PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. Hand tools are intended for occasional use and low volume applications. A wide selection of powered application equipment for extended–use, production operations is available.

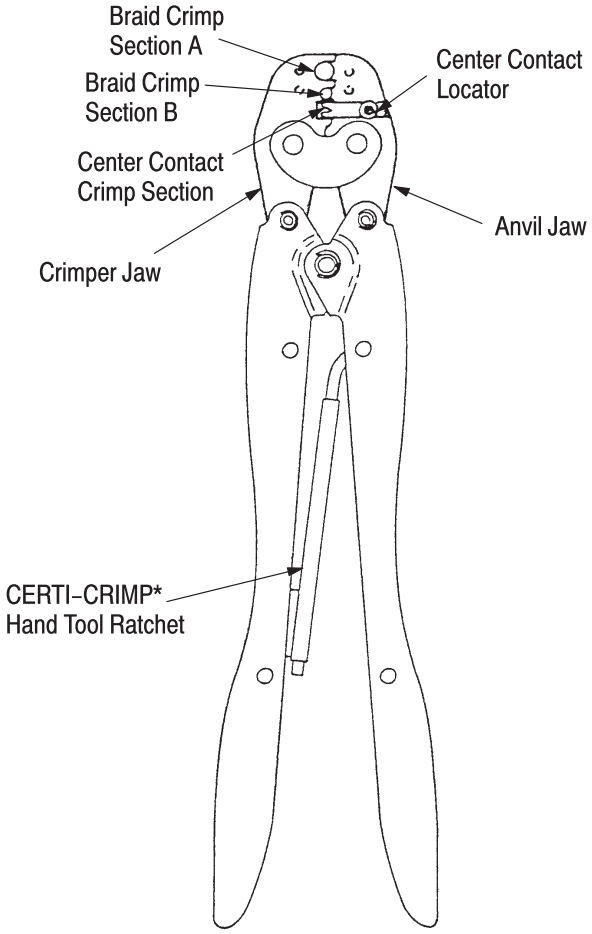


Figure 1

1. INTRODUCTION

This instruction sheet covers the use of Hand Crimping Tool 220061–1 (shown in Figure 1), which is used to crimp SMA Series 50–Ohm RF connectors (shown in Figure 2) onto flexible cable.

For information concerning connector assembly and cable selection and preparation, refer to instruction sheet 408–2322.

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

NOTE

Dimensions in this instruction sheet are in millimeters [with inch equivalents in brackets]. Figures are not drawn to scale.

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

2. DESCRIPTION

The tool consists of a crimper jaw and an anvil jaw, three crimping sections, a center contact locator, and a ratchet.

Braid crimp section A is used for large ferrule–to–braid crimps; braid crimp section B is used for small ferrule–to–braid crimps; and the center contact crimp section is used for crimping the center contact to the center conductor of the cable.

The center contact locator properly locates the center contact between the crimper and anvil jaws. The CERTI–CRIMP hand tool ratchet ensures full crimping of the contact and ferrules. Once engaged, the ratchet will not release until the tool handles have been FULLY closed.

NOTE

The crimping jaws bottom before the ratchet releases. This design feature 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 jaws, before using the tool.

