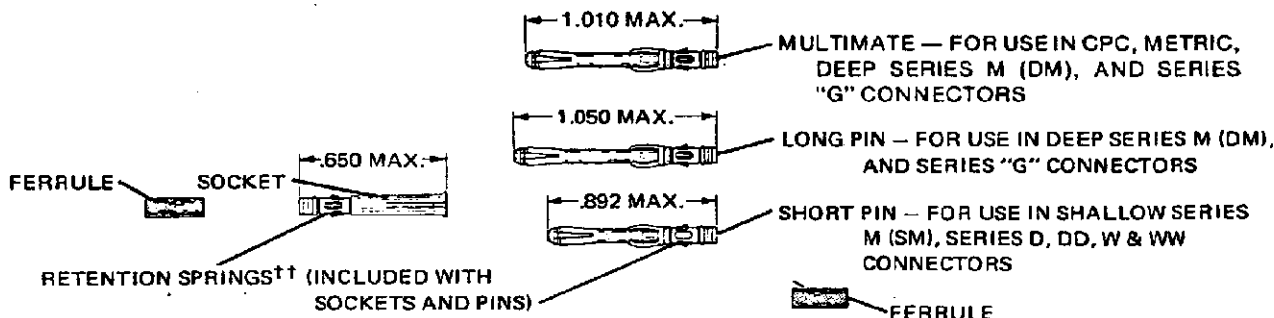


**SUBMINIATURE COAXICON\* CONTACTS**



**GOLD PLATED CONTACTS**

CABLE TYPE	MULTIMATE PIN		LONG PIN		SHORT PIN		SOCKET		FERRULE	DIES for Tool No. 69365-2, 69365-3§ or 69710
	30MM Gold	50MM Gold	30MM Gold	50MM Gold	30MM Gold	50MM Gold	30MM Gold	50MM Gold		
RG-178, 196	226537-2	226537-5	51561-2	51561-5	51563-2	51563-5	51565-2	51565-5	1-332057-0	69690-2
RG-174, 188, 316	226537-1	226537-4	51561-1	51561-4	51563-1	51563-4	51565-1	51565-4	1-332056-0	69690 MOD. D
RG-179, 187	226537-1	226537-4	51561-1	51561-4	51563-1	51563-4	51565-1	51565-4	1-332056-0	69690-1 MOD. D
28 AWG Shielded .075 Max. O.D.	226537-1	226537-4	51561-1	51561-4	51563-1	51563-4	51565-1	51565-4	1-332057-0	69690-3
26 AWG Tw. Pr. Solid or 7 Str. .0063 Dia.	226537-3	226537-6	51561-3	51561-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69690 MOD. D
28 AWG Tw. Pr. Solid	226537-3	226537-6	51561-3	51561-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69690 MOD. D
28 AWG Tw. Pr. 7 Str. .005 Dia.	226537-3	226537-6	51561-3	51561-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69690-1 MOD. D or 69690-2
30 AWG Tw. Pr. Solid	226537-3	226537-6	51561-3	51561-6	51563-3	51563-6	51565-3	51565-6	1-332057-0	69690-2

**TIN PLATED CONTACTS**

CABLE TYPE	MULTIMATE PIN	LONG PIN	SHORT PIN	SOCKET	FERRULE	DIES FOR TOOL NO. 69365-2, 69365-3§ OR 69710
RG-178, 196	226657-1	226659-1	226661-1	226663-1	1-332057-0	69690-2
RG-174, 188, 316	226657-2	226659-2	226661-2	226663-2	1-332056-0	69690 MOD. D
RG-179, 187	226657-2	226659-2	226661-2	226663-2	1-332056-0	69690-1 MOD. D
26 AWG Shielded .075 Max. O.D.	226657-2	226659-2	226661-2	226663-2	1-332057-0	69690-3
26 AWG Tw. Pr. Solid or 7 Str. .0063 Dia.	226657-3	226659-3	226661-3	226663-3	1-332057-0	69690 MOD. D
28 AWG Tw. Pr. Solid	226657-3	226659-3	226661-3	226663-3	1-332057-0	69690 MOD. D
28 AWG Tw. Pr. 7 Str. .005 Dia.	226657-3	226659-3	226661-3	226663-3	1-332057-0	69690-1 MOD. D or 69690-2
30 AWG Tw. Pr. Solid	226657-3	226659-3	226661-3	226663-3	1-332057-0	69690-2

†† Part No. 51671-3 for replacement purposes.

§ TOOL 69365-3 INCLUDES BENCH MOUNT AND FOOT CONTROL

Figure 1

**1. INTRODUCTION**

This instruction sheet is intended to provide you with "Instructions" on product application and a "Maintenance and Inspection Procedure" for the following interchangeable crimping dies:

**SUBMINIATURE COAXICON CONTACT CRIMPING DIES FOR PNEU. TOOL 69365-2, 69365-3 OR HAND TOOL 69710**

- 69690 Mod. D
- 69690-1 Mod. D
- 69690-2
- 69690-3

First read instructions shipped with tools for information concerning die insertion, crimping procedure and general performance. Then, refer to selection chart above for proper contacts and cables to use.

