

AMP ★ MULTIPLE COAXICON ★ MICROMINIATURE PIN AND SOCKET CONTACTS

The AMP Microminiature COAXICON Contacts (Figure 1) are used in special cavities in certain AMP multiple printed circuit board connectors. Pin contacts normally mount in pin header housings and socket contacts normally mount in receptacle housings. (Figure 2)

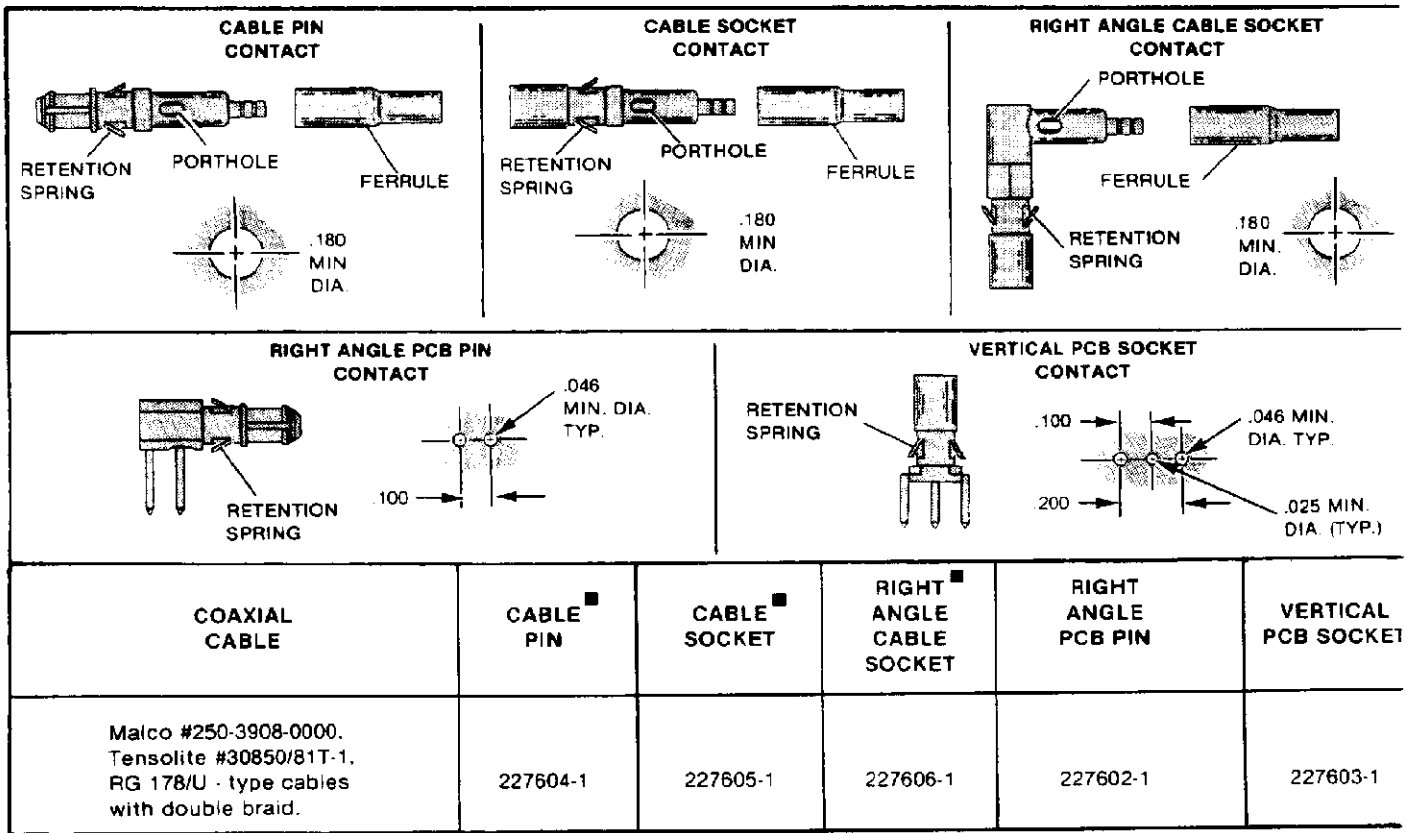
Furnished separate from the connector housing, the contact is held in place in the connector cavity by the contact's retention spring shown in Figure 1.

Mounting hole patterns for direct PCB insertion are shown in Figure 1. Cable sockets, when passing through the PCB, require the clearance hole indicated.

NOTE

TO PROMOTE TRUE PIN-TO-SOCKET ALIGNMENT, INSERT AND MATE CONTACTS IN HOUSING BEFORE SOLDERING TO PCB.

