AMP

Size 16 Socket Contact Assembly

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 ±2°. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

This specification covers the requirements for application of the AMP* Size 16 Socket Contact Assembly. This socket contact assembly consists of a socket body protected by a secondary sleeve. The size 16 socket contact assemblies will only mate with an appropriate size 16 pin contact or pin header assembly. They are terminated using standard crimp technology, then inserted into size 16 plug assembly contact cavities.

When corresponding with AMP representatives, use the terminology provided in this specification to facilitate information inquiries. Basic terms and features of AMP Size 16 Contact Assemblies are provided in Figure 1.

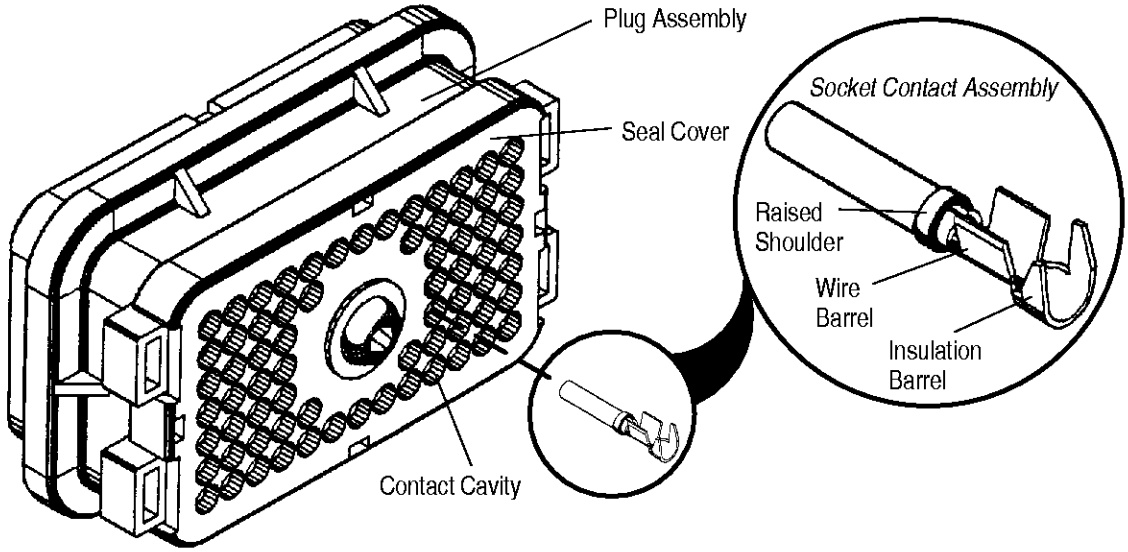


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

This paragraph is reserved for a revision summary of changes and additions made to this specification. The following changes were made to this revision (Rev A).

Per EC 0990–0689–97

- Changed statement in note following Paragraph 2.4 to state that circuits carrying maximum current must NOT be placed adjacent to each other in a plug assembly
- Expanded Section 5, TOOLING

2.2. Customer Assistance

Reference Part Number 776093 and Product Code 4819 are representative numbers of AMP Size 16 Socket Contact Assembly. Use of these numbers will identify the product line and expedite your inquiries through an AMP service network established to help you obtain product and tooling information. The information can be obtained through a local AMP Representative (Field Sales Engineer, Field Applications Engineer, etc.) or, after purchase, by calling the Tooling Assistance Center or the AMP FAX/Product Information number at the bottom of this page.

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. Product Specifications

Performance criteria for Size 16 socket contact assemblies are specified by a customer product specification. For specific product performance information, contact AMP by calling one of the numbers at the bottom of page 1.

NOTE *Circuits carrying the maximum rated current must NOT be located adjacent to each other in a plug assembly.*

2.5. Instructional Material

The following AMP Instruction Sheet and Customer Manuals provide information on application tooling.