Basic instructions on the use of these dies, cable preparation, tool adjustments, etc. are provided in Section 2, "Instructions." Section 3 contains "Maintenance and Inspection Procedure" which will enable you to establish and maintain a *die certification program*.

All illustrations and information contained in this instruction sheet are based on the latest product information available at the time of publication.

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## 2. INSTRUCTIONS

### 2.1 Cable Preparation and Contact Assembly

#### 2.1.1 Coaxial and Shielded Cable (Single Braid)

- (a) Slide ferrule on cable, then strip cable. See Figure 2.

NOTE: Under certain production conditions, it is desirable and permissible to slide ferrule on cable after stripping.

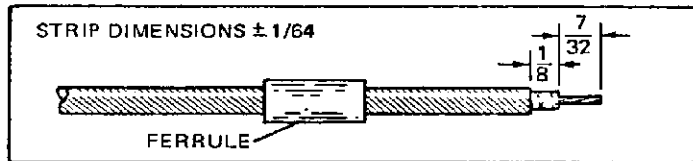


Figure 2

- (b) Flare braid, then insert conductor into contact as far as it will go. Braid passes over and around the support sleeve on contact. See Figure 3.
- (c) Slide ferrule over braid until ferrule bottoms against shoulder on contact. See Figure 3. Assembly can now be crimped.

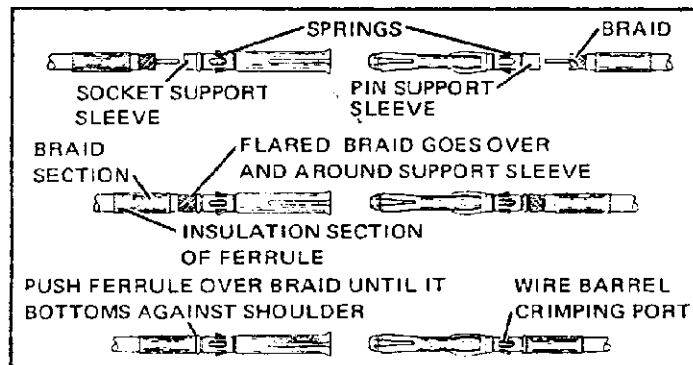


Figure 3

#### 2.1.2 Twisted Pair Cable

- (a) Separate the insulated leads and cut one lead to dimension shown in Figure 4.
- (b) Strip insulation from both leads to dimension shown.
- (c) Slide ferrule on wire, then insert longest lead into center contact as far as it will go.
- (d) Lay shortest (outside) lead on support sleeve of shell. See Figure 5.
- (e) Slide ferrule forward and over outside wire until ferrule bottoms against contact. Assembly can now be crimped.

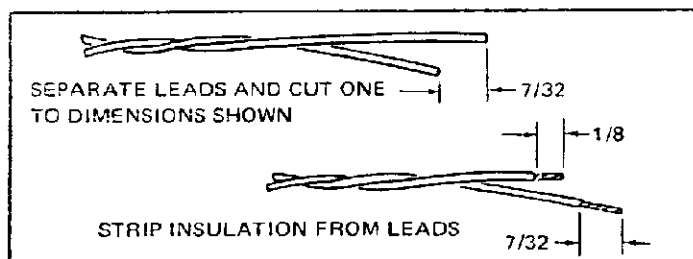


Figure 4

### 2.2 Die Installation and Crimping Procedure

- (a) Shut off air supply for pneumatic tool.
- (b) Each set of dies consists of a moving die and a stationary die. See Figure 6.
- (c) Position stationary die in stationary die holder and moving die in moving die holder. Take up on die holding screws enough to hold die in place. Do not tighten screws.