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



■ INCLUDES FERRULE

Figure 1

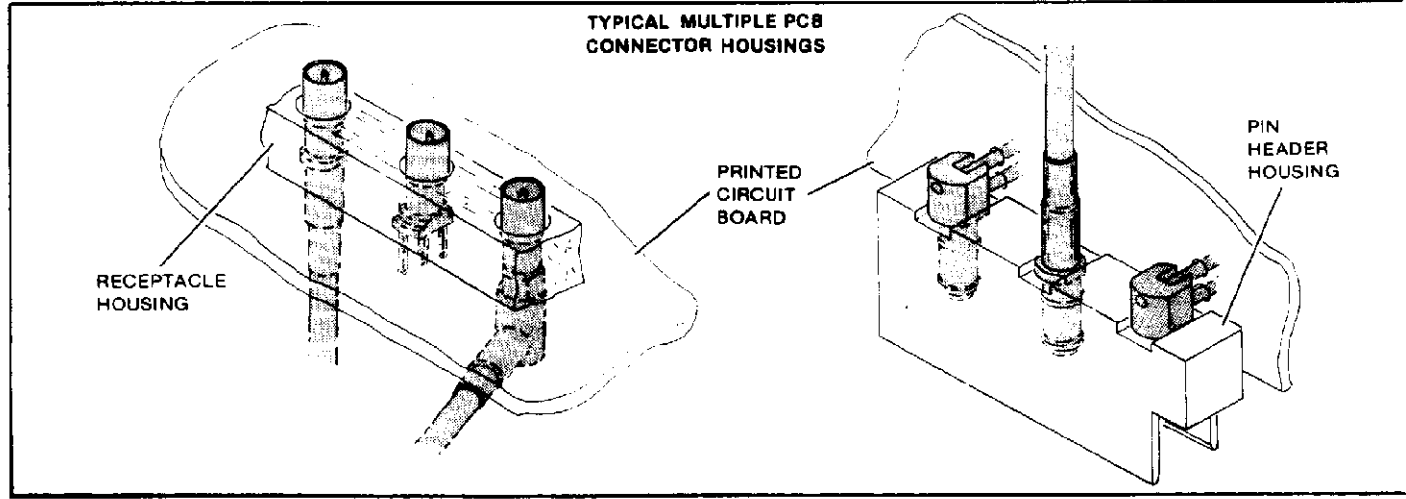


Figure 2

Copyright 1980 by AMP Incorporated, Harrisburg, Pa. All International Rights Reserved. AMP Incorporated products covered by U.S. and Foreign Patents and/or Patents Pending.

1. INTRODUCTION

This instruction sheet provides "Instructions" on product application and a "Maintenance and Inspection Procedure" for the following hand tool:

MICROMINIATURE COAXICON CONTACT HAND CRIMPING TOOL P/N 220215-1

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

2. INSTRUCTIONS

2.1 CABLE PREPARATION, INITIAL ASSEMBLY

- Slide ferrule, small end first, on cable; then strip cable to dimensions in Figure 3.
- Orient support sleeve with stripped cable as shown in Figure 4(a).
- Flare braid.
- Insert center conductor into inner wire barrel of contact until cable bottoms. Braid covers support sleeve. See Figure 4(b).

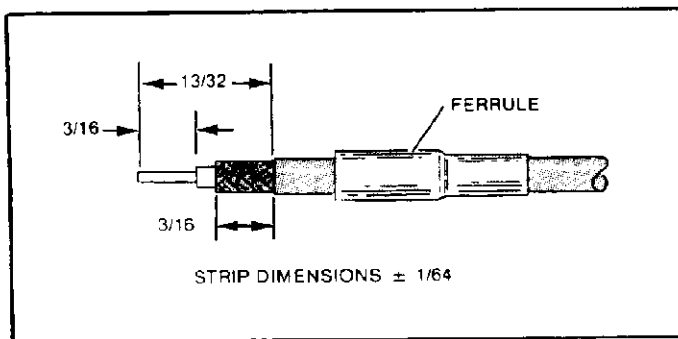


Figure 3

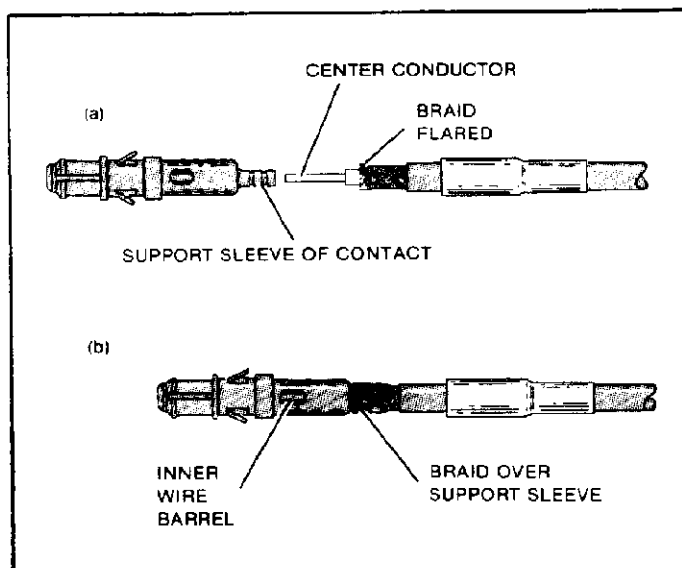


Figure 4

2.2 HAND TOOL, DUAL-CRIMPING

The crimping tool has 3 sets of crimping dies as shown in Figure 5.

Two separate crimps are performed to complete cable-to-contact assembly. During the first stage the inner wire barrel is crimped to the center conductor. This is followed by crimping the ferrule to the contact body and braid/outer insulation of cable.

To open tool handles, close handles until CERTI-CRIMP ★ ratchet releases. Note that once ratchet is engaged, handles cannot be opened until they are fully closed.

