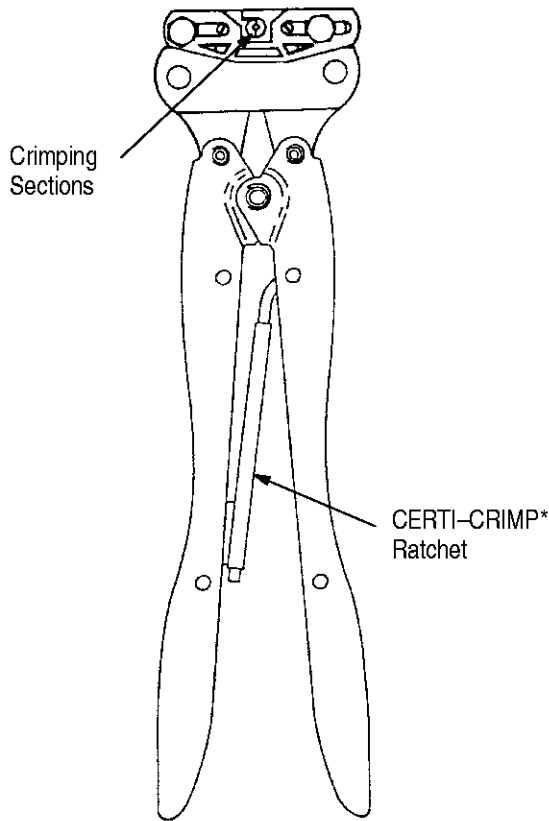


### PROPER USE GUIDELINES

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.



center contact to the stripped center conductor and the other crimps the ferrule to the braid and insulation. Ferrule and center contact are crimped at the same time. The CERTI-CRIMP ratchet assures full crimping of the connector. Once engaged, the ratchet will not release until the tool 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

#### NOTE

*Each hand tool is coated with a preservative to prevent rust or corrosion. Wipe this preservative from the tool, particularly from the crimping dies, before using the tool.*

1. Prepare cable and assemble connector on cable as described in Instruction Sheet 408-1771.
2. Open the tool's crimping dies by squeezing the handles until the ratchet releases and then allow the handles to open FULLY.

#### COAXICON MINIATURE THREADED CONNECTORS CRIMPING TOOLS

45609	69142	69188-1
45639	69143	69188-2

Figure 1

### 1. INTRODUCTION

This instruction sheet covers the use of AMP\* Hand Crimping Tools listed in Figure 1. The tools crimp plug and receptacle COAXICON connectors shown in Figure 2.

#### NOTE

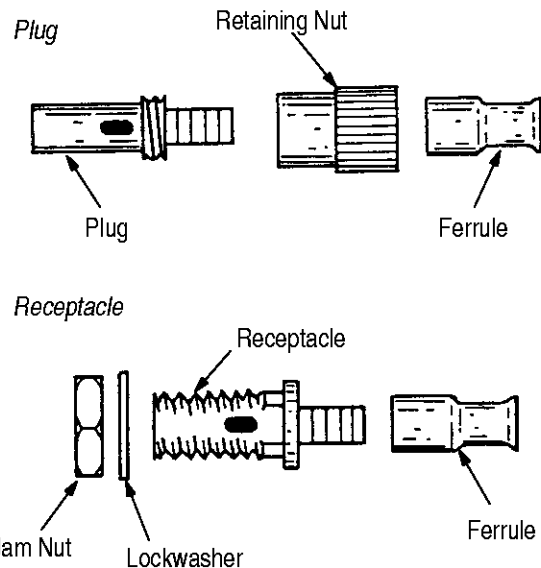
*Dimensions on this sheet are in metric units [with U.S. customary units in brackets].*

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

### 2. DESCRIPTION (Figure 1)

Each hand tool features two crimping sections and a CERTI-CRIMP ratchet. One section crimps the

