

For complete instructions concerning the related applicators or machines, refer to the customer documents supplied with the respective tooling. These documents will explain further instructions relative to tooling adjustments, die installation, tape loading, maintenance, etc.

Read this sheet thoroughly before installing or using the die assemblies. Reason for revision is provided in Section 8, REVISION SUMMARY.

NOTE
 Dimensions in this document are in millimeters and [inches]. Figures and illustrations are for reference only and are not drawn to scale.

2. DESCRIPTION

These die assemblies consists of two stationary dies and two movable dies. These features allow one set of dies to crimp the wire barrel while crimping the insulation simultaneously. See Figure 1.

Refer to Catalogs 82004 and 82042 for complete product information and features.

DANGER
 Avoid personal injury. Always disconnect machine from power supply when performing adjustments, die installation or removal, and machine maintenance. Always keep guards and covers in place during normal machine operation.

DIES	APPLICATOR (DOCUMENT)	MACHINE● (DOCUMENT)
59826-1 59827-1 59828-1	567200-2	1901700-[] (409-10078)
	567200-3	354500-[] (409-5842)
		1490501-[] (409-10029)
1725900-[] (409-10047)		
1725910-[] (409-10027)		
1725950-[] (409-10047)		
1901700-[] (409-10078)		
687658-1	122500-[] (409-5852)	
	356500-[] (409-5878)	

● Other Tyco Electronic machines may be available. Contact the Tooling Assistance Center number at the bottom of this page for more information.

Figure 1

1. INTRODUCTION

This Instruction Sheet (IS) covers the use and care of Crimping Die Assemblies 59826-1, 59827-1, and 59828-1. See Figure 1. These dies are used to crimp the PIDG* and PLASTI-GRIP* FASTON* terminals and splices listed in Figure 2 which are designed to be used in the various applicators and machines listed in Figure 1.

3. WIRE PREPARATION AND CRIMP INSTRUCTIONS

Figure 2 lists the preferred wire strip lengths for products discussed in this publication. However, depending on your wire stripping machine adjustment (strip length) capabilities, wire strip length may be increased to the nearest 0.8 mm [.031 in.] if necessary.

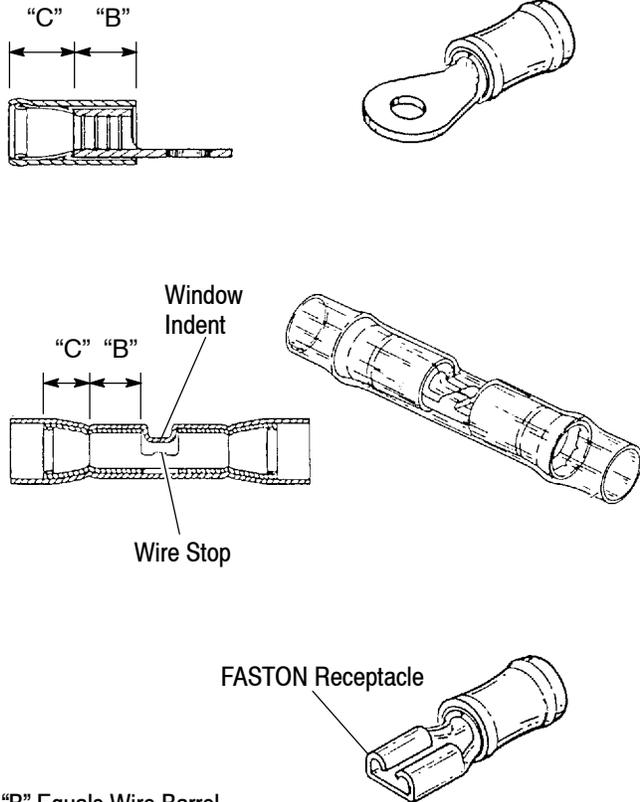
CAUTION
 Do not use wires with nicked or missing conductor strands.

Refer to the respective machine manual for crimp instructions.

