

**.156 MATE-N-LOK\* Connectors**
**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 .156 MATE-N-LOK housings and contacts. The housings are only available for four-circuit wire-to-wire (panel mount or free-hanging) applications. The contacts are designed with a single locking lance for retention in the connector housings.

When corresponding with TE Connectivity Representatives, use terminology provided in this specification to facilitate your inquiry for information. Basic terms and features of the housings and contacts are provided in Figure 1.

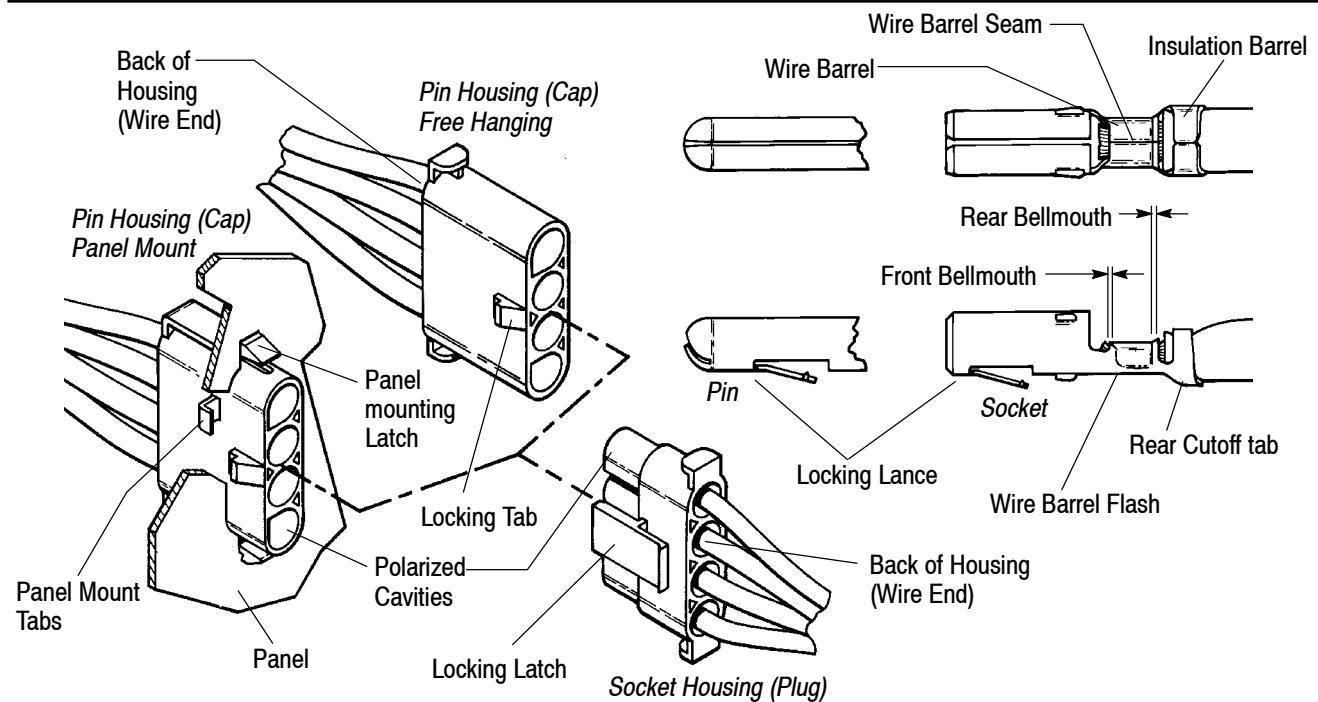


Figure 1

**2. REFERENCE MATERIAL**
**2.1. Revision Summary**

- Updated document to corporate requirements and new logo

**2.2. Customer Assistance**

Reference Part Number 794116-1 and Product Code 1345 are representative numbers of the .156 MATE-N-LOK product line. 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 TE Representative or, after purchase, by calling the Tooling Assistance Center or the Product Information number at the bottom of this page.

