

INSTRUCTIONS

FOR INSTALLATION OF **MULTIPLE CERTI-SEAL* SPLICE KIT**

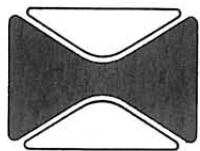
PART NO. 601350 2 CONDUCTOR SPLICE

SPLICES

TOOLING

SERVICE

MULTIPLE CERTI-SEAL SPLICE KITS ARE DESIGNED FOR WATER-TIGHT, PRESSURE-TIGHT SPLICING OF DOUBLE-INSULATED, COPPER VERMIN SHIELDED, MULTIPLE CONDUCTOR CABLE. INSTRUCTIONS MUST BE FOLLOWED CAREFULLY TO INSURE SPLICE RELIABILITY.



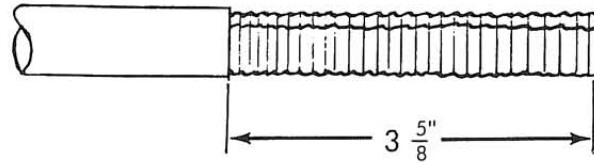
**AMP
SPECIAL
INDUSTRIES**

Division of AMP Products Corporation | Valley Forge, Pa.
A Subsidiary of AMP Incorporated

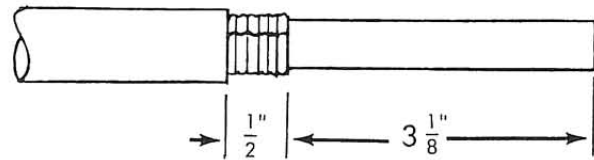
Installation Instructions
for
Multiple CERTI-SEAL Splice Kit - Part No. 601350
2 Conductor Splice

1. Cut mating cable ends evenly

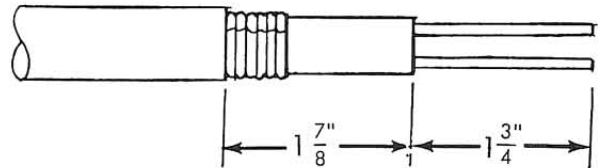
2. Strip outer jacket (3-5/8") from both ends. Note -- be careful not to cut copper shield.



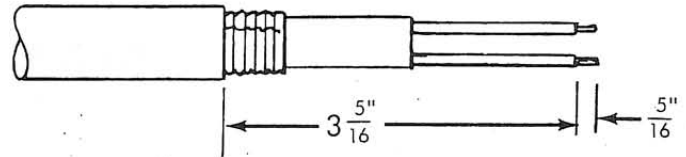
3. Cut and strip copper shield (3-1/8") from both ends. Note -- be careful not to cut inner jacket.



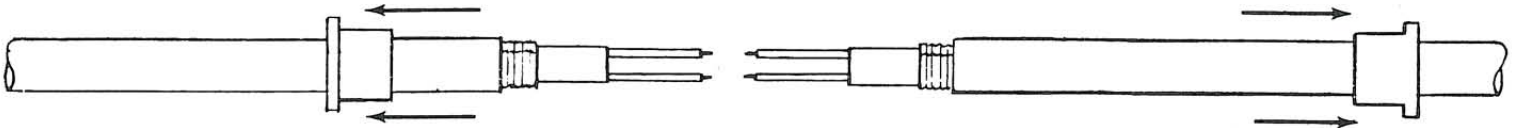
4. Strip inner jacket and cellophane (1-3/4") from both ends. Note -- be careful not to cut conductor insulation.



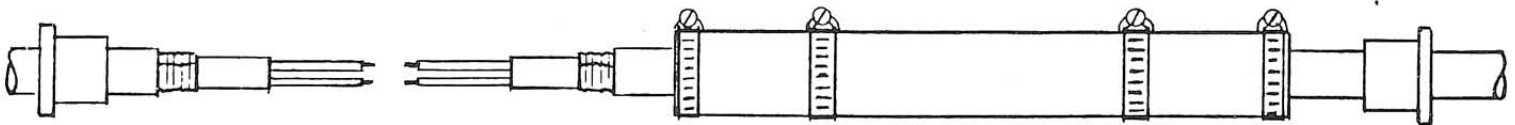
5. Strip insulation 5/16" from end of all wires. Cut off filler piece about 1" from end.



