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 FASTON high temperature tab terminals. These terminals are designed to be inserted into ceramic housings. The terminals are available with locking tabs or a locking lance. The terminal tab will mate with standard Series 250 and 312 FASTON receptacles. The tab thickness is 0.81 [.032]. The terminals are supplied in strip form for semi-automatic machine application.

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.

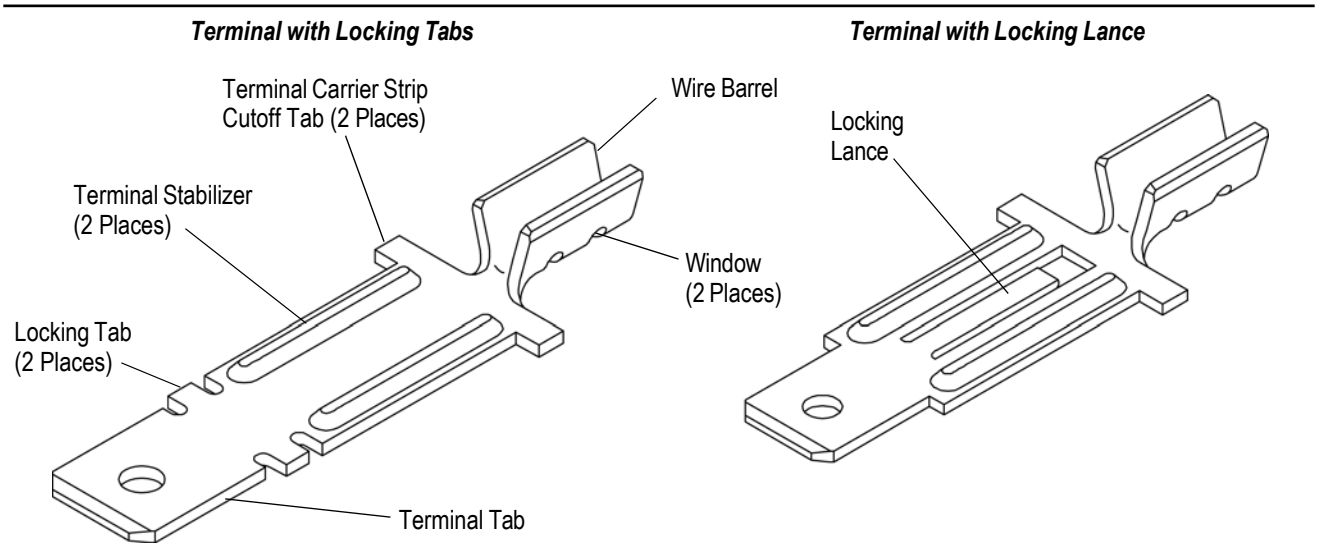


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Since the previous version of this document, the following changes were made:

- Updated document to corporate requirements.

2.2. Customer Assistance

To ensure consistent and high-quality terminations, TE Connectivity (TE) product engineering has analyzed and tested the design factors of numerous terminal crimp connections with varying wire ranges defined by the terminals. As a result, TE product engineering has defined five criteria necessary to achieve a reliable crimp: be sure to 1) use the TE product only for an application it was designed for, 2) always use the TE recommended application tooling, 3) use an appropriately selected and prepared wire, 4) adhere to the application specification described in the associated TE product print and application documentation (such as the TE 114- Application Specification, and TE Applicator “Log Sheet” print), and 5) have the product handled by trained operators only. TE product performance according to TE product specification can be achieved using the methods described in this application specification with the use of the recommended, properly maintained tooling and applicator.

If tooling or termination equipment is used other than what is recommended by TE, where such tooling or equipment was not used for agency validation and/or the product qualification process, TE does not make any representation or warranty, expressed or implied, and disclaims liability for non-performance per TE product specification. Customer accepts the sole responsibility for the evaluation, application, and use of the terminals in such circumstances.

