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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.

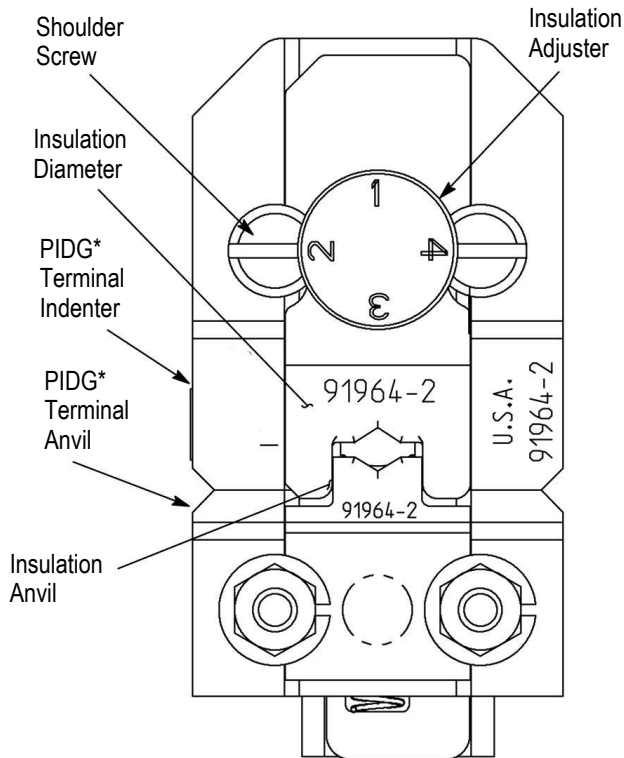


Figure 1

**1. INTRODUCTION**

SDE Premium Crimping Die Assemblies 91964-[ ] (Figure 1) are designed to crimp the connectors in Figure 2 onto wire when used in an SDE 1600 Power Unit 1583034-[ ]. Refer to Figure 2 for a list of connectors and the appropriate wire sizes.

Refer to instructions packaged with SDE 1600 Power Unit for information concerning the power unit 1583034-[ ].

**NOTE** *Dimensions in this document are in metric units [with U.S. customary units in brackets].*


**2. DESCRIPTION**

Each crimping die assembly consists of two indenter dies and two anvil dies, which when closed form two crimping chambers. The larger crimping chambers crimp the insulation of the connector onto the

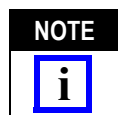
insulation of the wire. The smaller crimping chamber crimps the center contact onto the center conductor of the wire. Each die is held in the SDE 1600 power tool by shoulder screws.

**3. DIE INSTALLATION**

See Figure 3.

**3.1. Die Installation**

1. Turn off the SDE 1600 Power Unit and disconnect it from the power supply.
2. Depress the lever on the power unit to open the die holders.
3. Install indenter dies in the stationary jaw of the tool frame. Align the dies with the retaining screw hole, then secure dies with the die-retaining screws. Do NOT fully tighten dies.
4. Install anvil dies in the movable jaw of the tool frame. Align the dies with the retaining screw hole, then secure dies with the die-retaining screws. Do NOT fully tighten.
5. Release the lever on the power unit. This allows spring pressure to close the jaws. The dies will align themselves.
6. Install the locator assembly (packaged separately) to the die assembly.
7. Securely tighten the die retaining screws while the dies are bottomed.



*Dies are now installed. Die alignment and die holding screw tightness should be checked at least twice daily.*

**3.2. Die Removal**

1. Depress the lever on the power unit to open the die holders.
2. Turn off the SDE 1600 Power Unit and disconnect it from the power supply.
3. Loosen the die holding screws and remove the dies.

**4. CRIMPING PROCEDURE**

Select the appropriate wire size and connector. The wire size and insulation diameter must be within the specified range for the connector.

