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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# AMP

AMP INCORPORATED  
Harrisburg, Pa. 17105

## APPLICATION AND MAINTENANCE FOR AMP★ CRIMPING DIE ASSEMBLIES FOR CLOSED END SPLICES AND SPARE WIRE CAPS

Instruction Sheet

# IS 2254

RELEASED 5 • 23 • 85

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.

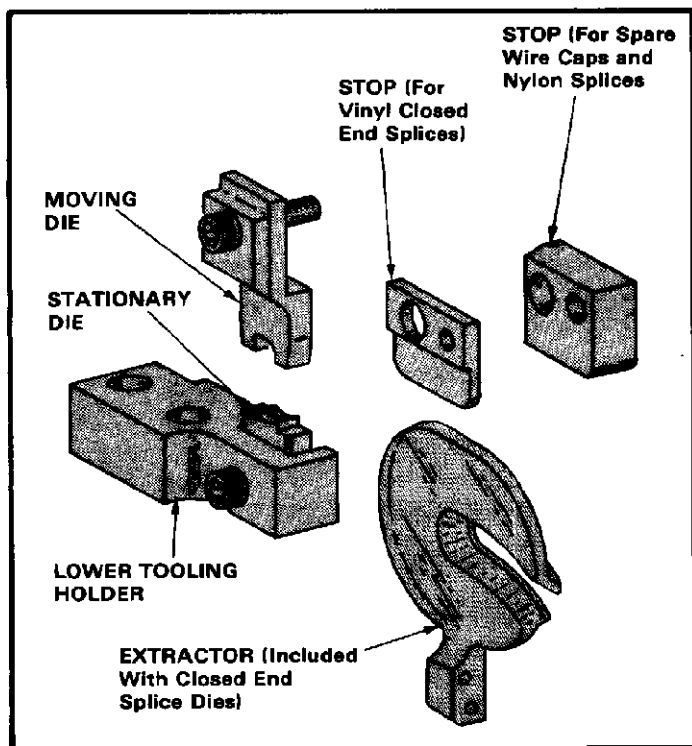


Fig. I-1

### SECTION I APPLICATION

#### I-1. INTRODUCTION

The crimping die assemblies listed in Figure I-2 of this instruction sheet (IS) are recommended for crimping tape-mounted nylon closed end splices, vinyl BOMB-TAIL★ closed end splices, and PIDG★ spare wire caps (see Figure I-2). The closed end splices and spare wire caps are used on solid or stranded copper wire. The spare wire caps can also be used on unstripped wire.

The die assemblies are used in AMP-TAPETRONIC★ Machine No. 69875. Refer to Customer Manual CM 1993, packaged with the machine, for application and operating procedures. Read these instructions thoroughly before crimping any splices or caps.

NOTE

All dimensions on this instruction sheet are in inches.

#### I-2. DESCRIPTION

Each crimping die assembly consists of a lower tooling holder, a stationary die (anvil), and a moving die (crimper). See Figure I-1. Each die is secured in the

AMP-TAPETRONIC machine by a socket head capscrew. The dies are color-coded according to wire size for easy identification. One terminal stop is provided with the spare wire cap dies, and two terminal stops are provided with the closed end splice die assemblies (except Die Assembly 68256-1); one for nylon splices, and one for vinyl splices. The stops aid in locating the splice or cap in the proper position for crimping. A terminal extractor is included with the closed end splice dies.

#### I-3. DIE SELECTION AND INSTALLATION

1. Refer to Figure I-2 and select a compatible die assembly for the closed end splice or spare wire cap to be crimped. If closed end splices are being crimped, use Terminal Stop No. 307251-1 for nylon splices or use Terminal Stop No. 307252-1 for vinyl splices. Use Terminal Stop No. 307251-2 for spare wire cap dies.
2. The AMP-TAPETRONIC machine must be converted to run closed end splices and spare wire caps. Convert the AMP-TAPETRONIC machine by following the machine conversion instructions given in CM 1993.

NOTE

When the machine is configured to crimp closed end splices, Terminal Extractor No. 308163-1 (provided with die assembly) must be installed in place of the wire funnel on the machine. Terminal Extractor No. 308162-1 (provided with machine) replaces the wire funnel when the machine is configured to crimp spare wire caps.

