



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 [$\pm .005$ in.] 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 standard MAG-MATE* Series 500 12.7 [.500] box height terminals. These terminals are designed to be installed into a housing with a terminal cavity depth of approximately 12.7 mm [.500 in.]. The terminals are designed for insulation displacement termination. The terminals are available with different sized wire termination slots that accept various sizes of solid round copper or aluminum magnet wire. These terminals are available in 110 Series, 187 Series, and 250 Series FASTON* tabs, input/output (I/O) pin, pin receptacle, box poke-in, box tab, and poke-in tab.

The terminal features a wire termination slot on both sides of the body or a wire termination slot on one side and a strain relief slot on the other side for high-vibration or other harsh environments. Terminals are available that accept only one wire at a time or up to two wires of the same size and type. Each terminal features four locking bars that ensure retention into the housing terminal cavity. The terminals are also available with latches in addition to the locking bars for greater retention.

A varnish-resistant coating is available on terminal interfaces for special application such as exposure to varnishing processes. This coating prevents polyester-type varnishes from adhering to the contact interface surfaces and causing electrical discontinuities. Compatibility with non-polyester type varnishes should be evaluated by the user.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate inquiries for information. Basic terms and features of this product are provided in Figure 1.

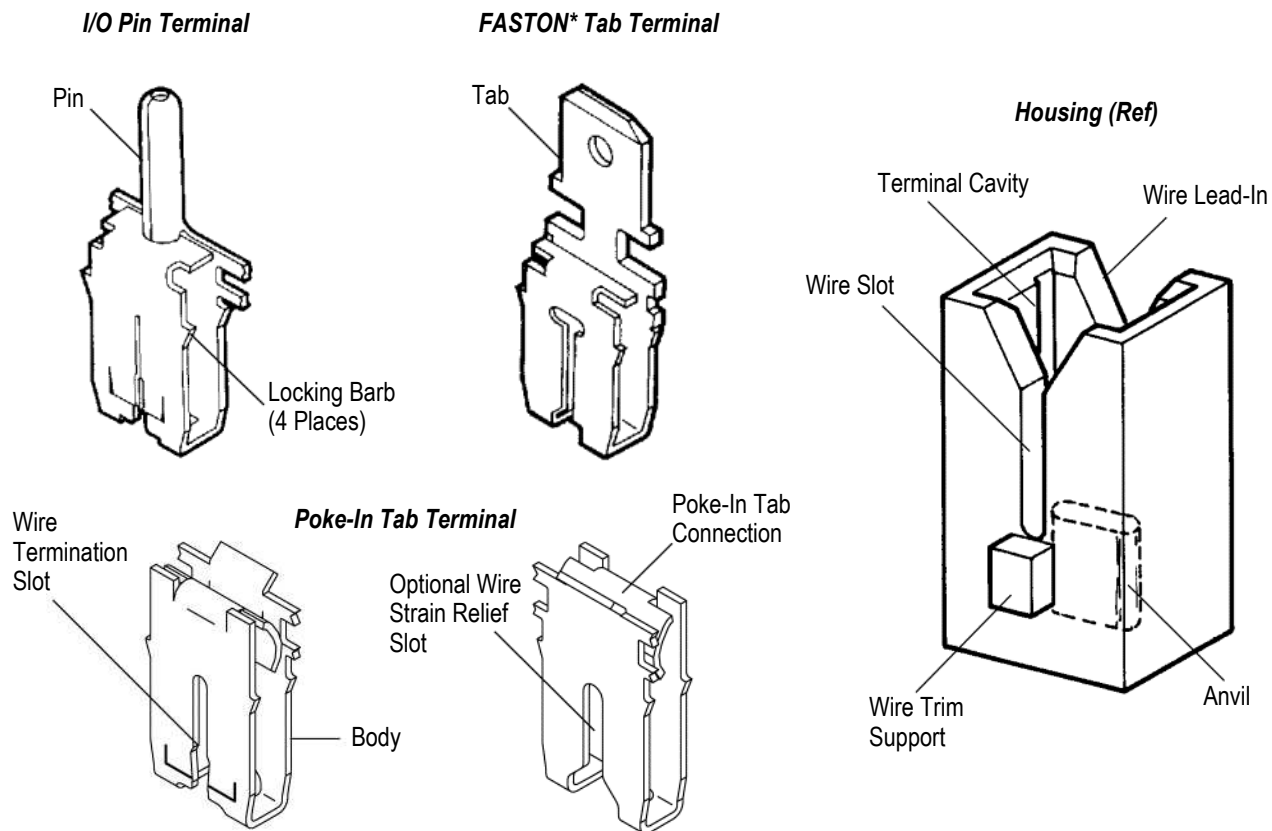


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Added Paragraph 3.2.A and Paragraph 3.2.B

2.2. Customer Assistance

Reference Product Base Part Number 62923 and Product Code 1039 are representative of MAG-MATE* Series 500 12.7 [.500] box height terminals. Use of these numbers will identify the product line and help you to obtain product and tooling information when visiting www.te.com or calling the number at the bottom of page 1.

2.3. Drawings

Customer Drawings for product part numbers are available from www.te.com. Information contained in the customer drawing takes priority.

2.4. Specifications

