

**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.

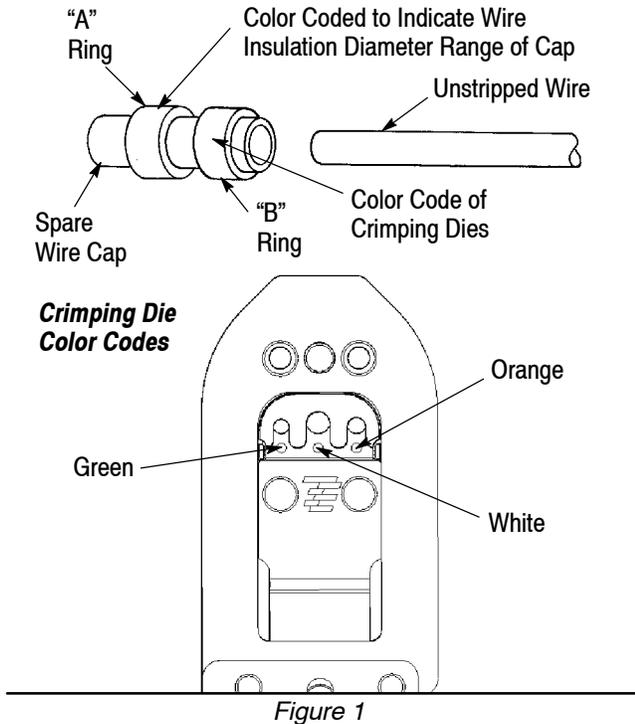


Figure 1

**1. INTRODUCTION**

This instruction sheet covers the application, maintenance, and inspection of Hand Crimping Tool 2063811-1, which is used to apply STRATO-THERM pre-insulated spare wire caps on unstripped TEFLON<sup>®</sup> insulated wire having an insulation diameter range of 0.91 - 3.50 mm [.036 - .138 in.]. Read this sheet thoroughly before proceeding. Refer to Catalog 82011 for product part numbers, wire insulation diameter, and proper color codes.

**NOTE** *Dimensions on this sheet are in millimeters [with inch equivalent dimensions in brackets]. Figures and illustrations are for identification only and are not drawn to scale.*

Reasons for reissue are provided in Section 7, REVISION SUMMARY.

**2. DESCRIPTION**

The tool features three crimping areas, tool handles, and a CERTI-CRIMP<sup>®</sup> Hand Crimping Tool Ratchet Control. Tool dies and spare wire cap rings are color coded for a given wire insulation diameter range. Crimp the color coded ring ("B") in the matching color

coded dies. See Figures 1 and 2. Example: If insulation diameter of wire is within a range of 1.422 to 1.63 mm [.056 - .064 in.], use ring "A."

**3. CRIMPING PROCEDURE**

To apply the wire cap, proceed as follows:

1. Open crimping dies by closing handles until CERTI-CRIMP ratchet releases. Note that, once ratchet is engaged, handles cannot be opened until they are first fully closed.
2. Place cap in matching color coded dies (ring "B" on cap must match die color code). Be sure cap is fully bottomed in tool and rings are centered in crimping dies. See Figure 3.