#### I-4. CRIMPING PROCEDURE

1. Refer to Figure I-2 and select a closed end splice or spare wire cap according to wire size being used.

NOTE

Splices are color-coded for a given wire range and caps are color-coded for a given wire range or wire insulation range. Ensure that color of splice or cap matches color-coding of dies.

2. Load splice or cap tape into indexing mechanism on machine. Refer to CM 1993 for tape loading instructions.
3. If stripped wire is to be used, strip the wire to the dimension specified in Figure I-2. Do NOT cut or nick the wire.

4. Insert prepared wire into splice or cap until bottomed.

5. Hold wire in position and activate machine to crimp the splice or cap.

6. Inspect crimped product by comparing it with the applicable product crimp inspection (CI) sheet.

**WARNING**

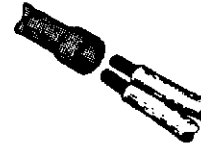
KEEP HANDS CLEAR OF DIES during crimping procedure.

**CLOSED END SPLICES**

**NYLON**



**VINYL BOMB-TAIL**



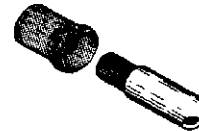
RANGE (AWG)	WIRE STRIP LENGTH		SPLICE PART NUMBER	COLOR CODE & INSULATION MATERIAL	SPLICE MARKING*	WIRE COMBINATION CHART NUMBER	DIE NUMBER
	MIN	MAX					
22-14	21/64	23/64	1-330718-0	Trans. Nylon	ECN	GP 1271	69951
			1- 35115-0	Trans. Nylon	ECN	GP 1271	
			2- 36964-2	Purple Vinyl	VS	GP 1394	
			2-328375-2				
			2- -4				
22-16	13/32	15/32	1- 34304-0	Red Vinyl			69973
			2-328890-1	Trans. Vinyl	ECV	GP 1395	
	2-328890-3	Yellow Vinyl					
	1-330021-0	Trans. Vinyl					
	11/32	13/32	1- 34306-0	Blue Vinyl	VS	GP 1396	
22-12	27/64	29/64	1- 34349-0				69952
			2- 34864-1				
22-10			53234-2	Trans. Vinyl	ECV	GP 1479	69950
			2-329251-1	Trans. Vinyl	ECV	GP 1479	
			53224-2	Trans. Nylon	EC	GP 1003	
			53915-2				
			2-324067-1				
			2-324067-3	Black Nylon			
			2-328400-1	Trans. Nylon			
			2-328730-1				
			2- 36653-1		ECN	GP 1021	
			1- 36965-1	Purple Vinyl	VS	GP 1029	
			1- 36965-2	Yellow Vinyl	VS		
			2-321519-2	Purple Vinyl	ECV		
2-321519-3	Purple Vinyl	ECV	GP 1002A				
1-330905-0	Trans. Nylon	ECN	GP 1021				

