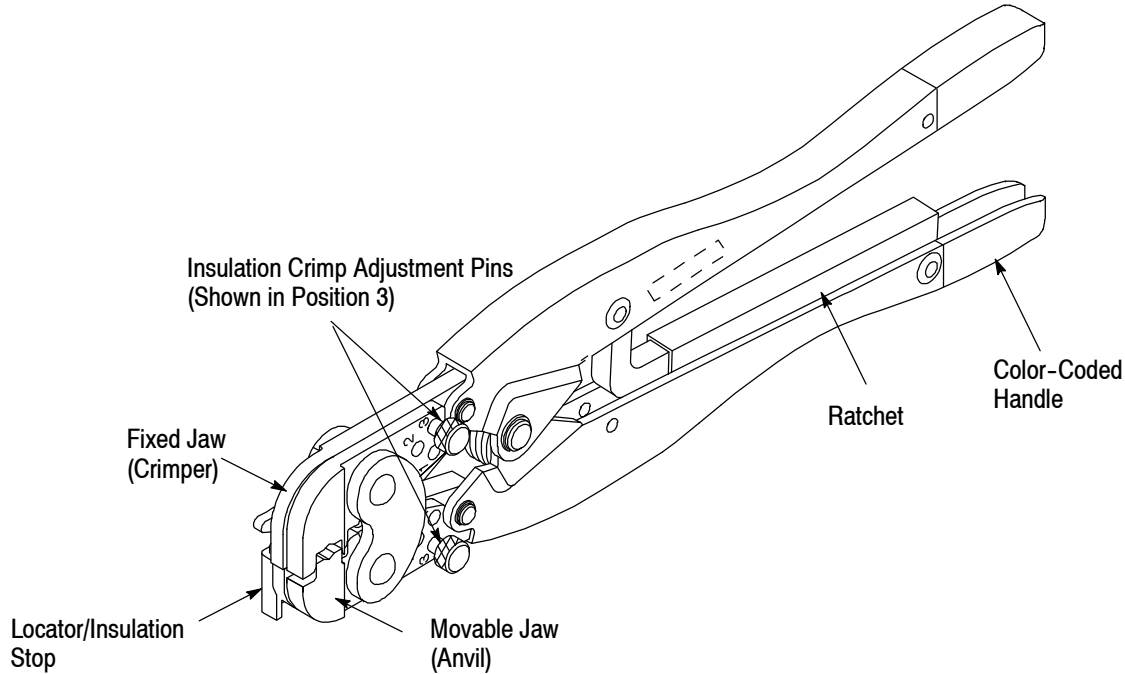


PROPER USE GUIDELINES

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.

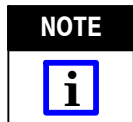


TE Tool			Wire Size Range (AWG)
Part Number	Color Code	Dot Code	
525690	Red	1	20-18
525691	Blue	2	16-14

Figure 1

1. INTRODUCTION

Double Action Hand Crimping Tools 525690 and 525691 crimp a wide variety of PIDG* terminals and splices and PLASTI-GRIP* terminals and splices onto stranded copper wire sizes 20 through 14 AWG. See Figure 1. Read these instructions thoroughly before using the tools.



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

Reasons for reissue of this instruction sheet are provided in Section 7, REVISION SUMMARY.

2. DESCRIPTION

Each tool features a fixed jaw (crimper), a movable jaw (anvil), a locator/insulation stop, and a ratchet attached to a handle.

These tools are members of the CERTI-CRIMP* hand crimping tool family. The ratchet on these tools ensures full crimping of the product. Once engaged, the ratchet will not release until the handles have been FULLY closed.



The jaws bottom before the ratchet releases. This design ensures maximum electrical and tensile performance of the crimp. DO NOT re-adjust the ratchet.

The locator/insulation stop positions the product between the jaws and aids in locating the wire in the product. When closed, the jaws form a crimping chamber with two sections: an insulation barrel section and a wire barrel section. The insulation barrel section crimps the insulation barrel of the product onto the wire insulation and, simultaneously, the wire barrel section crimps the wire barrel of the product onto the wire conductors.

