

**Product:** Closed End Splices Type EC  
**Product Catalog:** 65472

Figure 1

## 1. INTRODUCTION

Pneumatic Crimping Head 354422-2 (shown in Figure 1) crimps pre-insulated closed end splices Type EC, or similar splices, onto wire sizes 22 through 11<sup>1</sup>/<sub>2</sub> AWG. See Figure 2. The crimping head is used with 626 Pneumatic Tooling Assemblies 189721-1, 189722-1, 189723-1, and 189724-1; the head may also be used with "2614" Series Pneumatic Tools.

This instruction sheet provides recommended procedures for crimp head installation and removal, crimping procedures, and maintenance and inspection. For information concerning 626 pneumatic tooling setup and operation, refer to customer manual 409-5862. Read these and referenced instructions thoroughly before using the crimping head.

### NOTE



*Dimensions in this instruction sheet are in metric units [with U.S. customary units 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 pneumatic crimping head is designed with integral jaws which close in an arc-like motion.

After an operator locates the splice between the jaws and inserts the stripped wire into the splice, the tool is activated to crimp the splice to the wires.

## 3. INSTALLATION AND REMOVAL (Figure 1)

### DANGER



*Certain precautions should be taken by the operator to avoid personal injury or damage to the tool. Refer to the instructions packaged with the tooling assembly for operation and safety precautions concerning the tool.*

### 3.1. Installation

### DANGER



*To avoid personal injury, ALWAYS disconnect pneumatic tool from air supply before installing or removing the crimping head.*

### DANGER



*DO NOT operate pneumatic tool without the proper crimping head installed. After crimping head is installed, make sure that the pivot pins are FULLY tightened to avoid personal injury and damage to the tool.*

1. Remove pivot pins from tool holder assembly. Refer to Figure 1.

2. Insert crimping head into tool holder as shown in Figure 1.

CLOSED END SPLICE		WIRE COMBINATION CHART	WIRE-		WIRE STRIP LENGTH (mm [in.])
PART NUMBER	TYPE		CMA (Circular Mil Area)	SIZE AND TYPE	
53915-1	EC	408-1003	8600	18 AWG Solid	10.72-11.51 [.421-.453]
328730					
55929-1	EC	408-8807	7400		
54316-1	Pressure	408-2907	8100	Stranded	

■ Maximum recommended wire combination for this head.

Figure 2

3. After the crimping head is properly aligned, insert and tighten pivot pins. See Figure 1.

**NOTE**

*Tyco Electronics recommends using Loctite removable threadlock<sup>®</sup> 242, or equivalent, to prevent the pivot pins from loosening.*

4. Connect pneumatic tool to an adequate air supply between 620 and 690 kPa [90 and 100 psi]. For specific information on air line requirements and air hose installation, refer to the customer manual packaged with the pneumatic tool.

**3.2. Removal****DANGER**

*To avoid personal injury, ALWAYS disconnect tool from air supply before removing head.*

Remove pivot pins from crimping head; then remove crimping head from tool holder assembly.

**4. CRIMPING PROCEDURE** (Figure 3)**DANGER**

*To avoid personal injury, always keep fingers clear of crimping jaws when operating the tool.*

**DANGER**

*To avoid personal injury or damage to tool, make frequent visual checks to ensure that the pivot pins are fully tightened. If loose, tighten the pins, as described in Section 3, INSTALLATION AND REMOVAL.*

1. Strip wire to dimensions shown in Figure 2. DO NOT nick the wire strands or use wires with nicked or missing conductor strands.
2. Insert stripped wire into splice until the end of the conductor bottoms against the splice.
3. Place splice through the locator and into the crimping jaws. The skirt of the splice should be

positioned against the locator as shown in Figure 3.

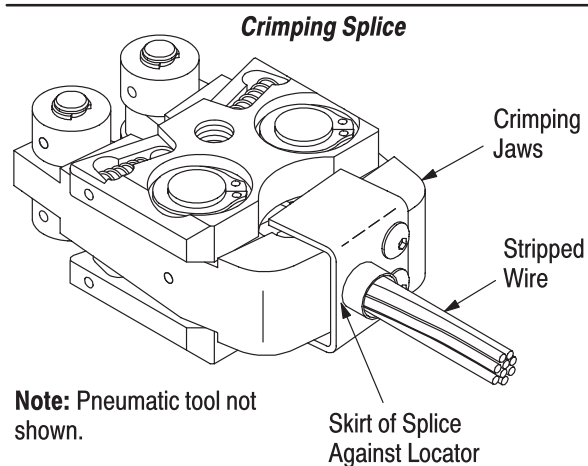


Figure 3

4. Activate the pneumatic tool to crimp the wire to the splice. When the crimp is completed, remove the crimped splice from the crimping jaws.

