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Jameco Part Number 248874

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 $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of AMP* SL 156 Contacts and Housings. These requirements are applicable to hand or automatic machine crimping tools. The contact housings are used for wire-to-board interconnection and mate with 1.14 [.045] square or round post headers or staked posts on 3.96 [.156] centers.

The wire-to-board connector is a two-piece connector system with the wire crimped to the contact, then inserted into the housing. This product mates with the MTA-156 flat, polarized and friction lock header, or staked posts.

When corresponding with AMP personnel, use the terminology provided in this specification to facilitate your inquiry for information. Basic terms and features of the connectors and contacts are provided in Figure 1.

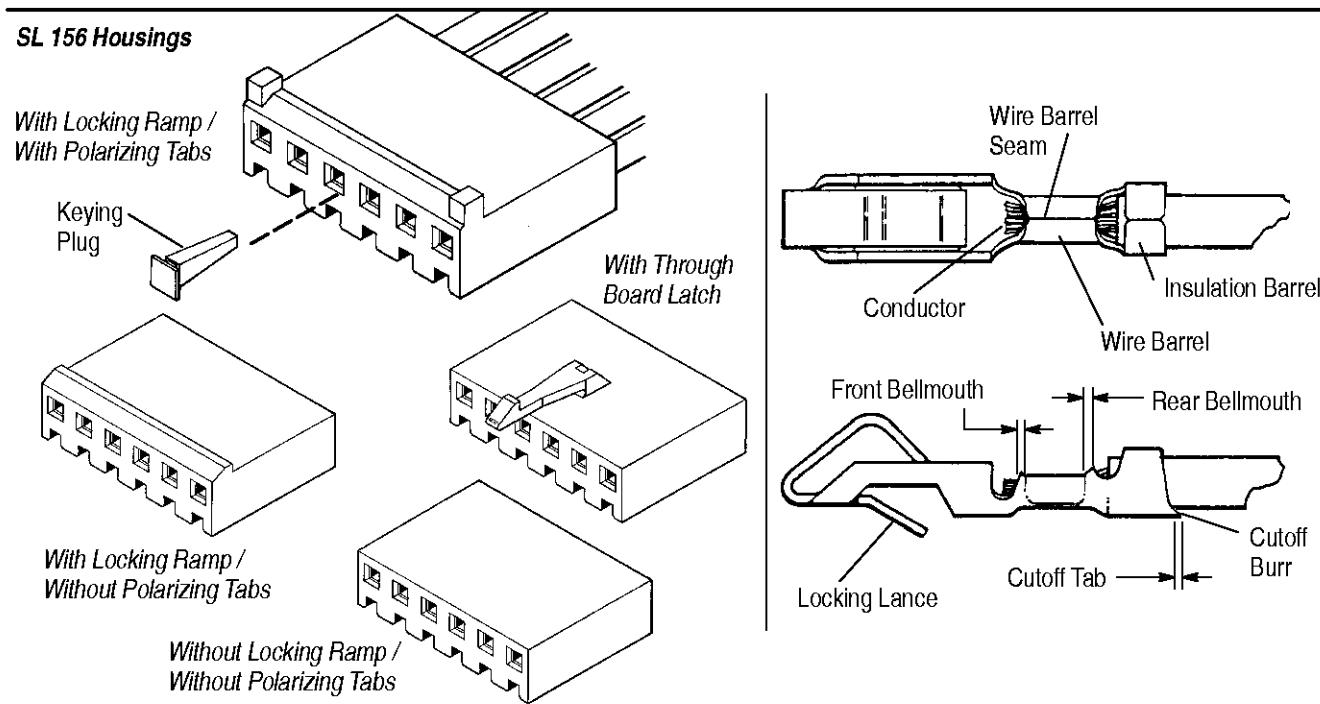


Figure 1

2. REFERENCE MATERIALS**2.1. Revision Summary**

This paragraph is reserved for a revision summary covering the most recent additions and changes made to this specification which include the following:

Per EC 0990-0973-96:

- Revised table in Figure 2
- Changed wire barrel flash dimension in Paragraph 3.3
- Added new paragraphs, Contact Insertion
- Added UL and CSA numbers to Section 4
- Revised Section 5 and added additional illustrations to Figure 7.

2.2. Customer Assistance

Reference Part Number 640252, 640250 and Product Code 1385 are representative numbers that identify the SL 156 Contact and Housing product line. These numbers are used in the AMP network of customer service to access tooling and product application information. This service is provided by your local AMP representative (Field Sales Engineer, Field Application Engineer, etc.) or, after purchase, by calling the Tooling Assistance Center number at the bottom of page 1.

2.3. Drawings

Customer Drawings for specific products are available from the responsible AMP 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 AMP Incorporated.