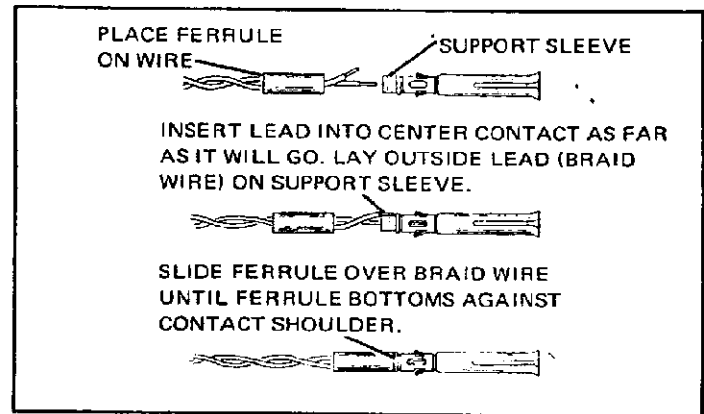


Figure 5

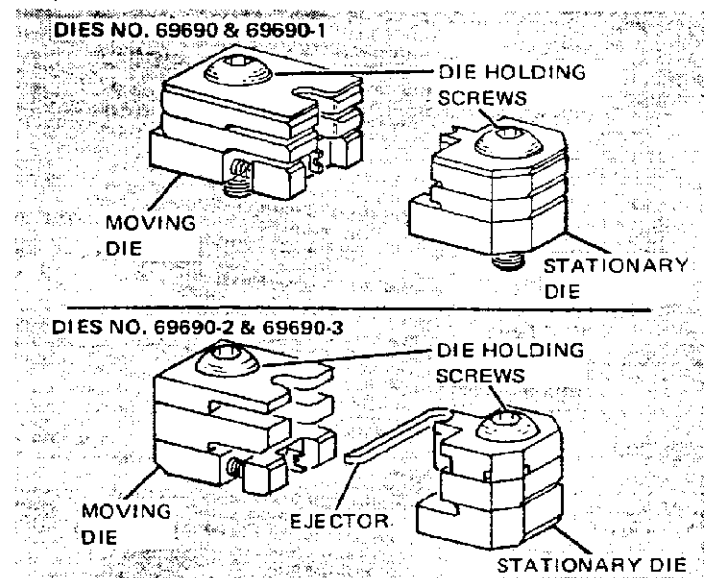


Figure 6

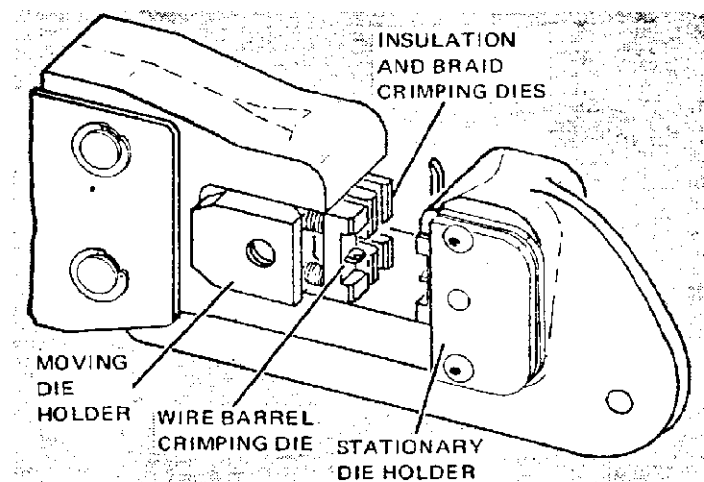


Figure 7

- (d) Connect air supply for pneumatic
- (e) Actuate pneumatic tool, or if hand tool is used, close handles until dies bottom.
- (f) Tighten both die holding screws while dies are bottomed.
- (g) Tool is now ready for operation.

**IMPORTANT: CHECK DIE ALIGNMENT AND TIGHTEN DIE HOLDING SCREWS AT LEAST TWICE DAILY.**

- (h) Die assemblies have three sets of crimping dies - one for inner wire barrel of contact, one for braid section of ferrule and another for outer insulation section of ferrule. See Figures 6 and 7. All three crimps are made at the same time.
- (i) Slide assembled contact over ejector for dies 69690-2 and 69690-3. See Figure 8.
- (j) For all dies align contact crimping ports with barrel crimping dies.
- (k) Push contact "up" so that upper barrel - crimping die enters small (oval shaped) crimping port in retention spring.
- (l) Braid section of ferrule should now be bottomed against upper braid ferrule crimping die. See Figure 8.
- (m) Make sure that lower barrel - crimping die is lined up with large (rectangular shaped) crimping port.
- (n) If hand tool No. 69710 is being used, observe lower (spring - loaded) crimping die as handles are closed part way. When wire barrel crimping die has entered crimping port, close handles until CERTI-CRIMP\* ratchet releases to complete crimp. Remove crimped contact from dies by lifting up on front of contact.
- (o) If pneumatic tool No. 69365 is to be used, manual take-up attachment No. 307569-1 should be installed on tool. This device will allow lower crimping die to be manually closed on the contact while observing entrance of wire barrel crimping die in crimping port. Refer to instruction sheet shipped with manual take-up attachment No. 307569-1 for installation instructions for this accessory. Proceed as follows after take-up attachment has been installed. This procedure also applies to tools No. 69365-2 and 69365-3.
1. Place contact on stationary die as previously described. See Figures 8 and 9.
  2. Pull handle on take-up attachment forward to close die on contact.
  3. After die has entered crimping port, crimping button (foot control on tool No. 69365-3) can be pressed to complete crimp. Remove crimped contact from dies by lifting up on front of contact.

