



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 MAG-MATE* Slim Line Terminals designed for housing configurations that have a cavity depth approximately 8.50 [.335]. They have an Insulation Displacement Crimp (IDC) slotted beam at one end for terminating solid round copper magnet wire in sizes from 0.18 mm dia [33 AWG] through 1.15 mm dia [17 AWG], and a tab on the opposite end to receive various types of receptacles crimped onto insulated lead wire. These requirements are applicable to hand and automatic machine application tooling.

TE Connectivity Engineering can provide assistance in selecting the most compatible wire, terminal, and terminating machines. Requests for assistance should be made as early as possible in the product planning stage.

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

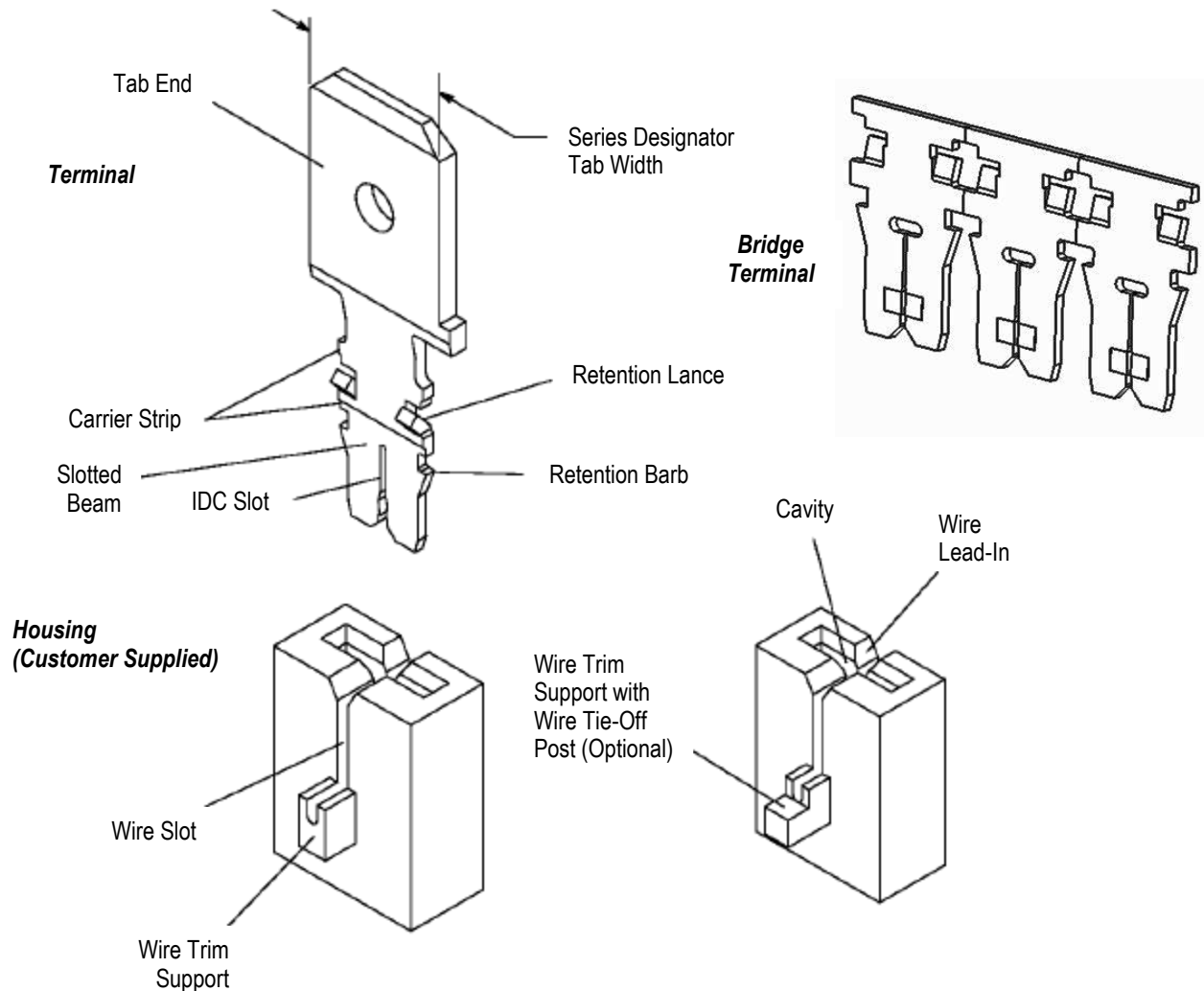


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

- Updated document to corporate requirements.
- Added Paragraph 3.2.A and 3.2.B.

2.2. Customer Assistance

Reference Product Base Part Number 63710 and Product Code 1039 are representative of MAG-MATE* Slim Line Terminals with Tab. 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 [108-1484](#) provides product performance and test results.

