

### 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.

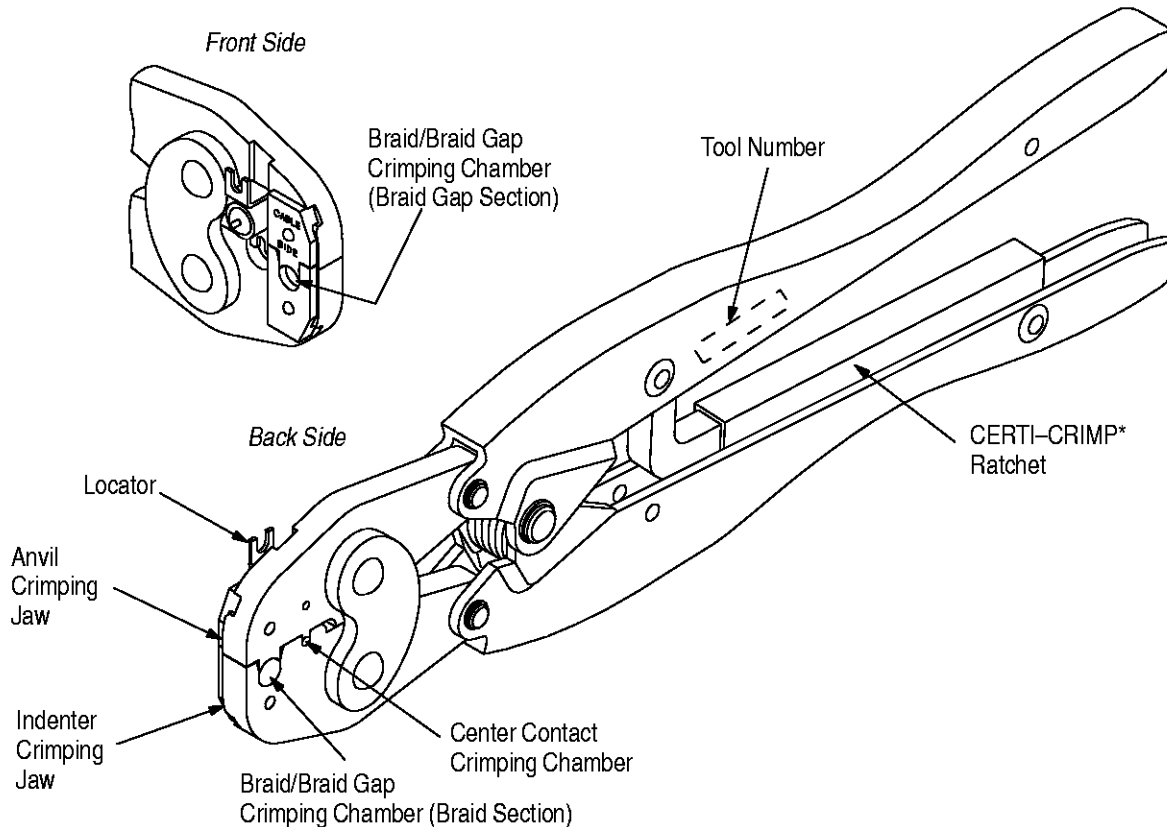


Figure 1

## 1. INTRODUCTION

AMP\* Hand Crimping Tool 220045-2 is designed to crimp the AMP COAXICON\* 50 Ohm C, HN, N, and TNC Series RF Connectors onto various size cable. 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 connector recommendations.

### NOTE

*Dimensions 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 provided in Section 6, REVISION SUMMARY.

## 2. DESCRIPTION

The tool features two crimping jaws (anvil and indenter), a reversible locator, and a CERTI-CRIMP ratchet. When closed, the crimping jaws form two

crimping chambers: center contact and braid/braid gap. The braid/braid gap crimping chamber contains two crimping sections in the same chamber. See Figure 1.

The center contact is crimped first in the center contact crimping chamber. Then, the ferrule is crimped in the braid/braid gap crimping chamber, which also provides a crimp for a gap created inside the ferrule during crimping. The cable must extend from the side of the tool marked "CABLE SIDE" when the ferrule is crimped. The tool number is marked on the BACK side of the tool.

The locator, which positions the center contact in the proper area of the crimping chamber, has a slot on each end; a wide slot for positioning Series HN, N, and, C Connectors, and a narrow slot for positioning Series TNC Connectors. See Figure 2.

Full crimping of the connector is assured by the CERTI-CRIMP ratchet. Once engaged, the ratchet does not release until the tool handles have been FULLY closed.

