

### 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.

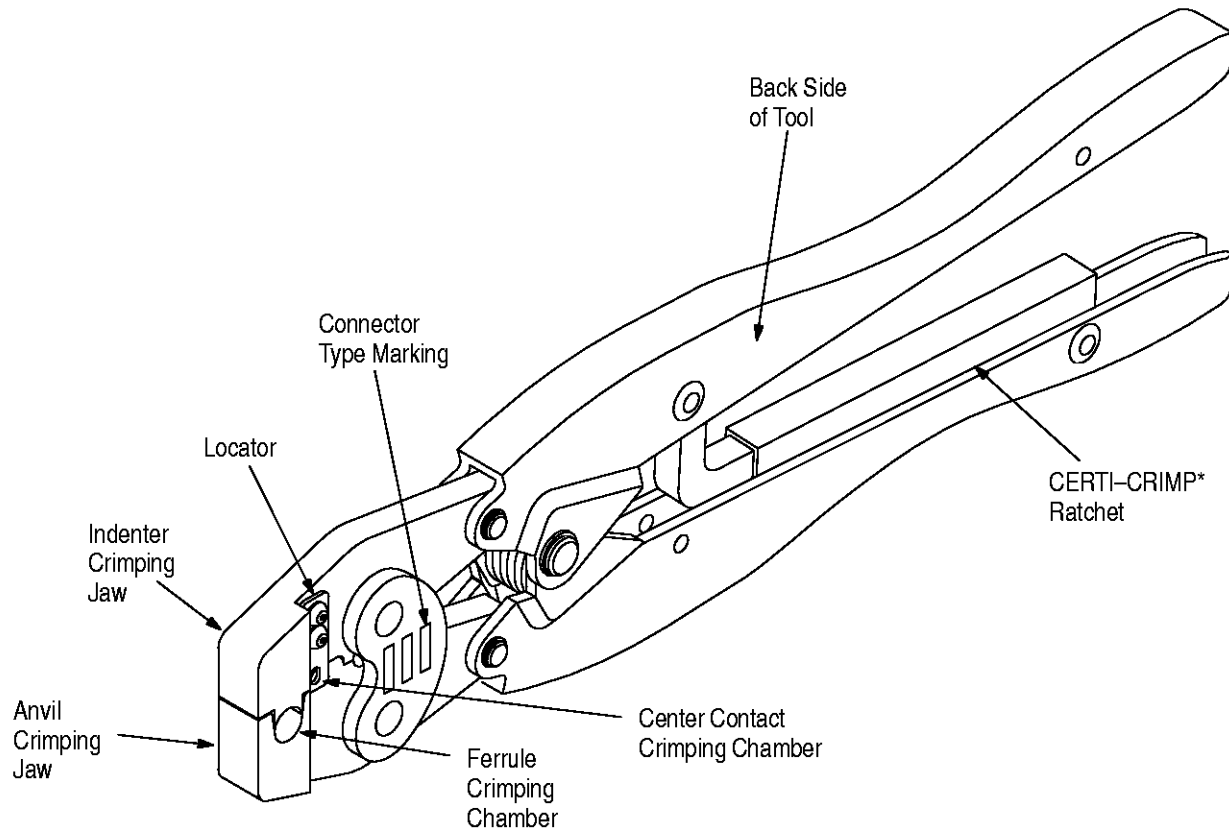


Figure 1

## 1. INTRODUCTION

AMP\* Hand Crimping Tools 59894-1, 69477-1, -2, -3, and 220043-1 are designed to crimp AMP BNC COAXICON\* Dual Crimp Connectors onto a variety of cable sizes and types. AMP Catalog 82074 provides a guide for cable-to-connector selection. For cable sizes and connectors not referenced in the catalog, contact AMP Product Engineering for recommendations. Read these instructions thoroughly before using the hand tools.

### NOTE

*Dimensions are in millimeters [followed by inch equivalent in brackets]. Figures are for identification only and are not drawn to scale.*

Reasons for reissue are provided in Section 6, REVISION SUMMARY.

## 2. DESCRIPTION (Figure 1)

Each hand tool features two crimping jaws: an indenter jaw and an anvil jaw. When closed, the jaws

form two crimping chambers: one for crimping the center contact and one for crimping the ferrule. The locator aids in positioning the center contact in the crimping chamber. The connector type suitable for the tool is marked on the BACK side of the tool.

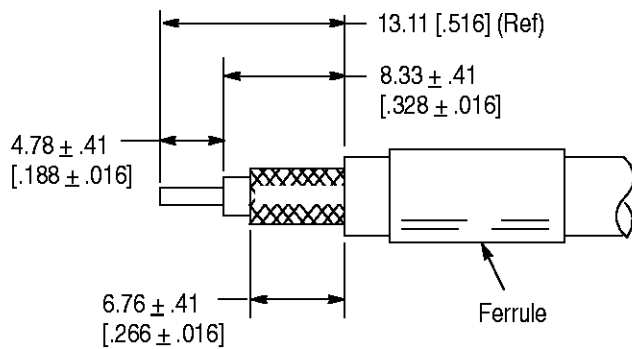
The CERTI-CRIMP ratchet ensures full crimping. Once engaged, the ratchet will not release until the handles have been FULLY closed.

