

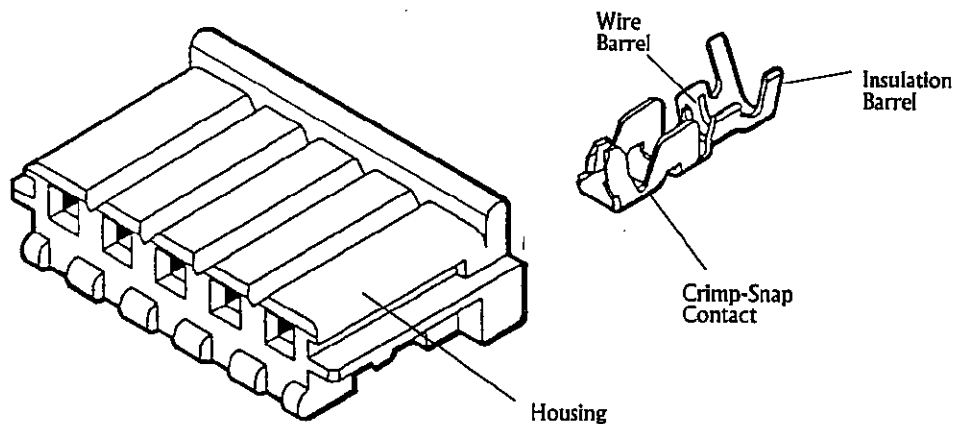
APPLICATION SPECIFICATION

114-58000

1. INTRODUCTION

This specification covers the requirements for application of the AMP Crimp-Snap Metric Interconnect System. The system consists of a receptacle connector having contacts on 2.50 mm centerlines which mate with 0.64 mm round post headers. A receptacle connector consists of a housing with a single row of crimped contacts. The contacts are terminated using standard crimp technology and inserted and locked into the housing cavities. These requirements are applicable to hand, bench, semi-automatic, and automatic application tools.

Refer to Figure 1 for product features and terms that will be used throughout this specification.



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Figure 1

2. REFERENCE MATERIAL

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:

- Updated format
- Added note on Page 1 regarding wire size description and metric dimensions
- Added this paragraph (2.1. Revision Summary) and renumbered paragraphs accordingly
- Changed Paragraph 3.4, A. Crimp Height to clarify insulation barrel crimp dimension
- Added qualification information (Paragraph 4)
- Added tooling information (Paragraph 5)

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D	REVISED FP00-0282-97	HK Lim	101297		PAGE	TITLE						
C	REVISED 0990-1100-97	Hanlin	050991		1 OF 12	CRIMP-SNAP METRIC INTERCONNECT SYSTEM						
LTR	REVISION RECORD	DR	DATE									

- Changed product code at note 2.2 to 4719
- Changed product specification at note 2.4 to 108-51007

2.2. Customer Assistance

Reference Part Number 92007 and Product Code 4719 identify the AMP Crimp-Snap Metric Interconnect System. 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 top of this page.

2.3. Engineering 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 Specification

AMP Product Specification 108-51007 provides performance criteria for these connectors.

2.5. Instruction Material

The following list includes AMP Applicator Instructions (408) and Customer Manual (409) which provide tool operation, maintenance, and repair procedures. These documents can be obtained by calling the AMP FAX number listed at the bottom of page 1.

- 408-8040 — Miniature Quick Change Applicator
- 408-9932 — Hand Crimping Tools
- 409-5128 — AMP-O-LECTRIC Bench Machine

3. REQUIREMENTS

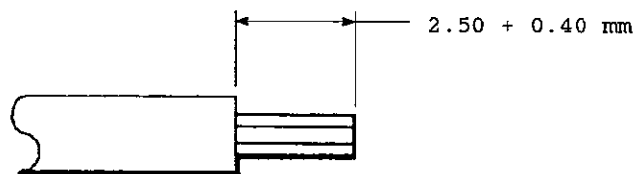
3.1. Wire Selection

The contacts will accept 0.3 through 0.05 mm² (22 - 30 AWG) solid, stranded, and prefused, or overcoated wire with outside insulation diameter of 1.9 to 1.0 mm. All wire gauges shall be in accordance with UL Style 1007 (105° C rating).