2.5. Instructional Material

Instruction sheets (408-series) provide product assembly instructions or tooling setup and operation procedures and customer manuals (409-series) provide machine setup and operating procedures. Handbook 410-5483 provides an overview of the MAG-MATE* product line. Instructional material that pertain to this product are:

- [408-3295](#) Preparing Reel of Contacts for Application Tooling
- [408-6628](#) Hand Insertion Tool 274260-2 for 187 Tabs
- [408-6635](#) Hand Insertion Tool 274282-1 for 250 Tabs
- [408-9816](#) Handling Reeled Product
- [409-5859](#) Vertical MAG-MATE* Product Terminator (MPT)
- [410-5483](#) MAG-MATE* Interconnect System Handbook

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 delivery.

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










3.3. Wire Selection

The insulation displacement slots will accommodate copper magnet wire 0.18 mm dia [33 AWG] through 1.15 mm dia [17 AWG]. The wire size for each terminal is listed on the Customer Drawing. Contact TE Connectivity Engineering for more information. Under closely controlled conditions, aluminum magnet wire, specialized magnet wire, or two wire terminations are applicable.

3.4. Cavity Design

Housing cavities that accept MAG-MATE* Slim Line terminals manufactured by TE Connectivity must be in accordance with the requirements specified in 3.2.A, B, C, and D.

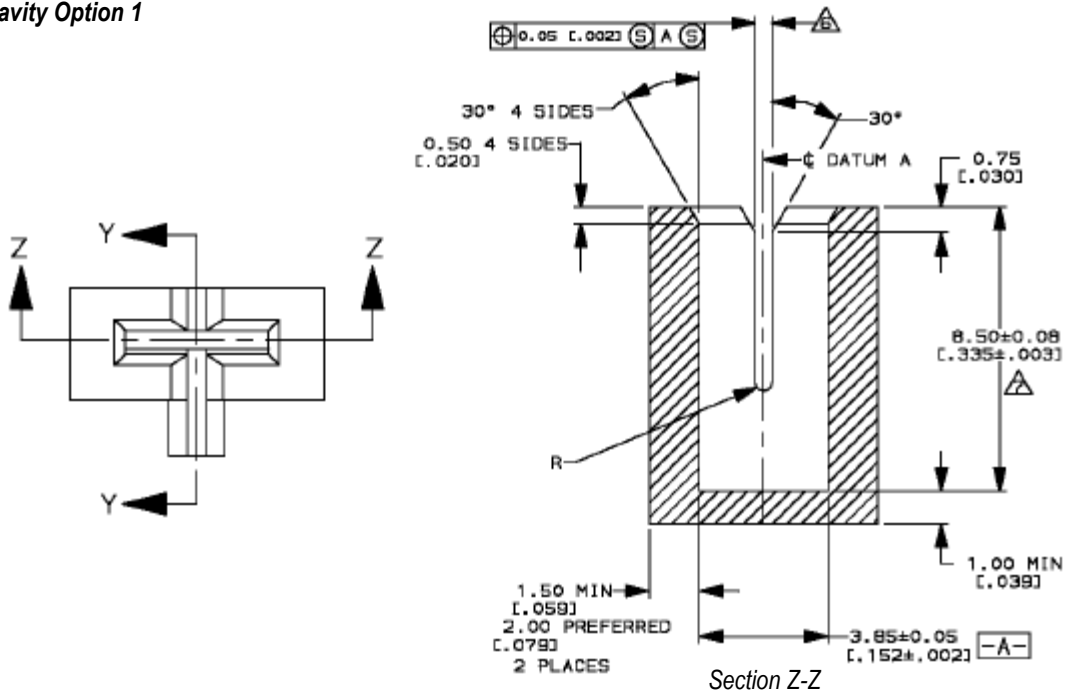
Drawings of the final design must be supplied to TE Connectivity Engineering for review and approval and for compatibility of insertion equipment. The following notes pertain to all applicable cavity designs.

-  Recommended material is glass-filled polyester or TE Connectivity Engineering approved equivalent.
-  Wall thickness on trim side must be equal on multicavity housings to provide wire trim by automatic insertion machines.
-  Wire trim support must be on the wire trim side only. The MPT will trim off both wire and wire trim support. Wire trim support is not necessary if the magnet wire is hand trimmed. Consult TE Connectivity Engineering if trimmed wire end must be concealed within the cavity.
-  Coil windings and other assembly components must not extend above the base of the wire slot or obstruct proper seating of the magnet wire in the slot.
-  Draft angle must be held within the feature tolerances.
-  Slot width should be 0.08 ± 0.03 [.003±.001] smaller than the largest magnet wire outside diameter dimension being terminated.
-  Terminal insertion depth flush to 0.35 [.014] below cavity surface when 7.75 ± 0.08 [.305±.003] is total terminal length.
-  Controlled flash option can be utilized when retention of both small and large diameter wires must be accommodated in the same cavity.
-  Commoned cavity option can be utilized when two MAG-MATE* Slim Line Terminals are inserted without removal of the carrier strip to provide an electrical bus between IDC terminators.