#### Typical Connectors



**NOTE:** For applicable connector part numbers and corresponding cable sizes, refer to AMP Catalog 82074.

Figure 2

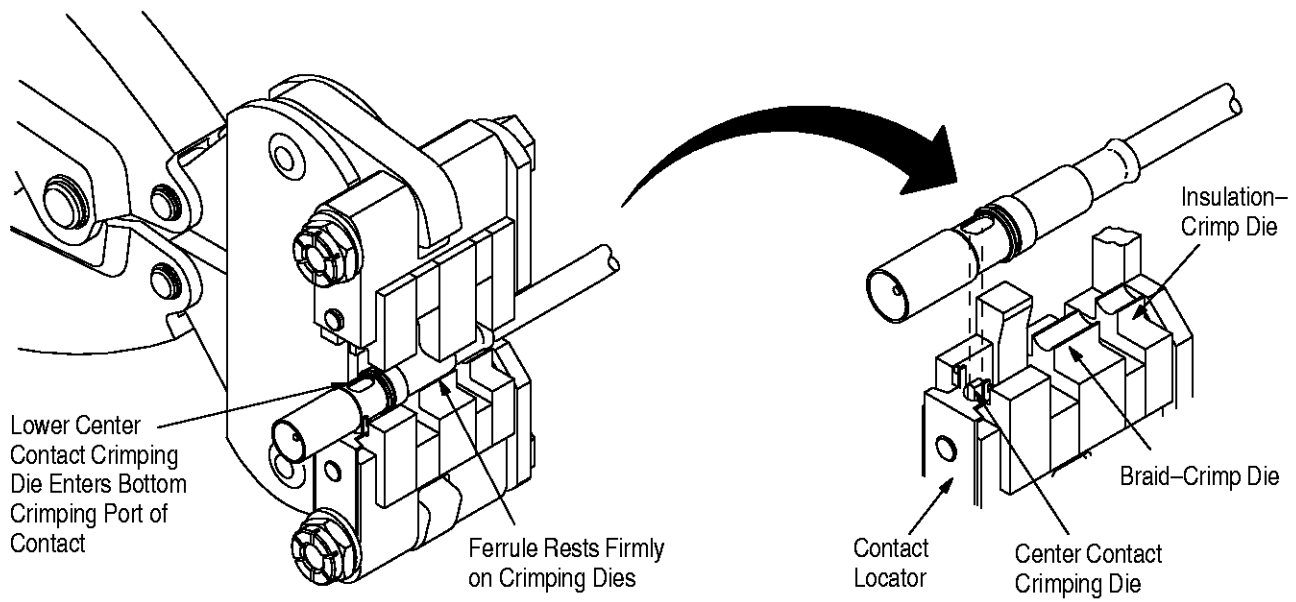


Figure 3

3. Position the connector/cable assembly in the crimping dies, as shown in Figure 3. The crimping ports of the contact should be positioned so that the lower center contact crimping die enters the bottom crimping port. Once located, push the contact down so that the lower center contact crimping die enters the bottom crimping port of the contact.

4. Ensure that the ferrule remains bottomed firmly on the crimping dies and that the upper center contact crimping die is aligned with the upper center contact crimping port.

5. While holding the connector/cable assembly in place, close handles until ratchet releases. Allow handles to open fully and remove crimped connector.

#### 4. MAINTENANCE AND INSPECTION PROCEDURE

AMP recommends that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations. Frequency of inspection depends on:

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

The hand tool is inspected before being shipped; however, AMP recommends that the tool be inspected immediately upon its arrival at your facility

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

#### 4.1. Daily Maintenance

1. Remove dust, moisture, and other contaminants with a clean brush, or a soft, lint-free cloth. Do NOT use 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.

#### 4.2. 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.

#### 4.3. Periodic Inspection

1. Hand tool should be immersed (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease, and foreign matter.

2. 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.

3. Inspect head assembly for worn, cracked, or broken dies. If damage is evident, return the tool to AMP for evaluation and repair. See Section 5, REPLACEMENT AND REPAIR.

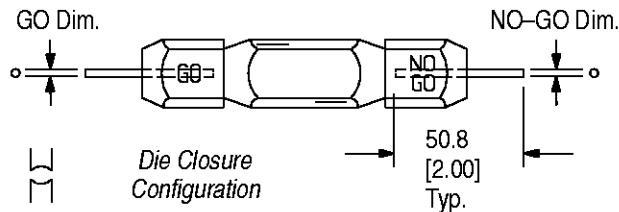
**4.4. Gaging the Crimping Chambers**

This inspection requires the use of plug gages conforming to the dimensions provided in Figures 4 through 6. AMP does not manufacture or market these gages. If crimping chambers conform to the gage inspection, the tools may be considered dimensionally correct, and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, the tool must be returned to AMP for further evaluation and repair. Refer to Section 5, REPLACEMENT AND REPAIR. To gage the crimping chambers, proceed as follows:

**A. Center Contact Dies**

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

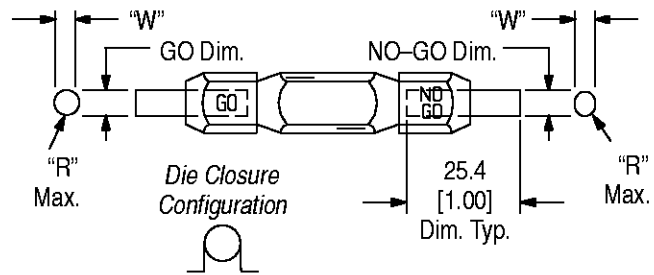
**Suggested Plug Gage Design – Center Contact Dies**



TOOL NUMBER	GAGE ELEMENT DIMENSIONS	
	GO	NO-GO
45609	.5588 – .5664 [.0220 – .0223]	.6325 – .6350 [.0249 – .0250]
45639	.9398 – .9474 [.0370 – .0373]	1.013 – 1.016 [.0399 – .0400]
69142	.4470 – .4547 [.0176 – .0179]	.5207 – .5232 [.0205 – .0206]
69143	.4318 – .4394 [.0170 – .0173]	.5055 – .5080 [.0199 – .0200]
69188-1	.4470 – .4547 [.0176 – .0179]	.5207 – .5232 [.0205 – .0206]
69188-2	.4470 – .4547 [.0176 – .0179]	.5207 – .5232 [.0205 – .0206]

Figure 4

**Suggested Plug Gage Design – Insulation Dies**



TOOL NUMBER	GAGE ELEMENT DIMENSIONS			
	GO	NO-GO	"W" Max.	RADIUS "R" (Max)
45609	3.531 – 3.538 [.1390 – .1393]	3.655 – 3.658 [.1439 – .1440]	3.30 [.130]	1.65 [.065]
45639	3.759 – 3.767 [.1480 – .1483]	3.884 – 3.886 [.1529 – .1530]	3.66 [.144]	1.83 [.072]
69142	3.531 – 3.538 [.1390 – .1393]	3.655 – 3.658 [.1439 – .1440]	3.30 [.130]	1.65 [.065]
69143	4.343 – 4.351 [.1710 – .1713]	4.468 – 4.470 [.1759 – .1760]	3.96 [.156]	1.98 [.078]
69188-1	1.981 – 1.989 [.0780 – .0783]	2.106 – 2.108 [.0829 – .0830]	1.73 [.068]	.864 [.034]
69188-2	2.286 – 2.294 [.0900 – .0903]	2.410 – 2.413 [.0949 – .0950]	2.03 [.080]	1.02 [.040]

**NOTE:** Since tools 45609, 69142, and 69143 have single dies for both insulation and braid, additional plug gages are not required for the braid section of dies of these tools.

Figure 5

3. With dies bottomed, check the center contact die closure using the proper plug gage. Hold gage in straight alignment with the tool and carefully try to insert, without forcing, the GO element. The GO element must pass completely through the center contact die closure, as shown in Figure 7.

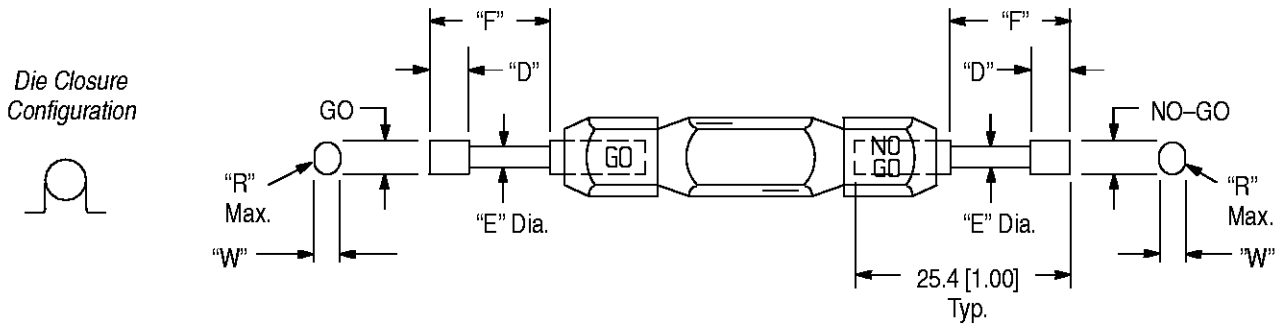
4. Try to insert the NO-GO element. The NO-GO element may enter partially, but must not pass completely through the length of the die closure.

