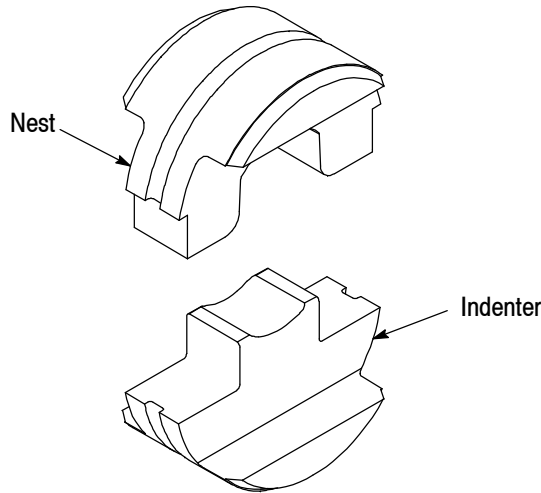


**PROPER USE GUIDELINES**

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.

**Crimping Die Assemblies for AMPOWER\* Terminals and Splices**



CRIMPING DIES			WIRE SIZE			HYDRAULIC CRIMP TOOLING	
ASSEMBLY	INDENTER	NEST	AWG	CMA RANGE	mm <sup>2</sup>	HEADS	HAND TOOLS
1583092-1	1490351-1	1490352-1	6	20,800-33,100	10.5-16.8	1490745-1 1490746-1 1490747-1 1976230-1	1490748-1 1490749-1
1583093-1	1490351-2	1490352-2	4	33,100-52,600	16.8-26.7		
1583094-1	1490351-3	1490352-3	2	52,600-83,700	26.7-42.4		
1583095-1	1490351-4	1490352-4	1/0	83,700-119,500	42.4-60.6		
1583096-1	1490351-5	1490352-5	2/0	119,500-150,500	60.6-76.3		
1583097-1	1490351-6	1490352-6	3/0	150,500-190,000	76.3-96.3	1490746-1 1976230-1	1490749-1
1583098-1	1490351-7	1490352-7	4/0	190,000-231,000	96.3-117		

Figure 1

**1. INTRODUCTION**

This instruction sheet covers application and maintenance procedures for the AMPOWER Crimping Die Assemblies listed in Figure 1. The die assemblies are used in Hydraulic Heads 1490745-1, 1490746-1, 1490747-1, 1976230-1 (not to be used with splices), and Hydraulic Hand Tools 1490748-1 and 1490749-1. See Figures 1 and 3.

Basic instructions for the installation and removal of dies are covered in Section 3; wire preparation and crimping procedures are covered in Section 4; and Maintenance and Certification are covered in Section 6.



*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.*

Read these instructions carefully prior to installing, removing, or using the dies.

**2. DESCRIPTION**

The AMPOWER die assemblies listed in the table in Figure 1 are used to crimp AMPOWER terminals and splices. Wire strip length is provided in Figure 2.

The die assemblies are single position sets, each consisting of an anvil subassembly and an indenter subassembly.

Refer to Figure 1 to ensure compatibility of crimping dies and wire size. For instructions relative to the crimping head and the hydraulic power units, refer to the instructions packaged with them.

**Wire Strip Lengths**

Length of Barrel "B" Plus 1.6 [.062] 1/16  
(Except Terminals and Butt Splices)

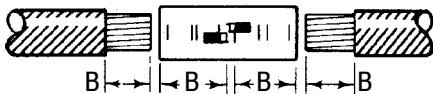
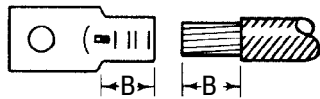
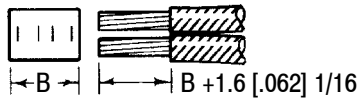
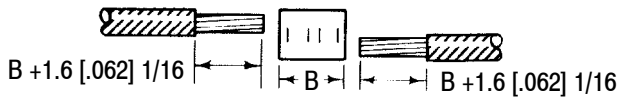


Figure 2

**3. DIE INSERTION AND REMOVAL**

**CAUTION** Do not operate the tool without the dies.

**DANGER**

**AVOID PERSONAL INJURY.** When changing dies, exercise caution and avoid accidentally depressing foot switch or trigger controls of power units.