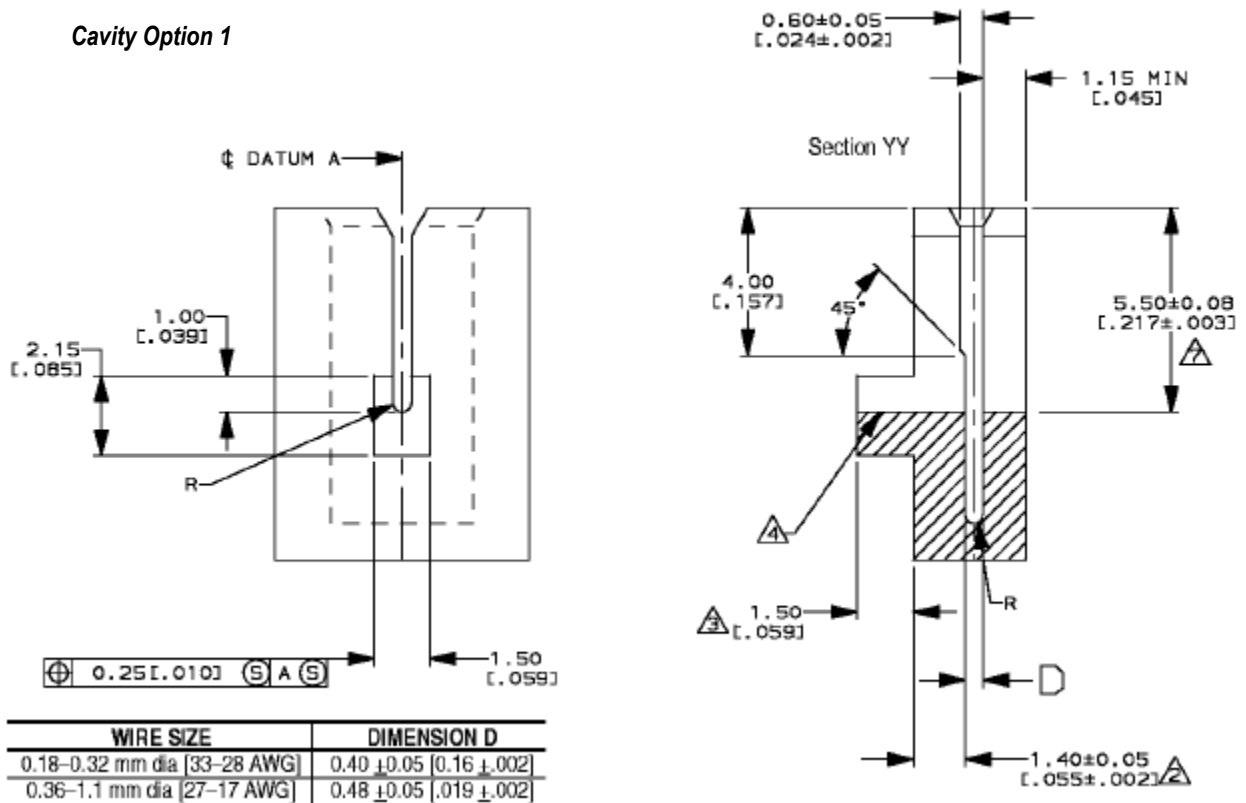
A. Cavity Option 1

Cavity Option 1 is a straight through slot which leaves the trimmed end of the magnet wire exposed and may be used in applications where isolation of the conductor end is not required. Refer to Figure 2.

Cavity Option 1



Cavity Option 1



WIRE SIZE	DIMENSION D
0.18–0.32 mm dia [33–28 AWG]	0.40 ± 0.05 [0.16 ± .002]
0.36–1.1 mm dia [27–17 AWG]	0.48 ± 0.05 [0.19 ± .002]

Figure 2 (end)

B. Cavity Option 2

Cavity Option 2 contains a controlled flash to retain a broad range of magnet wire sizes in the cavity prior to terminal insertion. Refer to Figure 3.

