

Figure 1

### 1. INTRODUCTION

AMP\* Die Assemblies 1320444-1 (shown in Figure 1) and 1320447-1 are used to crimp Break-Away butt splices, listed in Figure 2, onto nickel-plated copper wire sizes 3/0 or 2 AWG.

The die assemblies are used in DYNACRIMP\* Crimping Head 69066 (408-2453) or Hydraulic Crimping Head 58422-1 (408-9535). The head must be installed onto Hydraulic Power Unit 69120-[ ] (409-1950) or Hydraulic Hand Pump 314979-1 (409-5860).

Refer to the instruction sheet (408-series) for information concerning general performance of the head, and the customer manual (409-series) for information on operating the power units.

Read these instructions and any referenced documents thoroughly before using the die assemblies.

**NOTE**

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

### 2. DESCRIPTION (Figure 1)

Each die assembly consists of an indenter (stationary die) and anvil (moving die). When mated, the dies form a crimping chamber. The moving die assembly is marked with the wire size, and the FRONT of each die is marked with an alignment dot. The dots are

used to align the dies for proper mating when installed onto the crimping head. The dies are held in the crimping head by the shanks on the dies.

### 3. CRIMPING PROCEDURE

#### 3.1. Die Installation

**DANGER**

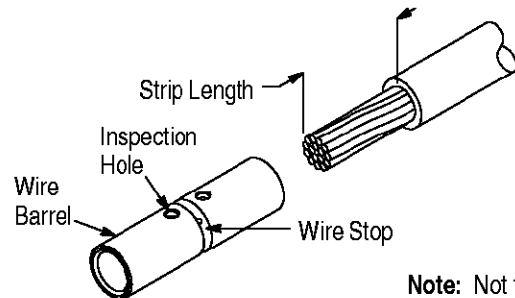
To avoid personal injury, ALWAYS DISCONNECT electrical and air supply from power unit before changing dies.

Install the die assembly onto the crimping head according to the instructions packaged with the crimping head. Make sure that the alignment dot on each die faces the FRONT of the head when installed onto the head. DO NOT MIX die components from different die assemblies.

#### 3.2. Wire and Butt Splice Selection

Refer to Figure 2, and select the appropriate wire size, die assembly, and butt splice. Strip the wire to the length indicated. Do NOT nick or cut the wire strands.

#### Typical Break-Away Butt Splice



| WIRE       |              | SPLICE   |      | DIE ASSEMBLY |
|------------|--------------|----------|------|--------------|
| SIZE (AWG) | STRIP LENGTH | PN       | SIZE |              |
| 3/0        | 25.4 [1.00]  | 696087-1 | 3/0  | 1320444-1    |
| 2          | 23.0 [.906]  | 696096-1 | 02   | 1320447-1    |

Figure 2

#### 3.3. Crimping the Butt Splice

**DANGER**

To avoid personal injury, CLOSE YOKE OF HYDRAULIC HEAD AND FULLY INSERT PIN. When operating the power unit, be careful when handling splices or wire near the crimping area.

There are two approved methods for crimping these butt splices as follows:

**A. First (Preferred) Method**

1. Insert properly stripped wire into the butt splice wire barrel to be crimped until the wire butts against the splice wire stop. Make sure that the wire conductors are visible in the splice inspection hole.
2. Position the butt splice on the stationary die so that the splice inspection holes face the stationary die. Make sure that the wire barrel to be crimped is centered in the crimping chamber. See Figure 3.

**NOTE** *The splice must be properly positioned on the stationary die so that moving die crimps the splice wire barrel. Refer to Figure 4.*

