

### PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. AMP hand tools are intended for occasional use and low volume applications. AMP offers a wide selection of powered application equipment for extended-use, production operations.

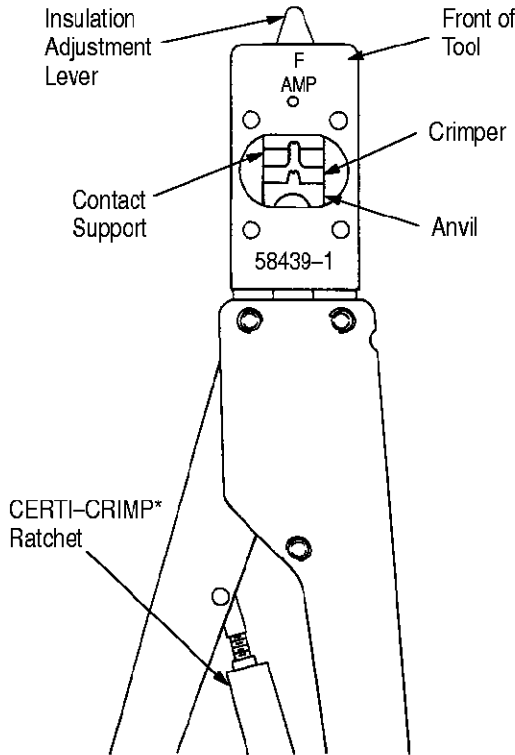


Figure 1

### 1. INTRODUCTION

AMP\* Hand Crimping Tool 58439-1 (Figure 1) is designed for crimping AMP Universal MATE-N-LOK\* and Universal MATE-N-LOK II loose-piece (LP) and strip form pin and socket contacts listed in Figure 2. Read these instructions thoroughly before crimping any contacts.

**NOTE**

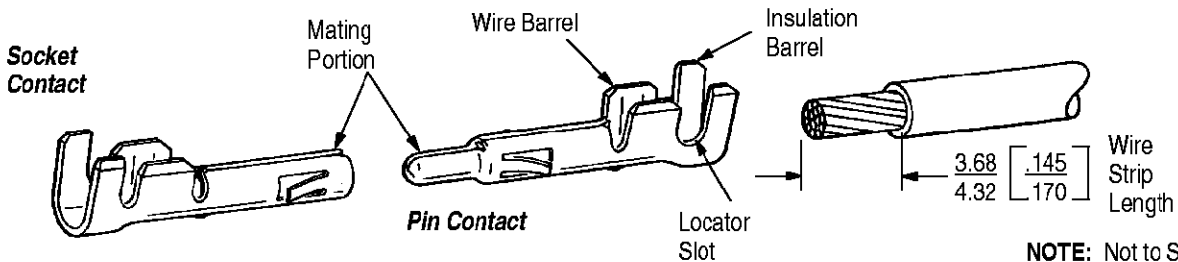
Measurements are in millimeters [followed by inch equivalents in brackets]. Figures and illustrations are for identification only and are not drawn to scale.

Reasons for reissue are in Section 7, REVISION SUMMARY.

### 2. DESCRIPTION

The FRONT of the tool, into which the contact is inserted, has the tool number marked on it. The BACK of the tool (wire side), into which the wire is inserted, has the wire size marked above the crimp section.

The tool features a fixed die (crimper), a movable die (anvil), an insulation crimp adjustment lever, a contact support, a locator/insulation stop, and a CERTI-CRIMP ratchet. The insulation adjustment



SERIES	WIRE SIZE (AWG)	INSULATION DIAMETER	CONTACT TYPE			
			LOOSE PIECE		STRIP	
			PIN	SOCKET	PIN	SOCKET
UNIVERSAL MATE-N-LOK●	0.05-0.15mm <sup>2</sup> [30-26] AWG	0.81-1.45 [.032-.057]	770672	770673	350924	350925
UNIVERSAL MATE-N-LOK II●	0.05-0.15mm <sup>2</sup> [30-26] AWG	0.81-1.45 [.032-.057]	770512	770416	770011	770012

● Universal MATE-N-LOK and Universal MATE-N-LOK II contacts are not interchangeable. Refer to 408-7300 and 408-3200 respectively for contact/housing compatibility.

