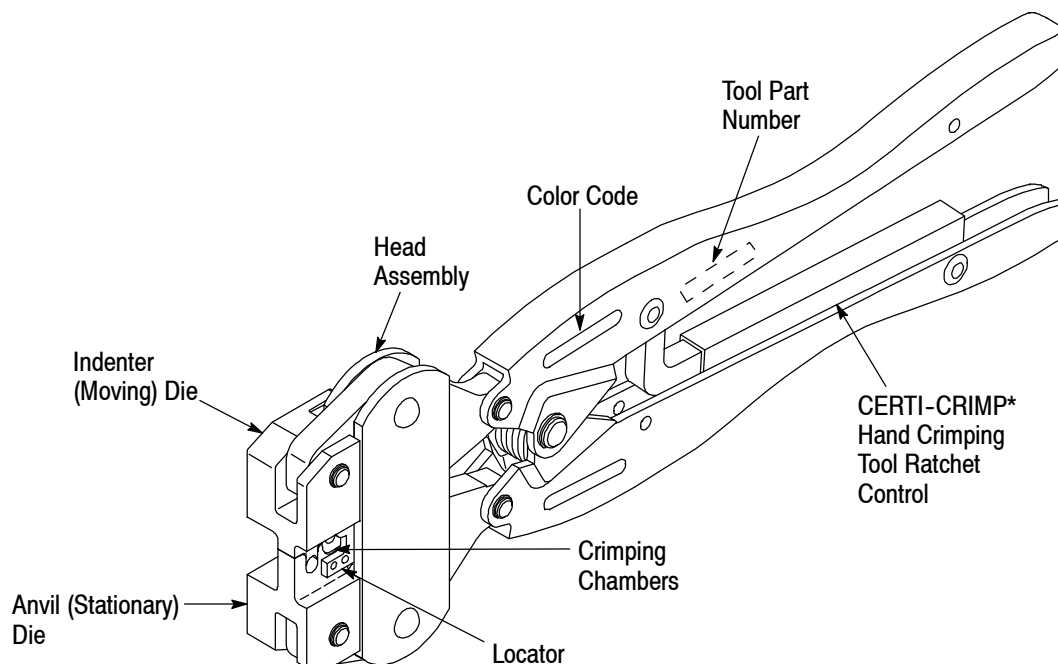


## PROPER USE GUIDELINES

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.



TOOL		WIRE		STRATO-THERM* TERMINAL OR SPLICE*	
PART NUMBER	COLOR CODE	SIZE (AWG)	INSUL DIA (mm [in.])	PART NUMBER	COLOR CODE
45730	Yellow	26-24	1.02-1.27 [.040-.050]	324370	Yellow
46467	White	22	1.02-1.27 [.040-.050]	133327	Aluminum
		22-20	1.17-1.60 [.046-.063]	151475	
		22-20		329645	
46468	Red	22-20	1.73 [.068] Max	132082	Red
		18-16	1.63-2.23 [.064-.088]	329647	
46469	Blue	14	2.03-3.81 [.080-.150]	322694 322695	White
46470	Yellow	12-10	1.78-3.05 [.070-.120]	133329 323060 323061 323062	Yellow

■ The product part numbers listed are not intended to be a complete list. Refer to Catalog 82011 or contact Product Information at the number listed at the bottom of this page.

Figure 1

## 1. INTRODUCTION

SADA Hand Tools 45730, 46467, 46468 (shown in Figure 1), 46469, and 46470 crimp STRATO-THERM Terminals and Splices listed in Figure 1 onto stranded or solid wire.

### NOTE



*All dimensions on this document are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for identification only and 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 head assembly with a stationary (anvil) die, moving (indenter) die, and locator. When closed, the dies form two crimping chambers. The dies apply the "W" crimp to the wire barrel and "O" crimp to the insulation barrel of the terminal or splice.

The locator assists in positioning the terminal or splice between the dies. The CERTI-CRIMP hand crimping tool ratchet control ensures full crimping of the product. Once engaged, the ratchet will not release until the handles have been FULLY closed. The back of each tool is marked with the part number and color code.



**CAUTION** The dies bottom before the ratchet releases. This feature ensures maximum electrical and tensile performance of the crimp. Do NOT re-adjust the ratchet.

