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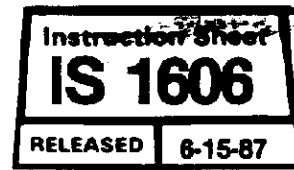
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# APPLICATION AND MAINTENANCE FOR AMP\* AMPOWER\* CRIMPING DIES



CUSTOMER HOTLINE 1 800 722-1111

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

Section II provides maintenance and inspection procedures for AMP crimping dies.

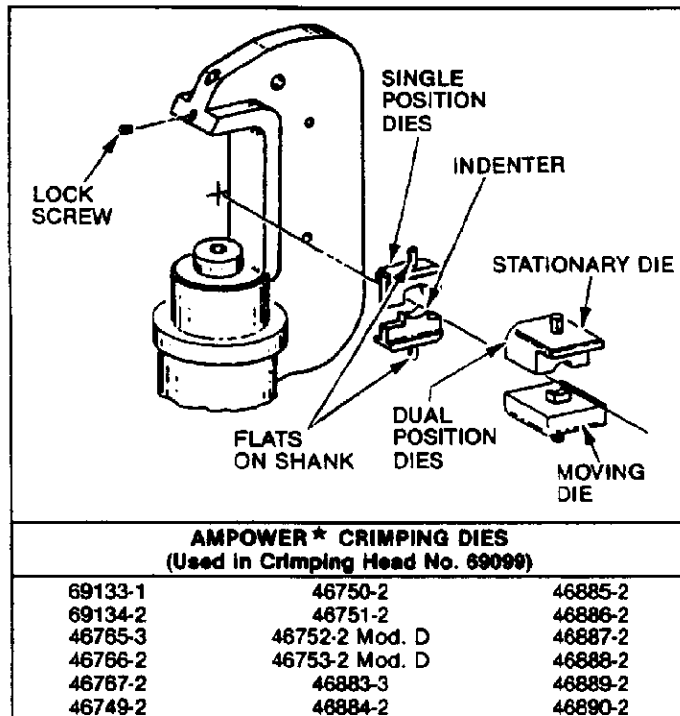


Fig. I-1

## SECTION I APPLICATION

### I-1. INTRODUCTION

This instruction sheet (IS) covers application and maintenance procedures for the AMPOWER crimping dies listed in Figure I-1.

Basic instructions for the installation and removal of dies, wire preparation, and crimping procedures are covered in the first section of this instruction sheet. Maintenance and certification information is located in the second section.

**NOTE** Dimensions presented on this instruction sheet are in inches with their metric equivalents provided in accompanying parentheses.

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

### I-2. DESCRIPTION

The AMPOWER die assemblies listed in Figure I-1 are used to crimp AMPOWER terminals and splices of the wire sizes indicated in Figure I-2.

WIRE STRIP LENGTHS			
LENGTH OF BARREL "B" PLUS 1/16 (1.6) (EXCEPT TERMINALS AND BUTT SPLICES)			
WIRE SIZE	CMA RANGE (mm <sup>2</sup> )	SINGLE POSITION DIE SET	DUAL POSITION DIE SET
6	20,800-33,100 (10.5-16.8)	69133-1	—
4	33,100-52,600 (16.8-26.7)	69134-2	—
2	52,600-83,700 (26.7-42.4)	46765-3	46883-3
1/0	83,700-119,500 (42.4-60.6)	46766-2	46884-2
2/0	119,500-150,500 (60.6-76.3)	46767-2	46885-2
3/0	150,500-190,000 (76.3-96.3)	46749-2	46886-2
4/0	190,000-231,000 (96.3-117)	46750-2	46887-2
250 MCM†	231,000-275,000 (117-139)	46751-2	46888-2
300 MCM	275,000-325,000 (139-165)	46752-2 Mod. D‡	46889-2
350 MCM	325,000-375,000 (165-190)	46753-2 Mod. D‡	46890-2

† MCM EQUALS THOUSAND CIRCULAR MILS

‡ NON-REVERSIBLE DIES. ALWAYS INSTALL INDENTER IN RAM. SEE FIGURE I-1.

Fig. I-2

## IS 1000

The die assemblies are either single or dual position sets, each consisting of an anvil subassembly and an indenter subassembly.

