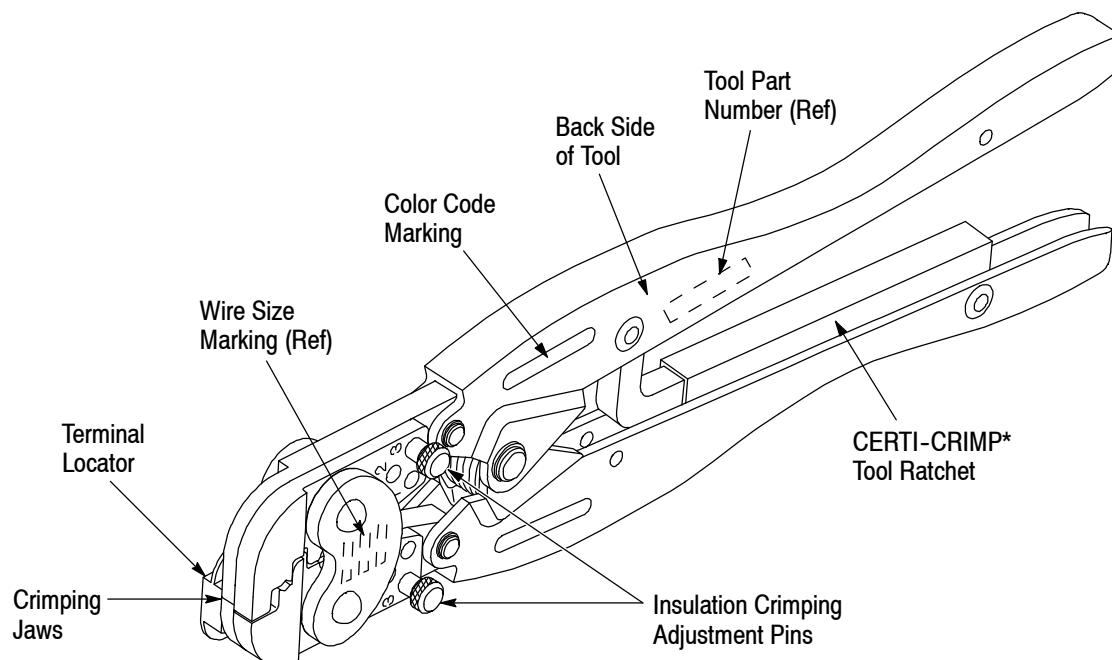


PROPER USE GUIDELINES

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.



WIRE			TERMINAL			HAND TOOL		
SIZE (AWG)	INSULATION DIA (mm [in.])	STRIP LENGTH (mm [in.])	BASE PART NUMBER	SHOULDER LENGTH	SLEEVE COLOR	PART NUMBER	COLOR CODE	CRIMP DOT CODE
26	1.02-2.03 [.040-.080]	3.96 [.156]	42927	Short	Blue	90015	Blue and Yellow	1
			66059	Long				
24-22			42574	Short	Yellow			
			42633	Long				
26	2.03-2.92 [.080-.115]	4.75 [.187]	66129	Long	Black	90016	White and Black	2
20-18	1.52-2.54 [.060-.100]		42575	Short	White			
			42634	Long				
16	2.03-2.92 [.080-.115]		42637	Short	Black			
			42646	Long				

Figure 1

1. INTRODUCTION

Hand Crimping Tools 90015 and 90016 crimp the PIDG* taper pin terminals (listed in Figure 1) onto wire sizes 26 through 16 AWG. Read these instructions thoroughly before crimping any terminals.

NOTE



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

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

2. DESCRIPTION

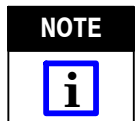
Each hand tool features two crimping jaws, a terminal locator, two insulation crimping adjustment pins, and a CERTI-CRIMP tool ratchet. The hand tool has the tool part number, color code, and wire size marked on the BACK side of the tool. The color code must match the color of the terminal sleeve. The terminal locator positions the terminal between the crimping jaws and is adjustable to accommodate long or short shoulder terminals. The insulation crimping adjustment pins are used to regulate the crimp height of the insulation barrel sleeve.

The ratchet assures full crimping of the terminal. Once engaged, the ratchet will not release until the tool handles have been FULLY closed. See Figure 1.