**2.3. Engineering Drawings**

Customer Drawings for specific products are available from the responsible TE Engineering department via the service network. The information contained in the Customer Drawings takes priority if there is a conflict with this specification or with any other technical documentation supplied by TE.

## 2.4. Specifications

Product Specification 108-8000 provides performance test for the connector housings.

## 2.5. Instruction Material

The following Customer Manuals (409-series) and Instruction Sheets (408-series) are supporting documents available to assist with product application, and tool setup and operation.

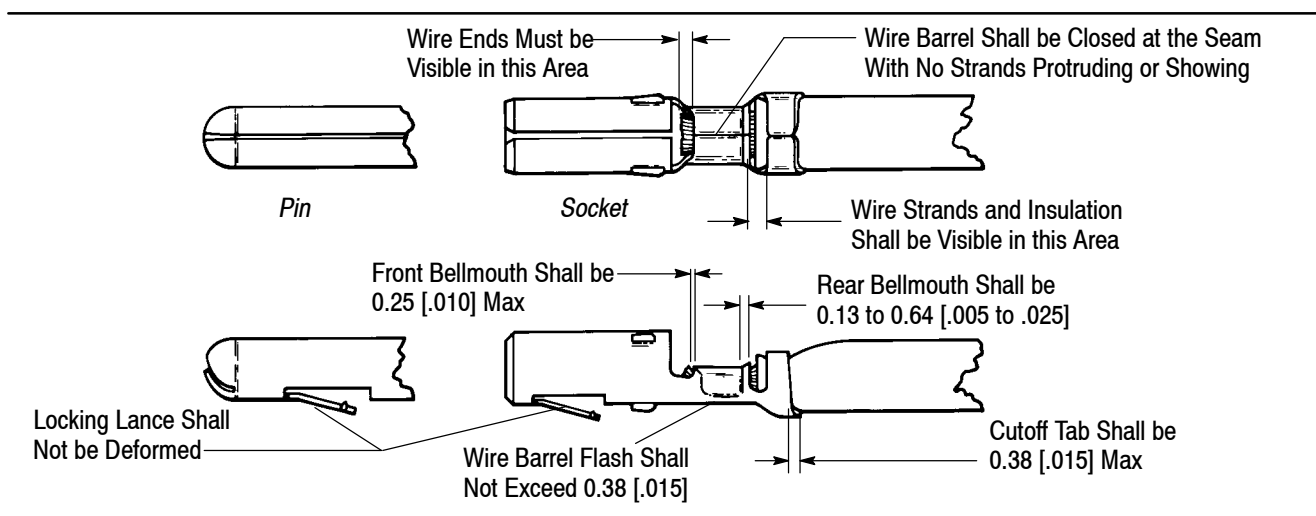
409-5128	AMP-O-LECTRIC* Machine information
409-5289	Model "T" Unit information
408-4340	Hand Tool 58631-1
408-4341	Hand Tool 58632-1
408-8040	Heavy Duty Miniature Quick Change Applicator
408-7347	Insertion Tool 91002-1
408-4322	Extraction Tool 691458-1 and -2

## 3. REQUIREMENTS

### 3.1. Wire

#### A. Wire Selection

The contacts will accept wires ranging in size from 10 to 20 AWG. Wire insulation diameter shall have minimum and maximum dimensions according to the wire sizes indicated in Figure 2.



**AUTOMATIC MACHINE WIRE CRIMP DIMENSIONS**

APPLICATOR PART NUMBER* (Instruction Sheet) (408-8040)	CONTACT PART NO.		WIRE			WIRE BARREL		INSULATION BARREL CRIMP WIDTH
	SOCKET	PIN	SIZE (AWG)	INSULATION DIAMETER MAX.	STRIP LENGTH ±0.38 [.015]	CRIMP HEIGHT ±0.05 [.002]	CRIMP WIDTH	
466462-1 466462-2 466462-3	61085	61086	20	3.18 [.125]	5.33 [.210]	1.45 [.057]	2.54 [.100]	3.94 [.155]
			18			1.55 [.061]		
			16			1.70 [.067]		
			14			1.96 [.077]		
687765-2 687765-3	61233	61234	12	4.70 [.185]		2.21 [.087]	3.56 [.140]	5.33 [.210]
			10			2.70 [.106]		