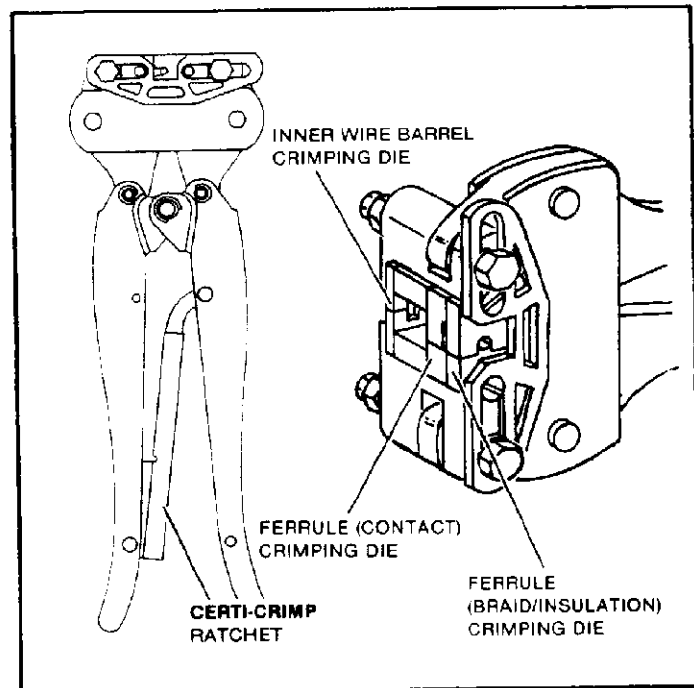


Figure 5

2.2.1 INNER WIRE BARREL CRIMPING: STRAIGHT CONTACT

- Align contact portholes with inner wire barrel crimp dies. Locate contact so that one wire barrel crimp die enters oval-shaped porthole as shown in Figure 5(a).
- Initially, close tool handles until other crimp die approaches porthole.
- Ensure that: 1, cable is bottomed in contact; 2, dies are aligned with portholes; then crimp inner wire barrel by closing tool handles until ratchet releases. Handles will open automatically.

2.2.2 INNER WIRE BARREL CRIMPING: RIGHT-ANGLE CONTACT

- Position mating end of right-angle contact in crimp nest as shown in Figure 6(b).
- Proceed with porthole alignment and crimping as described in Section 2.2.1.

2.2.3 FERRULE CRIMPING: STRAIGHT CONTACT

- Slide ferrule over braid until ferrule bottoms against shoulder on contact. Portholes are covered by ferrule. See Figure 7(a).

- (b) Place contact and ferrule assembly in ferrule crimp nest so that shoulder of contact butts against end of ferrule (contact) crimp nest. See Figure 7(b).
- (c) Crimp ferrule.
- (d) Remove crimped contact from crimping dies.

