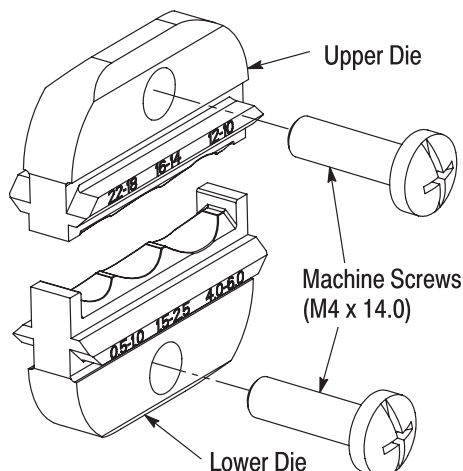


## PROPER USE GUIDELINES

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.



**NOTE:** Die set 1976357-1 has only one crimp nest.

| Die Set<br>Part<br>Number | Raychem DuraSeal Terminals and Splices |        |                                       |                          |                        |
|---------------------------|----------------------------------------|--------|---------------------------------------|--------------------------|------------------------|
|                           | Type                                   | Color  | Wire Size<br>mm <sup>2</sup><br>(AWG) | Insulation<br>Range      | Strip<br>Length        |
| 1804039-1                 | Terminal                               | Red    | 0.5-1.0<br>[22-18]                    | 1.40-4.00<br>[.055-.160] | 5.5-6.5<br>[.215-.255] |
|                           |                                        | Blue   | 1.5-2.5<br>[16-14]                    | 2.00-4.60<br>[.080-.181] |                        |
|                           |                                        | Yellow | 3.0-6.0<br>[12-10]                    | 2.80-6.50<br>[.110-.255] |                        |
|                           | Splice                                 | Red    | 0.5-1.0<br>[22-18]                    | 1.40-3.70<br>[.055-.146] | 6.0-10.0<br>[.24-.39]  |
|                           |                                        | Blue   | 1.5-2.5<br>[16-14]                    | 2.00-4.60<br>[.080-.181] | 6.0-10.0<br>[.24-.39]  |
|                           |                                        | Yellow | 3.0-6.0<br>[12-10]                    | 2.80-6.50<br>[.110-.255] | 10.0-13.0<br>[.39-.51] |
| 1976357-1                 | Splice                                 | Yellow | 0.15-0.25<br>[26-24]                  | 1.40-3.00<br>[.055-.118] | 6.0-8.0<br>[.24-.31]   |
|                           |                                        | Green  | 0.25-0.35<br>[24-22]                  | 0.90-3.00<br>[.035-.118] | 6.5-9.0<br>[.255-.355] |

Figure 1

## 1. INTRODUCTION

This instruction sheet provides information for SDE Die Sets 1804039-1 and 1976357-1 which is designed to crimp Raychem DuraSeal Crimp Terminals and Splices. The die assemblies will fit into the tools shown in Figure 4.

### NOTE



Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures and illustrations are for reference only, and are not drawn to scale.

## 2. DESCRIPTION

The 1804039-1 die set has three crimp sections and the 1976357-1 die set has one crimp section which are marked to identify the wire sizes used with the products listed in the table in Figure 1. The AWG wire sizes are 26-24, 24-22, 22-18, 16-14, and 12-10.

## 3. DIE INSTALLATION

Refer to the specific tooling documents provided in Figure 4 for die installation information for those tools. Since each application tool is unique, each tool will have their own specific instructions for die installation.

## 4. CRIMPING PROCEDURE

Strip the wire according to the dimensions listed in Figure 1. The strip length is determined by the terminal or splice and by the wire size. Do not nick or cut the wire strands. Proceed as follows:

1. Close the tool handles until the ratchet releases. Allow the tool handles to open fully.
2. While holding the terminal or splice in place, squeeze the tool handles together just until the jaws begin to close on the wire barrel. Make sure the tool crimp jaws are centered on the crimp sleeve wire barrel. Refer to Figure 2. Do NOT deform the wire barrel.
3. Insert the stripped wire into the terminal or splice making sure that the wire insulation does not enter the wire barrel.