■ Heavy Duty Miniature Applicators with -1 suffix part number are used in a Model "T" Terminating Unit, and those with a -2 suffix part number are used in an AMP-O-LECTRIC Model "K" terminating machine. Refer to Customer Manual 409-5289 for Model "T" unit information and, Instruction Sheet 408-8040 for applicator information. Refer to Customer Manual 409-5128 for AMP-O-LECTRIC machine information.

Figure 2 (cont'd)

**HAND TOOL WIRE CRIMP DIMENSIONS**

HAND TOOL PART NUMBER	CONTACT PART NO.		WIRE			WIRE BARREL		INSULATION BARREL CRIMP WIDTH
	SOCKET	PIN	SIZE (AWG)	INSULATION DIAMETER MAX.	STRIP LENGTH $\pm .38$ [.015]	CRIMP HEIGHT $\pm .05$ [.002]	CRIMP WIDTH	
58631-1	61250	61251	20	3.18 [.125]	5.33 [.210]	1.63 [.064]	2.29 [.090]	3.94 [.155]
			18			1.63 [.064]		
			16			1.96 [.077]		
			14			1.96 [.077]		
58632-1	61252	61253	12	4.70 [.185]		2.21 [.087]	3.56 [.140]	5.33 [.210]
			10			2.64 [.104]		

Figure 2 (end)

**B. Wire Preparation**

The wire strip length shall be according to the wire sizes as indicated in Figure 2. Reasonable care shall be taken during the stripping operation to ensure the conductor is not nicked, scraped, or cut.

**3.2. Crimped Contacts**

Contacts shall be crimped in accordance with the instruction material packaged with the tooling; Refer to Paragraph 2.5 and Figure 2.

**A. Carrier Cutoff Tab**

Cutoff tab shall not exceed .38 mm [.015 in.].

**B. Wire Barrel Crimp Inspection**

1. Crimp height and width shall be as shown in Figure 2.
2. The wire barrel seam shall be closed adequately to confine all strands of the wire. There shall be no loose wire strands. Wire strands should not be embedded in the seam of the wire barrel.
3. The rear bellmouth shall be 0.13 to 0.64 mm [.005 to .025 in.]. The front bellmouth shall be 0.25 mm [.010 in.] maximum.
4. Both insulation and conductor shall be visible between the insulation barrel and wire barrel. Care shall be taken not to allow insulation to be crimped in the wire barrel.
5. Wire barrel flash shall not exceed 0.38 mm [.015 in.].

**NOTE**


*Care shall be taken to ensure that the wire insulation is not cut or broken during the crimping operation, and to ensure that the insulation is not crimped into the wire barrel.*

**C. Inspection**

Contacts shall be crimped in accordance with instruction material packaged with the tooling; refer to Paragraph 2.5 and Figure 2.

**D. Locking Lance**

The locking lance shall not be deformed.

**3.3. Housings**

A connector assembly consists of a plug and a cap connector. A connector consists of a housing (plug or cap) with a specified number of crimp contacts (pin or socket). Both the plug and cap housings have individually numbered cavity identification on the wire end, and feature polarizing cavities on the mating end. The plug housings and the cap housings have a single locking tab. The housings are designed for free hanging or panel mounting applications (refer to Paragraph 3.4, Panel Cutout).

**A. Assembly**

Crimped pin and socket contacts shall be manually inserted in the appropriate housing. All contacts are designed with a .156 diameter pin and a single locking lance for retention inside of the connector housings. See Figure 3.