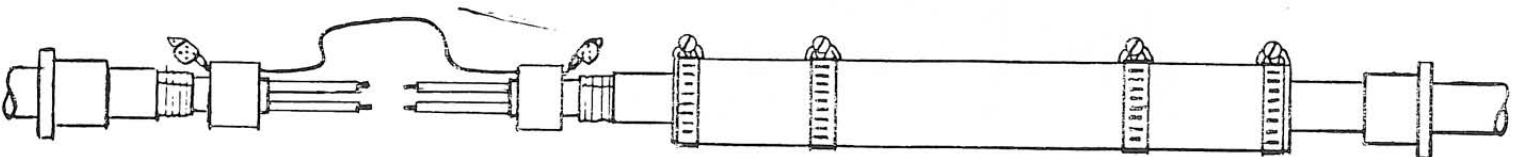
6. Slide end grommets (Part "A") on each cable; position one grommet approx. 15" from end of cable.



7. Slide boot assembly (Part "B") onto grommet 15" from end of cable.



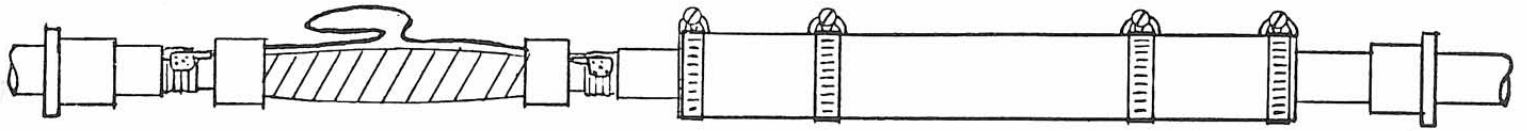
8. Slide internal grommet assembly (Part "C") on inner jacket of both cables.



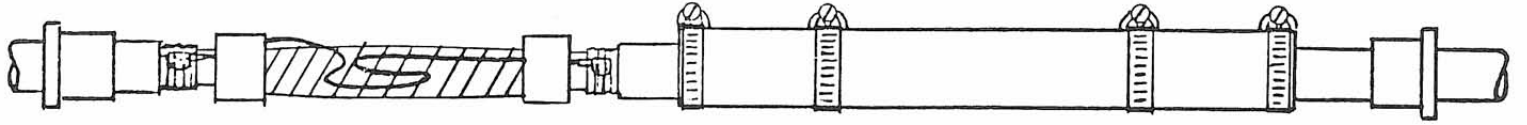
9. Insert wires in CERTI-SEAL splices (Part "D") and crimp. (See CERTI-SEAL tool instructions.)

10. Peel open copper shield and attach TERMI-FOIL* terminal with pliers.

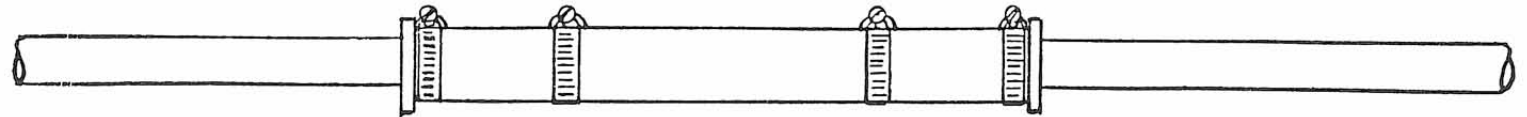
11. Wrap SPIRAP* tubing (Part "E") around conductors, between inner grommets.



