire conductor and insulation must be visible in the transition area between the wire and insulation barrels.

**H. Conductor Location**

The conductor may extend beyond the wire barrel to the maximum shown in Figure 3.

**I. Locking Lance**

Locking lance height must not change during termination. Refer to specific product customer drawing for exact dimensional requirements.

**J. Wire Barrel Seam**

The wire barrel seam must be closed with no evidence of loose wire strands visible in the seam.

**K. Twist and Roll**

There shall be no twist, roll, deformation, or other damage to the mating portion of the crimped contact that will prevent proper mating.

**L. Straightness**

The force applied during crimping may cause some bending between the crimped wire barrel and the mating portion of the contact. Such deformation is acceptable within the following limits.

1. Up and Down

The crimped contact, including cutoff tab and burr, shall not be bent above or below the datum line more than the amount shown in Figure 4.

2. Side to Side

The side-to-side bending of the contact may not exceed the limits provided in Figure 4.

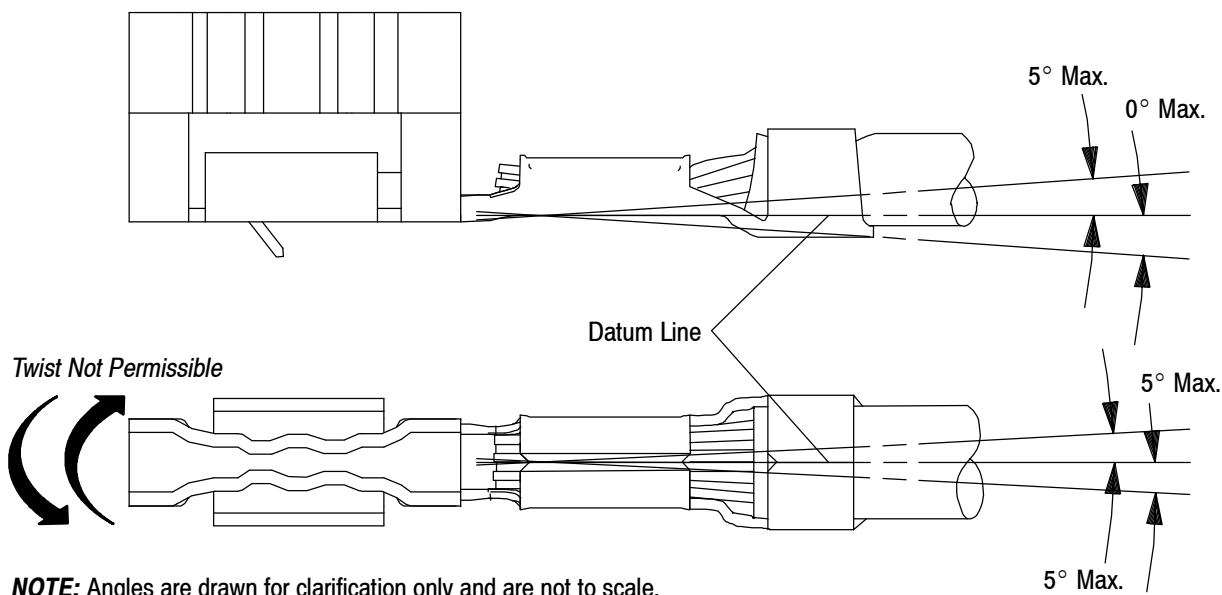


Figure 4

**3.6. Housings**

CST-100 II Housings are available in 2 through 28 positions. They are available in a natural color, UL 94 V-0, Flame Retardant Nylon. See Figure 5.