Product Specification [108-2053](#) provides product performance and test results.

2.5. Instructional Material

Instruction Sheets (408-series) and Handbooks (410-series) provide product assembly instructions or tooling setup and operation procedures and Customer Manuals (409-series) provide machine setup and operating procedures. Instructional material that pertain to this product are:

- [408-3295](#) Preparing (Reel-Wrap) Reel of Contacts for Applicator Tooling
- [408-9816](#) Handling Reeled Products
- [409-5842](#) AMP-O-LECTRIC* Model "G" Terminating Machines 354500-[]
- [409-5844](#) MAG-MATE* Product Terminator
- [410-5483](#) MAG-MATE* Interconnect System

3. REQUIREMENTS

3.1. Safety

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

3.2. Storage

A. Storage Temperature and Humidity

Products should be stored at room temperature and low ambient humidity. The temperature and humidity should be in the range as per DIN IEC68 (15-35°C, 25-75% relative humidity). Products should not be exposed to extreme temperatures, intense humidity or damaging mediums (acid or base atmospheres, aggressive agents, etc.)

B. Durability of Products

These products have a normally unlimited durability, provided they are stored in their original packing and at normal storage temperature and humidity. Exceptions are solderable products, tubes and cables. Solderable products will be solderable only within 6 months after deliver.

C. Ultraviolet Light

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

D. Shelf Life

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

E. Chemical Exposure

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

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



NOTE

Where the above environmental conditions exist, phosphor-bronze terminals are recommended.

3.3. Housing Design

Single or multiple terminal cavity housings can be designed with a concealed or exposed wire end feature and a controlled flash wire slot to help retain the wire in the housing prior to insertion of the terminal. The multiple terminal cavity housing can be designed with or without commoned terminal cavities.

All housings must have an open-end slot on the trim side to allow protrusion of the wire. The protruding wire end and wire trim support should be trimmed flush with the housing by the terminal insertion machine trim blade. See Figure 2.