5. Inspect the crimp to ensure that it is centered on the wire barrel and the stripped wires are fully bottomed in the splice. See Figure 4.

**5. MAINTENANCE AND INSPECTION**

Tyco Electronics recommends that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations. The pneumatic crimping head should be inspected once a month. Frequency of inspection should be adjusted to suit your requirements through experience. Frequency of inspection depends on:

1. The care, amount of use, and handling of the crimping head.
2. The type and size of the products crimped.
3. The degree of operator skill.

<sup>®</sup> Trademark of Loctite Corporation

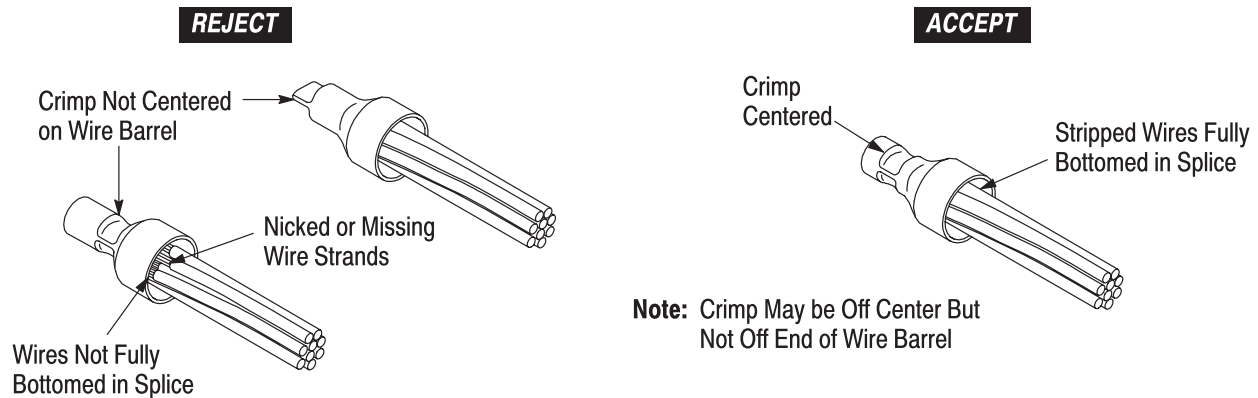
**Crimp Inspection**

Figure 4

4. The presence of abnormal amounts of dust and dirt.

5. Your own established standards.

Each crimping head is thoroughly inspected before packaging. Since there is the possibility of crimp head damage during shipment, heads should be inspected immediately upon arrival at your facility in accordance with Paragraph 5.2,C, Gaging the Crimping Chamber, and Figure 5.

**5.1. Cleaning**

Remove dust, moisture, and other contaminants with a clean, soft brush, or a soft, lint-free cloth. Do NOT use objects that could damage the crimping head. Re-lubricate the head, as instructed in Paragraph 5.2,B, Lubrication, before placing it back into service.

**5.2. Periodic Inspection****A. Visual Inspection**

1. Inspect the head for missing pins and retaining rings. If parts are missing or defective, replace them by referring to Section 6.
2. Check all bearing surfaces for wear. Make sure the rollers turn freely with minimal resistance. Replace any worn parts.
3. Inspect the crimp area for flattened, chipped, or broken areas. Although jaws may gage within permissible limits, worn or damaged jaw closure surfaces are objectionable and will affect the quality of the crimp.

**B. Lubrication**

Lubricate all pins, pivot points, and bearing surfaces with a high quality grease. Tyco Electronics

recommends using Molykote<sup>●</sup> grease, which is a commercially available lubricant. Lubricate according to the following schedule:

Head used in daily production—lubricate daily  
 Head used daily (occasional)—lubricate weekly  
 Head used weekly—lubricate monthly

The crimping jaws and rollers may be lubricated by using the oiling holes in the rollers and jaws. Insert a syringe filled with the appropriate lubricant into the holes. See Figure 5. The needle of the syringe should be smaller than 1.57 mm [.062 in.] in diameter. These syringes can be purchased from:

Techni-Tool, Inc.  
 Plymouth Meeting, PA  
 (610) 941-2400

Wipe excess grease from crimping head, particularly from jaw closure areas. Grease transferred from the jaw closure area onto certain terminations may affect the electrical characteristics of an application.