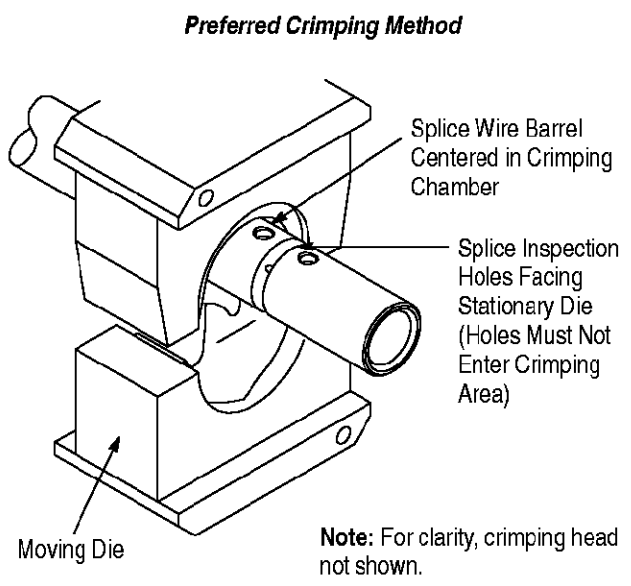


Figure 3

**Splice Location in Crimping Area**

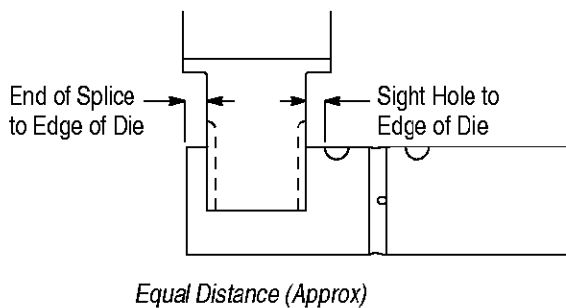


Figure 4

3. Holding the wire in place, actuate power unit to complete the first crimp.
4. When crimp is completed, remove pin from crimping head, open yoke, and remove the splice.

**NOTE** *If splice sticks in dies after crimping, apply a rocking action to remove the splice from the dies. Wipe light oil or spray dry lubricant on the crimping surface of the dies to reduce sticking.*

5. To crimp the other half of the butt splice, follow Steps 1 through 4.

**B. Second (Alternate) Method**

1. Position the butt splice on the stationary die so that the splice inspection holes face the stationary die. Make sure that the wire barrel to be crimped is centered in the crimping chamber. See Figure 5.

**NOTE** *The splice must be properly positioned on the stationary die so that moving die crimps the splice wire barrel. Refer to Figure 4.*

2. DO NOT insert wire into splice at this time. Slowly actuate the power unit until the splice is just held in place. BE VERY CAREFUL NOT TO DEFORM THE SPLICE. If the splice is deformed, the wire cannot be inserted properly. See Figure 5.
3. Insert properly stripped wire into the splice wire barrel to be crimped until the wire butts against the splice wire stop. Make sure that the wire conductors are visible in the splice inspection hole.
4. Holding the wire in place, actuate power unit to complete the first crimp.

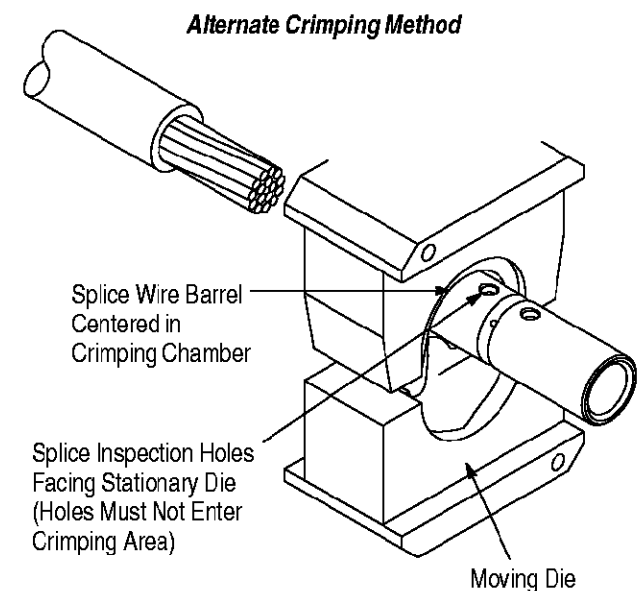


Figure 5

5. When crimp is completed, remove pin from crimping head, open yoke, and remove the splice.

**NOTE**

If splice sticks in dies after crimping, apply a rocking action to remove the splice from the dies. Wipe light oil or spray dry lubricant on the crimping surface of the dies to reduce sticking.