Figure 2

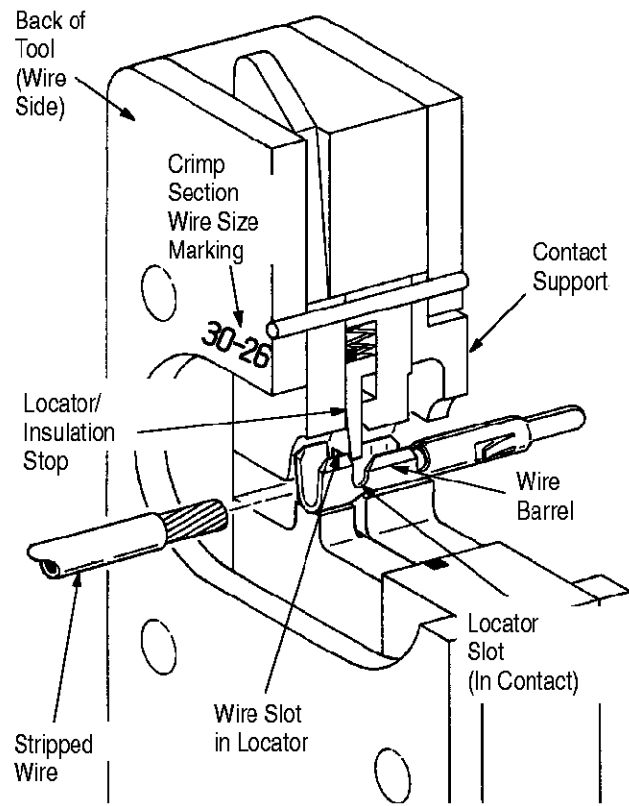


Figure 3

lever is used to regulate the crimp height of the contact insulation barrel. Refer to Section 4, INSULATION CRIMP ADJUSTMENT. The contact support prevents the contact from bending during the crimping operation. The locator/insulation stop has two functions: first, it positions the contact between the crimper and the anvil before crimping; and, second, it limits the insertion distance of the stripped wire into the contact. In use, it rests in the locator slot of the contact (see Figures 2 and 3). The CERTI-CRIMP ratchet assures full crimping of the contact. Once engaged, the ratchet will not release until the handles have been FULLY closed.

**CAUTION**

*The crimping dies bottom before the CERTI-CRIMP ratchet releases. This is a design feature that ensures maximum electrical and tensile performance of the crimp. Do NOT re-adjust the ratchet.*

**3. CRIMPING PROCEDURE**

Refer to the table in Figure 2 and ensure that the wire of the specified size and insulation diameter is compatible with the contact and the wire size marking on the BACK of the tool. Strip the wire to the length indicated — do NOT cut or nick the wire strands. Then proceed as follows:

1. Hold tool so BACK side (wire side) faces you. See Figure 3.

2. Ensure that tool ratchet is released by squeezing tool handles and allowing them to open.
3. Holding contact by its mating portion and looking straight into BACK of crimp section, insert contact from the FRONT of tool into BACK of crimp section. Position contact between crimpers so locator/insulation stop enters the locator slot in contact. The wire barrel should butt against the locator/insulation stop.
4. Holding contact in this position, squeeze tool handles together until insulation barrel anvil starts entry into insulation crimper. Do NOT deform insulation barrel or wire barrel.
5. Insert a properly stripped wire through the wire slot in locator and into wire barrel of contact until insulation butts against the locator/insulation stop.
6. Holding wire in place, crimp contact to wire by squeezing tool handles together until ratchet releases.
7. Allow tool handles to open FULLY and remove crimped contact from tool.

**4. INSULATION CRIMP ADJUSTMENT**

The insulation barrel crimp height is regulated by the insulation adjustment lever. To determine the proper setting, test crimp a contact using the setting which approximates the insulation size: (1) small, (2) medium, or (3) large. If the crimped insulation barrel is too tight or too loose, change the setting accordingly. The crimp should hold the insulation firmly without cutting into it.

