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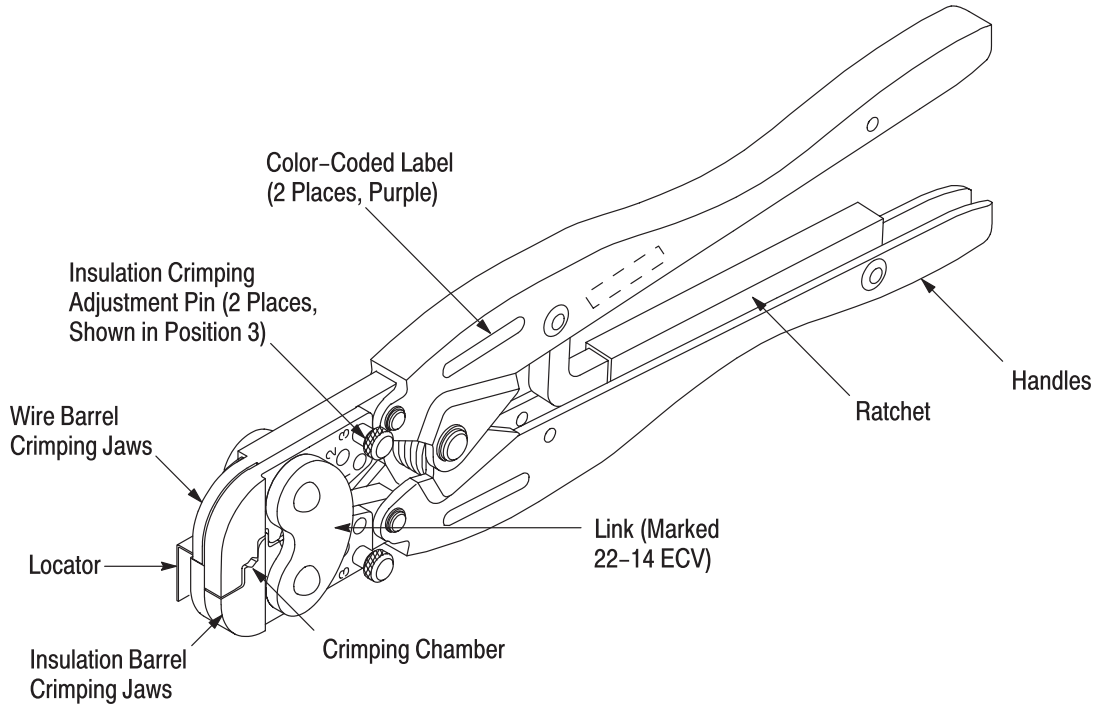
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PROPER USE GUIDELINES

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.



SPLICE			WIRE		INSTRUCTION SHEET (Wire Combinations)
PART NUMBER	COLOR	TYPE	SIZE (AWG)	STRIP LENGTH	
34304	Red	VS (Vinyl)	22-14	8.33-9.13 mm [.328-.359 in.]	408-1394
36964, 55843-1, 2-328375-3	Purple	ECV (Vinyl)			408-9850

Figure 1

1. INTRODUCTION

CERTI-CRIMP Hand Crimping Tool 48087 is used to crimp the closed-end splices onto the wire sizes listed in Figure 1.



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 (Figure 1)

The hand tool consists of two crimping jaws, a locator, two insulation crimping adjustment pins, a handles, and ratchet. The tool features colored labels

(purple) which match splices with an insulation color of purple. The splice listed in Figure 1 having an insulation color or red can also be crimped using this tool. The FRONT of the tool, into which the splice is inserted, has the wire size and splice type marked on the link that corresponds with the color code.

When closed, the crimping jaws form one crimping chamber. The locator positions the splice between the crimping jaws. The insulation crimping adjustment pins are used to regulate the crimp height of the insulation barrel sleeve of the splice. The ratchet assures full crimping of the splice. Once engaged, the ratchet will not release until the tool handles have been FULLY closed.



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

3. CRIMPING PROCEDURE

NOTE *The 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.*

Refer to Figure 1, and make sure the tool matches the closed-end splice to be crimped with the correct wire size. Note that the splice and tool color is coded for a given wire size. If the splice insulation is purple, match the label on the tool; however, if the splice insulation is red, match the product-tool compatibility by part number (given in Figure 1).