The crimping jaws bottom before the CERTI-CRIMP tool ratchet releases. This design feature ensures maximum electrical and tensile performance of the crimp. Do NOT re-adjust the ratchet.

3. CRIMPING PROCEDURE



The 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.

Refer to Figure 1 and select the appropriate wire size and terminal for the hand tool. The wire size and insulation diameter must be within the specified range for the terminal and hand tool.

1. Strip the wire using the appropriate strip-length dimension provided in Figure 1. Do NOT nick or cut the wire strands.

2. Adjust the terminal locator to accommodate the shoulder length of the terminal being crimped. See Figure 2.

3. Hold tool so that the BACK side of the tool is facing you.

4. Open the crimping jaws by squeezing the tool handles together until the CERTI-CRIMP ratchet releases.

5. Insert the tip of the terminal through the hole in the locator. The shoulder of the terminal must be positioned against the locator as shown in Figure 2.

6. Hold terminal in position and squeeze the tool handles together just enough to hold the terminal in the crimping jaws.



Squeezing the handles together too much will engage the crimping jaws and deform the terminal.

7. Insert stripped wire through the insulation barrel sleeve and into the wire barrel sleeve until it bottoms. See Figure 2.

8. Hold wire in place and squeeze tool handles together until the CERTI-CRIMP ratchet releases. Allow tool handles to open FULLY.

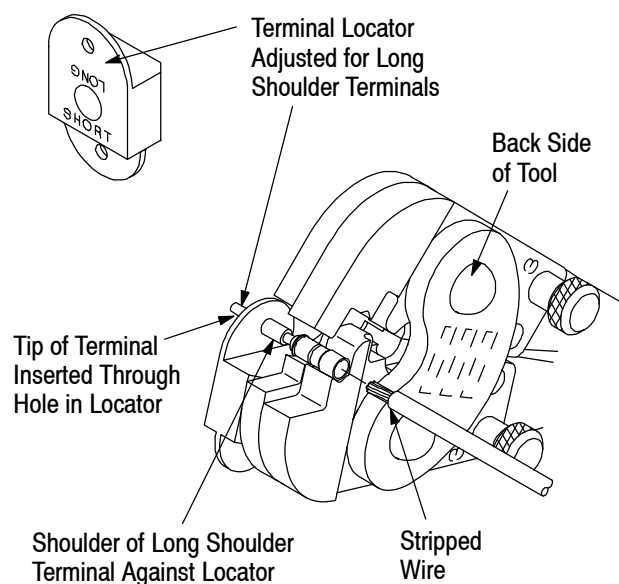
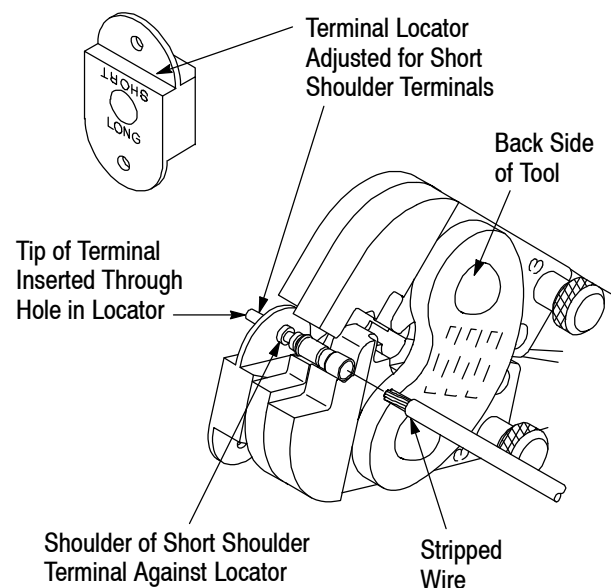
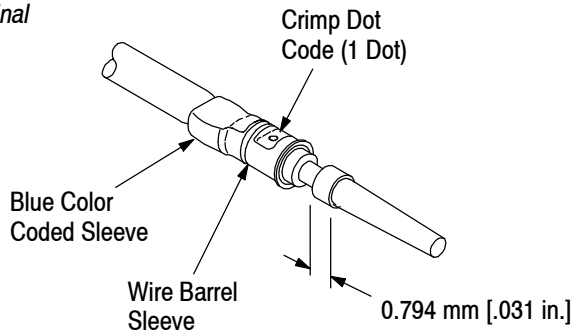
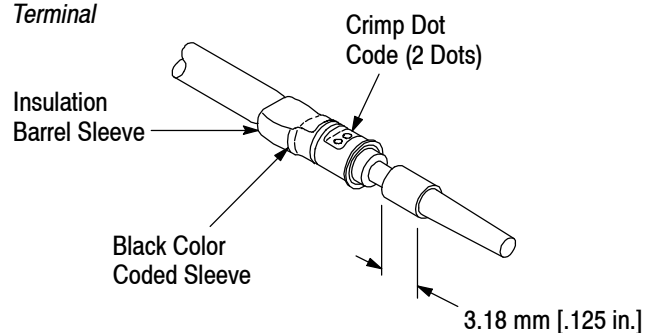