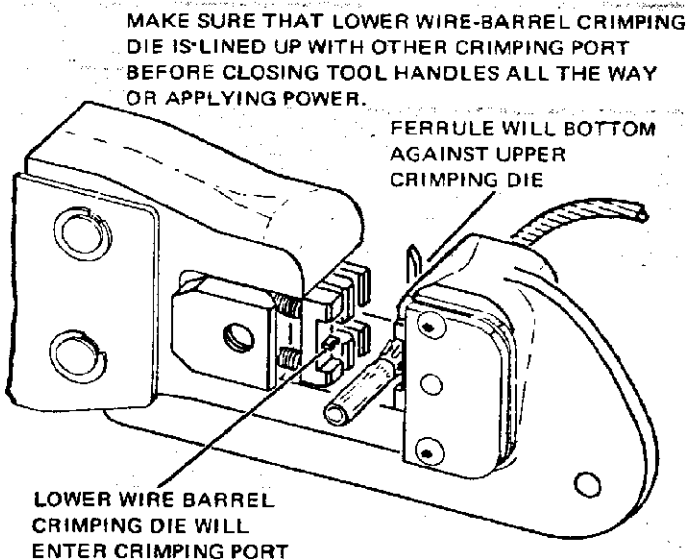


Figure 8

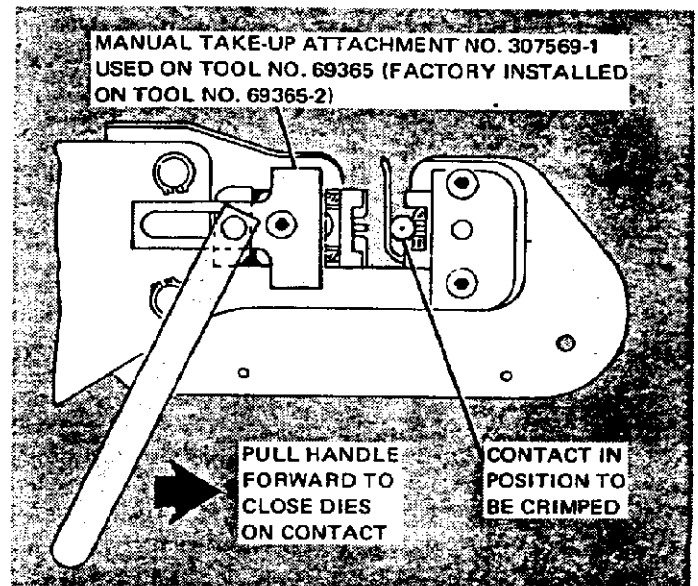


Figure 9

## 2.3 Insertion & Extraction Instructions

### 2.3.1 Coaxial and Shielded Cable

AMP\* subminiature COAXICON contacts on coaxial and shielded cable are inserted by hand into multiple-contact connectors. Insert contact into connector to the shoulder of the cavity, then rotate the contact 1/8 turn with light force. The end of the contact will pass the shoulder. Continue insertion of contact and make sure it is bottomed.

### 2.3.2 Twisted Pair

AMP subminiature COAXICON contacts on twisted pairs are inserted with insertion tool No. 220035-1. Refer to Figures 10 and 11.

Insert contact into connector to the shoulder of the cavity, then apply insertion tool 220035-1 to the rear of the contact. Rock the contact with light force. The end of the contact will pass the shoulder. Continue insertion of contact and make sure it is bottomed.

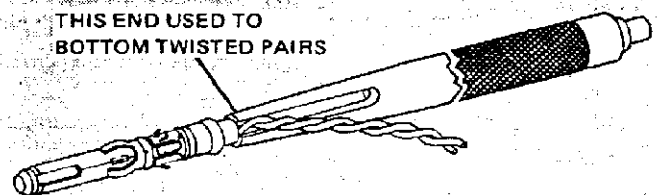


Figure 10

### 2.3.3 Extraction of Contacts

To extract contacts from connector cavity, use tool No. 305183. Refer to Figure 12.

- (a) Insert end of tool into cavity.
  - (b) Rotate tool several times with light force until bottomed. Note that push rod button will "back-out" of handle when tip of socket or pin is contacted.
  - (c) Hold handle down firmly with thumb and middle finger and push button with forefinger.
  - (d) As button is pressed down, socket or pin will be ejected.
- NOTE:** Applying a chamfer to the I.D. of the existing extraction tool will ease removal of contact.