12. Fold wire (connecting TERMI-FOIL terminals) between inner grommets on outside of SPIRAP tubing.



13. Position boot assembly (Part "B"), and grommets (Part "A"), and tighten clamps tightly with screwdriver.



A-MP* CERTI-SEAL MOISTURE PROOF SPLICE CRIMPING TOOL

1. The Tool, see Figure 1, covered by this Instruction Sheet is used to crimp CERTI-SEAL Moisture Proof Splices.

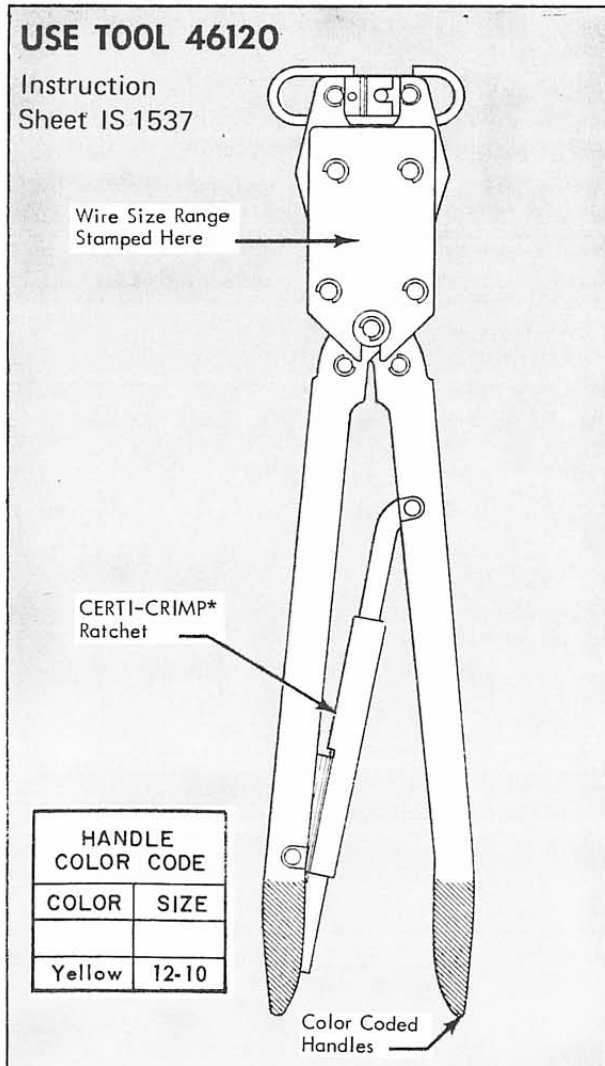


Fig. 1

2. CRIMPING PROCEDURE

(a) Open Tool Handles by closing them until CERTI-CRIMP Ratchet, see Figure 1, releases. Note that once Ratchet is engaged, Handles cannot be opened until they are fully closed.

(b) Insert stripped Wire into Splice, End of Conductor should be visible in Window Indent of Splice.

(c) Place Splice in Locator as shown in Figure 2. Window Indent on Splice faces Nest.

(d) Hold Wire in position and close Handles until Ratchet releases.

(e) To crimp other half of Splice, remove it and reposition in Locator. If Splice cannot be turned, turn Tool over. Repeat steps (b), (c) and (d).

(f) Inspect finished crimp to make sure that end of Conductor is visible in Window Indent.

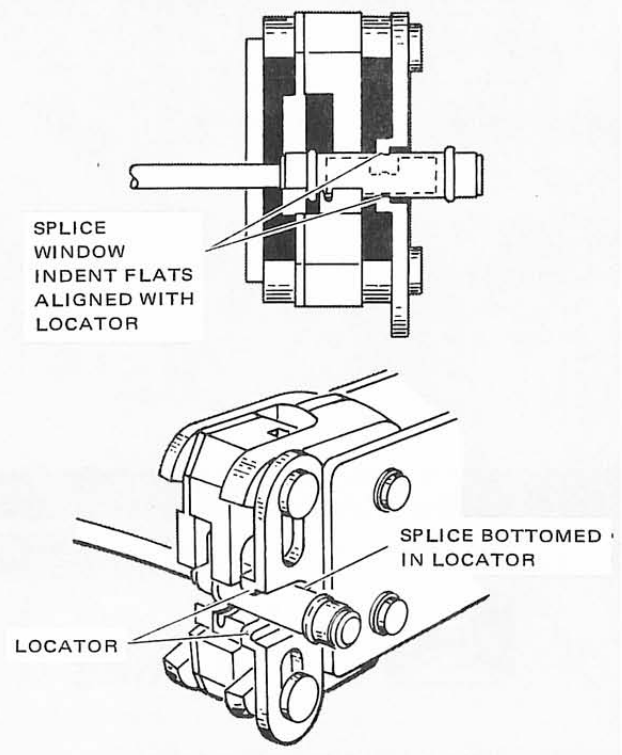


Fig. 2

1. INTRODUCTION

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

CERTI-SEAL* SPLICE CRIMPING TOOLS

46120 59282

These tools are used to crimp:

- CERTI-SEAL moisture proof splices on wire sizes 16 thru 10 AWG and wire insulation diameters .090 thru .218.