Reference Product Base Part Number 62813 and Product Code 1091 are representative of FASTON Flag Receptacles with “F”-Crimp Feature. 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 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 product part numbers are available from the service network. If there is a conflict between the information contained in the Customer Drawings and this specification or with any other technical documentation supplied, call PRODUCT INFO at the number at the bottom of this page.

2.4. Instructional Material

Instruction Sheets (408-series) provide assembly instructions and Customer Manuals (409-series) provide machine setup and operation procedures. Documents available which pertain to this product are:

408-3295	Preparing Reel of Contacts for Application Tooling
408-7424	Checking Terminal Crimp Height or Gaging Die Closure
408-8012	Standard Type Side-Feed Applicators
408-8059	General Preventative Maintenance for Applicators
408-9816	Handling of Reeled Products
409-5128	Basic AMP-O-LECTRIC* Model “K” Terminating Machines

2.5 Terminal Voltage Rating

Voltage rating is based upon dielectric strength between the terminal and other voltage potential conductors. For these un-insulated terminals, this dielectric strength is determined by 1) the wire insulation used, 2) the housing used (if any), and 3) the application spacings. These appliance business unit terminals with an insulation barrel crimp are designed for UL 1015 wire with insulation rated for 600 volts; so, this is the voltage rating assigned to these terminals. Clearly, if higher dielectric strength wire insulation, larger spacings, and possibly an optional housing are used, larger voltages can be used.

3. REQUIREMENTS

3.1. Storage

A. Shelf Life

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

B. Ultraviolet Light

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

C. Reeled Terminals

When using tape-mounted reeled terminals, care must be taken to prevent stretching, sagging, or other distortion that would prevent smooth feeding of the tape through automatic machine feed mechanisms. Store coil wound reels horizontally and traverse wound reels vertically.

D. Chemical Exposure

Do not store the terminals near any chemical listed below as they may cause stress corrosion cracking in the terminals.

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

3.2. Wire Selection and Preparation

These terminals accept uninsulated, nickel-chrome alloy, high temperature, solid heater wire sizes 22 through 15 AWG. The wire must be straight. No stripping or other preparation is required.

3.3. Crimp Requirements

Terminals must be crimped with the appropriate tooling according to the instructions supplied with the tooling. Periodic inspections must be made to ensure crimp formation is consistent with Figure 2.

A. Cutoff Tab and Burr

The cutoff tab is the remaining portion of the carrier strip after the terminal is cut off. The following dimensional requirements will assure proper application for these terminals.

1. The cutoff tabs must not exceed the dimensions (length from tab to tab and length of each tab) shown in Figure 2.
2. The burr resulting from the cutoff tab shearing must not exceed the dimension shown in Figure 2.

B. Crimp Height and Width

The crimp applied to the wire portion of the terminal is the most compressed area and is most critical in ensuring optimum electrical and mechanical performance of the terminal. The wire barrel must be formed to the “F” crimp where the tips of the wire barrel turn inward and capture the wire. The crimp must cover both windows. The crimp height and crimp width must be within the dimensions provided in Figure 2.