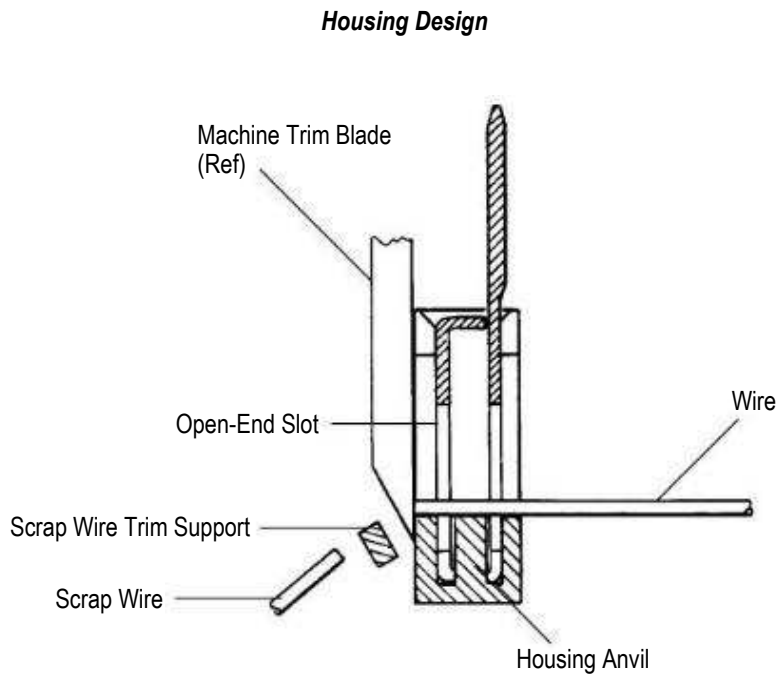


Figure 2

The external design of the housing will depend on system requirements. The internal part of the terminal cavity design must conform to the dimensions of the terminal. See Figure 3.



NOTE

Pre-design consultation with TE is necessary to ensure that the terminal cavity will be functional with the terminal and compatible with automatic insertion machines. Contact PRODUCT INFORMATION at the number at the bottom of page 1.

The following requirements must apply to the housings for these terminals.

- Housing must be glass-filled polyester material or an approved equivalent.
- The wire trim side of a multiple-terminal cavity housing shall have an equal wall thickness to prevent damage to the housing when trimming excess wire.
- Coil windings and other components must not extend above the base of the wire slots or otherwise obstruct the seating of the wire in the slots.
- The housing must have a wire trim support. It should be cut off automatically during machine insertion and must be cut off manually after manual insertion.

3.4. Wire Size and Type

The wire size may range from 22 through 12 AWG. The wire must be solid, round, film-coated copper or aluminum.

The individual wire size for each terminal is provided on the Customer Drawing for the terminal. Note that these terminals require a larger aluminum conductor than copper conductor.