Basic instructions on the use of these tools, wire preparation, 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.

These instructions may be used for tools not listed in Figure 1 but accompanied by this IS. For unlisted tools, use the wire strip dimensions given in Figure 1 for an identical size tool.

Tools are coated with oil to prevent rust and corrosion. Wipe this oil from tool, particularly from crimping area.

2. INSTRUCTIONS

2.1 WIRE STRIPPING AND CRIMPING PROCEDURES

- (a) Select the correct splice for the wire size and wire insulation diameter being used by observing color coding of splice, rings, adaptors, and tools. See Figure 1.
- (b) Strip wire to dimensions listed in Figure 1.
- (c) Open crimping dies by closing handles until CERTI-CRIMP* ratchet releases. See Figure 2. Note that once ratchet is engaged, handles cannot be opened until they are fully closed.

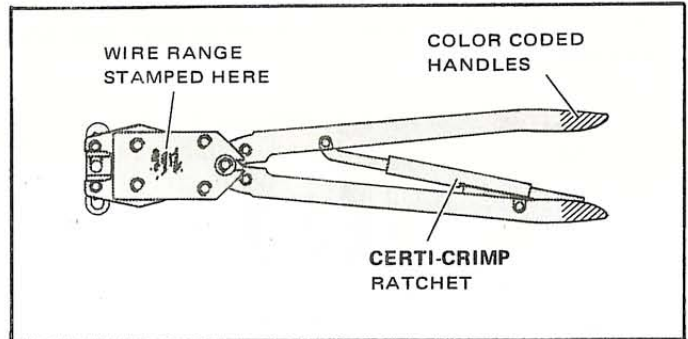
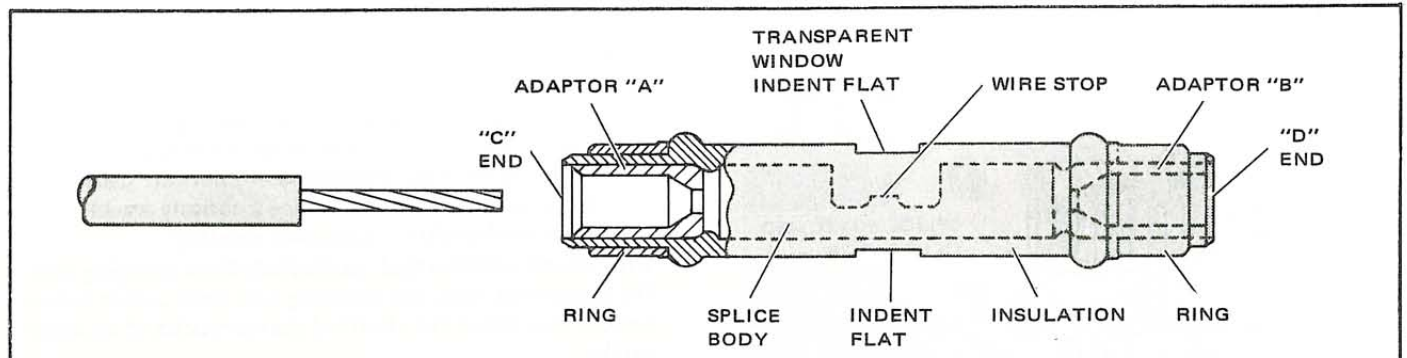


Figure 2



WIRE RANGE EITHER END	WIRE SIZE ONE END	SPLICE NUMBER	MAX. WIRE INSUL. DIA.	ADAPTORS		RING COLOR		SPLICE BODY & TOOL COLOR CODE	WIRE STRIP LENGTH ±.010	TOOL NUMBER
				"A"	"B"	"C" END	"D" END			
—	16	52765	.090	BLUE	—	GREEN		BLUE	.340	59282
	14		.114	—	GREEN				.320	
16-14	—	324989	.120	GREEN		TIN			.295	
		324549	.157	—		TIN	—		.320	
		325178	.157	—	GREEN	—	GREEN	.320		
			.120	—	GREEN	—	GREEN	.320		
—	14	52766	.122	GREEN	—	GREEN		YELLOW	.405	
	12		.122	—	YELLOW					
12	—	52762	.122	YELLOW		GREEN			.405	
—	12	52767	.122	YELLOW	—					GREEN
	10		.160	—	BROWN	YELLOW	.405			
12-10	—	324990	.170	GREEN				TIN		.360
		324631	.218	—		TIN	—	.360		
		325179	.218	—		TIN	—	.405		
			.170	—	GREEN	—	GREEN	.405		

Figure 1

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

Copyright 1960, 1968, 1973, by AMP Incorporated, Harrisburg, Pa. All International Rights Reserved. AMP Incorporated products covered by U.S. and Foreign Patents and/or Patents Pending.

