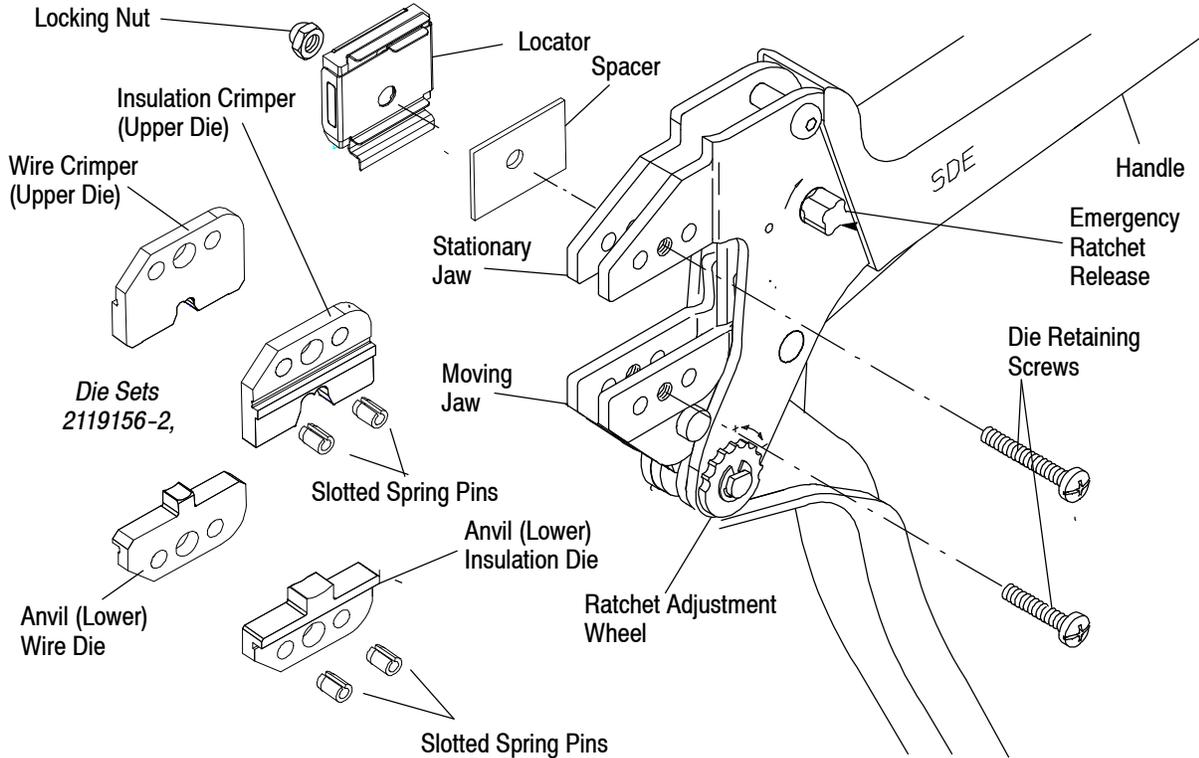


**PROPER USE GUIDELINES**

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.



TE Crimp Tooling		UTILUX* Connector	Cable		Wire Insulation		
SDE-SA Tool	Die Assembly		Qty.	Cable Type mm [Inch]	Conductor Size	Dia mm [Inch]	Strip Length mm [Inch]
2119156-1	2119156-2	1-1659268-0 (H2698)	1	Advance Railway Cable ‡ SDI .75 24/0 .20	.75mm <sup>2</sup> [18]	3.0mm [.118]	5.0mm [.197]

Figure 1

**1. INTRODUCTION**

SDE-SA Commercial Hand Tool Assemblies for the UTILUX connectors consist of the tools and die sets shown in Figure 1. The tools consist of the of SDE-SA Frame Assembly 9-1478240-0 (Instruction Sheet 408-8851) and die sets listed in Figure 1. The tool is used to crimp the terminal number provided in the table in Figure 1.



*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.*

‡ Advance Wire and Cable Pty Ltd

Reasons for revision are given in Section 9, REVISION SUMMARY.

**2. DESCRIPTION**

The die set consists of an indenter (upper die) and an anvil (lower die). The tool frame holds a die assembly with one crimping chambers. See Figure 1. Die retaining screws are used to secure the dies in the tool frame.

The tool frame features two jaws, a handle, ratchet adjustment wheel, and an emergency ratchet release.

The tool features a ratchet and an adjustment wheel with a range of settings. The ratchet ensures that the tool has completed the cycle and will not release until the handles have been FULLY closed, unless the emergency ratchet release is rotated to manually release the ratchet. The adjustment wheel controls the amount of handle pressure exerted on the dies during the crimping procedure.



