

**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  $\pm 0.13$  [ $\pm 0.005$ ] 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 36-Series and 50-Series Flat-Cable SDL Plug Connectors. These connectors are available in 4-, 6-, 8-, and 16-position configurations. The plug connectors will mate with SDL Printed Circuit (PC) Board Receptacle Connectors.

When corresponding with TE Connectivity Personnel about this product, 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.

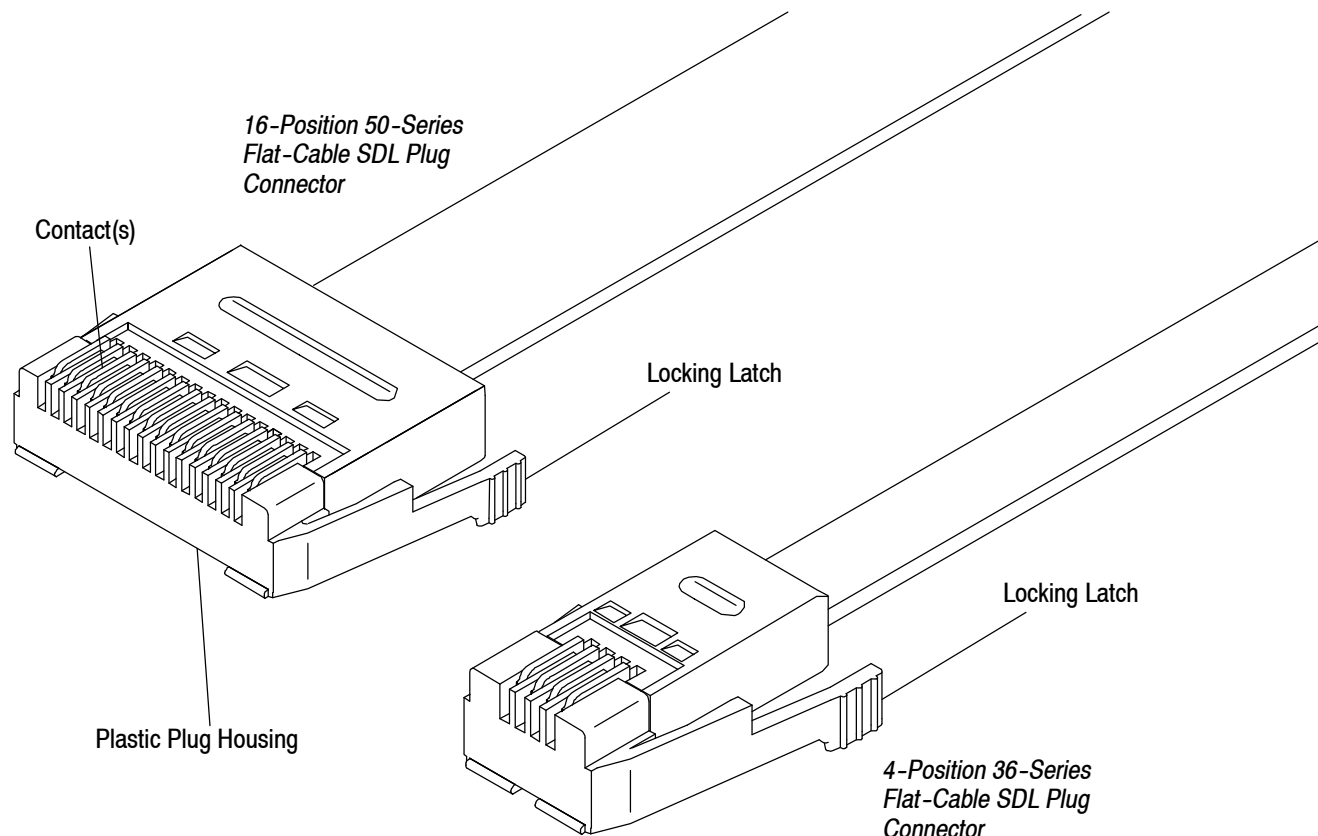


Figure 1

**2. REFERENCE MATERIAL**

**2.1. Revision Summary**

- Updated document to corporate requirements
- New logo

**2.2. Customer Assistance**

Reference Base Part Numbers 520423, 520527, and Product Code 1003 are representative numbers of 36-Series and 50-Series Flat-Cable SDL Plug Connectors. 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 Product Information Center at the number 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 by TE, call the Product Information Center number at the bottom of page 1.