2.4. Specifications

AMP Product Specification 108-1049 provides applicable performance requirements for the SL 156 Connector system.

2.5. Instructional Material

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

408-4228	PRO-CRIMPER* II Hand Tool Assembly 58614-1 with Die Assembly 58614-2
408-9930	PRO-CRIMPER II Hand Crimping Tool Frame Assembly 354940-1
408-8040	AMP Heavy Duty Miniature Quick-Change Applicators (Side Feed)
408-7332	Hand Crimping Tools 90123-2, 90123-5, and 90124-2
409-5842	AMP-O-LECTRIC* Model "G" Terminating Machine 354500-[]
409-5855	AMP-O-MATIC* Side Feed Stripper Crimper Model II Machine 854040-3, and -4
409-5878	AMPOMATOR* CLS III "G" Lead Making Machine 356500-[]

3. PLUG REQUIREMENTS

3.1. Wire Preparation

A. Wire Selection

The contacts will accept stranded copper wire ranging in size from 18 to 24 AWG. Special contact 641550 will accept 24-30 AWG wire. Wire insulation diameter shall be a minimum dimension of 1.09 [.043] and a maximum dimension of 2.79 [.110].

B. Wire Preparation

Wire strip length shall be 3.96 ± 0.38 [.156 ±.015]. Reasonable care shall be taken during the stripping operation to ensure the conductor is not nicked, scraped, or cut.

3.2. Crimped Contacts

The contacts shall be crimped in accordance with the instructional material packaged with the tooling; refer to the table in Figure 2.

A. Carrier Cutoff Tab

Cutoff tab shall be not exceed 0.38 [.015].

B. Carrier Cutoff burr

Cutoff burr shall not exceed 0.08 [.003].

C. Wire Barrel Crimp

Wire barrel crimp width and height shall be as specified in Figure 2.

D. Wire Barrel Flash

Wire Barrel flash shall not exceed 0.25 [.010]

E. Wire Barrel Seam

The wire barrel seam shall be closed adequately to confine all strands of wire. There shall be no loose wire strands. Wire strands shall not be embedded in the seam of the wire barrel.

F. Front And Rear Bell Mouth

Front bellmouth shall be 0.25 [.010] maximum; rear bellmouth shall be 0.25 to 0.50 [.010 to .020].

G. Conductor Location

The end of the wire shall be flush with the front end of the wire barrel or extend 0.79 [.031] maximum after crimping. See Figure 2.

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.

H. Insulation Barrel

Insulation barrel crimp width shall be as specified in Figure 2.

Reasonable care shall be taken not cut or break the insulation during the crimping operation.

I. Locking Lance

Locking lance shall not be deformed.

SL 156 Low Force Contact

Wire Barrel Shall be Closed at the Seam with No Strands Protruding or Showing

Wire Strands and Insulation Shall Both be Visible in This Area

Conductor Length 0.79 [.031] Max.

Insulation Barrel

Wire Barrel

Front Bellmouth Shall be 0.25 [.010] Max.

Rear Bellmouth Shall Be 0.25–0.50 [.010–.020]

Cutoff Tab Shall Not Exceed 0.38 [.015]

Cutoff Burr Shall Not Exceed 0.08 [.003]

SIZE AWG	WIRE		HAND TOOL PART NUMBER (Instruction Sheet)	
	INSULATION DIAMETER MAX	STRIP LENGTH $\pm 0.38 [.015]$		
24	1.52 – 2.79 [.060 – .110]	3.96 [.156]	58614-1 (408-4228)	
22				
20				
18	1.09 – 1.90 [.043 – .075]			
24				
22				
20				
18				

SL 156 High Force Contact

SL 156 Hooded (Dual Wipe) Contact

Figure 2

3.3. Alignment

1. The contact, including the cutoff tab and burr, shall not be bent above or below the datum line more than the amount shown in Figure 3.
2. The side-to-side bending of the contact shall not exceed the limit specified in Figure 3.
3. There shall be no twist or roll in the crimped portion that will impair usage of the contact.