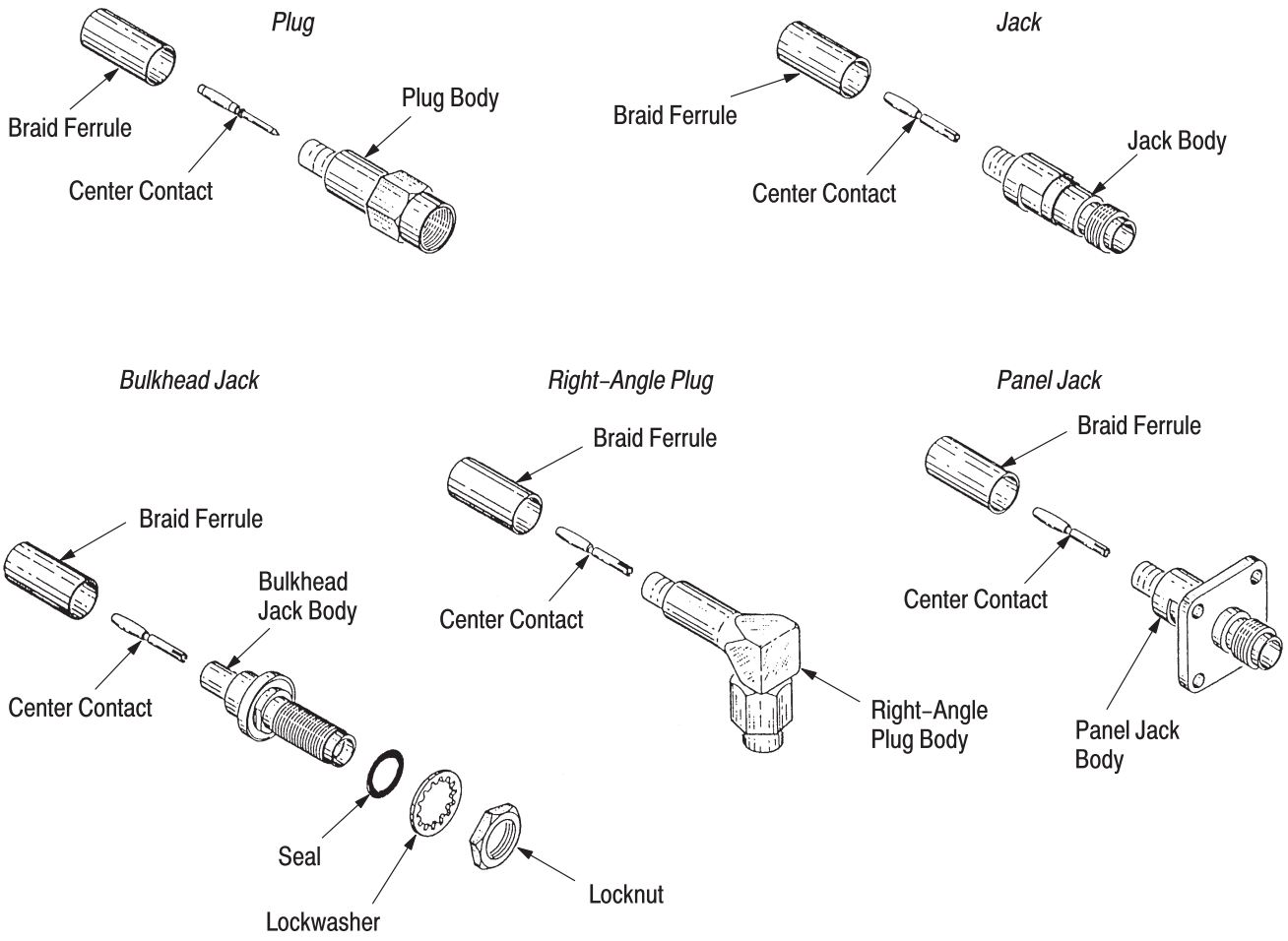
These procedures provide instructions on the use of the hand tool for crimping only. For information pertaining to the individual connectors, such as cable stripping dimensions and assembly of component parts, refer to instruction sheet 408–2322. The crimping procedure requires two separate crimps. First, the center contact must be crimped to the center conductor of the cable; then the ferrule is crimped to the cable and connector.

3.1. Crimping Center Contact

Refer to Figure 3 and proceed as follows:

1. Prepare cable in accordance with instruction sheet 408–2322.

Typical Connector Assemblies●



●For applicable connector assembly part numbers, refer to Catalogs 65780 and 82074.

Figure 2

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

3. Insert center contact into locator of hand tool as shown in Figure 3, and close tool handles ONLY enough to retain the contact for cable insertion.

4. Insert the center conductor of the cable (with ferrule properly positioned on cable) into the center contact, ensuring that it bottoms inside the contact.