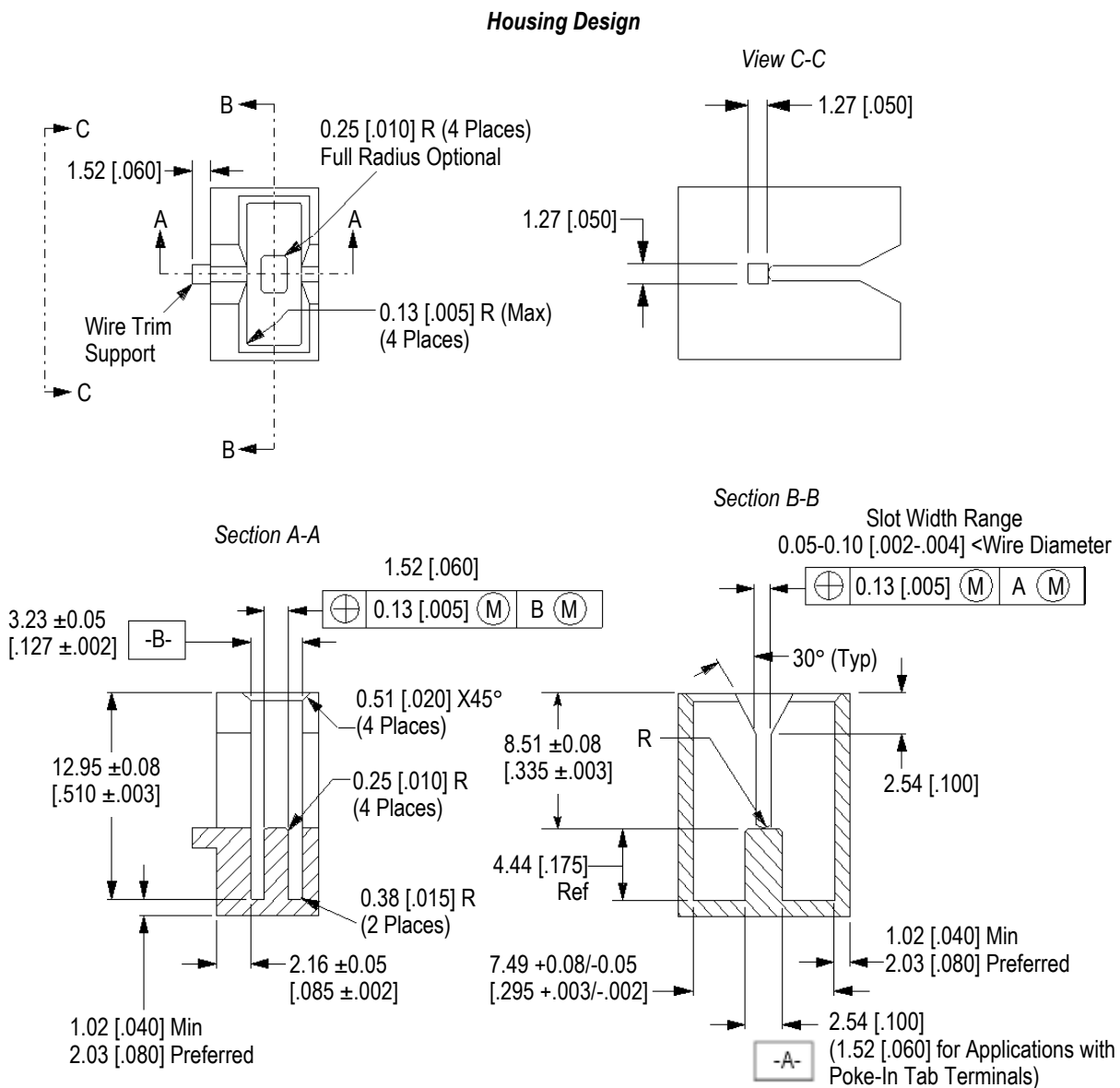


Figure 3

3.5. Wire Placement

The wire should be placed in the bottom of the wire slot of the housing (it should NOT be driven to the bottom by the terminal) and seated on the anvil of the housing with the end protruding beyond the wire trim support (prior to terminal insertion). This will ensure correct placement in the wire slot of the housing and full insertion of the terminal. See Figure 4.

The wire should be straight and free of any sharp bends or twists through the housing.

3.6. Termination

A. Cutoff Tab and Burr Allowances

Cutoff tab (not including the burr) is the portion of the carrier strip that remains after the terminal is cut from the carrier strip. The cutoff tabs located on each side of the terminal should not exceed the dimensions given in Figure 5.

The burr, which remains at the bottom of the cutting edge of each cutoff tab, should not exceed the dimension given in Figure 5.