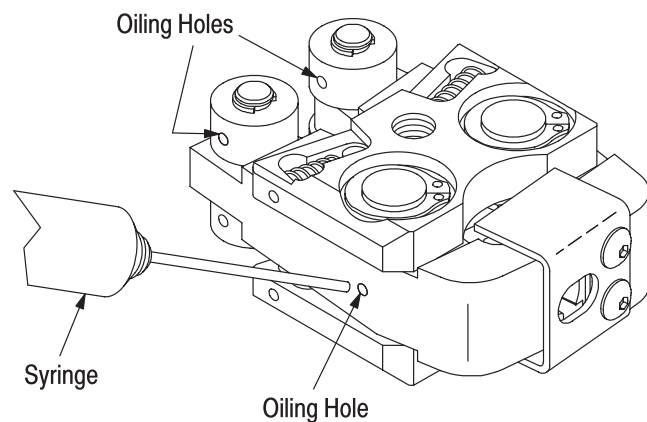


Figure 5

● Trademark of Dow Corning Corporation

### C. Gaging the Crimping Chamber

The crimping head is inspected for proper jaw closure before packaging. An inspection should be performed periodically to check the jaw closure for excessive wear. The jaw closure inspection is accomplished using the plug gage. Tyco Electronics neither manufactures nor sells plug gages. A suggested plug gage design and dimensions of the plug gage are provided in Figure 6. Proceed as follows:

1. DISCONNECT AIR SUPPLY and remove crimping head from tool. Refer to Paragraph 3.2, Removal.
2. Remove oil and dirt from the bottom of the jaw surfaces, jaw closure surfaces, and plug gage element surfaces.
3. Simultaneously, squeeze the front half of both crimping jaws until the jaws are bottomed.
4. Align the GO element with the crimping chamber as shown in Figure 6. Push the GO element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber, as shown in Figure 6.
5. Align the NO-GO element with the crimping chamber; then try to insert it straight into the crimping chamber. The NO-GO element may start entry but must not pass completely through, as shown in Figure 6.

If the crimping chamber conforms to the gage inspection, the head may be considered dimensionally correct and should be lubricated with a THIN coat of any high quality SAE 20 motor oil. If the crimping chamber does not conform to the gage inspection, refer to Section 6, REPLACEMENT AND REPAIR.

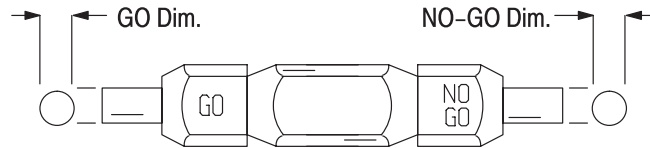
For additional information about the use of a plug gage, see instruction sheet 408-7424.

### 6. REPLACEMENT AND REPAIR

Customer-replaceable parts are listed in Figure 7. 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 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

#### Suggested Plug Gage Design



GAGE ELEMENT DIAMETER (mm [in.])	
GO	NO-GO
2.896-2.900 [.1140-.1143]	3.142-3.150 [.1237-.1240]