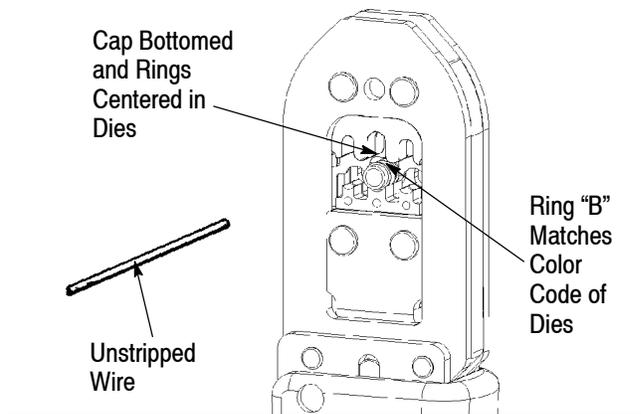


Figure 2

3. Close handles until cap is firmly in place. Do NOT deform cap.
4. Insert UNSTRIPPED wire all the way into cap.
5. To complete crimp, close handles until CERTI-CRIMP ratchet releases. Open the handles and remove the crimped cap.
6. Refer to Section 4 and Figure 3 for spare wire cap crimp inspection procedure.
7. "REJECT" spare wire caps can be avoided through careful use of instructions in Section 2, and by performing regular tool maintenance as instructed in Section 5.

**4. CRIMP INSPECTION**

1. Inspect crimped spare wire caps by checking the features described in Figure 3.

2. Use only the spare wire caps that meet the conditions shown in "ACCEPT" column.
3. "REJECT" spare wire caps can be avoided through careful use of instructions in Section 3, and by performing regular tool maintenance as instructed in Section 5.

**5. MAINTENANCE AND INSPECTION PROCEDURE**

Tyco Electronics recommends that a maintenance/inspection program be performed periodically to ensure dependable and uniform terminations. The tool should be inspected at least once per month. Frequency of inspections depends on:

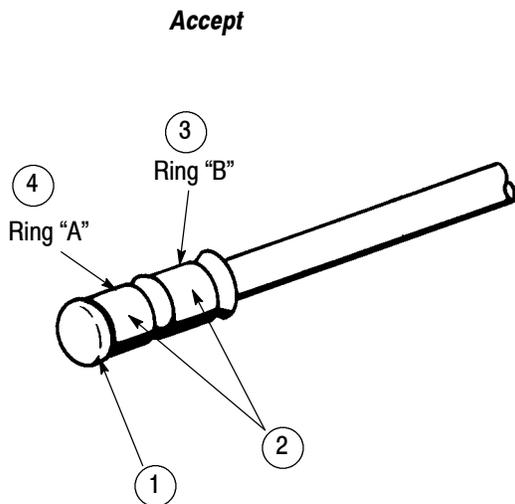
- The care, amount of use, and handling of the tool.
- The type and size of products crimped.
- The degree of operator skill.
- The presence of abnormal amounts of dust and dirt.

- Your own established standards.

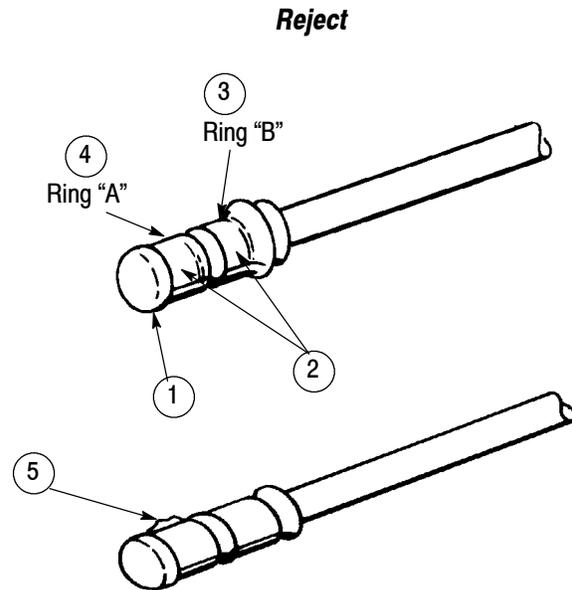
The hand tool is inspected before being shipped; however, Tyco Electronics recommends that the tool be inspected immediately upon arrival to ensure that the tool has not been damaged during shipment.

**5.1. 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. 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.



1. Wire fully bottomed in cap.
2. Full length of both rings crimped (cap was bottomed in tool and rings centered in dies).
3. Ring "B" color code matches color code of dies.
4. Wire insulation diameter is within range of color coded (Ring "A") cap. See Figure 1.