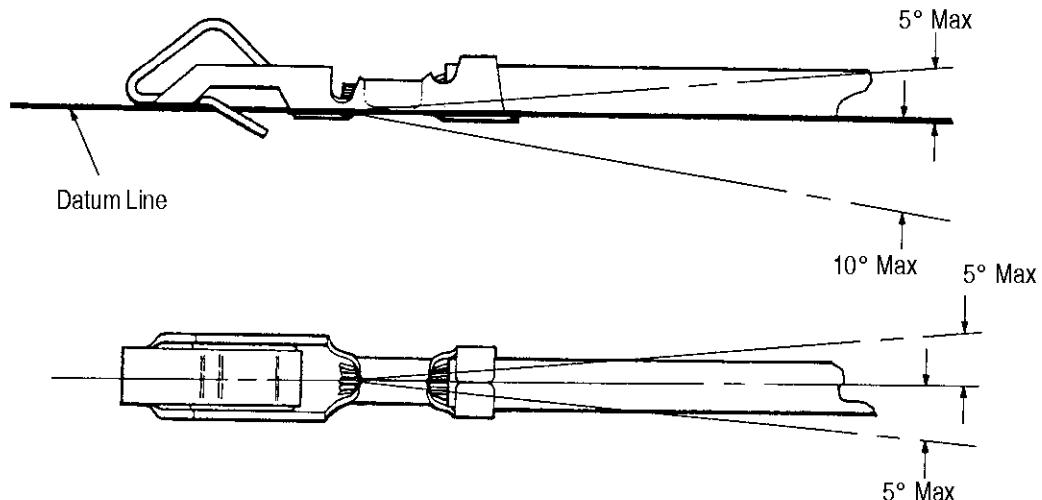


Figure 3

3.4. Assembly Procedures

A. Contact Insertion

Select the appropriate contact cavities. Grasp terminated SL156 contact directly behind the insulation barrel and push the contact straight into the contact cavity, then pull back lightly to ensure the locking lance has engaged. See Figure 4. Follow this procedure for remaining contacts.

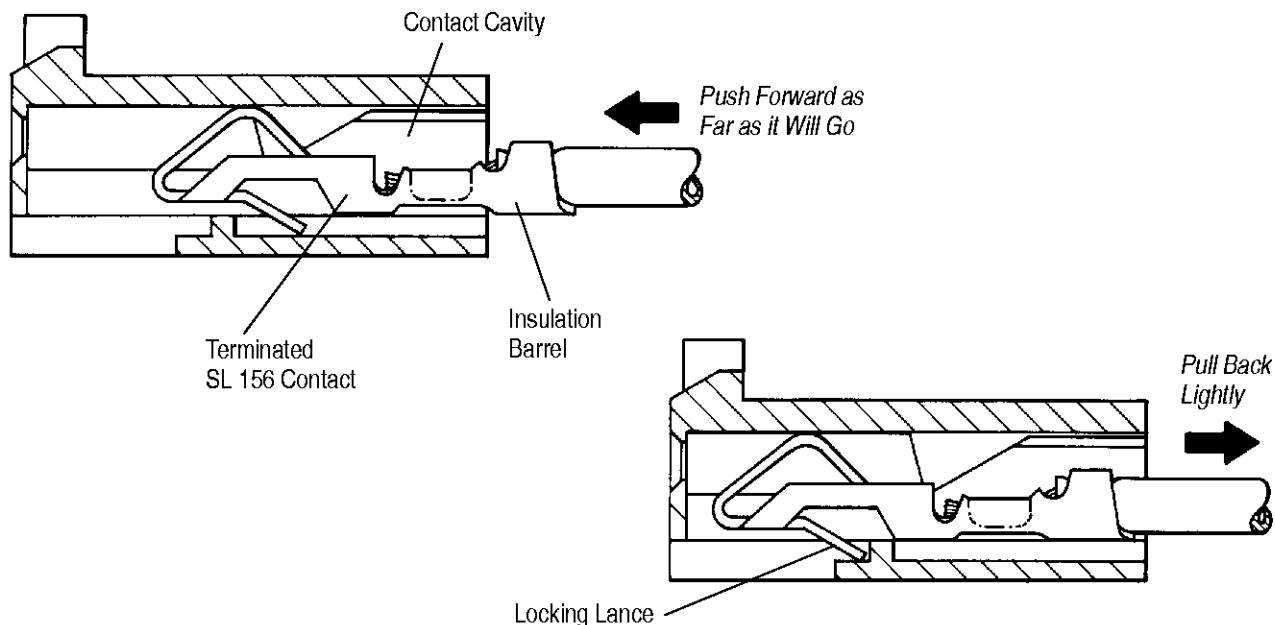


Figure 4

B. Contact Extraction

Insert contact extraction tool 90471-1 into the selected locking lance slot until it bottoms as shown in Figure 5. Insertion of the extraction tool will deflect the locking lance. Pull the terminated wire free from the housing.