### 3. PREPARATION

1. For splices, slide the insulation bushings onto the end of each wire. Slide the sleeve (or insulation tubing) onto one of the wires. Refer to Figure 2.
2. Strip the wires according to the dimensions shown in Figure 2. Do NOT nick or cut the wire strands.

$$B \text{ (Length of Wire Barrel)} + 0.79 \text{ [.031]} = \text{Strip Length}$$

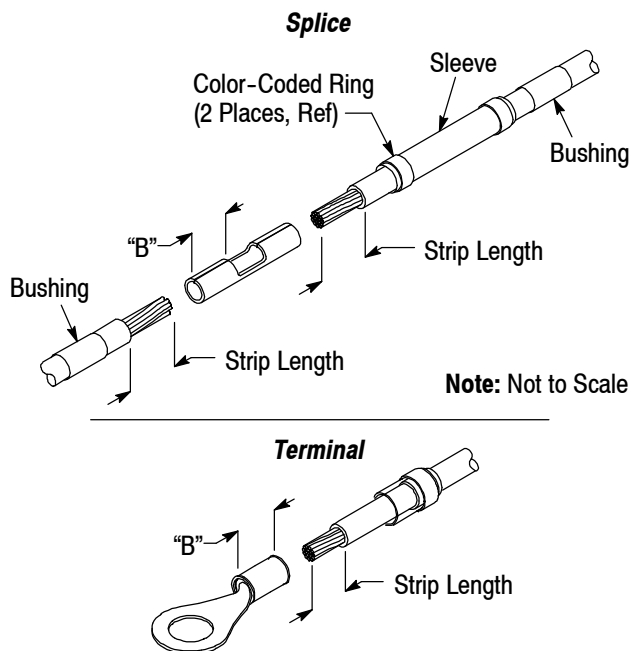
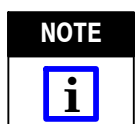


Figure 2

### 4. CRIMPING PROCEDURE



**NOTE** These tools are coated with a preservative to prevent rust or corrosion. Wipe the preservative from the tool, particularly from the dies, before using the tool.

1. Open the tool dies by squeezing the tool handles together until the ratchet releases.

2. Position the terminal or splice onto the anvil die so that the end of the wire barrel rests against the locator. See Figure 3.

3. Squeeze the tool handles just enough to firmly hold the wire barrel in place. Take care not to deform the wire barrel.

4. Insert the stripped end of the wire into the wire barrel until the wire bottoms. Refer to Figure 3.

5. Holding the wire in place, squeeze the tool handles until the ratchet releases. Allow the handles to open FULLY.

**Note:** Splice Shown (Applies to Terminal Also)

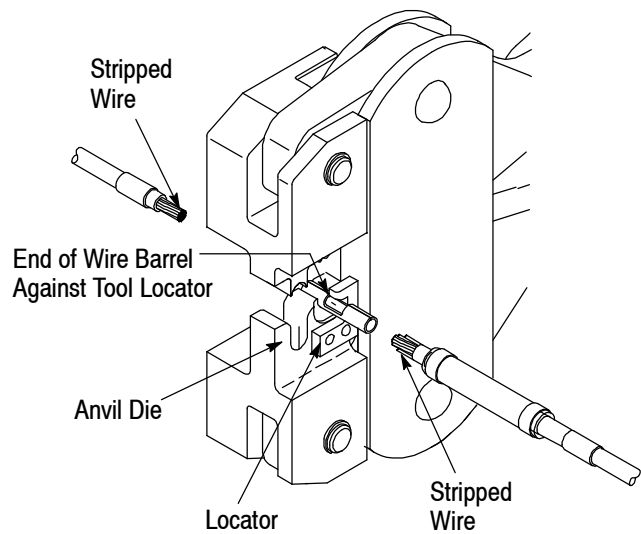


Figure 3

6. For splices, re-position the splice onto the anvil die so that the end of the uncrimped wire barrel rests against the locator, and repeat Steps 3 through 5.

7. Remove the terminal or splice from the tool, and inspect the crimp according to Figure 4.

**Note:** Splice Shown (Applies to Terminal Also)

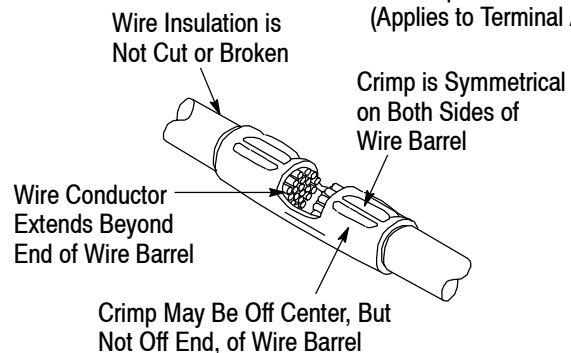


Figure 4

For splices, continue with the following:

8. Slide the bushings against the wire barrels, then center the sleeve over the splice. Make sure that the bushings and sleeve are properly positioned according to the dimensions shown in Figure 5.