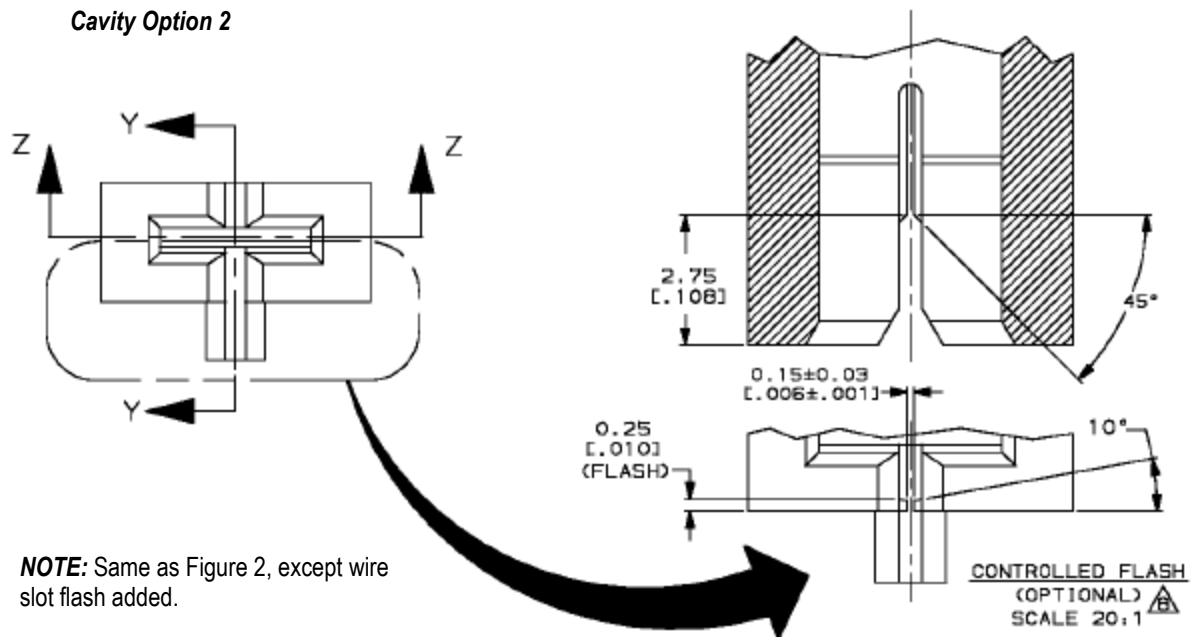


Figure 3

C. Commoned Cavities

Cavity Options 1 and 2 may be commoned. The housing accepts a pair of terminals with the carrier strip left intact for electrical commoning as shown in Figure 4.

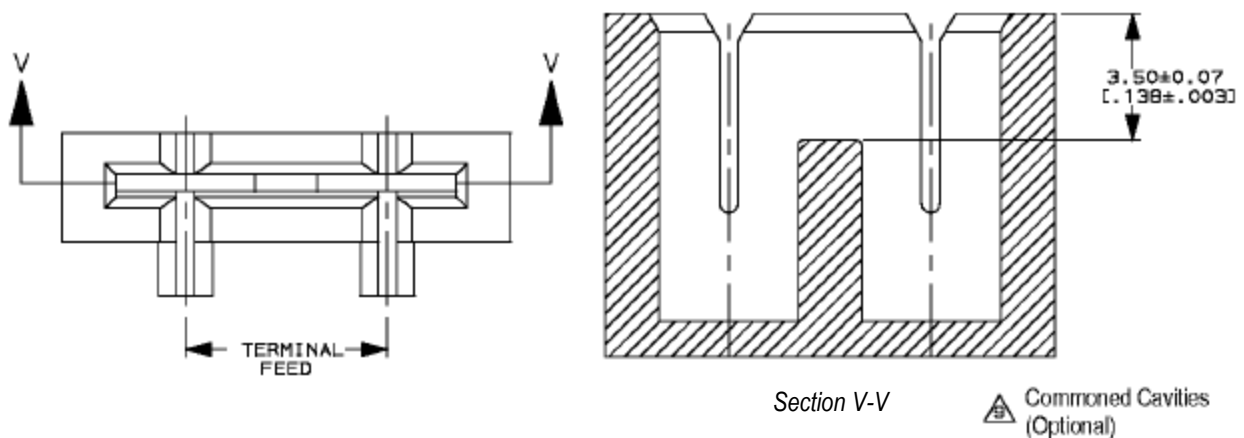


Figure 4

D. Tie-Off Post Option

For smaller wire sizes, a wire tie-off post option should be used. The magnet wire should be laced across the cavity slot and then the free end should be wrapped for a minimum of three times around the tie-off post as shown in Figure 5.