**PIDG SPARE WIRE CAPS**

**FOR SINGLE UNSTRIPPED WIRE**



**FOR SINGLE STRIPPED WIRE**



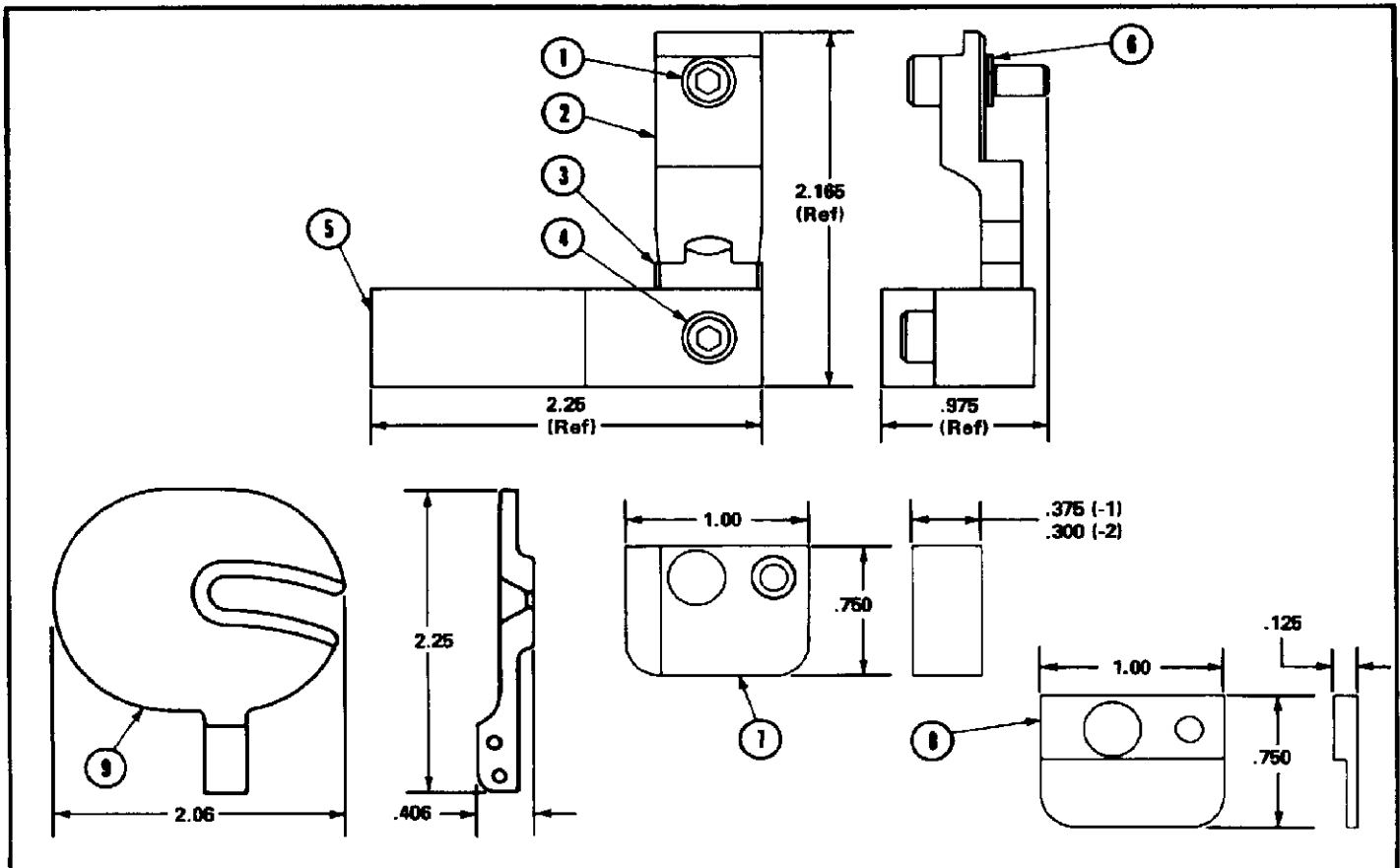
RANGE (AWG)	WIRE STRIP LENGTH		UNSTRIPPED WIRE INSUL DIAMETER RANGE	CAP PART NUMBER	COLOR CODE	DIE NUMBER
	MIN	MAX				
22-18	5/16	11/32	--	2-328307-1	Red	68170-1
16-14	5/16	11/32	--	2-328308-1	Blue	68169-1
			.048-.080	2-324484-1	Transparent	68165-1
			.048-.080	2-324693-1**	Transparent	68165-1
			.080-.120	2-324485-1	Red	68166-1
			.080-.120	2-324694-1**	Red	68166-1
			.120-.150	2-324486-1	Blue	68167-1
			.120-.150	2-324695-1**	Blue	68167-1
			.150-.223	2-324487-1	Yellow	68168-1
			.150-.223	2-324696-1**	Yellow	68168-1

\* VS - 300 V, 90°C  
 ECV - 600 V MAX BUILDING WIRING - 1,000 V MAX FIXTURES AND SIGNS, 105°C UL, 90°C CSA  
 ECN - 300 V 105°C  
 EC - 600 V MAX BUILDING WIRING - 1,000 V MAX FIXTURES AND SIGNS, 105°C

\*\* MOISTURE RESISTANT TYPE (Inhibitor Filled)

**Fig. 1-2**

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.