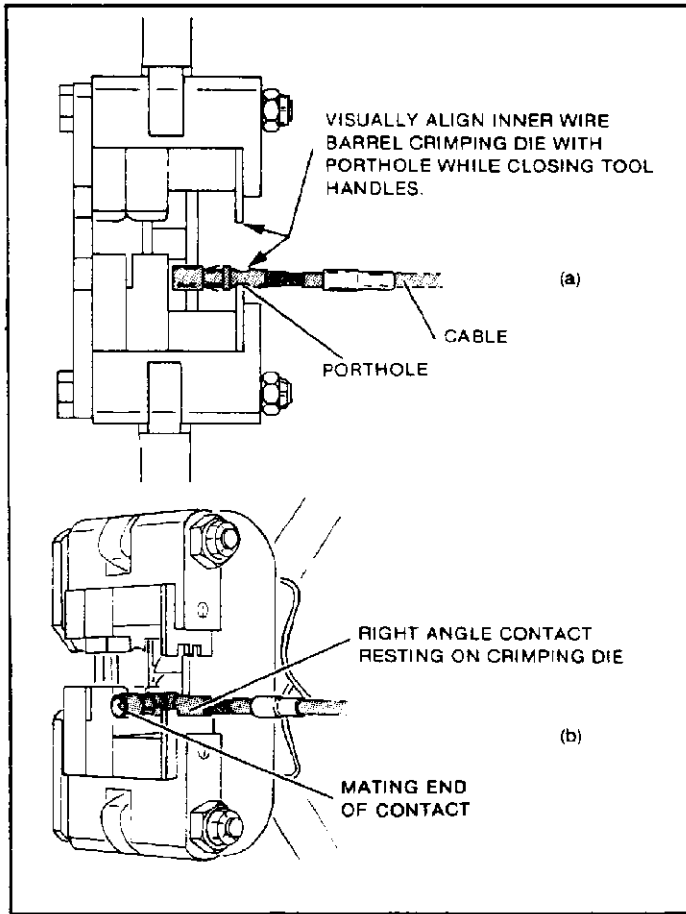


Figure 6

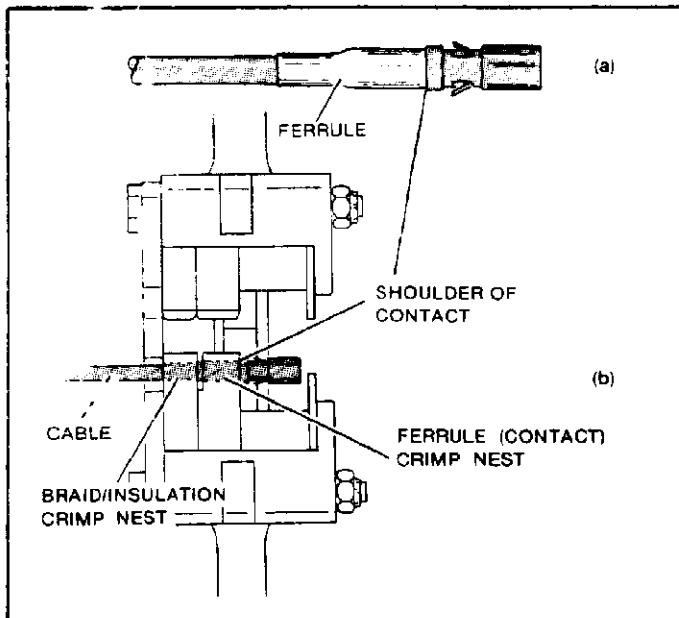


Figure 7

2.2.4 FERRULE CRIMPING: RIGHT-ANGLE CONTACT

- (a) Slide ferrule over braid until ferrule bottoms against body of contact. Portholes are covered by ferrule. See Figure 8 (a).
- (b) Position mating end of right-angle contact as shown in Figure 8 (b). Body of contact butts against end of ferrule (contact) crimp nest.
- (c) Crimp ferrule.
- (d) Remove crimped contact from crimping dies.

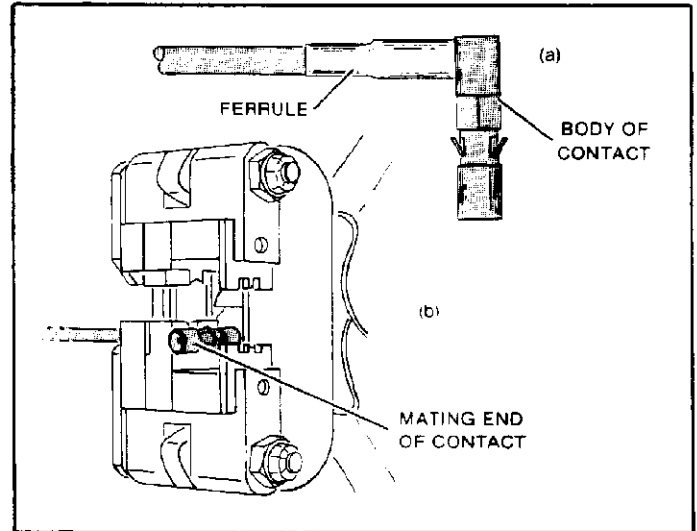


Figure 8

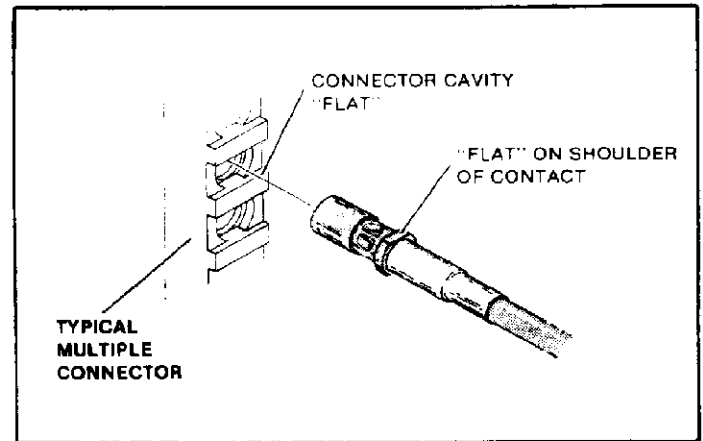


Figure 9

2.3 INSERTION & EXTRACTION INSTRUCTION

AMP Microminiature COAXICON contacts are inserted by hand into Multiple-Contact connectors.

NOTE

BE SURE TO ALIGN FLATS ON CONTACT SHOULDER WITH FLATS ON CAVITY OF MULTIPLE-CONTACT CONNECTOR WHILE INSERTING CONTACT. (FIGURE 9)

To extract contacts from connector block cavity, use Tool P/N 220216-1. (Figure 10)

- (a) Place end of tool (sleeve) over end of socket or pin.
- (b) Push sleeve into cavity as far as it will go.

NOTE

PUSH-ROD BUTTON WILL BACK OUT OF TOOL HANDLE WHEN TIP OF SOCKET OR PIN IS CONTACTED.

- (c) Rotate tool handle several times.
- (d) Keep end of tool bottomed in cavity by holding handle firmly with thumb and middle finger. Push button with forefinger.
- (e) As button is pressed down, socket or pin will be ejected.

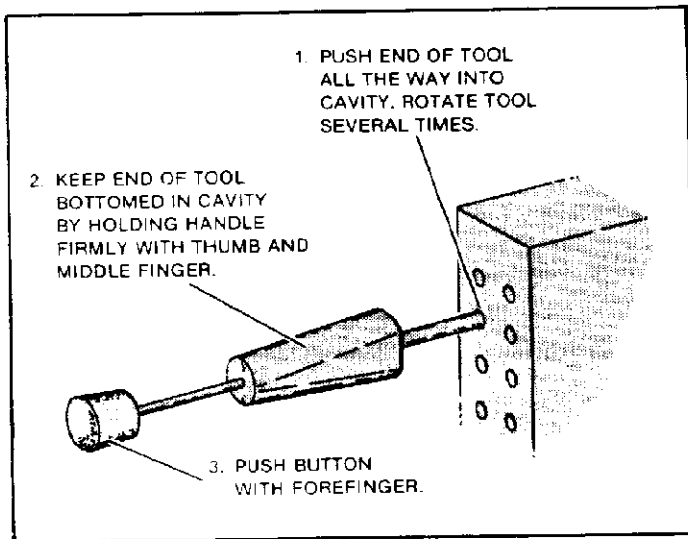


Figure 10

3. MAINTENANCE/INSPECTION PROCEDURE

AMP recommends that a maintenance-inspection program be performed periodically. This is necessary to assure that continued use of the tool will result in the same dependable and uniform terminations for which the tool was 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 tool.
2. Type of products crimped.
3. Degree of operator skill.
4. Presence of abnormal amounts of dust and dirt.
5. Your own established standards. With proper maintenance and inspection, this tool will give years of satisfactory service. All AMP tools are inspected and calibrated before being shipped from the factory; however, since there is a possibility of tool damage in shipment, AMP recommends that new tools be inspected in accordance with Section 3 when received in your plant.