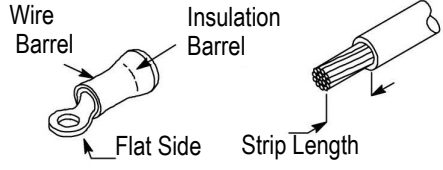
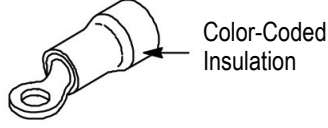

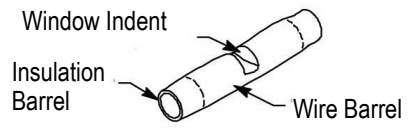
TERMINAL OR SPLICE	WIRE			CRIMP DOT CODE (After Crimping)
	SIZE (AWG)	INSULATION DIAMETER RANGE	STRIP LENGTH $\pm 0.397 [\pm 0.016]$	
<p><b>PIDG (Pre-Insulated Diamond Grip Terminal)</b></p> 	22-16	2.03-3.56 [.080-.140]	5.56 [.219]	1
<p><b>PLASTI-GRIP* Terminal</b></p> 	22-16	2.03-3.56 [.080-.140]	5.56 [.219]	1
<p><b>PIDG Insulation Restriction Terminal</b></p> 	22	0.97-2.79 [.038-.110]	6.75 [.268]	1
	20	1.17-2.79 [.046-.110]		1
	18	1.42-2.79 [.056-.110]		1
<p><b>PIDG Butt Splice</b></p> 	22-16	2.03-3.18 [.080-.125]	6.75 [.266]	1

Figure 2

For detailed information on wire strip lengths and proper assembly of the connector, refer to the instructions packaged with the connector.

1. Turn on the SDE 1600 Power Unit and allow approximately five seconds for the hydraulic pressure to build up.
2. Open the crimping dies by depressing the control lever on the power unit.
3. Then position the terminal between the crimping dies (Figure 4). The terminal is properly positioned when the tongue of the terminal is

under the locator and the wire barrel is against the locator.

4. Release the control lever, allowing the dies to spring shut and hold the terminal in place.
5. Insert stripped wire into terminal until wire butts against locator. Insert stripped wire into splice until wire butts against wire stop in splice.
6. Cycle the SDE 1600 Power Unit and hold momentarily to complete the crimp. The terminal or splice should be as shown in Figure 5 or Figure 6.

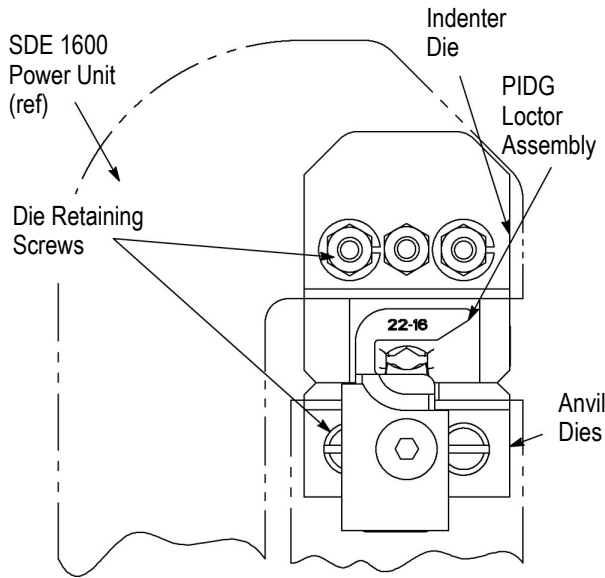


Figure 3

7. Remove the crimped terminal or splice.
8. When crimping a butt splice, reposition the uncrimped half in the stationary die. If the splice cannot be turned around, turn the tool around, load stripped wire in splice and cycle the power unit.
9. Remove the butt splice.

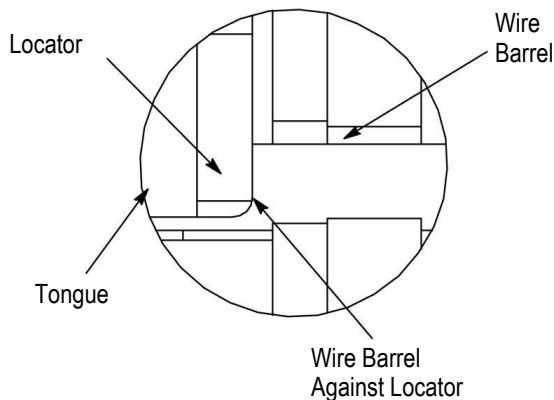
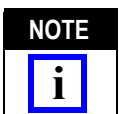


Figure 4

## 5. INSULATION CRIMP ADJUSTMENT



*PIDG terminals and splices feature an "insulation grip."*

Each tool has four insulation crimp positions. See Figure 1.