If center contact dies conform to the gage inspection, the dies may be considered dimensionally correct.

**B. Braid and Insulation Dies**

1. Remove traces of oil or dirt from the 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 beyond initial contact.

**Suggested Plug Gage Design – Braid Dies**



TOOL NUMBER	GAGE ELEMENT DIMENSIONS						
	DIM "F"	DIM "D"	GO	NO-GO	"E" DIA	"W" Max.	RADIUS "R" Max.
45639	12.70 [.500]	2.36 [.093]	4.877 – 4.884 [.1920 – .1923]	5.001 – 5.004 [.1969 – .1970]	3.18 [.125]	4.47 [.176]	2.24 [.088]
69188-1	12.70	2.36	3.480 – 3.487	3.604 – 3.607	2.08	3.25	1.63
69188-2	[.500]	[.093]	[.1370 – .1373]	[.1419 – .1420]	[.082]	[.128]	[.064]

Figure 6

3. With dies bottomed, check the braid and insulation crimp die closure using the proper plug gage. Hold gage in straight alignment with the tool and carefully try to insert, without forcing, the GO element. The GO element must pass completely through the crimping chamber, as shown in Figure 8, Detail A.

4. Try to insert the NO-GO element. The NO-GO element may enter partially, but must not pass completely through the crimp die closure.

5. Tools containing braid crimp dies with a larger OD than the insulation crimp dies require a gage of special design. See Figure 6.

6. To use this gage, open the crimping dies and locate end of gage element in the area between

center contact dies and braid crimp dies. Shank of element will be located in the insulation die closure. See Figure 8, Detail B.

7. Close handles of tool and proceed as described in steps 2 through 4 by pulling gage into braid crimp die closure. Braid die closure is inspected as shown in Figure 8, Detail B.

If both braid and insulation dies conform to the gage inspection, the tool may be considered dimensionally correct. If crimping dies do NOT conform to the gage inspection, contact your local AMP field representative.

For additional information regarding the use of a plug gage, refer to Instruction Sheet 408-7424.

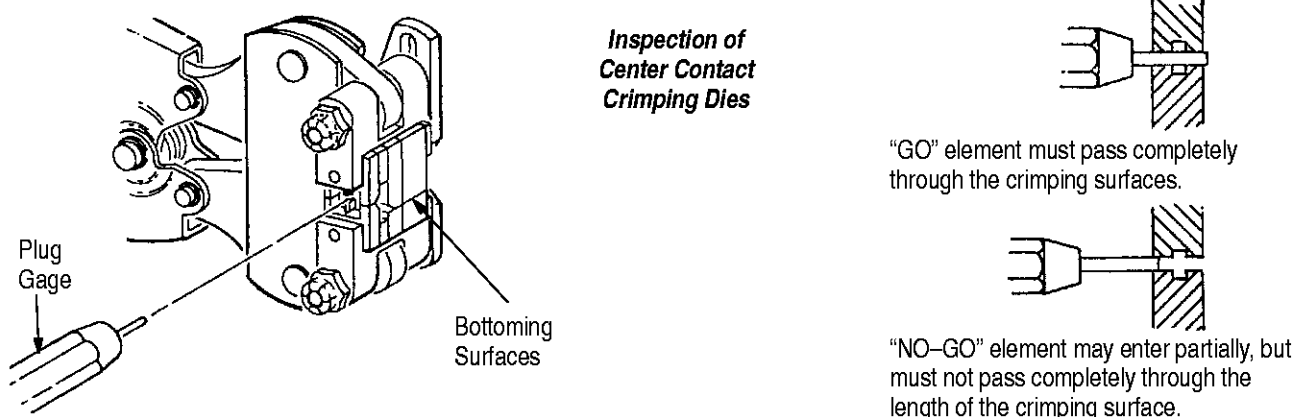
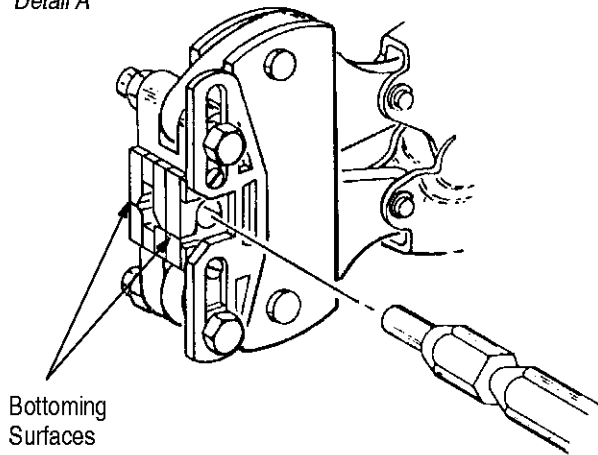


