

WIRE SIZE (MCM) <sup>(1)</sup>	CMA (Circular Mil Area) Range	Die Assembly PN	
		Single Crimp	Dual Crimp
350	325,000-375,000	69653	---
350 HD			
400	375,000-450,000	46754-2	---
500	450,000-550,000	46755-2	---
500		---	46756-2 <sup>(2)</sup>
600	550,000-650,000	---	46756-2
600 HD		---	59870-1
700	650,000-750,000	---	46757-2
800	750,000-850,000	---	46758-2
900	850,000-950,000	---	46759-2
1000	950,000-1,125,000	---	46760-2

<sup>1</sup> MCM equals thousand circular mils

<sup>2</sup> After crimping, product insulation will be embossed with 600

Figure 1

## 1. INTRODUCTION

AMP\* crimping die assemblies listed in Figure 1 are designed to crimp AMPPOWER\* terminals, parallel splices and butt splices onto wire sizes 350 through 1000 MCM. The die assemblies are installed into Crimping Head PN 69082 (Mod 1). The head is used with Hydraulic Power Units PN 69120-1 or 69120-2.

For information on tool setup and operation, refer to Instruction Sheet [408-2456](#) for the crimping head and Customer Manual [409-1950](#) for the power units.

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

**i** **NOTE**  
Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures are not drawn to scale.

Reasons for re-issue of this instruction sheet are provided in Section 8, REVISION SUMMARY.

## 2. DESCRIPTION

The die assemblies are either single-crimp or dual-crimp sets; each consisting of an anvil subassembly (stationary die) and an indenter subassembly (moving die).

## 3. DIE INSTALLATION AND REMOVAL



### DANGER

Avoid personal injury. When using power unit, exercise caution to avoid accidentally depressing foot switch or trigger control when changing dies.

### 3.1. Die Installation



### NOTE

Die assemblies are coated with a preservative to prevent rust and corrosion. Wipe the preservative from the dies (particularly from the crimping areas) before installing the dies.

Refer to Figure 1 to verify that wire size to be used is compatible with die assembly. Select the proper terminal or splice for the wire size to be used. Ensure the wire size stamped on the terminal or splice corresponds to the wire size stamped on the stationary die. Determine the correct wire load by referring to the CMA range listed in Figure 1. The total CMA of wires being used must be within the CMA range of the terminal or splice. Proceed as follows:

1. Loosen the lock screw in the top of the crimping head (see Figure 2 for location).
2. Insert the shank of the stationary die into the top section of the crimping head and secure by tightening the lock screw (see Figure 2).



### NOTE

Verify the die is fully inserted and that the flat area on the shank faces the lock screw.

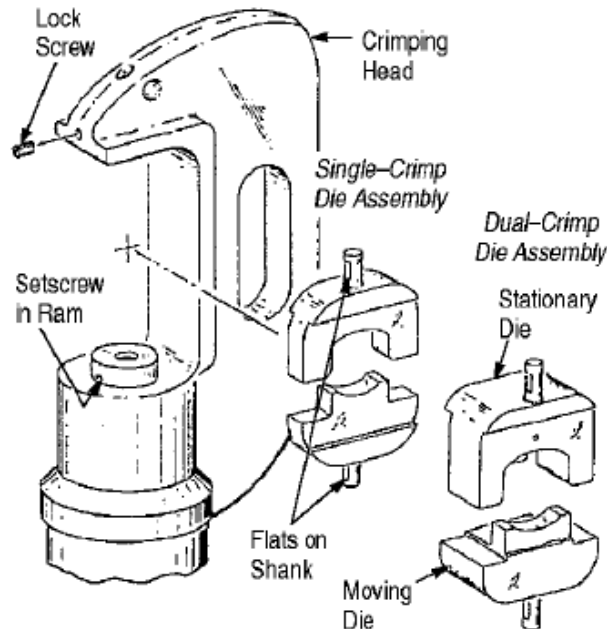


Figure 2

3. Activate the power unit and advance the ram until the setscrew on the ram is visible.



### DANGER

Take care to prevent depressing the foot switch or trigger control while installing dies or loosening or tightening setscrew.

- Loosen setscrew on ram and insert shank of moving die into the ram well. Ensure that moving die is correctly oriented with regard to stationary die, and tighten setscrew on ram (see Figure 2).