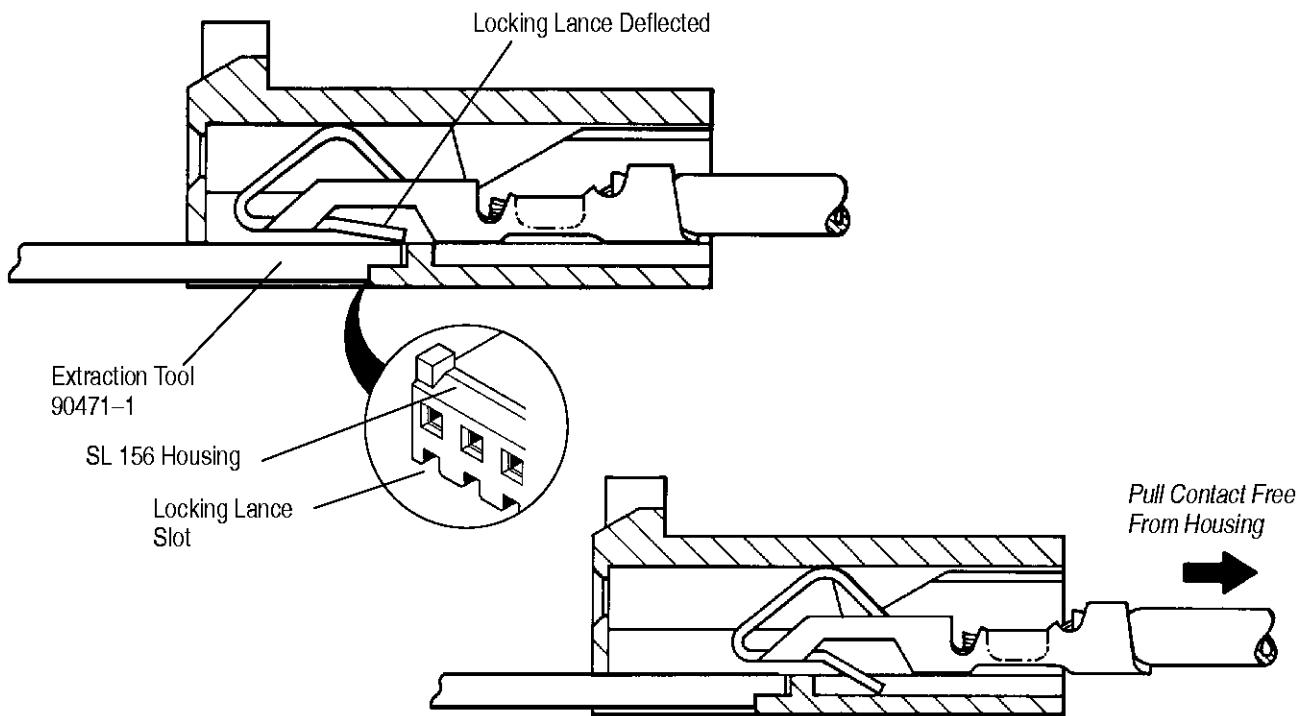


Figure 5

3.5. Polarization

Post (s) from the header assemblies can be omitted for keying purposes. Identify the desired post to be omitted and insert keying plug 640254-1 into the corresponding contact cavity of the SL 156 connector housing. This procedure will ensure polarization as shown in Figure 6.

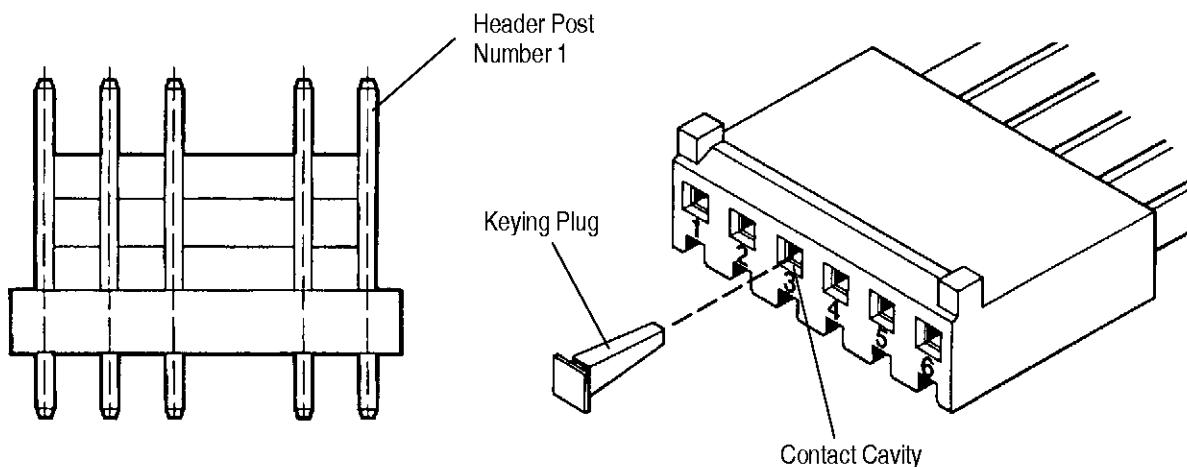


Figure 6

4. QUALIFICATIONS

4.1. Underwriters Laboratories Inc. (UL)

SL 156 Connectors are listed under UL File Number E28476.

4.2. Canadian Standards (CSA)

SL 156 Connectors are certified under CSA File number LR7189.