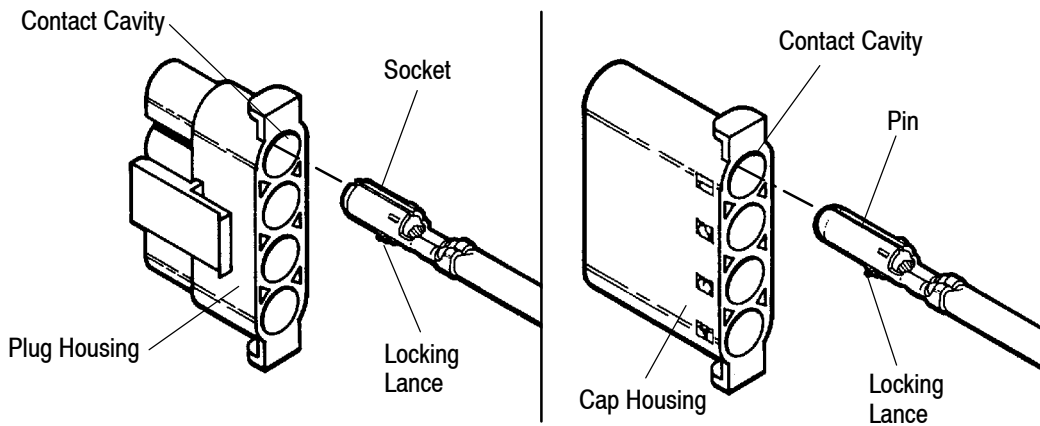


Figure 3

**NOTE** *.156 MATE-N-LOK contacts cannot be intermixed; pin contacts must be inserted into cap housings and socket contacts into plug housings.*

**NOTE** *Insertion Tool 91002-1 (Instruction Sheet 408-7347) is available for inserting contacts crimped to small wire sizes.*

**B. Disassembly**

Extraction Tool 691458-1 is designed for removing pin contacts from cap housings. Tool 691458-2 is designed for removing socket contacts from plug housings. See Instruction Sheet 408-4322 for pin and socket extraction procedures.

**3.4. Panel Cutout**

Cap connector panel mounting cutouts shall be as indicated in Figure 4. (No mounting hardware is required.)

The cap housing features flexible mounting latches for insertion into the panel. Push the cap connector through the panel - in the same direction as the cutout was made - until it snaps in place. See Figure 4.