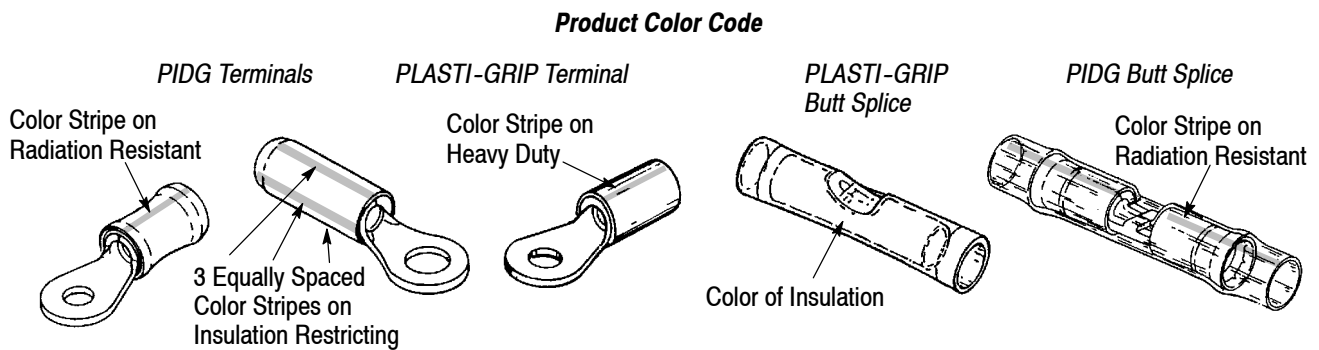
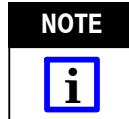


Figure 2

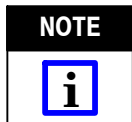
Each tool handle is color coded to correspond to the color code of the product (refer to Figure 2). Each tool produces a dot code on the crimp to correspond to the given wire size range (refer to Figure 1).



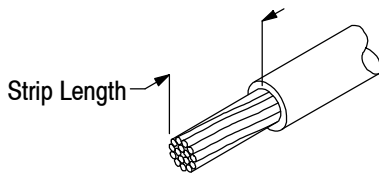
DO NOT allow the wire insulation to enter the wire barrel.

3. CRIMPING PROCEDURE

1. Strip the wire to the dimension given in Figure 3, being careful to avoid nicking or damaging the conductors.



DO NOT use wire with nicked or missing conductors.



Terminal	Splice
5.08-5.84 [.20-.23]	6.35-7.11 [.25-.28]

Figure 3

2. Insert the insulation crimp adjustment pins in the proper position according to Section 4.
3. Open the tool jaws by closing the handles until the ratchet releases, then allow the handles to open FULLY.
4. Place the terminal or splice in the crimping chamber as shown in Figure 4 (for terminals) or Figure 5 (for splices).
5. Close the tool handles until the terminal or splice is held firmly in place. DO NOT deform the wire barrel.
6. Insert a properly stripped wire into the wire barrel as shown in Figure 4 (for terminals) or Figure 5, Detail A (for splices).