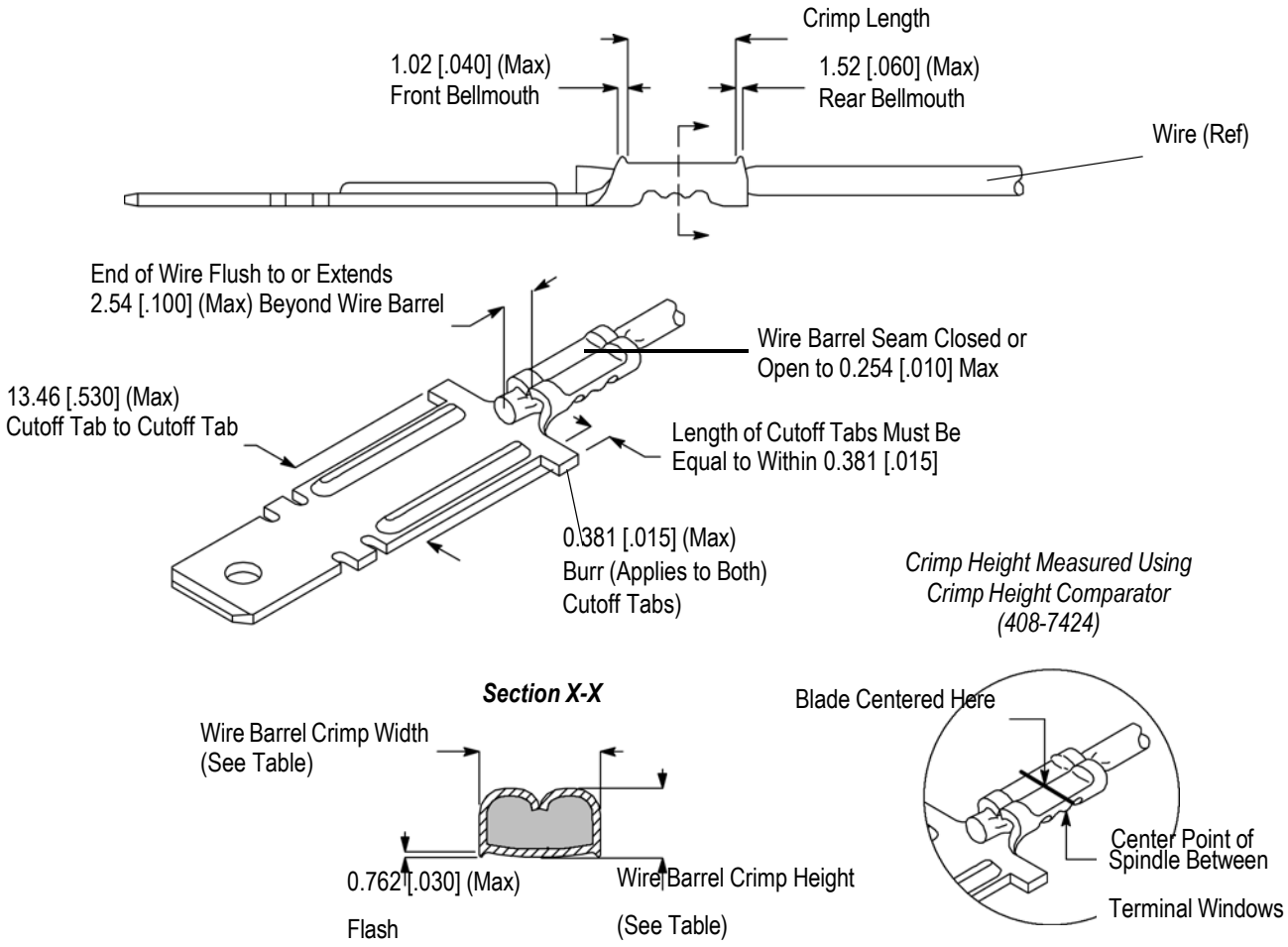


Figure 2

CMA	REFERENCE SIZE [AWG]	WIRE BARREL	
		CRIMP WIDTH	CRIMP HEIGHT
700-1600	22-18	3.30 [.130]	1.78 - 2.03 [.070 - .080]
1900	17		1.83 - 2.18 [.072 - .086]
2600	16		1.98 - 2.36 [.078 - .093]
3200	15		2.08 - 2.54 [.082 - .100]

C. Crimp Length

Effective crimp length is defined as that portion of the wire barrel, excluding bellmouths, fully formed by the crimping tooling. For optimum crimp effectiveness, the crimp must be within the area shown and must meet the crimp requirements provided in Figure 2.

D. Bellmouths

Front bellmouth and rear bellmouth shall be evident and conform to the dimensions provided in Figure 2.