**NOTE** *The panel must be punched in the same direction that the connector housing will enter the panel.*

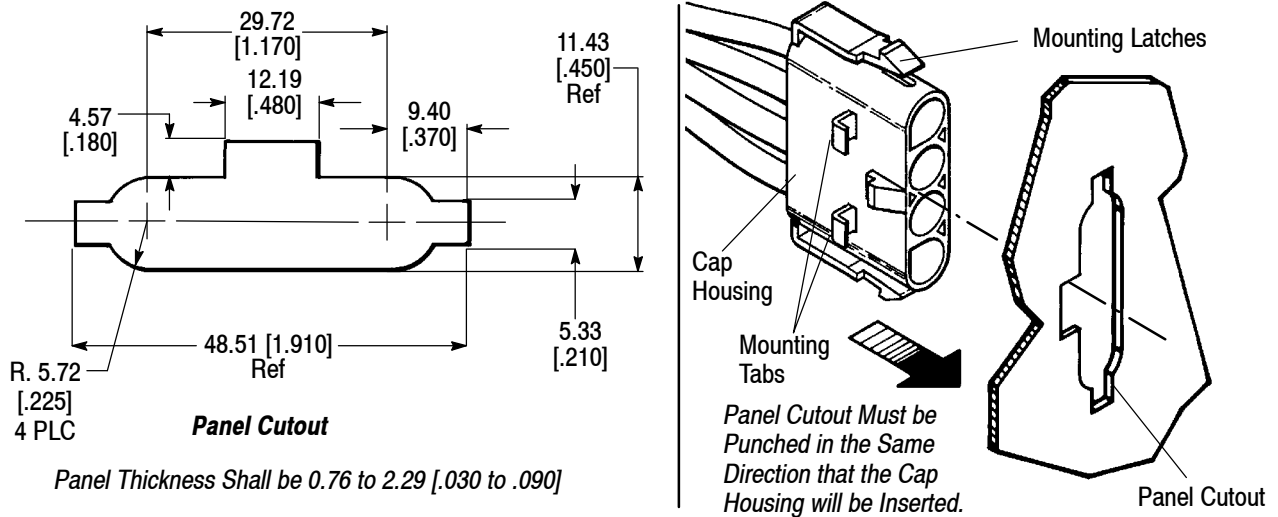


Figure 4

#### 4. QUALIFICATION

The .156 MATE-N-LOK Connectors have been submitted for agency evaluation and testing.

#### 5. TOOLING (Figure 5)

Loose piece contacts are designed to be crimped with a TE hand tool. Strip form contacts are designed to be crimped with a miniature applicator used in a TE semi-automatic or automatic machine. Tooling, applicators, and instruction material are in Paragraph 2.5 and in Figure 2.

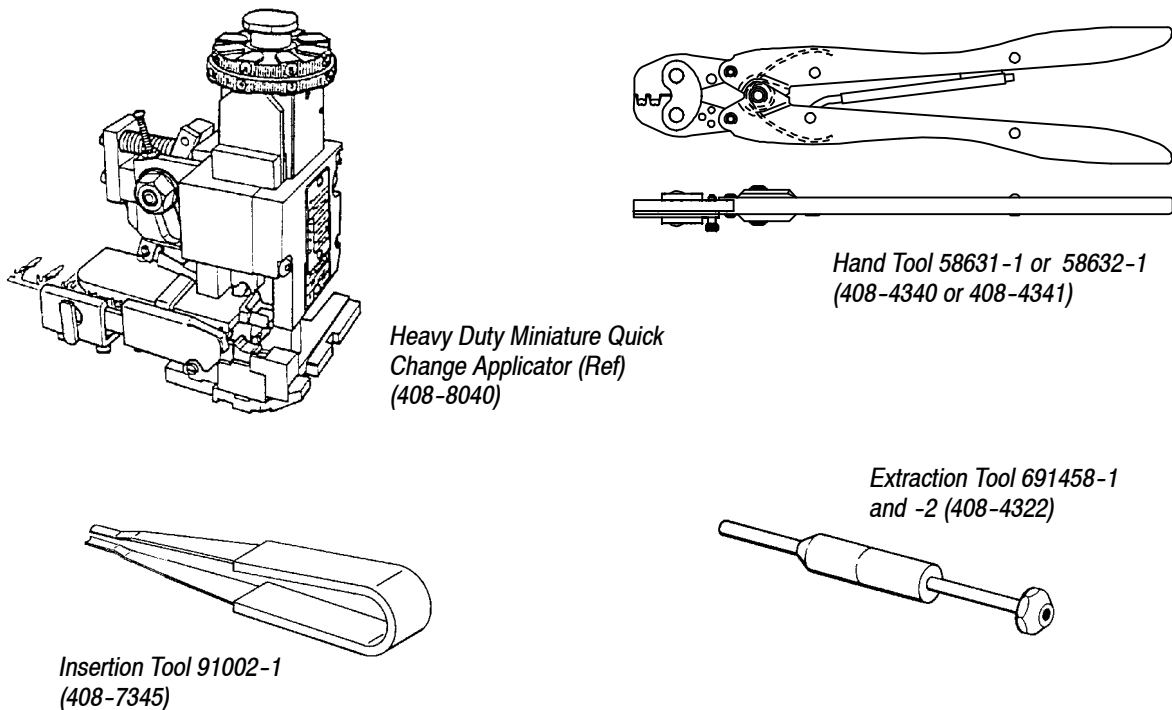


Figure 5

## 6. VISUAL AID

The following illustrations shown in Figure 6 are to be used by production personnel to ensure properly applied product. The views suggest requirements for good applications. Applications considered visually incorrect should be inspected using the information in the main body of this document.