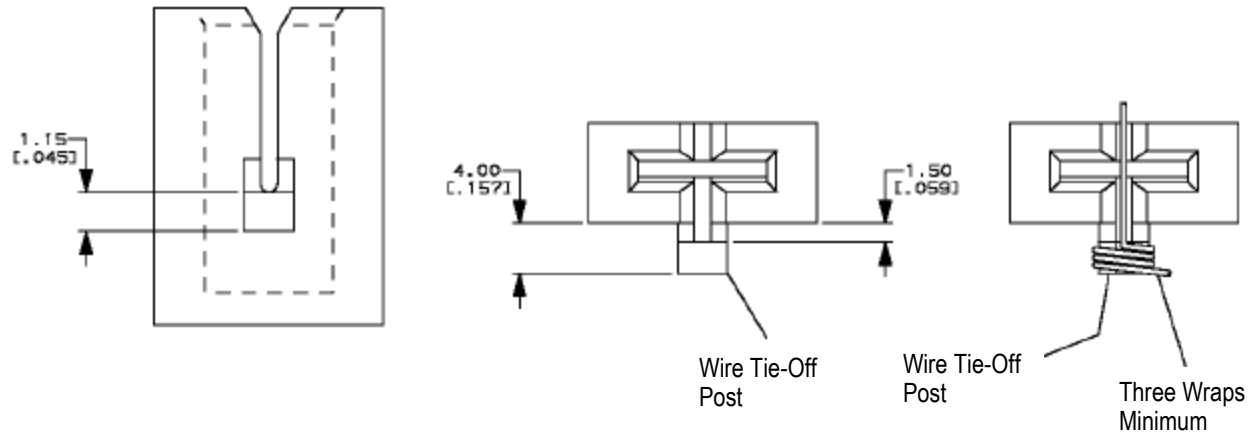


Figure 5

3.5. Wire Placement (Pre-Termination)

The magnet wire must be laced into the bottom of the cavity slot prior to terminal insertion. The magnet wire may rebound at the base of the slot, but must remain within the slot. The magnet wire must not rest in the lead-in area of the slot or outside the cavity opening. There must be a small amount of slack between the coil winding and the housing to prevent stretching of the magnet wire during insertion.



NOTE

There must be sufficient slack in the magnet wire to allow any necessary movement of components within the system.

3.6. Terminal Insertion Depth

The terminal should be inserted into the housing cavity within the limits specific in Figure 6.

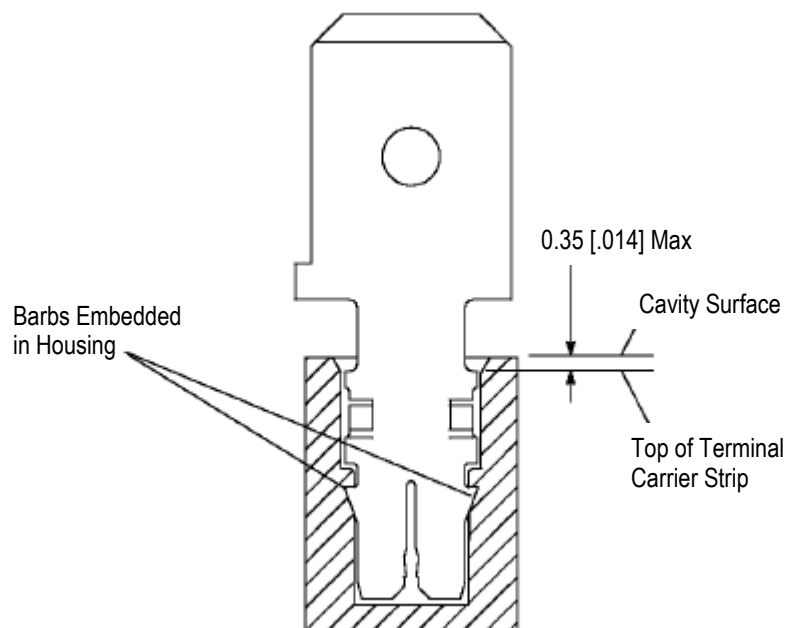


Figure 6

3.7. Wire Position (Terminated)

The magnet wire must be fully seated in the bottom of the cavity slots as shown in Figure 7.