3.1 CLEANING

Immerse tool (handles partially closed) in a reliable commercial de-greasing compound to remove accumulated dirt, grease and foreign matter. Make certain de-greasing compound does not attack paint or plastic materials. Remove remaining de-greasing compound with a lint-free cloth. When de-greasing compounds are not available, tool may be wiped clean with a lint free cloth. Relubricate tool, as instructed in paragraph 3.2, before placing it back in service.

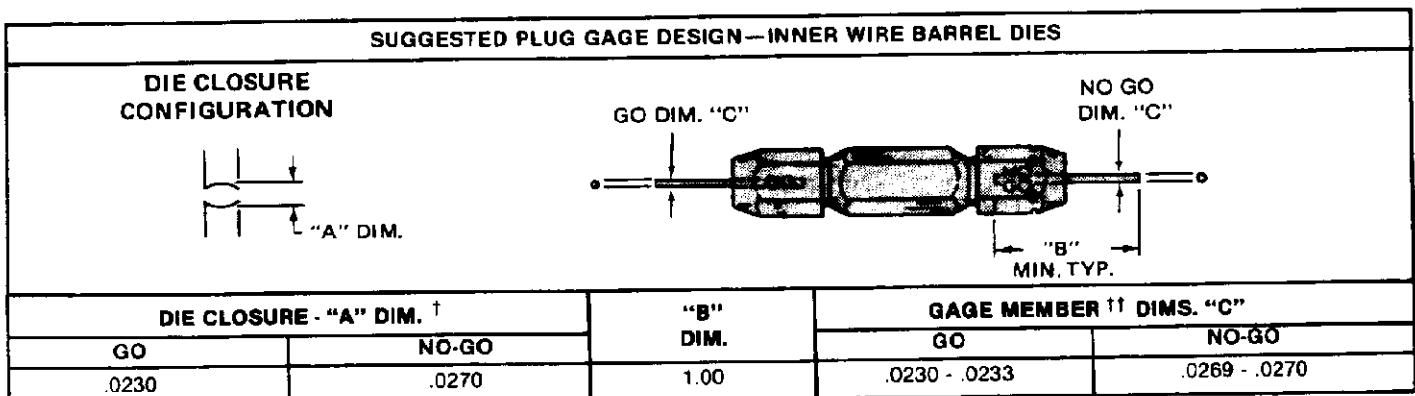
3.2 LUBRICATION

Lubricate all pins, pivot points and bearing surfaces with a good grade S.A.E. no. 20 motor oil as follows:
 Tools used in daily production-Lubricate daily.
 Tools used daily (occasional)-Lubricate weekly.
 Tools used weekly-Lubricate monthly.

Wipe excess oil from tool, particularly from crimping area. Oil transferred from crimping area onto certain terminations may affect the electrical characteristics of an application.

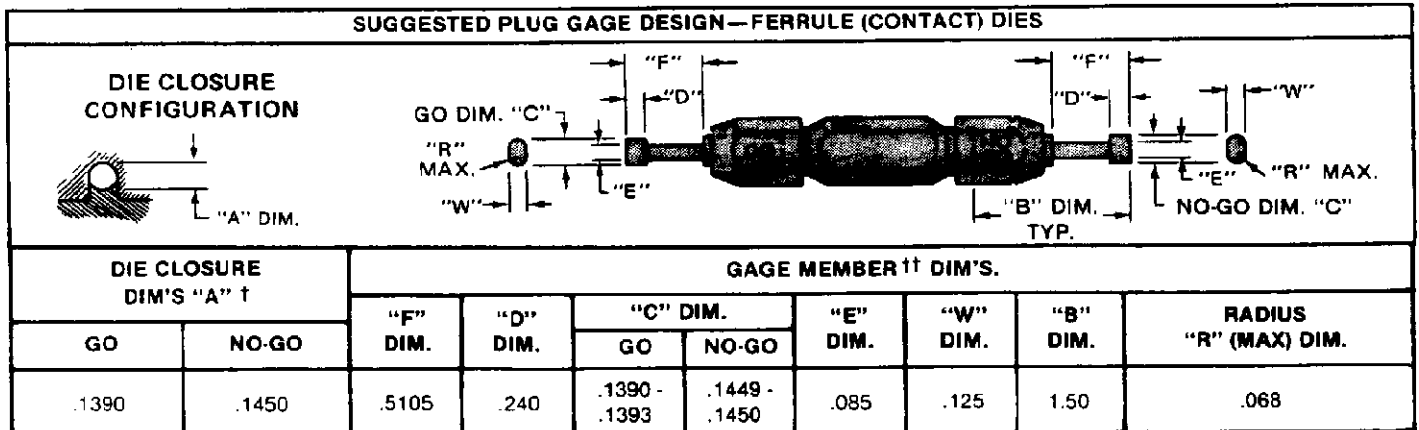
3.3 VISUAL INSPECTION

- (a) Visually inspect tool for missing pins or retaining rings, then operate tool and note return action of spring-loaded handles. If parts are missing or spring in handles is defective, refer to Figure 17 for customer replaceable parts.
- (b) Visually inspect the tool die crimping areas for flattened, broken or chipped conditions. Although dies may gage within permissible limits, worn or broken crimping areas are objectionable and can affect the quality of the crimp.