**3.1. Die Insertion**

Refer to Figures 1 and 3 for a listing of tooling that these dies will fit into. Ensure that the possibility of accidental activation of the hydraulic power unit has been eliminated, and proceed as follows:

1. Depress the upper release button located in the C-head and slide the nest into place.
2. Release the button and rock the die back-and-forth until the nest snaps in place.
3. Activate the power unit until the lower die release button located in the ram is exposed.
4. Depress the release button and slide the indenter into place.
5. Release the button and rock the indenter back-and-forth until the die snaps in place.
6. Return the ram to the down position.

**Tools Using Crimping Dies for AMPPOWER Terminals and Splices (Refer to Figure 1)**

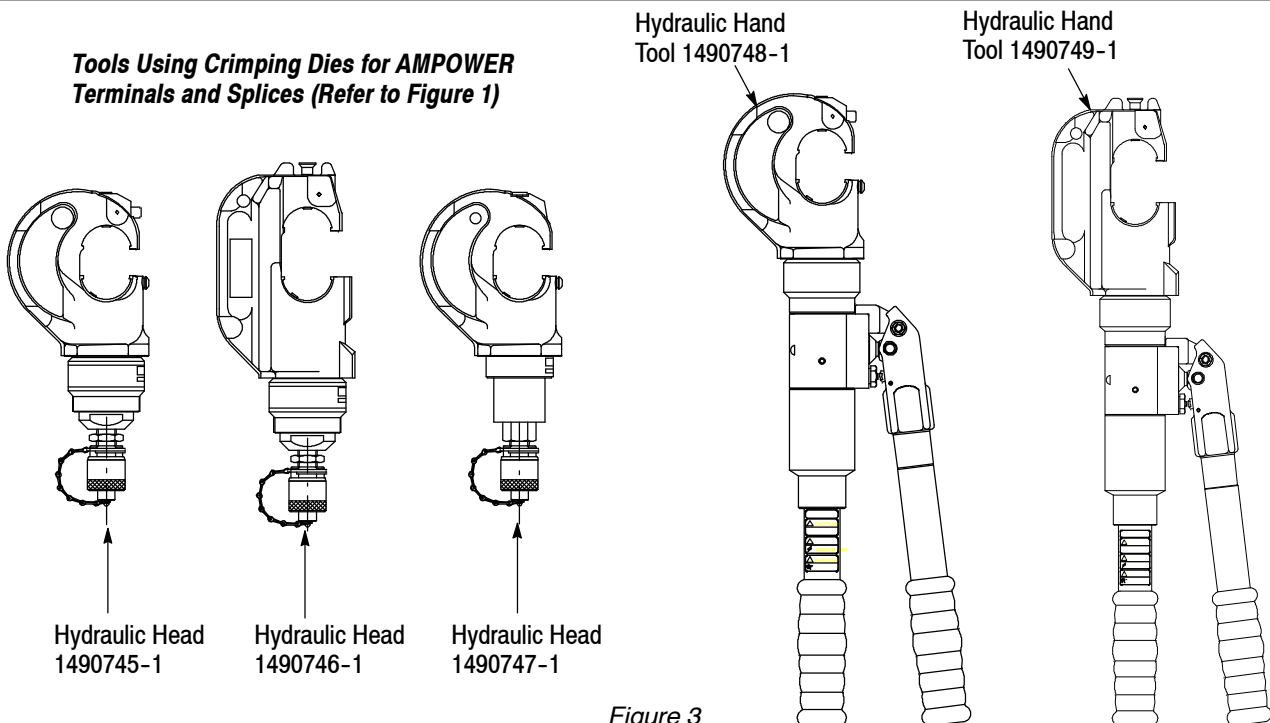


Figure 3

### 3.2. Die Removal

Ensure that the possibility of accidental activation of the hydraulic power unit has been eliminated, and proceed as follows:

1. Depress the upper release button located in the C-head and slide the nest out of the head.
2. Activate the power unit until the lower die release button in the ram is exposed.
3. Depress the release button and slide the indenter out of the ream.

## 4. WIRE PREPARATION AND CRIMPING PROCEDURES

### 4.1. Wire Preparation

1. Select proper size terminal or splice for wire size being used.
2. Determine correct terminal or splice wire loading by referring to CMA (Circular Mill Area) range listed in the table in Figure 1. The total CMA of wires being used must be within the CMA range of the terminal or splice.
3. Strip the wire to the dimensions indicated in the table in Figure 2, taking care not to nick or cut the wire strands.