4. COLOR AND DOT CODE

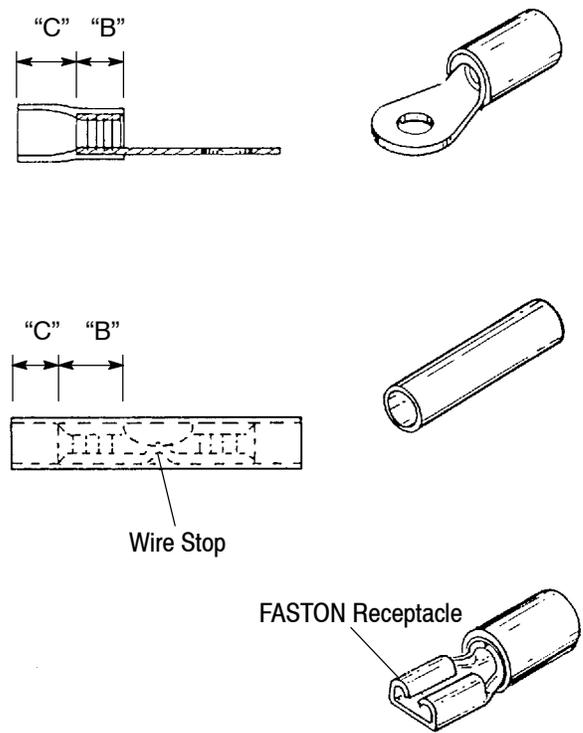
Dies, terminals, and splices are color-coded for a given wire range as shown in Figure 2. Color coding is used as a method of verifying that the correct combination of die set and terminal or splice was used.