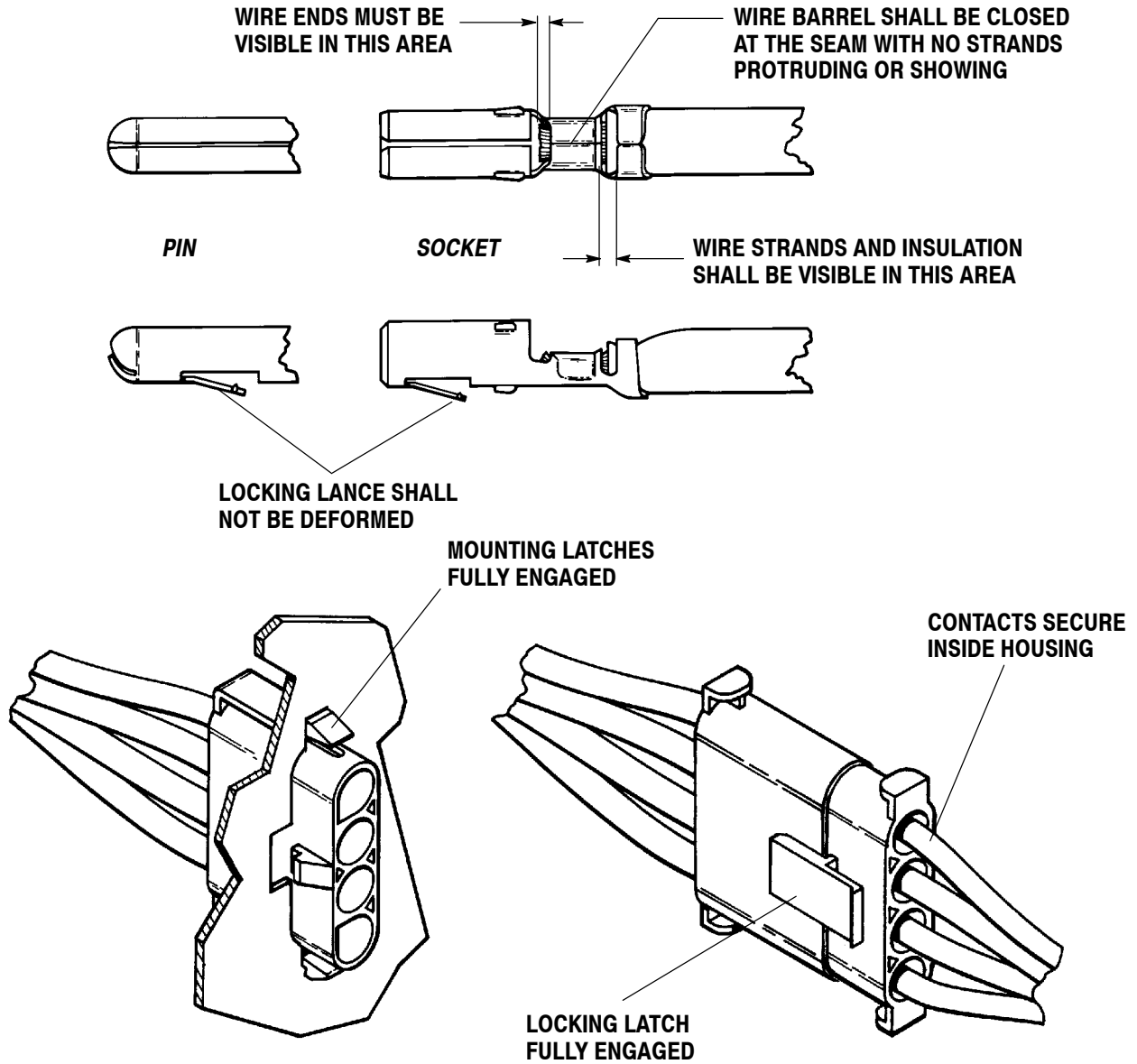


FIGURE 6. VISUAL AID