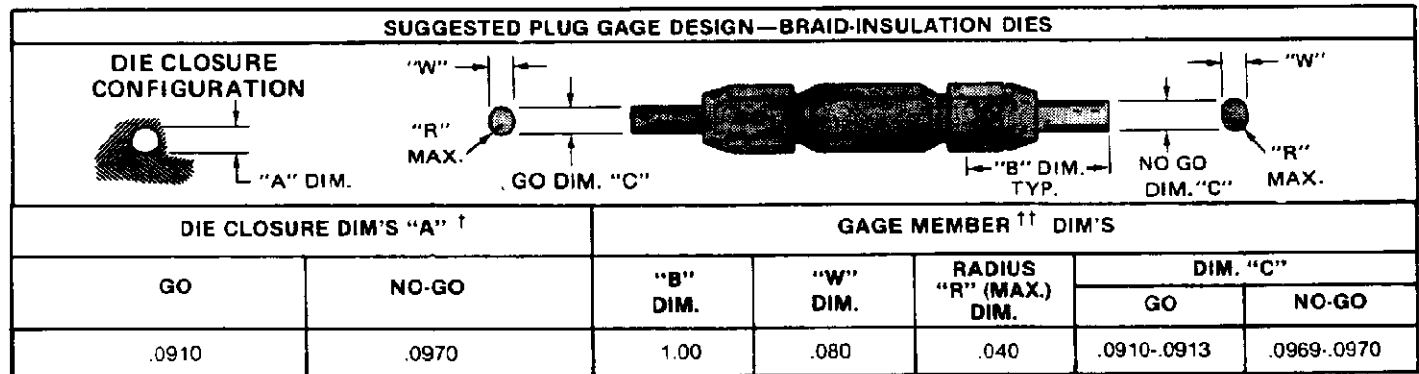


† Die closure dimensions apply when dies are bottomed, but not under pressure. Figure 11

†† Material-tool steel



† Die closure dimensions apply when dies are bottomed, but not under pressure. Figure 12
 †† Material-tool steel



† Die closure dimensions apply when dies are bottomed, but not under pressure. Figure 13
 †† Material-tool steel

3.4 DIE CLOSURE INSPECTION

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

Tool die closure inspection is accomplished using GO NO-GO plug gages. AMP neither manufactures nor sells plug gages; however, suggested plug gage designs are shown in Figures 11 thru 13. The following procedure is recommended for measuring tool die closures.

3.4.1 INNER WIRE BARREL DIES

- (a) Remove traces of oil or dirt from tool crimping area and plug gage members.
- (b) Close handles of tool until crimping jaws are bottomed. Do not apply additional pressure to tool handles.
- (c) With crimping jaws bottomed, check inner wire barrel crimp die closure using proper plug gage. Hold gage in straight alignment with tool and carefully try to insert, without forcing, the GO member, then the NO-GO member. See Figure 14. The GO member must pass completely through the inner wire barrel crimp die closure.
- (d) The NO-GO member may enter partially, but must not pass completely through length of barrel crimp die closure.
- (e) If wire barrel dies meet GO NO-GO gage conditions, the dies may be considered dimensionally correct.

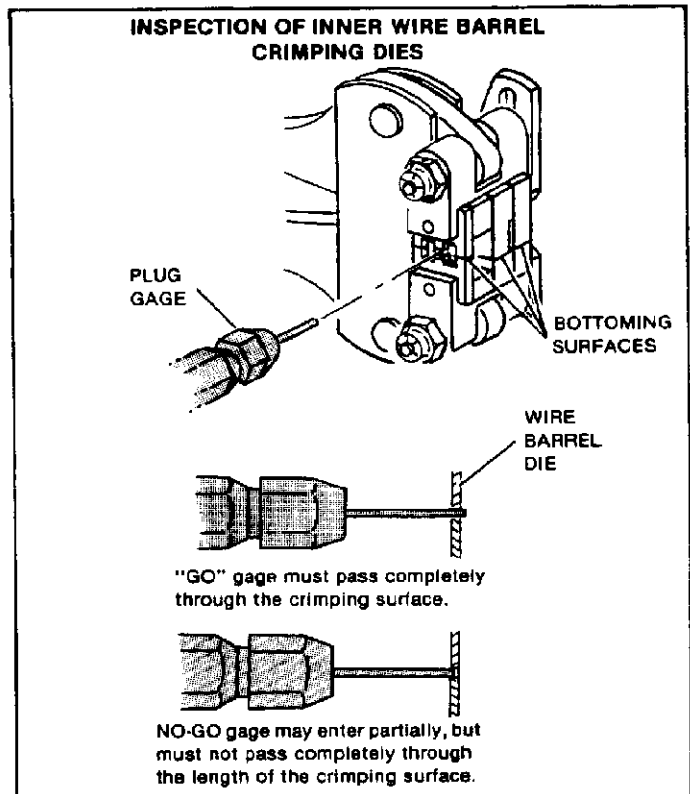


Figure 14

3.4.2 FERRULE (CONTACT) DIES

- Because the ferrule (contact) die set O.D. is larger than the braid-insulation die set, a gage of special design is required. See Figures 12 and 15.
- To use this gage, open crimping dies and locate end of gage member in the area between inner wire barrel dies and ferrule (contact) dies. Shank of member will be located in the braid-insulation die closure. See Figure 15.
- Close handles of tool until crimping jaws are bottomed. Do not apply additional pressure to tool handles.
- With crimping jaws bottomed, check ferrule (contact) crimp die closure using the proper plug gage. Hold gage in straight alignment with tool and carefully try to insert, without forcing, the GO member, then the NO-GO member. See Figure 15. The GO member must pass completely through the crimp die closure.
- The NO-GO member may enter partially, but must not pass completely through the crimp die closure.