- (d) Select the proper color coded end of splice (when applicable) for the wire insulation diameter being used. See Figure 1.
- (e) Insert stripped wire into splice until it bottoms against wire stop. End of conductor should be visible through transparent window indent flat of splice.
- (f) Align splice window indent flats with tool locator and push splice into locator until bottomed. See Figure 3.
- (g) Hold wire in position and close handles until CERTI-CRIMP ratchet releases. Handles will open automatically and crimped splice may be removed.
- (h) To crimp other half of splice, reposition uncrimped half in tool and follow same procedure used to crimp first half of splice. If splice cannot be turned, turn tool around.
- (i) Refer to paragraph 2.2 for finished crimp inspection. See Figure 4.

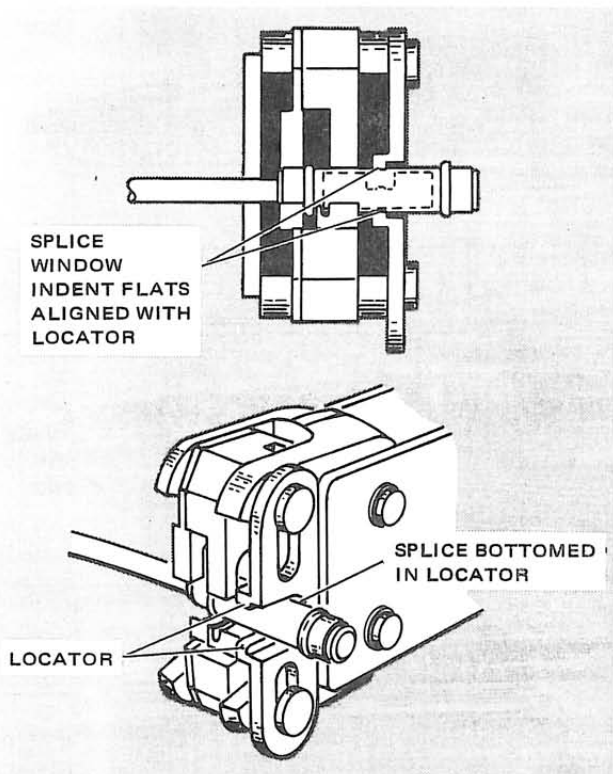


Figure 3

2.2 CRIMP INSPECTION

Finished crimps should appear as shown in Figure 4. Perform the following inspection:

1. Wire ends should butt against wire stop, however, application is acceptable if wire ends are flush with or protrude beyond inside ends of wire barrels.
2. Observe crimped rings for splitting at area shown. Split rings indicate possible damaged dies or wire insulation diameter is too large. Refer to die visual inspection in paragraph 3.3.

NOTE: Conductor strands may fracture if oversize insulation diameter is used.

3. MAINTENANCE/INSPECTION PROCEDURE

AMP recommends that a maintenance/inspection program be performed periodically. This is necessary to assure that continued use of the tools will result in the same depend-

able and uniform terminations for which the tools 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 tool.
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.

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. Due to the precision design, *it is important that no parts of these tools be interchanged except those replacement parts listed in Figure 9.*

3.1 CLEANING

The tool should be immersed (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease and foreign matter. Make certain the degreasing compound does not attack paint or plastic materials. Remove remaining degreasing compound with a lint free cloth. When degreasing compounds are not available, tool may be wiped clean with a lint free cloth. Re-lubricate 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 the crimping area onto certain terminations may affect the electrical characteristics of an application.