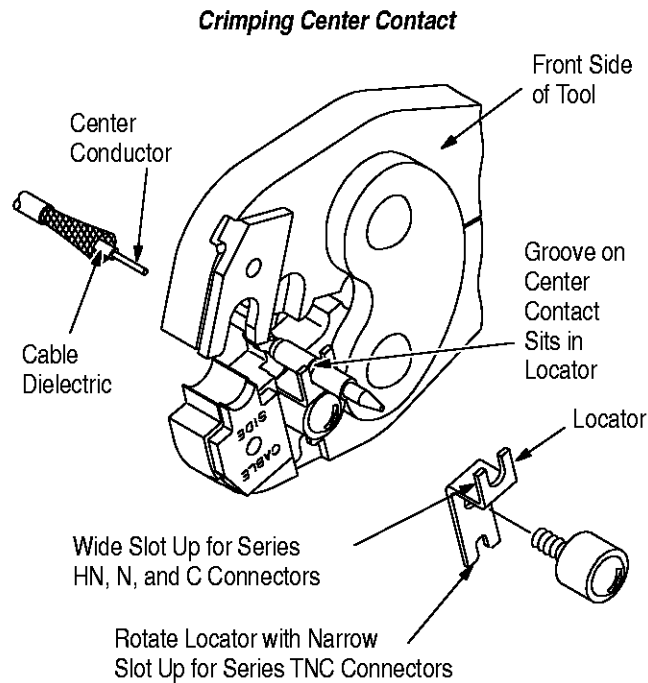


Figure 2

**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 cable and connector for the hand tool. Then, proceed as follows:

**3.1. Crimping the Center Contact**

1. Make sure the locator is in the correct position for the type of connector being used. Refer to Figure 2.
2. Slide ferrule onto cable, then strip cable to the dimensions specified on the instruction sheet provided with the connector. Do NOT nick or cut cable braid.
3. Hold tool so that FRONT side is facing you. Open the crimping jaws by squeezing the tool handles together until the CERTI-CRIMP ratchet releases.
4. Position center contact in locator, as shown in Figure 2. Make sure the groove on contact sits in locator. Close tool handles just enough to hold center contact in place without deforming the wire barrel.
5. Insert cable center conductor into wire barrel of center contact. The cable dielectric should butt

against the contact; avoid excessive pressure which could move the locator and mislocate the crimp.

6. Squeeze tool handles together until ratchet releases.
7. Allow tool handles to open FULLY and remove crimped center contact from crimping jaws.

**3.2. Crimping the Ferrule**

1. Assemble connector as described in the instruction sheet provided with the connector. Slide ferrule against connector.
2. Center ferrule in the braid/braid gap crimping chamber on the anvil crimping jaw. Note the "CABLE SIDE" marking on the tool — the cable must extend from this side of the tool. The support sleeve on connector must rest against crimping jaw. See Figure 3.

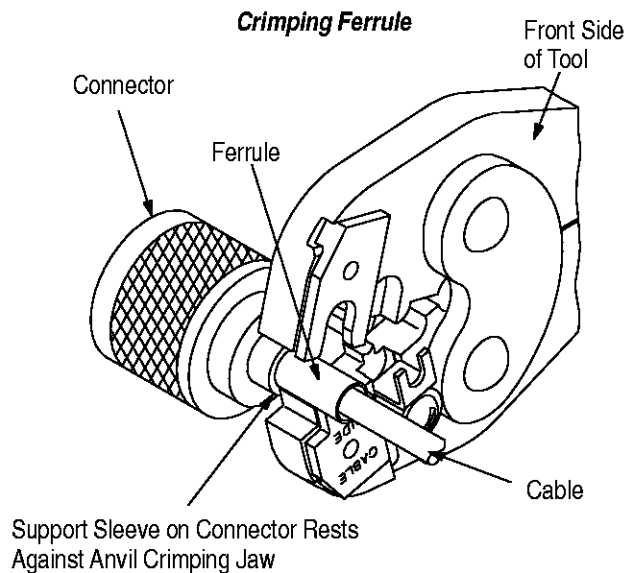


Figure 3

3. Holding ferrule in place, squeeze tool handles together until ratchet releases.
4. Allow handles to open FULLY and remove the 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.
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 from the plant; however, AMP recommends that the tool be inspected immediately upon arrival 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.