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

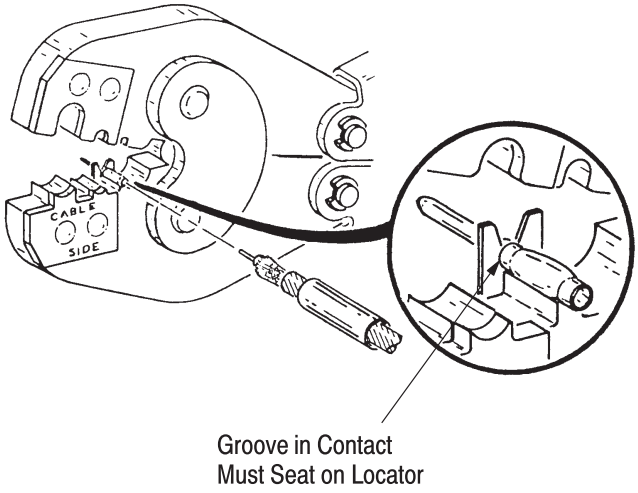


Figure 3

3.2. Crimping Ferrule

These procedures provide instructions for crimping the ferrule. For large ferrule–to–braid crimping, use ferrule crimp section A, and for small ferrule–to–braid crimping, use crimp section B.

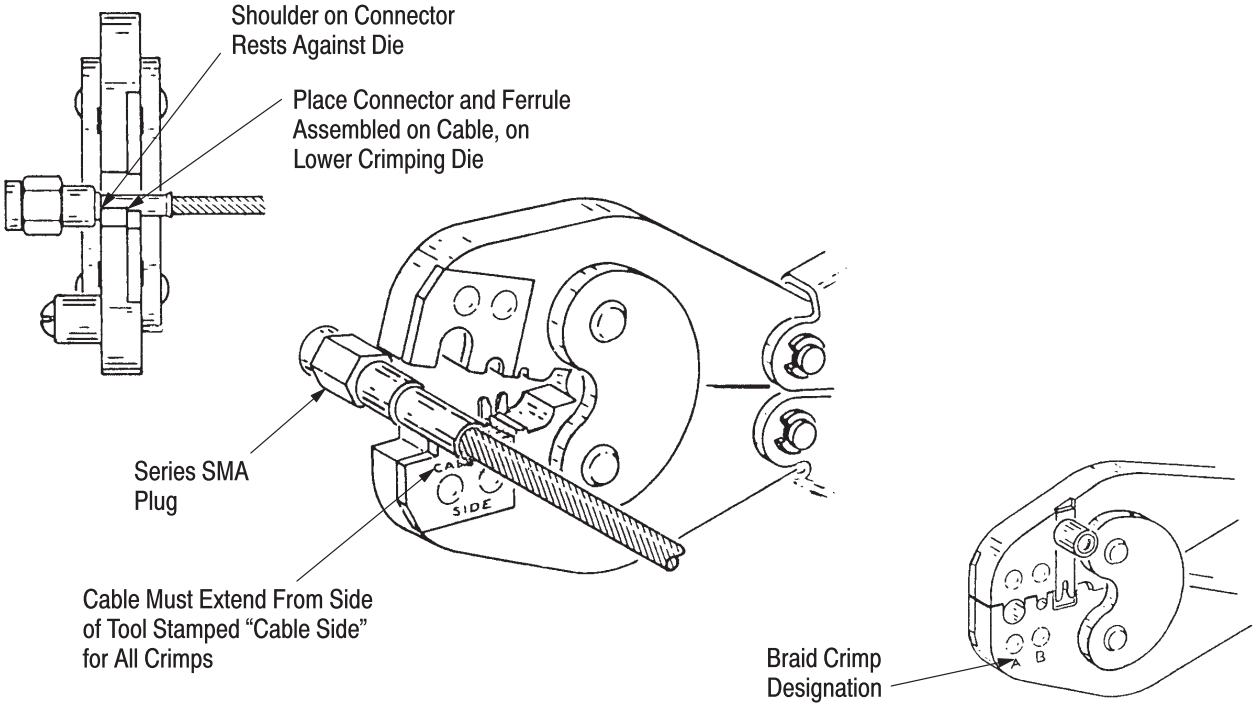


Figure 4

Refer to Figure 4 and proceed as follows:

1. Properly assemble connector parts and cable, as described in instruction sheet 408–2322 or 408–9161.

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

3. Position connector assembly so that ferrule is in the proper crimping section of the tool and located, as shown in Figure 4.