7. Close the tool handles until the ratchet releases.

Crimping a Terminal

“B” Equals Wire Barrel
 “C” Equals Insulation Barrel

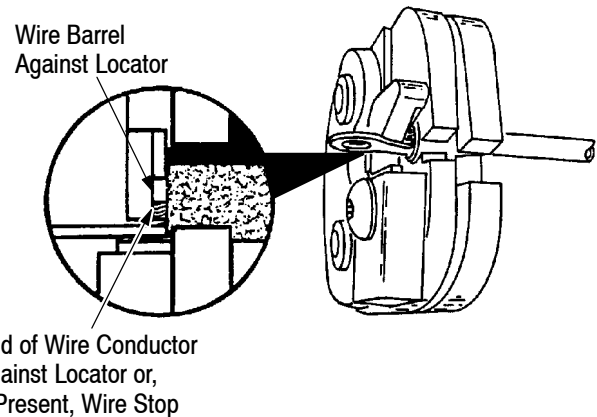
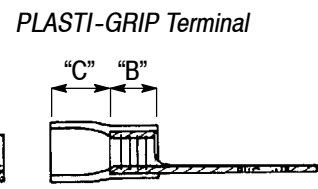
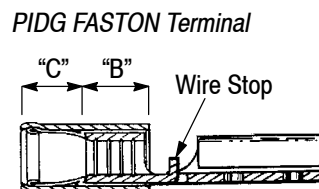
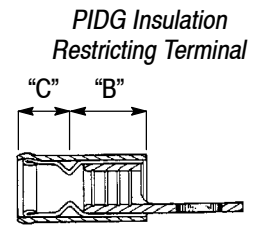
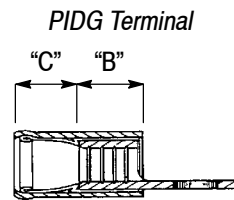
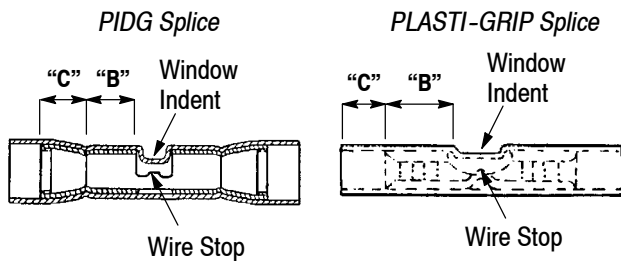


Figure 4

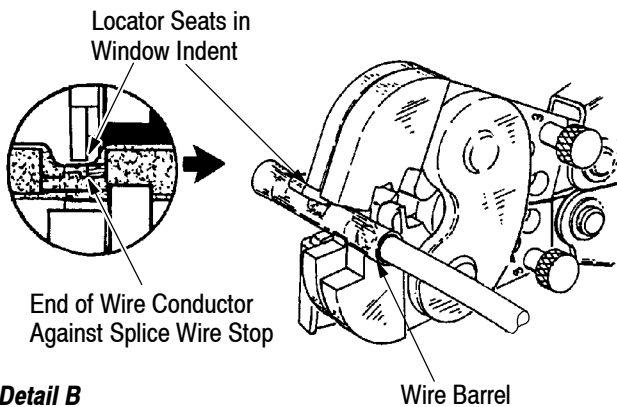
8. Release the tool handles, and allow them to open FULLY. Remove the crimped terminal or splice.
9. For splices, position the remaining wire barrel in the crimping chamber as shown in Figure 5, Detail B. Repeat Steps 5 through 8.
10. Inspect crimped terminal or splice by checking the features described in Figure 6. Terminals and splices not meeting the described conditions should NOT be used.

Crimping a Butt Splice

“B” Equals Wire Barrel
 “C” Equals Insulation Barrel



Detail A



Detail B

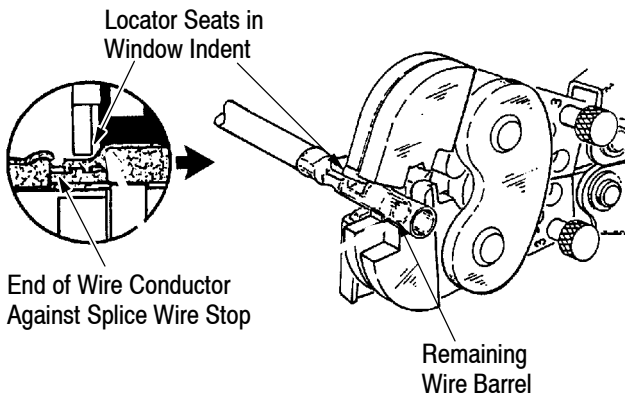


Figure 5

4. INSULATION CRIMP ADJUSTMENT

The insulation barrel section of the crimping chamber has three positions: 1 — tight, 2 — medium, and 3 — loose. To adjust the grip resulting from the crimp of the insulation barrel, proceed as follows:

4.1. PIDG Terminals and Splices

NOTE *PIDG terminals and splices feature a wire “insulation grip.”*

1. Insert each insulation crimp adjustment pin into Position 3. Refer to Figure 1.

CAUTION *Make sure that both insulation crimp adjustment pins are in the same position.*

2. Position the terminal or splice in the crimping chamber as described in Section 3.
3. Insert an UNSTRIPPED wire into ONLY the insulation barrel of the terminal or splice.
4. Close the tool handles until the ratchet releases.
5. Release the tool handles, and allow the handles to open FULLY. Remove the crimped terminal or splice.
6. Check the insulation barrel crimp by bending the wire back and forth once. The terminal or splice should retain its grip on the wire insulation. If it does not, insert each insulation crimp adjustment pin into the next position (Position 2).
7. Repeat Steps 2 through 6 until the correct insulation barrel grip is attained. DO NOT use a tighter position than is necessary.

4.2. PLASTI-GRIP Terminals and Splices

NOTE *PLASTI-GRIP terminals and splices feature a wire “insulation support” only. Ideally, the terminal or splice insulation should be in contact with the wire insulation.*

Insert each insulation crimp adjustment pin into position according to the following:

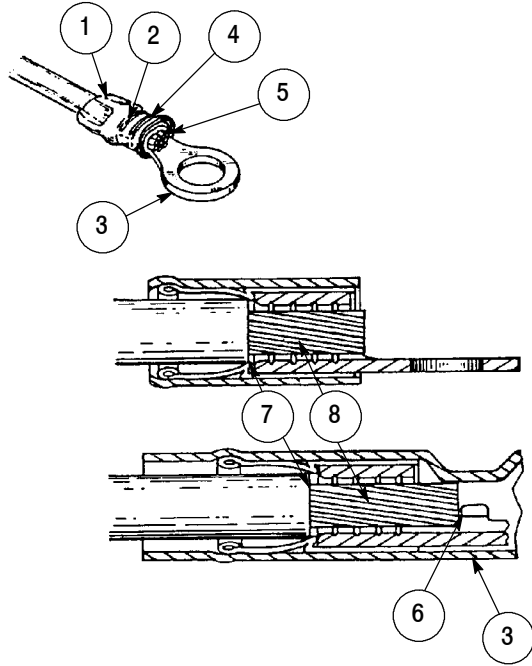
CAUTION *Make sure that both insulation crimp adjustment pins are in the same position.*

- Position 3 for wire having a large insulation diameter.
- Position 2 for wire having a medium insulation diameter.
- Position 1 for wire having a small insulation diameter.

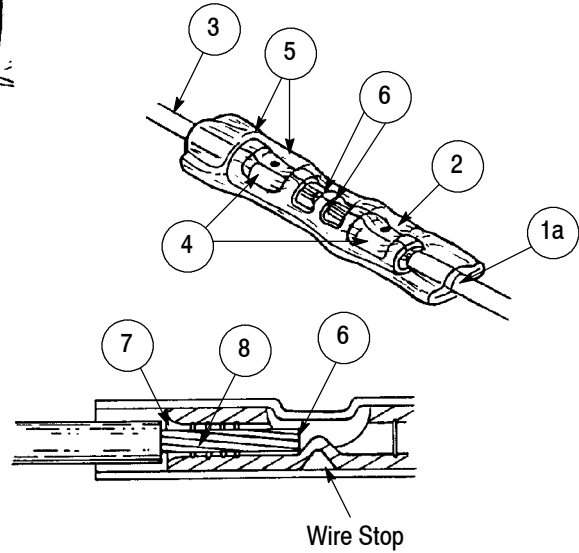
Crimp Inspection

Dot Code (1 or 2 Dots) Must Appear on All Crimps

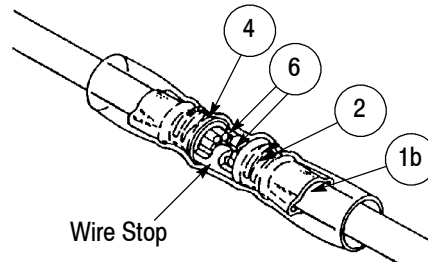
PIDG Terminals and PLASTI-GRIP Terminals