**CAUTION**

The shanks are offset on dual-crimp die assemblies. Take care to ensure that the shank of each die is offset to the same side to maintain proper mating of dies.

- Activate the power unit to complete the cycle, and allow the ram to return to the retracted position.

**3.2. Die Removal**

- Loosen the lock screw in the top of the crimping head and remove the stationary die.
- Advance the ram until the setscrew is visible. Loosen the setscrew and remove the moving die.
- If no die assembly is to be installed following die removal, ensure that the ram setscrew is turned in far enough to avoid interfering with the movement of the ram.

**4. CRIMPING PROCEDURE**

**4.1. Wire Preparation**

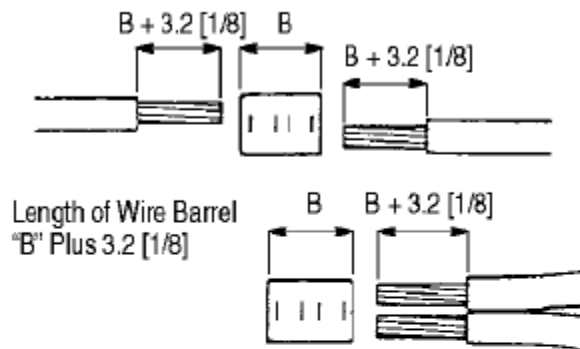
Strip the wire as shown in Figure 3; taking care not to nick or cut conductor strands.



**NOTE**

**DO NOT scale from this illustration.**

*Parallel Splice*



*Terminal and Butt Splice*

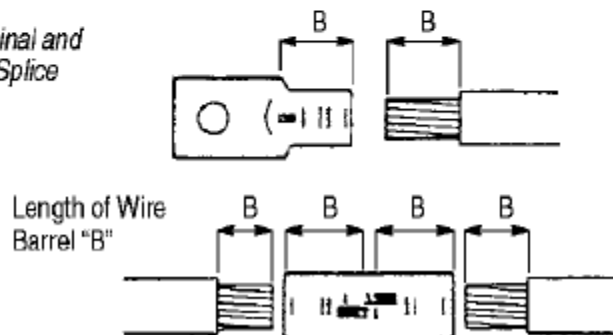


Figure 3

## 4.2. Using Single-Crimp Die Assembly

- Center the terminal or splice in the stationary die as shown in Figure 4.

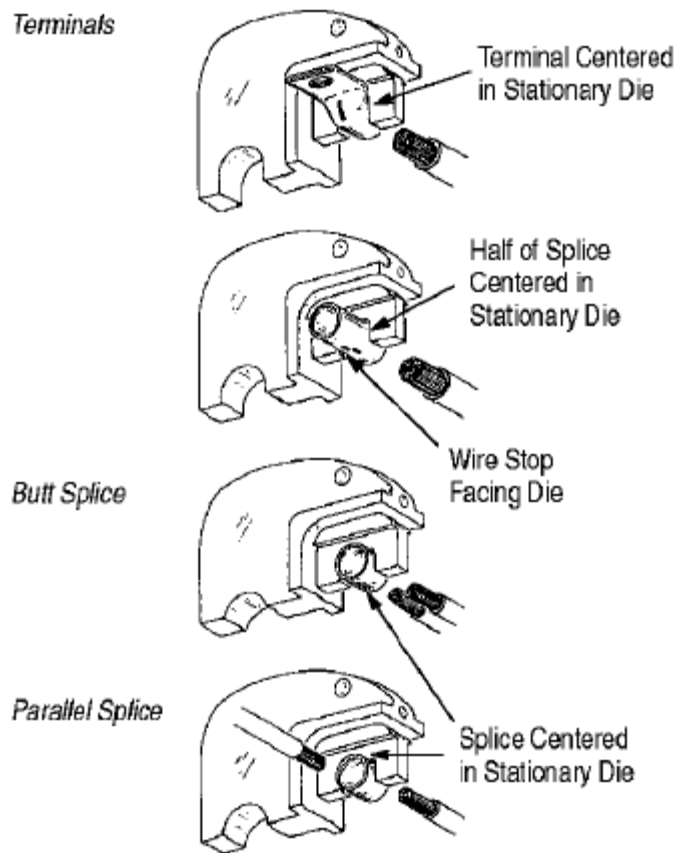


Figure 4

- Activate the power unit so the moving die advances and holds the terminal or splice in place; but without deforming the wire barrel.
- Insert the stripped wire until it bottoms in the terminal or splice.