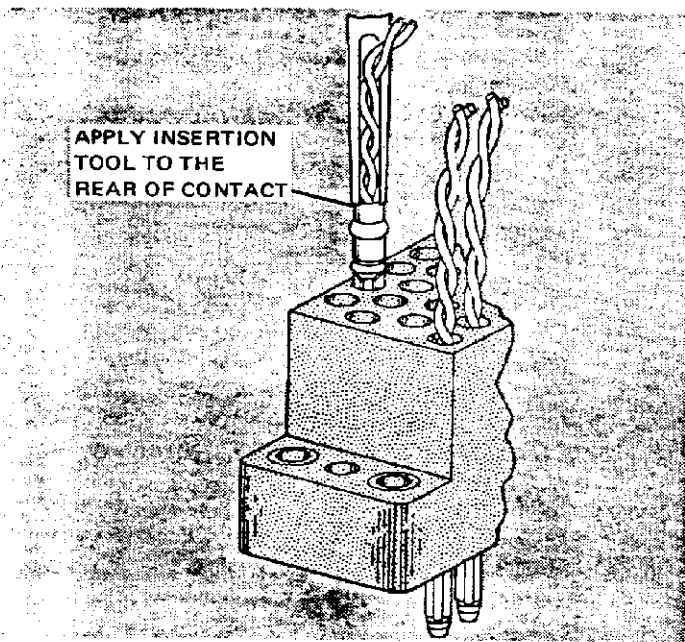


Figure 11

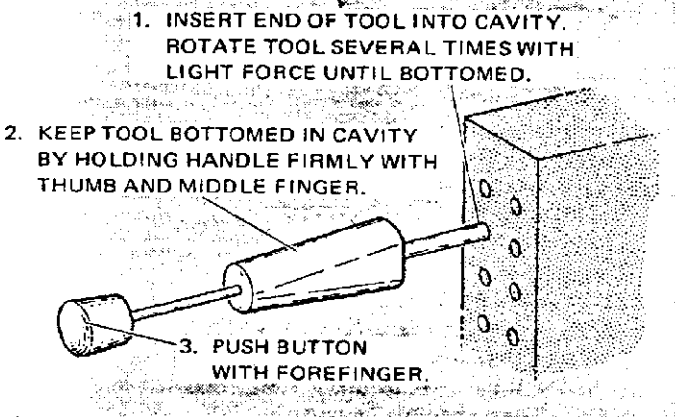


Figure 12

### 3. MAINTENANCE/INSPECTION PROCEDURE

AMP recommends that a maintenance/inspection program be performed periodically. This is necessary to assure that continued use of the dies will result in the same dependable and uniform terminations for which the dies were designed. We recommend an initial frequency of inspection of once a month. This frequency may be adjusted to suit your requirements through experience. The frequency of an inspection is dependent upon:

1. The care, amount of use, and handling of the dies.
2. The type and size of the products crimped.
3. The degree of operator skill.
4. The presence of abnormal amounts of dust and dirt.
5. Your own established standards.

With proper maintenance and inspection, these dies will give years of satisfactory service.

All AMP dies are thoroughly inspected before being shipped from the factory, however, since there is a possibility of die damage in shipment, AMP recommends that new dies be inspected in accordance with this section when received in your plant.

#### 3.1 Cleaning

Do not allow deposits of dirt, grease and foreign matter to accumulate in the die closure area. These deposits may cause excessive wear in the die closure surfaces, thereby affecting the quality of the crimp. The dies should be wiped clean frequently with a clean cloth.

#### 3.2 Visual Inspection

Visually inspect the die closure surfaces for broken, pitted, or chipped areas. Although dies may gage within permissible limits, worn or damaged die closure surfaces are objectionable and can affect the quality of the crimp.

#### 3.3 Die Closure Inspection

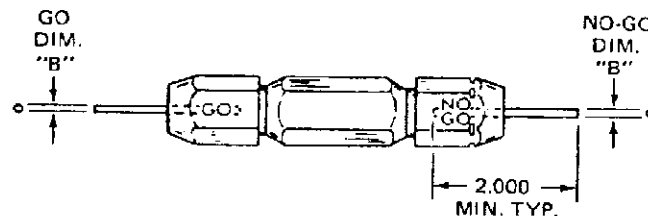
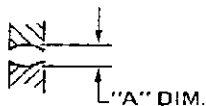
Every AMP die set is inspected and tested for proper die closure before being shipped from the factory. An inspection should, however, be performed periodically to measure the die closure.

The die closure inspection is accomplished using GO NO-GO plug gages for center contact dies only.

AMP Neither manufactures nor sells plug gages. A suggested

### SUGGESTED PLUG GAGE DESIGN - WIRE BARREL DIES

#### DIE CLOSURE CONFIGURATION



TOOL NUMBER	DIE CLOSURE DIM'S. "A" †		GAGE MEMBER †† DIM'S. "B" DIA.	
	GO	NO-GO	GO	NO-GO
69690 MOD. D	.0180	.0220	.0180-.0183	.0219-.0220
69690-1 MOD. D	.0130	.0170	.0130-.0133	.0169-.0170
69690-2	.0130	.0170	.0130-.0133	.0169-.0170
69690-3	.0180	.0220	.0180-.0183	.0219-.0220

† Die closure dimensions apply when dies are bottomed, but not under pressure.  
 †† Material-tool steel

Figure 13

plug gage design and the GO NO-GO dimensions of the plug gage members are listed in Figure 13.

Inspection of the braid and insulation crimping dies is accomplished by measuring a crimped contact. The following procedure is recommended for measuring the die closures.

**3.3.1 Center Contact Dies**

- (a) Remove traces of oil or dirt from the die closure and plug gage members.
- (b) When using pneumatic tool, reduce air supply pressure to a range between 15-20 P.S.I. Actuate tool to bottom dies. When using hand tool, close handles of tool until dies bottom. Do not apply additional pressure to tool handles.
- (c) With crimping dies bottomed, check the center contact wire barrel crimp die closure using the proper plug gage. Hold gage in straight alignment with the dies and carefully try to insert, without forcing, the GO element, and then the NO-GO element. See Figure 14. The GO element must pass completely through the barrel crimp die closure.
- (d) The NO-GO element may enter partially, but must not pass completely through the length of the barrel crimp die closure. See Figure 14.
- (e) If the die closures meet the GO NO-GO gage conditions, the dies may be considered dimensionally correct. If you find that the die closures do not conform with the GO NO-GO gage conditions, contact your local AMP field representative.

**3.3.2 Braid and Insulation Dies**

- (a) First crimp a contact on the appropriate cable. The contact, ferrule and cable listed in Figure 15 should be used for this test since the dimensions listed apply only to the combinations shown.
- (b) Measure the crimped ferrule over both the braid and insulation sections. A typical measuring device is shown in Figure 16.
- (c) If crimp dimensions do not conform to those listed in Figure 15, contact your local AMP representative.