4. To complete crimp, close handles until ratchet releases. Allow handles to open fully and remove crimped connector assembly.

4. MAINTENANCE AND INSPECTION PROCEDURE

Tyco Electronics 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, Tyco Electronics recommends that the tool be inspected immediately upon its arrival at your facility to ensure that the tool has not been damaged during shipment. Due to the precision design, it is important that no parts of these tools be interchanged except those replacement parts listed in Figure 7.

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 for evaluation and repair. See Section 5, REPLACEMENT AND REPAIR.

4.4. Crimping Die Closure Inspection

This inspection requires the use of plug gages conforming to the dimensions shown in Figure 5. Tyco Electronics does not manufacture or market these gages.

Note that there is a set of externally mounted dies on the cable side of the tool, as shown in Figure 6, Detail B. These dies form the braid gap crimping sections that are used to crimp the ferrule to the cable insulation. The closure for these dies are smaller than the braid crimp dies shown in Figure 6, Detail C.

To gage die closure, refer to Figure 6 and proceed as follows:

1. Remove traces of oil or dirt from the crimping chamber and plug gage.

2. Remove the center contact locator assembly from the tool.

NOTE

Do not lose spring in locator assembly.

3. 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.

4. Align the GO element with the appropriate crimping chamber. Push element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber.

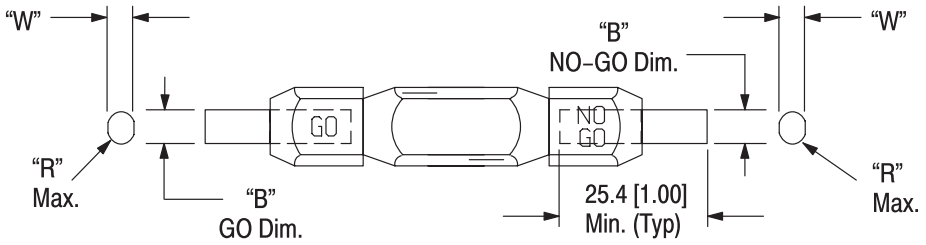
5. Align the NO–GO element and try to insert it straight into the same crimping chamber. The NO–GO element may start entry, but must not pass completely through the crimping chamber.

6. Repeat steps 4 and 5 for each crimp section listed in the table in Figure 5.

7. Reinstall the center contact locator assembly on the tool.

SUGGESTED PLUG GAGE DESIGN

Die Closure Configuration



CRIMP	GAGE ELEMENT DIMENSIONS			
	DIMENSION "B"		"W" MAX.	RADIUS "R" (MAX.)
	GO	NO–GO		
CENTER CONTACT CRIMP	1.245–1.252 [.0490–.0493]	1.318–1.321 [.0519–.0520]	1.07 [.042]	0.53 [.021]
BRAID CRIMP B	2.743–2.751 [.1080–.1083]	2.918–2.921 [.1149–.1150]	2.24 [.088]	1.12 [.044]
BRAID GAP CRIMP B	2.337–2.344 [.0920–.0923]	2.563–2.565 [.1009–.1010]	2.14 [.084]	1.07 [.042]
BRAID CRIMP A	5.486–5.494 [.2160–.2163]	5.687–5.690 [.2239–.2240]	4.62 [.182]	2.31 [.091]
BRAID GAP CRIMP A	4.623–4.630 [.1820–.1823]	4.849–4.851 [.1909–.1910]	4.46 [.176]	2.23 [.088]