### NOTE

*The end of the wire must be visible thru the sight hole.*

- For parallel splices, make sure the ends of the wires are at least flush with, or extend slightly beyond the end of the wire barrel.
  - For butt splices, make sure the wire stop faces either die.
- Activate power unit to complete crimp.
  - To crimp the other half of a butt splice, remove and position the un-crimped half in the stationary die. Insert wire until it bottoms against wire stop and crimp the splice.
  - Remove the terminal or splice from the dies and inspect the crimp in accordance with Section 5; CRIMP INSPECTION.

### 4.3. Using Dual-Crimp Die Assembly

#### A. Terminal and Parallel Splice

1. Place the terminal or splice in the stationary die as shown in Figure 5.


**NOTE**

Verify the crimp area of the dies is centered between the crimp marks of the terminal or splice.

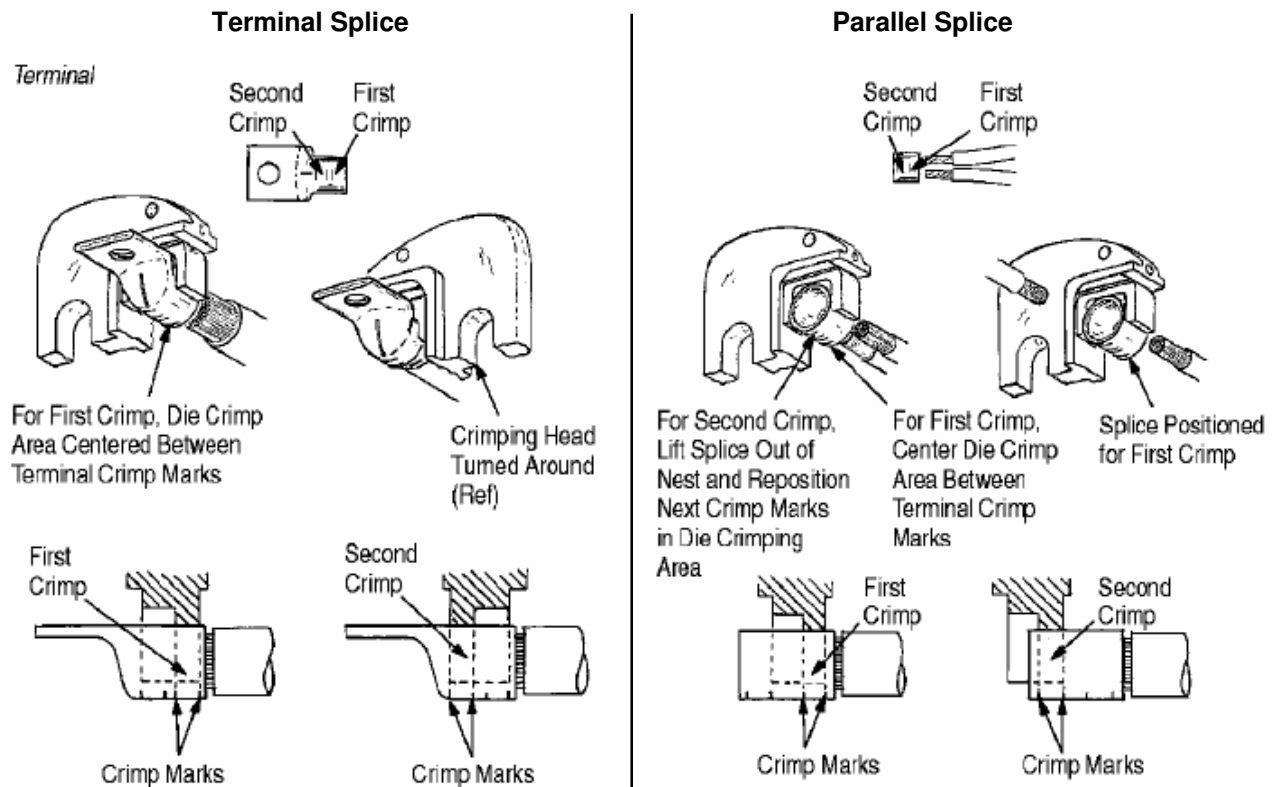


Figure 5

2. Activate the power unit so the moving die advances and holds the terminal or splice in place without deforming the wire barrel.
3. Insert the stripped wire until it bottoms in the terminal and is visible through the sight hole.  
For parallel splices, make sure the ends of the wires are at least flush with, or extend slightly beyond the end of the wire barrel.
4. Activate power unit to complete the first crimp.
5. Remove the terminal or splice from the dies.