**2.4. Specifications**

Product specification 108-2047 provides product performance requirements and test information. Application Specification 114-2081 covers SDL Top-Entry and Side-Entry PC Board Receptacles, and Application Specification 114-2090 covers 36-Series and 50-Series Round-Cable SDL Plug Connectors.

**2.5. Instruction Material**

The following list includes available instruction sheets (408-series) that provide assembly procedures for product, operation, maintenance and repair of tooling, and customer manuals (409-series) that provide setup, operation, and maintenance of machines.

<u>Document Number</u>	<u>Document Title</u>
408-6974	SDL Flat-Cable Plug Connector Cable Guide/Adapters 63394-1 and 63396-1
408-9072	SDL Plugs and Receptacles
408-9113	CERTI-LOK* Hand Crimping Tool 58194-1
408-9115	Crimping Die Assemblies 58261-1, 58261-2, 58261-3, and 58261-6
408-9164	Die Holder Assembly 58201-1 for SDL Connector Crimping Dies
409-5843	2700-lb. Pneumatic Power Unit 312522-[ ]

**3. REQUIREMENTS**

**3.1. Storage**

**A. Ultraviolet Light**

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

**B. Shelf Life**

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

**C. Chemical Exposure**

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

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

**D. Stacking**

Do not stack shipping containers so high that they bend or buckle and damage the product.

### 3.2. Materials

The internal contacts are made from copper alloy, and the connector shield is made from brass with bright tin or tin-lead over nickel. The connectors are molded from polycarbonate resin which can be adversely affected by strong commercial and industrial cleaners, solvents, and thinners containing hydrocarbons, amines, esters, and ketones. The use of these types of products should be avoided in the general area of any polycarbonate material. The following is a partial listing of approved commercially available products. For a more complete list, contact TE.

#### A. Cleaning Solvents

Heptane	Fisher Scientific Co. Cat. H20
Denatured Alcohol #1430	American Mineral Spirits
Methanol	Fisher Scientific Co. Cat. E412
Ethanol	Fisher Scientific Co. Cat. A405
Isopropyl Alcohol	Fisher Scientific Co. Cat. A416

#### B. Greases

G-692, G-623, G-660, G-624	G.E. Silicone Prod. Dept.
Marfak 3, Marfak 2	Texaco

#### C. Lubricating Oils

Hydrotherm Oil C	BP
A90 NR, Teresso 56	Exxon
Amberex 830	Mobil Oil Co.
Spirax 9CEP	Shell Oil Co.

### 3.3. Cable Selection and Stripping

#### A. Cable Selection

Select the correct cable from the table in Figure 2.

CONNECTOR SERIES TYPE	POSITION	CONDUCTOR SIZE	CABLE CUSTOMER DRAWING
36	4, 8, 16	26 and 28 AWG	520822 (4-Position, 28 AWG) Extrapolate Other Positions and 26 AWG From This Drawing
50	4	24 AWG	520471
	6		520473
	8		520475
	16		520477

Figure 2

#### B. Cable Stripping

Cable shall be prepared as indicated in Figure 3. The continuity to the end of the conductors shall be preserved when stripping the cable jacket.



*Do not cut, nick, or otherwise damage the conductor insulation or the conductors when stripping the cable. Do not cut or scrape the inner layer of aluminum on the foil shield.*

The following conditions are acceptable if they occur during the stripping operation:

1. Pinholes of 1.02 mm [.040 in.] maximum diameter in the foil shield.
2. Removal of part of the outer layer of aluminum only from the foil shield.