1. Wire not fully bottomed in cap.
2. Full length of rings not crimped (Cap was not fully bottomed in tool; see Figure 2).
3. Ring "B" color code did not match color code of dies.
4. Wire insulation diameter is not within range of color coded (Ring "A") cap. See Figure 1.
5. Excessive flash or cracked ring. Wire insulation diameter too large (see Figure 1) or damaged dies.

Figure 3

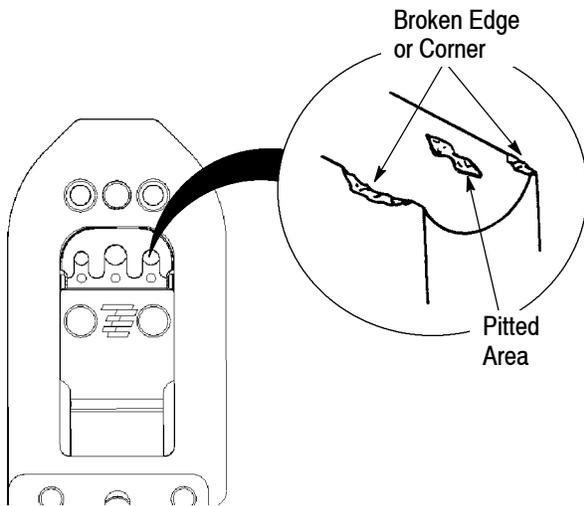


Figure 4

4. 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.

**5.2. Periodic Inspection**

**A. Lubrication**

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

- Tool used in daily production – lubricate daily
- Tool used daily (occasional) – lubricate weekly
- Tool used weekly – lubricate monthly

Wipe excess oil from tool, particularly from crimping jaws. Oil transferred from the crimping area onto certain terminations may affect the electrical characteristics of an application.

**B. Visual Inspection**

1. Inspect the tool for missing parts or retaining rings. If parts are missing or defective, see Section 6, REPLACEMENT AND REPAIR.
2. Inspect head assembly for worn, cracked, or broken jaws. See Figure 4. If damage is evident, return the tool to Tyco Electronics for evaluation and repair. See Section 6, REPLACEMENT AND REPAIR.

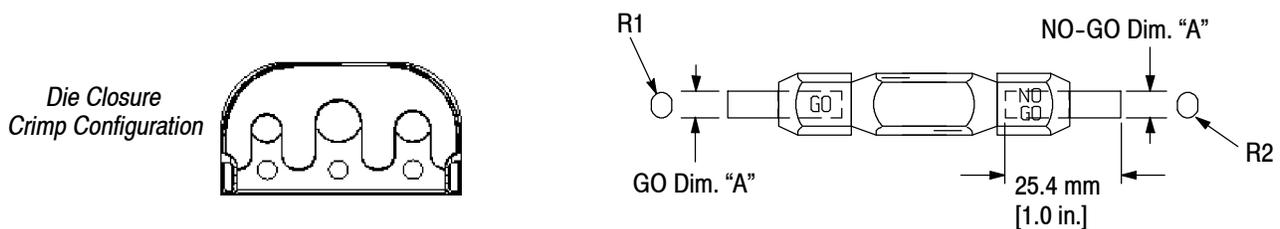
**C. Gaging the Crimping Chamber**

Each tool is inspected for proper die closure before packaging. An inspection should be performed periodically to check the die closure for excessive wear.

The die closure inspection is accomplished using plug gages. Tyco Electronics neither manufactures nor sells plug gages. Suggested designs and dimensions for the plug gage elements are listed in Figure 5. The following procedure is recommended for inspecting the three die closures.

1. Clean oil or dirt from the die closure and plug gage elements.
2. Close handles of tool until crimping dies are bottomed. Do not apply additional pressure to tool handles.