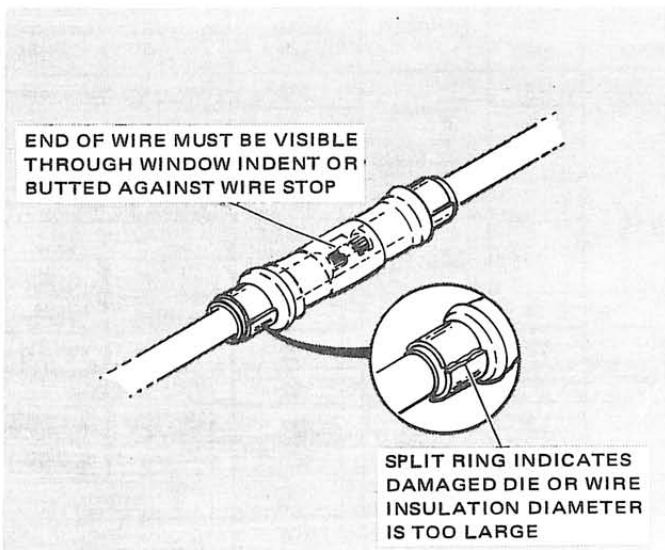


Figure 4

3.3 VISUAL INSPECTION

- (a) Visually inspect the tool for missing pins or retaining rings. If parts are missing or defective, refer to Figure 9 for customer replaceable parts.
- (b) Visually inspect the die closure surfaces for flattened, broken or pitted conditions. Although dies may gage within permissible limits, worn or damaged die closure surfaces are objectionable and can affect the quality of the crimp. Examples of possible damaged die closure surfaces are shown in Figure 5.

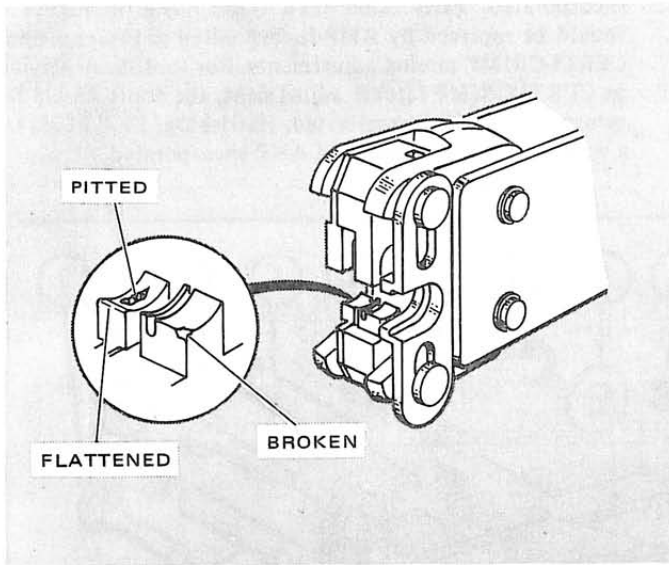


Figure 5

3.4 DIE CLOSURE INSPECTION

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

The die closure inspection is accomplished using GO NO-GO plug gages. AMP neither manufactures nor sells plug gages, however, suggested designs and GO NO-GO dimensions for the plug gage members are listed in Figures 6 and 7. The following procedure is recommended for measuring the die closures.

- (a) Remove traces of oil or dirt from the die closures and plug gage members.
- (b) Close handles of tool until crimping dies are bottomed. Do not apply additional pressure to tool handles.
- (c) With crimping dies bottomed, check the wire barrel crimp die closure using the proper plug gage. Hold gage in straight alignment with the die closure and carefully try to insert, without forcing, the GO member, and then the NO-GO member. See Figure 8, Detail A. The GO member must pass completely through the wire barrel crimp die closure.
- (d) The NO-GO member may enter partially, but must not pass completely through the wire barrel crimp die closure.
- (e) Insert a .005 shim between both bottoming surfaces of insulation crimp dies. See Figure 8, Detail B.
- (f) With crimping dies bottomed, check the insulation crimp closure in the same manner as steps (c) and (d). See Figure 8, Detail B.