3.2. Wire Preparation

Cut and strip 2.5 ± 0.4 mm of outer jacket as shown in Figure 2. If stranded wire is used, care should be taken not to nick or cut the individual conductor strands during the wire stripping operation.

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Figure 2

3.3. Termination

Terminate contacts according to instructions packaged with the tooling.

3.4 Inspection

A. Crimp Height

The crimp height of the wire barrel (Dimension A) must be set as specified in the following table. The crimp height of the insulation barrel (Dimension B) must be adjusted according to the wire insulation outside diameter and the type of wire used. The height must be set so that the wire insulation is gripped by the contact but is not excessively crimped. See the Figure 3 for visual reference of proper crimping conditions. The crimp width of the insulation barrel crimp shall be 2.0 mm maximum. See Figure 3.



Insulation materials and thicknesses may vary from one manufacturer. The crimp heights given for the insulation barrels (Dimension B) are reference values.

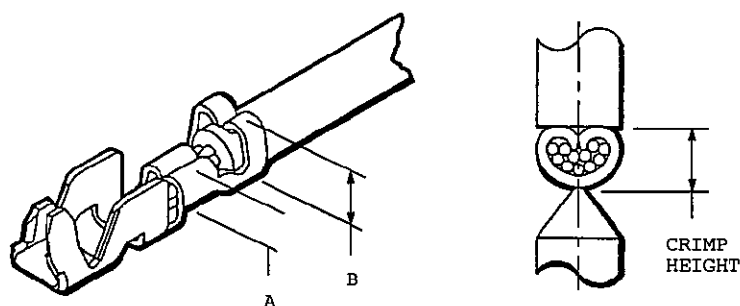


Figure 3 (cont'd)

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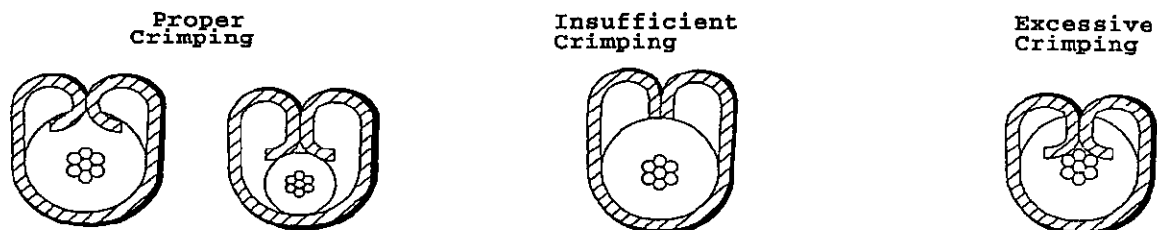
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The barrel does not hold the wire properly.

The barrel holds the wire too tightly.

CRIMP HEIGHT TABLE				
WIRE SIZE		NOMINAL INSULATION DIA (mm)	CRIMP HEIGHT (mm)	
mm ²	AWG		WIRE BARREL (DIM. A)	INSUL BARREL (DIM. B)
.05	30	1.1	0.55 ± 0.03	1.4
.08	28	1.2	0.56 ± 0.05	1.5
.12	26	1.3	0.60 ± 0.05	1.6
.2	24	1.5	0.63 ± 0.05	1.6
.3	22	1.7	0.70 ± 0.05	1.7

Figure 3 (end)

B. Crimp Tensile Strength

After verifying crimp height, measure crimp tensile strength with a push-pull gauge or a spring balance. Minimum crimp tensile strength values for each wire gage are given in Figure 4.