### NOTE



Be sure the wire is stripped to the length indicated in Figure 1.

### NOTE



For proper crimp location, make sure to position the terminal or splice in the die set correctly. See Figure 2.

4. While holding the wire in place, squeeze the tool handles together until the ratchet releases, then allow the tool handles to open fully. Remove the terminal or splice.

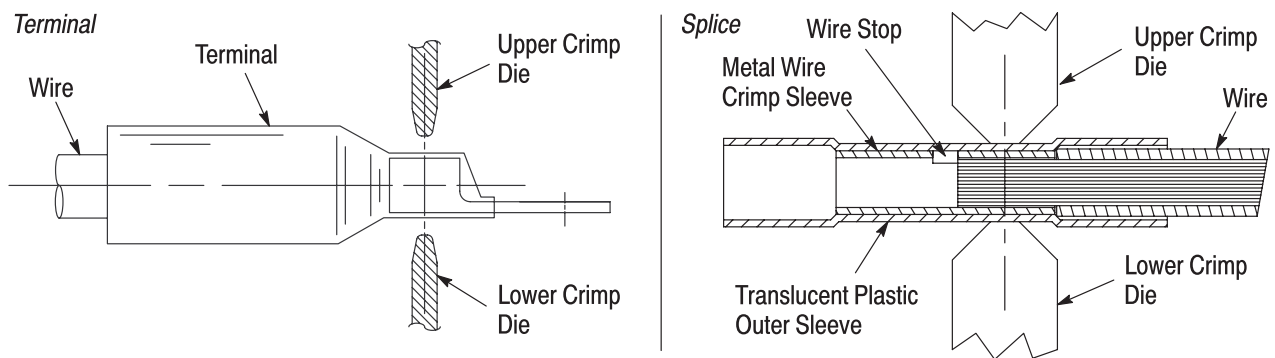


Figure 2

5. If a splice is being crimped, repeat Steps 2 to 4 for the other crimp side of the splice.

**NOTE**

*If splice cannot be turned for crimping other half, turn the tool around.*

**CAUTION**

*Damaged splices should not be used. If a damaged splice is evident, it should be removed and replaced with a new one. Splices should not be reterminated.*

## 5. CRIMP INSPECTION

Inspect crimped terminals and splices by checking to make sure the splice has been crimped in the center of the wire barrel.

Poor crimps can be avoided by carefully following the procedures provided in Section 4, and by following the tool maintenance procedures provided in your hand tool instruction sheet.

## 6. DIE INSPECTION

### 6.1. Visual Inspection

Inspection of the crimping dies should be made on a regular basis to ensure that they have not become worn or damaged. Inspect the crimp sections for flattened, chipped, worn, or broken areas. If damage or abnormal wear is evident, the dies must be replaced.

### 6.2. Measured Die Opening

The dies will perform properly as long as: (1) the product specified is correct for the application, (2) the specified die set is used, (3) the die set has been measured to ensure that the openings are correct, and (4) the dies bottoms.

## 7. CRIMP HEIGHT INSPECTION

This inspection requires the use of plug gages conforming to the dimensions provided in Figure 3.

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 gage.
2. Close the tool handles, or cycle the crimp tooling until the dies have bottomed. Do NOT force dies beyond initial contact.
3. Align the GO element with the crimping chamber. Push element straight into the crimping chamber without using force.

The GO element must pass completely through the crimping chamber. See Figure 3.

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. See Figure 3.

If the crimping chamber conforms to the gage inspection, the dies are considered dimensionally correct, and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, the dies must be returned to Tyco Electronics for further evaluation. Refer to Section 7, REPAIR/REPLACEMENT.