**Typical PIDG Type
Terminals and Splices**



"B" Equals Wire Barrel
"C" Equals Insulation Barrel

**Typical PLASTI-GRIP Type
Terminals and Splices**



"B" Equals Wire Barrel
"C" Equals Insulation Barrel

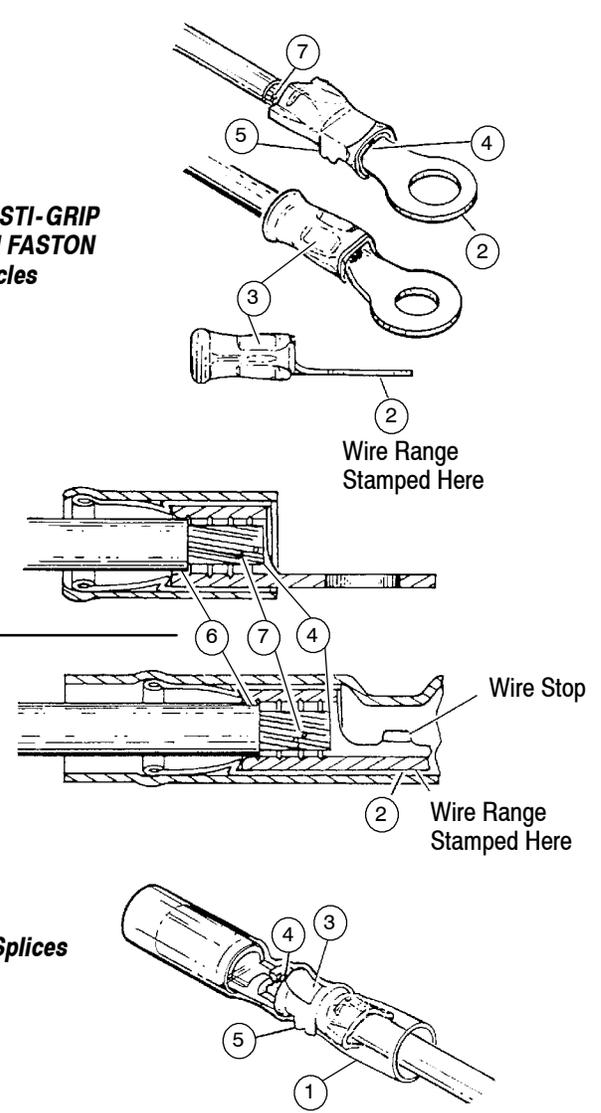
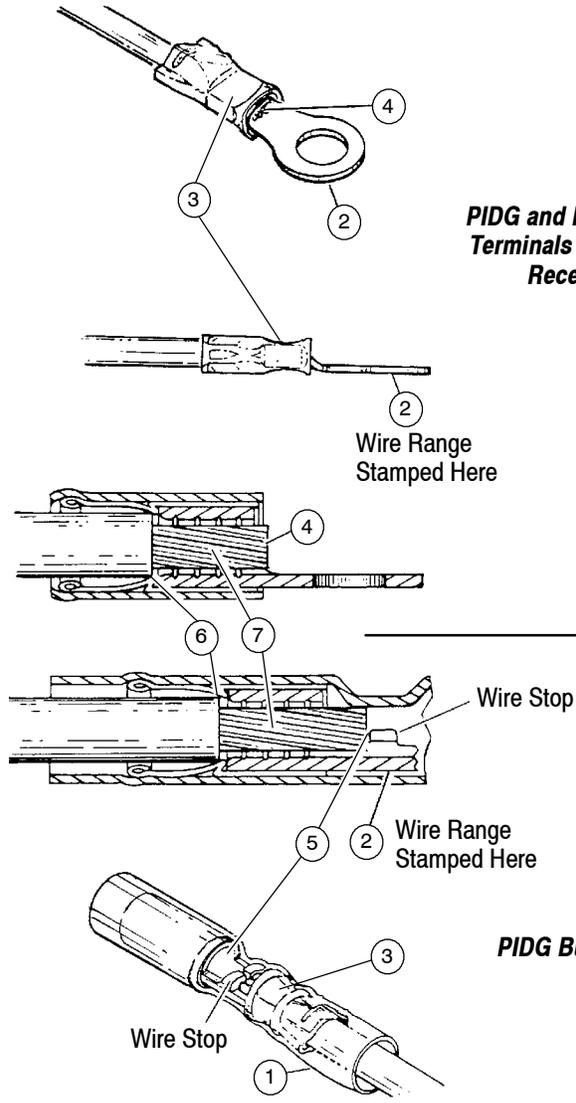
DIE SET NUMBER AND COLOR CODE DOT	PRODUCT INSULATION COLOR CODE	PRODUCT	WIRE STRIP LENGTH				WIRE SIZE mm ² [AWG]
			TERMINALS		SPLICES		
			MIN	MAX	MIN	MAX	
59826-1 (Red)	Red	PIDG and PLASTI-GRIP Terminals and Splices	5.16 [.203]	5.95 [.234]	6.35 [.250]	7.14 [.281]	0.3-1.3 [22-16]
		PIDG and PLASTI-GRIP FASTON Receptacles☐☐	7.54 [.297]	8.33 [.328]	---	---	0.3-0.8 [22-18]
59827-1 (Blue)	Blue	PIDG and PLASTI-GRIP Terminals and Splices	5.16 [.203]	5.95 [.234]	6.35 [.250]	7.14 [.281]	1.3-2.0 [16-14] 0.5-1.3 [20-16] HD
		PIDG and PLASTI-GRIP FASTON Receptacles☐☐	7.54 [.297]	8.33 [.328]	---	---	1.3-2.0 [16-14]
59828-1 (Yellow)	Yellow	PIDG Terminals and PLASTI-GRIP Terminals and Splices	7.94 [.313]	8.73 [.344]	8.73 [.344]	9.53 [.375]	3.0-5.0 [12-10] 1.3-2.0 [16-14] HD■
		PIDG and PLASTI-GRIP FASTON Receptacles☐☐	7.94 [.313]	9.53 [.375]	---	---	3.0-5.0 [12-10]

☐☐Crimp using foot petal control only.

■Yellow with black stripe product insulation color code.