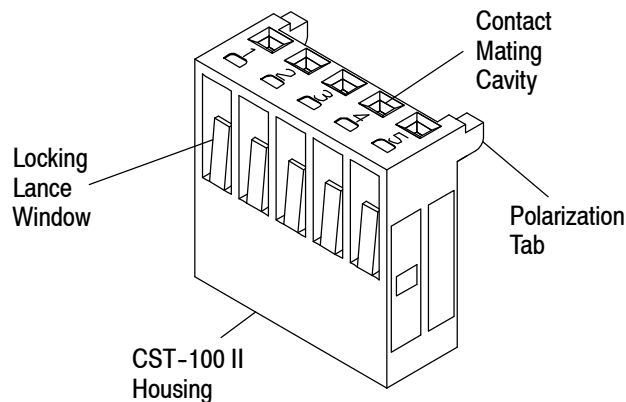


Figure 5

### 3.7. Contact Insertion

Orient the crimped contact so that the locking lance aligns with the contact insertion cavity as shown in Figure 6. Insert contact into housing until it bottoms, and audible click is heard or felt. Pull back lightly on the wire to ensure retention of crimped contact in housing.

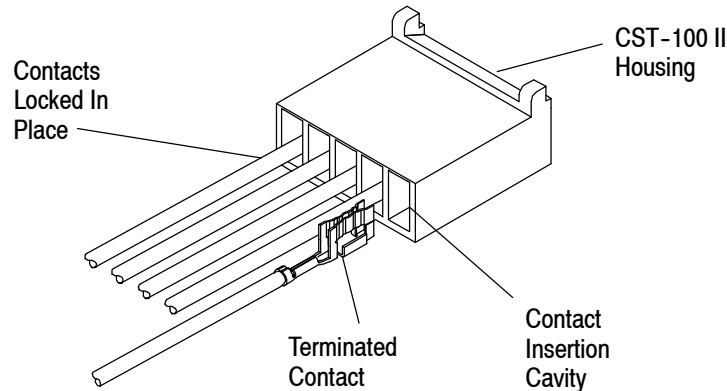


Figure 6

### 3.8. Repair/Contact Replacement

Refer to Instruction Sheet 408-8493 for information on CST-100 II extraction techniques.

## 4. QUALIFICATION

CST-100 II Connectors are Listed by Underwriters Laboratories Inc. (UL) in File E28476, and Certified by CSA International, in File LR7189.

## 5. TOOLING

This section provides a selection of tools for various application requirements. They include hand tools for manual application of loose piece contacts, and semi-automatic and automatic machines for power assisted application of strip form contacts. 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. A listing of tooling recommendations covering the full wire size range is provided in Figure 7.

- **Hand Crimping Tools**

Hand crimping tools that accommodate the full wire size range are designed for prototype and low-volume applications such as repair of damaged contacts.

- **Applicators**

Applicators are designed for the full wire size range of strip-fed, precision formed contacts, and provide for high volume, heavy duty production requirements. The applicators can be used in bench or floor model power units.

**NOTE**



Each applicator is shipped with a metal identification tag attached. DO NOT remove this tag or disregard the information on it. Also, a packet of associated paperwork is included in each applicator shipment. This information should be read before using the applicator; then it should be stored in a clean, dry area near the applicator for future reference. Some changes may have to be made to the applicators to run in all related power units. Contact the Tooling Assistance Center number at the bottom of page 1 for specific changes.

**NOTE**



CST-100 II contacts are designed to run in existing CST-100 application tooling. However, some minor adjustments may be required before running. Verify that you have the latest revision level for all crimp tooling by reviewing the appropriate applicator log available from the Tooling Assistance Center phone numbers listed at the bottom of page 1.

- **Power Units**

A power unit is an automatic or semi-automatic device used to assist in the application of a product. Power unit includes the power source used to supply the force or power to an applicator.

**NOTE**



The Model "K" AMP-O-LECTRIC Terminating Machine PN 565435-5 (Customer Manual 409-5128) has been superseded by the Model "G" Terminating Machine PN 354500-1 (Customer Manual 409-5842) for new applications. For existing applications, the Model "K" is still recommended because of the large number of installed machines.