E. Flash

Flash is the formation that may appear on both sides of the wire barrel as the result of the crimping process. The flash must not exceed the limit provided in Figure 2.

F. Wire Location

The end of the wire must be flush to or extend beyond the wire barrel to the limit provided in Figure 2.

G. Wire Barrel Seam

The seam between the two sides of the wire barrel must be completely closed or have an opening between the seam no greater than the dimension provided in Figure 2.

NOTE

The developed crimp configurations result from using the specific tooling described in Section 5, TOOLING. Applied crimp height is provided on the documentation (applicator logs and instruction sheets) supplied with the termination tooling.

H. Twist and Roll

There should be no twist or roll of the wire barrel that would cause over-stress, impair usage, or prevent insertion of the terminal into the housing. See Figure 3.

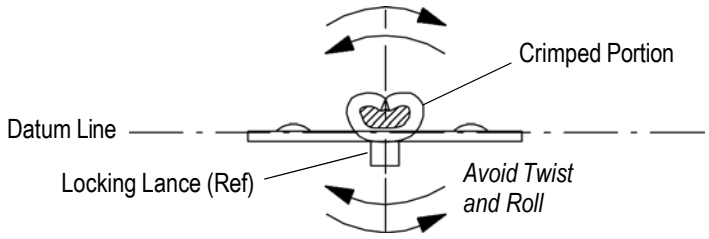


Figure 3

I. Straightness

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

1. Up and Down

The crimped terminal, 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 terminal may not exceed the limits provided in Figure 4.

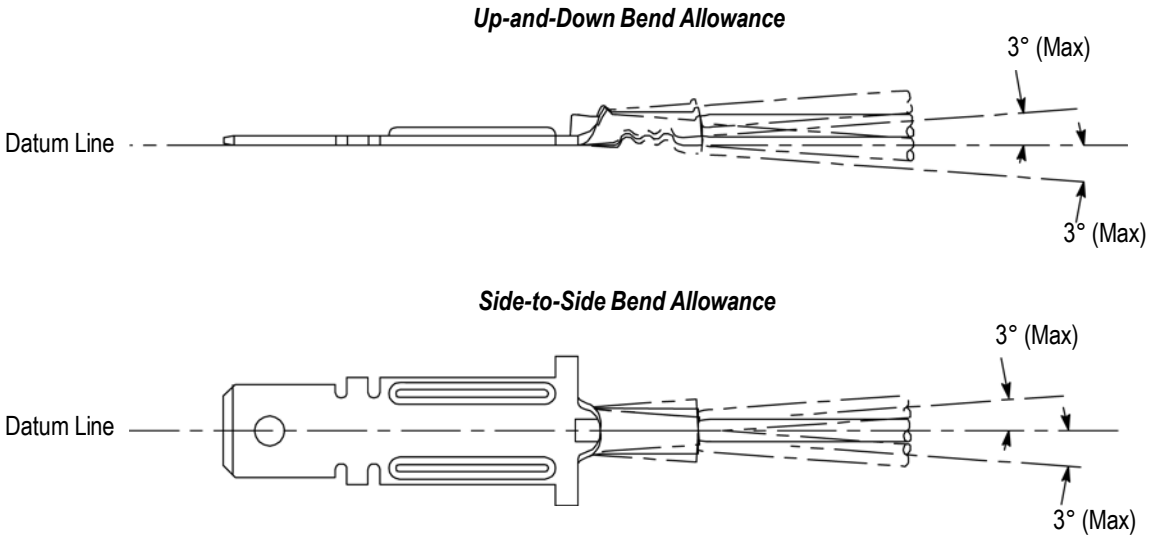


Figure 4

3.4. Checking Installed Terminal

The terminal must be inserted into the back of the housing. The terminal must be oriented so that the tab faces the terminal slot of the housing. After the terminal is fully inserted, the following must apply:

A. Terminal with Locking Tabs

The locking tabs must be formed downward (away from the stabilizers) to secure the terminal in the housing. The locking tabs must be formed according to the dimension given in Figure 5.