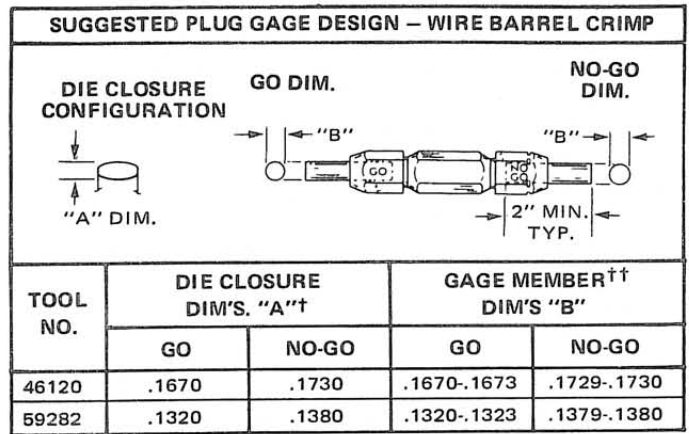


Figure 6

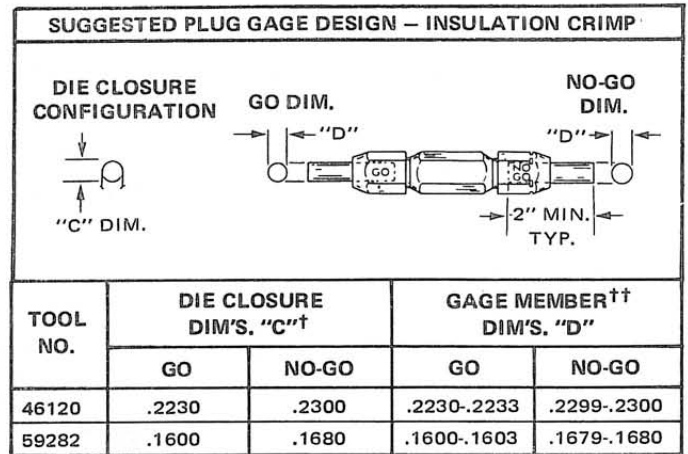


Figure 7

† Die closure dimensions apply when dies are bottomed, but not under pressure.
 †† Material – Tool Steel

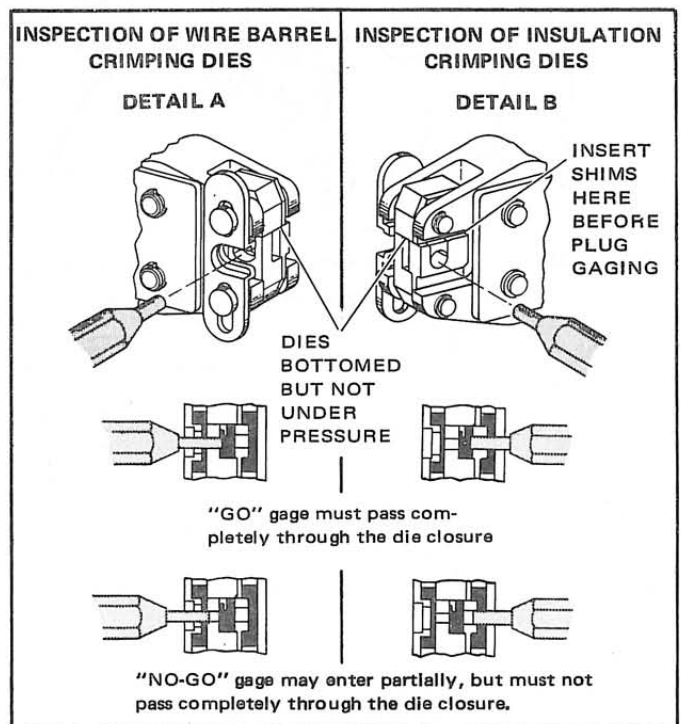


Figure 8

- (g) If the die closures meet the GO NO-GO gage conditions, the dies may be considered dimensionally correct.
- (h) If you find that the die closures do not conform with the GO NO-GO gage conditions, contact your local AMP field representative.

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 jaws to open before they have fully bottomed.

To check ratchet feature:

- (a) Thoroughly clean the bottoming surfaces of the dies.
- (b) Make a test crimp using the maximum wire load, i.e., a No. 10 AWG wire in a 12-10 splice. When this crimp is made, squeeze handles until the ratchet is free, however, **DO NOT RELAX PRESSURE ON TOOL HANDLES.**

- (c) Bottoming is satisfactory if bottoming surfaces of the dies make contact with each other or if the clearance between the bottoming surfaces is .001" or less.
- (d) If the .001" shim stock can be inserted completely between the bottoming surfaces of the dies, the 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 9 lists the customer replaceable parts that can be purchased from AMP Incorporated. Parts other than those listed on Figure 9 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. 17105, or a wholly owned subsidiary of AMP Incorporated.