6. Before making the 2<sup>nd</sup> crimp, it will be necessary to turn either the terminal (or splice), the crimping head, or the dies around. Then, position the terminal or splice in the dies as shown in Figure 5 and repeat Steps 2 and 3.
7. Activate the power unit to complete the 2<sup>nd</sup> crimp.
8. Remove the terminal or splice from the dies and inspect the crimp in accordance with Section 5; CRIMP INSPECTION.

## B. Butt Splice

1. Position the butt splice so the crimp area of the die is centered within the crimp marks of the splice.



### NOTE

The offset cavity of the die must always face the center of the splice, and the wire stops on the splice must always face either die (see Figure 6).

2. Activate the power unit so the moving die advances and holds the splice in place without deforming the wire barrel.
3. Insert the first wire until it bottoms in the splice. The ends of the wires must be visible through the sight hole.
4. Activate power unit to complete the first crimp.
5. Reposition the splice as shown in Figure 6 and perform the 2<sup>nd</sup> crimp.

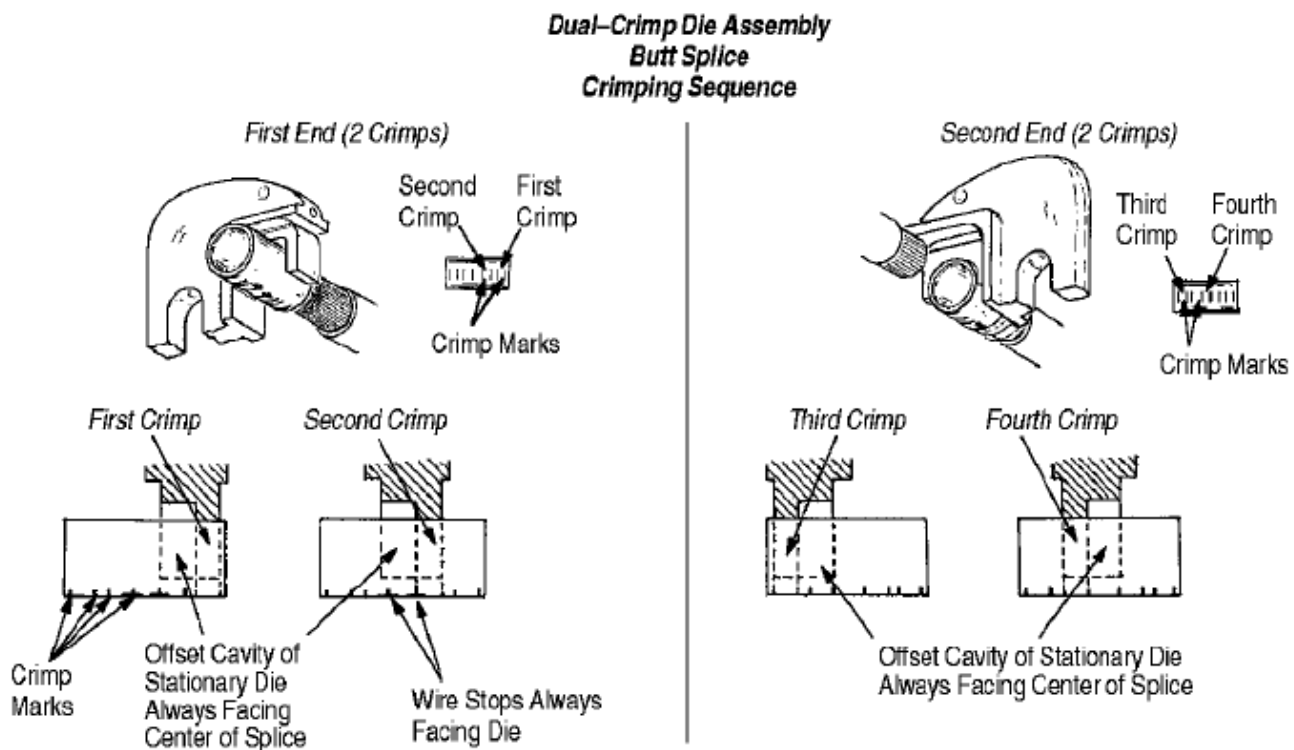


Figure 6

6. Before making the 3<sup>rd</sup> and 4<sup>th</sup> crimps, it will be necessary to turn either the splice, the crimping head, or the dies, around. Then, position the splice in the stationary die as shown in Figure 6 and repeat Steps 2 and 3.
7. Activate the power unit and complete the 3<sup>rd</sup> crimp.
8. Reposition the splice as shown in Figure 6 and complete the 4<sup>th</sup> crimp.