The die assemblies are designed for use in AMP Hydraulic Crimping Head 69099 Mod. 1, which may be installed in AMP Hydraulic Power Units 69120-1, 69120-2, 69325, and 69325-1. For instructions relative to the crimping head and the hydraulic power units, refer to the instructions packaged with them.

### I-3. DIE INSERTION AND REMOVAL

**WARNING** AVOID PERSONAL INJURY. When changing dies, exercise caution and avoid accidentally depressing foot switch or trigger controls of power units.

#### A. Die Insertion

After ensuring that the possibility of accidental activation of the hydraulic power unit has been eliminated, proceed as follows:

1. Select correct dies for wire size being used. See Figure I-2.
2. Loosen lock screw in top of crimping head. See Figure I-1.
3. Insert shank of stationary die properly into top of crimping head and tighten lock screw.

## AMPOWER CRIMPING-DIES

**NOTE** Ensure that dies are inserted FULLY and that flats on shanks are facing lock screws. See Figure I-1.

4. Activate power unit, advancing ram until lock screw on ram is fully visible, and hold ram in position.
5. Exercising caution, loosen lock screw on ram and insert shank of moving die properly into ram FULLY. Tighten lock screw.
6. Activate power unit to complete cycle and allow ram to return to DOWN position.

**NOTE** Typical single and dual position die sets are shown in normal crimping position in Figure I-1. The dual position dies are used in alternate position only for parallel splice applications as shown in Figure I-4.

#### B. Die Removal

Ensure that the possibility of accidental activation of hydraulic power unit has been eliminated, and proceed as follows:

1. Loosen lock screw in top of crimping head and remove stationary die.
2. Advance ram until lock screw on ram is visible. Loosen lock screw and remove die.