### CAUTION

*The crimping jaws 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

Select the appropriate wire size and connector for the hand tool. Strip the wire to the length indicated in Figure 2. Do NOT nick or cut the wire strands. Then proceed as follows:



**NOTE:** Not to scale.

Figure 2

### 3.1. Crimping the Center Contact

#### NOTE

For additional information on preparing the center contact, refer to the instruction sheet packaged with the connector.

1. Hold tool so that the BACK side faces you.
2. Open the crimping jaws by squeezing the tool handles together until the CERTI-CRIMP ratchet releases.
3. Insert center contact into tool locator until the flange on the center contact rests on the locator. See Figure 3.
4. Close tool handles just enough to hold center contact in place without deforming wire barrel.

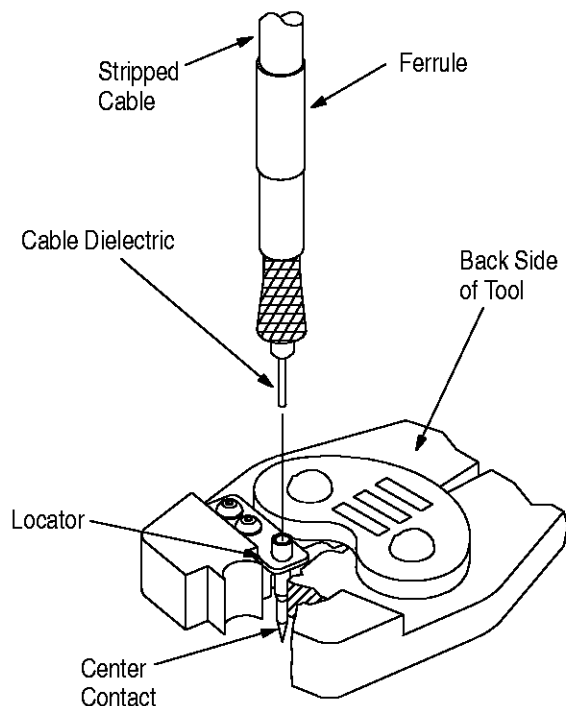


Figure 3

5. Insert cable's center conductor into center contact until cable dielectric butts against center contact.
6. Holding cable in place, squeeze tool handles until ratchet releases. Allow tool handles to open FULLY.
7. Remove crimped center contact from tool.

### 3.2. Crimping the Ferrule

1. Assemble center contact onto connector according to the instruction sheet packaged with the connector.
2. Open the crimping jaws by squeezing the tool handles together until the CERTI-CRIMP ratchet releases.
3. Position ferrule in crimping chamber on the anvil crimping jaw so that the connector shoulder butts against jaw, as shown in Figure 4.

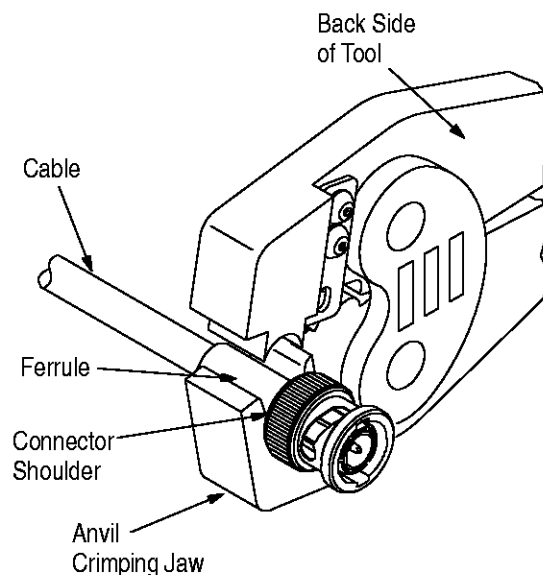


Figure 4

4. Holding ferrule in place, close tool handles until ratchet releases. Allow tool handles to open FULLY.
5. Remove crimped assembly from tool. Refer to Figure 5 for a properly crimped connector.

### 4. 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.

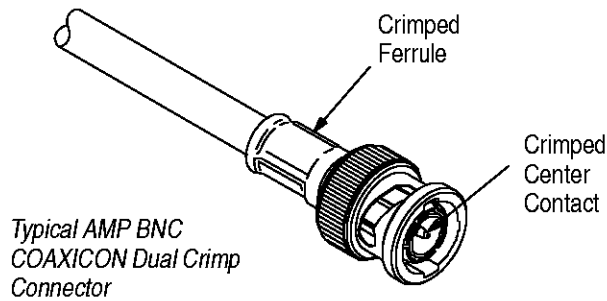


Figure 5

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 at your facility to ensure that the tool has not been damaged during shipment.