### 4.2. Crimping Procedure

1. Ensure that the wire size stamped on the terminal or splice corresponds to the wire size stamped on the stationary die.
2. Center the terminal or splice in the stationary die as shown in Figure 4.
3. Activate the power unit so that the moving die advances and holds the terminal or splice in place without deforming the wire barrel.
4. Insert the stripped wire until it bottoms in the terminal or butt splice. The end of the wire must be visible through the sight hole.

**NOTE**



*Sight holes of butt splices must always face either the upper or lower die.*

5. When inserting the stripped wires into a parallel splice, the ends of the wires must be at least flush with, or extend slightly beyond the end of the wire barrel.
6. Activate the power unit to complete the crimp.
7. To crimp the other half of the butt splice, remove and reposition the uncrimped half in the stationary die. Insert the wire until it bottoms against the splice wire stop (visible through the sight holes), and then crimp the splice.
8. Inspect the crimp by referring to Section 5, CRIMP INSPECTION, and to Figure 5.

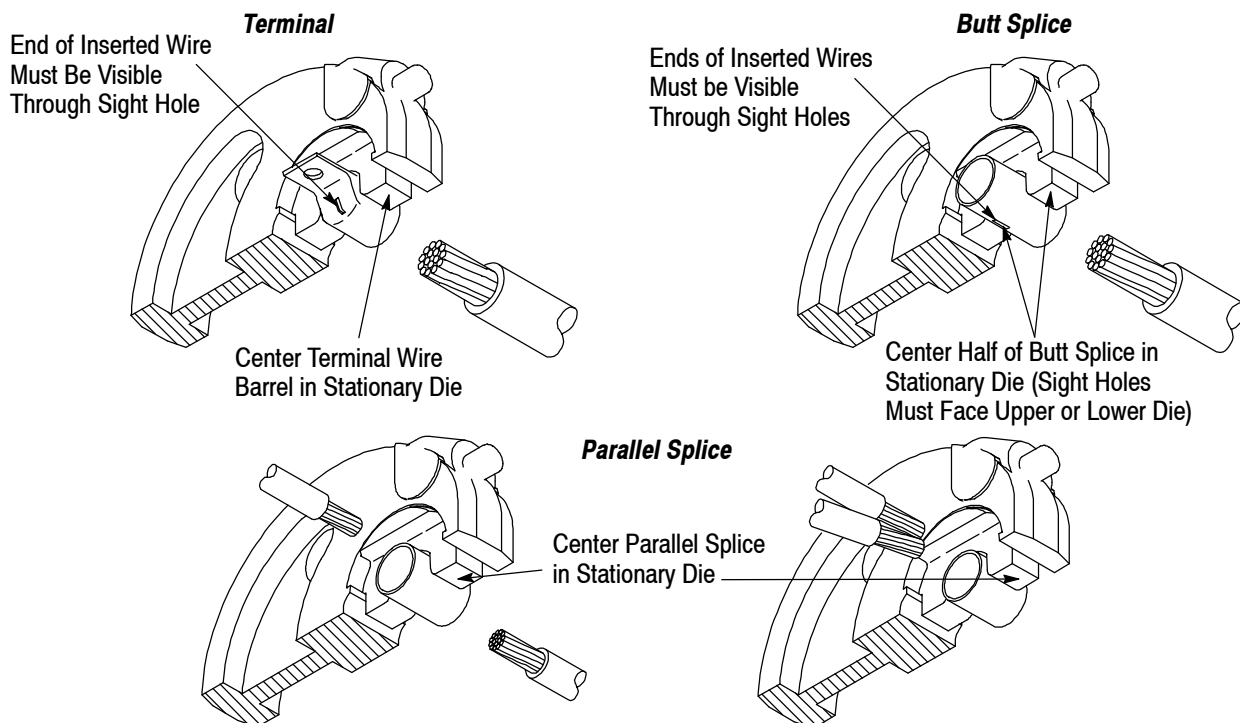


Figure 4

### 5. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figure 5. Use only terminals and splices that meet the conditions shown in the "ACCEPT" column of Figure 5. Unacceptable

terminals and splices, as depicted in the "REJECT" column of Figure 5 can be avoided through careful use of the instructions in Section 4 and by performing regularly scheduled die maintenance as described in Section 6.