Figure 2

Properly Crimped Terminals**Short Shoulder Terminal****Long Shoulder Terminal****Figure 3**

9. Remove the crimped terminal from the crimping jaws and inspect the crimp. The crimp dot code on the color coded sleeve will identify the hand tool used. Make sure that the proper crimp dot code is shown for the appropriate hand tool. Refer to Figure 1. Refer to Figure 3 for a properly crimped terminal. Check the insulation grip by referring to Section 4, INSULATION CRIMPING ADJUSTMENT.



Discard and replace any defective or damaged terminal. DO NOT re-use a crimped terminal.

4. INSULATION CRIMPING ADJUSTMENT

Each hand tool has three insulation crimping adjustment positions to adjust the wire insulation grip: 1-Tight, 2-Medium, and 3-Loose. To obtain the desired insulation grip, proceed as follows:

1. Insert insulation crimping adjustment pins into Position 3 as shown in Figure 1.
2. Position terminal into crimping jaws as described in Section 3, Step 5.
3. Insert an UNSTRIPPED wire just into the insulation barrel sleeve.
4. Crimp the terminal using the procedure described in Section 3, Step 8. Remove the crimped terminal from the crimping jaws and check the insulation support by bending the wire back and forth once. The insulation barrel sleeve should retain grip on the wire insulation. If the wire pulls out, move the insulation crimping adjustment pins to the next tighter position (Position 2) and proceed to Step 5. If the wire does not pull out, the pins are properly adjusted and the tool is ready for crimping.
5. Perform another test crimp as described above. Adjust pins, as necessary, until the desired

insulation grip is obtained. DO NOT use a tighter setting than is required.

NOTE

The pins must be located in the same adjustment position.

5. MAINTENANCE AND INSPECTION PROCEDURE

It is recommended 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 from the plant; 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. 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.

- 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.

5.2. 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.

5.3. Visual Inspection

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

5.4. Gaging the Crimping Chamber

This inspection requires the use of plug gages conforming to the dimensions provided in Figure 4. Tyco Electronics does not manufacture or market these gages. To gage the crimping chamber, proceed as follows:

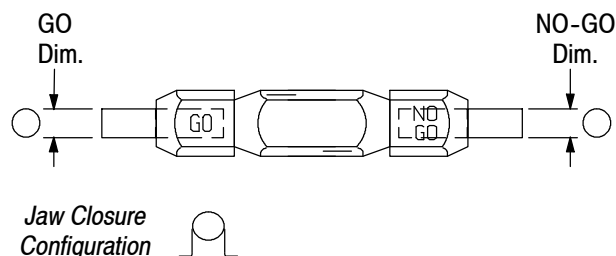
- Remove traces of oil or dirt from the crimping chamber and plug gages.
- Close the tool handles until it is evident that the jaws have bottomed; then hold in this position. Do NOT force the jaws beyond initial contact.
- Align the GO element with the appropriate section of the crimping chamber. Push element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber as shown in Figure 4.
- Align the NO-GO element and try to insert it straight into the same section of the crimping chamber. The NO-GO element may start entry, but must not pass completely through the crimping chamber. See Figure 4.

If the crimping chamber conforms to the gage inspection, the crimping chamber is 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 Tyco Electronics for further

evaluation and repair. Refer to Section 6, REPLACEMENT AND REPAIR.

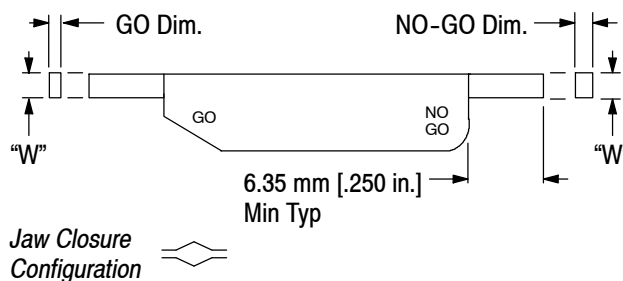
For additional information regarding the use of plug gages, refer to instruction sheet 408-7424.