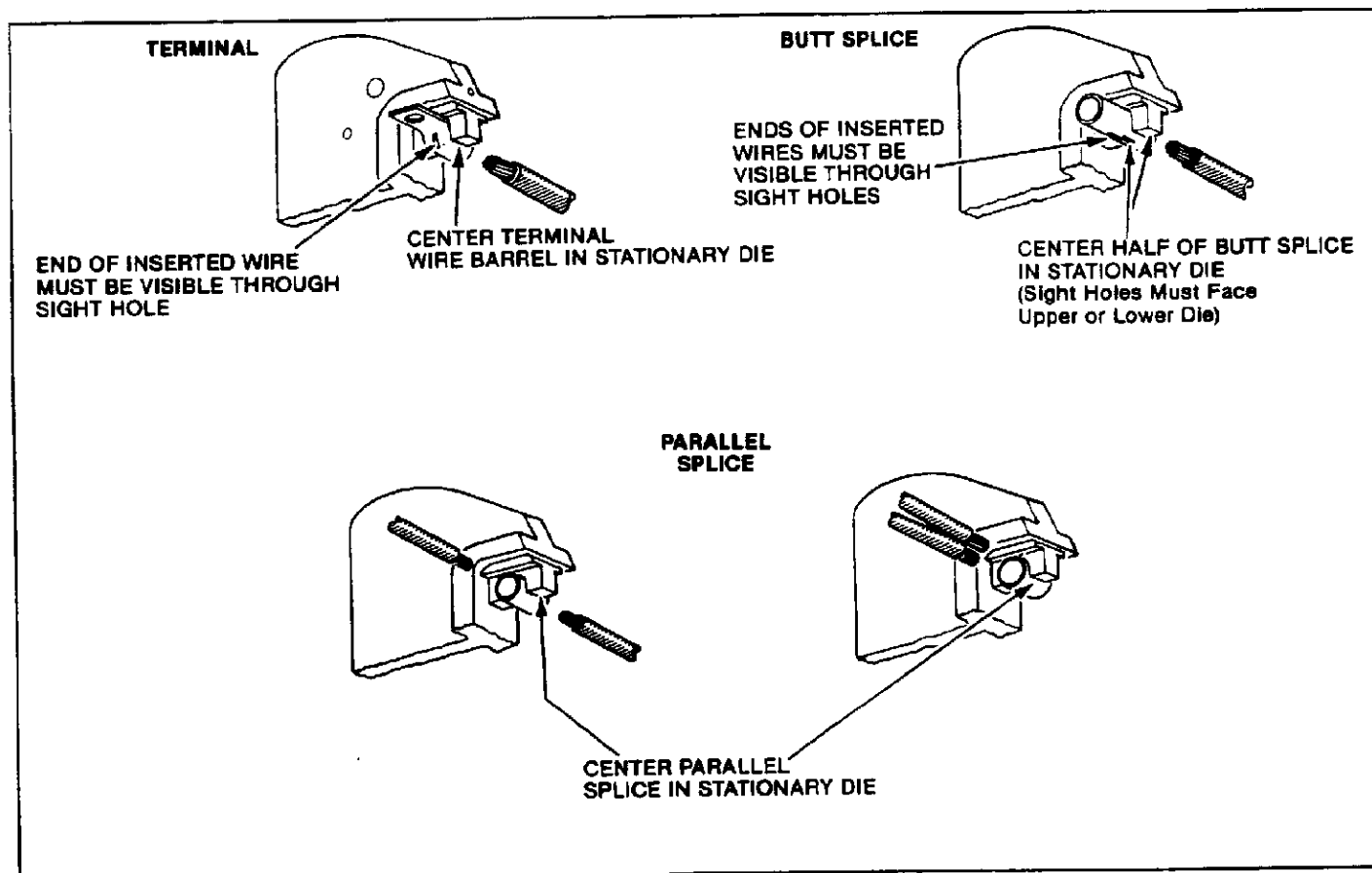


Fig. I-3

**I-4. WIRE PREPARATION AND CRIMPING PROCEDURE**

**A. Wire Preparation**

1. Select proper size terminal or splice for wire size being used.
2. Determine correct terminal or splice wire loading by referring to CMA (Circular Mil Area) range listed in Figure I-2. Total CMA of wires being used must be within CMA range of terminal or splice.
3. Strip wire to dimensions indicated in Figure I-2, taking care not to nick or cut wire strands.

**B. Crimping Procedure (Single- and Dual-Position Dies)**

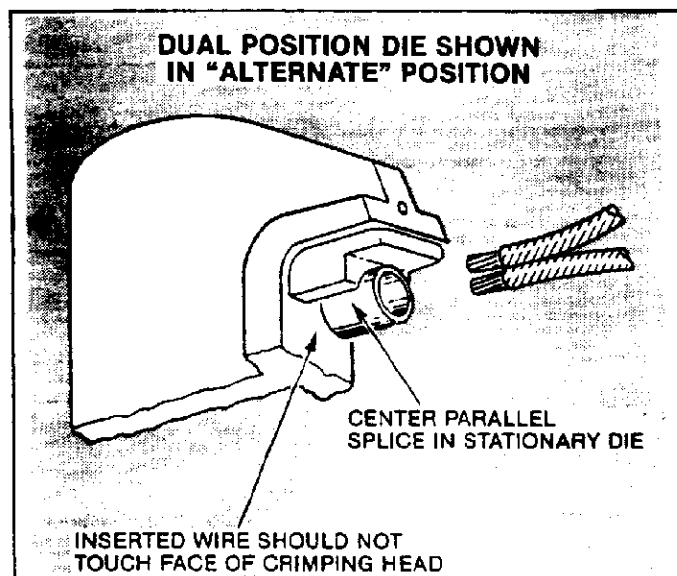
1. Ensure that wire size stamped on terminal or splice corresponds to wire size stamped on stationary die.
2. Center terminal or splice in stationary die as shown in Figure I-3.
3. Activate power unit so that moving die advances and holds terminal or splice in place without deforming wire barrel.
4. Insert stripped wire until it bottoms in terminal or butt splice. End of wire must be visible through sight hole.

**NOTE** Sight holes of butt splice must always face either upper or lower die.

5. Insert stripped wires into parallel splice. Ends of wires must be at least flush with, or extend slightly beyond, end of wire barrel.

**NOTE** When "alternate" position of dual position dies is being used to crimp parallel splices, ensure that the end of the inserted wire does not touch or bind against face of crimping head. See Figure I-4.

6. Activate power unit to complete crimp.
7. To crimp other half of butt splice, remove and reposition uncrimped half in stationary die. Insert wire until it bottoms against splice wire



**Fig. I-4**

stop (visible through sight holes) and then crimp the splice.