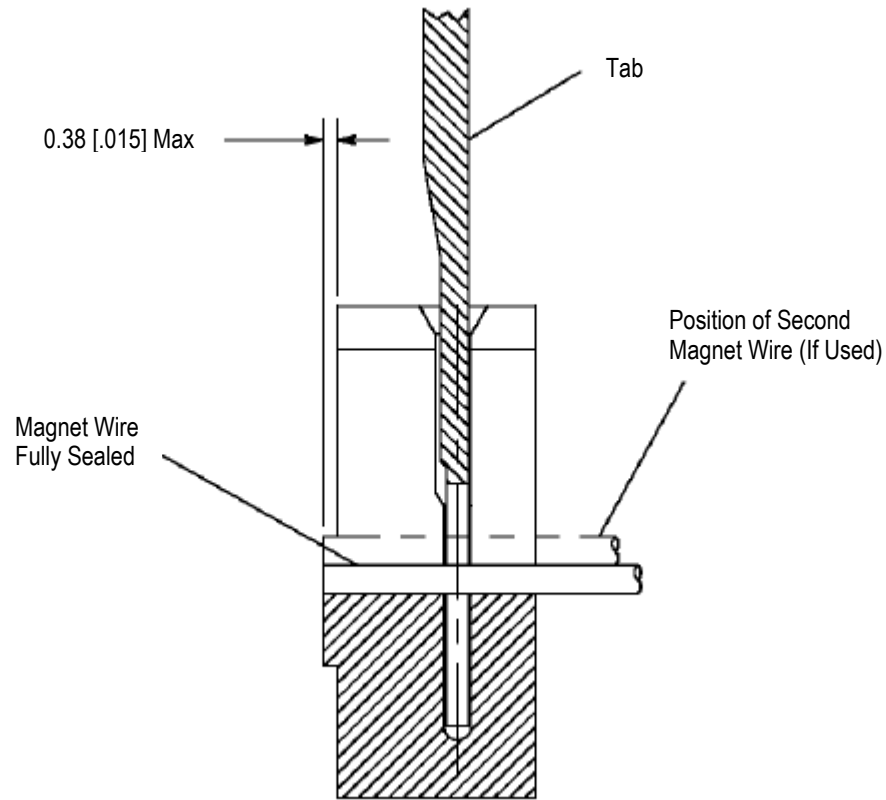


Figure 7

Cutoff tabs are the portions of the carrier strip that remain after the terminal is cut from the carrier strip. They should not exceed the specified limits on either side of the terminal. The burr which remains at the bottom of the cutting edge on the tabs should not exceed the indicated limit. See Figure 8.

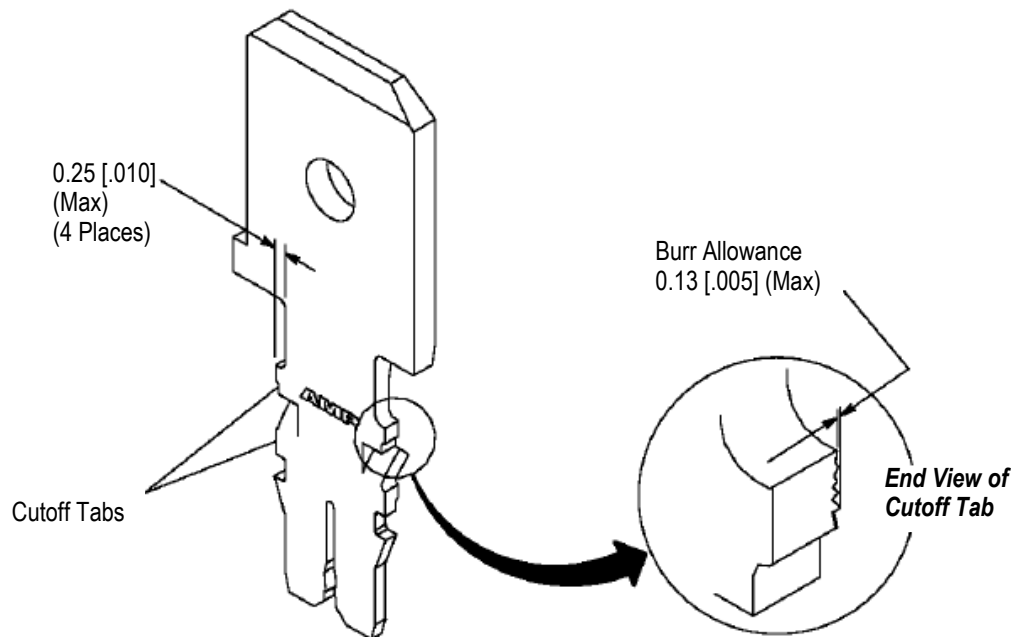


Figure 8

3.9. Tab Terminal Termination

After inserting a tab terminal, bend the tab as indicated in Figure 9 to avoid push/pull force during insertion and extraction of a receptacle terminal. TE has a wide variety of receptacle terminals that will mate with the available tab sizes. TE suggests consulting with your local TE Representative who can assist in making the best selection.