**3.4 CERTI-CRIMP Ratchet Inspection**

The CERTI-CRIMP ratchet feature on AMP hand tools should be checked to make certain that the ratchet does not release prematurely allowing dies to open before dies have fully bottomed.

To check ratchet feature:

- (a) Make a test crimp. When this crimp is made, squeeze handles until the ratchet is free, however, DO NOT RELAX PRESSURE ON TOOL HANDLES.
- (b) If a .001 or smaller shim can be inserted between the bottoming surfaces of the dies, or if there is no opening whatever, the CERTI-CRIMP ratchet is satisfactory.
- (c) If the clearance between the bottoming surfaces of the dies is greater than .001, the dies are considered as not bottoming. Contact your local AMP field representative.

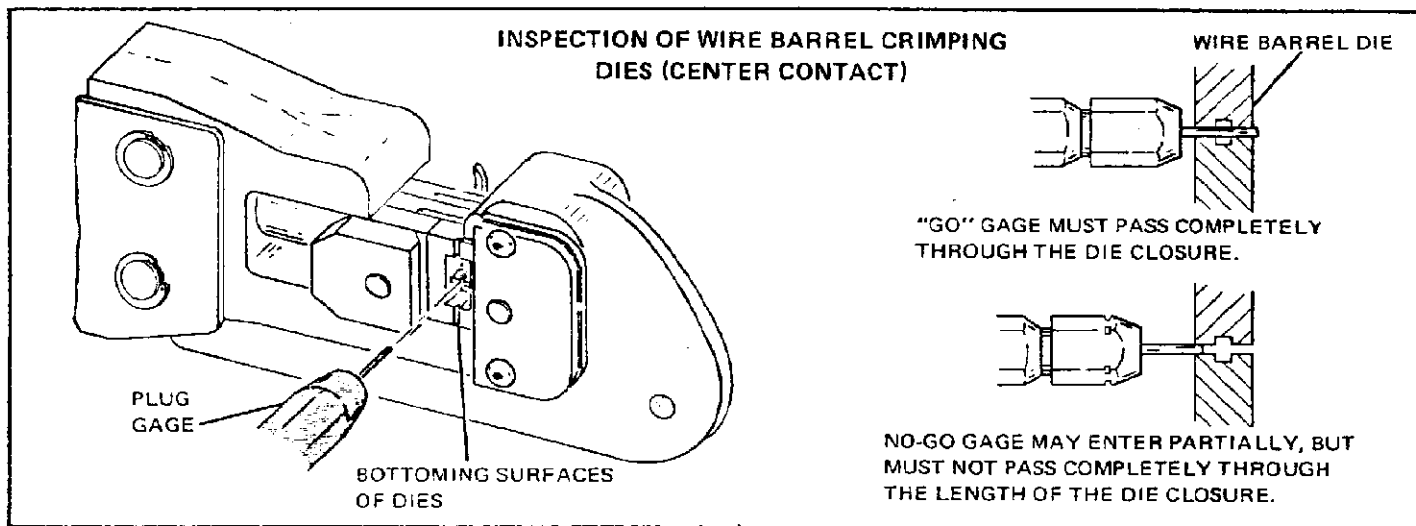


Figure 14

MEASUREMENT OF INSULATION AND BRAID CRIMP	PART NO.	CRIMPED CONTACT PART NO.	FERRULE PART NO.	DIM. B	DIM. C	CABLE SIZE
		69690 MOD. D	51563-1 51565-1	1-332056-0	.109 .115	.111 .121
69690-1 MOD. D		51563-1 51565-1	1-332056-0	.109 .115	.111 .121	RG-179
69690-2		51563-2 51565-2	1-332057-0	.109 .115	.084 .092	RG-196
69690-3		51563-1 51565-1	1-332057-0	.109 .115	.084 .092	NO. 26 TEFLON