1. Loosen insulation adjustment locking screw (see top of tool) and turn indicator to Position 4.
2. Place terminal or splice in tool dies.
3. Insert UNSTRIPPED wire into ONLY the insulation barrel of terminal or splice.
4. Perform a crimp. Remove crimped terminal or splice and check insulation grip as follows: Bend the wire back and forth once. Terminal or splice should retain grip on wire insulation.
5. If wire pulls out, set insulation adjustment indicator to next tighter position - Position 3.
6. Perform a crimp and repeat adjustment as necessary until desired insulation grip is obtained. Do not use a tighter setting than required.

## 6. MAINTENANCE AND INSPECTION

Although the dies are inspected at the factory prior to their shipment, it is recommended that a maintenance and inspection program be performed at your facility periodically. This is necessary to assure that continued use of the dies will result in the same dependability and uniform terminations for which the dies were designed.

We recommend an initial frequency of once a month, however frequency may be adjusted to suit your requirements through experience. Frequency should be dependant on:

- Care, amount of handling, and use of the dies;
- Type and size of the product being crimped;
- Degree of operator skill;
- Presence of abnormal amounts of dirt and dust; and
- Your own established standards.

### 6.1. 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 dies are not in use, store them in a clean, dry area.
4. Store the tool with the tool handles closed to prevent objects from becoming lodged within the jaws