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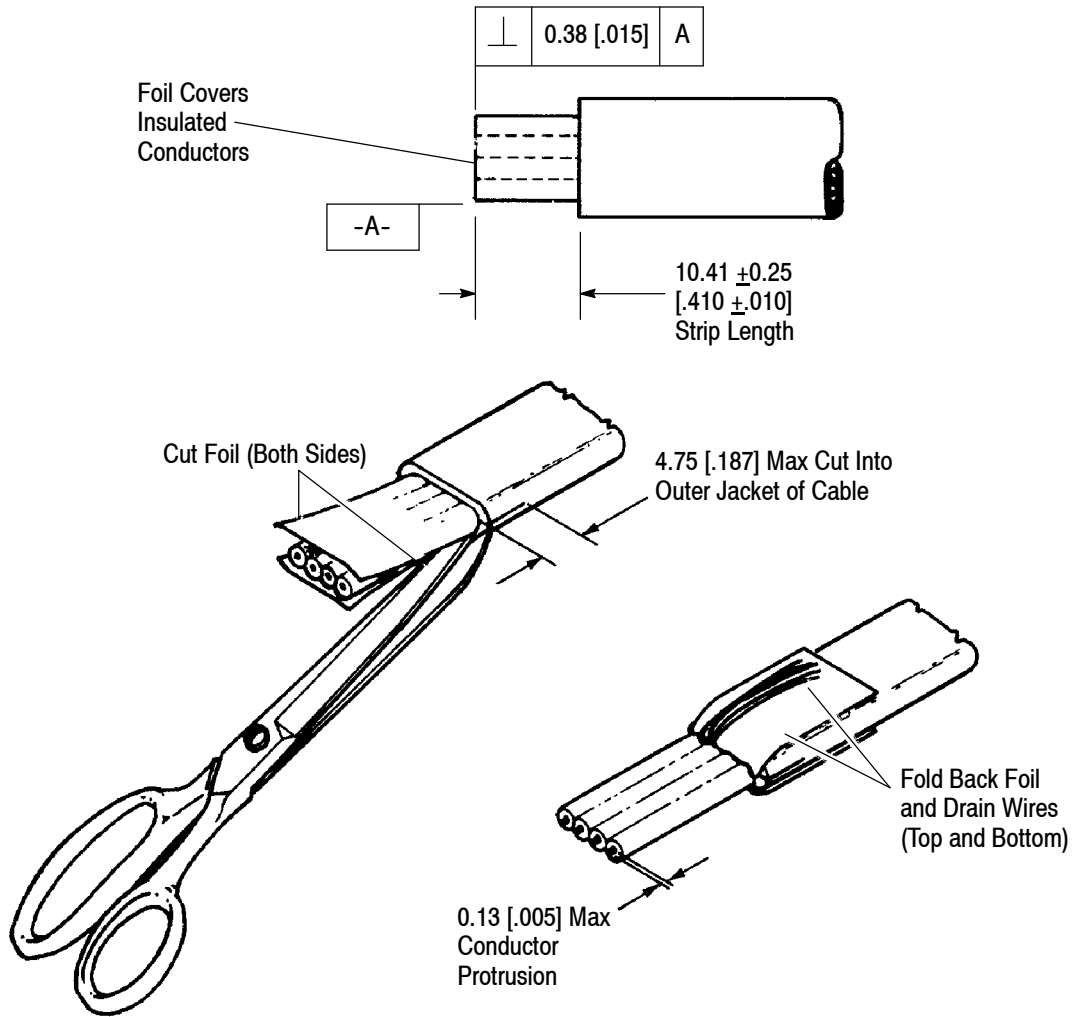


Figure 3

### 3.4. Assembly Procedures

The assembly procedures for 36-Series and 50-Series Flat-Cable SDL Plug Connectors are provided in Instruction Sheet 408-9072 (SDL Plug and Receptacle Connectors). When inserting the cable into the plug cavity, the drain wires must be positioned within the limits of the dimensions provided in Figure 4.