CRIMP TENSILE STRENGTH TABLE		
WIRE SIZE		MINIMUM CRIMP TENSILE STRENGTH (KG)
mm ²	AWG	
.05	30	0.5
.08	28	1.0
.12	26	2.0
.2	24	3.0
.3	22	5.0

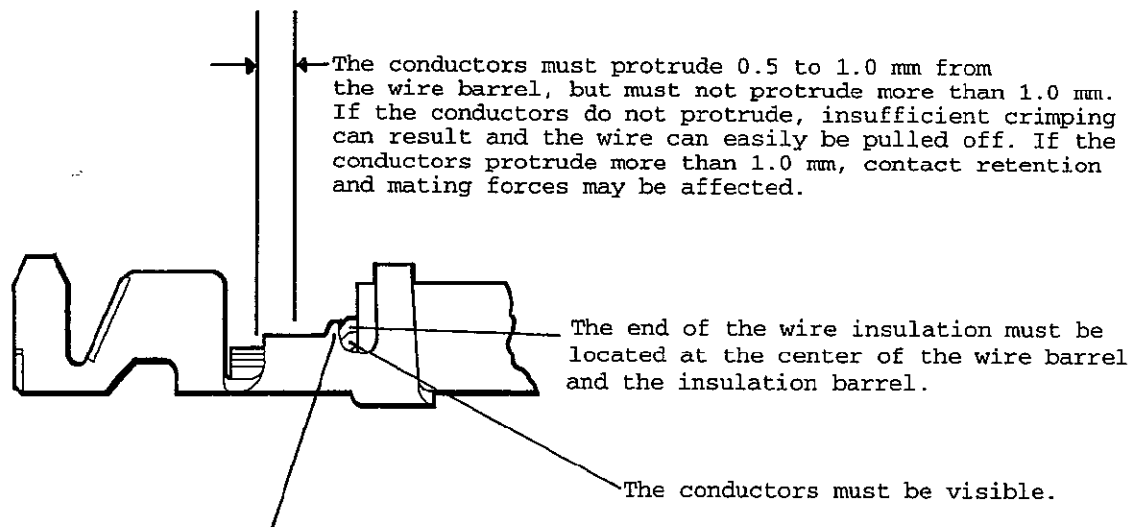
Figure 4

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C. Crimping Condition

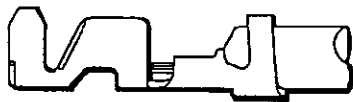
Visually check that crimping has been done properly.

1. Crimp the wire at the correct position (Figure 5).



This portion must be bell-mouthed. The bell-mouth design prevents the conductors from being damaged by the crimper or the sharp edges of the wire barrel.

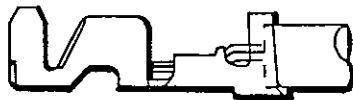
INCORRECT



The wire insulation is inside the wire barrel. This may cause poor conduction or wire breakage due to excessive crimping.



The conductors do not reach the end of the wire barrel. Insufficient crimping can result and the wire can easily be pulled off.



The wire insulation is not crimped completely. The wire insulation is easily pulled off the contact when the wire is pulled.

Figure 5

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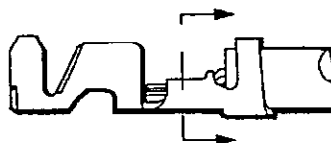
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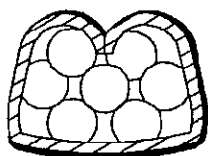
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2. The wire barrel must be free of conspicuous burrs. Cut the crimped contact as shown in Figure 6.



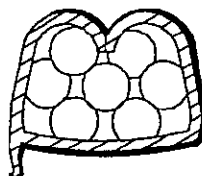
There must be no clearance in the crimped wire barrel. Uncrimped conductors are not allowed.

CORRECT



A conspicuous burr partially reduces the contact thickness and, in the worst case, ruptures the contact, degrading the tensile strength and the electrical performance.

INCORRECT



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Figure 6

3. Cut the insulation barrel and the wire as shown in Figure 7 and remove the wire insulation. Check that the conductors are not damaged.

