AMP INCORPORATED
Harrisburg, Pa. 17105

APPLICATION AND MAINTENANCE FOR AMP* CRIMPING DIE ASSEMBLIES FOR SIZE 3/0 AND 4/0 AMPLI-BOND* AND PLASTI-GRIP* TERMINALS

Instruction Sheet
IS 9232
RELEASED 4-8-86

REDUCED FOR PACKAGING

Section I of this instruction sheet provides application procedures for AMP crimping die assemblies.

Section II provides maintenance and inspection procedures for AMP crimping die assemblies.

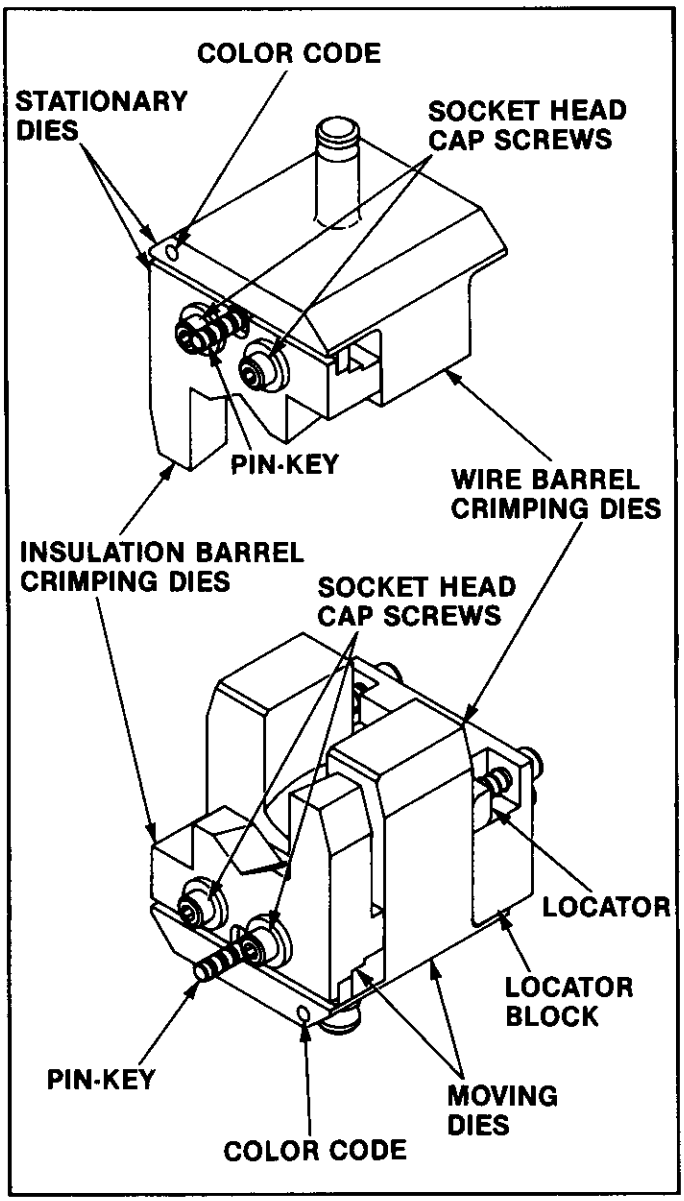

Fig. I-1

SECTION I APPLICATION

I-1. INTRODUCTION

The crimping die assemblies listed on this instruction sheet (IS) are designed for use in AMP DYNA-CRIMP* Crimping Heads 69066 and 69993 to crimp AMPLI-BOND and PLASTI-GRIP terminals on wire sizes 3/0 and 4/0 AWG. The moving die on the hydraulic head can be used in AMP Hydraulic Power Unit 69120 or in AMP Hydraulic Foot Pumps 69325 and 69325-1.

This instruction sheet describes terminal crimping, die maintenance and inspection procedures, and die replacement part information. For information on the DYNA-CRIMP Crimping Head, refer to IS 2453, packaged with tool 69066, or to IS 2460, packaged with tool 69993. See Customer Manual CM 1950 for information on the power unit, or see CM 1980 for information on the foot pumps.