B. Terminal with Locking Lance

The locking lance must engage the housing locking tab (inside housing) to secure the terminal in the housing (to ensure engagement, pull back lightly on wire).

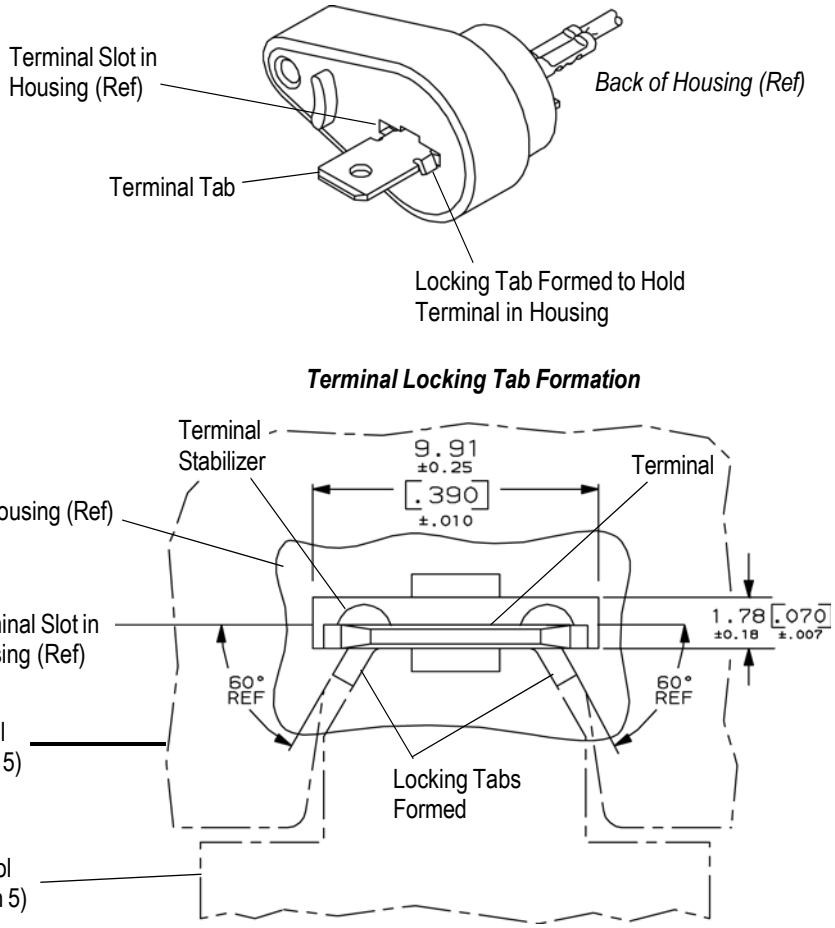


Figure 5

3.5. Terminal Removal

Terminals with locking lance can be removed from the housing using a small flat-blade screwdriver. The blade must be inserted under the terminal from the front of the housing. The blade must disengage the locking lance from the housing locking tab, then the terminal can be pulled out of the back of the housing.

3.6. Repair

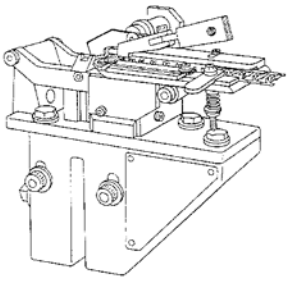
Damaged terminals must be removed, discarded, and replaced. Terminals must NOT be re-used.

4. QUALIFICATION

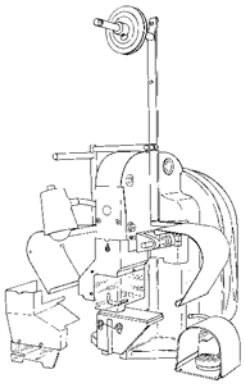
There is no qualification required for FASTON high temperature tab terminals.

