



APPLICATION AND MAINTENANCE  
FOR A-MP★ HAND CRIMPING TOOLS  
90270-1 AND 90271-1

IS 7552  
RELEASED 5-16-72  
REVISED

**NOTE**

Section I of this instruction sheet covers the contacts and application procedures recommended for the A-MP Hand Crimping Tools 90270-1 and 90271-1.

Section II covers the Maintenance and Inspection procedures recommended by AMP to assure reliability of A-MP Hand Crimping Tools and each application.

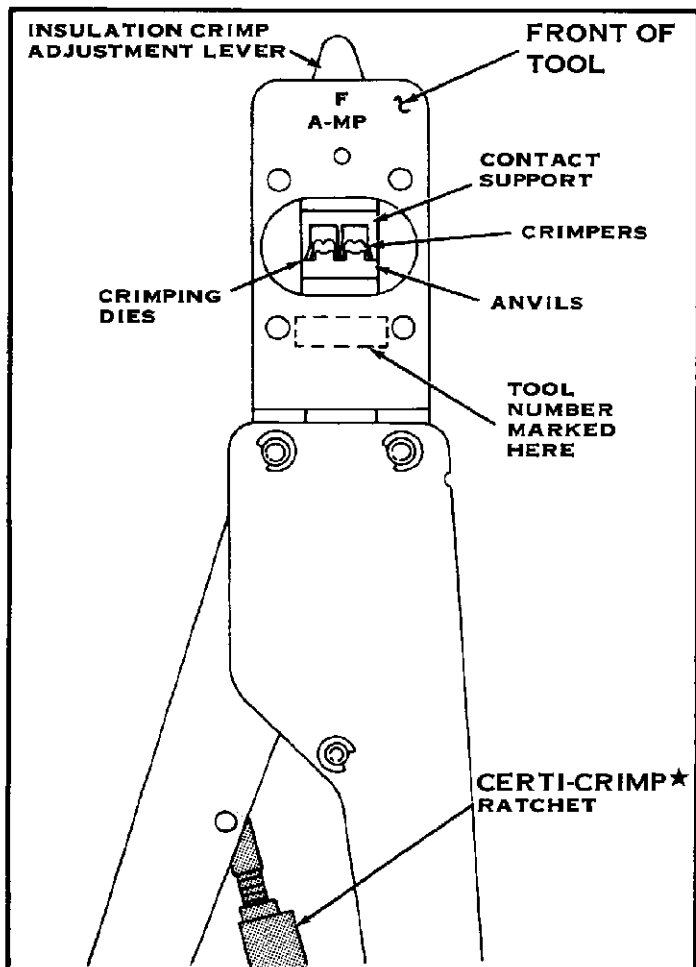


FIGURE I-1  
SECTION I APPLICATION

**I-1. INTRODUCTION**

The A-MP Hand Crimping Tools 90270-1 and 90271-1 are designed to crimp the Relay Base Contacts listed in Figure 1. We recommend that you read these instructions thoroughly before crimping any contacts.

**I-2. DESCRIPTION**

These tools have two fixed dies (Crimpers) and two movable dies (Anvils). The dies are specifically designed to crimp only the contacts listed in Figure I-2. Do not crimp contacts that are not listed on this sheet.

Each tool features an Insulation Crimp Height Adjustment, a Contact Support, a Contact Locator-Insulation Stop and a CERTI-CRIMP Ratchet.

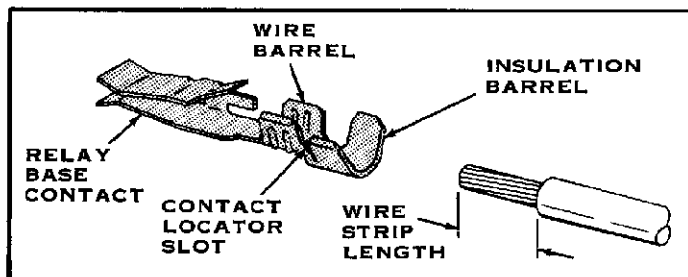
The Insulation Crimp Height Adjustment controls the Crimp Height of the Contact Insulation Barrel. It can be set by placing the Adjustment Lever in any one of three positions: (1) small (2) medium and (3) large.