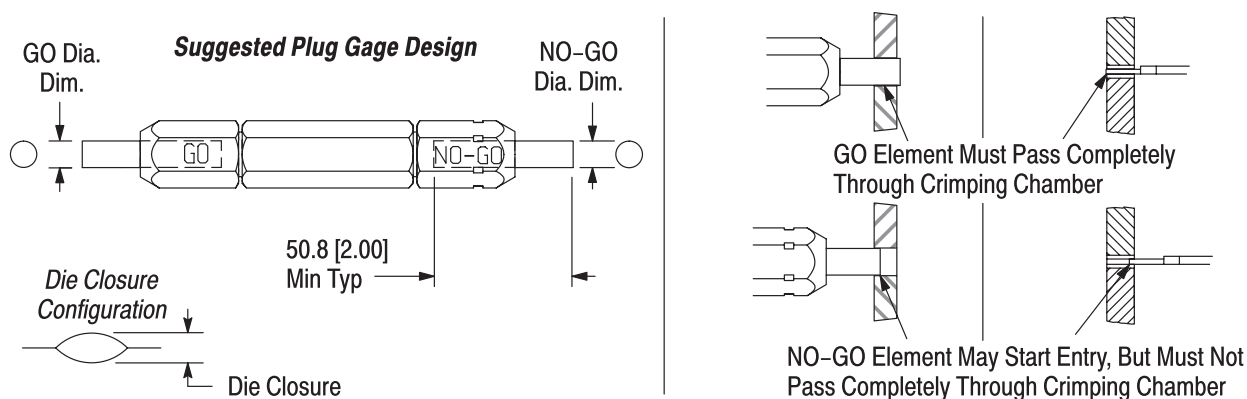
For additional information regarding the use of a plug gage, refer to Tyco Electronics Instruction Sheet 408-7424.

## 8. REPAIR/REPLACEMENT

If the dies do not meet the GO, NO-GO gage dimensions provided in Figure 3, the tool and/or dies are defective and must be replaced.

Order replacements 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  
PO BOX 3608  
HARRISBURG PA 17105-3608



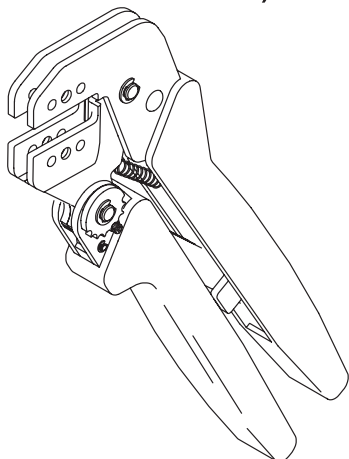
| Die Set   | SDE Die Sets for Raychem DuraSeal Crimp Splices |             |             |                           |                           |
|-----------|-------------------------------------------------|-------------|-------------|---------------------------|---------------------------|
|           | Cavity                                          | Die Closure |             | Gage Elements             |                           |
|           |                                                 | GO          | NO-GO       | GO                        | NO-GO                     |
| 1804039-1 | 22-18                                           | 2.29 [.090] | 2.39 [.094] | 2.261-2.268 [.0890-.0893] | 2.410-2.413 [.0949-.0950] |
|           | 16-14                                           | 2.67 [.105] | 2.77 [.109] | 2.642-2.649 [.1040-.1043] | 2.791-2.794 [.1099-.1100] |
|           | 12-10                                           | 3.71 [.146] | 3.81 [.150] | 3.683-3.691 [.1450-.1453] | 3.833-3.835 [.1509-.1510] |
| 1976357-1 | 26-22                                           | 1.78 [.070] | 1.88 [.074] | 1.753-1.760 [.0690-.0693] | 1.902-1.905 [.0749-.0750] |

Figure 3

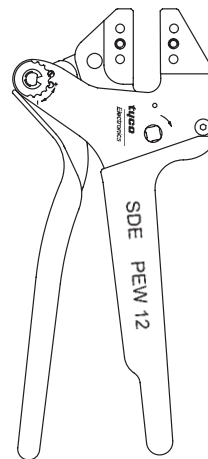
## 9. REVISION SUMMARY

- Updated document to corporate requirements
- Added new information to table in Figure 1
- Added “terminal” in conjunction with “splice” in most places
- Added new text to Paragraph 4.4
- Added new Paragraph 4.5
- Added new artwork to Figure 2