408–8040 – Heavy Duty Miniature Quick Change Applicators
409–5128 – AMP–O–LECTRIC* Model "K" Terminating Machine
409–5842 – AMP–O–LECTRIC Model "G" Terminating Machine
409–5806 – AMPOMATOR* CLS III Lead–Making Machine

3. PLUG REQUIREMENTS

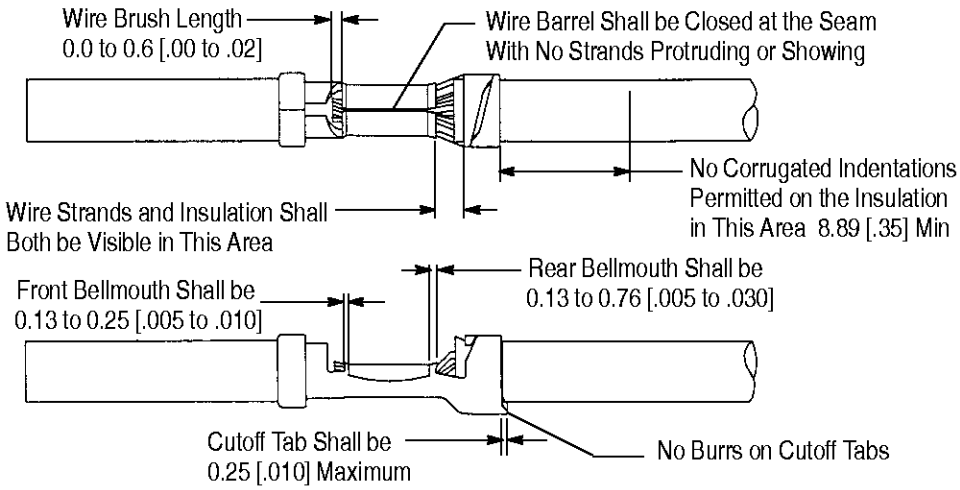
3.1. WIRE

A. Wire Selection

The Size 16 contact assemblies will accept wire sizes 18 to 14 AWG type GXL wire and 18 to 16 AWG type SXL wire. This wire is defined by SAE J1128. Insulation material is cross–linked polyethylene and appropriate insulation diameter ranges are listed in Figure 2.

B. Wire Preparation

Reasonable care shall be taken during the stripping operation to ensure the conductors and insulation are not nicked, scraped, or cut. Wire strip length shall be 5.99 [.236] for 16 AWG GXL and 18 AWG SXL wire. Wire strip length shall be 5.00 [.197] for 18 AWG GXL, 14 AWG GXL, and 16 AWG SXL wire.



WIRE			WIRE BARREL		INSUL BARREL
TYPE	SIZE (AWG)	INSULATION DIAMETER	CRIMP HEIGHT ±0.05 [.002]	CRIMP WIDTH (NOM)	CRIMP WIDTH (MAX)
GXL (SAE J1128)	18	2.26 to 2.50 [.089 to .098]	1.37 [.054]	2.54 [.100]	3.68 [.145]
	16	2.50 to 2.84 [.098 to .112]	1.50 [.059]		
	14	2.90 to 3.18 [.114 to .125]	1.63 [.064]		
SXL (SAE J1128)	18	2.62 to 3.00 [.103 to .118]	1.37 [.054]		
	16	2.95 to 3.33 [.116 to .131]	1.50 [.059]		

Figure 2

3.2. Crimped Contact

A. Contact Crimping

The Size 16 socket contacts shall be crimped in accordance with the instructional material packaged with the tooling referenced in Paragraph 5.

B. Inspection

Inspect crimped Size 16 socket contacts for conditions shown in Figure 2.

NOTE *Wire stripping tool jaws may leave corrugated indentations on the surface of the wire insulation. This is especially severe with cross–linked polyethylene (high temperature) insulation. If these indentations occur at the location of the wire seal, leakage may result. Insulation surface within 8.89 mm [.35 in.] from the tip of the contact must be smooth and free of indentations. See Figure 2.*

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.*

NOTE *The ends of the insulation barrel shall be wrapped around the wire insulation, leaving no sharp points to damage the rubber wire seal.*

NOTE *To ensure sufficient crimping of the insulation barrel, periodically insert a terminated contact into a cavity and remove it with the extraction tool. If difficulty is encountered removing the contact, crimp the insulation barrel at next lower setting.*

3.3. Contact Insertion

1. Select the appropriate contact cavities. Insert terminated socket contacts into seal cover side of the plug assembly by grasping the wire directly behind the insulation barrel and pushing the contact straight into the contact cavity until the contact retention fingers lock behind the raised shoulder of the terminated socket contact. See Figure 3.