Suggested Plug Gage Design for Wire Barrel Section of Crimping Chamber



HAND TOOL	GAGE ELEMENT DIMENSIONS (mm [in.])	
	GO	NO-GO
90015	1.600-1.607 [.0630-.0633]	1.747-1.750 [.0688-.0690]
90016	2.160-2.167 [.0850-.0853]	2.287-2.290 [.0900-.0902]

Suggested Plug Gage Design for Insulation Barrel Section of Crimping Chamber (Gage to be used at position 1 of insulation adjustment)



HAND TOOL	GAGE ELEMENT DIMENSIONS (mm [in.])		
	GO	NO-GO	"W" (Width) (Max)
90015	0.889-0.897 [.0350-.0353]	1.394-1.397 [.0549-.0550]	2.36 [.093]
90016			

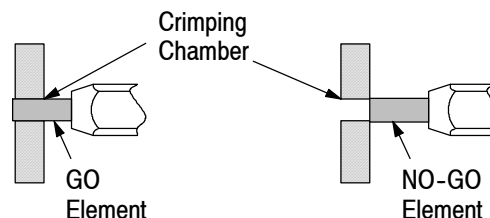


Figure 4

5.5. CERTI-CRIMP Ratchet Inspection

The CERTI-CRIMP ratchet feature on the hand tools should be checked to ensure that the ratchet does not release prematurely, allowing the jaws 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 jaws. Proceed as follows:

1. Select the *maximum* size wire for the tool and a terminal.
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 tension 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

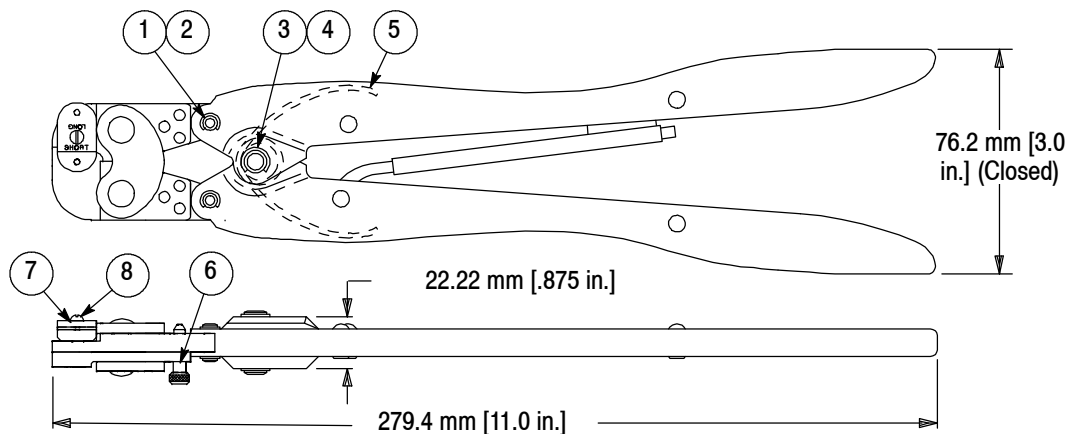
Replaceable parts are listed in Figure 5. Parts other than those listed in Figure 5 should be replaced by Tyco Electronics to ensure quality and reliability of the tool. Order replacement parts through your Tyco Electronics representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

CUSTOMER SERVICE (38-35)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG, PA 17105-3608

For tool repair service, please contact a representative at 1-800-526-5136.

7. REVISION SUMMARY

Since the previous release of this sheet, the TE logo was applied.



REPLACEMENT PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	RING, External Crescent Retaining, .188 D Shaft	4
2	1-23619-6	PIN, Retaining, .187 D × .521 L	2
3	21045-6	RING, External Crescent Retaining, .250 D Shaft	2
4	2-23620-9	PIN, Retaining, .250 D × .838 L	1
9	39364	SPRING, Handle	1
5	39207	PIN, Insulation Crimping Adjustment	2
7	125461-1	LOCATOR	1
8	3-21016-7	SCREW	1

Figure 5