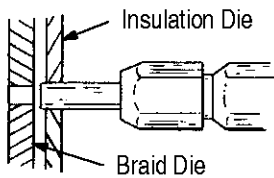
Figure 7

**Inspection of Insulation Crimping Dies and Braid Crimping Dies**

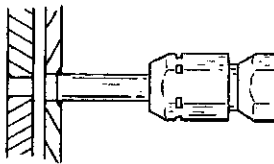
Detail A



**Inspection of Insulation Dies**

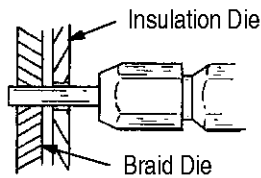


"GO" element must pass completely through the crimping surface.



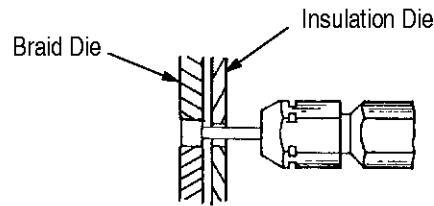
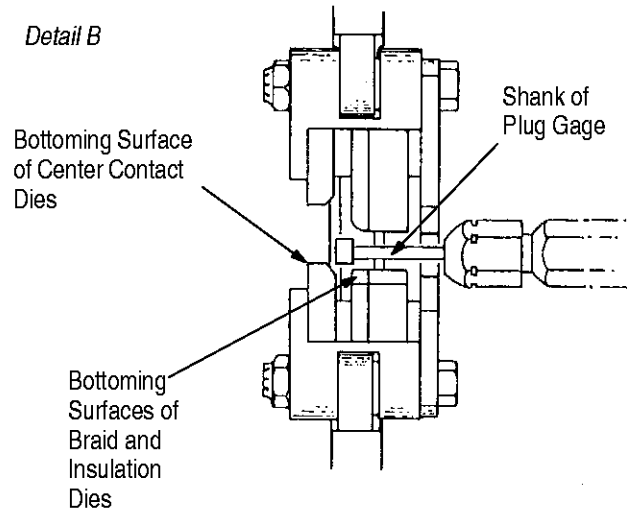
"NO-GO" element may enter partially, but must not pass completely through the length of the crimping surface.

**Inspection of Braid Dies**

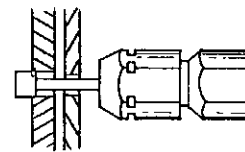


**Inspection of Braid† Crimping Dies**

Detail B



"GO" element must pass completely through the crimping surface of braid die closure.



"NO-GO" element may enter partially, but must not pass completely through the length of the crimping surface.

• Where braid dies have a smaller diameter than insulation dies.

† Where braid dies have a larger diameter than insulation dies.