**5. MAINTENANCE AND INSPECTION PROCEDURE**

AMP recommends that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations. Though recommendations call for at least one inspection a month, frequency of inspection depends on:

1. The care, amount of use, and handling of the hand tool.
2. The presence of abnormal amounts of dust and dirt.
3. The degree of operator skill.
4. Your own established standards.

The hand tool is inspected before being shipped; however, AMP recommends that the tool be inspected immediately upon arrival to ensure that the tool has not been damaged during shipment.

Inspect crimped contacts by checking the features described in the proper Application Specifications for the contact. For Universal MATE-N-LOK contacts, refer to Application Specification 114-1010, and for Universal MATE-N-LOK II contacts, refer to Application Specification 114-1043.

**5.1. Daily Maintenance**

1. Hand tool should be immersed (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease, and foreign matter. When degreasing compound is not available, tool may be wiped clean with a soft, lint-free cloth. Do NOT use hard or abrasive objects that could damage the tool.
2. Make certain that the retaining pins are in place and that they are secured with retaining rings.
3. All pins, pivot points, and bearing surfaces should be protected with a THIN coat of any good SAE 20 motor oil. Do not oil excessively.
4. When the tool is not in use, keep handles closed to prevent objects from becoming lodged in the crimping dies. Store the tool in a clean, dry area.

**5.2. Periodic Inspection**

**A. Lubrication**

Lubricate all pins, pivot points, and bearing surfaces with SAE 20 motor oil as follows:

- Tool used in daily production – lubricate daily
- Tool used daily (occasional) – lubricate weekly
- Tool used weekly – lubricate monthly

Wipe excess oil from tool, particularly from crimping area. Oil transferred from the crimping area onto certain terminations may affect the electrical characteristics of an application.

**B. Visual Inspection**

1. Close tool handles until ratchet releases and then allow them to open freely. If they do not open quickly and fully, the spring is defective and must be replaced. See Section 6, REPLACEMENT AND REPAIR.
2. Inspect head assembly for worn, cracked, or broken dies. If damage is evident, return the tool to AMP for evaluation and repair. See Section 6, REPLACEMENT AND REPAIR.

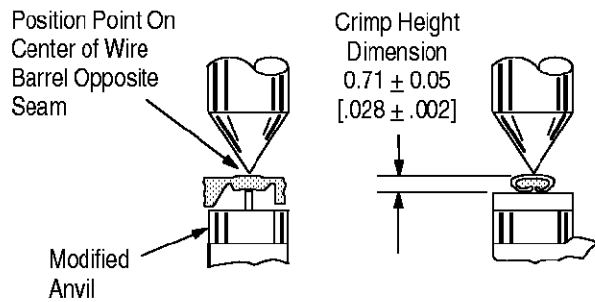
**C. Crimp Height Inspection**

This inspection requires the use of a modified micrometer with a modified anvil and spindle, as shown in Figure 4. AMP recommends the Crimp Height Comparator RS-1019-5LP which can be purchased from:

Shearer Industrial Supply Co.      VALCO  
 20 North Penn Street      or      1410 Stonewood Drive  
 York, PA 17401-1014      Bethlehem, PA 18017-3527

Proceed as follows:

1. Refer to the table in Figure 4 and select a contact and a maximum size wire for each crimp section listed in the table.
2. Refer to Section 3, CRIMPING PROCEDURE, and crimp the contact(s) accordingly.
3. Using a crimp height comparator, measure the wire barrel crimp height as shown in Figure 4. If the crimp height conforms to that height, the tool is considered dimensionally correct. If not, the tool must be returned to AMP for evaluation and repair. See Section 6, REPLACEMENT AND REPAIR.



PART NUMBER LOOSE PIECE CONTACT	PART NUMBER STRIP CONTACT	INSULATION DIAMETER RANGE	CRIMP SECTION (WIRE SIZE MARKING)
770512	770011	0.81 – 1.45 [.032 – .057]	30 – 26
770416	770012		
770672	350924		
770673	350925		

Figure 4

For additional information concerning the use of the crimp height comparator, refer to AMP instruction sheet 408-7424.