NOTE *To prevent deformation of terminated socket contacts during insertion, grasp the wire behind the insulation barrel and push the contact straight into the contact cavity.*

2. After the terminated socket contact has been fully inserted, pull back lightly on the wire with a force of 4.5 to 8.9 N [1 to 2 lbs]. This will ensure that the retention fingers are locked behind the raised shoulder as shown in Figure 3.

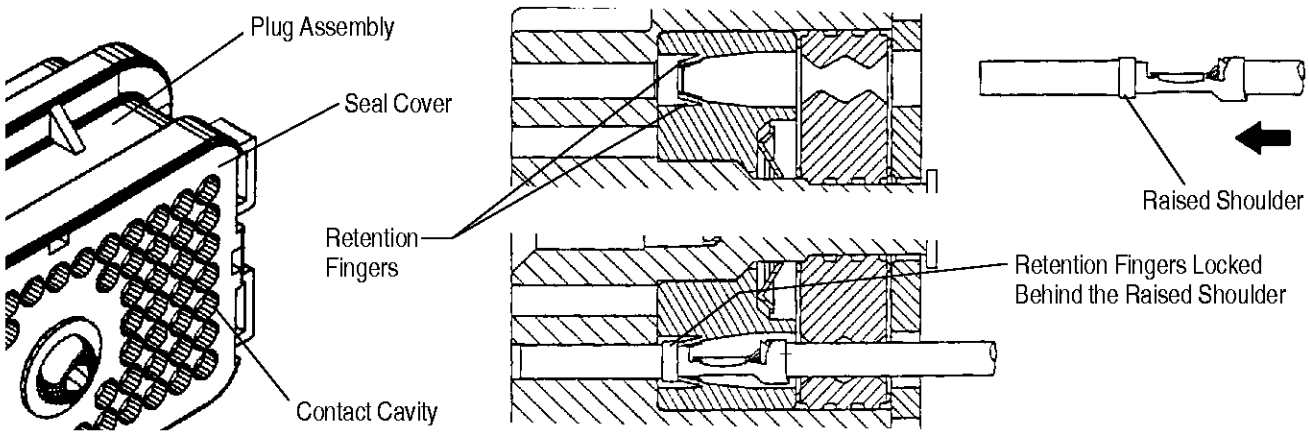


Figure 3

3.4. Contact Removal

AMP Extraction Tool 776106–1 is required to remove the socket contacts from the plug housing.

1. Feed selected wire through the wire entry slot of the extraction tool as shown in Figure 4.

2. Push the extraction tool into the contact cavity until it rests against the raised shoulder of the terminated socket contact.

NOTE *If difficulty is encountered during the insertion of the extraction tool, pull the tool out of the contact cavity, and rotate the tool 90°.*

CAUTION *Do not twist the extraction tool while it is bottomed in the contact cavity; twisting will cause damage to the retention fingers.*

3. Gently pull the extraction tool and the terminated socket contact together from the contact cavity,

CAUTION *Remove the extraction tool and the terminated socket contact together; this technique will prevent damage to the wire seal.*

NOTE *If the tool is broken during contact extraction and small fragments of the tool remain in the contact cavity, obtain another extraction tool and repeat steps 1 through 3. Tool fragments in the contact cavity will not affect circuit function.*