Figure 2

ACCEPT *PIDG Type Terminals and Splices Shown* **REJECT**



PIDG and PLASTI-GRIP Terminals and FASTON Receptacles

PIDG Butt Splices

- ① Correct product insulation color and die set combination.
- ② Wire size is within wire range stamped under terminal tongue or on center of splice.
- ③ Crimp centered on wire barrel.
- ④ End of conductor is flush with, or extends slightly beyond end of terminal wire barrel.
- ⑤ End of conductor against wire stop of splice, or at least flush with, or extended slightly beyond wire barrel.
- ⑥ Wire insulation does not enter wire barrel.
- ⑦ No nicked or missing conductor strands.

- ① Wrong product insulation color and die set combination.
- ② Wire size is not within wire range stamped on terminal tongue or splice.
- ③ Crimp not centered on wire barrel. See machine manual for terminal positioning and crimp location adjustments.
- ④ End of conductor is not flush with or extending beyond end of wire barrel. (Check for correct strip length.)
- ⑤ Excessive flash or extruded insulation, (wrong die set, terminal, or splice combination, or damaged dies.)
- ⑥ Wire insulation entered wire barrel.
- ⑦ Nicked or missing conductor strands.

Figure 3

5. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figure 3.

Use only the terminals and splices that meet conditions shown in the “ACCEPT” column.

“REJECT” terminals and splices can be avoided through careful use of instructions provided in the machine manual and by performing regular die maintenance as instructed in Paragraph 6 of this Instruction Sheet.

6. DIE MAINTENANCE/INSPECTION PROCEDURE



Disconnect power supply from tooling before any inspection, maintenance, adjustment, or repair.

TE Connectivity recommends that a maintenance/inspection program be performed periodically to ensure dependable and uniform terminations. Frequency of inspection may be adjusted to suit your requirements through experience.

Frequency of inspection depends on:

1. The care, amount of use, and handling of the dies.
2. Type and size of products being crimped.
3. Skill level of the operator.
4. Presence of abnormal amounts of dust and dirt.
5. Your own established standards.

6.1. Initial Die Inspection

The dies are thoroughly inspected before shipping. The dies should be inspected immediately upon arrival at your facility to ensure the dies have not been damaged during shipment, and that they conform to Figure 7. If the dies are damaged upon arrival, retain the shipping container, file a claim with the carrier, and notify TE immediately.

6.2. Daily Maintenance

It is recommended that each operator of the dies be made aware of — and responsible for — the following four steps of daily maintenance.

1. Remove dust, moisture, and other contaminants from the dies with a clean brush, or a soft, lint-free cloth. Do **NOT** use objects that could damage the dies.

2. Check the die alignment and tighten the die holding screws regularly.

3. Make certain the dies are protected with a THIN coat of any good SAE No. 20 motor oil. Do **NOT** oil excessively.

4. When the dies are not in use, store them in a clean, dry area.

6.3. Periodic Inspection

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the dies and/or be supplied to supervisory personnel responsible for the dies. Though recommendations call for at least one inspection a month, the inspection frequency should be based on the amount of use, ambient working conditions, operator training and skill, and established company standards. These inspections should be performed in the following sequence:

6.4. Visual Inspection

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. Make sure all die holding screws, retaining rings, and die components are in place. Refer to the parts list in Figure 8 if replacements are necessary.
3. Check all bearing surfaces for wear. Remove and replace worn components.
4. Inspect the crimp area for flattened, chipped cracked, worn, or broken areas. Although dies may gage within permissible limits, worn or damaged die closure surfaces are objectionable and can affect the quality of the crimp. See Figure 4. If damage is evident, the dies must be repaired before returning them to service (See Paragraph 7, DIE REPLACEMENT AND REPAIR).

6.5. Die Closure Inspection

Every die set is inspected for proper die closure dimensions before packaging. However, inspection of die closure for excessive wear is required periodically. Die closure inspection is accomplished using plug gages.

TE neither manufactures nor sells plug gages. A suggested plug gage design and the GO and NO-GO dimensions for plug gage elements are given in Figures 5 and 6. For additional information concerning the use of a plug gage, refer to Instruction Sheet 408-7424.

Clean oil or dirt from the die closure surfaces, bottoming surfaces, and plug gage elements.