5. TOOLING (Figure 7)

For contact crimping, refer to the tables in Figure 2 for the appropriate hand tools and applicators. The instruction sheets, applicator instruction sheets, and customer manuals are referenced in Paragraph 2.5, Instructional Material.

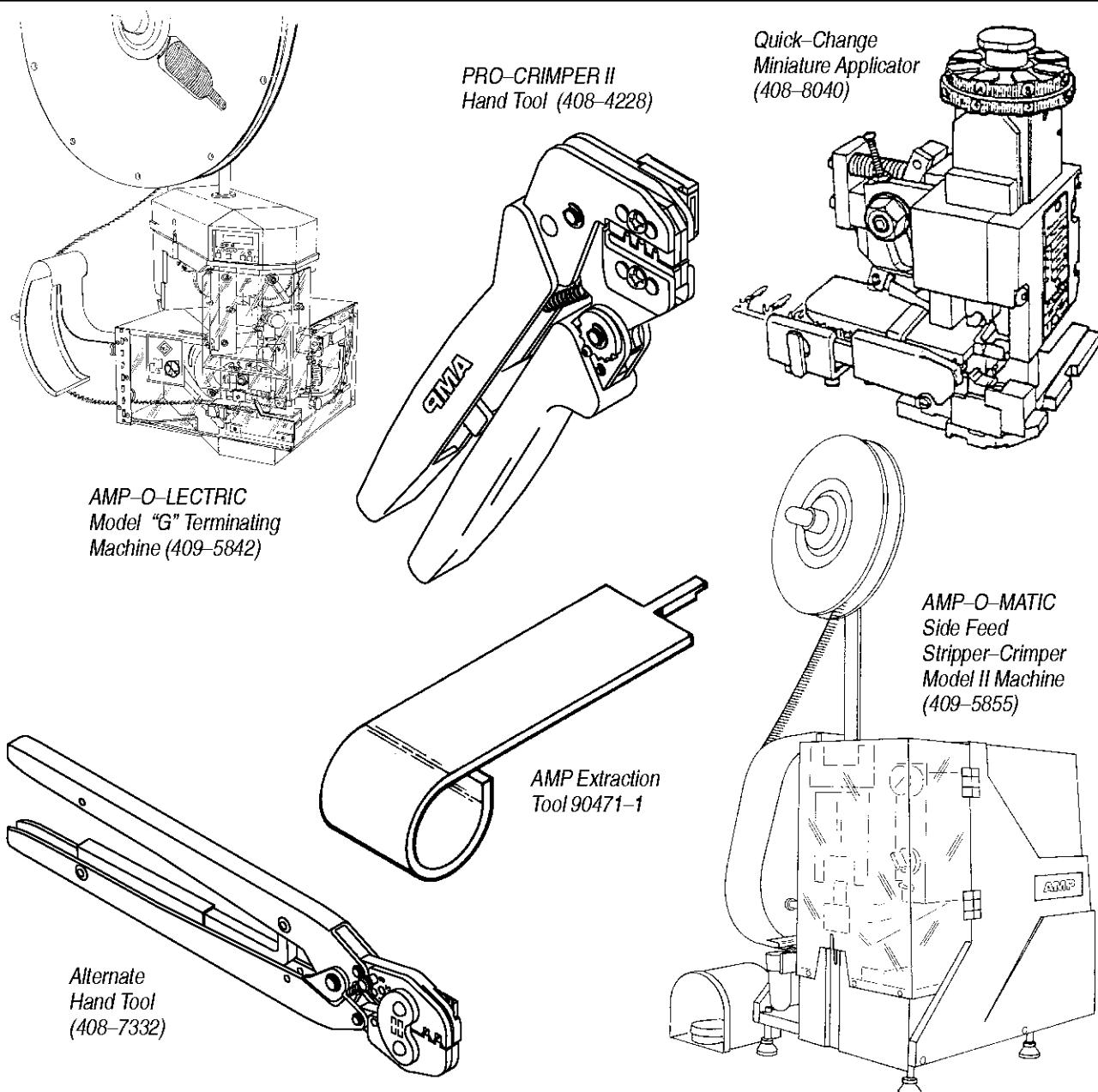
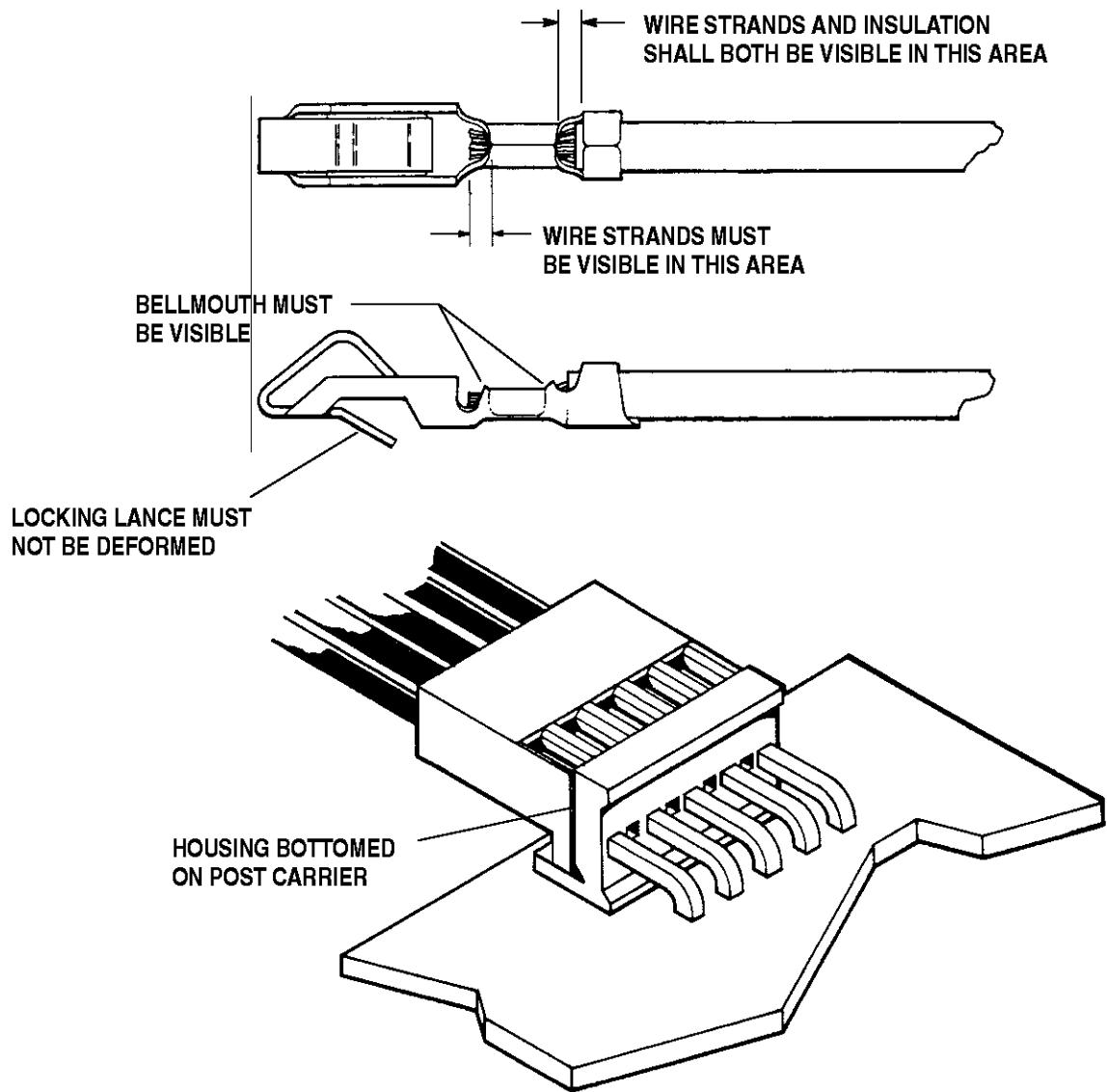