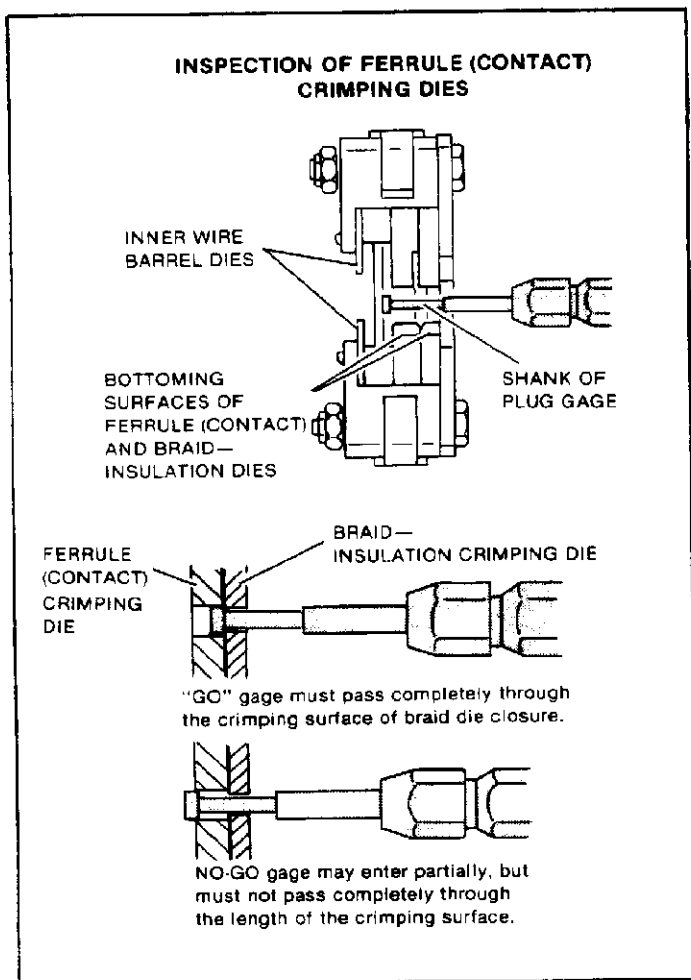


Figure 15

3.4.3 BRAID-INSULATION DIES

- Remove traces of oil or dirt from tool crimping area and plug gage members.
- Close handles of tool until crimping jaws are bottomed. Do not apply additional pressure to tool handles.

- With crimping jaws bottomed, check braid-insulation crimp die closure using proper plug gage. Hold gage in straight alignment with tool and carefully try to insert, without forcing, the GO member, then the NO-GO member. See Figure 16. The GO member must pass completely through the crimp die closure.
- The NO-GO member may enter partially, but must not pass completely through crimp die closure.
- If you find that the tool crimping dies do not conform with the GO NO-GO gage conditions, contact your local AMP field representative.

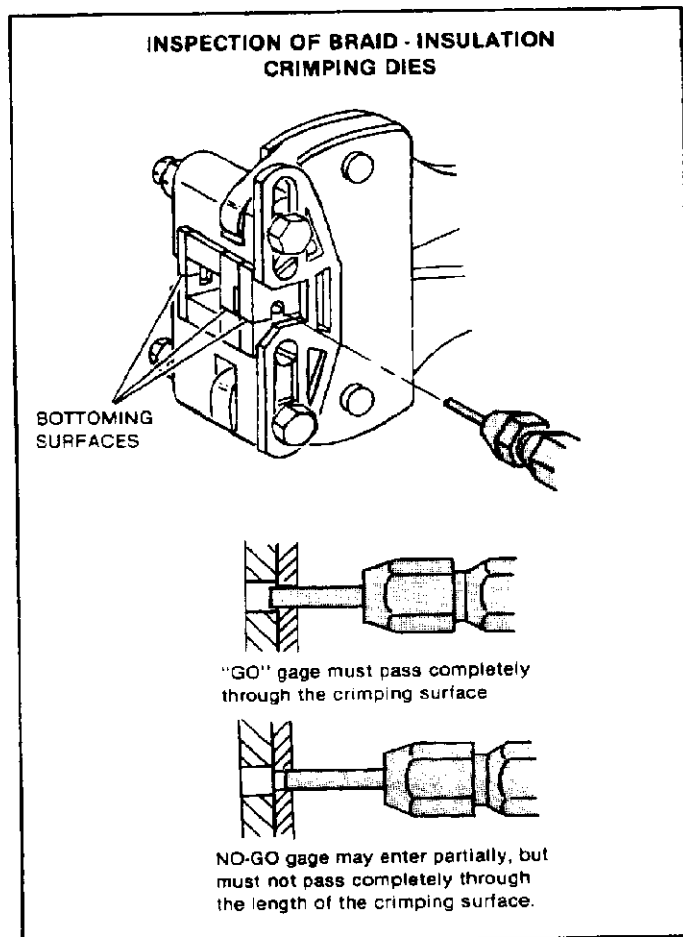


Figure 16

3.5 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 jaws have fully bottomed.