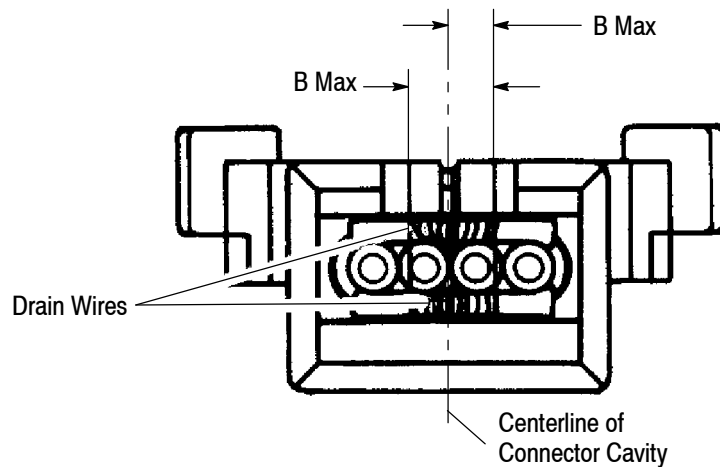


Figure 4 (cont'd)

NUMBER OF CONDUCTORS	DIMENSION "B"
4	1.27 [.050]
6	2.54 [.100]
8	3.81 [.150]
16	8.89 [.350]

Figure 4 (end)

### 3.5. Crimp Requirements

Crimp the plug connector with the tooling and documentation referenced in Section 5, TOOLING. After the contact crimping operation is complete, the completed connector shall meet the requirements provided in Figures 5 and 6.

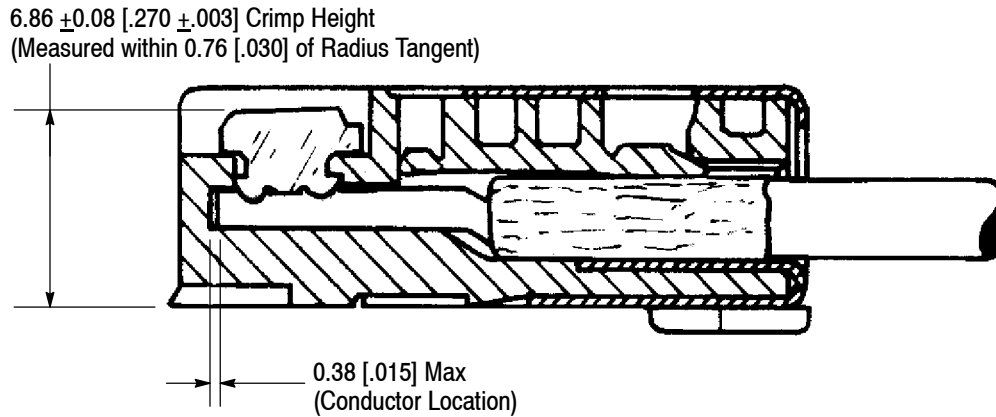


Figure 5

**NOTE**


If the crimp height is measured more than 24 hours after crimping, some relaxation may have taken place. If the cable used meets the requirements of Paragraph 3.3.A, the crimp height should relax to a dimension of no more than 6.98 mm [.275 in.]. This will not affect the performance of the plug connector.

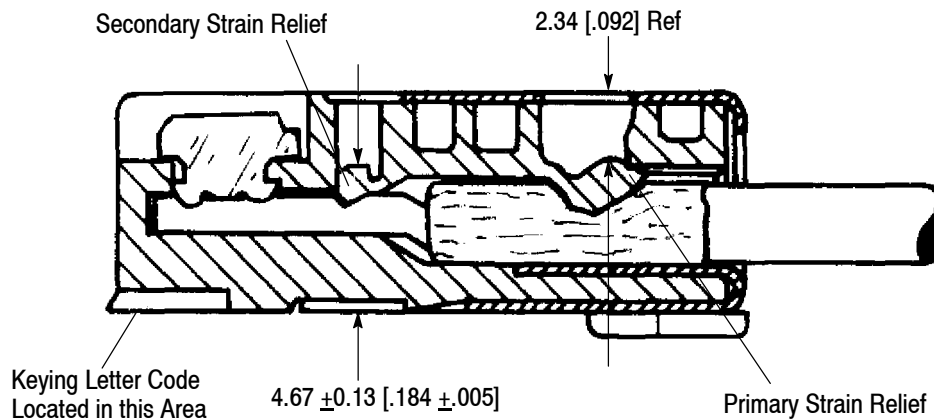


Figure 6

### 3.6. Workmanship Standards

The following workmanship standards shall apply to the terminated plug:

1. There shall be no broken, cut, scraped, or sliced plastic or other visible damage to the housing.
2. The housing may exhibit cracking in the contact area. Cracking which is internal to the plug housing and does not extend to the front face is acceptable. Cracking which extends to the front face of the plug housing is unacceptable. Such unacceptable cracking is often caused by inadvertent exposure to one or more of the items in Paragraph 3.2.

### 3.7. Keying Letter Codes

A keying letter code is visible in the area of the plastic housing as shown in Figure 6. The plug must be matched with a receptacle of the same number of positions, and the same letter code.



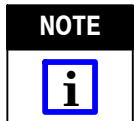
*Do not force the plug into the receptacle. If the fit seems too tight, check the keying letter codes on both parts to ensure they are compatible with each other.*

### 3.8. Cable Guide Adapter

A cable guide/adapter is available to convert:

1. An 8-position Flat-Cable SDL Plug for use with 4-position flat cable.
2. A 16-position Flat-Cable SDL Plug for use with 8-position flat cable.

Installation information for these guide/adapters is available in Instruction Sheet 408-6974.



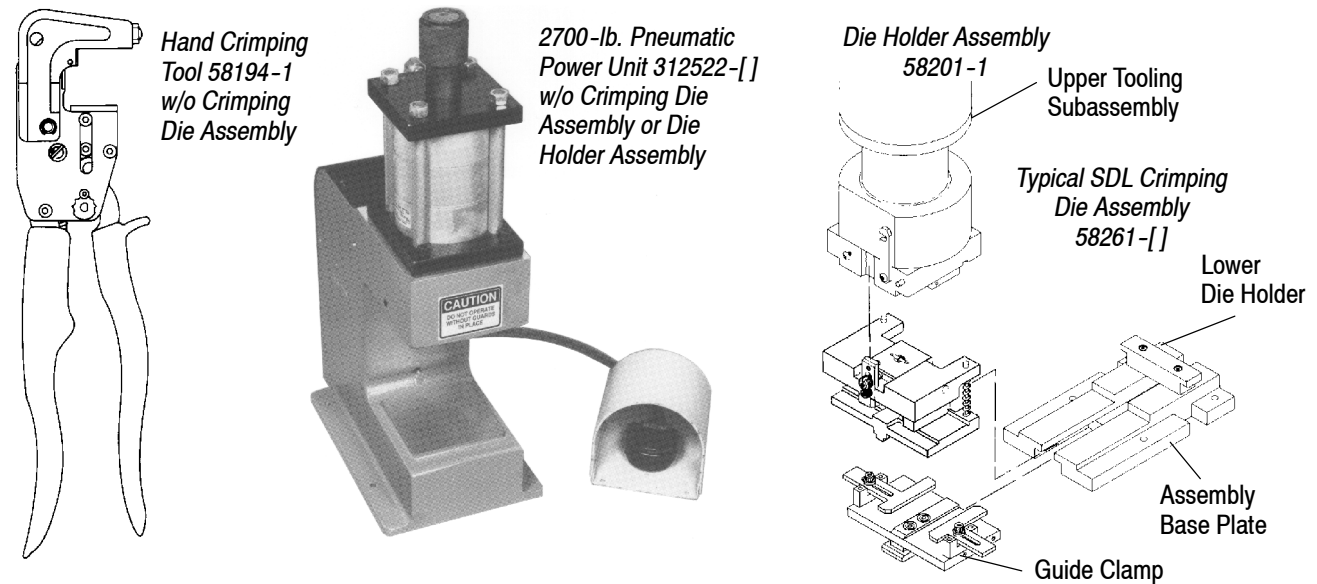
*Prepare the cable for use with the guide/adapter by stripping the cable to a length of 11.68 ±0.25 mm [.460 ±.010 in.]. Do not strip the cable to the length shown in Figure 3.*

## 4. QUALIFICATIONS

36-Series and 50-Series Flat-Cable SDL Plug Connectors are Recognized by Underwriters Laboratories Inc. (UL) in File E28476, and Certified by CSA International in File LR7189.