**D. CERTI-CRIMP Ratchet Inspection**

The CERTI-CRIMP ratchet feature on AMP hand tools should be checked to ensure that the ratchet does not release prematurely, allowing the dies to open before they have fully bottomed. Obtain a 0.025 [.001] shim that is suitable for checking the clearance between the bottoming surfaces of the crimping dies. Proceed as follows:

1. Select a terminal, maximum size wire, and the designated crimp section for the wire you are using. See Figure 2.
2. Position the terminal and wire between the crimping dies, as described in Section 3, CRIMPING PROCEDURE.

3. Hold the wire in place and squeeze the handles until the CERTI-CRIMP ratchet releases. Hold the handles in this position, maintaining just enough tension to keep the dies closed.

4. Check the clearance between the bottoming surfaces of the crimping dies. If the clearance is 0.025 [.001] or less, the ratchet is satisfactory. If clearance exceeds 0.025 [.001], the ratchet is out of adjustment and must be repaired. See Section 6, REPLACEMENT AND REPAIR.

**6. REPLACEMENT AND REPAIR**

Replacement parts are listed in Figure 5. Parts other than those listed in Figure 5 should be replaced by AMP to ensure quality and reliability of the tool. Order replacement parts through your AMP representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

CUSTOMER SERVICE (38-35)  
 AMP INCORPORATED  
 P.O. BOX 3608  
 HARRISBURG, PA 17105-3608

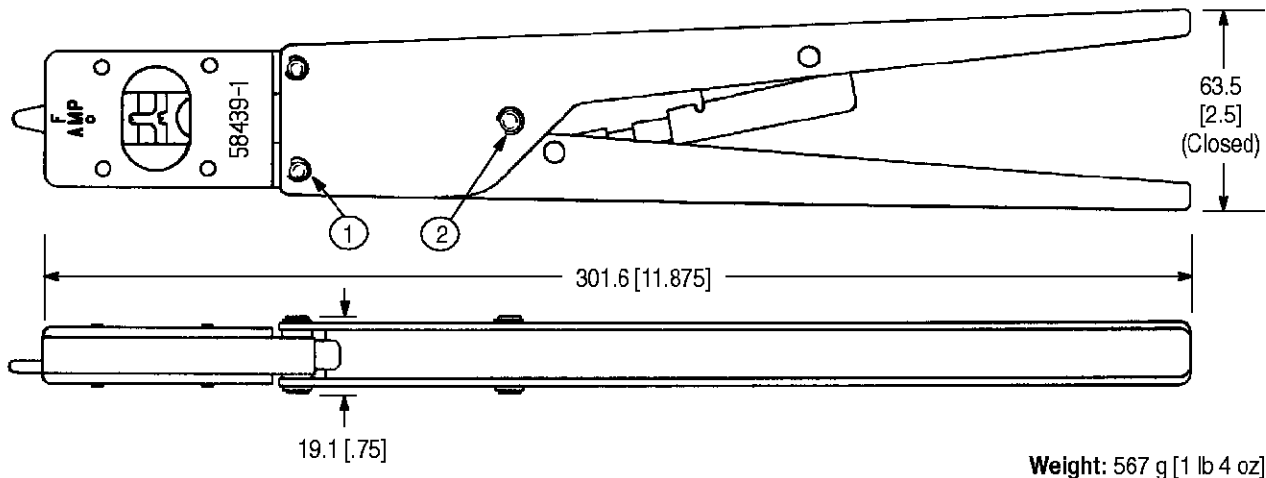
For tool repair service, please contact an AMP representative at 1-800-526-5136.

**7. REVISION SUMMARY**

Since the previous release of this sheet, the following changes were made:

Per EC 0990-1115-99

- Updated document to corporate requirements
- Changed document title
- Changed tool repair service information in Section 6, REPLACEMENT AND REPAIR



REPLACEMENT PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY PER ASSY
1	21045-3	RING, Retaining	4
2	21045-9	RING, Retaining	2

Figure 5