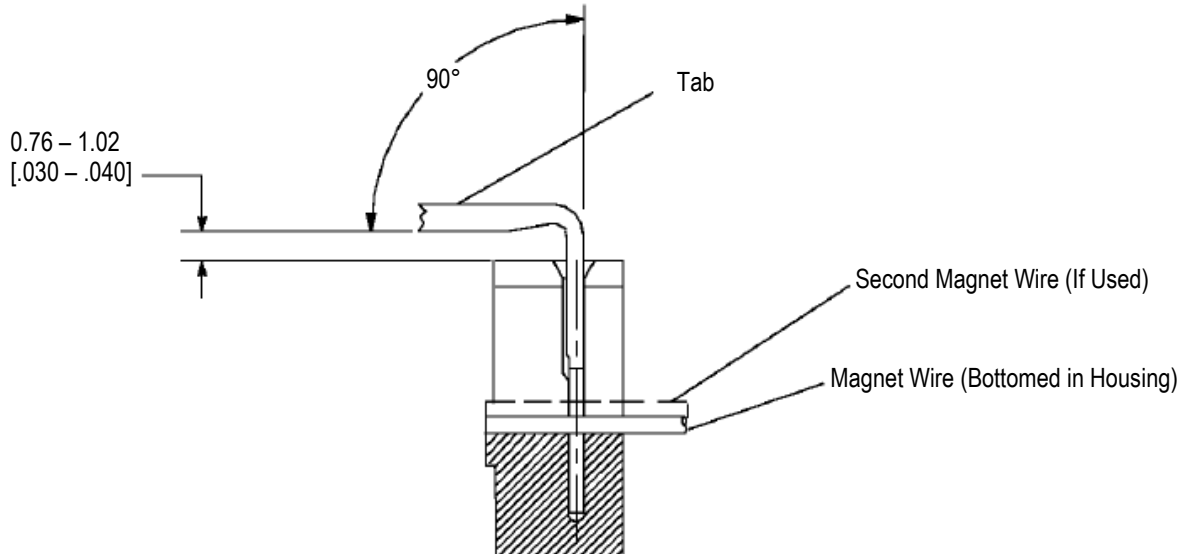


Figure 9

Magnet wire terminations using MAG-MATE* Slim Line Terminals, cavities, and assembly requirements outlined in this specification will conform to the design objectives provided in TE Specification 108-1484.

5. TOOLING

Loose piece terminals can be inserted with TE Hand Insertion Tools. Strip terminals can be inserted with a variety of TE tools and machines designed for specific applications. Since the exterior design of the housing must meet the requirements of the equipment in which the housing is going to be used, tooling must be designed for each specific application. Some basic tooling designs that could be modified for specific application requirements are the horizontal and vertical MAG-MATE* Product Terminators (MPT) or a three station Rotary Index Table (RIT). There is also the AMP Modular Interface Unit which can be part of a TE machine or it can be designed into other production equipment. Customer manuals are available for any machine produced by TE Connectivity. Typical tooling and reference documentation for each are provided in Figure 10.



NOTE

Experienced TE Tooling Engineers have modified machines of this type and developed others to meet specific design requirements. TE recommends contacting TE Engineering through the number at the bottom of page 1.