NOTE *All dimensions presented on this instruction sheet are in inches.*

I-2. DESCRIPTION

Each die assembly consists of two stationary dies, two moving dies, a spring-loaded locator on a locator block, and two pin-keys (for insulation crimp adjustment). See Figure I-1. When mated, the dies form two crimping chambers; one chamber crimps the terminal wire barrel, and the other chamber crimps the terminal insulation barrel. Both crimps are made simultaneously. The locator, mounted on a block on the moving die, aids in positioning the terminal in the crimping dies.

The dies are color coded according to wire size for easy identification. The terminal size is stamped on the wire barrel crimping chambers of both the stationary and moving dies. When a terminal is crimped, the wire size appears on both sides of the terminal wire barrel. The size appearing on the crimped wire barrel should always agree with the wire size stamped on the terminal tongue.

I-3. CRIMPING PROCEDURE

WARNING *TO AVOID PERSONAL INJURY WHEN USING POWER UNIT, EXERCISE CAUTION WHILE HOLDING TERMINALS OR WIRE NEAR CRIMPING AREA.*

1. Refer to Figure I-2 and select a compatible die assembly for the wire/terminal size being used.

2. Install the dies according to the instructions packaged with the DYNA-CRIMP Crimping Head.

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WIRE/ TERMINAL SIZE	DIE ASSEMBLY				TERMINAL COLOR CODE	DIE COLOR CODE
	STANDARD EXPANSION DIES*	MAX. INSUL DIA	LARGE EXPANSION DIES	MAX. INSUL DIA		
3/0	48758-1	.737	47380-1	.799	Red	Red
4/0	48759-1	.799	47668-1	.950	Blue	Blue

*WHEN TIGHT INSULATION SUPPORT IS REQUIRED ON PLASTI-GRIP TERMINALS, USE STANDARD EXPANSION DIES.

Fig. I-2

3. Strip wire to dimension indicated in Figure I-3.

NOTE *Do NOT nick or cut conductor strands.*

4. Insert stripped wire into terminal. End of wire must be flush with, or extend beyond, edge of terminal wire barrel.

5. With yoke on tool open, place terminal in moving die. See Figure I-4. Bottom of terminal tongue should face stationary die, and terminal barrel should rest against spring-loaded locator as shown in Figure I-4.

6. Close yoke and insert latch pin.

CAUTION *Ensure that latch pin is inserted fully, or yoke, dies, and/or latch pin may be damaged.*

7. Hold terminal in place and activate dies to complete crimp.

8. Open yoke and remove crimped terminal.

NOTE *If terminal sticks in die after crimping, use rocking motion on the terminal to remove it from the dies.*

I-4. INSULATION CRIMP ADJUSTMENT

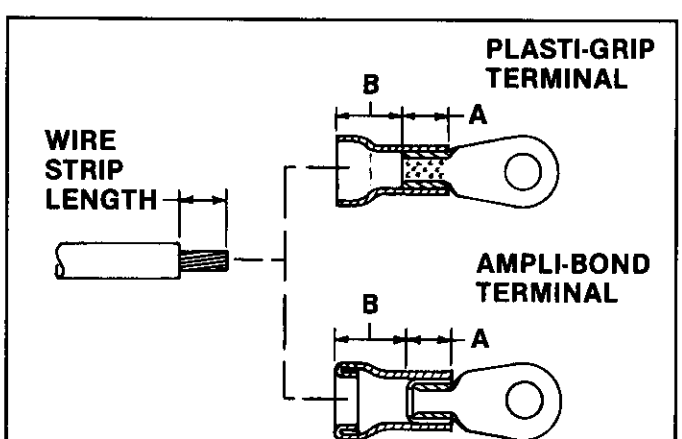
This adjustment is made to the insulation barrel crimping die on the stationary and moving dies after they are installed in the tool head. The dies have three insulation crimp positions. The adjustment is made by moving a pin-key (see Figure I-1). When the pin-key is pushed in all the way, the insulation crimping chamber is in the loose position; when the pin-key is half way out, the insulation crimping chamber is in the medium position; when the pin-key is all the way out, the insulation crimping chamber is in the tight position. Adjust the insulation crimping chamber as follows:

1. Loosen socket head cap screws on stationary die (see Figure I-1) and push pin-key all the way in so that the insulation crimping die is in the loose position.