WIRE SIZE, AWG	INSULATION DIAMETER	APPLICATOR (DOC)	POWER UNIT (DOC)	HAND TOOL ASSY (DOC)
26-22	0.89-1.65 [.035-.065]	567373-1 (408-8040)	122500-2, -3 (409-5852)	58517-3 (408-4064)
			356500-1, -2 (409-5878)	
		567373-2 (408-8040)	354500-1 (409-5842)	
			565435-5 (409-5128)	
			1338600-[ ] (409-10016)	
		567373-3 (408-8040)	354500-[ ] (409-5842)	
			1338600-[ ] (409-10016)	
		567827-1	1320895-2, -4 (409-10012)	
567910-1	1320895-1, -3 (409-10012)			

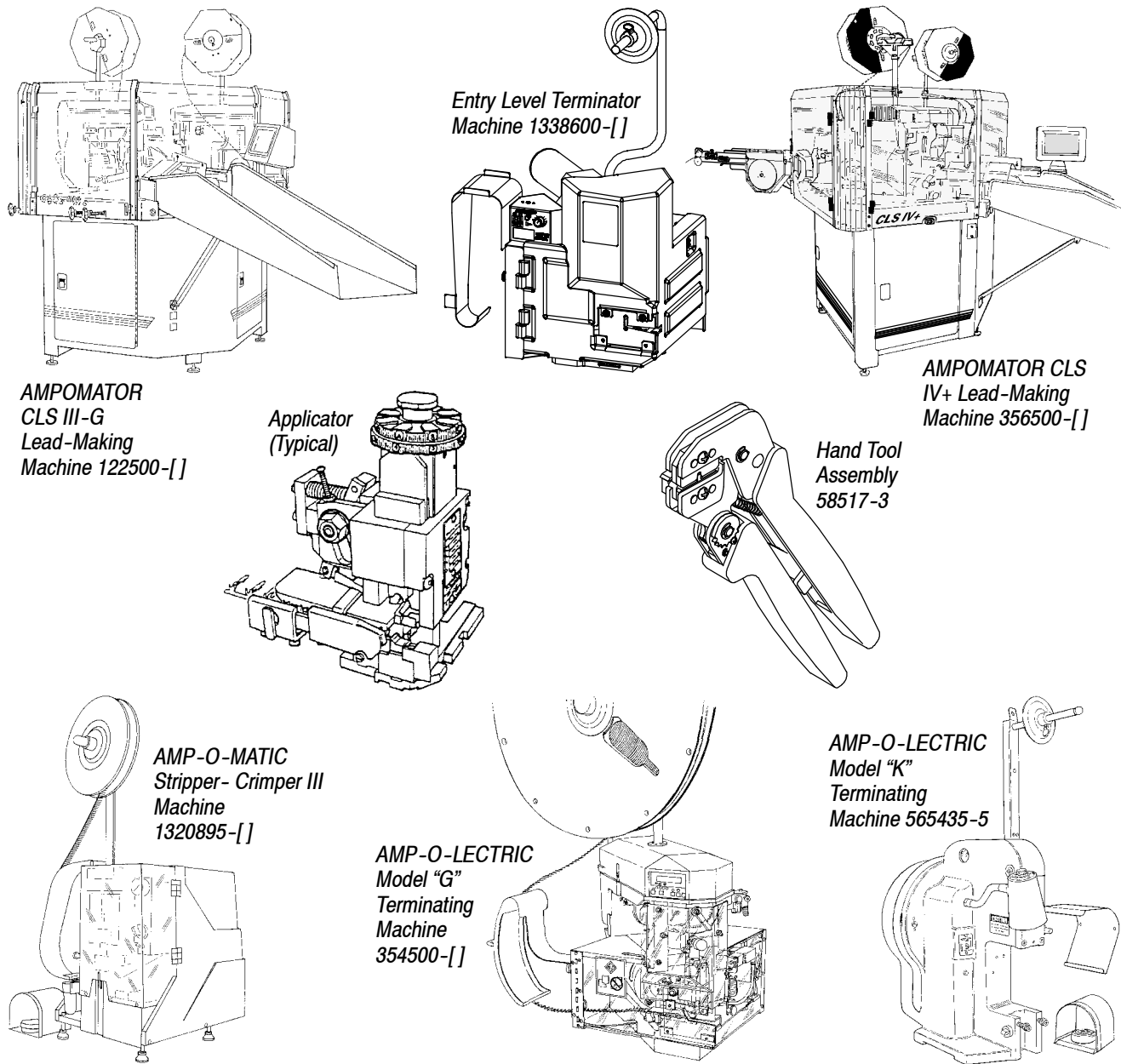
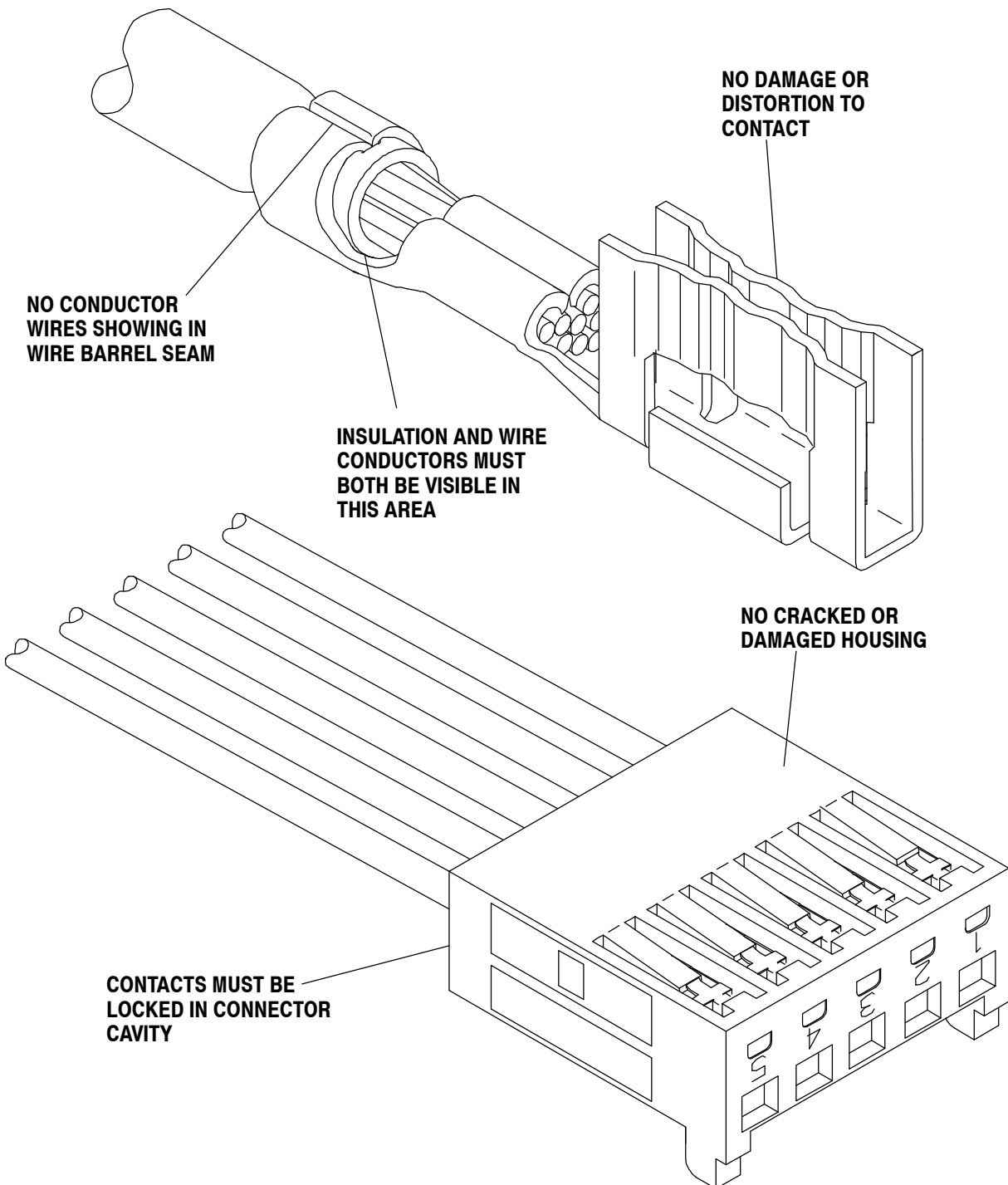


Figure 7

## 6. VISUAL AID

Figure 8 shows a typical application of CST-100 II 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 8. VISUAL AID**