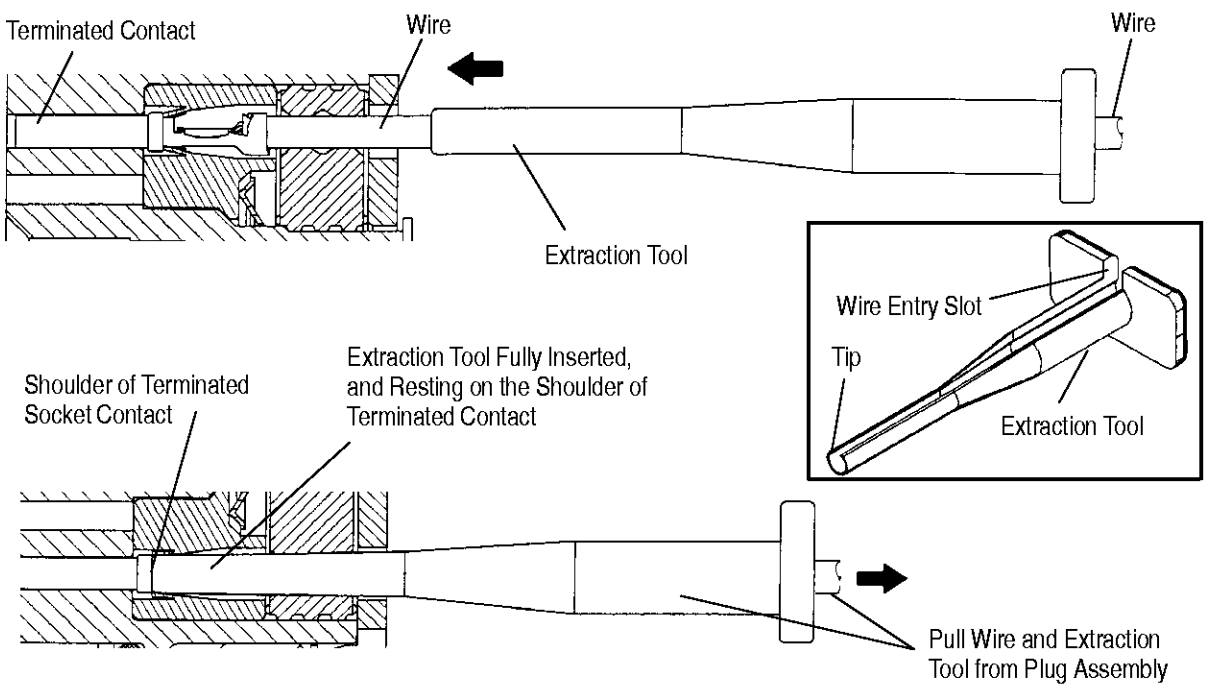


Figure 4

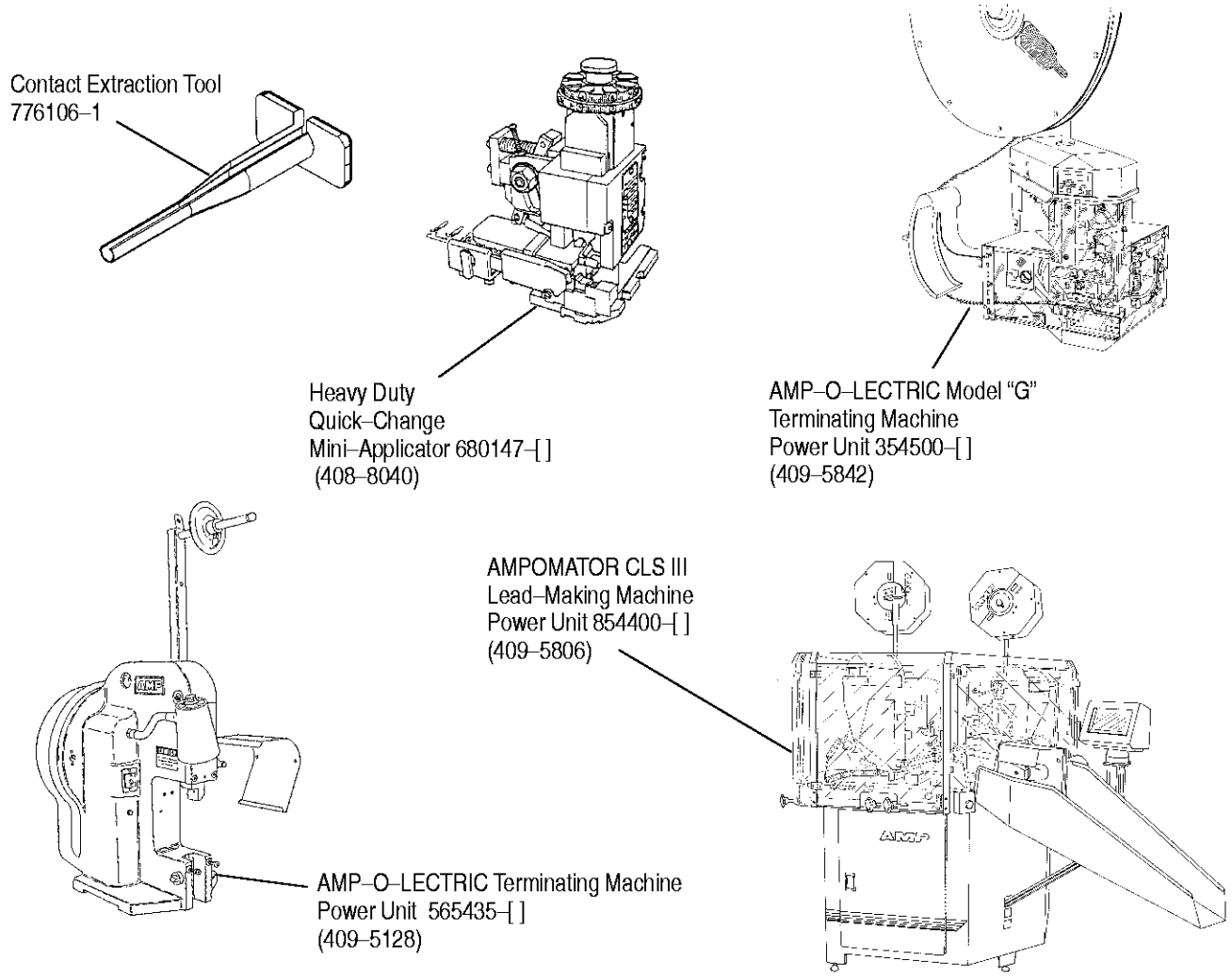
4. QUALIFICATIONS

AMP Size 16 Socket Contact Assemblies are not required to be listed or recognized by Underwriters Laboratories Inc. (UL), or the Canadian Standards Association (CSA).

5. TOOLING

This section provides a selection of tools for various application requirements. They include an AMP Heavy Duty Quick–Change Miniature Applicator used in AMP Semi–Automatic and Automatic Machines Power Units used as power sources for terminating strip–form contacts. Modified designs and additional tooling concepts may be available to meet other application requirements. For additional information, contact one of the service group numbers at the bottom of page 1. Tooling recommendations and applicable instruction material covering the full wire size range of 18 through 14 AWG are provided in Figure 5.

Once inserted into the housing, contacts can be removed with a specially designed extraction tool that has an open slot for the wire and a tip designed to prevent damage to the connector seal. See Figure 5. Instructions for use of this tool are provided in Paragraph 3.4.