PLASTI-GRIP Butt Splices



PIDG Butt Splices



- ① Insulation barrel is in firm contact with wire insulation
- ② Correct color code, dot code, and tool combination
- ③ Wire size is within wire size range stamped on terminal tongue
- ④ Crimp is centered on wire barrel
- ⑤ Conductor end is flush with, or extends beyond, end of wire barrel
- ⑥ Conductor end is against the wire stop, or is at least flush with or extends slightly beyond wire barrel
- ⑦ Wire insulation does not enter wire barrel
- ⑧ No nicked or missing wire conductor strands

- ① Splice insulation (a) or insulation barrel (b) is in contact with wire insulation
- ② Correct color code, dot code, and tool combination (dot coding disappears from sealed splices when heat sealed)
- ③ Wire size is within wire size range stamped on center of splice
- ④ Crimp is centered on wire barrel
- ⑤ No flash or extruded insulation
- ⑥ Conductor end is against wire stop, or is at least flush with or extends slightly beyond wire barrel
- ⑦ Wire insulation does not enter wire barrels
- ⑧ No nicked or missing conductor strands

Figure 6

5. MAINTENANCE AND INSPECTION

It is recommended 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 tool.
2. The presence of abnormal amounts of dust and dirt.
3. The degree of operator skill.
4. Your own established standards.

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

5.1. Daily Maintenance

1. Immersed the tool (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease, and foreign matter. When degreasing compound is not available, the 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 the handles closed to prevent objects from becoming lodged in the jaws. Store the tool in a clean, dry area.

5.2. Periodic Inspection

A. Lubrication

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

- Tool used in daily production — daily
- Tool used daily (occasional) — weekly
- Tool used weekly — monthly

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

B. Visual Inspection

1. Close the tool handles until the ratchet releases and then allow them to open freely. If they do not

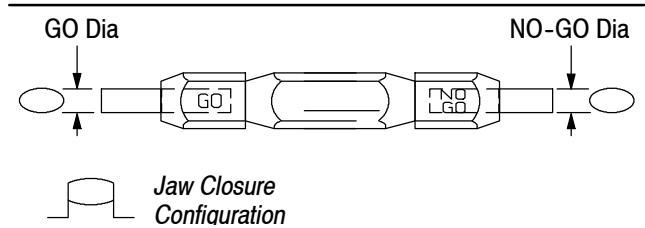
open quickly and fully, the spring is defective and must be replaced. See Section 6, REPLACEMENT AND REPAIR.

2. Inspect the head for worn, cracked, or broken jaws. If damage is evident, return the tool for evaluation and repair. See Section 6, REPLACEMENT AND REPAIR

C. Gaging the Crimping Chamber

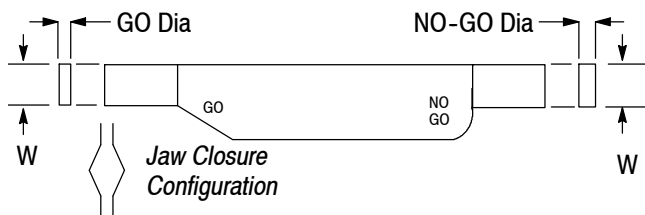
This inspection requires the use of plug gages conforming to the dimensions provided in Figure 7. To gage the crimping chamber, proceed as follows:

1. Remove traces of oil or dirt from the crimping chamber and plug gage.
2. Insert each insulation crimp adjustment pin into Position 1. See Figure 8.