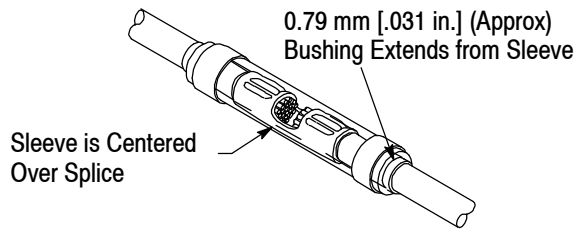


Figure 5

9. Position the splice onto the anvil die so that the color-coded ring on the sleeve is centered in the die and the end of the sleeve rests against the locator. See Figure 6.

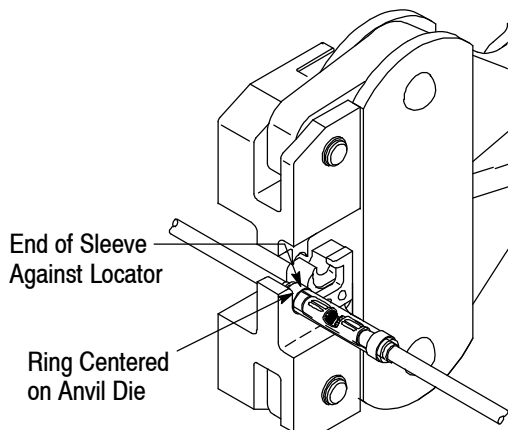


Figure 6

10. Squeeze the tool handles just enough to firmly hold the color-coded ring in place. Take care not to deform the ring. If necessary, move the wire back and forth until the splice is centered in the sleeve.
11. Squeeze the tool handles until the ratchet releases. Allow the handles to open FULLY, and remove the splice from the tool.
12. Re-position the splice onto the anvil die so that the uncrimped color-coded ring on the sleeve is centered in the die and the end of the sleeve rests against the locator.
13. Squeeze the tool handles until the ratchet releases. Allow the handles to open FULLY.
14. Remove the splice from the tool, and inspect the crimp according to Figure 7.

## 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 tool is inspected before being shipped; however, it is recommended that the tool be inspected immediately upon 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.*

### 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. When not in use, keep the tool handles closed to prevent objects from becoming lodged in the dies. 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:

- Tool used daily—lubricate daily
- Tool used occasional—lubricate weekly
- Tool used weekly—lubricate monthly

Do NOT oil excessively. 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 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 handles do not open quickly and fully, the spring is defective and must be replaced. See Section 6, REPLACEMENT AND REPAIR.

3. Inspect head assembly for worn, cracked, or broken areas. 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 a plug gage conforming to the dimensions provided in Figure 8. To gage the crimping chamber, proceed as follows:

1. Remove traces of oil or dirt from the crimping chamber and plug gage.
2. Close the tool handles until it is evident that the dies have bottomed; then hold in position. Do NOT force the dies beyond initial contact.
3. Align the GO element with the wire barrel crimping chamber. Push the element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber.
4. 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.
5. Follow the same procedure for the insulation barrel crimping chamber using proper plug gage.

If crimping chambers conform 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, 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. CERTI-CRIMP Hand Crimping Tool Ratchet Control Inspection

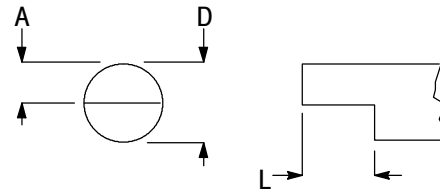
The ratchet on these tools should be inspected to ensure that the ratchet does not release prematurely, allowing the dies to open before they have fully bottomed. Obtain a 0.025 mm [.001 in.] shim that is suitable for checking the clearance between the bottoming surfaces of the dies.

Proceed as follows:

1. Select the *maximum* size wire for the tool, and strip the wire according to Figure 2.

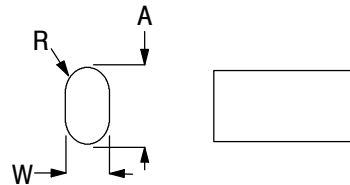
2. Position the terminal or splice in the tool according to Section 3.