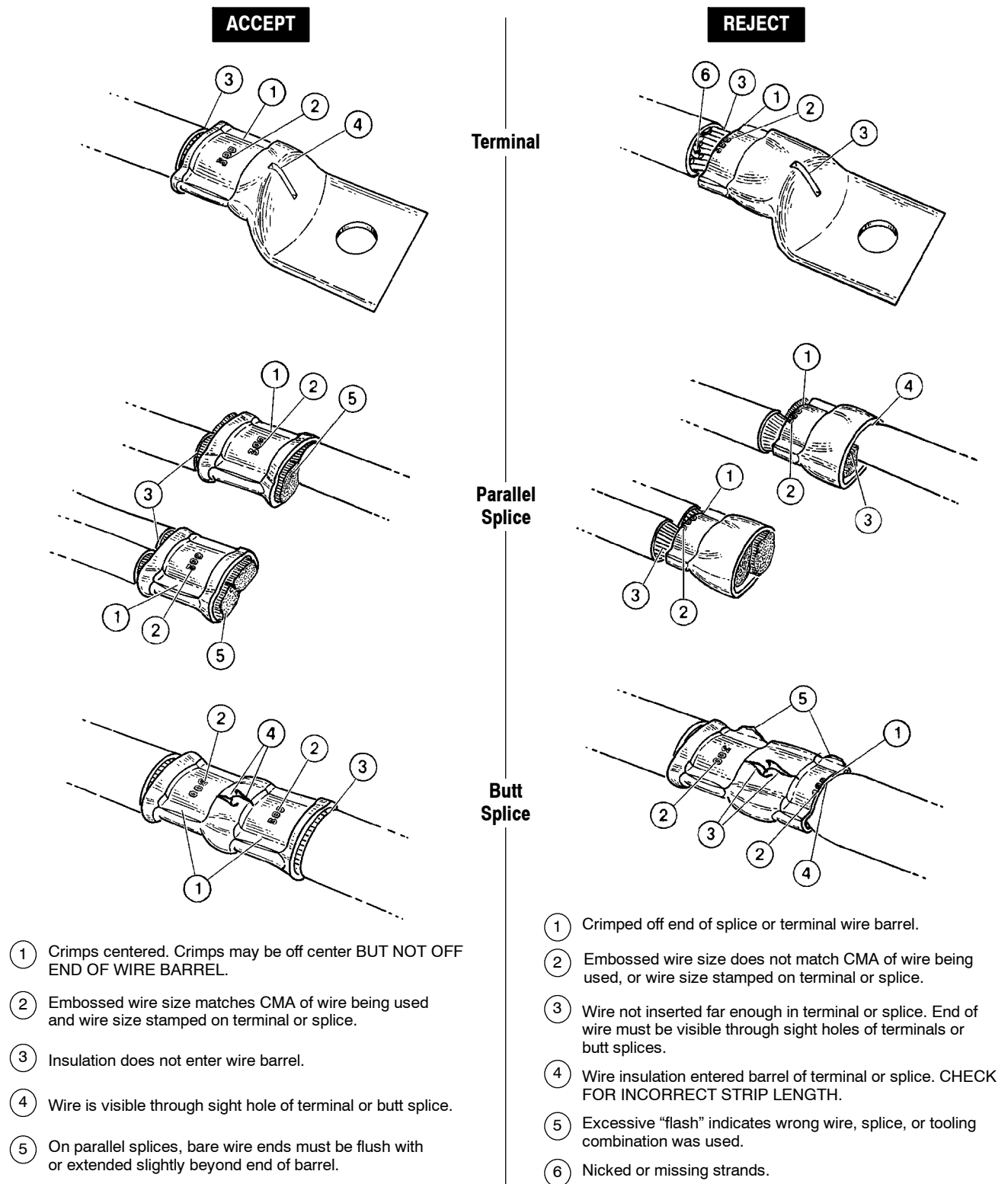


Figure 5

## 6. MAINTENANCE

TE Connectivity recommends that a maintenance/inspection program be performed periodically to ensure dependable and uniform terminations. Frequency of inspection is dependent upon operator skill and care of dies, amount of use, presence of abnormal amounts of dust and dirt, type and size of products being crimped, and your company's established standards.