SUGGESTED PLUG GAGE DESIGN FOR WIRE BARREL SECTION

TOOL	GAGE ELEMENT DIAMETER	
	GO	NO-GO
525690	2.768-2.776 [.1090-.1093]	2.918-2.921 [.1149-.1150]
525691	3.022-3.030 [.1190-.1193]	3.172-3.175 [.1249-.1250]



SUGGESTED PLUG GAGE DESIGN FOR INSULATION BARREL SECTION

TOOL	GAGE ELEMENT THICKNESS		
	GO	NO-GO	W
525690	0.889-0.897 [.0350-.0353]	1.394-1.397 [.0549-.0550]	2.80-3.05 [.110-.120]
525691	1.143-1.151 [.0450-.0453]	1.648-1.651 [.0649-.0650]	4.50-4.75 [.177-.187]

Figure 7

3. Close the tool handles until the jaws bottom, and hold in this position. DO NOT force beyond initial contact.

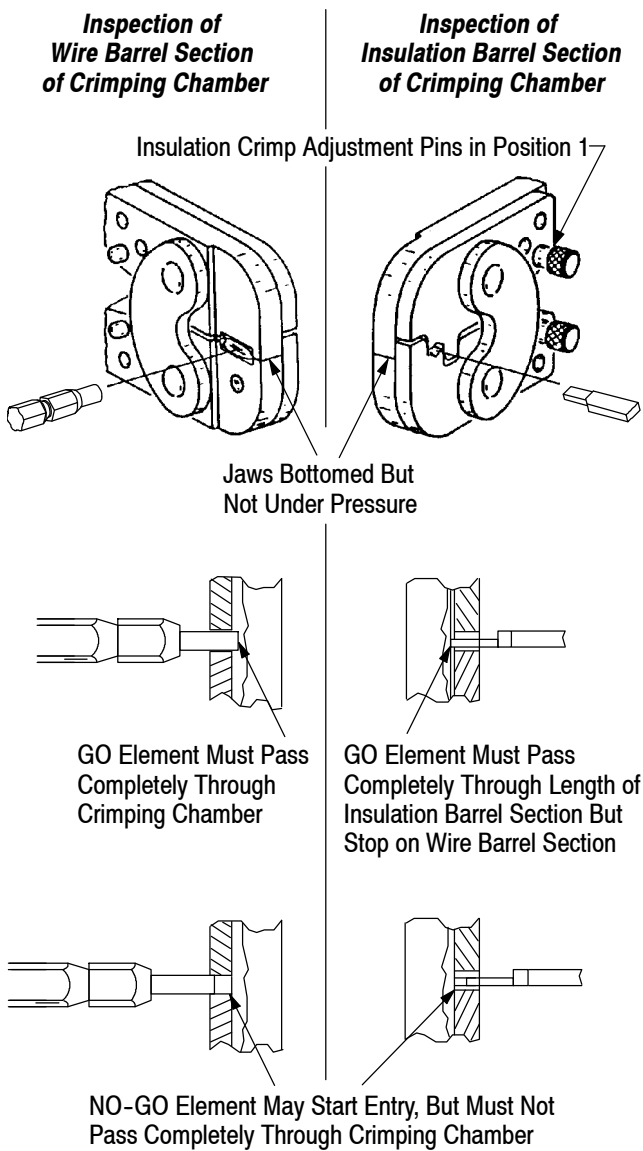


Figure 8

4. Carefully insert the GO element into the crimping chamber as shown in Figure 8; DO NOT force it. For the wire barrel section of the crimping chamber, the GO element must pass completely through the crimping chamber. For the insulation barrel section, the GO element must pass through the length of the section but will stop against the wire barrel section.

5. In the same manner, try to insert the NO-GO element into the crimping chamber as shown in Figure 8. The NO-GO element may begin entry, but may not pass through the crimping chamber.

If the crimping chamber conforms to the gage inspection, the tool is considered dimensionally

correct, and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, return the tool for evaluation and repair. See Section 6, REPLACEMENT AND REPAIR.