2. Press and hold insulation die down against pin-key. This prevents the spring-loaded pin-key from popping back.

3. Tighten socket head cap screws.

4. In like manner, adjust insulation crimping die on moving die to the same position.



WIRE SIZE	WIRE STRIP LENGTH	
	MINIMUM	MAXIMUM
3/0	3/4	13/16
4/0	49/64	53/64

Fig. I-3

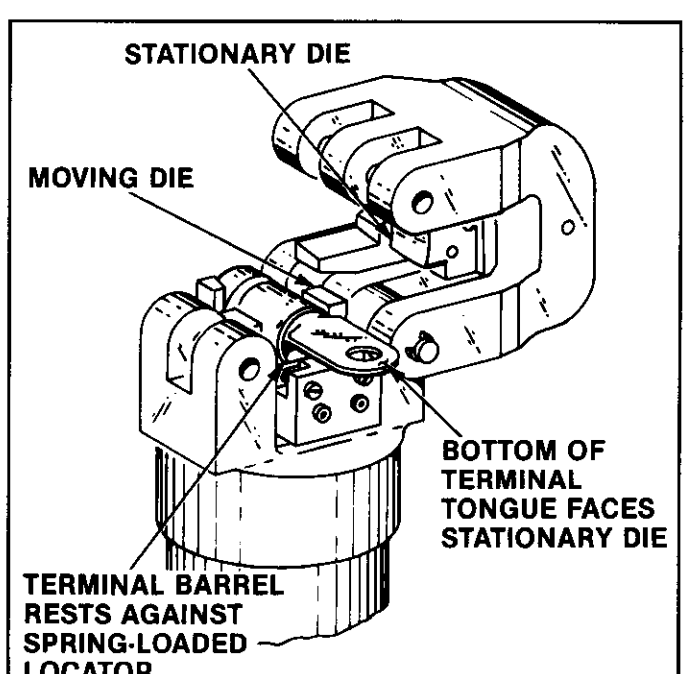


Fig. I-4

5. Make a test crimp. Refer to Paragraph I-3, CRIMPING PROCEDURE.

NOTE *AMPLI-BOND terminals provide a "grip" on wire insulation. PLASTI-GRIP terminals provide only a "support" for the wire.*

6. Remove crimped terminal from dies and visually inspect the insulation crimp portion of the terminal. The insulation crimp should grip the wire insulation (when crimping AMPLI-BOND terminals) or touch the wire's insulation to provide support for the wire (when crimping PLASTI-GRIP terminals).

7. If the insulation crimp does not grip or support the wire insulation as described in Step 6, loosen the socket head cap screws and set the pin-key in the medium position; then repeat Steps 2 through 5.

8. Remove crimped terminal from dies and visually inspect insulation crimp.

9. Repeat adjustment procedure as required until desired insulation crimp is obtained. Do NOT use a setting tighter than required.

I-5. CRIMP INSPECTION

Features of a properly crimped terminal are listed below and are shown in Figure I-5. Use only the terminals that meet the conditions given.

1. Wire must be fully inserted.
2. Crimp must be centered on wire barrel.
3. Correct color code and die combination must be used. (Terminal insulation color matches color code on dies).