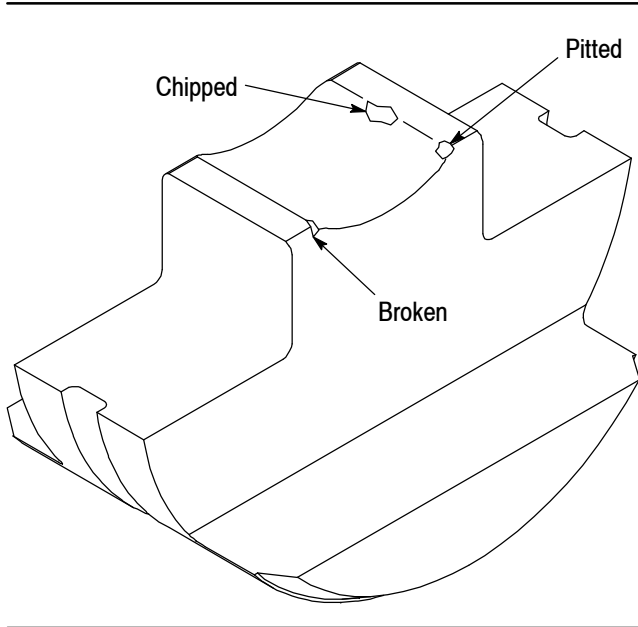


Figure 6

### 6.1. Die Maintenance and Certification

All dies are thoroughly inspected prior to shipment. Because of the possibility of damage in transit, new dies should be inspected in accordance with the information provided in this section and be inspected at regularly scheduled intervals to ensure their conformance to standards.

Dies are coated with a preservative to prevent rust and corrosion. Wipe preservative from dies, particularly from crimping areas, prior to use. Do not allow deposits of dirt, grease, or other contaminants to accumulate on the die closure surfaces. These deposits may cause excessive wear in the die closure surfaces, thereby affecting the quality of the crimp. Wipe dies frequently with a clean dry cloth and store them in a clean, dry area when not in use.

### 6.2. Visual Inspection

Visually inspect die closure surfaces for broken, pitted, or chipped areas. Although dies may gage within permissible limits, worn or damaged die closure surfaces can affect crimp quality. Examples of

possible damage to die closure surfaces are shown in Figure 6.

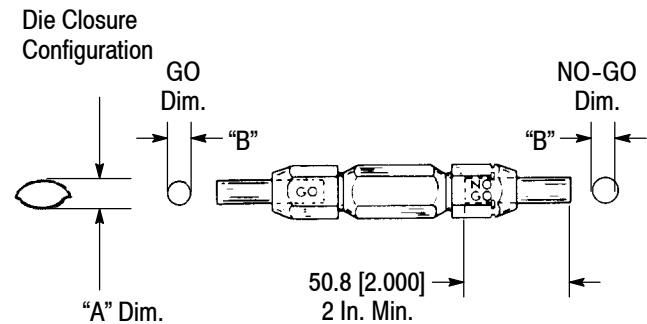
### 6.3. Die Closure Inspection

Every die set is inspected for proper die closure before shipment. However, inspection of die closure for excessive wear is required on a periodic basis depending upon usage and conditions.

The die closure inspection is accomplished using GO/NO-GO plug gages. A suggested plug gage design and the GO/NO-GO dimensions for plug gage members are provided in Figure 7. TE does not manufacture or market these gages. The following procedure is recommended for inspecting the die closure.

1. Clean oil or dirt from die closure surfaces and from plug gage members.

#### Suggested Plug Gage Design



DIE NO.	DIE CLOSURE DIM. "A"		GAGE MEMBER DIM. "B"	
	GO	NO-GO	GO	NO-GO
1583092-1	3.734 [.1470]	3.988 [.1570]	3.734-3.741 [.1470-.1473]	3.985-3.988 [.1569-.1570]
1583093-1	4.496 [.1770]	4.75 [.187]	4.496-4.503 [.1770-.1773]	4.747-4.750 [.1869-.1870]
1583094-1	5.38 [.212]	5.639 [.2220]	5.380-5.392 [.2120-.2123]	5.636-5.639 [.2219-.2220]
1583095-1	6.655 [.2620]	6.909 [.2720]	6.655-6.662 [.2620-.2623]	6.906-6.909 [.2719-.2720]
1583096-1	7.544 [.2970]	7.798 [.3070]	7.544-7.551 [.2970-.2973]	7.795-7.798 [.3069-.3070]
1583097-1	8.509 [.3350]	8.763 [.3450]	8.509-8.517 [.3350-.3353]	8.760-8.763 [.3449-.3450]
1583098-1	9.576 [.3770]	9.83 [.387]	9.576-9.583 [.3770-.3773]	9.827-9.830 [.3869-.3870]