5.3. Ratchet Inspection

Check the ratchet to ensure that the ratchet does not release prematurely, allowing the jaws to open before they have fully bottomed. Proceed as follows:

1. Remove traces of oil or dirt from the bottoming surfaces of the jaws.
2. Obtain a 0.025 mm [.001 in.] shim that is suitable for checking the clearance between the bottoming surfaces of the jaws.
3. Select a terminal or splice and *maximum* size wire for the terminal or splice.
4. Position the terminal or splice in the crimping chamber according to Section 3, CRIMPING PROCEDURE. Holding the wire in place, squeeze the tool handles together until the ratchet releases. Hold the tool handles in this position, maintaining just enough pressure to keep the jaws closed.
5. Check the clearance between the bottoming surfaces of the 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

Customer-replaceable parts are listed in Figure 9. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary. Parts other than those listed should be replaced by Tyco Electronics to ensure quality and reliability. Order replacement parts through your representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605, or write to:

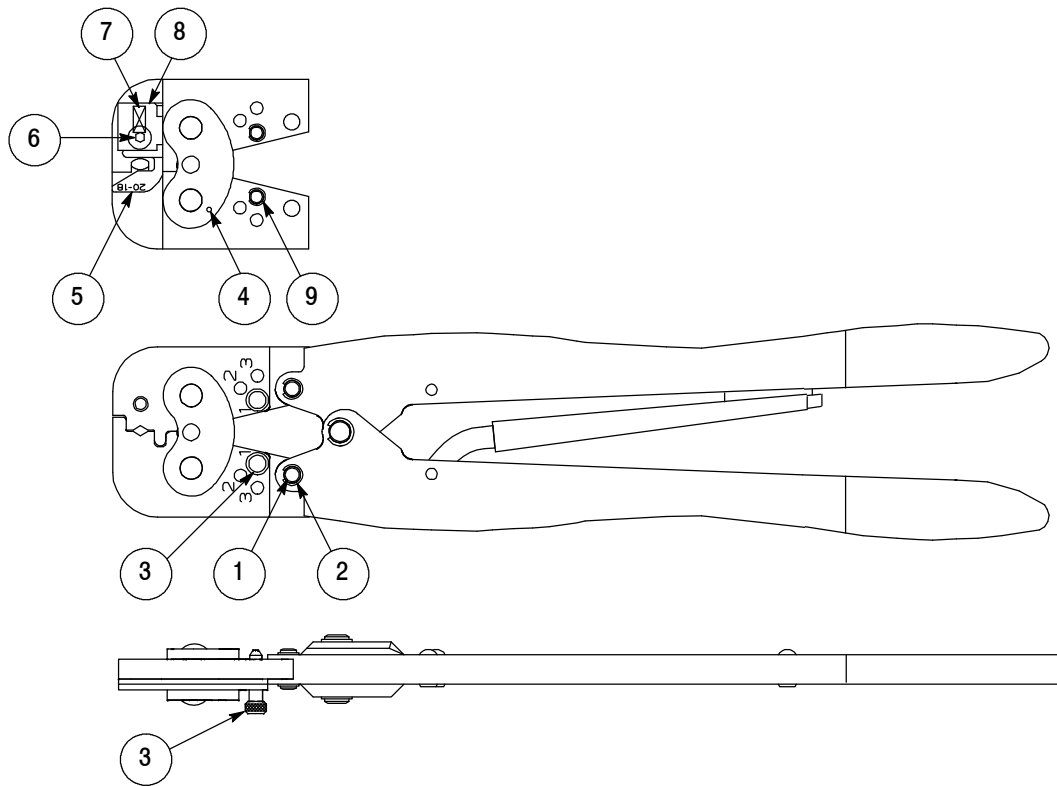
CUSTOMER SERVICE (038-035)
 TYCO ELECTRONICS CORPORATION
 PO BOX 3608
 HARRISBURG PA 17105-3608

For customer repair service, call 1-800-526-5136.

7. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated document to corporate requirements
- Added new data to tables in Figure 7



REPLACEMENT PARTS			
ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	1-23619-6	PIN, Retaining	2
2	525108	RING, Retaining	4
3	39207	PIN, Adjustment	2
4	21028-1	PIN	2
5	525355-8	LOCATOR	1
6	9-305927-1	SCREW	1
7	302994	HOUSING STOP	1
8	301201	SPRING	1
9	39208	RING	6

Figure 9