Figure 5

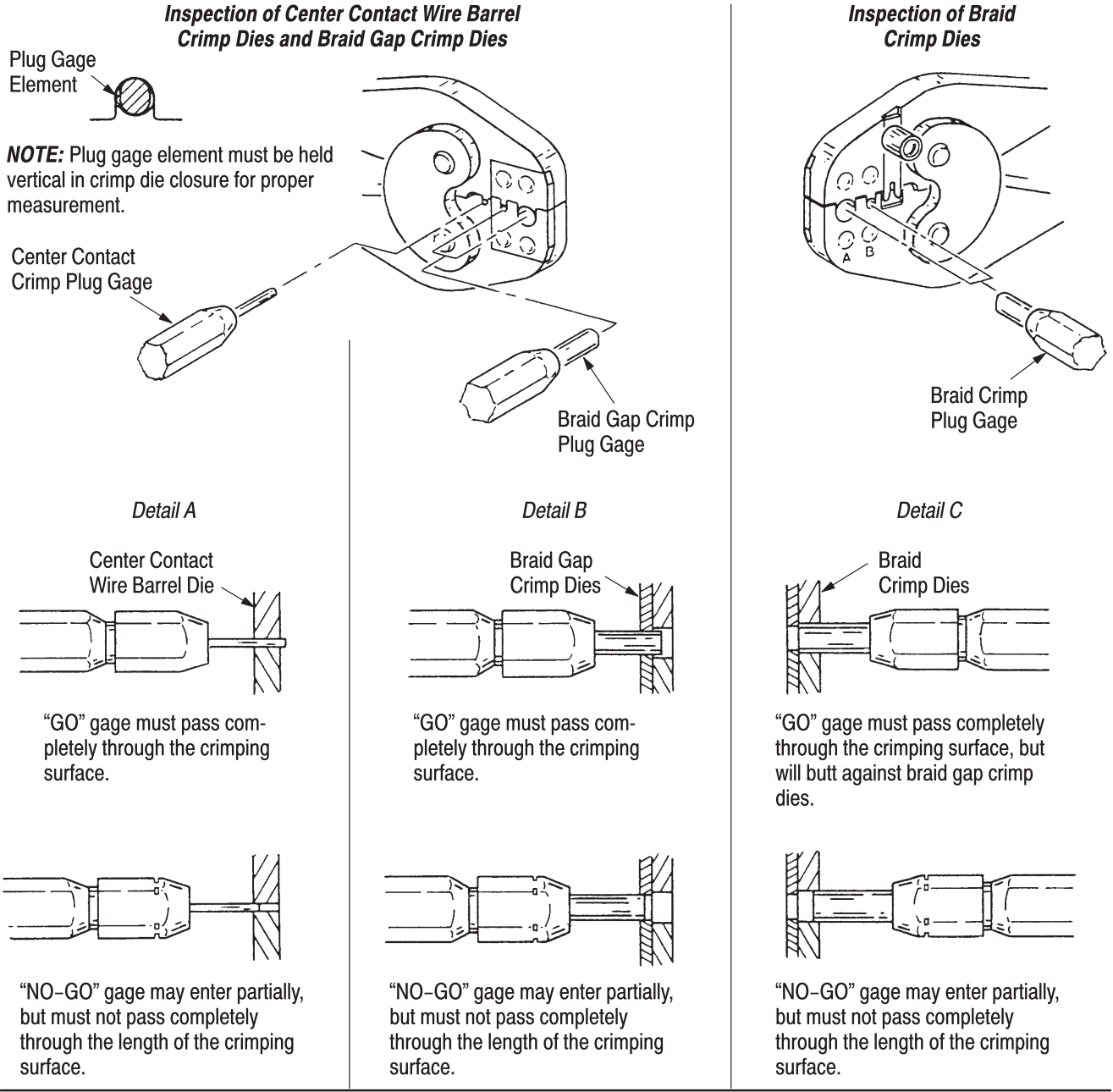


Figure 6

If all die closures conform to the gage inspections, the crimping chambers are considered dimensionally correct. If correct, the tool should be lubricated with a thin coat of any good SAE 20 motor oil and returned to service. If not correct, the tool must be returned for further evaluation and repair. Refer to Section 5, REPLACEMENT AND REPAIR.