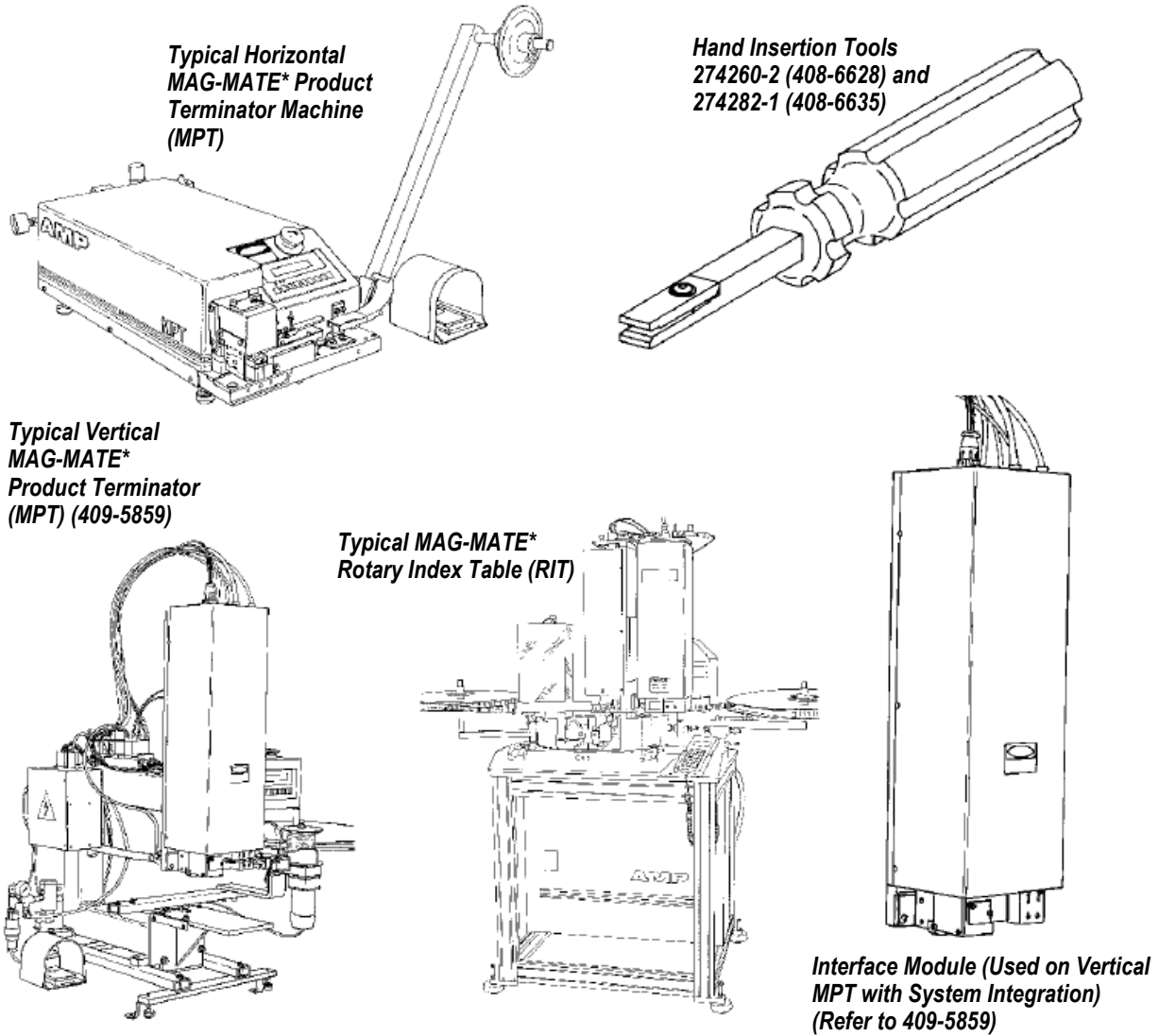


Figure 10

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.

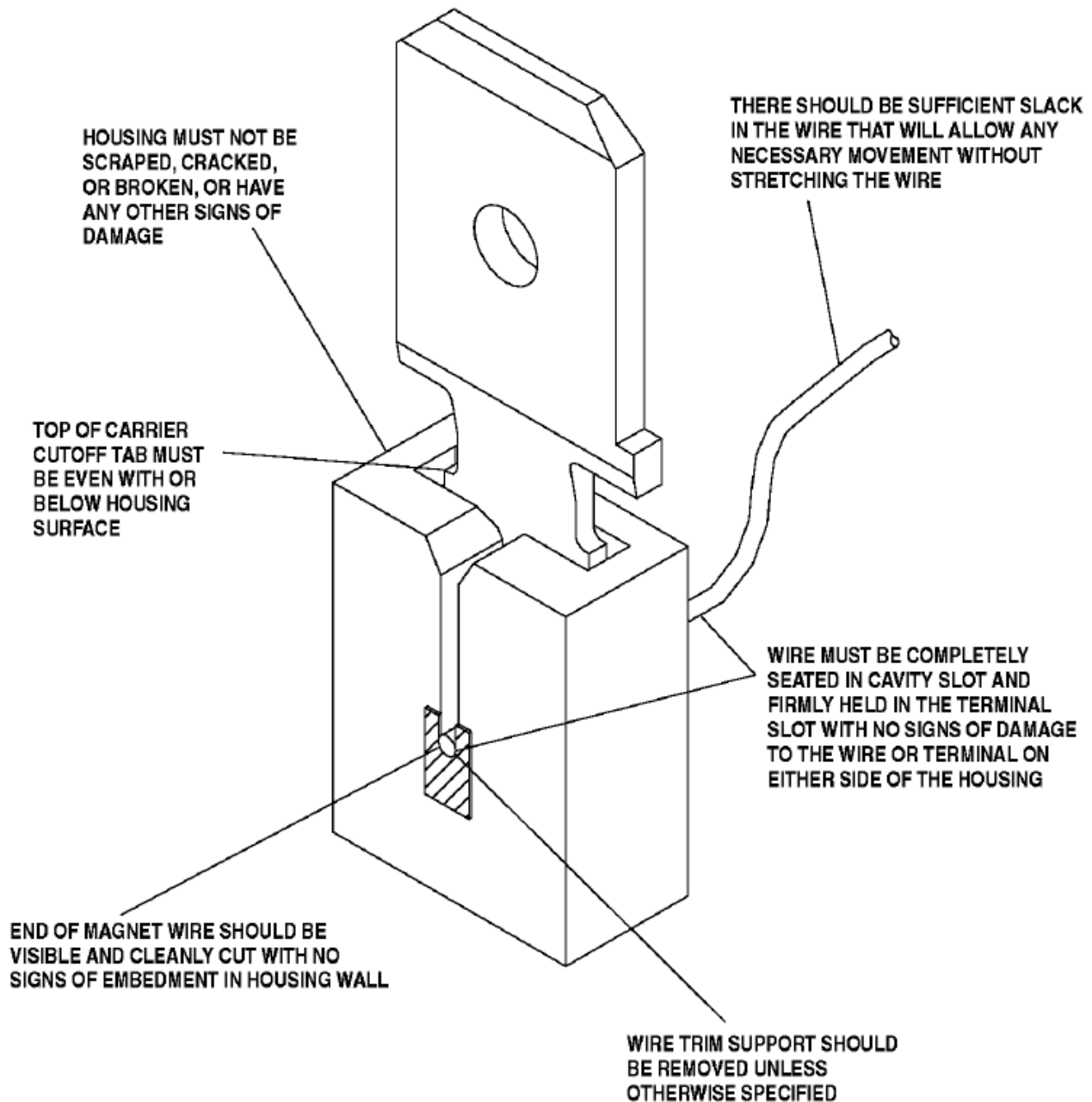


FIGURE 11. VISUAL AID