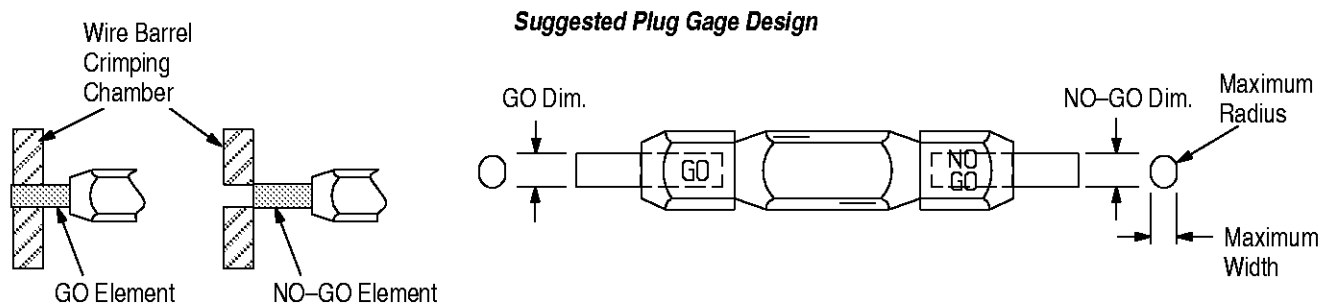
**C. Gaging the Crimping Chambers**

This inspection requires the use of three plug gages conforming to the dimensions provided in Figure 4. AMP does not manufacture or market these gages. To gage the crimping chambers, proceed as follows:

1. Remove locator on hand tool.

**NOTE** Do not lose spring inside housing of locator.

2. Remove traces of oil or dirt from crimping chambers and plug gages.
3. Close the tool handles until the jaws have bottomed; hold in this position. DO NOT force the jaws beyond initial contact.

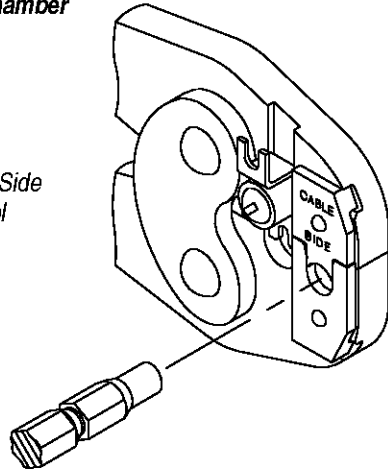


CRIMPING CHAMBER	GAGE ELEMENT DIMENSIONS			
	GO	NO-GO	WIDTH (MAX)	RADIUS (MAX)
CENTER CONTACT	1.905 – 1.913 [.0750 – .0753]	2.004 – 2.007 [.0789 – .0790]	1.83 [.072]	0.91 [.036]
BRAID SECTION	5.486 – 5.494 [.2160 – .2163]	5.636 – 5.639 [.2219 – .2220]	5.44 [.214]	2.72 [.107]
BRAID GAP SECTION	4.851 – 4.859 [.1910 – .1913]	5.103 – 5.105 [.2009 – .2010]	4.57 [.180]	2.29 [.090]

Figure 4

### Gaging Braid Gap Crimping Chamber

Front Side  
of Tool



### Gaging Center Contact and Braid Crimping Chamber

Back Side  
of Tool

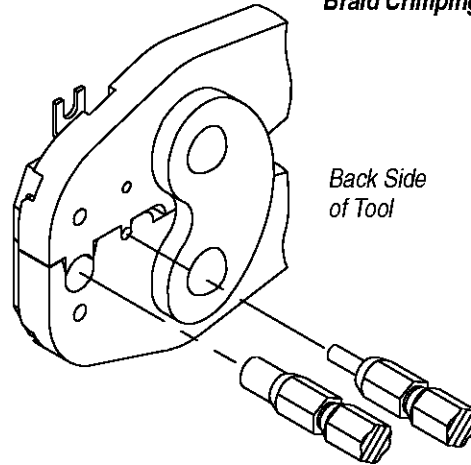


Figure 5

4. Carefully insert GO element straight into the corresponding crimping chamber; do not force it. The GO element must pass completely through the crimping chamber. See Figure 4.

**NOTE** Insert BRAID GAP plug gage in the crimping chamber on the FRONT ("CABLE SIDE") of tool and insert BRAID plug gage in the crimping chamber on BACK side of tool. See Figure 5.

5. In the same manner, try to insert the NO-GO element into the same crimping chamber. The NO-GO element may start entry, but must not pass completely through the crimping chamber. See Figure 4.