Figure 7

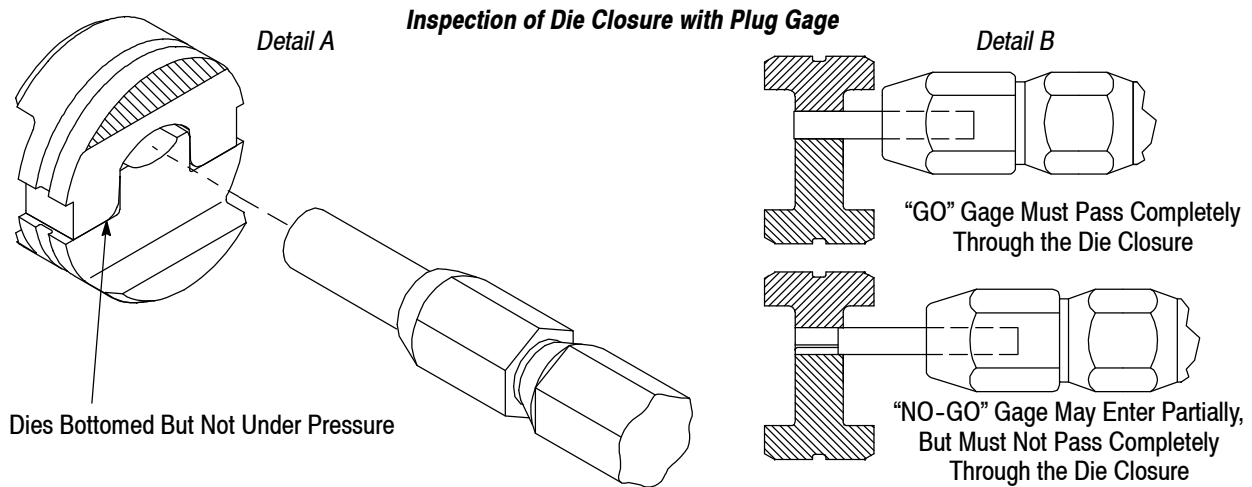


Figure 8

2. Mate the dies until it is evident that they have bottomed. Hold the dies in this position.
3. Hold gage in straight alignment with die closure and carefully try to insert, without forcing, the GO member. See Figure 8, Detail B. The GO member must pass completely through the die closure.
4. Try to insert the NO-GO member. The NO-GO member may enter partially, but must not pass completely through die closure.
5. If die closure meets GO/NO-GO gage conditions, dies may be considered dimensionally correct. If die closure does not conform with GO/NO-GO gage conditions, the dies must be replaced.

**7. REPLACEMENT PARTS**

Worn or damaged dies may not be repaired. It is recommended that spare sets be stocked and controlled to prevent lost time. See Figure 9. Order replacement dies through your TE Representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

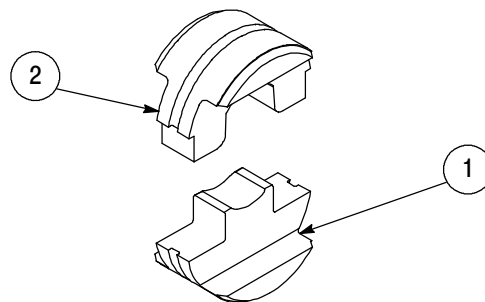
CUSTOMER SERVICE (38-35)  
TYCO ELECTRONICS CORPORATION  
P.O. BOX 3608  
HARRISBURG, PA 17105-3608

For tool repair service, please contact a TE Representative at 1-800-526-5136.

**8. REVISION SUMMARY**

- Updated document to corporate requirements
- Corrected table in Figure 1

*Single Position Dies*



ITEM	DESCRIPTION	SINGLE POSITION DIES						
		1583092-1	1583093-1	1583094-1	1583095-1	1583096-1	1583097-1	1583098-1
1	Moving Die	1490351-1	1490351-2	1490351-3	1490351-4	1490351-5	1490351-6	1490351-7
2	Stationary Die	1490352-1	1490352-2	1490352-3	1490352-4	1490352-5	1490352-6	1490352-7

Figure 9