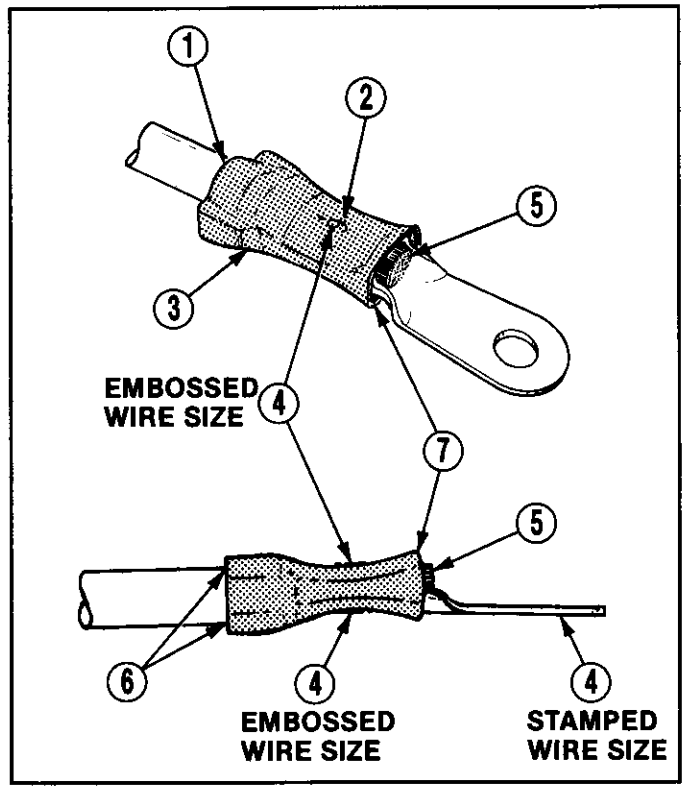


Fig. I-5

4. AWG wire size that is used must be the same as wire size embossed on terminal insulation and stamped on terminal tongue.
5. End of conductor must be flush with, or extend beyond, end of wire barrel of terminal.
6. Insulation barrel must contact wire insulation. (AMPLI-BOND terminals have insulation "grip" and PLASTI-GRIP terminals have insulation "support.")
7. Bellmouth must be visible.

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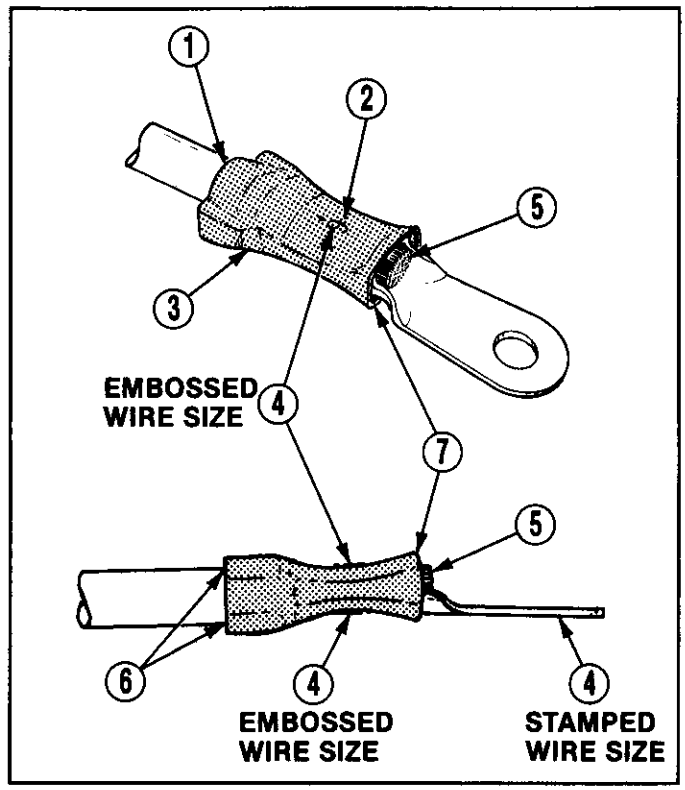

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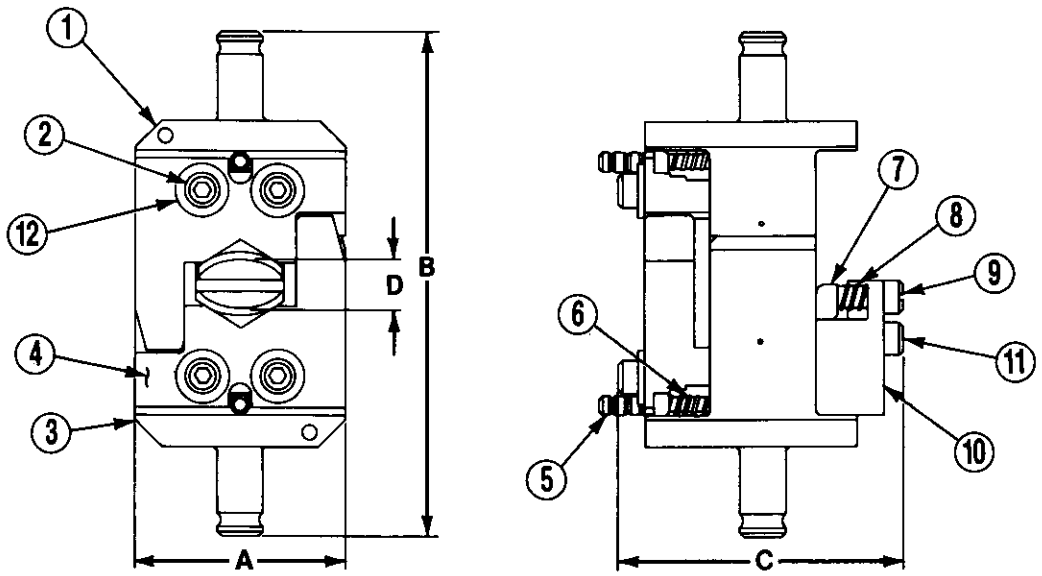