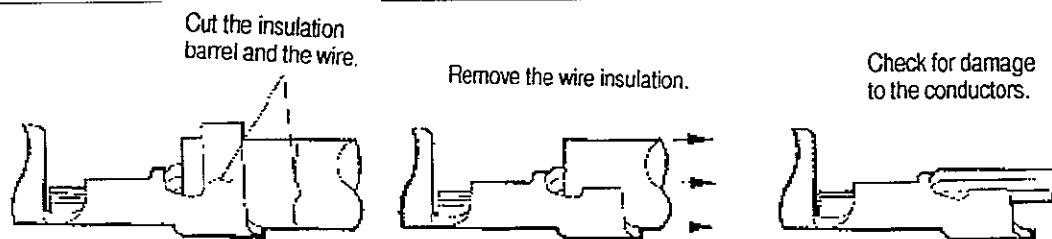


Figure 7

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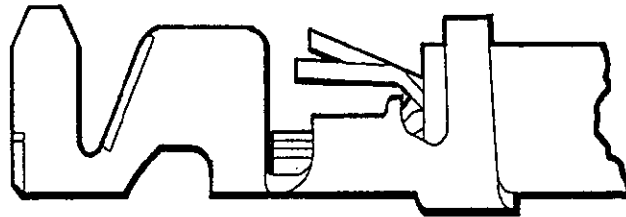
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4. There must be no uncrimped conductors (Figure 8).

INCORRECT



Some conductors are uncrimped. Degradation of the tensile strength and electrical performance will result.

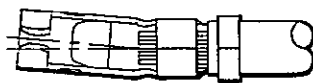
Figure 8

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5. The contact must not be deflected or bent excessively (Figure 9). If the contact is deflected or bent excessively, it will be difficult to insert the contact into the housing. If such a contact is forced into the housing, the contact may be seriously deformed and not function.

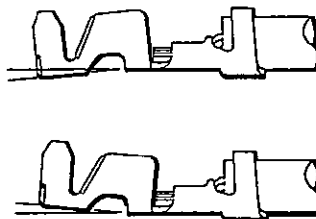
INCORRECT

The contact is deflected excessively (exceeding 3)



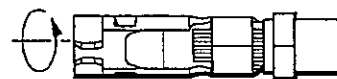
INCORRECT

The contact is bent excessively (exceeding 3)



INCORRECT

The contact is excessively (exceeding 5)



6. The contact must be handled carefully so that the mating end of the contact will not be deformed. Deformed contacts must not be used.

3.5. Contact Insertion

Hold the housing with the housing latch facing upward. Align the contact mating end with the back of the housing cavity and gently insert the contact until the housing latch snaps into the contact window and locks the contact in place. See Figure 10.

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CAUTION

Do NOT forcibly insert the contact by moving it vertically or horizontally. This may deform the contact mating end.

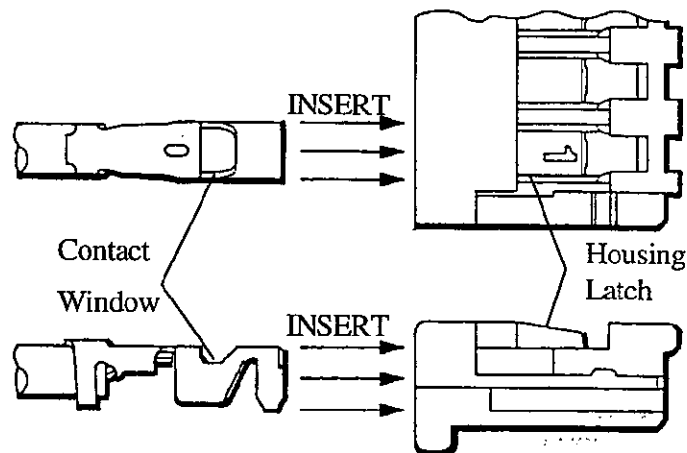


Figure 10

Each time a contact is inserted into the housing, gently pull the wire to check that the contact is securely locked. See Figure 11. Do NOT pull the wire too forcefully or abruptly as this may damage the crimp or the housing. Visually check that the housing latch is snapped into the contact window. When the insertion is insufficient or the contact is upside-down, the housing latch remains lifted.