**Suggested Plug Gage Design**



DIE COLOR CODE	GAGE ELEMENT DIM'S. "A"		R1	R2
	GO	NO-GO		
Green	3.124 - 3.132 [.1230 - .1233]	3.274 - 3.277 [.1289 - .1290]	1.30 [.051]	1.47 [.051]
Orange	3.404 - 3.411 [.1340 - .1343]	3.553 - 3.556 [.1399 - .1400]	1.57 [.062]	1.57 [.062]
White	4.445 - 4.452 [.1750 - .1753]	4.595 - 4.597 [.1809 - .1810]	2.03 [.080]	2.03 [.080]

Figure 5

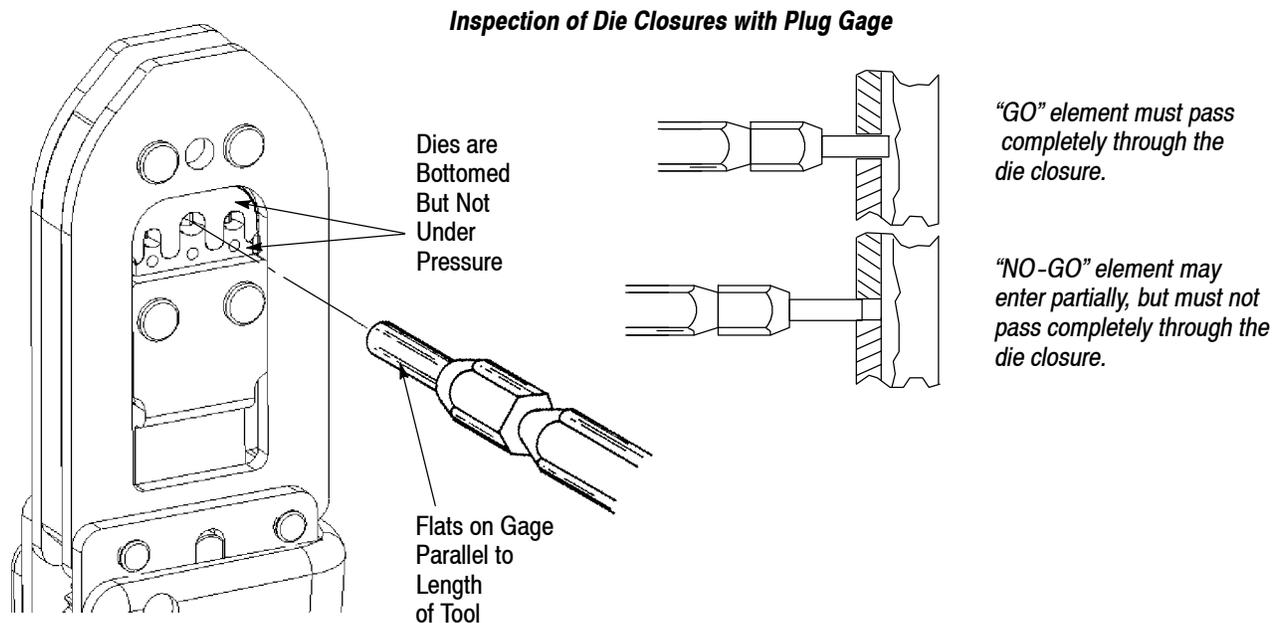


Figure 6

3. With crimping dies bottomed, check the selected die closure using the proper plug gage. Hold gage in straight alignment with the die closure and carefully try to insert, without forcing, the GO element. See Figure 6. The GO element must pass completely through the die closure. See Figure 6.

4. Try to insert the NO-GO element. The NO-GO element may enter partially, but must not pass completely through the die closure. See Figure 6.

5. If all three closures meet the plug gage conditions, The die closures may be considered dimensionally correct. If you find that the die closures do not conform to the gage conditions, contact your local Tyco Electronics Representative.