REPLACEMENT PARTS

ITEM	DIE ASSEMBLY				DESCRIPTION	QTY
	47380-1	47668-1	48758-1	48759-1		
1	307809-7	307809-8	307809-7	307809-8	ANVIL	1
2	1-23030-6	1-23030-6	1-23030-6	1-23030-6	SCREW, Skt Hd Cap, Slflkg, Patch Type, 8-32 UNC x 1.250 L	4
3	307810-7	307810-8	307810-7	307810-8	INDENTER	1
4	45859-2	45859-4	45859-3	45859-2	INSERT, Insulation	2
5	313291-2	307100-1	313291-2	307100-1	ASSY, Pin-Key	2
6	2-22279-1	2-22279-1	2-22279-1	2-22279-1	SPRING, Compression .188 OD x .688 L	2
7	313338-1	313338-1	313338-1	313338-1	LOCATOR	1
8	7-59683-0	7-59683-0	7-59683-0	7-59683-0	SPRING, Compression .189 ID x .265 OD x .235 L	2
9	1-22353-0	1-22353-0	1-22353-0	1-22353-0	SCREW, Shldr, Slot Hd, 8-32	2
10	307333-1	307333-1	307333-1	307333-1	BLOCK, Locator	1
11	3-21000-1	3-21000-1	3-21000-1	3-21000-1	SCREW, Skt Hd Cap 8-32 UNC x 1.00 L	2
12	306098-2	306098-2	306098-2	306098-2	WASHER, Flat .170 ID x .438 OD x .062 Thk	4

DIE ASSEMBLY SPECIFICATIONS

DIE ASSY	DIMENSIONS				DIE WEIGHT
	A	B	C	D	
47380-1	1.74	4.15	2.36	.502 ± .003	2 lb 2 oz
47668-1	1.74	4.15	2.36	.564 ± .003	
48758-1	1.74	4.15	2.30	.502 ± .003	
48759-1	1.74	4.15	2.36	.564 ± .003	

ENGINEERING APPROVAL

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Fig. II-1

SECTION II MAINTENANCE/INSPECTION

II-1. DIE CERTIFICATION

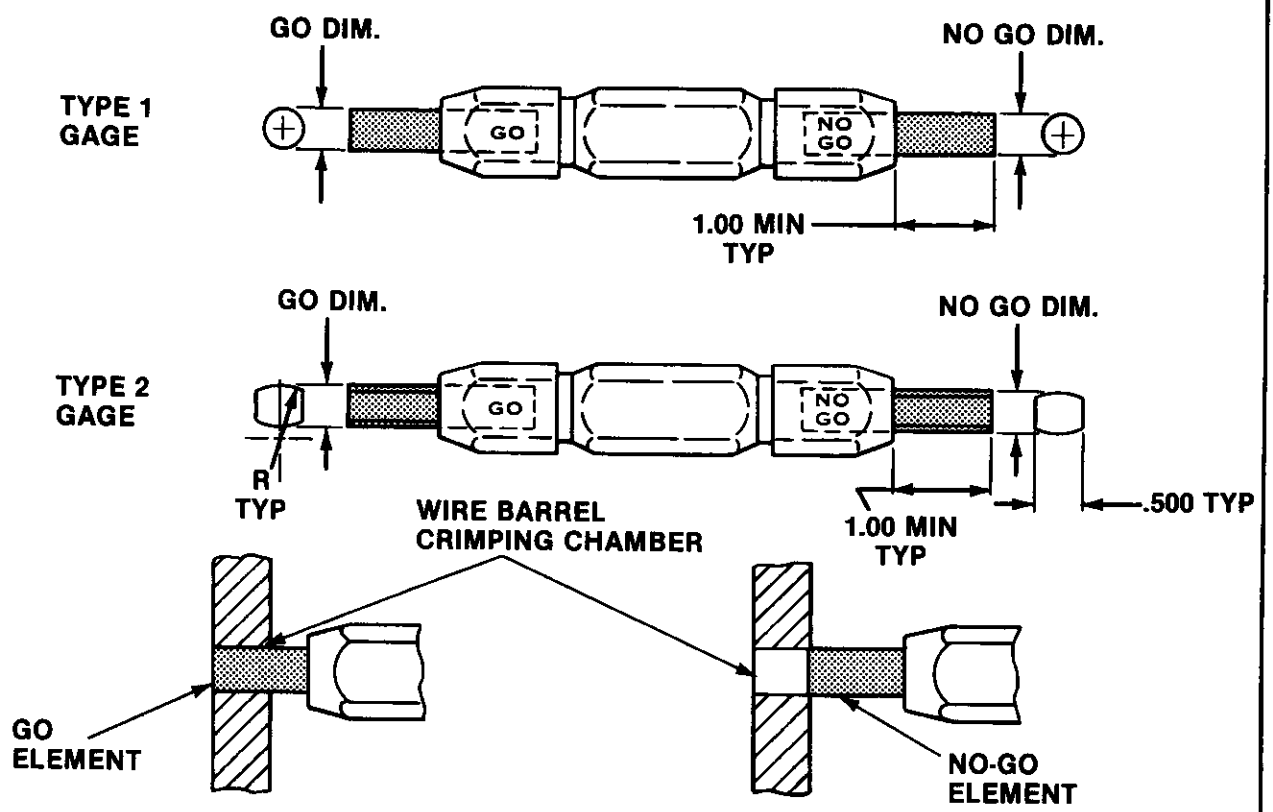
These instructions have been approved by AMP Design, Production, and Quality Control Engineers to provide documented maintenance and inspection procedures in accordance with AMP Corporate Policy No. 3-3. Through AMP test laboratories and the inspection of production assembly, the procedures described herein have been established to ensure the quality and reliability of AMP crimping dies.