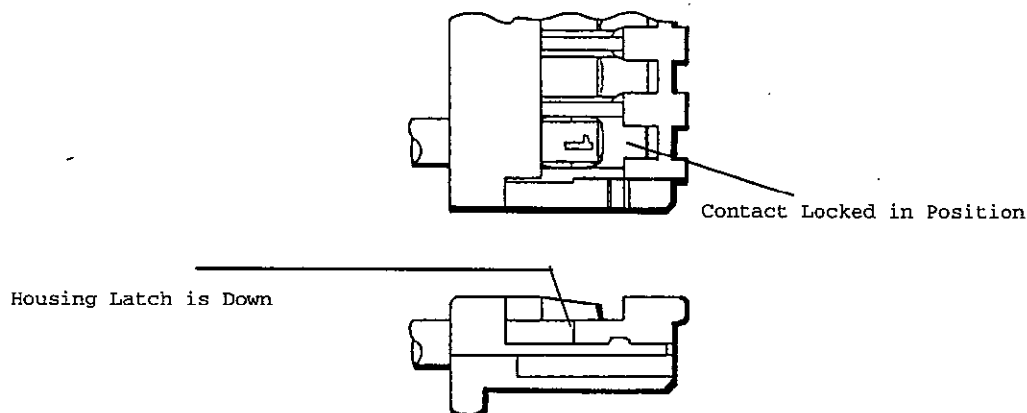


Figure 11

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3.6. Contact Removal

If a contact has been inserted in the wrong cavity or there is a need to remove it, proceed as follows:

Using an instrument with a sharp blade (knife, scalpel, small flat-bladed screwdriver, etc.), GENTLY lift the housing latch and pull on the wire to extract the contact. The contact will be unlocked as soon as the housing latch is out of the contact window. Care must be taken when prying up the housing latch - it should not be pried farther than it needs to be in order to unlock the contact. Prying the housing latch too far may cause breakage to the latch or the housing, or deform it too much to be reusable. If the housing latch remains lifted after the contact has been removed, it will not lock a new contact in position. In this case, a new housing must be used.

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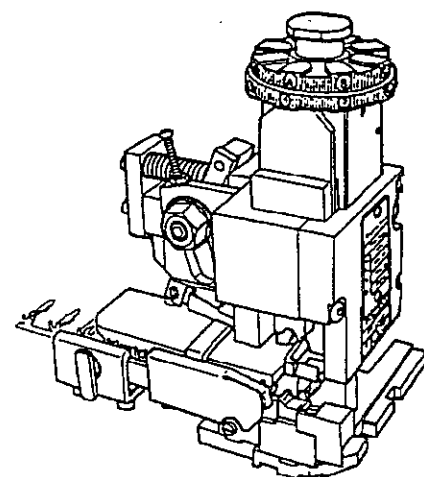
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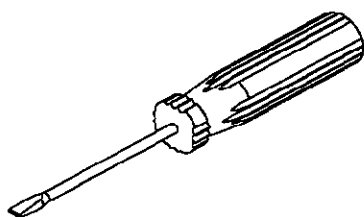
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4. QUALIFICATION

AMP Crimp-Snap Metric Interconnect System Connectors are listed by Underwriters' Laboratories, Inc. (UL) under File Number E28476 and certified by Canadian Standards Association (CSA) under File Number LR7189.