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

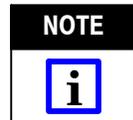
### 3. INSTALLATION AND REMOVAL OF DIE SET AND LOCATOR ASSEMBLY (Figure 1)

1. Open the tool handles and remove the two die retaining screws from the tool jaws.
2. Place the wire anvil so that the chamfered side and the marked surfaces face outward, when mounted in the moving jaw of the tool frame.
3. Insert the die retaining screw through the jaw and through the anvil die, and tighten the screw just enough to hold the die in place. Do *not* tighten the screw completely at this time.
4. Place the wire crimper so that the chamfered side and the marked surface face outward, when mounted in the stationary jaw of the tool frame.
5. Insert the die retaining screw through the jaw and through the crimper die, and tighten the screw just enough to hold the die in place. Do *not* tighten the screw completely at this time.
6. Carefully close the tool handles, making sure that the anvil and crimper align properly. Continue closing the tool handles until the ratchet in the tool frame has engaged sufficiently to hold the anvil and crimper in place, then tighten both die retaining screws.
7. Place the nut onto the end of the long screw and tighten the nut enough to hold the locator assembly in place.
8. To disassemble, close the tool handles until the ratchet releases, remove the nut, locator assembly, the four die retaining screws, and slide the anvil and crimper out of the tool jaws.



**NOTE** The ratchet has detents with audible “clicks” as the handles are closed. The ratchet releases on the sixth “click”.

### 4. CRIMPING PROCEDURE



**NOTE** This tool is provided with a crimp adjustment feature. Initially, the crimp height should be verified as specified in Figure 3. Refer to Section 5, CRIMP HEIGHT INSPECTION, and Section 6, CRIMP HEIGHT ADJUSTMENT, to verify crimp height before using the tool to crimp desired contacts and wire sizes.

Refer to the table in Figure 1 and select wire of the specified size and insulation diameter. Strip the wire to the length indicated in Figure 1, taking care not to nick or cut wire strands.

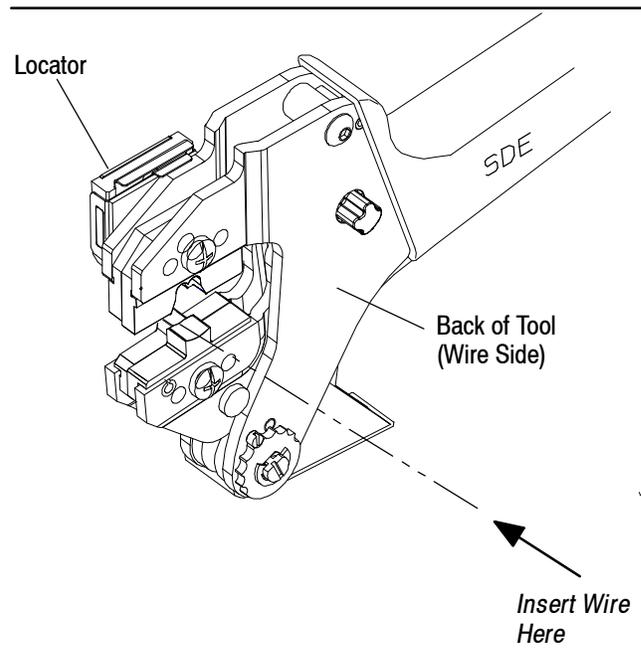
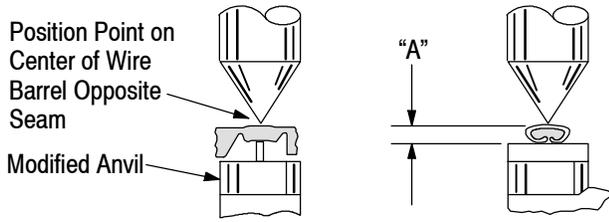


Figure 2

Select an applicable contact and identify the appropriate crimp section according to the wire size markings on the tool. Refer to Figure 2 and proceed as follows:

1. Hold the tool so that the back (wire side) is facing you. Squeeze tool handles together and allow them to open fully.
2. Holding the contact by the mating end, insert the contact through the front of the tool and into the appropriate crimp section.



TE Tooling	Wire Size Max mm <sup>2</sup> [AWG]	Crimp Section (Wire Size Markings)	Crimp Height Dimension "A"
2119156-[ ]	0.75 [18]	0.75	1.45 ± 0.50 [.057 ± .002]

Figure 3

3. Position the contact so that the open "U" of the wire barrel faces the top of the tool. Place the contact up into the nest so that the wire barrel is against the locator. See Figure centered on the wire crimper.



**CAUTION** Make sure that both sides of the wire barrel are started evenly into the crimping section. Do NOT attempt to crimp an improperly positioned contact.

**5. CRIMP HEIGHT INSPECTION**

Crimp height inspection is performed through the use of a micrometer with a modified anvil, commonly referred to as a crimp-height comparator. Tyco Electronics does not manufacture or market crimp-height comparators. Detailed information on obtaining and using crimp-height comparators can be found in Instruction Sheet 408-7424.

Proceed as follows:

1. Refer to Figure 1 and select a wire (maximum size) for each crimp section listed.
2. Refer to Section 4, CRIMPING PROCEDURE, and crimp the contact(s) accordingly.
3. Using a crimp height comparator, measure the wire barrel crimp height listed in Figure 3. If the crimp height conforms to that shown in the table, the tool is considered dimensionally correct. If not, the tool must be adjusted. Refer to Section 6, CRIMP HEIGHT ADJUSTMENT.