### 6.2. Visual Inspection

1. Remove all lubrication and accumulated film from the dies by immersing the dies in a suitable commercial degreaser.

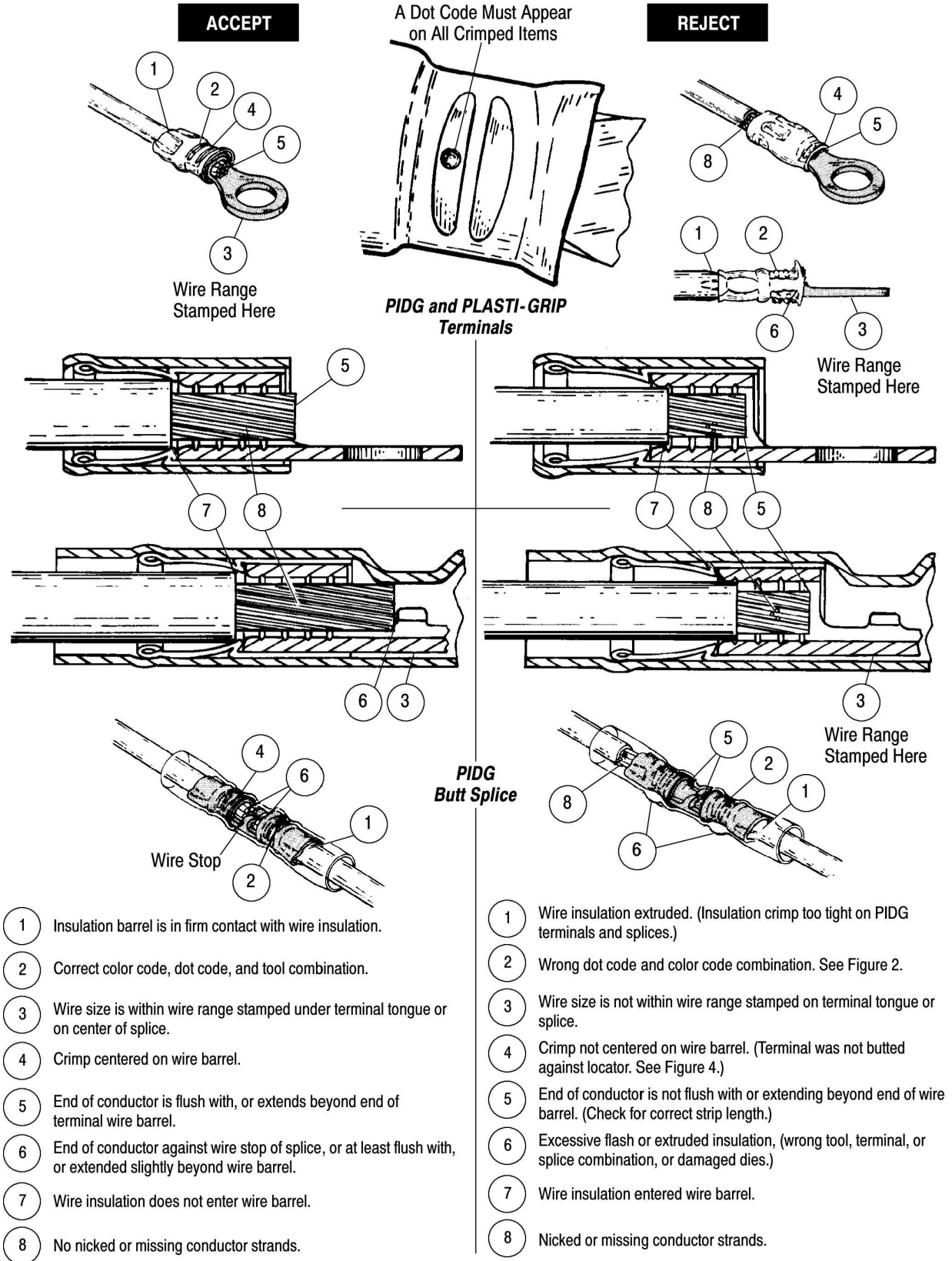


Figure 5

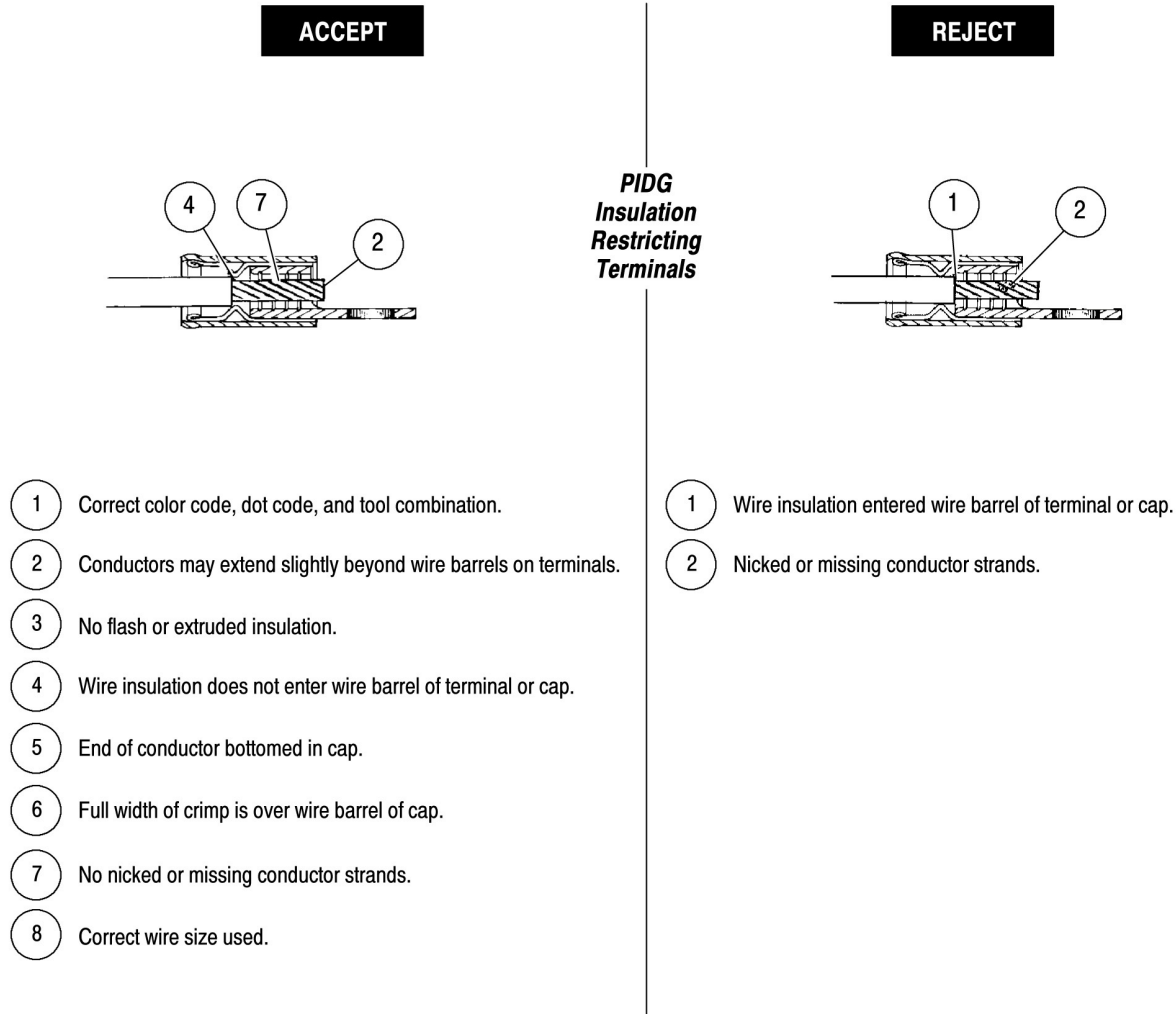


Figure 6

2. Make certain that all die-retaining screws and die components are properly secured.

3. Inspect the crimping surfaces for flattened, chipped, worn, or cracked areas. If damage is evident, the dies must be replaced. Refer to Section 7, REPLACEMENT.

### 6.3. Gaging the Crimping Chamber

Each tool is inspected for proper die closures before packaging. An inspection should be performed periodically to check the tool die closures for excessive wear.



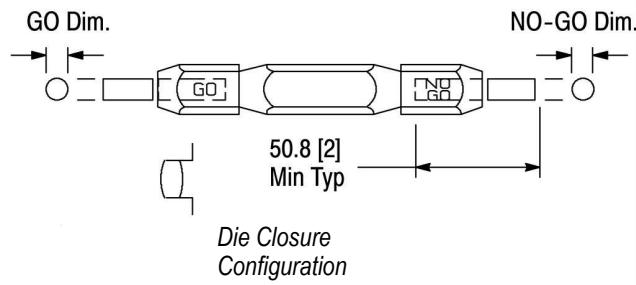
*The following plug gaging information for insulation crimping chambers is provided for customers specifically requiring this information. If plug gaging is not required, inspect the die closures using an alternate procedure, i.e., performing the "Insulation Crimp Adjustment" (see Section 5) and "Visual Inspection" (see Paragraph 6.3).*

