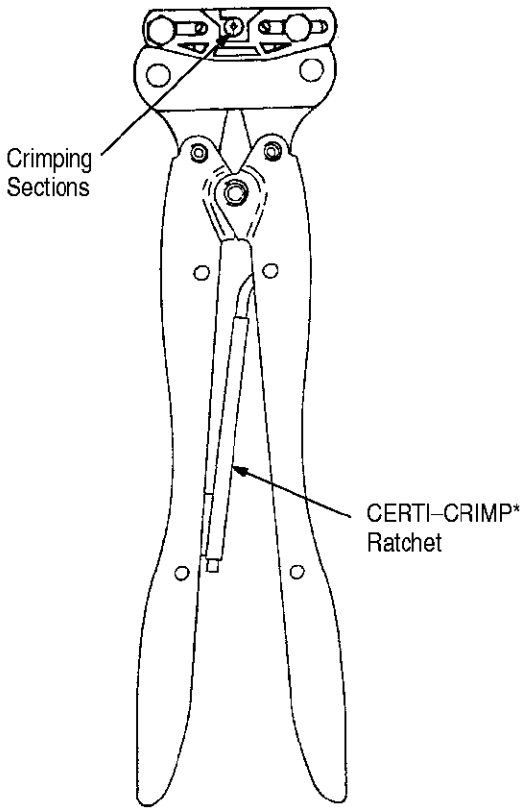
Hand Crimping Tools for Twin Standard COAXICON* Contacts

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.



TWIN STANDARD COAXICON CONTACT CRIMPING TOOLS
45707–2
45707–4

Figure 1

1. INTRODUCTION

This instruction sheet covers the use of AMP* Hand Crimping Tools listed in Figure 1. The tools crimp pin and socket twin standard COAXICON contacts shown in Figure 2.

NOTE *Dimensions in this instruction sheet are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for identification only and are not drawn to scale.*

Read these instructions thoroughly before using the hand crimping tool.

Reasons for reissue of this instruction sheet are provided in Section 6, REVISION SUMMARY.

2. DESCRIPTION

Each hand tool features two crimping chambers and a CERTI–CRIMP ratchet. One chamber crimps the stripped twin conductors to the center contact 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 contact. 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.*

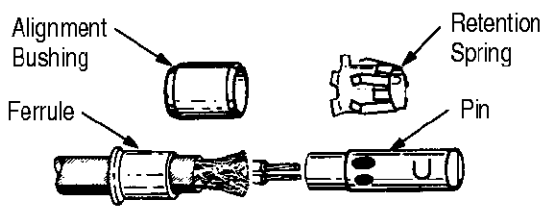
3. CRIMPING PROCEDURE

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.*

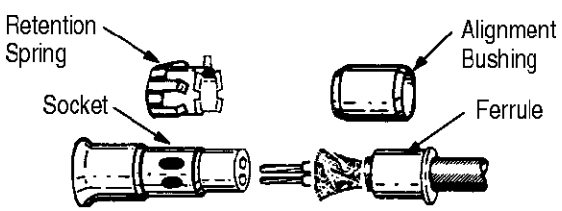
1. Prepare cable and assemble contact on cable as described in instruction sheet 408–1772.

2. Open the tool's crimping dies by squeezing the handles until the ratchet releases and then allow the handles to open FULLY.

Typical Contacts



Pin Assembly



Socket Assembly

NOTE: For applicable contact part numbers and corresponding cable and wire sizes, refer to AMP catalogs 82003 and 82074.