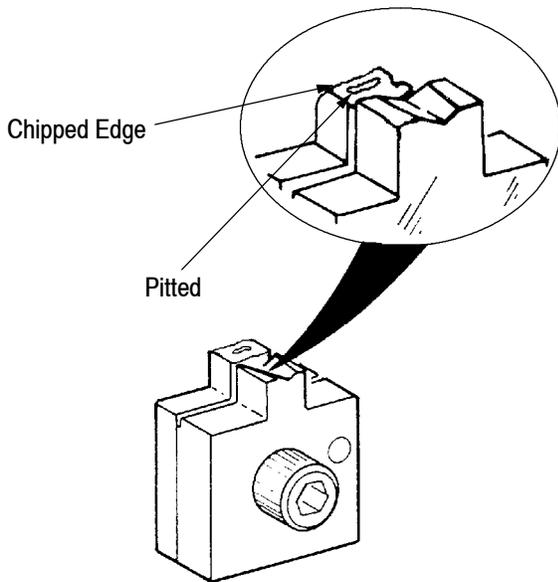


Figure 4

A. Wire Barrel Crimp Die Closure (Figure 7A)

1. Assemble dies so that wire barrel crimp dies are bottomed but not under pressure.

2. With wire barrel crimp dies bottomed, inspect the wire barrel crimp die closure using the proper plug gage. Hold gage in straight alignment with the die closure and carefully insert, without forcing, the GO element. The GO element must pass completely through the wire barrel crimp die closure.

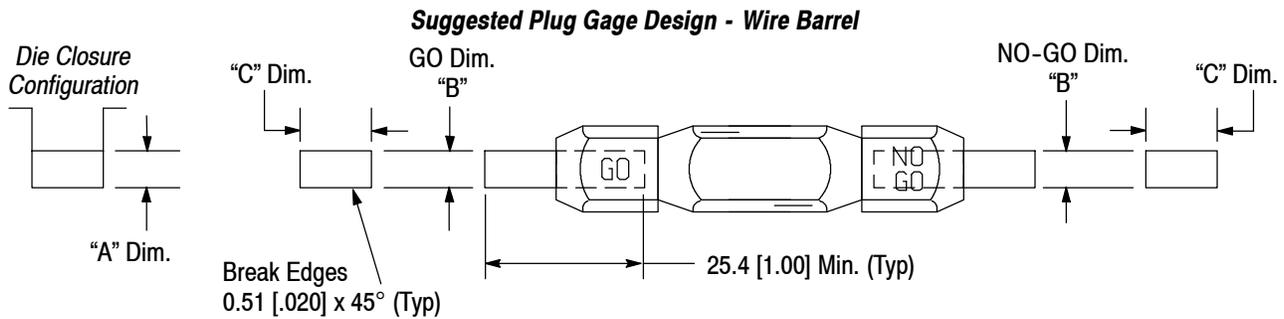
3. Try to insert the NO-GO element. The NO-GO element may enter partially, but must not pass completely through the wire barrel crimp die closure.

B. Insulation Crimp Die Closure (Figure 7B)

1. With the wire barrel crimp dies bottomed and not under pressure, adjust the dies to meet the “gage dimension” as shown in Figure 7B.

2. Inspect the insulation crimp die closure using the proper plug gage in the same manner as steps 6.5.A. (2) and (3).

If both the wire barrel and insulation crimp die closures meet the plug gage conditions, the dies are considered to be correct and should be lubricated with a THIN coat of any good SAE No. 20 motor oil. If not, the dies must be repaired before returning them to service (See Paragraph 7, DIE REPLACEMENT AND REPAIR).