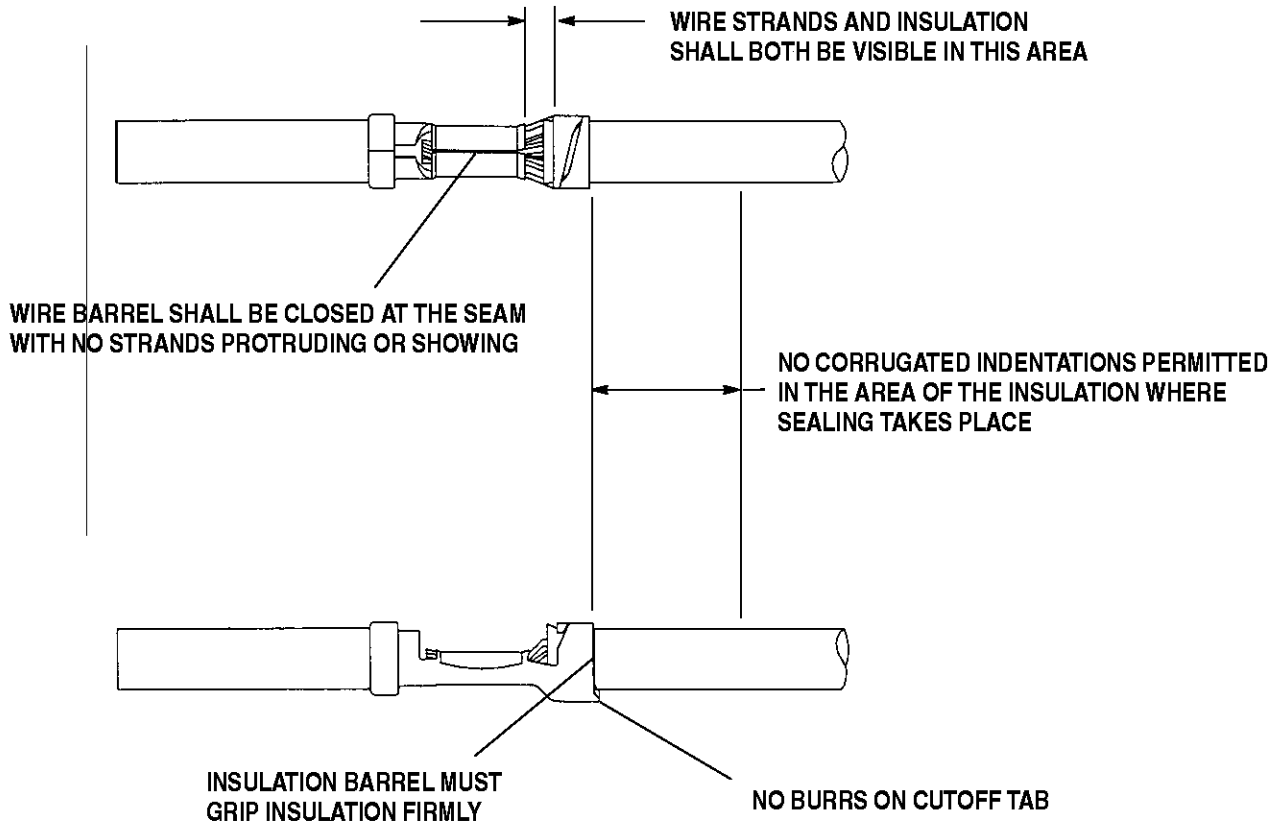
WIRE SIZE (AWG)	MINI–APPLICATOR	POWER SOURCE
18 through 14	680147–1	AMPOMATOR CLS III Lead–Making Machine 854400–2
	680147–2	AMP–O–LECTRIC Model "K" Terminating Machine 565435–5
	680147–3	AMP–O–LECTRIC Model "G" Terminating Machine 354500–1

Figure 5

NOTE *The AMP–O–LECTRIC Model "K" Terminating Machine PN 565435–5 has been superseded by the Model "G" Terminating Machine PN 354500–1 for new applications. For existing applications, the Model "K" is still recommended because of the large number of installed machines.*

6. VISUAL AID

The following illustrations 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.



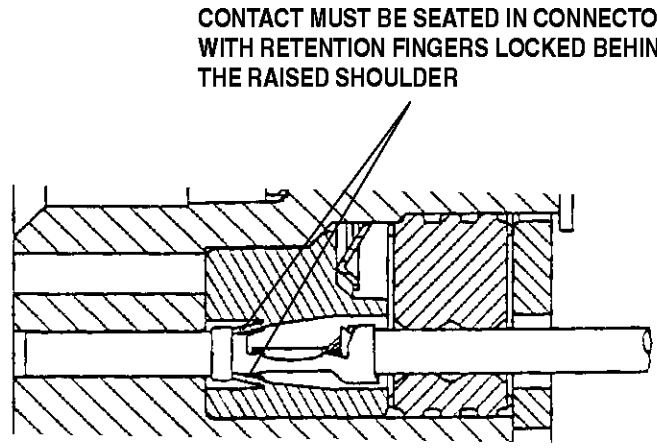


FIGURE 6. VISUAL AID