8. Inspect crimp by referring to Paragraph I-5, CRIMP INSPECTION, and to Figure I-5.

**I-5. CRIMP INSPECTION**

Inspect crimped terminals and splices by checking the features described in Figure I-5. Use only terminals and splices that meet the conditions shown in the "ACCEPT" column. Unacceptable terminals and splices, as depicted in the "REJECT" column of Figure I-5 can be avoided through careful use of the instructions in Paragraph I-4 and by performing regularly scheduled die maintenance as described in Section II of this instruction sheet.

**I-6. MAINTENANCE**

AMP recommends that a maintenance/inspection program be performed periodically to ensure dependable and uniform terminations. Frequency of inspection is dependent upon operator skill and care of dies, amount of use, presence of abnormal amounts of dust and dirt, type and size of products being crimped, and your company's established standards.

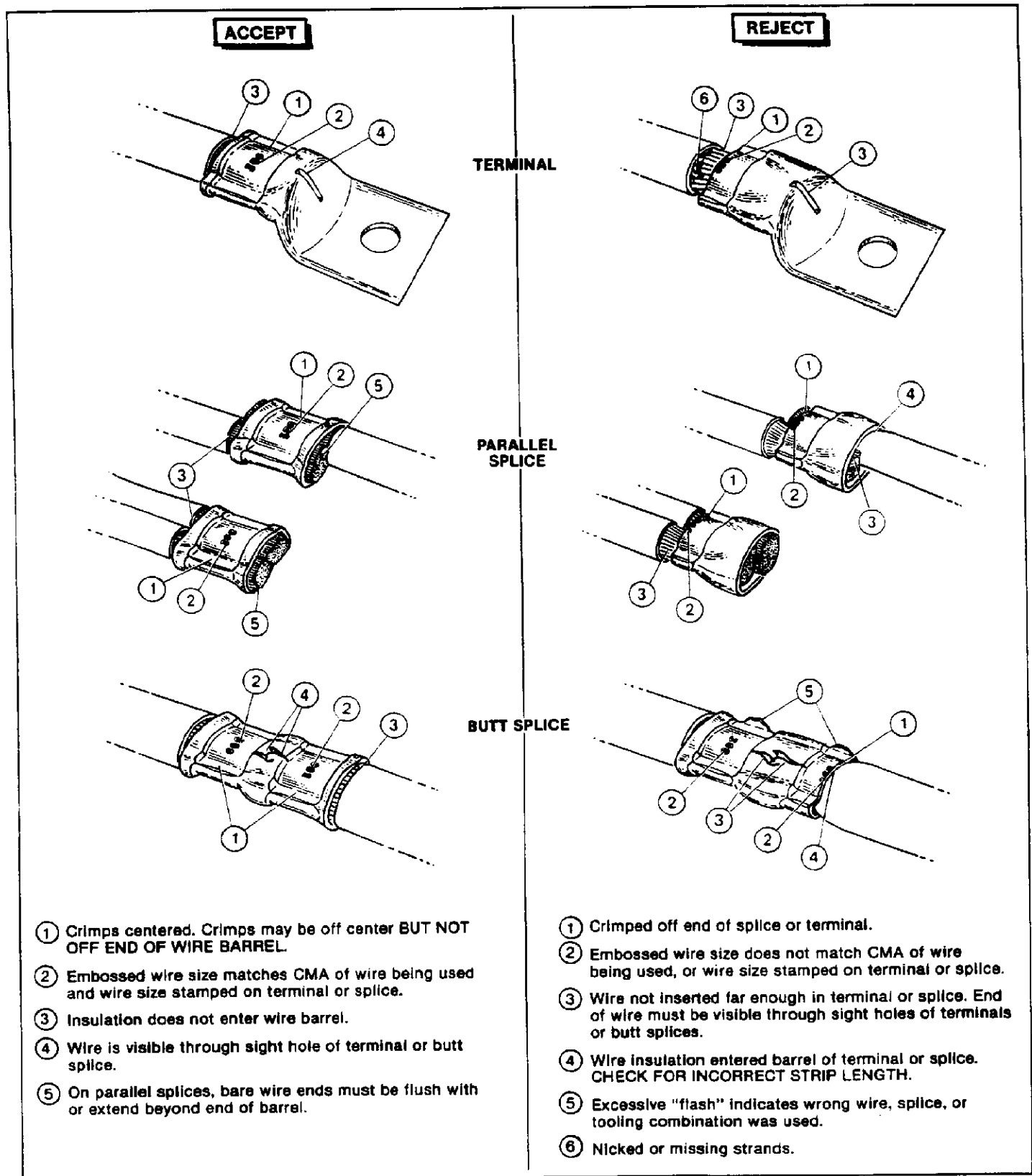
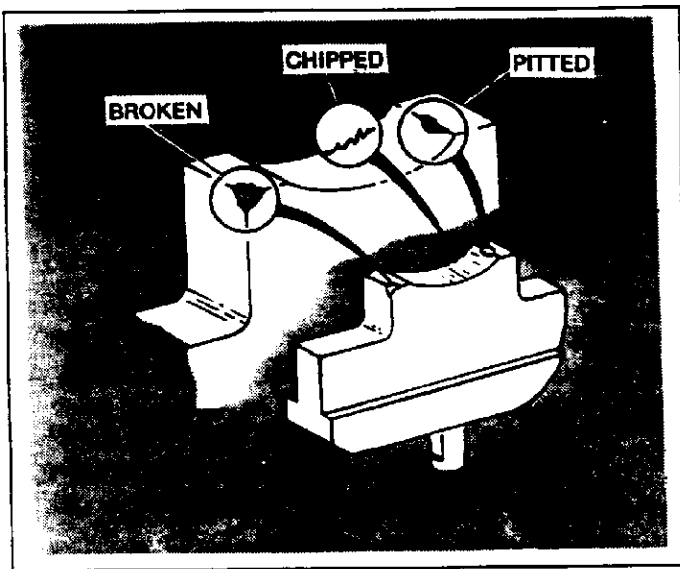