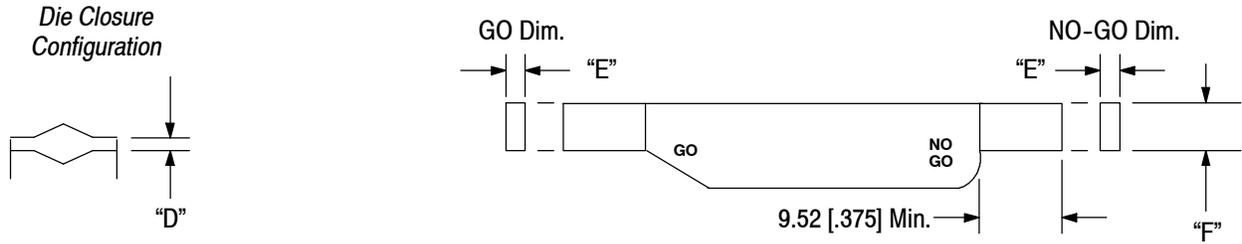


DIE SET	DIE CLOSURE DIM'S "A"†		GAGE ELEMENT‡ DIM'S "B"		"C" DIM
	GO	NO-GO	GO	NO-GO	
59826-1	1.98 [.078]	2.18 [.086]	1.98-1.99 [.0780-.0783]	2.18-2.19 [.0859-.0860]	4.49 [.185]
59827-1	2.33 [.092]	2.54 [.100]	2.33-2.34 [.0920-.0923]	2.53-2.54 [.0999-.1000]	5.33 [.210]
59828-1	3.25 [.128]	3.45 [.136]	3.25-3.26 [.1280-.1283]	3.45-3.46 [.1359-.1360]	6.85 [.270]

† Die closure dimensions apply when wire barrel crimp dies are bottomed but not under pressure.

‡ Material - Tool Steel

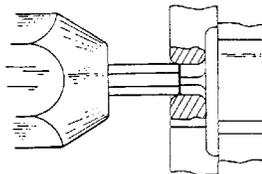
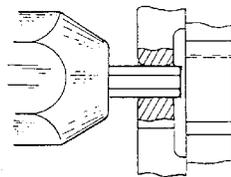
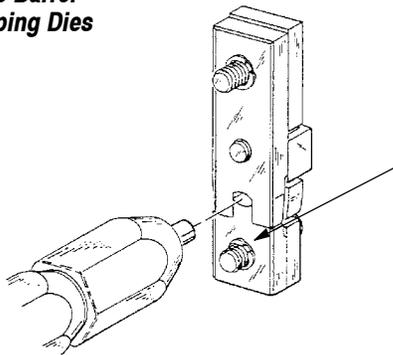
Figure 5

Suggested Plug Gage Design - Insulation Crimp


DIE SET	DIE CLOSURE DIM'S "D"†		GAGE ELEMENT‡ DIM'S "E"		"F" DIM
	GO	NO-GO	GO	NO-GO	
59826-1	0.76 [.030]	1.27 [.050]	0.76-0.77 [.0300-.0303]	1.26-1.27 [.0498-.0500]	4.57 [.180]
59827-1	1.01 [.040]	1.52 [.060]	1.01-1.02 [.0400-.0403]	1.51-1.52 [.0598-.0600]	5.58 [.220]
59828-1	1.62 [.064]	2.13 [.084]	1.62-1.63 [.0640-.0643]	2.12-2.13 [.0838-.0840]	7.36 [.290]

† Die closure dimensions apply when dies are positioned at gage dimensions as shown in Figure 7B.
‡ Material - Tool Steel

Figure 6

**Detail "A"
Inspection of
Wire Barrel
Crimping Dies**

**Detail "B"
Inspection of
Insulation
Crimping Dies**

1.18 [.0465] (Gage Dim.)

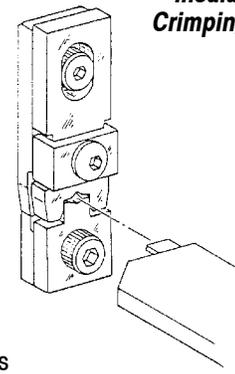
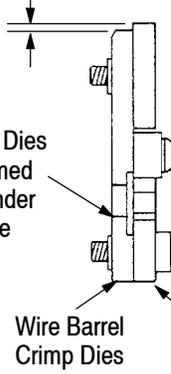
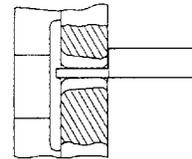
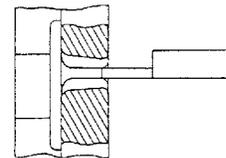
 Wire Barrel Dies
are Bottomed
but Not Under
Pressure

 "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 7

7. DIE REPLACEMENT AND REPAIR



Due to their precision design, it is important that no parts of these dies are interchanged.