### NOTE

If the splice sticks in the die after crimping, apply a rocking action to break it free.

9. Remove the butt splice from the dies and inspect the crimp in accordance with Section 5; CRIMP INSPECTION.

## 5. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figures 7 and 8. Use ONLY the terminals and splices that meet the conditions shown in the "ACCEPT" column. Unacceptable terminals and splices (depicted in the "REJECT" column) can be avoided through careful use of the crimping procedure and by performing regularly scheduled die maintenance.

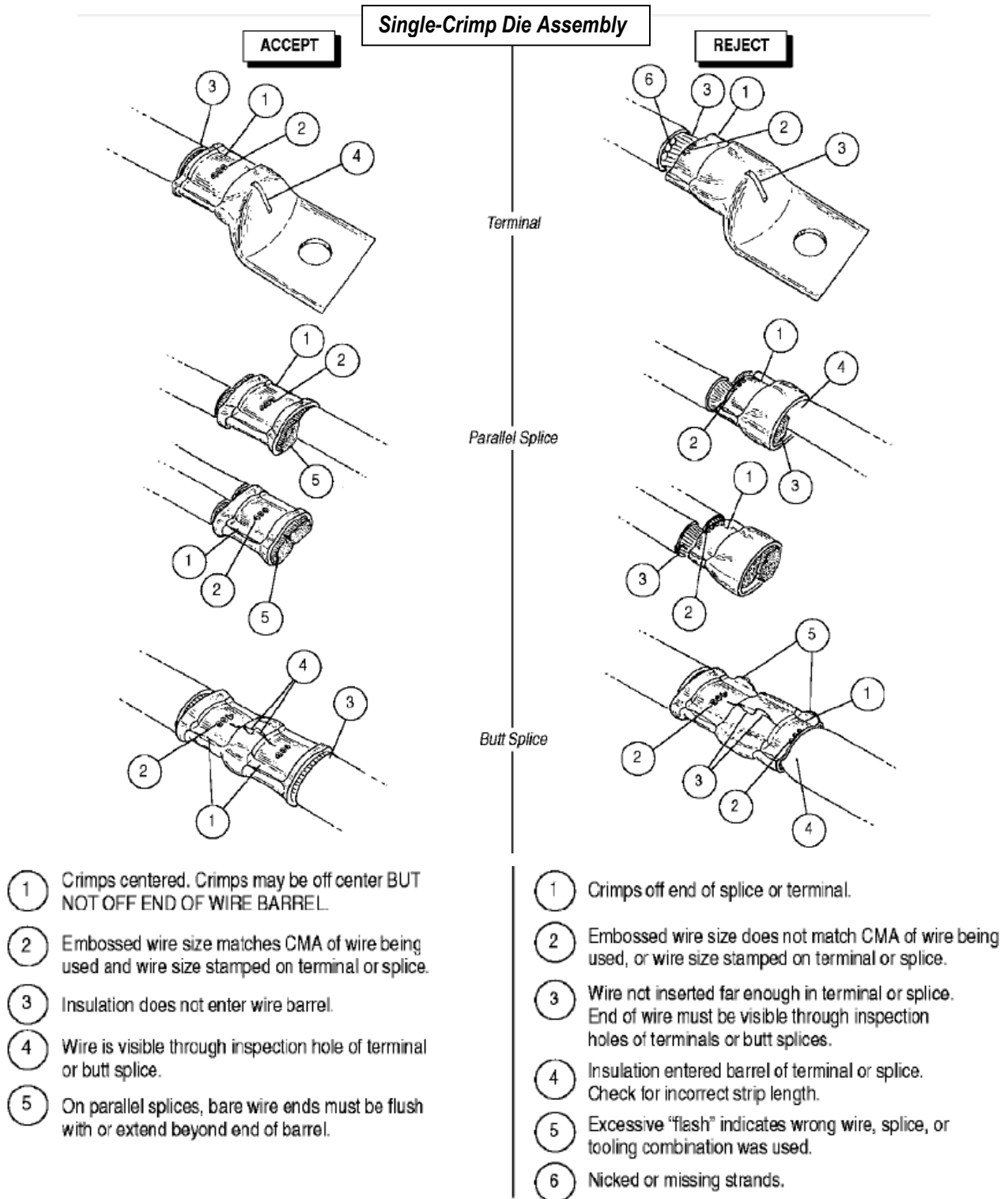


Figure 7



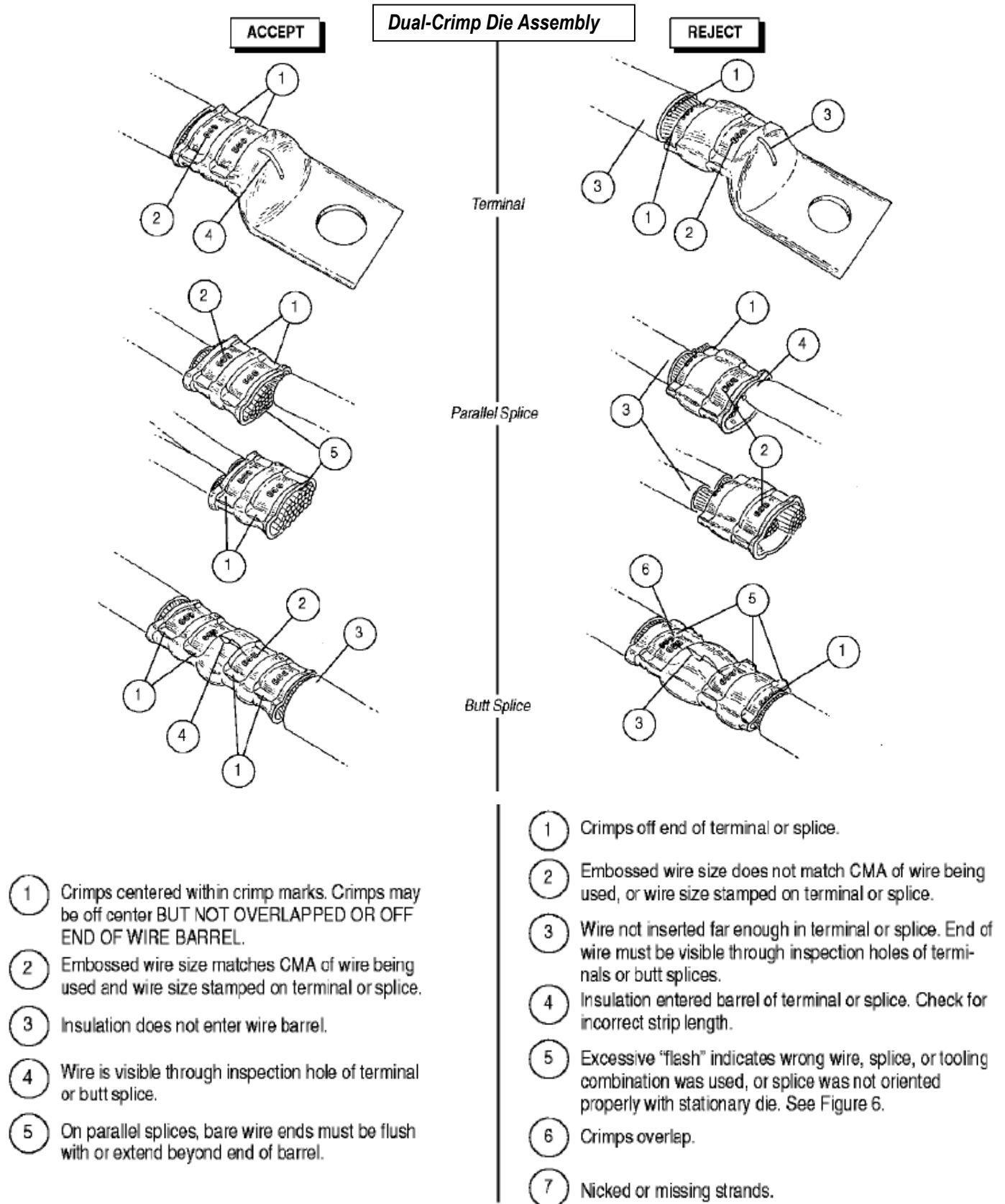


Figure 8



## 6. MAINTENANCE AND INSPECTION

The die assembly is thoroughly inspected prior to shipment. Because of the possibility of damage in transit, dies should be inspected upon arrival in accordance with the information provided, and at regularly scheduled intervals thereafter to ensure conformance to standards.