#### Suggested Plug Gage Design for Wire Barrel Crimping Chamber



TOOL	GAGE ELEMENT			
	"A" DIMENSION		"D" (Diameter) ±0.00 [.000]	"L" (Length) (Min)
	GO	NO-GO		
45730	0.660-0.668 [.0260-.0263]	0.810-0.813 [.0319-.0320]	1.58 [.062]	12.7 [.50]
46467	0.940-0.947 [.0370-.0373]	1.090-1.092 [.0429-.0430]	2.34 [.093]	
46468	1.295-1.303 [.0510-.0513]	1.445-1.448 [.0569-.0570]	3.14 [.125]	
46469	1.511-1.519 [.0595-.0598]	1.661-1.664 [.0654-.0655]	3.96 [.156]	
46470	1.930-1.938 [.0760-.0763]	2.080-2.083 [.0819-.0820]	3.96 [.156]	

#### Suggested Plug Gage Design for Insulation Barrel Crimping Chamber



TOOL	GAGE ELEMENT		
	"A" DIMENSION		"W" (Width) ±0.00 [.000]
	GO	NO-GO	
45730	2.972-2.979 [.1170-.1173]	3.096-3.099 [.1219-.1220]	2.77 [.109]
46467	3.277-3.284 [.1290-.1293]	3.401-3.404 [.1339-.1340]	2.77 [.109]
46468	4.394-4.402 [.1730-.1733]	4.519-4.521 [.1779-.1780]	3.18 [.125]
46469	4.978-4.986 [.1960-.1963]	5.103-5.105 [.2009-.2010]	3.96 [.156]
46470	6.426-6.434 [.2530-.2533]	6.551-6.553 [.2579-.2580]	5.54 [.218]

Figure 8

3. Holding the wire in place, squeeze the tool handles until the ratchet releases. Hold the handles in this position, maintaining just enough tension to keep the dies closed.

4. Check the clearance between the bottoming surfaces of the dies. 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.

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

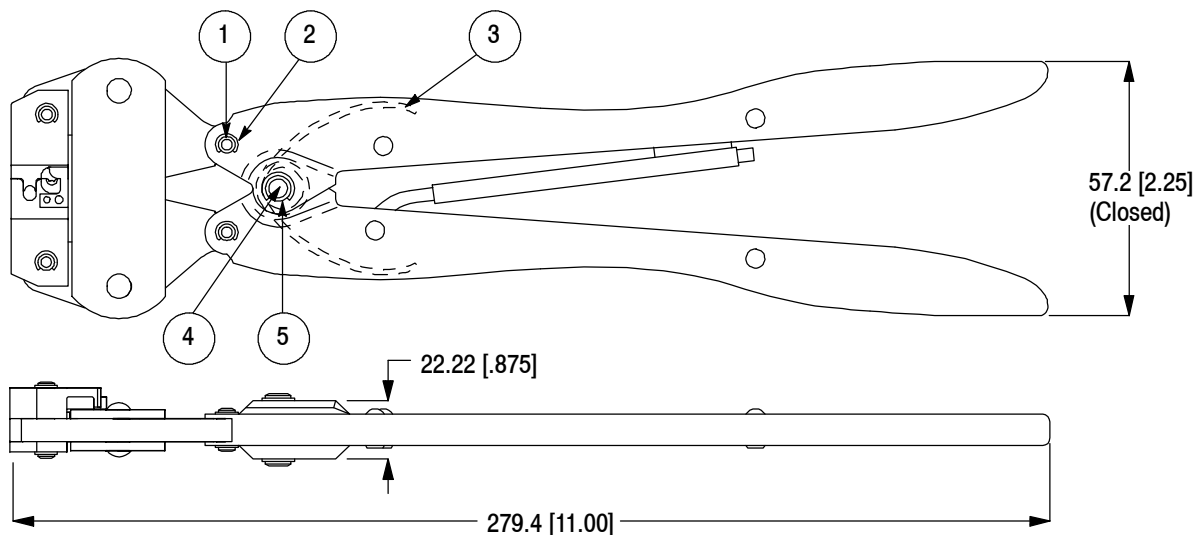
## 6. REPLACEMENT AND REPAIR

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 Tyco Electronics Representative, or call

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

## 7. REVISION SUMMARY

- Updated document to corporate requirements
- Added new information for hand tool 46467 in table in Figure 1



### REPLACEMENT PARTS

ITEM	PART NUMBER FOR TOOL					DESCRIPTION	QTY PER TOOL
	45730	46467	46468	46469	46470		
1	8-59558-2	1-23619-6	8-59558-2	8-59558-2	300388	PIN, Retaining	2
2	21045-3					RING, Retaining	8 <input type="checkbox"/>
3	39364					SPRING	1
4	2-23620-9					PIN, Retaining	1
5	21045-6					RING, Retaining	8

☐ Tool 46470 requires 12 of these retaining rings.

Figure 9