Figure 8

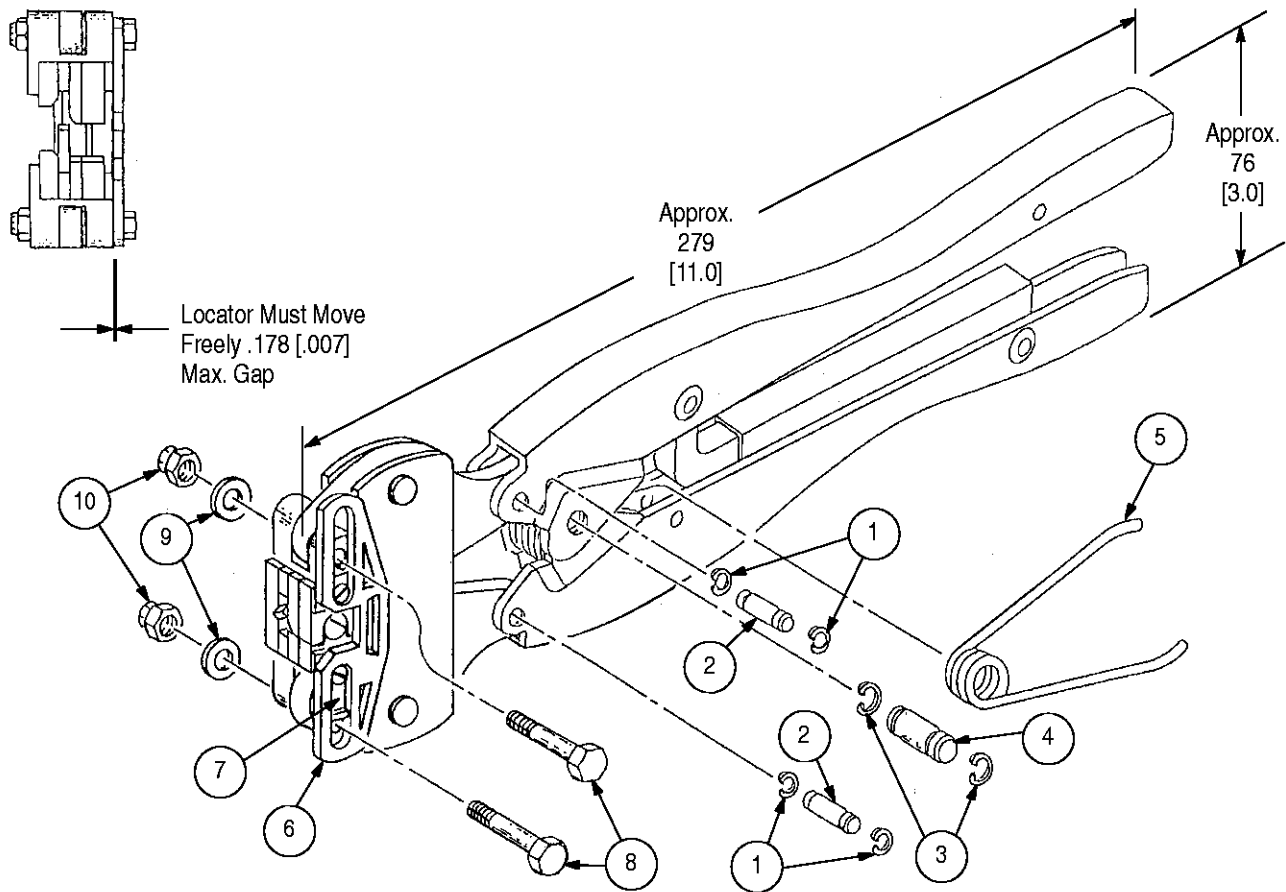
**4.5. CERTI-CRIMP Ratchet Inspection**

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-mm [.001-in.] shim that is suitable for checking the clearance between the bottoming surfaces of the crimping dies. Proceed as follows:

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

3. Hold the cable 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 mm [.001 in.] or less, the ratchet is satisfactory. If clearance exceeds 0.025 mm [.001 in.], the ratchet is out of adjustment and must be repaired. See Section 5, REPLACEMENT AND REPAIR.



ITEM	TOOL NUMBERS		DESCRIPTION	QTY PER ASSY
	45639 69188-1 69188-2	45609 69142 69143		
1	21045-3	21045-3	RING, Retaining	4
2	1-23619-6	1-23619-6	PIN, Retaining	2
3	21045-6	21045-6	RING, Retaining	2
4	2-23620-9	2-23620-9	PIN, Retaining	1
5	39364	39364	SPRING	1
6	307089-1	307089-1	LOCATOR	1
7	307339-1	307339-1	SPACER	2
8	307087-5	307087-4	SCREW, Shoulder	2
9	23911-7	23911-7	DISC SPRING	2
10	21022-2	21022-2	NUT, Self-Locking	2

Figure 9

**5. REPLACEMENT AND REPAIR**

Replacement parts are listed in Figure 9. Parts other than those listed in Figure 9 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

Tools may also be returned to AMP for evaluation and repair. For tool repair service, contact an AMP representative at: 1-800-526-5136.

**6. REVISION SUMMARY**

The following changes were made since the previous release of this sheet:

Per EC 0990-0725-99

- Changed tool repair service information in Section 5, REPLACEMENT AND REPAIR
- Updated document format