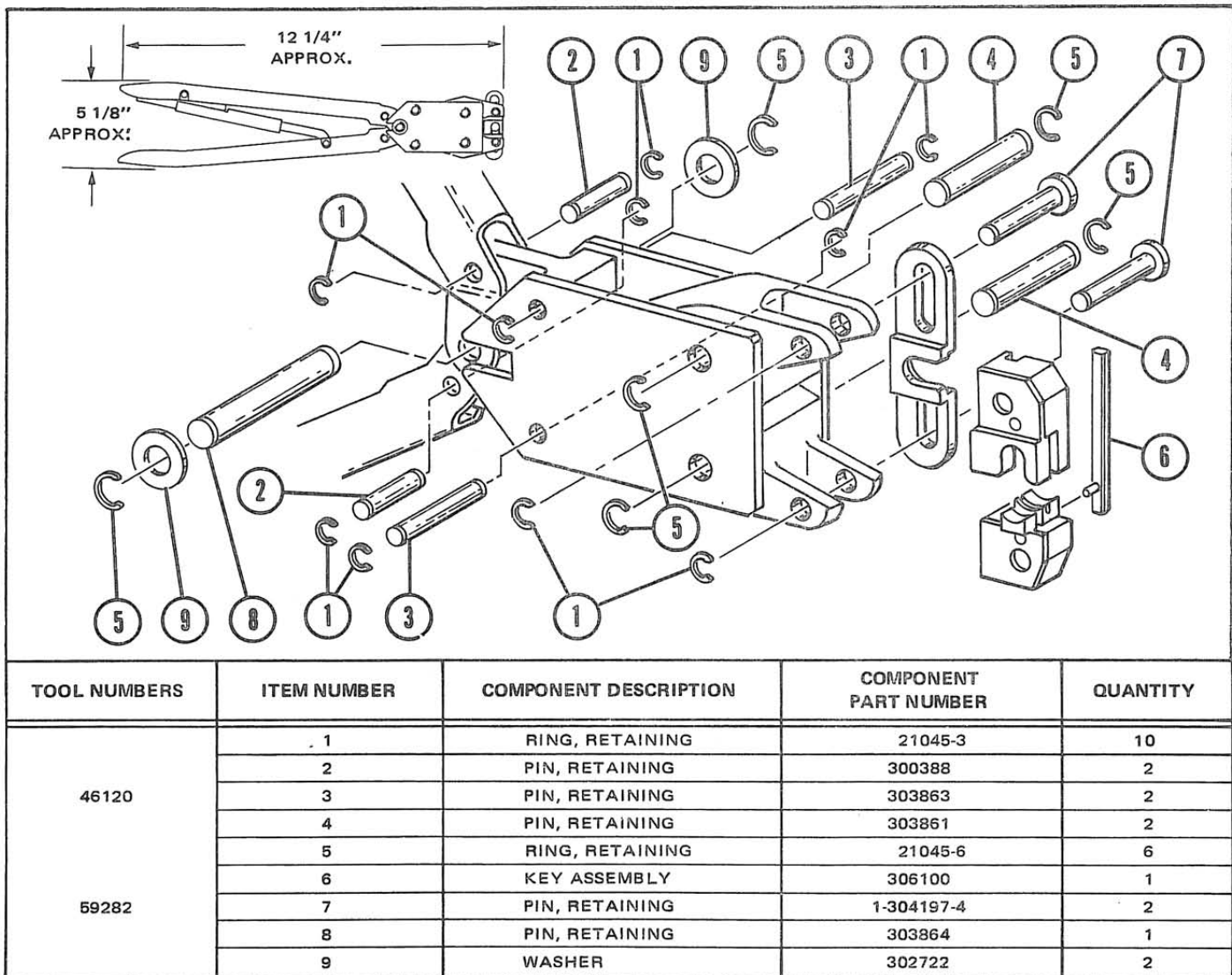


Figure 9

REL. DATE	REV. DATE	APPROVALS	
3-15-58	9-11-73	ENG. <i>James J. Bell</i>	PUB. <i>Paul Felty</i>