Figure 2

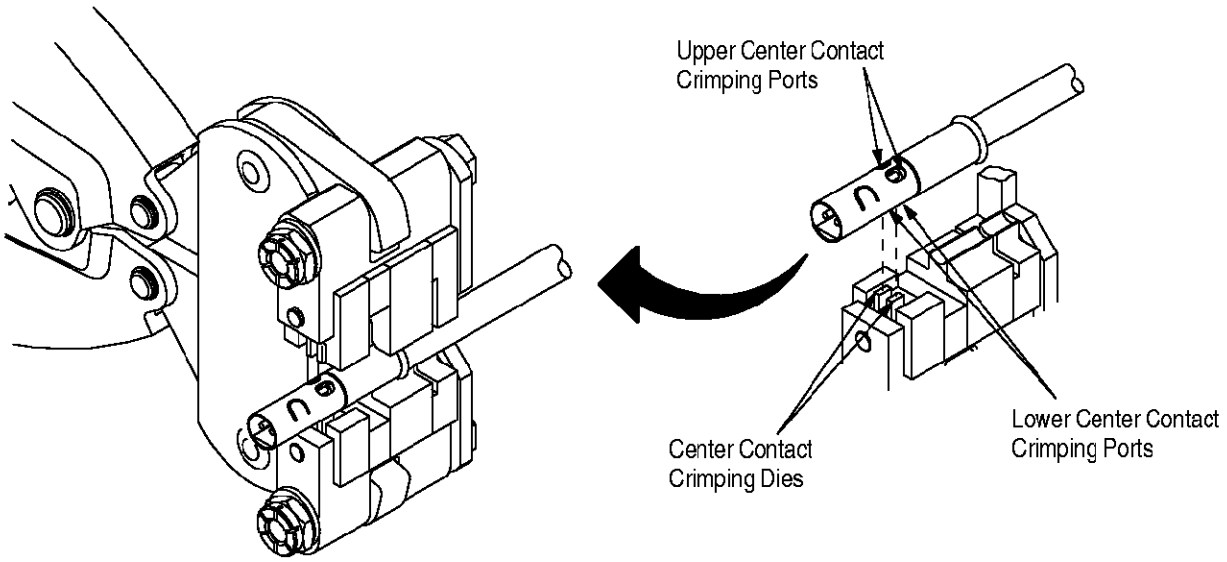


Figure 3

3. Position the contact/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 dies may enter the bottom crimping ports. Once located, push the contact down so that the lower center contact crimping dies enter the bottom crimping ports of the contact.

4. Ensure that the ferrule remains bottomed firmly on the crimping dies and that the upper center contact crimping dies are aligned with the upper center contact crimping ports.

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

NOTE

Once the assembly is crimped, the retention spring is attached and the assembly is ready for insertion into the connector. Refer to AMP instruction sheet 408–1772 for information on attaching the retention spring and for insertion and extraction procedures.

4. MAINTENANCE/INSPECTION

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 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 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:

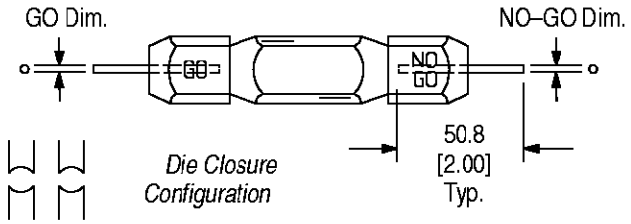
Tools used in daily production – lubricate daily
Tools used daily (occasional) – lubricate weekly
Tools used weekly – lubricate monthly

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.

Suggested Plug Gage Design
Center Contact Dies



TOOL NUMBER	GAGE ELEMENT DIMENSIONS	
	GO	NO–GO
45707–2 45707–4	0.9398–0.9474 [.0370–.0373]	1.013–1.016 [.0399–.0400]

Figure 4

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:

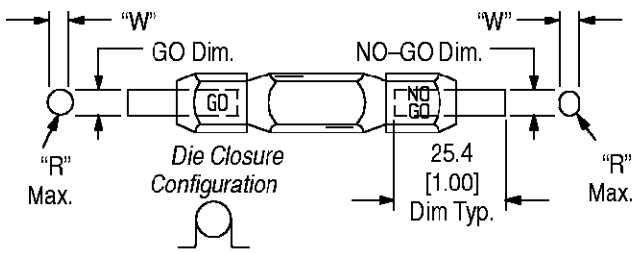
A. Center Contact Dies

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.

3. With dies bottomed, check each center contact crimping chamber 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 each crimping chamber, as shown in Figure 7.