1. Strip the wire using the strip length provided in Figure 1. DO NOT nick or cut the wire strands.
2. Open the crimping jaws by squeezing the tool handles together until the ratchet releases.
3. Insert the stripped wire into the wire barrel of the splice.
4. Locate the splice — with the wire inserted — into the crimping jaws as shown in Figure 2. Make sure that the end of the splice rests against the locator.
5. Hold the wire in place, and squeeze the tool handles together until the ratchet releases. Allow the tool handles to open FULLY. Remove the crimped splice.

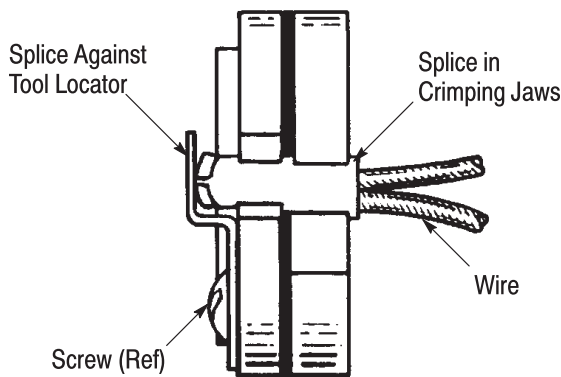


Figure 2

4. INSULATION CRIMP ADJUSTMENT

The 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 wire insulation grip, proceed as follows:

1. Insert the pins into Position 3 as shown in Figure 1.

2. Position the splice into the crimping jaws as described in Section 3.
3. Insert an UNSTRIPPED wire just into the insulation barrel sleeve of the splice.
4. Crimp the splice using the procedure described in Section 3. Remove the crimped splice from the crimping jaws.
5. 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 pins to the next tighter position (Position 2), and proceed to Step 6. If the wire does not pull out, the pins are properly adjusted, and the tool is ready for crimping.

NOTE *Both insulation crimping adjustment pins must be located in the same position.*

6. Perform another test crimp as described in Step 4. Adjust the pins, as necessary, until the desired wire insulation grip is obtained. DO NOT use a tighter position than is required.

5. MAINTENANCE AND INSPECTION

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; however, it is recommended that the tool be inspected immediately upon its arrival at your facility to ensure that the tool has not been damaged during shipment.

5.1. 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 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.

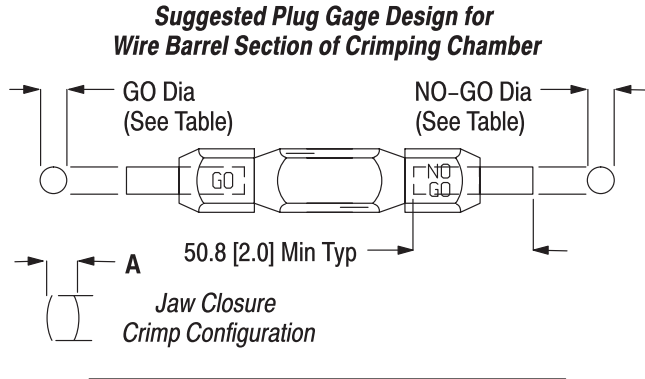
5.3. Periodic Inspection

1. The hand tool should be immersed (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease, and foreign matter.
2. 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.
3. Inspect the head assembly for worn, cracked, or broken jaws. If damage is evident, return the tool for evaluation and repair. See Section 6, REPLACEMENT AND REPAIR.

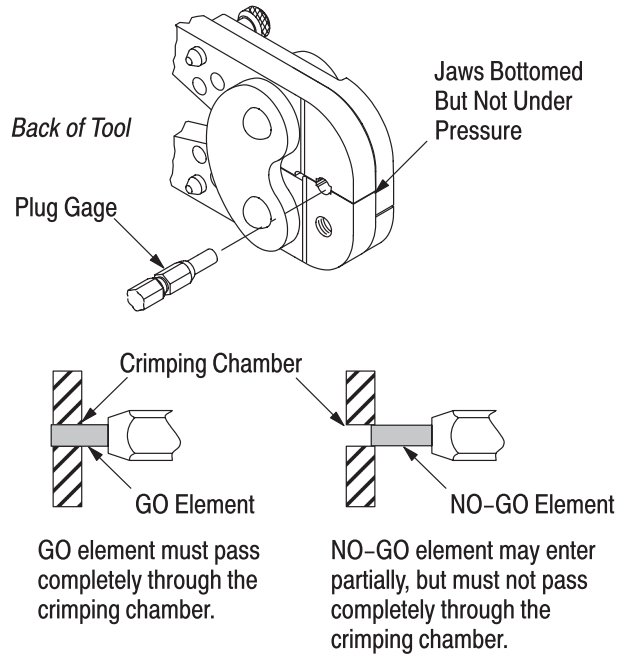
5.4. Gaging the Crimping Chamber

This inspection requires the use of plug gages conforming to the dimensions provided in Figures 3 and 4. Tyco Electronics does not manufacture or market these gages. To gage the crimping chamber, proceed as follows:

1. Remove traces of oil or dirt from the crimping chamber and plug gages.
2. Remove the screw and locator from the tool. Refer to Figure 2.
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. From the back of the tool, align the GO element of the plug gage with the wire barrel section of the crimping chamber. Push the element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber. See Figure 3.
5. Align the NO-GO element of the plug gage, 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. See Figure 3.



Inspection of Wire Barrel Section of Crimping Chamber



JAW CLOSURE DIMENSION A†		GAGE ELEMENT†† DIAMETER	
GO	NO-GO	GO	NO-GO
2.413 [.0950]	3.175 [.1250]	3.023-3.030 [.1190-.1193]	3.172-3.175 [.1249-.1250]

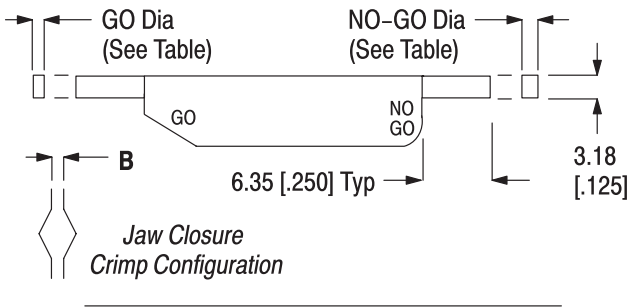
† Applies when jaws are bottomed, but not under pressure.
 †† Material — Tool steel

Figure 3

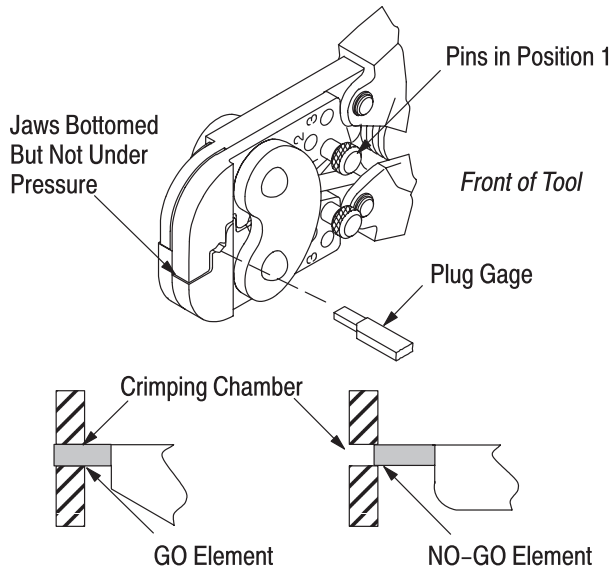
6. Re-install the screw and locator onto the tool.
7. Insert the insulation crimping adjustment pins in Position 1.
8. From the front of the tool, check the insulation barrel section of the crimping chamber using the proper plug gage in the same manner. See Figure 4.

If the crimping chamber conforms to the gage inspection, the tool is considered dimensionally correct, and should be lubricated with a THIN coat of

Suggested Plug Gage Design for Insulation Barrel Section of Crimping Chamber



Inspection of Insulation Barrel Section of Crimping Chamber



GO element must pass completely through the crimping chamber.

NO-GO element may enter partially, but must not pass completely through the crimping chamber.

JAW CLOSURE DIMENSION B† (Insulation Crimping Adjustment Pins in Position 1)		GAGE ELEMENT†† DIAMETER	
GO	NO-GO	GO	NO-GO
0.508 [.0200]	1.016 [.0400]	0.508-0.516 [.0200-.0203]	1.013-1.016 [.0399-.0400]

† Applies when jaws are bottomed, but not under pressure.

†† Material — Tool steel

Figure 4

any good SAE 20 motor oil. If not, the tool must be returned for further evaluation and repair. Refer to Section 6, REPLACEMENT AND REPAIR.