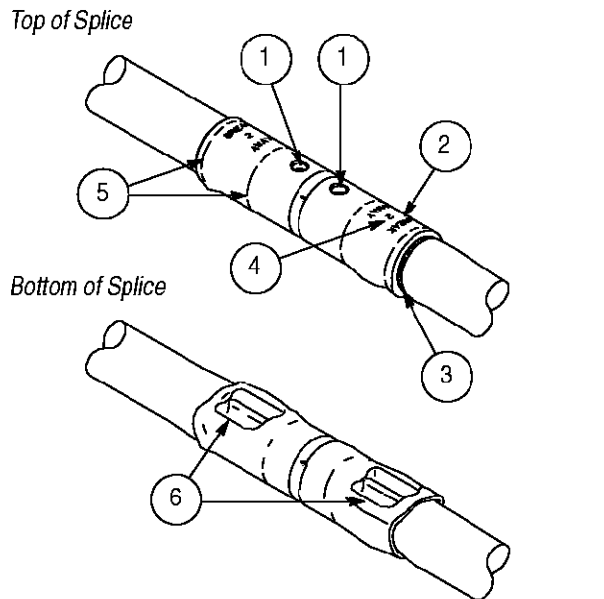
6. To crimp other half of butt splice, rotate the splice or power unit 180°, making sure that the splice is properly positioned as described in Step 1. Then follow Steps 2 through 5.

**3.4. Crimp Inspection**

Inspect the crimped butt splice according to Figure 6. Use only butt splices that meet the conditions shown.

**NOTE**

For detailed crimp inspection requirements, refer to Application Specification 114-13004.

**Crimp Inspection**

- 1 Wire Conductor Ends Must Be Against Wire Stop (Visible in Inspection Hole)
- 2 Crimp Identification Embossment Must Show and Be Aligned with Inspection Holes
- 3 Wire Insulation Must Not Enter Wire Barrel
- 4 Crimp Identification Embossment on Splice Wire Barrel Must Match Wire Size
- 5 Die Mark Centered (Approx) Between Edge of Wire Barrel and Inspection Hole
- 6 Crimp May Be Off Center, But Not Off End of Wire Barrel

Figure 6

**4. MAINTENANCE AND INSPECTION****DANGER**

To avoid personal injury, ALWAYS DISCONNECT electrical and air supply from power unit before performing adjustments, inspections, or repairs.

The die assemblies are inspected before shipment; however, it is recommended that the die assembly be inspected immediately upon arrival at your facility to ensure that it has not been damaged during shipment.

**4.1. Daily Maintenance**

It is recommended that each operator of the die assembly be made aware of, and responsible for, the following steps of daily maintenance.

1. Remove all foreign particles from the dies with a clean, soft brush, or a clean, soft, lint-free cloth. Do not use objects that could damage the dies.
2. Make certain that the dies are protected with a thin coat of any good SAE 20 motor oil. Do NOT oil excessively.
3. When dies are not in use, mate them and store them in a clean, dry area.

**4.2. Periodic Inspection**

Regular inspections should be performed by quality control personnel with a record of scheduled inspection remaining with the die assembly or supplied to personnel responsible for them. Though recommendations call for at least one inspection per month, inspection frequency should be based upon amount of use, working conditions, operator training and skill, and established company standards. The inspections should be performed in the following sequence:

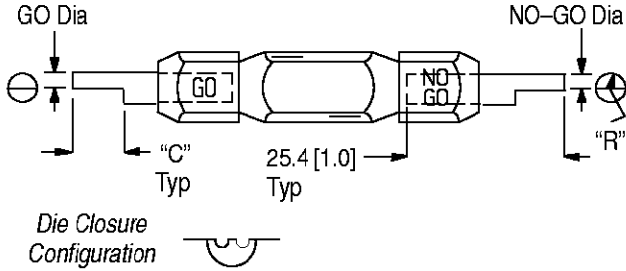
1. Remove all lubrication and accumulated film by immersing the dies in a suitable commercial degreaser that will not affect paint or plastic material.
2. Check all bearing surfaces for wear. Replace worn components. Refer to Section 5.
3. Inspect the crimp area for flattened, chipped, cracked, worn, or broken areas. If damage is evident, the dies must be repaired before returning them to service. Refer to Section 5.