#### 4.1. 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 jaws. Store the tool in a clean, dry area.

#### 4.2. Periodic Inspection

##### A. Lubrication

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

Tools used in daily production – lubricate daily  
Tools used daily (occasional) – lubricate weekly  
Tools 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 5, REPLACEMENT AND REPAIR.
2. Inspect head assembly for worn, cracked, or broken jaws. If damage is evident, return the tool to AMP for evaluation and repair. See Section 5, REPLACEMENT AND REPAIR.

#### C. Center Contact Crimp Height Inspection

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

Shearer Industrial Supply Co.  
20 North Penn Street  
York, PA 17401-1014

or VALCO  
1410 Stonewood Drive  
Bethlehem, PA 18017-3527

Inspection of the center contact crimp configuration is determined by measuring a crimped slug. The recommended material for this slug is 14 AWG solid copper commercial wire. Refer to Figure 6.

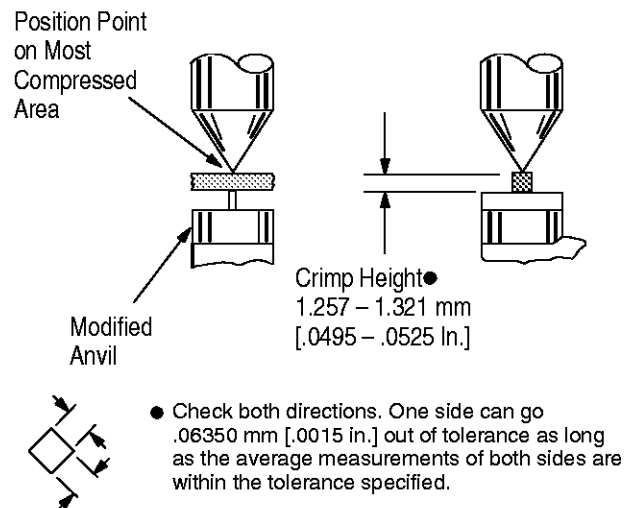
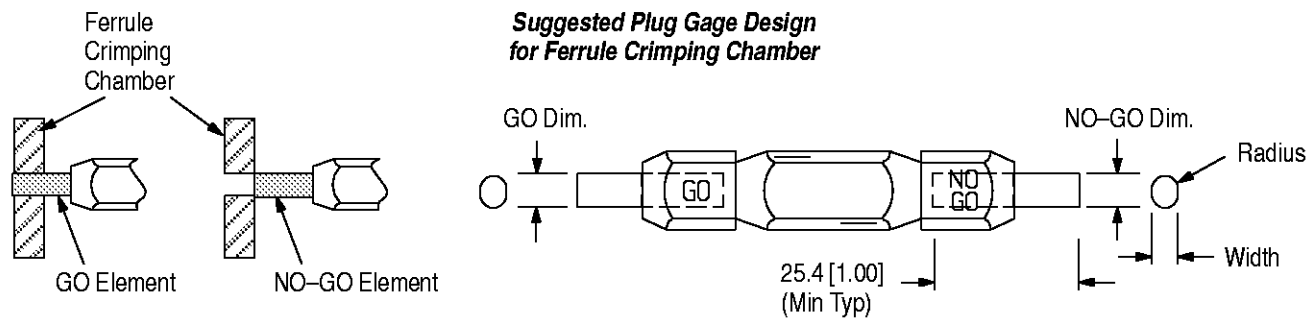


Figure 6

#### D. Gaging the Ferrule Crimping Chamber

This inspection requires the use of a plug gage conforming to the diameters in Figure 7. AMP does not manufacture or market these gages. To gage the crimping chamber, proceed as follows:

1. Remove traces of oil or dirt from crimping chamber and plug gage.
2. Close the tool handles until it is evident that the jaws have bottomed, then HOLD in this position. Do NOT force the jaws beyond initial contact.



| HAND TOOL<br>PART NUMBER | GAGE ELEMENT DIMENSIONS      |                              |                |                |
|--------------------------|------------------------------|------------------------------|----------------|----------------|
|                          | GO                           | NO-GO                        | WIDTH (MAX)    | RADIUS (MAX)   |
| 59894-1                  | 6.782-6.789<br>[.2670-.2673] | 6.932-6.934<br>[.2729-.2730] | 6.65<br>[.262] | 3.33<br>[.131] |
| 69477-1                  | 6.426-6.434<br>[.2530-.2533] | 6.576-6.579<br>[.2589-.2590] | 6.30<br>[.248] | 3.15<br>[.124] |
| 69477-2                  | 4.242-4.249<br>[.1670-.1673] | 4.392-4.394<br>[.1729-.1730] | 4.17<br>[.164] | 2.08<br>[.082] |
| 69477-3                  | 7.087-7.094<br>[.2790-.2793] | 7.236-7.239<br>[.2849-.2850] | 6.96<br>[.274] | 3.48<br>[.137] |
| 220043-1                 | 8.306-8.313<br>[.3270-.3273] | 8.456-8.458<br>[.3329-.3330] | 8.18<br>[.322] | 4.09<br>[.161] |