This inspection requires the use of plug gages conforming to the dimensions listed in Figure 7. Tyco Electronics does not manufacture or market these gages. Refer to 408-7424 for information concerning plug gages and crimp-height comparators.

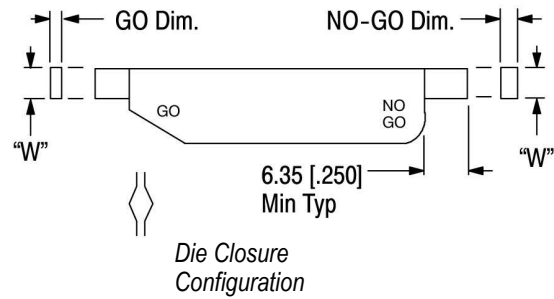
To gage the crimping area(s), refer to Figure 8 and proceed as follows:

1. Clean oil or dirt from the crimping chamber and plug gage.
2. Cycle the SDE power unit until wire barrel dies are bottomed. Do not apply additional pressure.
3. With wire barrel dies bottomed, inspect the wire barrel crimping chamber using the proper plug gage. Lift the spring-loaded locator up and hold gage in straight alignment with the crimping chamber. Carefully try to insert, without forcing, the GO element. See Figure 8. The GO element must pass completely through the crimping area.