To check ratchet feature:

- Make a test crimp. When crimp is made, squeeze handles until ratchet is free; however, **DO NOT RELAX PRESSURE ON TOOL HANDLES.**
- Bottoming is satisfactory if bottoming surfaces of dies make contact with each other or if clearance between bottoming surfaces is .001" or less.
- If the .001" shim stock can be inserted completely between bottoming surfaces of dies, dies are considered as not bottoming. Contact your local AMP field representative.

3.6 REPLACEMENT PARTS

It may be advantageous to stock certain replaceable parts to prevent loss of production time. Figure 17 lists the customer replaceable parts that can be purchased from AMP Incorporated, Harrisburg, PA, or a wholly-owned subsidiary of AMP Incorporated. Parts

other than those listed on Figure 17 should be replaced by AMP Incorporated to insure proper CERTI-CRIMP ratchet adjustments. For tool repair service or CERTI-CRIMP ratchet adjustment, the tools should be returned to AMP Incorporated, Harrisburg, PA, or a wholly-owned subsidiary of AMP Incorporated.

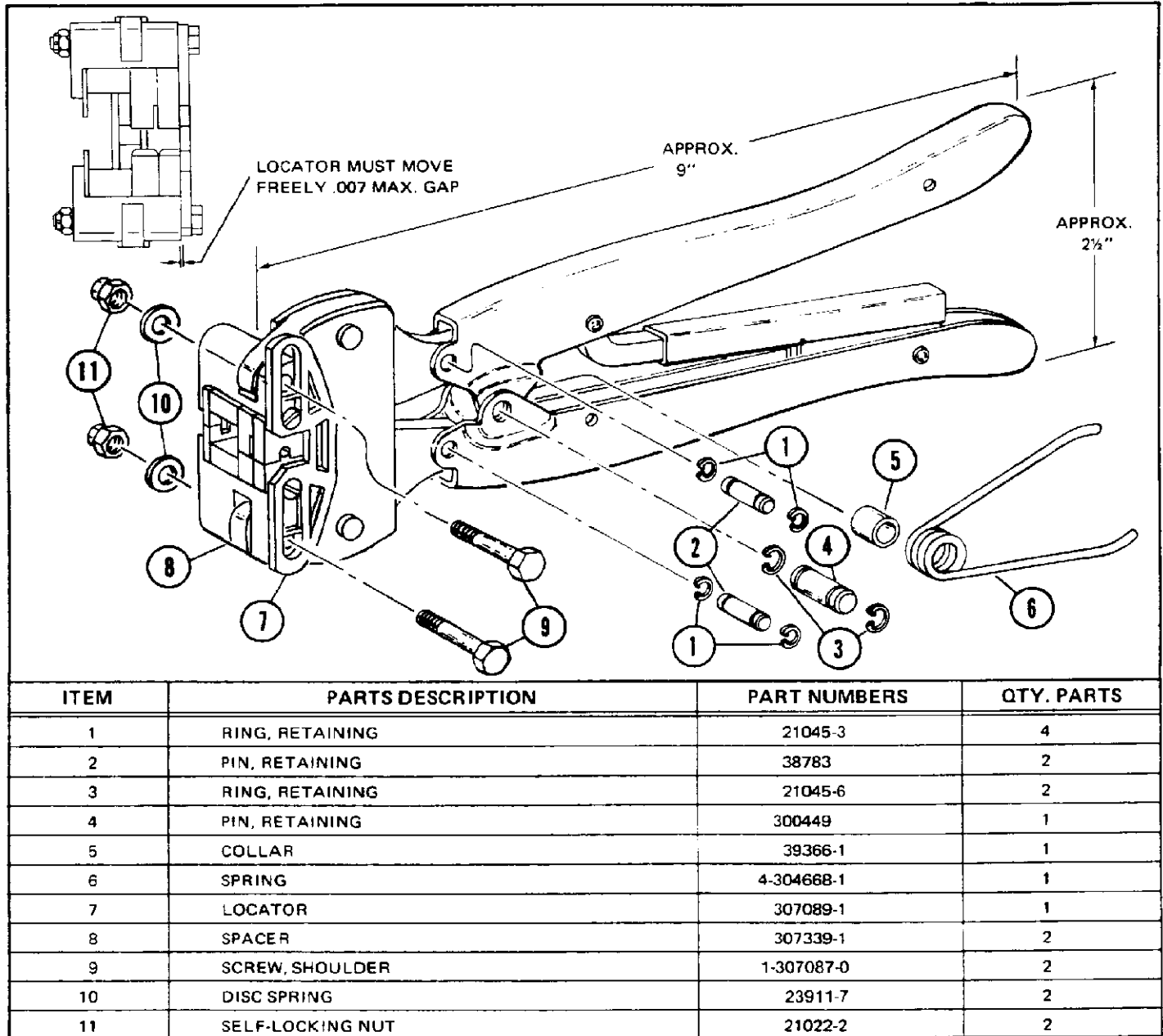


Figure 17

REL. DATE	REV. DATE	APPROVALS	
3-27-80		ENG. <i>Richard H. ...</i>	PUB. <i>Paul Felty</i>