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

4.5. Ratchet Inspection

The ratchet feature on CERTI–CRIMP hand tools should be checked to ensure that the ratchet does not release prematurely, allowing the crimping 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: checking the clearance between the bottoming surfaces of the crimping dies. Proceed as follows:

1. Select an appropriate connector and cable for the tool and properly prepare the cable for center contact crimping.

2. Position the center contact and cable in the crimping jaws, as described in Paragraph 3.1, Crimping Center Contact.

3. Hold the center contact and cable in place and squeeze the tool handles until the 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 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

The parts listed in Figure 7 are customer replaceable. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your Tyco Electronics 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)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105–3608

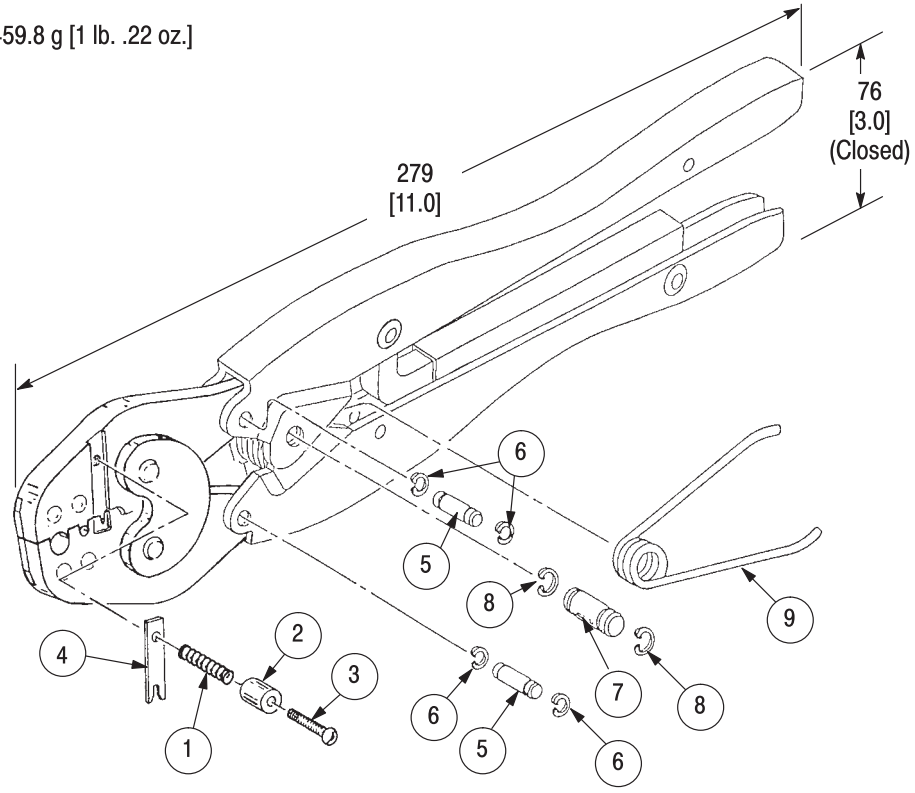
Tools may also be returned for evaluation and repair. For tool repair service, contact a Tyco Electronics Representative at 1–800–526–5136.

6. REVISION SUMMARY

Since the previous release of this document, the following changes and additions were made:

- Updated document to corporate requirements
- Applied the TE logo

WEIGHT: Approx. 459.8 g [1 lb. .22 oz.]



REPLACEMENT PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	7–59683–3	SPRING	1
2	307402–1	HOUSING, Spring	1
3	7–21082–4	SCREW	1
4	307553–1	LOCATOR	1
5	1–23619–6	PIN, Retaining	1
6	21045–3	RING, Retaining	1
7	2–23620–9	PIN, Retaining	1
8	21045–6	RING, Retaining	1
9	39364	SPRING	1

Figure 7