## 5. TOOLING

Figure 7 provides tooling part numbers and related instructional material to terminate 36-Series and 50-Series Flat-Cable SDL Plug Connectors.



CONNECTOR		TOOLING (DOCUMENT)			
SERIES	POSITION	DIE ASSEMBLY (408-9115)	DIE HOLDER ASSY	PNEUMATIC TOOL	HAND TOOL
36-Series or 50-Series	4	58261-1	58201-1 (408-9164)	312522-[] (409-5843)	58194-1 (408-9113)
	6	58261-2			
	8	58261-3			
	16	58261-6			

Figure 7

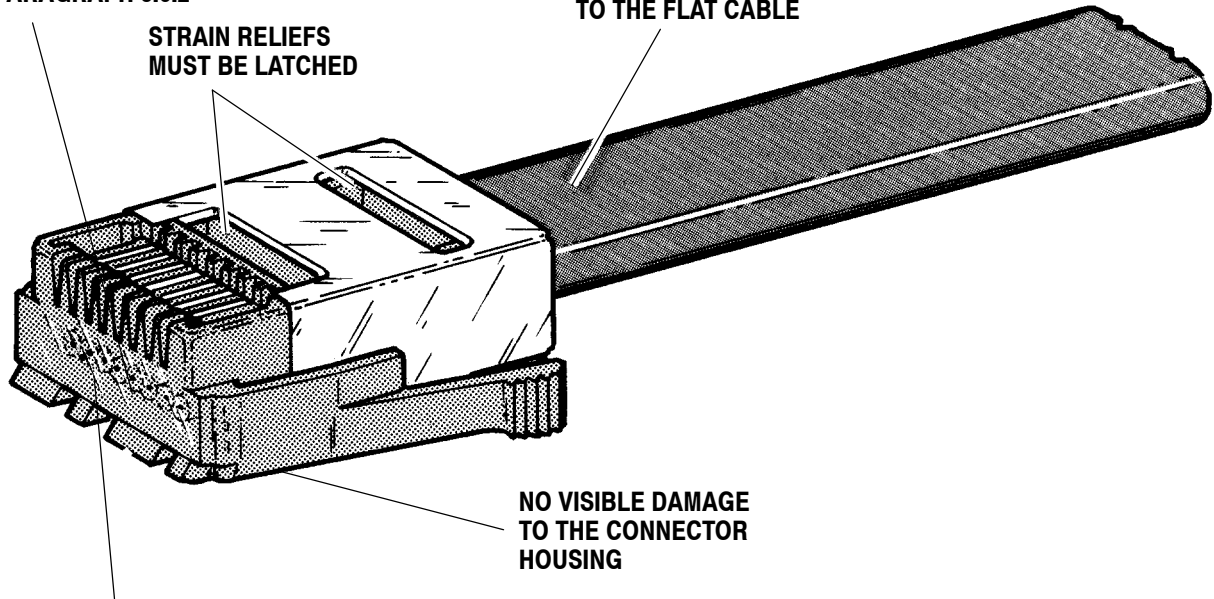
## 6. VISUAL AID

Figure 8 shows a typical application of a Flat-Cable SDL Plug Connector. 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.

**CRACKING MAY BE  
PRESENT IN THIS AREA.  
SEE PARAGRAPH 3.6.2**

**STRAIN RELIEFS  
MUST BE LATCHED**

**NO VISIBLE DAMAGE  
TO THE FLAT CABLE**



**NOTE: CRACKING WHICH IS INTERNAL TO THE PLUG HOUSING AND DOES NOT EXTEND TO THE FRONT FACE IS ACCEPTABLE. CRACKING WHICH EXTENDS TO THE FRONT FACE OF THE PLUG HOUSING IS UNACCEPTABLE.**

**FIGURE 8. VISUAL AID**