### 6.1. Maintenance

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

### 6.2. Visual Inspection

Visually inspect the die closure surfaces for broken, pitted, or chipped areas. Although dies may close within permissible gage limits, worn or damaged die closure surface are objectionable and may affect the quality of the crimp. Examples of possible damaged die closure surfaces are shown in Figure 9.

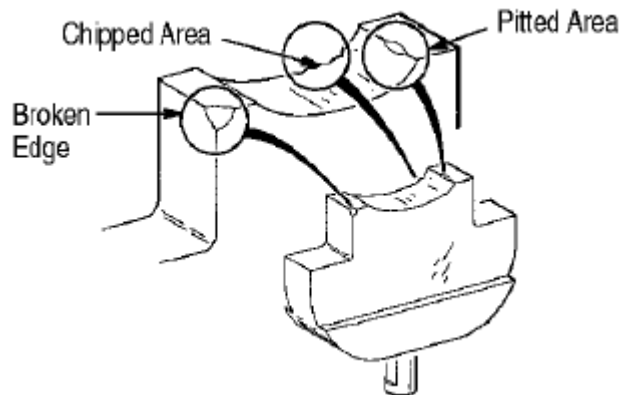


Figure 9

### 6.3. Gaging the Crimping Chamber

This inspection requires the use of plug gages conforming to the dimensions provided in Figure 11.



**NOTE**

*TE Connectivity (TE) 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.



**NOTE**

*The ejector must be removed from the die when gaging a dual-crimp die assembly.*

2. Mate the dies, then adjust them to meet the gage dimension indicated in Figure 10. Hold the dies in this position.
3. Insert GO element into the crimping chamber, but DO NOT force it. **The GO element must pass through the length of the crimping chamber** (see Figure 10).
4. In the same manner, try to insert the NO-GO element into the crimping chamber. **The NO-GO element may enter partially, but must not pass completely thru** the length of the crimping chamber (see Figure 10).

### Inspection of Crimping Chamber

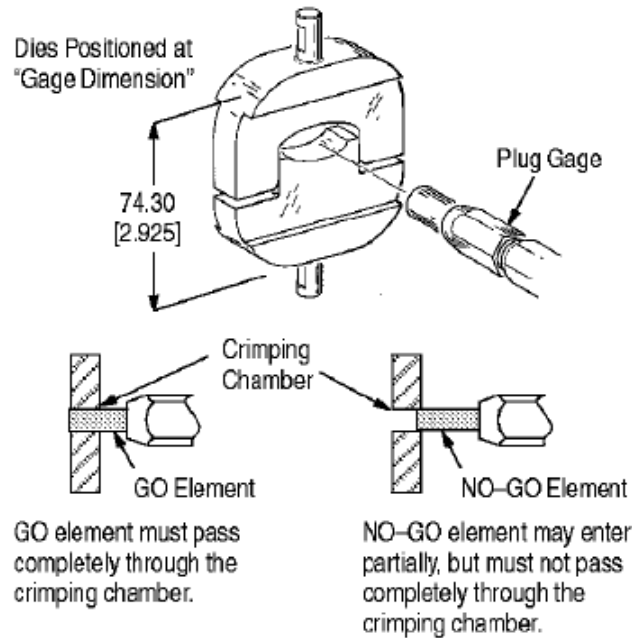
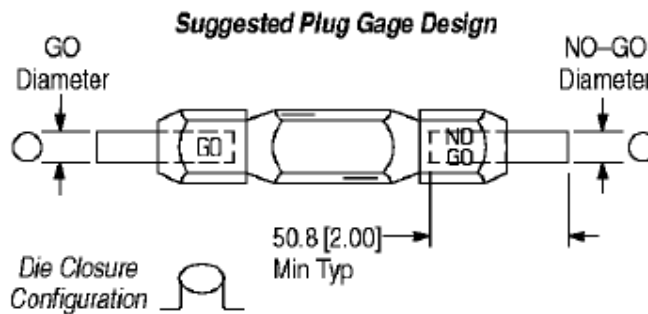