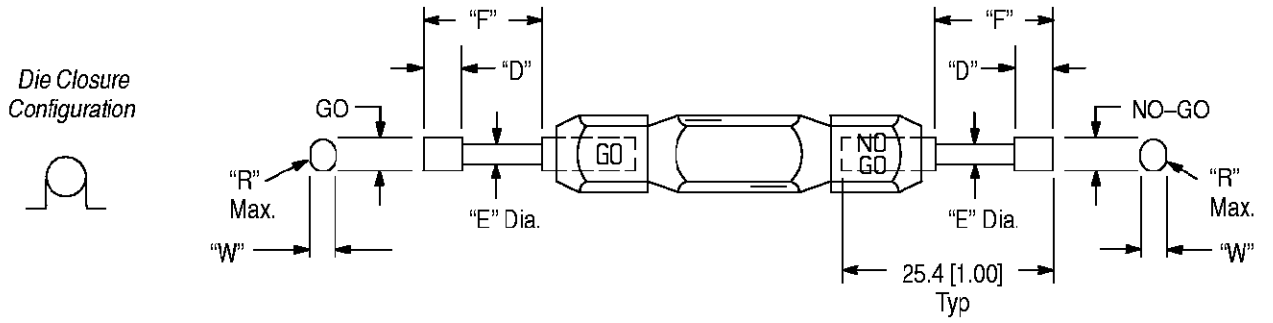
Suggested Plug Gage Design – Insulation Dies



TOOL NUMBER	GAGE ELEMENT DIMENSIONS			
	GO	NO–GO	"W" Max.	RADIUS "R" (Max.)
45707–2	5.588–5.596 [.2200–.2203]	5.712–5.715 [.2249–.2250]	5.44 [.214]	2.72 [.107]
45707–4	3.759–3.767 [.1480–.1483]	3.884–3.886 [.1529–.1530]	3.61 [.142]	1.80 [.071]

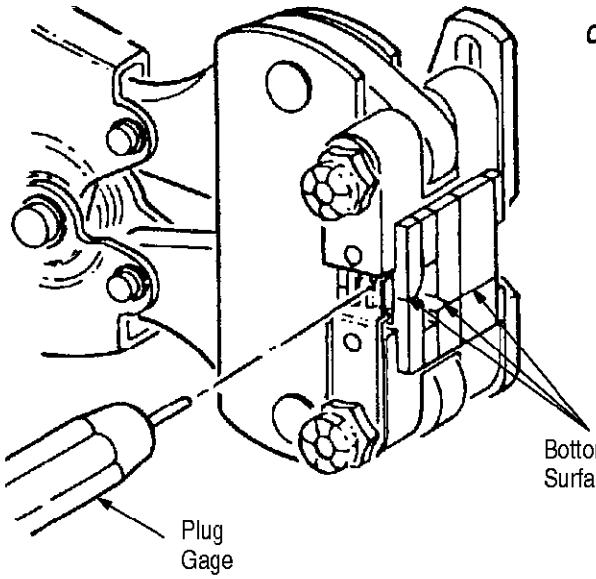
Figure 5

Suggested Plug Gage Design – Braid Dies

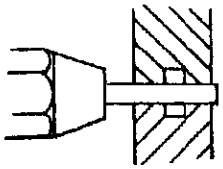


TOOL NUMBER	GAGE ELEMENT DIMENSIONS						
	DIM "F"	DIM "D"	GO	NO–GO	"E" DIA	"W" Max.	RADIUS "R" Max.
45707–2 45707–4	10.97 [.432]	1.57 [.062]	6.325–6.332 [.2490–.2493]	6.449–6.452 [.2539–.2540]	5.54 [.218]	6.15 [.242]	3.07 [.121]

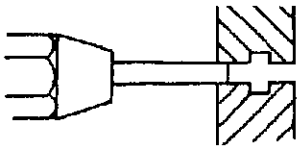
Figure 6



Inspection of Center Contact Crimping Dies



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



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

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 center contact crimping chamber.

B. Braid and Insulation Dies

1. Remove traces of oil or dirt from the crimping chambers and plug gages.

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.