#### D. CERTI-CRIMP Ratchet Inspection

Check the CERTI-CRIMP Hand Crimping Tool Ratchet Control to ensure that ratchet does not release prematurely, allowing 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 dies. To check the ratchet feature:

1. Thoroughly clean bottoming surfaces of dies.
2. Position the terminal and wire between the crimping jaws, as described in Section 3, CRIMPING PROCEDURE.

3. Hold the wire in place and squeeze the handles until the CERTI-CRIMP ratchet releases. Hold the handles in this position, maintaining just enough force to keep the jaws closed.

4. Check the clearance between the bottoming surfaces of the crimping jaws. 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 6, REPLACEMENT AND REPAIR.

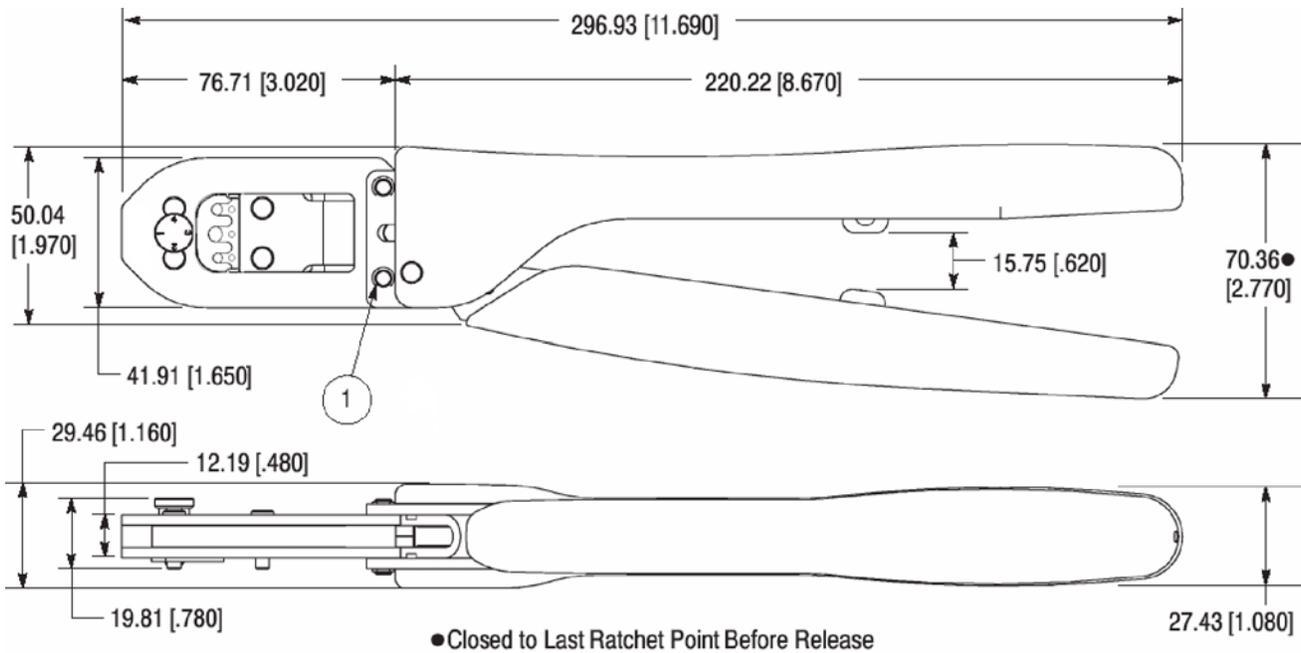
#### 6. REPLACEMENT AND REPAIR

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. Parts other than those listed in Figure 7 must be replaced by Tyco Electronics to ensure quality and reliability of the tool. Order replacement parts through your Tyco Electronics Representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605, or write to:

CUSTOMER SERVICE (038-035)  
TYCO ELECTRONICS CORPORATION  
P.O. BOX 3608  
HARRISBURG, PA 17105-3608

#### 7. REVISION SUMMARY

- Initial release of document



**REPLACEABLE PARTS**

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	RING, Retaining	4

Figure 7