**CAUTION** Damaged product should not be used. If a damaged contact is evident, it should be replaced. Contacts must not be re-terminated.

**6. RATCHET (Crimp Height) ADJUSTMENT**

Although the ratchet is preset prior to shipment, it is important to verify the crimp height using a micrometer or caliper. General use and subsequent wear may cause the tool to go out of adjustment. It is recommended that crimp height be inspected, and the ratchet be adjusted, if necessary, on a regular basis. Refer to Figure 4, and proceed as follows:

1. If the crimp height is larger than recommended, remove the ratchet wheel adjustment screw and rotate the adjustment wheel counterclockwise (+) to a higher setting. Reinstall the screw. Repeat as required.
2. If the crimp height is smaller than recommended, remove the ratchet wheel adjustment screw and rotate the adjustment wheel clockwise (-) to a lower setting. Reinstall the screw. Repeat as required.
3. If the crimp cannot be made to conform to the recommended crimp height, the tool or die set must be replaced. See Section 8, REPLACEMENT.

**7. MAINTENANCE AND INSPECTION**

**7.1. Daily Maintenance**

1. Remove dust, moisture, and other contaminants with a clean, soft brush, or a clean, soft, lint-free cloth. DO NOT use any objects that could damage the dies or tool.
2. Make sure that the proper die retaining screws are properly secured.
3. When the tool is not in use, keep the handles closed to prevent objects from becoming lodged in the dies. Store the tool in a clean, dry area.
4. Remove all lubrication and accumulated film from the dies by immersing the dies in a suitable commercial degreaser.

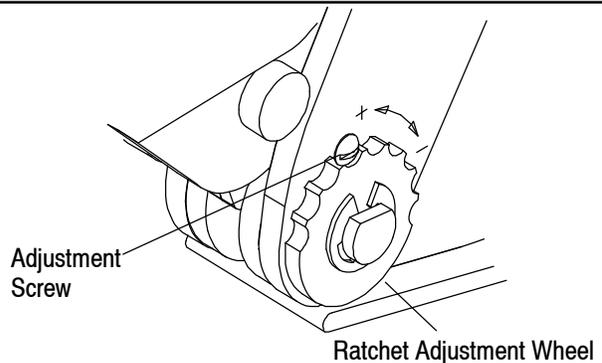


Figure 4

**7.2. Inspection**

Close the tool handles until the ratchet releases, and then allow them to quickly open freely. If they do not open quickly and fully, the spring is defective. See Section 8, REPLACEMENT.

**8. REPLACEMENT**

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:

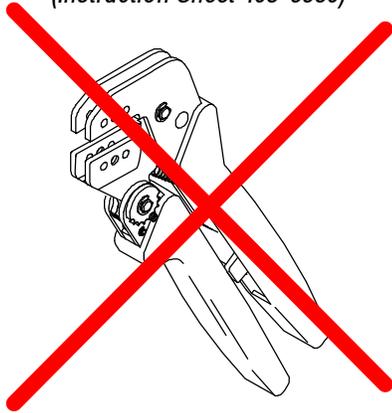
CUSTOMER SERVICE (038-035)  
 TYCO ELECTRONICS CORPORATION  
 PO BOX 3608  
 HARRISBURG PA 17105-3608

**9. REVISION SUMMARY**

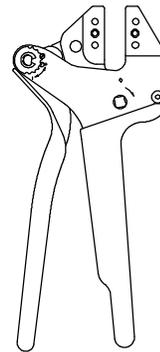
- Changed part number in table in Figure 1

*Die Sets 2063765-2, 2119156-2, and 1976147-2 Can be Used in Tools Show Below*

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



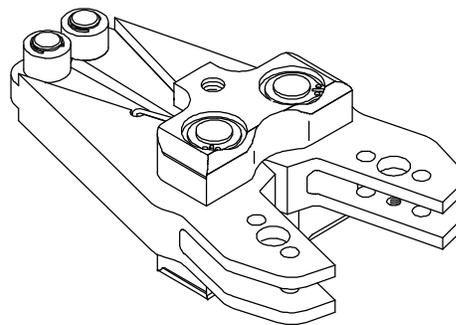
*SDE-SA Hand Tool 9-1478240-0  
 (Instruction Sheet 408-8851)*



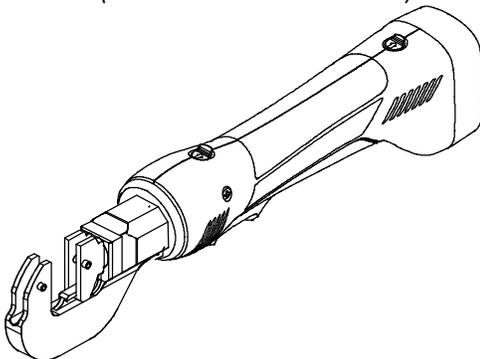
*SDE Bench Terminator 1490076-2  
 (Customer Manual 409-10052)*



*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)*