3. With dies bottomed, check the insulation crimping chamber 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 crimping chamber.

NOTE *Braid crimp dies have a larger OD than the insulation crimp dies and require a gage of special design. See Figure 6.*

5. 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 crimping chamber. See Figure 8, Detail B.

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

If all crimping chambers conform to the gage inspection, the tool may be considered dimensionally correct. If crimping chambers do not conform to the gage inspection, contact your local AMP representative.

For additional information regarding the use of a plug gage, refer to instruction sheet 408–7424.

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.

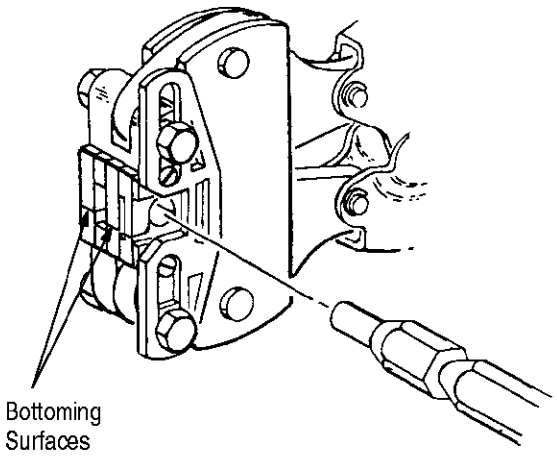
2. Position the contact and cable between the crimping dies, as described in Section 3, CRIMPING PROCEDURE.

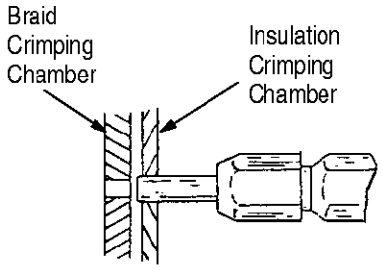
3. Hold the cable in place and squeeze the handles until the CERTI–CRIMP ratchet releases. Hold the handles in this position, maintaining just enough tension to keep the dies closed.

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.

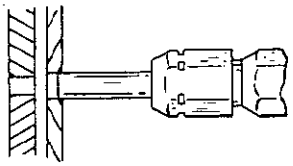
Inspection of Insulation Crimping Chamber

Detail A





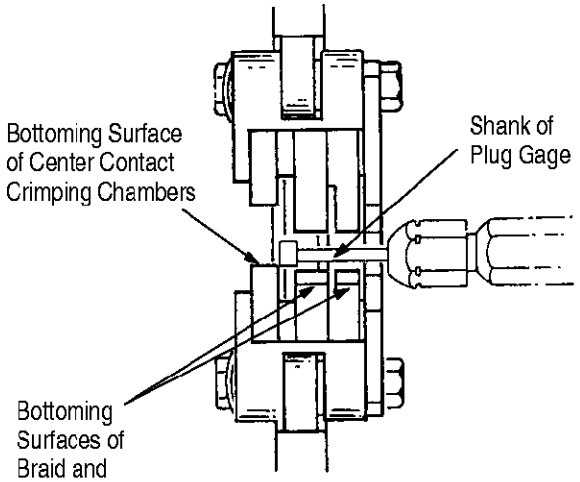
"GO" element must pass completely through the crimping chamber.

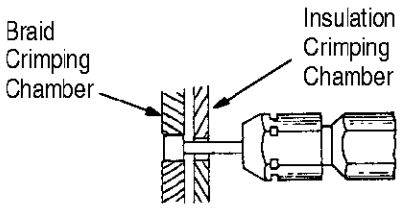


"NO–GO" element may enter partially, but must not pass completely through the length of the crimping chamber.