Fig. I-5

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

Section II provides maintenance and inspection procedures for AMP crimping dies.



**Fig. II-1**

**SECTION II MAINTENANCE/INSPECTION**

**II-1. DIE MAINTENANCE AND CERTIFICATION**

All dies are thoroughly inspected prior to shipment. Because of the possibility of damage in transit, new dies should be inspected in accordance with the information provided in this section and be inspected at regularly scheduled intervals to ensure their conformance to standards.

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

**II-2. VISUAL INSPECTION**

Visually inspect die closure surfaces for broken, pitted, or chipped areas. Although dies may gage within permissible limits, worn or damaged die closure surfaces can affect crimp quality. Examples of possible damage to die closure surfaces are depicted in Figure II-1.

**II-3. DIE CLOSURE INSPECTION**

Every die set is inspected for proper die closure before shipment. However, inspection of die closure for excessive wear is required on a periodic basis depending upon usage and conditions.

The die closure inspection is accomplished using GO/NO-GO plug gages. A suggested plug gage design and the GO/NO-GO dimensions for plug gage members are provided in Figure II-2. The following procedure is recommended for inspecting the die closure:

1. Clean oil or dirt from die closure surfaces and from plug gage members.

<b>SUGGESTED PLUG GAGE DESIGN</b>				
<b>DIE NO.</b>	<b>DIE CLOSURE DIM. "A"†</b>		<b>GAGE MEMBER DIM. "B"‡</b>	
	<b>GO</b>	<b>NO-GO</b>	<b>GO</b>	<b>NO-GO</b>
46749-2	.3350 (8.509)	.3450 (8.763)	.3350-.3353 (8.509-8.517)	.3449-.3450 (8.760-8.763)
46750-2	.3770 (9.576)	.3870 (9.83)	.3770-.3773 (9.576-9.583)	.3869-.3870 (9.827-9.83)
46751-2	.4130 (10.490)	.4230 (10.744)	.4130-.4133 (10.490-10.498)	.4229-.4230 (10.742-10.744)
46752-2 Mod. D	.4530 (11.506)	.4630 (11.760)	.4530-.4533 (11.506-11.514)	.4629-.4630 (11.758-11.760)
46753-2 Mod. D	.4890 (12.41)	.4990 (12.675)	.4890-.4893 (12.421-12.428)	.4989-.4990 (12.672-12.675)
46765-3	.2120 (5.38)	.2220 (5.639)	.2120-.2123 (5.38-5.392)	.2219-.2220 (5.636-5.639)
46766-2	.2620 (6.655)	.2720 (6.909)	.2620-.2623 (6.655-6.662)	.2719-.2720 (6.906-6.909)
46767-2	.2970 (7.544)	.3070 (7.798)	.2970-.2973 (7.544-7.551)	.3069-.3070 (7.795-7.798)
46883-3	.2120 (5.38)	.2220 (5.639)	.2120-.2123 (5.38-5.392)	.2219-.2220 (5.636-5.639)
46884-2	.2620 (6.655)	.2720 (6.909)	.2620-.2623 (6.655-6.662)	.2719-.2720 (6.906-6.909)
46885-2	.2970 (7.544)	.3070 (7.798)	.2970-.2973 (7.544-7.551)	.3069-.3070 (7.795-7.798)
46886-2	.3350 (8.509)	.3450 (8.763)	.3350-.3353 (8.509-8.517)	.3449-.3450 (8.760-8.763)
46887-2	.3770 (9.576)	.3870 (9.83)	.3770-.3773 (9.576-9.583)	.3869-.3870 (9.827-9.83)
46888-2	.4130 (10.490)	.4230 (10.744)	.4130-.4133 (10.490-10.498)	.4229-.4230 (10.742-10.744)
46889-2	.4530 (11.506)	.4630 (11.760)	.4530-.4533 (11.506-11.514)	.4629-.4630 (11.758-11.760)
46890-2	.4890 (12.412)	.4990 (12.675)	.4890-.4893 (12.421-12.428)	.4989-.4990 (12.672-12.675)
69133-1	.1470 (3.734)	.1570 (3.988)	.1470-.1473 (3.734-3.741)	.1569-.1570 (3.985-3.988)
69134-2	.1770 (4.496)	.1870 (4.750)	.1770-.1773 (4.496-4.503)	.1869-.1870 (4.747-4.750)

† DIE CLOSURE DIMENSIONS APPLY WHEN DIES ARE POSITIONED AT "GAGE DIMENSION" INDICATED IN FIGURE II-3, DETAIL "A".