Figure 10



Die Assembly	Gage Element Diameter		Die Assembly	Gage Element Diameter	
	GO	NO-GO		GO	NO-GO
46754-2	13.564-13.571 [.5340-.5343]	13.815-13.818 [.5439-.5440]	46759-2	20.422-20.429 [.8040-.8043]	20.673-20.676 [.8139-.8140]
46755-2	15.037-15.044 [.5920-.5923]	15.288-15.291 [.6019-.6020]	46760-2	21.539-21.547 [.8480-.8483]	21.791-21.793 [.8579-.8580]
46756-2	16.612-16.619 [.6540-.6543]	16.863-16.866 [.6639-.6640]	59870-1	18.288-18.296 [.7200-.7203]	18.539-18.542 [.7299-.7300]
46757-2	17.831-17.838 [.7020-.7023]	18.082-18.085 [.7119-.7120]	69653	12.421-12.428 [.4890-.4893]	12.672-12.675 [.4989-.4990]
46758-2	19.406-19.413 [.7640-.7643]	19.657-19.660 [.7739-.7740]			

Figure 11

If the crimping chamber **DOES** conform to the gage inspection, the dies may be considered dimensionally correct and should be lubricated with a THIN coat of any good SAE 20 motor oil.

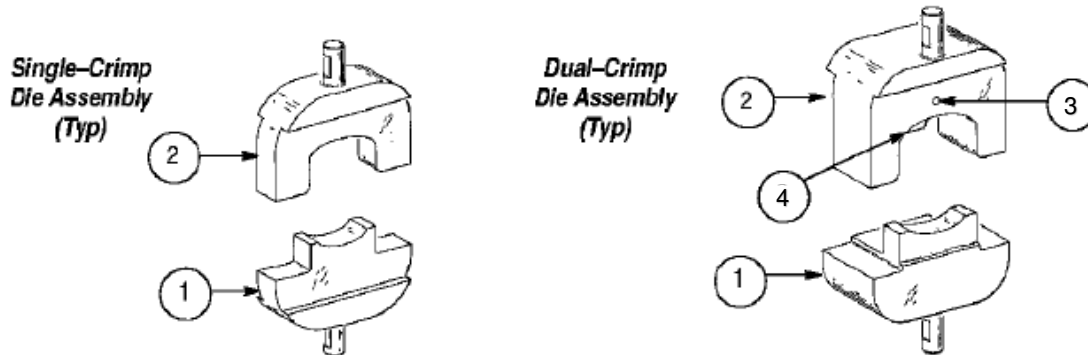
If the crimping chamber **DOES NOT** conform to the gage inspection, refer to Section 7 for information on obtaining further evaluation and repair.

**NOTE:** For additional information regarding the use of a plug gage, reference Instruction Sheet [408-7424](#).

## 7. REPLACEMENT AND REPAIR

Customer-replaceable parts are listed in Figure 12. 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 TE to insure quality and reliability. Order replacement parts through your TE representative, or call 1-800-526-5142, or send a FAX 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



REPLACEMENT PARTS FOR SINGLE-CRIMP DIE ASSEMBLIES							
ITEM	PART NUMBER FOR DIE ASSEMBLY			DESCRIPTION	QTY PER ASSEMBLY		
	69653	46754-2	46755-2				
1	1-45831-3	305688-6	305688-7	DIE, Moving	1		
2	1-45830-3	305687-6	305687-7	DIE, Stationary	1		

REPLACEMENT PARTS FOR DUAL-CRIMP DIE ASSEMBLIES								
ITEM	PART NUMBER FOR DIE ASSEMBLY						DESCRIPTION	QTY PER ASSEMBLY
	46756-2	46757-2	46758-2	46759-2	46760-2	59870-1		
1	305688-8	305688-9	1-305688-0	1-305688-1	1-305688-2	45835-9	DIE, Moving	1
2	305687-8	305687-9	1-305687-0	1-305687-1	1-305687-2	45834-9	DIE, Stationary	1
3	1-21919-3	1-21919-3	1-21919-4	1-21919-4	1-21919-4	1-21919-3	PIN, Dowel	1
4	314947-1						EJECTOR	1

Figure 12

## 8. REVISION SUMMARY

- Changed callouts 3 and 4 in Figure 12