5. TOOLING

Semi-automatic machines for power assisted application of tape-mounted terminals are available to cover the full wire size range. Tooling part numbers and instructional material packaged with the tooling are shown in Figure 6.

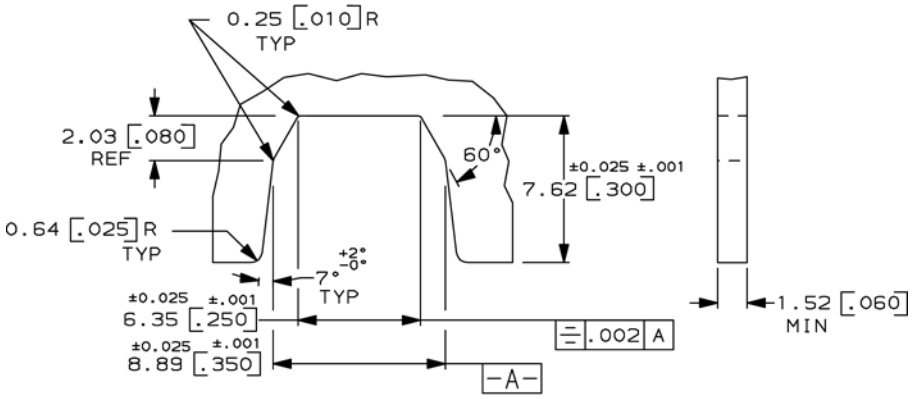


Standard Type Side-Feed Applicator 566322-1 or -3 (408-8012)



Basic AMP-O-LECTRIC Model "K" Terminating Machine 1-471273-3 (409-5128)

Tab Forming Tool (Customer Supplied)



Tab Support Tool (Customer Supplied)

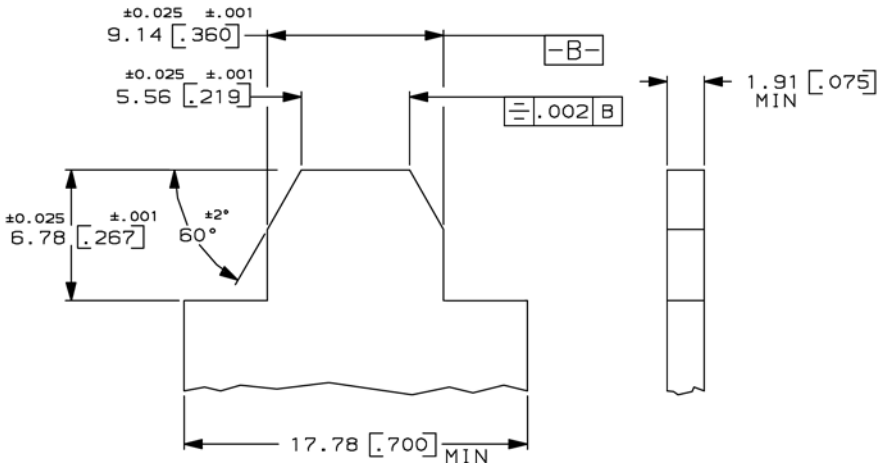


Figure 6

5.1. Semi-Automatic Machine

This power unit provides the force required to drive applicators for crimping tape-mounted terminals. They provide for medium-volume applications. These machines are designed to be bench mounted.

5.2. Applicator

These applicators are designed to crimp tape-mounted terminals. The applicator must be installed onto a power unit.

5.3. Tools for Forming Terminal Locking Tabs

Tab support tool and tab forming tool must be used to form the terminal locking tabs. In use, the tab support tool prevents deformation of the tab as the tab forming tool bends the locking tabs into position. It is recommended to construct tooling using the dimensions provided in Figure 6.

NOTE

TE does not manufacture nor market these tools.

6. VISUAL AID

The illustration below shows a typical application of FASTON high temperature tab terminal. 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.