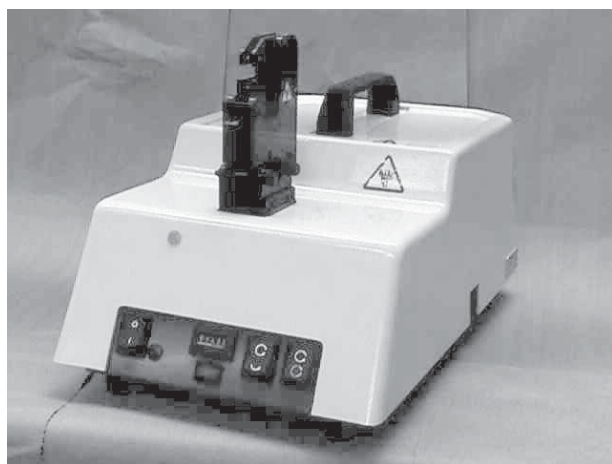
**PRO-CRIMPER III Hand Tool 354940-1**  
(Instruction Sheet 408-9930)



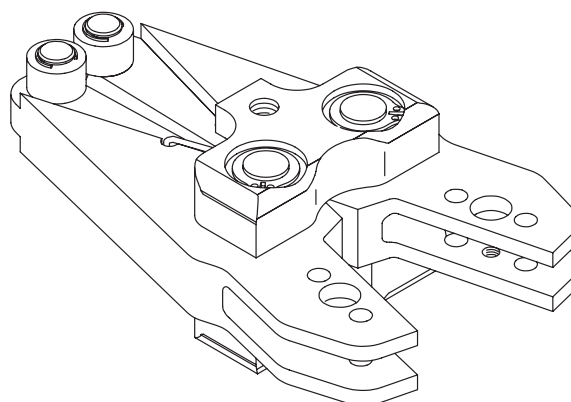
**SDE PEW-12 Hand Tool 9-1478240-0**  
(Instruction Sheet 408-8851)



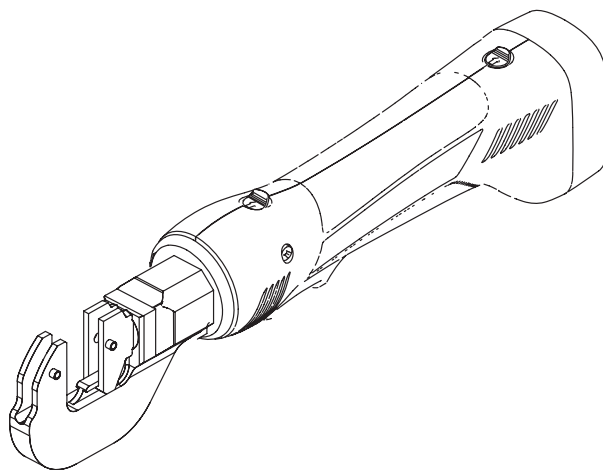
**SDE Bench Terminator 1490076-2**  
(Customer Manual 409-10052)



**626 Adapter 679304-1**  
(Instruction Sheet 408-4070)



**Battery Tool (Shouldered Die) 1725837-1, -2**  
(Customer Manual 409-10053)



**Battery Tool (Pin Die) 1213890-1, -2**  
(Customer Manual 409-10065)

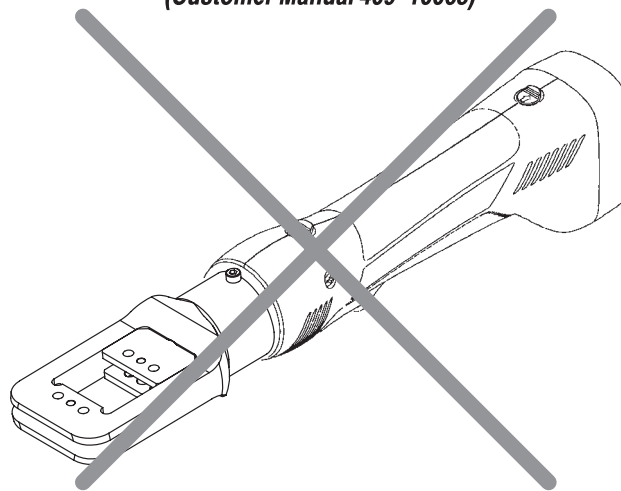


Figure 4