Parts listed in Figure 8 are customer-replaceable. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Damaged dies cannot be repaired: replace any worn or damaged dies or die components immediately. Replacement parts or additional dies

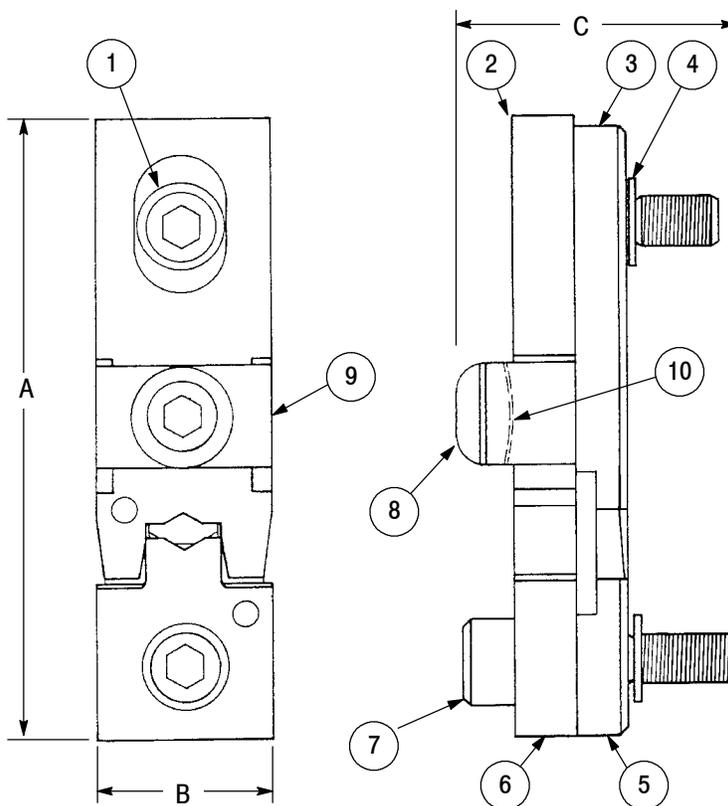
may be requested by calling 1 800 526-5142 or send a facsimile of your purchase order to 1 717 986-7605 or by contacting:

CUSTOMER SERVICE (38-35)
 TYCO ELECTRONICS CORPORATION
 P.O. BOX 3608
 HARRISBURG PA 17105-360

8. REVISION SUMMARY

- Updated document to corporate requirements.

**Die Assembly
 59827-1 (Typ)**



DIE SPEC DIMENSIONS		REPLACEMENT PARTS					
		ITEM	DESCRIPTION	QTY	DIE ASSEMBLY NUMBER		
					59826-1	59827-1	59828-1
A	57.53 [2.265]	1	SCREW, Special	1	2-59781-4	2-59781-4	59781-1
		2	INSULATION DIE, Moving	1	307285-1	307285-2	307276-1
B	15.87 [.625]	3	WIRE BARREL DIE, Moving	1	310605-1	310605-2	310606-1
		4	RING, Retaining	2	1-21046-3	1-21046-3	1-21046-3
C	25.4 [1.00]	5	WIRE BARREL DIE, Stationary	1	310596-1	310600-1	310604-1
		6	INSULATION DIE, Stationary	1	1-59619-7	1-59619-8	1-59619-2
WEIGHT (Approx.) 113 g [4 oz.]		7	SCREW, Special	1	59781-6	59781-6	59781-5
		8	SCREW	1	2-59577-9	2-59577-9	2-59577-8
		9	SADDLE	1	307275-9	307275-9	1-307275-0
		10	WASHER, Curved	1	24088-8	24088-8	24088-8

Figure 8