II-2. INSPECTION PROCEDURES

A. Daily Maintenance

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

SUGGESTED PLUG GAGE DESIGN—WIRE BARREL CRIMP



DIE NUMBER	GAGE TYPE USED	GAGE MEMBER DIMENSIONS		
		GO	NO-GO	R
47380-1	1	.4990-.4993	.5049-.5050	—
47668-1	1	.5610-.5613	.5669-.5670	—
48758-1	2	.4990-.4993	.5049-.5050	.642
48759-1	1	.5610-.5613	.5669-.5670	—

Fig. II-2

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

2. Make certain the dies are protected with a THIN coat of any good SAE No. 20 motor oil. DO NOT OIL EXCESSIVELY.

3. When the dies are not in use, mate and store them in a clean, dry area.

B. 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:

B-1. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the dies in a suitable commercial degreaser that does not affect paint or plastic material.

2. Make sure all die holding components are in place. Refer to the parts listed in Figure II-1 if replacements are necessary.

3. Check all bearing surfaces for wear. Remove and replace worn components.

4. Inspect the crimping chambers for flattened, chipped, cracked, worn, or broken areas. If damage is evident, the dies must be repaired before returning them to service (see Paragraph II-3, REPAIR).

B-2. Gaging the Wire Barrel Crimping Chamber

The inspection of each die assembly requires the use of a GO NO-GO gage, shown in Figure II-2. The gage is used to check the wire barrel crimping

chamber. AMP does not manufacture or market these gages.

1. Remove the socket head cap screws and the locator block from the moving die for access to the wire barrel crimping chamber.
2. Mate the dies until it is evident that they have bottomed.
3. Align the GO element with the wire barrel crimping chamber. Push the element straight into the crimping chamber. The GO element must pass completely through the crimping chamber, as shown in Figure II-2.
4. Now align the NO-GO element and try to insert it straight into the same crimping chamber. The NO-GO element may start entry but must not pass completely through as shown in Figure II-2.
5. Re-install locator and secure with the two socket head cap screws.

If the crimping chamber conforms to the gage inspection, the dies are considered dimensionally correct and should be lubricated with a THIN coat of SAE No. 20 motor oil. If not, the dies must be repaired before returning them to service (see Paragraph II-3, REPAIR).

For additional information concerning the use of a GO NO-GO gage, refer to AMP Instruction Sheet IS 7424.

II-3. REPAIR

The parts listed in Figure II-1 are customer-replaceable parts. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. The dies can be returned to AMP for evaluation and repair. Send the dies with a written description of the problem to:

AMP Incorporated
Customer Repair
1523 North 4th Street
Harrisburg, PA 17102-1604

or a wholly owned subsidiary of AMP Incorporated.