‡ MATERIAL — TOOL STEEL

**Fig. II-2**

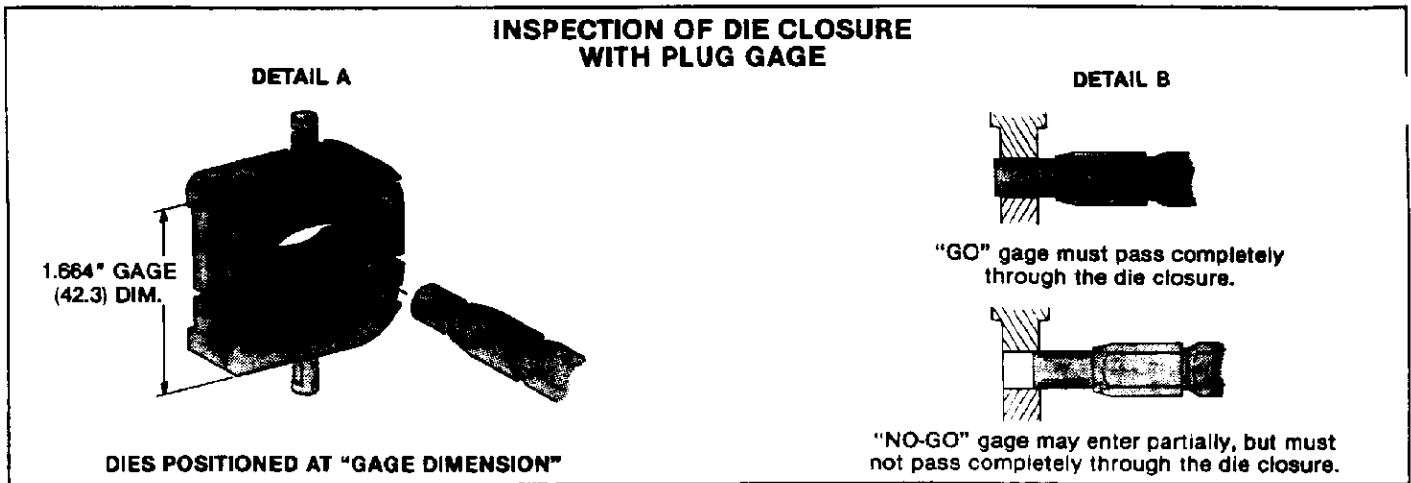


Fig. II-3

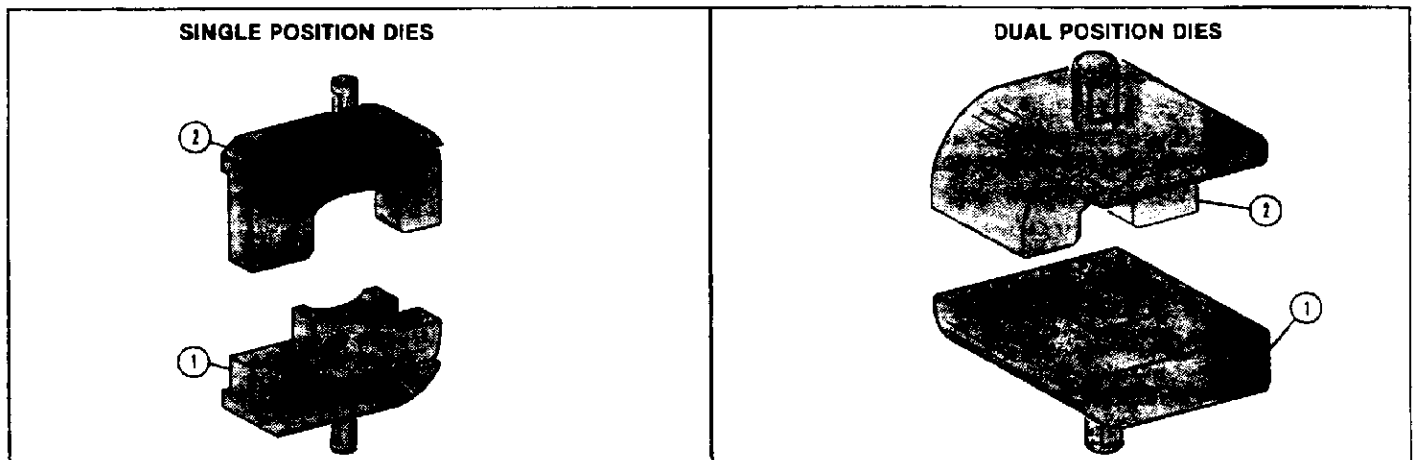
2. Assemble and adjust dies to meet the gage dimension indicated in Figure II-3, Detail A.
3. With dies positioned at gage dimension, inspect die closure using proper plug gage. Hold gage in straight alignment with die closure and carefully try to insert, without forcing, the GO member. See Figure II-3, Detail B. The GO member must pass completely through the die closure.
4. Try to insert the NO-GO member. The NO-GO member may enter partially, but must not pass completely through die closure.
5. If die closure meets GO/NO-GO gage conditions, dies may be considered dimensionally

correct. If die closure does not conform with GO/NO-GO gage conditions, the dies must be replaced.

**II-4. REPLACEMENT PARTS**

Worn or damaged dies may not be repaired. It is recommended that spare sets be stocked and controlled to prevent lost time. Figure II-4 lists replacement dies that may be purchased from AMP Incorporated or a wholly-owned subsidiary of AMP Incorporated. Address correspondence to:

AMP Incorporated  
 P.O. Box 3608  
 Harrisburg, PA 17105-3608



ITEM	DESCRIPTION	SINGLE POSITION DIES									
		69133-1	69134-2	46765-3	46766-2	46767-2	46749-2	46750-2	46751-2	46752-2 MOD. D	46753-2 MOD. D
1	MOVING DIE	307718-9	2-307718-0	1-307718-9	307718-7	307718-8	307718-1	307718-2	307718-3	307718-4	307718-5
2	STATIONARY DIE	307719-9	1-307719-0	307719-6	307719-7	307719-8	307719-1	307719-2	307719-3	307719-4	307719-5

ITEM	DESCRIPTION	DUAL POSITION DIES								
		46883-3	46884-2	46885-2	46886-2	46887-2	46888-2	46889-2	46890-2	
1	MOVING DIE	6-305688-1	2-305688-9	3-305688-0	3-305688-1	3-305688-2	3-305688-3	3-305688-4	3-305688-5	
2	STATIONARY DIE	2-305687-8	2-305687-9	3-305687-0	3-305687-1	3-305687-2	3-305687-3	3-305687-4	3-305687-5	

Fig. II-4