Figure 7

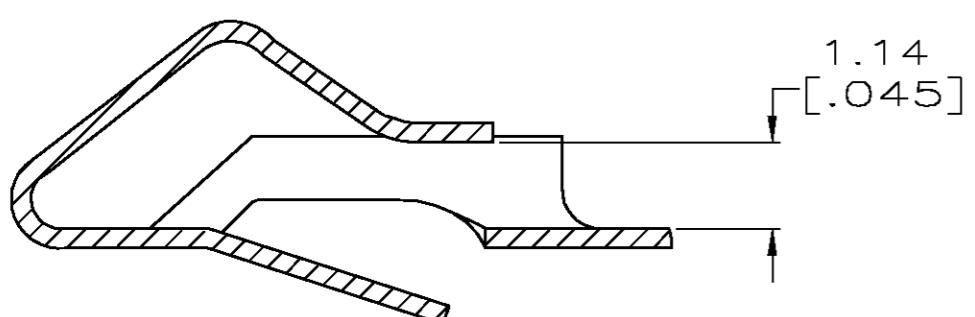
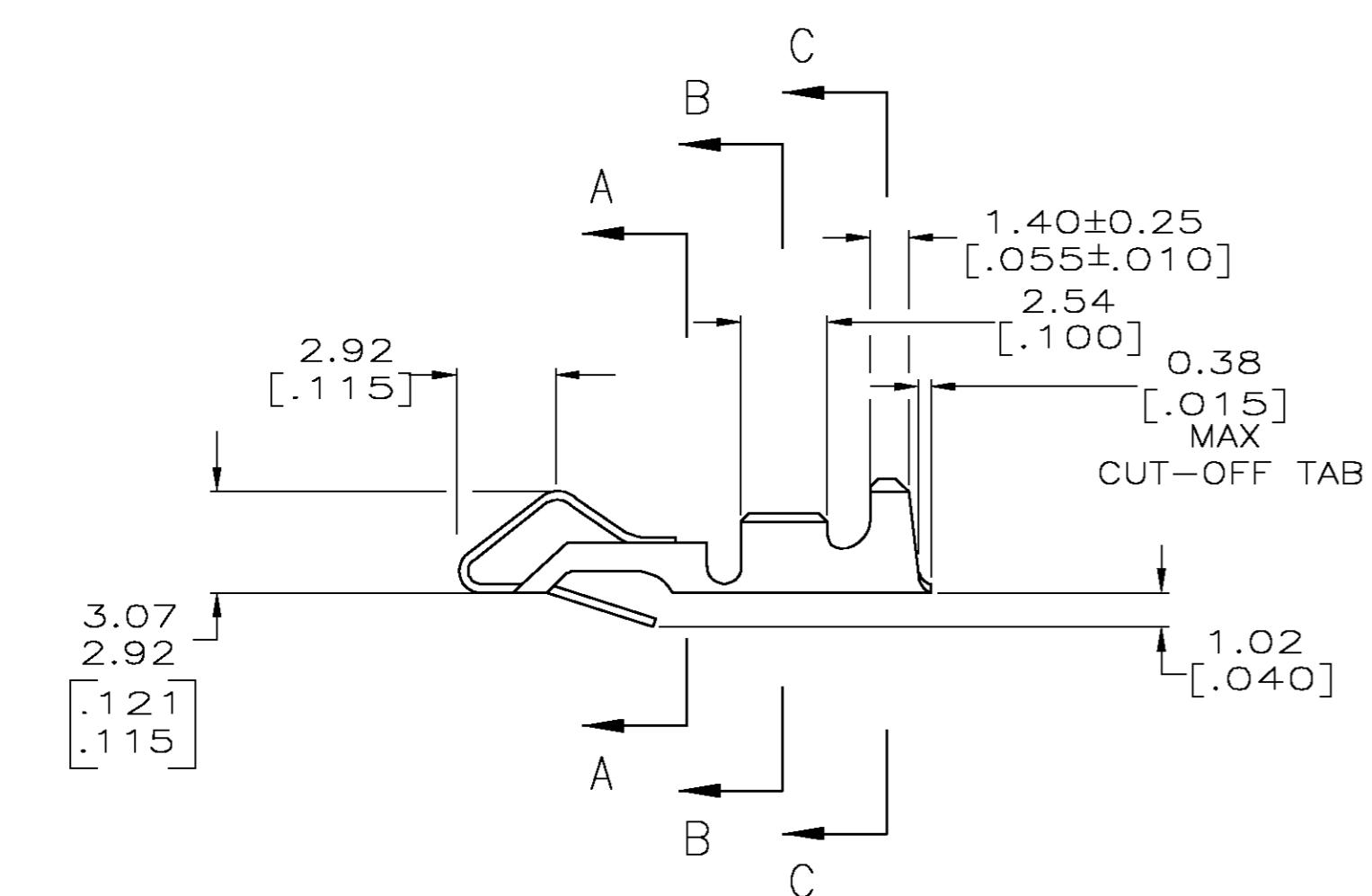
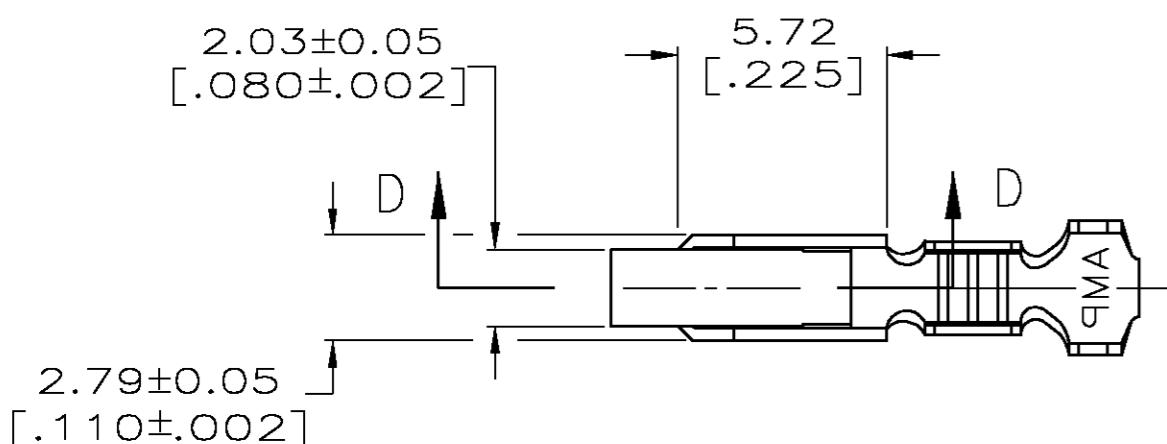
6. VISUAL AID (Figure 8)