#### Inspection of Crimping Chamber

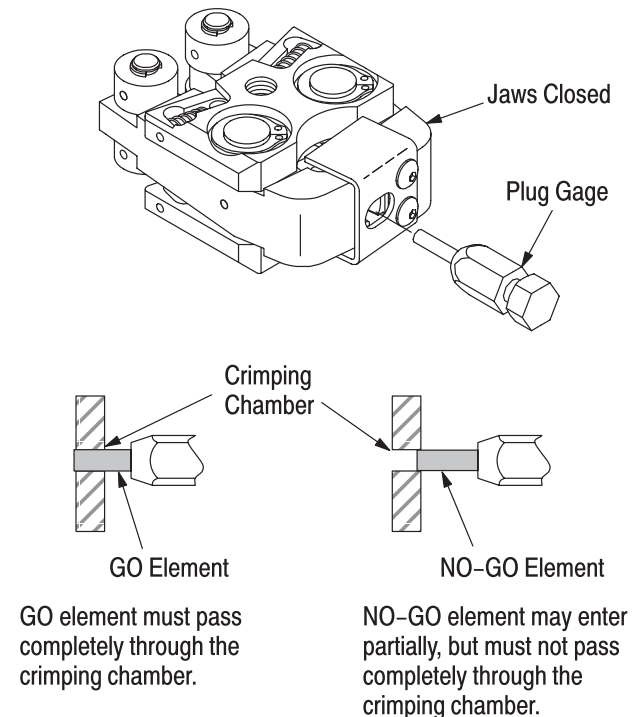


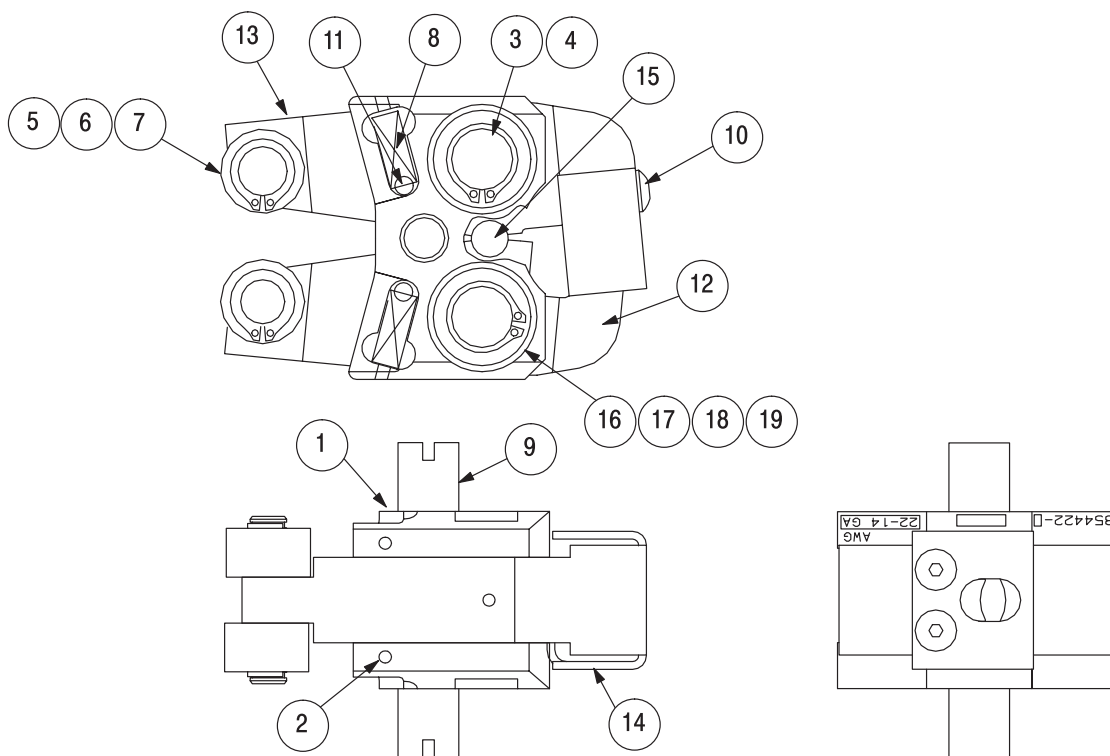
Figure 6

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

### 7. REVISION SUMMARY

Since the previous release of this sheet, the following changes were made:

- Updated logo and format.
- Updated company name and contact references.



## REPLACEMENT PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER HEAD
1	224302-1	LINK	2
2	8-21028-7	PIN, Spring	4
3	224301-2	PIN, Grooved, Straight	2
4	1-21028-0	RING, Retaining	4
5	314479-5□	ROLLER, Cam	4
6	224301-1□	PIN, Grooved, Straight	2
7	21048-7	RING, Retaining	4
8	28922-5□	SPRING, Compression	4
9	354425-1	PIN, Pivot	2
10	1-21002-3	SCREW, Button Head Cap, 4-40 × .25	2
11	224259-1	SPRING, Post	2
12	354423-2	INDENTER	1
13	354424-2	ANVIL	1
14	354428-1	LOCATOR, 22-10	1
15	3-59559-9	PIN, Rocker	1
16	301185-9	SHIM	As Required
17	301185-8	SHIM	As Required
18	301185-7	SHIM	As Required
19	301185-6	SHIM	As Required

□ Recommended customer spares

Figure 7