6. Re-assemble locator onto hand tool.

If the crimping chambers conform to the gage inspection, they are considered dimensionally correct, and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, return the tool to AMP for further evaluation and repair. Refer to Section 5, REPLACEMENT AND REPAIR.

For additional information concerning the use of a plug gage, refer to 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 jaws 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 jaws. Proceed as follows:

1. Select a connector and **maximum** size cable for the hand tool.
2. Position the connector and cable between the crimping jaws, as described in Section 3, CRIMPING PROCEDURE.

3. Holding connector in place, squeeze tool handles until the CERTI-CRIMP ratchet releases. Hold the handles in this position, maintaining just enough tension to keep the jaws closed.

4. 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 the 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 6. Parts other than those listed in Figure 6 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

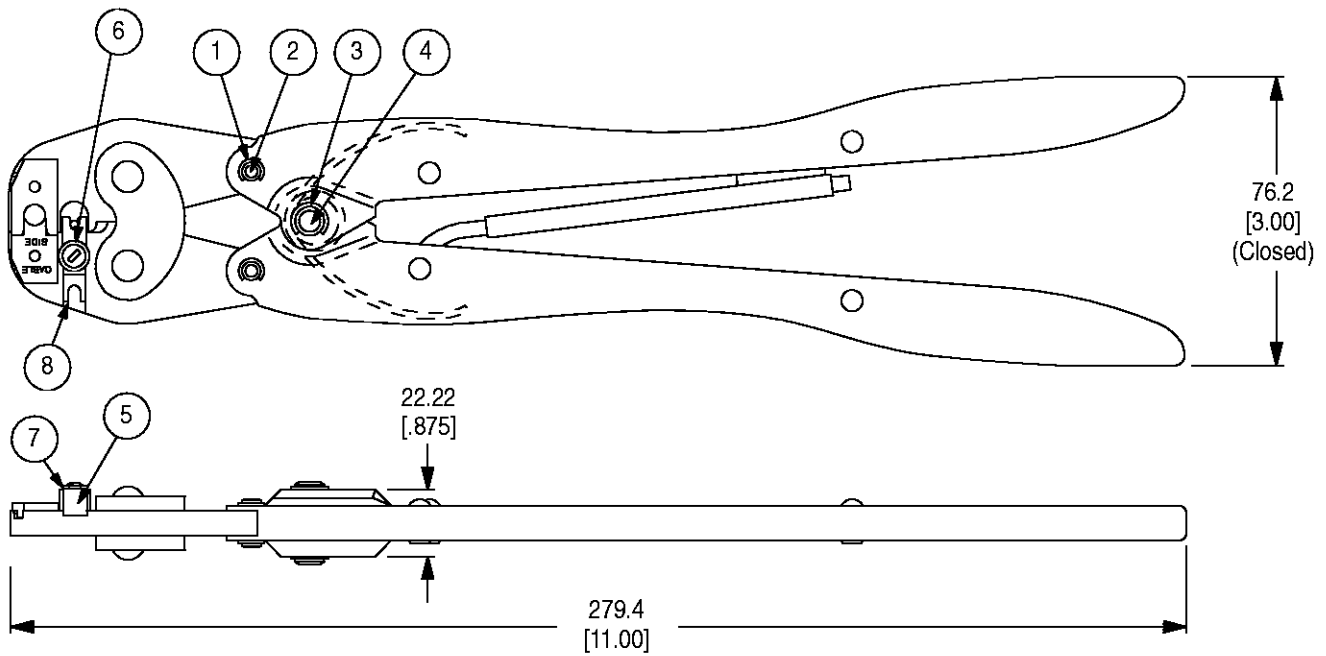
For tool repair service, please contact an AMP representative at 1-800-526-5136.

#### 6. REVISION SUMMARY

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

Per EC 0990-0722-99

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



Weight: 539 g [1 lb. 3 oz.]

**REPLACEMENT PARTS**

ITEM	PART NUMBER	DESCRIPTION	QTY PER ASSY
1	21045-3	RING, External Crescent Retaining, .188 D Shaft	4
2	1-23619-6	PIN, Retaining, .187 D x .521 L	2
3	21045-6	RING, External Crescent Retaining, .250 D Shaft	2
4	2-23620-9	PIN, Retaining, .250 D x .838 L	1
5	307402-1	SPRING, Housing	1
6	7-21082-4	SCREW, Slotted Round Head, 2-56 UNC x .438 L	1
7	59682-3	SPRING, Locator	1
8	307403-1	LOCATOR	1

Figure 6

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