Figure 15

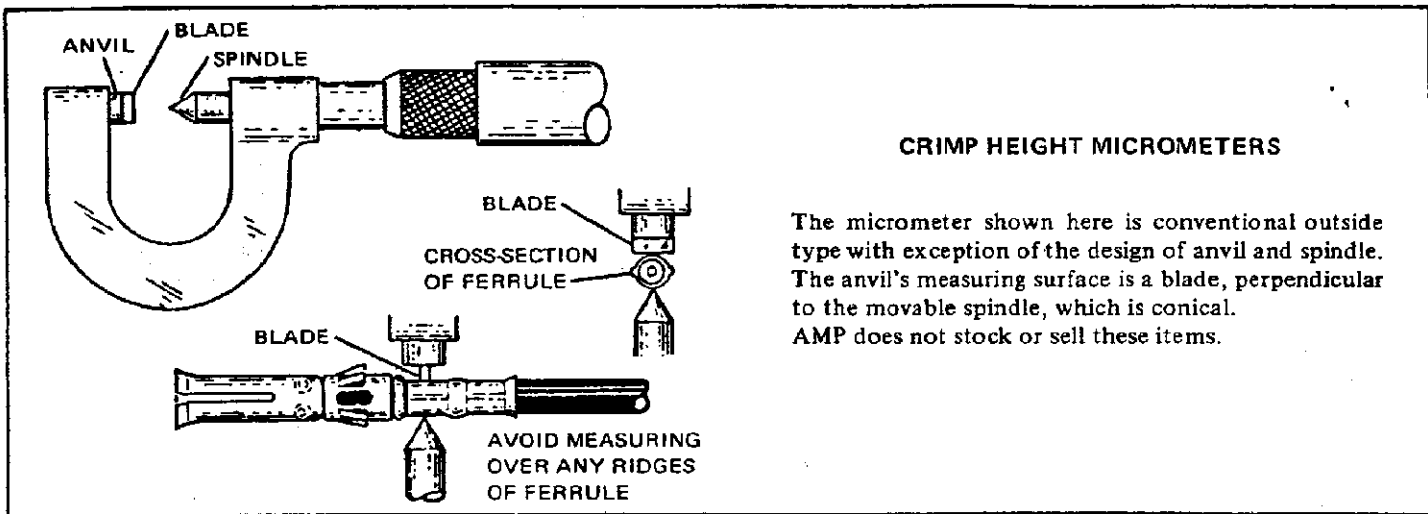
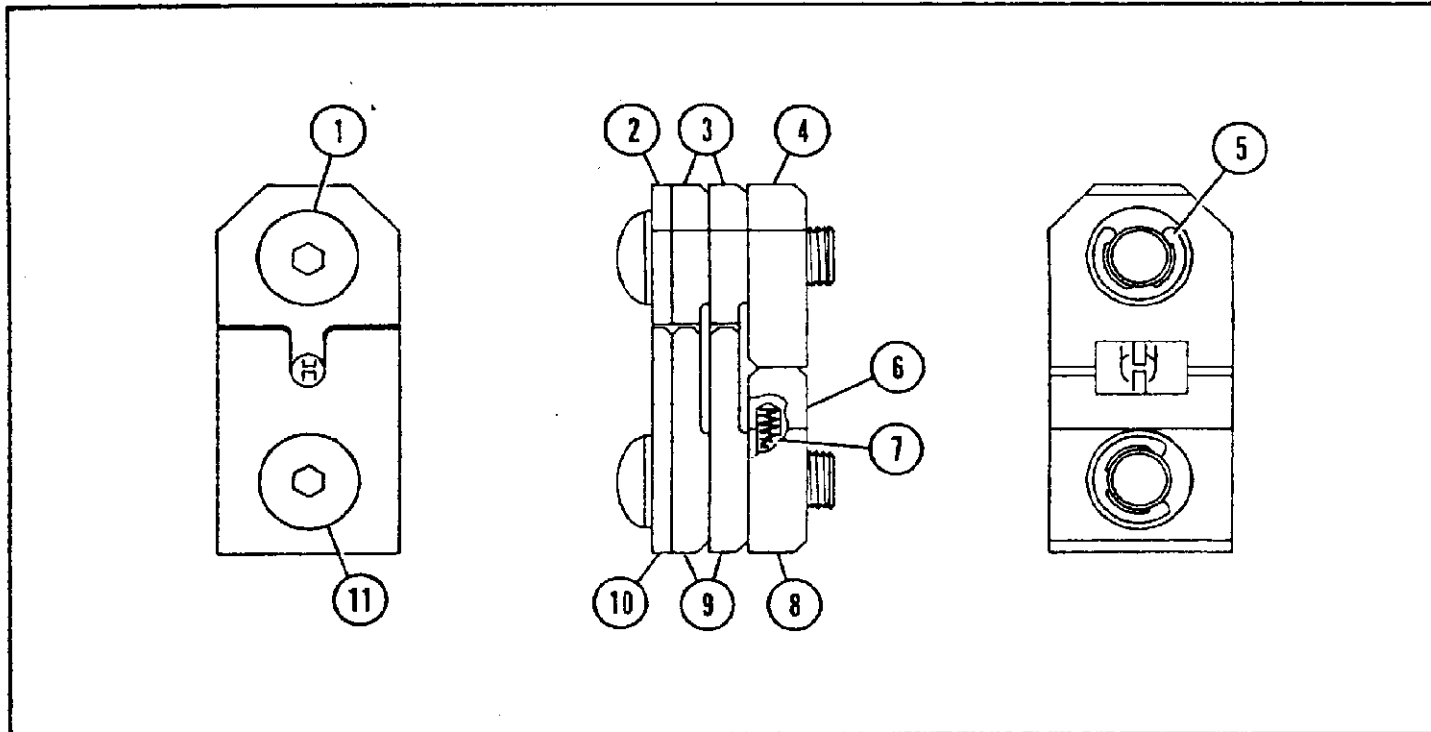