Figure 7

3. Align the GO element with the crimping chamber. Push element straight into the crimping chamber without using force. The GO element must pass completely through. Refer to Figure 7.

4. Now align the NO-GO element and try to insert it straight into the same crimping chamber. The NO-GO element may start entry but must not pass completely through as shown in Figure 7.

If the crimping chamber conforms to the gage inspection, it is considered dimensionally correct and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, the tool must be repaired before returning it to service. See Section 5, REPLACEMENT AND REPAIR.

For additional information concerning the use of the plug gage, refer to AMP instruction sheet 408-7424.

### E. CERTI-CRIMP Ratchet Inspection

Obtain a 0.025 [.001] shim that is suitable for checking the clearance between the bottoming surfaces of the crimping jaws. Then proceed as follows:

1. Select a connector and **maximum** size cable for the tool.
2. Position the ferrule and cable between the crimping jaws, according to Section 3, CRIMPING PROCEDURE. Holding the cable in place, squeeze the tool handles together until the CERTI-CRIMP ratchet releases. Hold the tool handles in this

position, maintaining just enough pressure to keep the jaws closed.

3. Check the clearance between the bottoming surfaces of the crimping jaws. 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 5, REPLACEMENT AND REPAIR.

### 5. REPLACEMENT AND REPAIR

Replacement parts are listed in Figure 8. Parts other than those listed in Figure 8 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

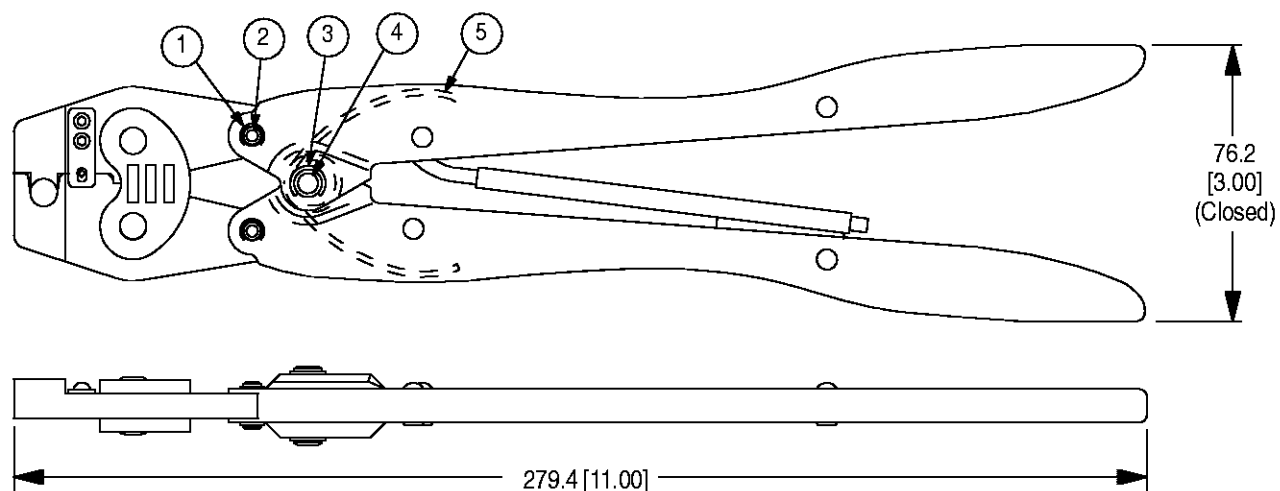
For tool repair service, please contact an AMP representative at 1-800-526-5136.

### 6. REVISION SUMMARY

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

Per EC 0990-0795-99

- Updated document to corporate requirements
- Changed tool repair service information in Section 5, REPLACEMENT AND REPAIR



## REPLACEMENT PARTS

| ITEM | PART NUMBER | DESCRIPTION     | QTY PER ASSY |
|------|-------------|-----------------|--------------|
| 1    | 21045-3     | RING, Retaining | 4            |
| 2    | 1-23619-6   | PIN, Retaining  | 2            |
| 3    | 21045-6     | RING, Retaining | 2            |
| 4    | 2-23620-9   | PIN, Retaining  | 1            |
| 5    | 39364       | SPRING, Handle  | 1            |

Figure 8