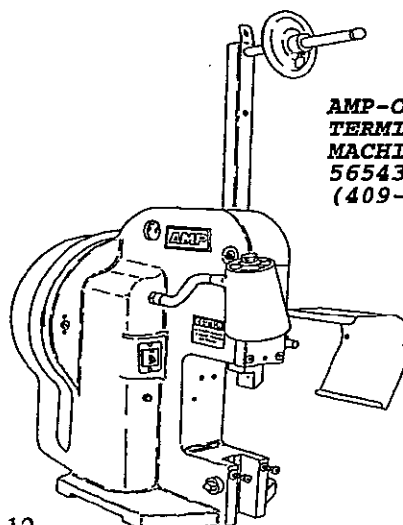
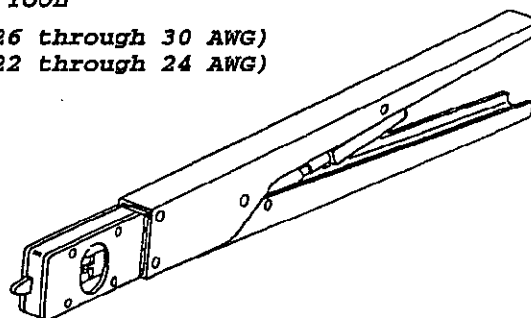
**HEAVY DUTY QUICK CHANGE
MINIATURE APPLICATOR 567449-2**
(408-8040)



CONTACT EXTRACTION TOOL
(Commercially Available Tool)

HAND CRIMPING TOOL

90700-1 (For 26 through 30 AWG)
90701-1 (For 22 through 24 AWG)
(408-9932)



**AMP-O-LECTRIC
TERMINATING
MACHINE**
565435-5
(409-5128)

Figure 12

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5. TOOLING

These contacts can be terminated to wire using hand or semi-automatic crimping tools. Once a contact has been crimped, it can be inserted into the housing without the use of a tool. Any commercially available small sharp-bladed tool can be used to extract a contact from the housing. Recommended tooling (and instructional material, if available) is provided in Figure 12 above.

A. Hand Tool

Hand crimping tools are designed for prototype and low-volume applications such as repair of damaged contacts. Two hand tools have been developed to accommodate the full wire range of the contacts. The wire size that each tool will accept is marked on the tool.

B. Applicator

Heavy Duty Quick Change Miniature Applicators are designed for high-volume production, heavy duty crimping requirements. The recommended applicator is adjustable for the full wire range of the contacts and is powered by a bench mount machine.

C. Power Unit

The AMP-O-ELECTRIC Terminating Machine is the bench mounted power source recommended for terminating these contacts. This is a semi-automatic machine where wires are hand fed into the contact wire barrel. It is designed to accept reeled, strip form contacts.

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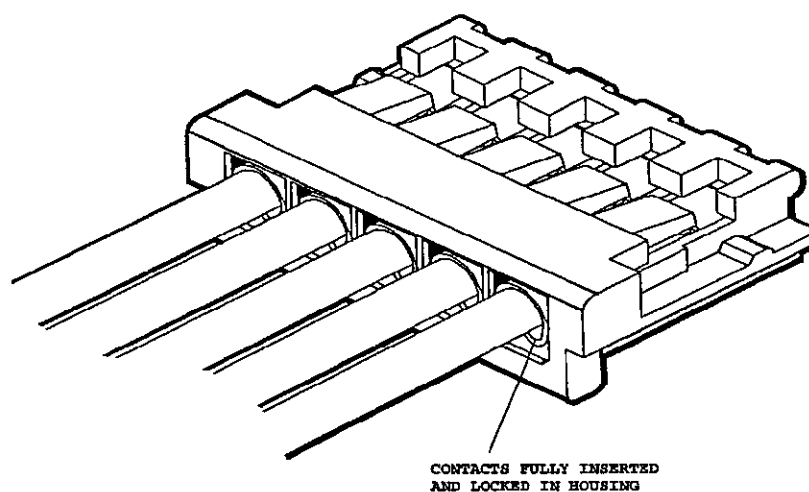
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6. VISUAL AID

Figure 13 illustrates a properly assembled connector. This illustration is to be used by production personnel to visually ensure a properly applied product.



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Figure 13: Visual Aid

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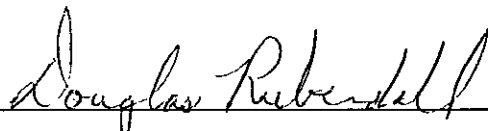
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