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

5.5. Ratchet Inspection

The ratchet should be checked to ensure that the it does not release prematurely, allowing the jaws 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 jaws. Then proceed as follows:

1. Refer to Figure 2, and select a splice and *maximum* size wire for the tool.
2. Position the splice 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 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 6, REPLACEMENT AND REPAIR.

6. REPLACEMENT AND REPAIR

Customer-replaceable parts are listed in Figure 5. 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:

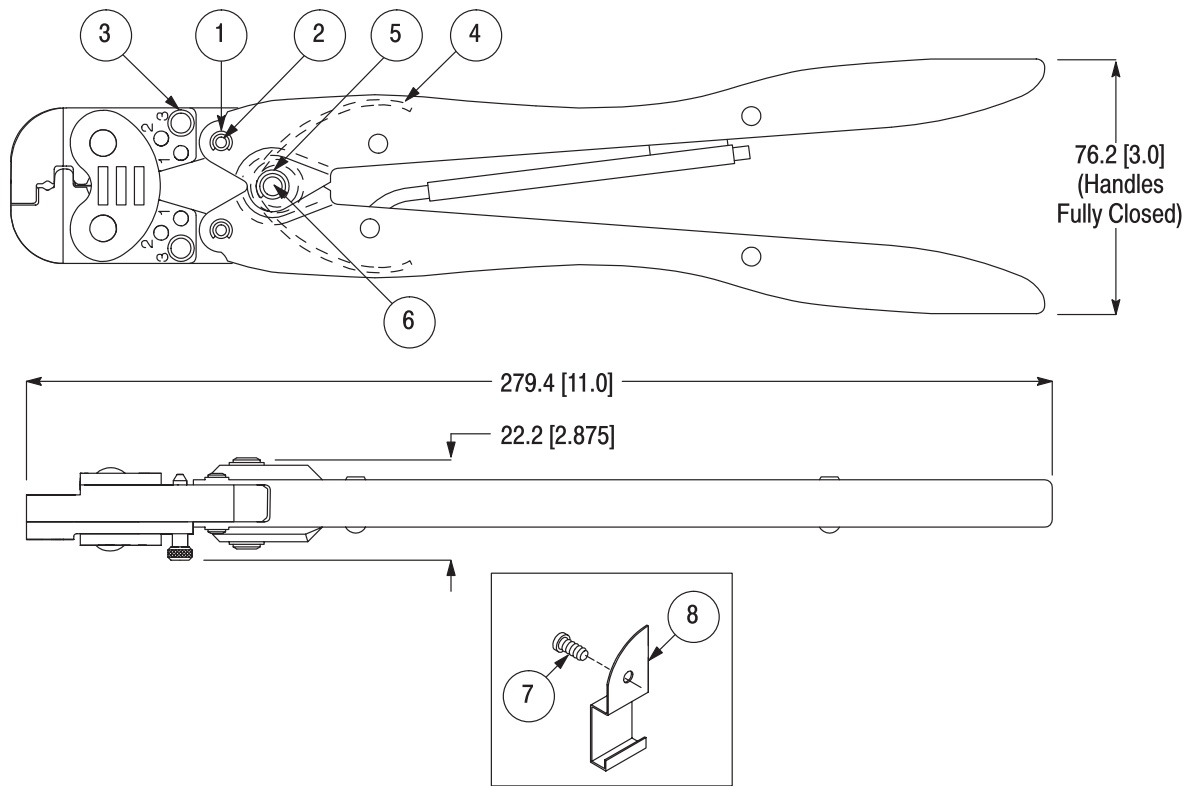
CUSTOMER SERVICE (038-035)
 TYCO ELECTRONICS CORPORATION
 PO BOX 3608
 HARRISBURG PA 17105-3608

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

7. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated document to corporate requirements
- Removed superceded Tool 45329
- Changed “die” to “jaw”
- Added clarity to Steps 5 and 7 of Paragraph 5.4



REPLACEMENT PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	RING, Retaining	4
2	1-23619-6	PIN, Retaining	2
3	39207	PIN, Insulation Crimping Adjustment	2
4	39364	SPRING	1
5	21045-6	RING, Retaining	2
6	2-23620-9	PIN, Retaining	1
7	3-21016-5	SCREW	1
8	300328	LOCATOR (Stop)	1

Figure 5