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

**FIGURE 8. VISUAL AID**

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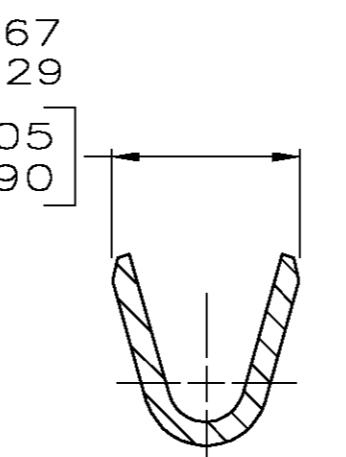
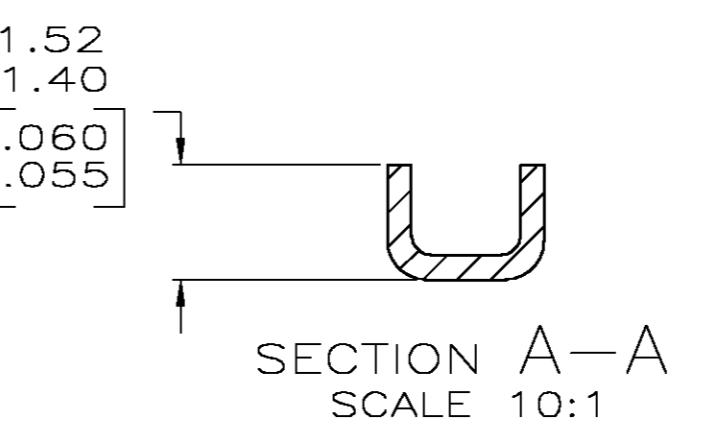
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DATE 21AUG03 DWN SC JE



SECTION D-D
SCALE 10:1

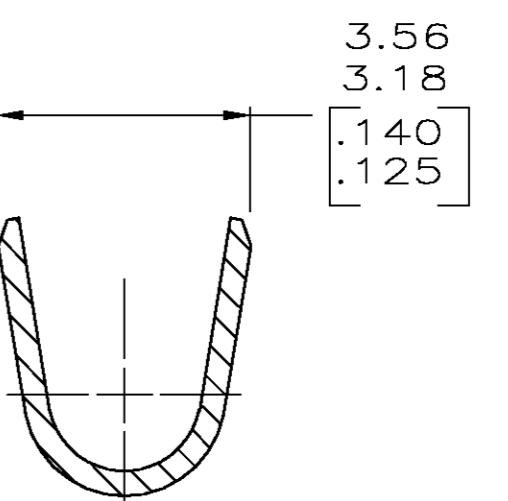
METRIC

① 0.00203 [.000080] MIN BRIGHT TIN-LEAD OVER 0.00127 [.000050] MIN NICKEL.
 ② 0.00330 [.000130] MAX PRE-TIN.
 3. WIRE RANGE: 0.2–0.9mm² (24–18 AWG).
 INSULATION RANGE: 2.79 [.110] DIA MAX.
 4. DIMENSIONS IN BRACKETS ARE IN INCHES.
 ⑤ 0.00203 [.000080] MIN BRIGHT TIN OVER 0.00127 [.000050] MIN NICKEL.



SECTION B-B
SCALE 10:1

SECTION A-A
SCALE 10:1



SECTION C-C
SCALE 10:1

⑤	3-640706-1
②	640706-2
①	640706-1
FINISH	PART NO

THIS DRAWING IS A CONTROLLED DOCUMENT.		tyco Electronics		Tyco Electronics Corporation Harrisburg, PA 17105
DIMENSIONS: INCHES	TOLERANCES UNLESS OTHERWISE SPECIFIED:	CHK J. ELLIS APVD J. ELLIS PRODUCT SPEC	NAME	RECEPTACLE, SL-156, LOOSE PIECE
0 PLC 1 PLC 2 PLC 3 PLC 4 PLC	± ± 0.13 [.005] ±	21AUG2003 21AUG2003 21AUG2003 21AUG2003		
ANGLES		APPLICATION SPEC		
MATERIAL 0.33 [.013] BRASS	FINISH SEE TABLE	WEIGHT	SIZE A2	RESTRICTED TO CAGE CODE DRAWING NO C-640706
		CUSTOMER DRAWING	SCALE 5:1	1 OF 1