**4.3. Gaging the Crimping Chamber**

This inspection requires the use of plug gages conforming to the dimensions provided in Figure 7. To gage the crimping chamber, proceed as follows:

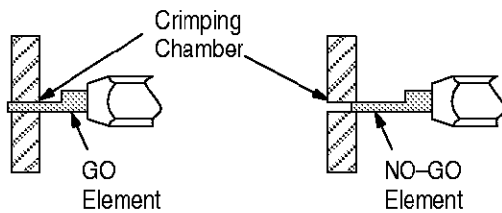
1. Remove traces of oil or dirt from the crimping chamber and plug gage.
2. Mate dies until it is evident that they have bottomed. Do NOT force beyond initial contact.

**Suggested Plug Gage Design**



| DIE ASSEMBLY | GAGE ELEMENT DIMENSIONS      |                              |                 |                |
|--------------|------------------------------|------------------------------|-----------------|----------------|
|              | GO                           | NO-GO                        | "C"             | "R" (Radius)   |
| 1320444-1    | 7.832-7.830<br>[.3080-.3083] | 8.023-8.026<br>[.3159-.3160] | 14.28<br>[.562] | 3.53<br>[.375] |
| 1320447-1    | 5.410-5.418<br>[.2130-.2133] | 5.610-5.613<br>[.2209-.2210] | 11.09<br>[.437] | 6.35<br>[.250] |

**Inspection of Crimping Chamber**



GO element must pass completely through the crimping chamber.

NO-GO element may enter partially, but must not pass completely through the crimping chamber.

Figure 7

3. Insert GO element into the crimping chamber; but do not force it. The GO element must pass completely through the crimping chamber. Refer to Figure 7.

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 through the length of the crimping chamber. Refer to Figure 7.

If the crimping chamber conforms 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 5 for information on customer repair service.

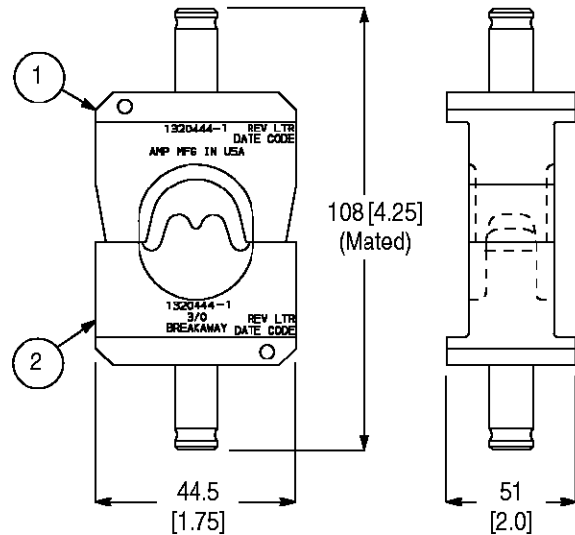
For additional information regarding the use of a plug gage, refer to 408-7424.

**5. REPLACEMENT AND REPAIR**

Customer-replaceable parts are listed in Figure 8. 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 Tyco to ensure quality and reliability. Order replacement parts through your 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

For customer repair service, please contact a representative at 1-800-526-5136.



Weight: 255 g [9 oz]

**REPLACEMENT PARTS**

| ITEM | PART NUMBER FOR DIE ASSEMBLY |           | DESCRIPTION               | QTY PER ASSEMBLY |
|------|------------------------------|-----------|---------------------------|------------------|
|      | 1320444-1                    | 1320447-1 |                           |                  |
| 1    | 1320446-1                    | 1320446-2 | INDENTER (Stationary Die) | 1                |
| 2    | 1320445-1                    | 1320445-2 | ANVIL (Moving Die)        | 1                |

Figure 8

**6. REVISION SUMMARY**

Per EC 0990-0823-99:

- Initial release of instruction sheet