REPLACEMENT PARTS\*

DIE ASSY NO.	SPECIAL SCREW	INDENTER (CRIMPER)	ANVIL	SCREW	LOWER HOLDER	RETAINING RING	STOP F/CAPS AND NYLON SPLICES	STOP F/VINYL SPLICES	TERMINAL EXTRACTOR
	1	2	3	4	5	6	7	8	9
68165-1**	1-59781-3	307923-1	307924-1	3-21000-5	307250-1	1-21046-3	307251-2		
68166-1**		-2	-2						
68167-1**		-3	-3						
68168-1**		-4	-4						
68169-1**		307963-2	307964-2						
68170-1**		-1	-1						
68256-1†		-3	-3	3-21000-6			307251-1		308163-1
69950 †	2-59781-2	307248-1	307249-1	3-21000-5				307252-1	
69951 †	1-59781-3	307248-2	307249-2						
69952 †		307351-2	307352-2						
69973 †		307351-1	307352-1						
DIE ASSY WT		ENGINEERING APPROVAL						DATE	
F/Splices - 6 oz		<i>Lloyd C. Osman</i>						5-23-85	
F/Caps - 10 oz									

\* QUANTITY FOR EACH PART IS ONE PER DIE ASSEMBLY.  
 \*\* DIE ASSEMBLY FOR SPARE WIRE CAPS.  
 † DIE ASSEMBLY FOR CLOSED END SPLICES.

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:

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 will 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 crimp sections 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 Crimping Chamber

This inspection requires the use of a GO NO-GO gage conforming to the dimensions in Figure II-2. AMP does not manufacture or market these gages.

1. Mate the dies until it is evident that they have bottomed.
2. Align the GO element with the crimping chamber. Push element straight into the crimping chamber. The GO element must pass completely through the crimping chamber as shown in Figure II-2.

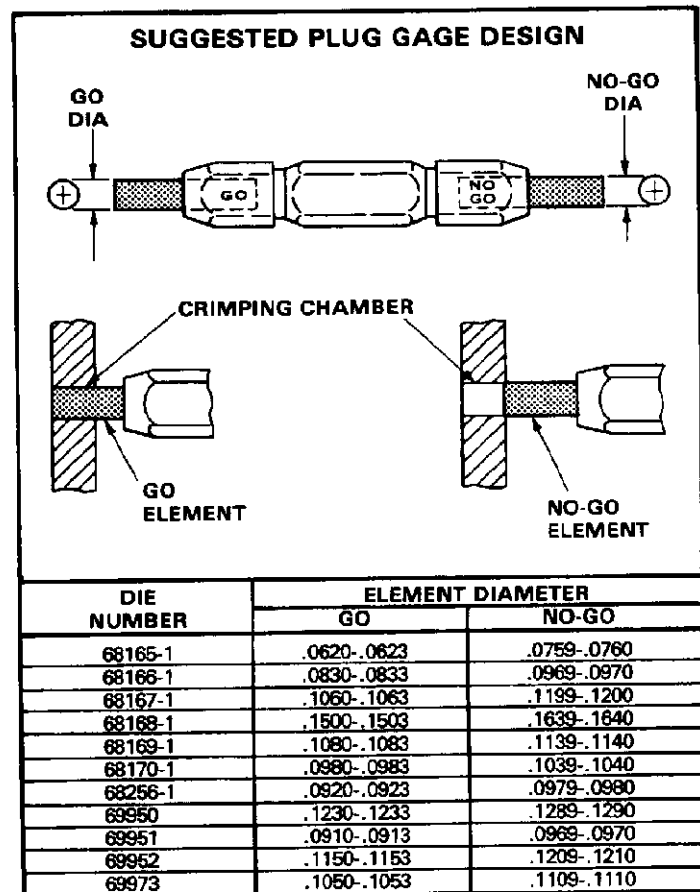


Fig. II-2

3. Now align the NO-GO element and try to insert it straight into the crimping chamber. The NO-GO element may start entry but must not pass completely through as shown in Figure II-2.

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

or a wholly owned subsidiary of AMP Incorporated.