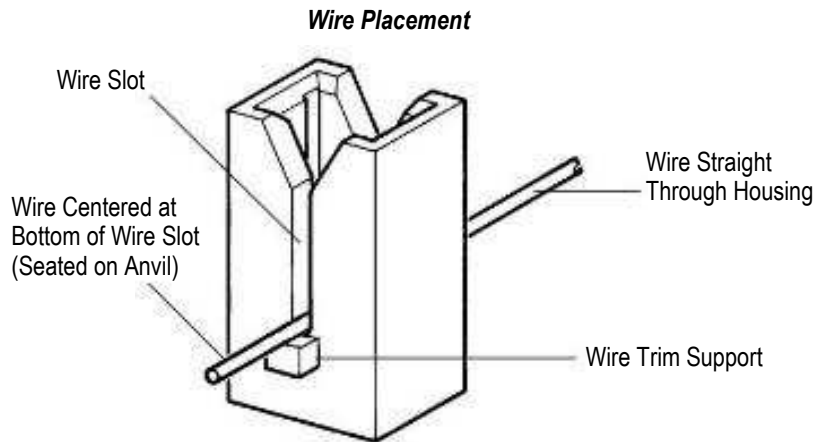


Figure 4

Cutoff Tab and Burr Allowances

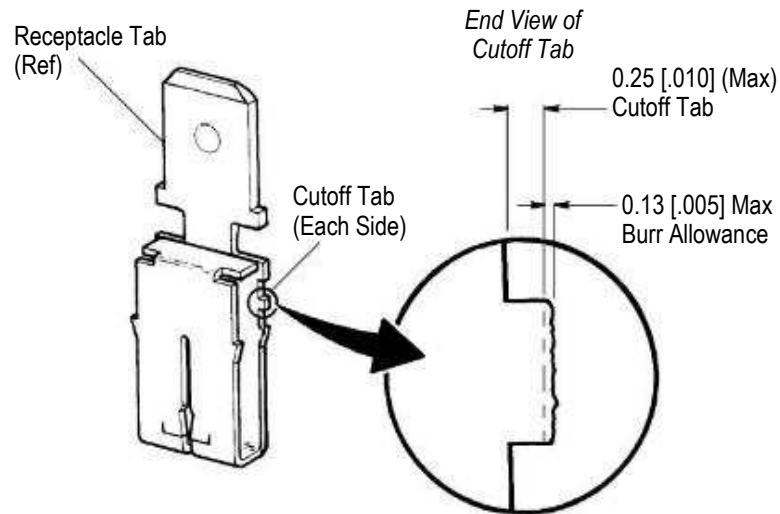


Figure 5

B. Terminal Insertion Depth

The terminal shall be inserted into the housing to within the dimensions given in Figure 6.

C. Wire Position

The wire shall be centered in the wire slot of the housing and in contact with the anvil of the housing as indicated in Figure 6. If a second wire is used, it should be directly on top of the first wire.



NOTE

There must be sufficient slack in the wire to allow any necessary movement of the components within the system. Contact PRODUCT INFORMATION at the number at the bottom of page 1 for an alternate method of measuring terminal insertion depth from the top of the contact cavity of the housing.

3.7. Mating

Pin and tab terminals will mate with a receptacle of the appropriate size and configuration.

Terminal Insertion Depth and Wire Position

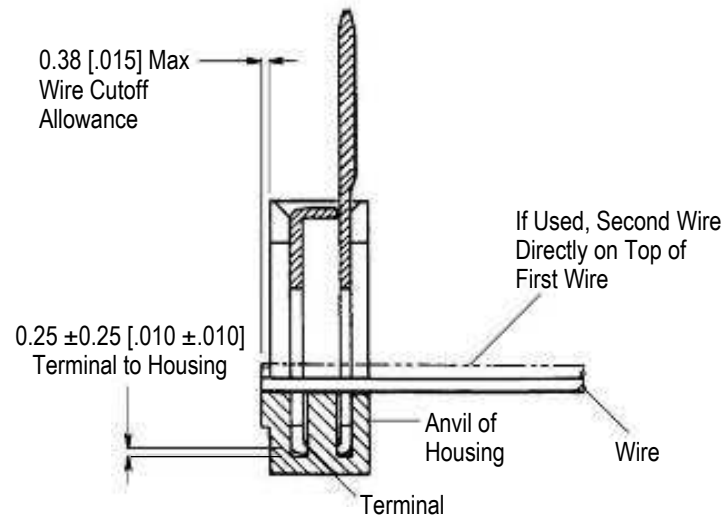


Figure 6

3.8. Tab Terminal Termination

After inserting a tab terminal, bend the tab as indicated in Figure 7 to avoid pull/push force during insertion and extraction of a receptacle terminal. TE has a wide variety of FASTON* Receptacle Terminals that will mate with the available tab sizes. We suggest that you consult with your local TE Representative who can assist you in making the best selection.