**Suggested Plug Gage Design for Wire Barrel Section of Crimping Chamber**



**Suggested Plug Gage Design for Insulation Barrel Section of Crimping Chamber**



**GAGE ELEMENT DIMENSIONS**

WIRE BARREL GAGE		INSULATION BARREL GAGE		
GO	NO-GO	GO	NO-GO	w (Width) (Max)
2.768-2.776 [.1090-.1093]	2.918-2.921 [.1149-.1150]	0.762-0.77 [.0300-.0303]	1.267-1.27 [.0499-.0500]	3.18 [.125]

Figure 7

4. Try to insert the NO-GO element. The NO-GO element may enter partially, but must not pass completely through the crimping area.
5. Set insulation adjustment indicator in Position 1. Measure insulation crimping chambers with the proper GO plug gages in the same manner as Steps 2 and 3. See Figure 8.

6. With the insulation adjustment indicator in Position 1, measure the insulation crimping chambers with the proper NO-GO plug gages. See Figure 8.

If the crimping areas conform to the gage inspection, the tool is considered dimensionally correct. If the crimping areas do not conform to the inspection, the tool must be repaired. Refer to Section 7, REPLACEMENT.

*GO gage must pass completely through the die closure*

*NO-GO gage may enter partially, but must not pass completely through the die closure.*