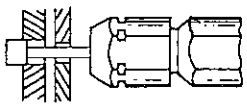
Inspection of Braid Crimping Chamber

Detail B





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



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

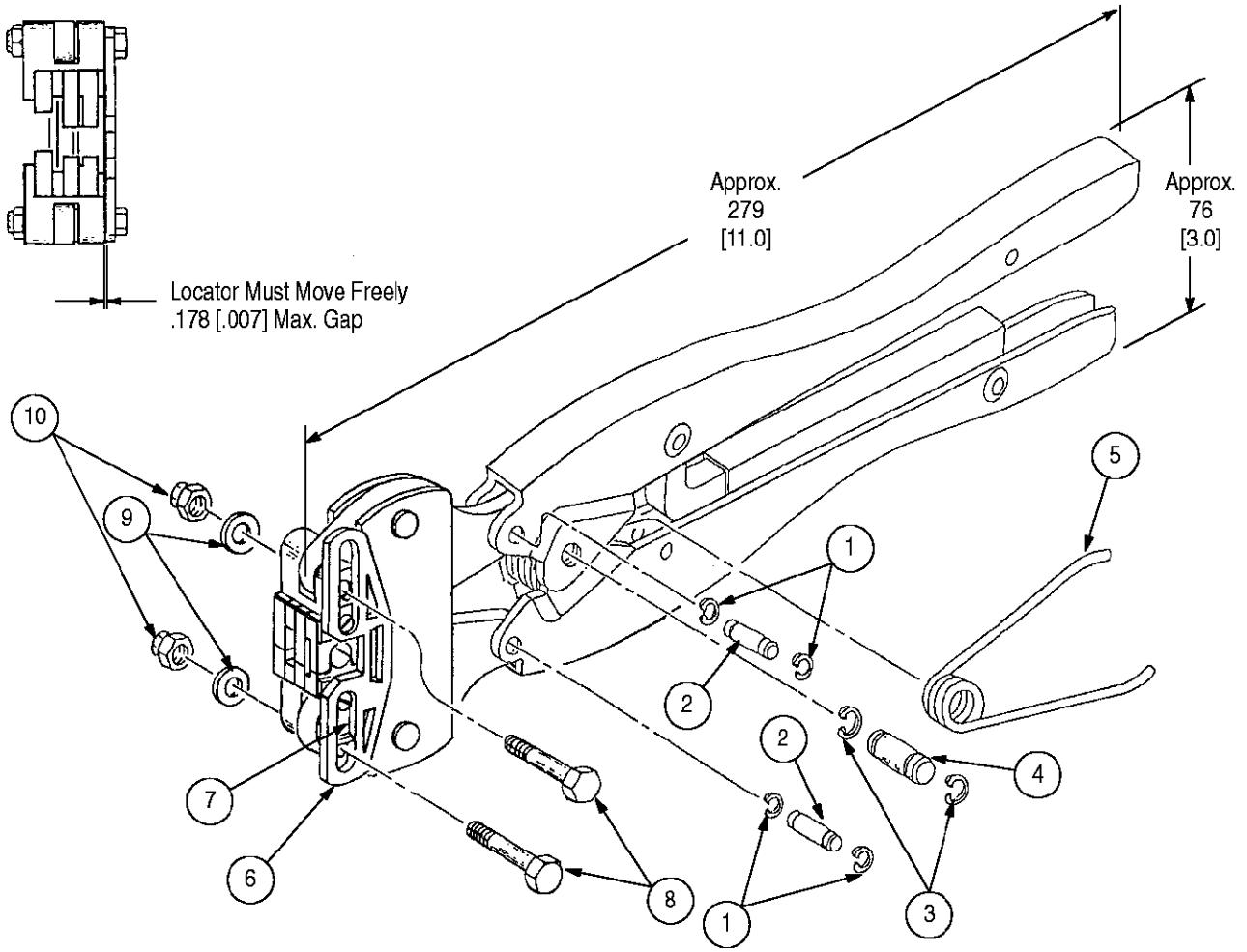
Figure 8

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

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



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	1
6	307089–1	LOCATOR	1
7	307339–1	SPACER	1
8	307087–5	SCREW, Shoulder	1
9	23911–7	DISC SPRING	1
10	21022–2	NUT, Self–Locking	1

Figure 9

6. REVISION SUMMARY

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

Per EC 0990–0958–99:

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

Mouser Electronics

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