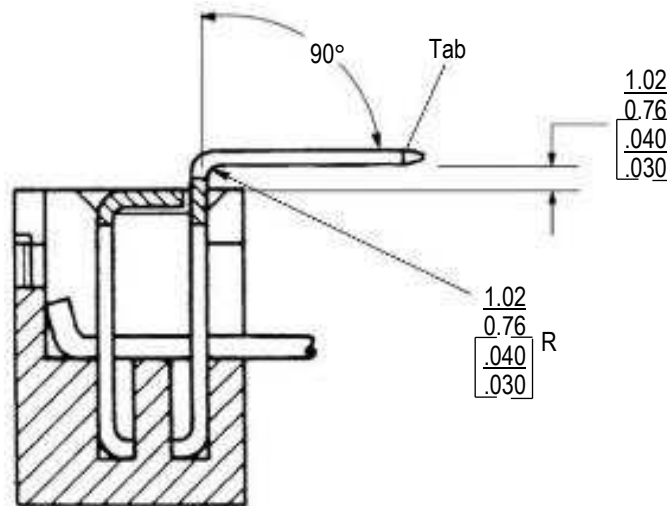


Figure 7

3.9. Replacement and Repair

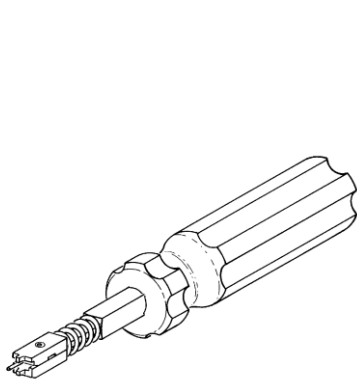
Damaged terminals or housings should not be used. If a damaged terminal or housing is evident, it should be replaced.

4. QUALIFICATION

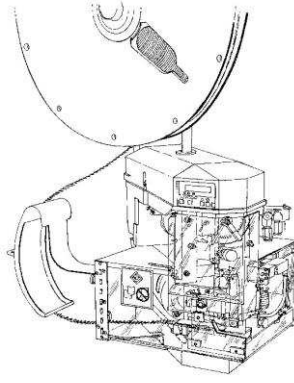
MAG-MATE* Series 500 12.7 [.500] box height terminals are Recognized under the Component Recognition Program of Underwriters Laboratories Inc. (UL) in File E13288.

5. TOOLING

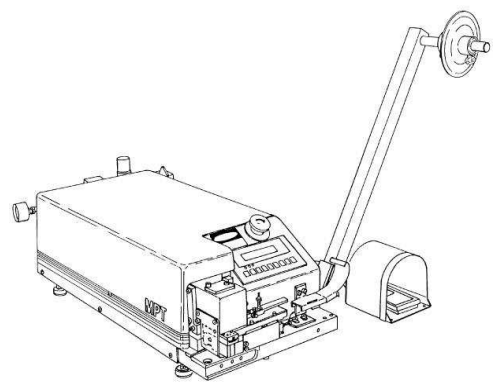
For terminal insertion tooling and automatic termination machines available for these terminals, contact TOOLING ASSISTANCE at the number at the bottom of page 1. Examples of tooling and the instruction document included with the tooling is given in Figure 8.



*Insertion Tool 274250-2
(408-6653)*



*AMP-O-LECTRIC Model "G"
Terminating Machines 354500-[]
(409-5844)*



MAG-MATE Product
Terminator 318119-1
(409-5844)*

Figure 8

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.