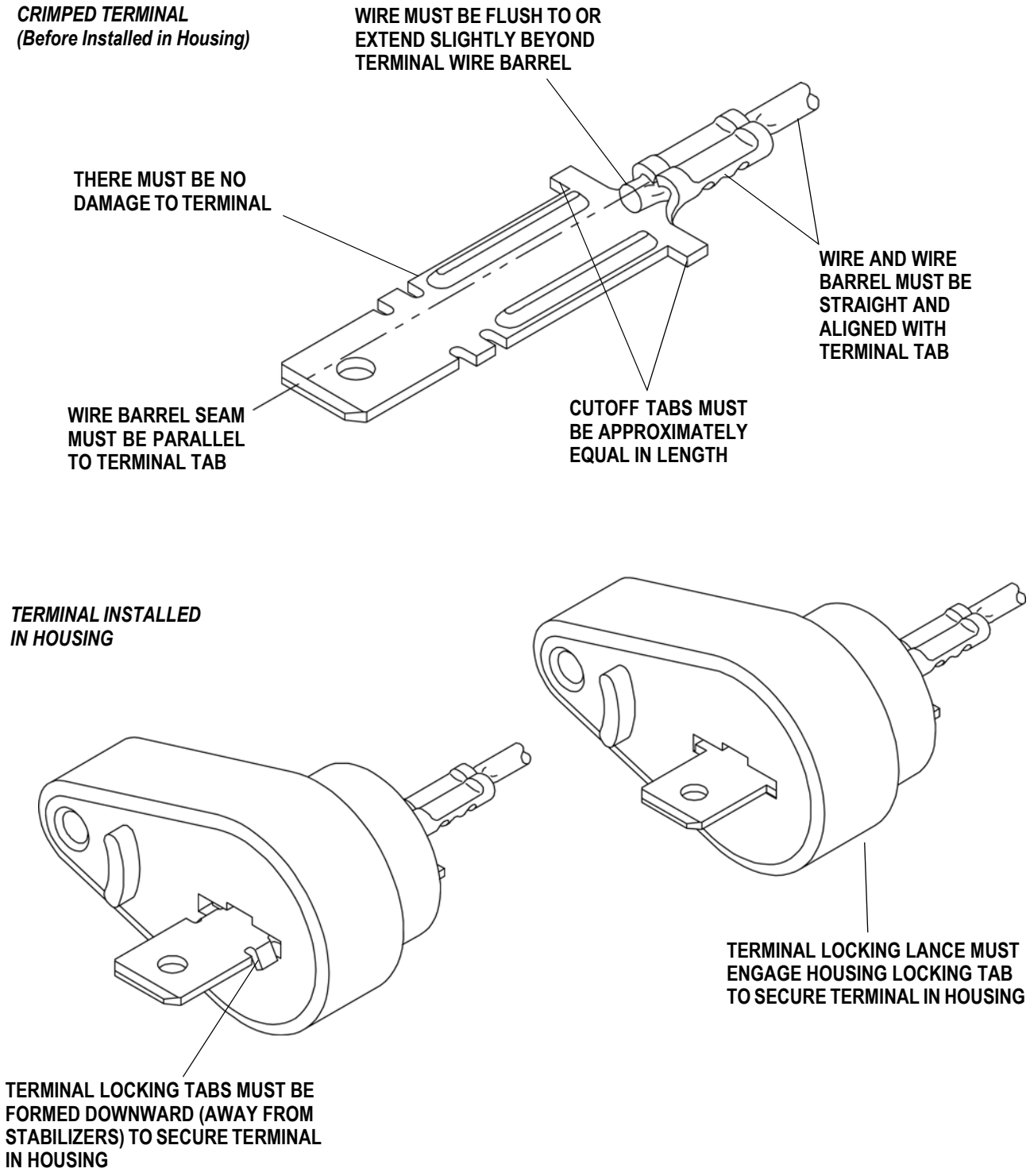


FIGURE 7. VISUAL AID