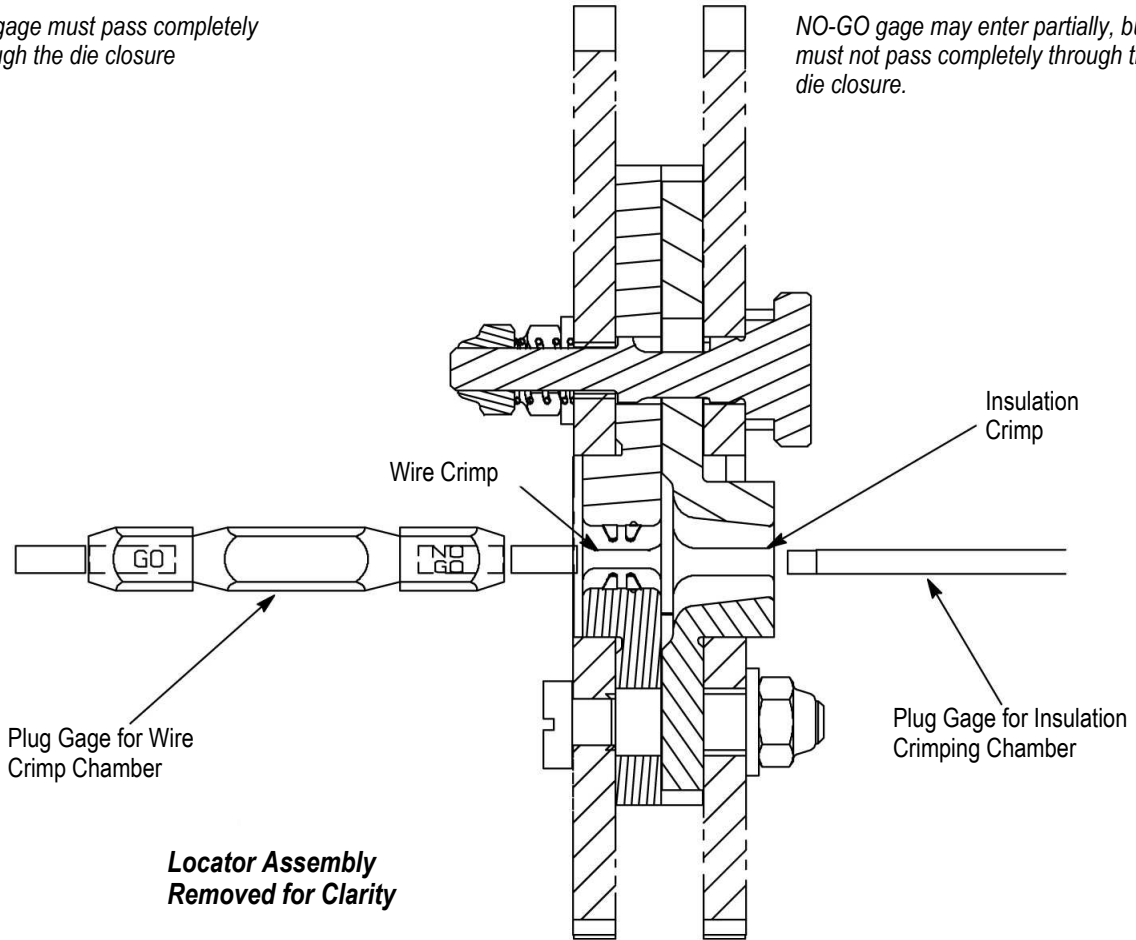


Figure 8

## 7. REPLACEMENT

Refer to Figure 9.

These crimping die assemblies are inspected before shipment. It is recommended that the dies be inspected immediately upon arrival at your facility to ensure that the dies have not been damaged during shipment.

Order replacements through your local Tyco Electronics representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

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



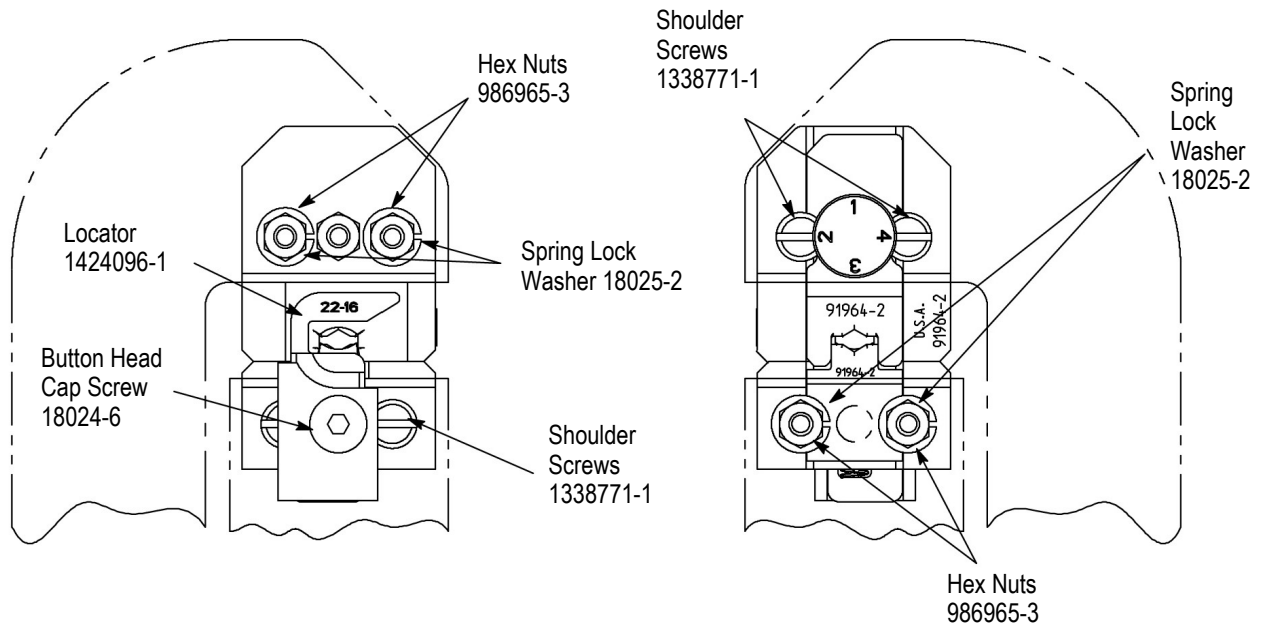


Figure 9

**8. REVISION SUMMARY**

Since the previous release of these instructions, the TE logo has been applied.