Figure 16



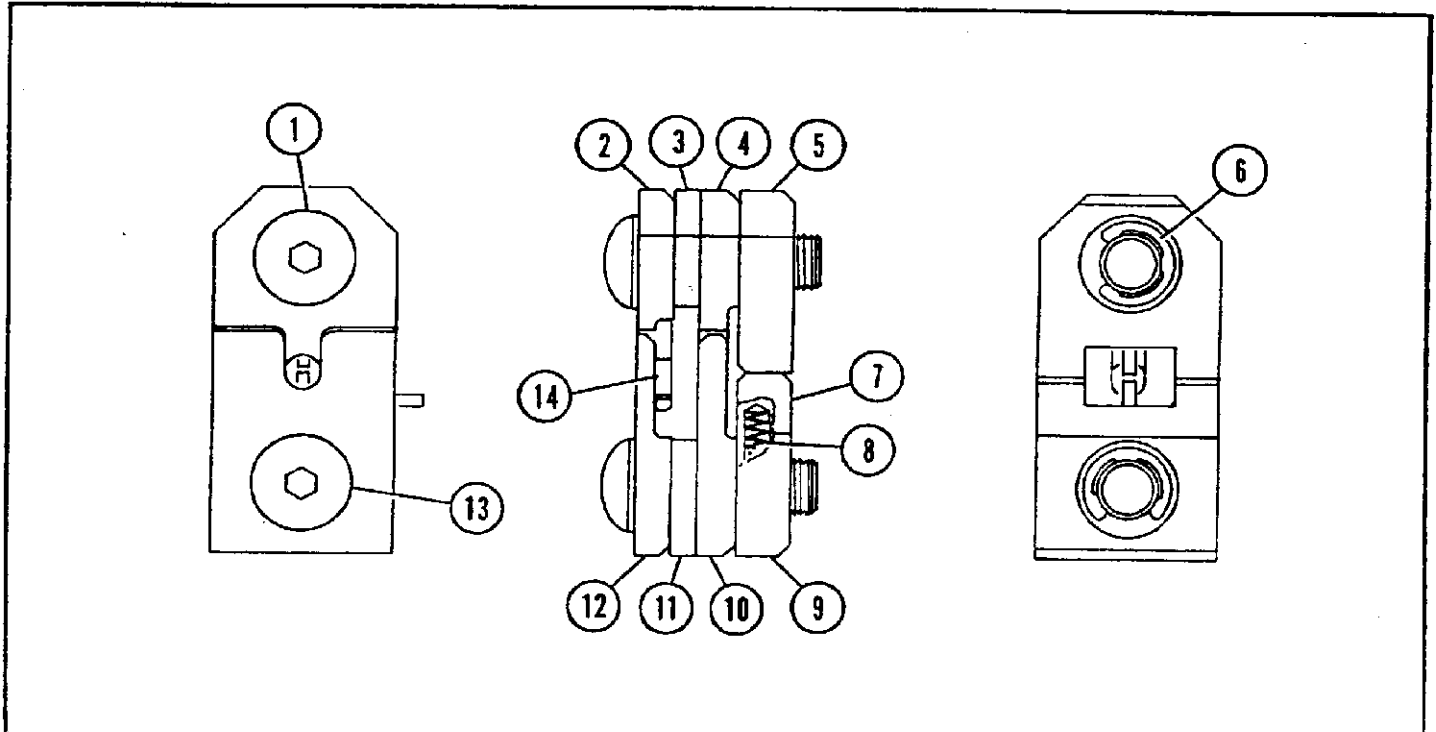
ITEM	PARTS DESCRIPTION	QTY.	PART NUMBER	
			DIE 69690 MOD. D	DIE 69690-1 MOD. D
1	SCREW - SPECIAL	1	306105-9	306105-9
2	ANVIL - INSULATION	1	1- 45923-2	1- 45923-2
3	ANVIL - BRAID	2	306741	306741
4	INSERT - BARREL - UPPER	1	306738-1	306738-2
5	RING, RETAINING	2	1- 21046-3	1- 21046-3
6	INSERT - BARREL, LOWER	1	306544-7	306544-8
7	SPRING	2	305182	305182
8	BARREL - BLOCK	1	306543-1	306543-1
9	INDENTER - BRAID	2	306742	306742
10	INDENTER - INSULATION	1	306740-1	306740-1
11	SCREW - SPECIAL	1	5-306105-4	5-306105-4

Figure 17

**3.5 Replacement Parts**

It may be advantageous to stock certain replaceable parts to prevent loss of production time. Figures 17 and 18 list

the customer replaceable parts that can be purchased from AMP Incorporated, Harrisburg, Pa., or a wholly owned subsidiary of AMP Incorporated.



ITEM	PARTS DESCRIPTION	QTY.	PART NUMBER	
			DIE 69690-2	DIE 69690-3
1	SCREW - SPECIAL	1	7-306131-2	7-306131-2
2	ANVIL - INSULATION	1	306739-2	306739-2
3	SPACER - UPPER	1	1-306191-0	1-306191-0
4	ANVIL - BRAID	1	306741	306741
5	INSERT - BARREL - UPPER	1	306738-2	306738-1
6	RING - RETAINING	2	1- 21046-3	1- 21046-3
7	INSERT - BARREL - LOWER	1	306544-8	306544-7
8	SPRING	2	305182	305182
9	BARREL - BLOCK	1	306543-1	306543-1
10	INDENTER - BRAID	1	306742	306742
11	SPACER - LOWER	1	306192-7	306192-7
12	INDENTER - INSULATION	1	306740-2	306740-2
13	SCREW - SPECIAL	1	1-306593-4	1-306593-4
14	EJECTOR	1	306493-2	306493-2

Figure 18

REL. DATE	REV. DATE	APPROVALS	
6-17-71	6-11-76	ENG. <i>W. Schenker</i>	PUB. <i>Paul Felty</i>