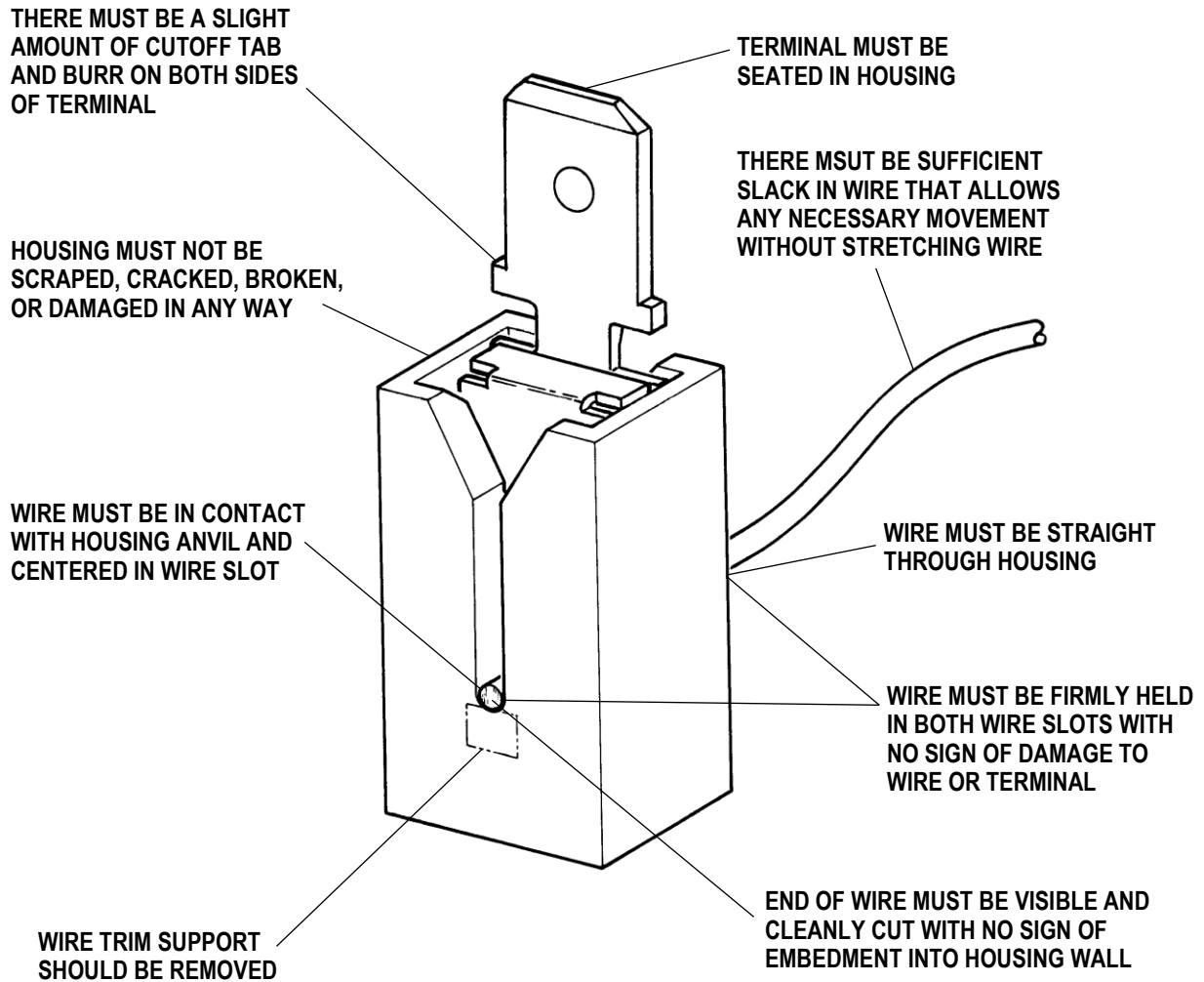


FIGURE 9. VISUAL AID