The Contact Support keeps the contact straight while it is being crimped.

The Contact Locator-Insulation Stop has two functions as the name implies. First it is used to position the contact between the tool's crimping dies and second it aids in locating the wire in the contact. In use it is positioned in the Contact Locator Slot. See Figure I-2.

The CERTI-CRIMP Ratchet is calibrated to ensure the Crimp Height specified for the contacts listed in Figure I-2. Note that once engaged, the ratchet will not release until the tool handles have been fully closed.

**CAUTION** *The crimping dies bottom before the CERTI-CRIMP Ratchet releases. This is a design feature that assures maximum electrical and tensile performance of the crimp. Do not re-adjust the ratchet, otherwise, an improperly crimped contact will result. See Section II of this Instruction Sheet.*



WIRE SIZE	INS. DIA.	CONTACT NUMBER		HAND TOOL NUMBER	WIRE STRIP LENGTH
		LP	STRIP		
16-14	.075 to .132	350067	350057	90270-1	3/16"
20-18	.050 to .088	350068	350059	90271-1	5/32"
24-22					(.155)

FIGURE I-2

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**I-3. CRIMPING PROCEDURE**

Using the chart in Figure I-2, select wire within the specified Wire Size and Insulation Size. Then select the applicable Loose Piece Contact and applicable Crimping Tool. Now strip the wire to the length shown in Figure I-2 — *Do not cut or nick the wire strands.*

Proceed as follows:

1. Hold the tool so the **BACK** of it is facing you. See Figure I-3.
2. Squeeze the Tool Handles and allow them to spring open fully.
3. Looking straight into the crimping dies from the **BACK** of the tool, insert a contact (Insulation Barrel first) into the **FRONT** of the tool. See Figure I-3. *Make certain you use the Crimp Section specified for the Wire Size you are using.*
4. Align the Contact Locator Slot with the tool's Contact Locator-Insulation Stop.
5. Hold the contact in position and squeeze the tool handles until the Insulation Anvils start entry into the Crimpers. *Do not deform the Insulation Barrel or Wire Barrel.*
6. Insert a properly stripped wire through the Locator Wire Slot and into the Contact Wire Barrel until the wire's Insulation butts against the Contact Locator-Insulation Stop.

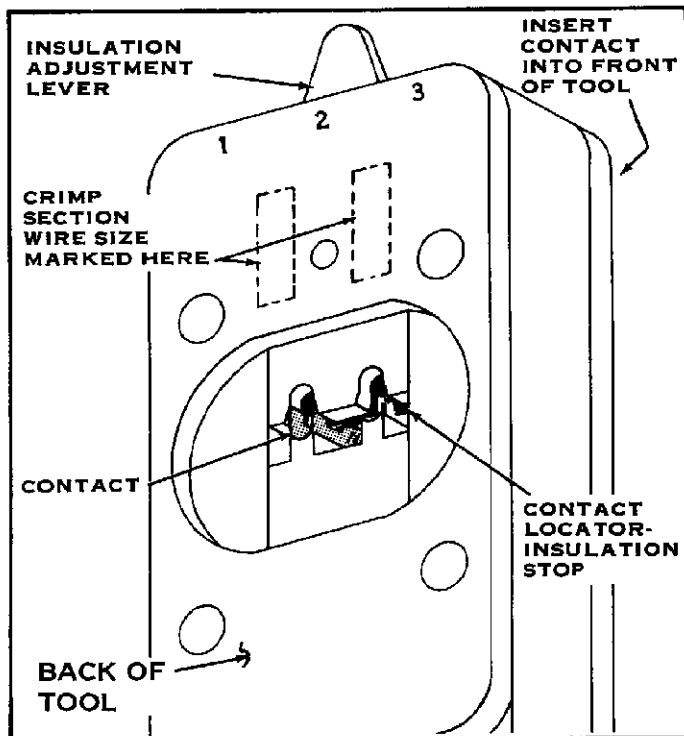


FIGURE I-3

**A-MP HAND TOOLS 90270-1 AND 90271-1**

7. Hold the wire in place and squeeze the tool handles until the CERTI-CRIMP Ratchet releases.
8. Allow the tool handles to open fully and remove the crimped contact.

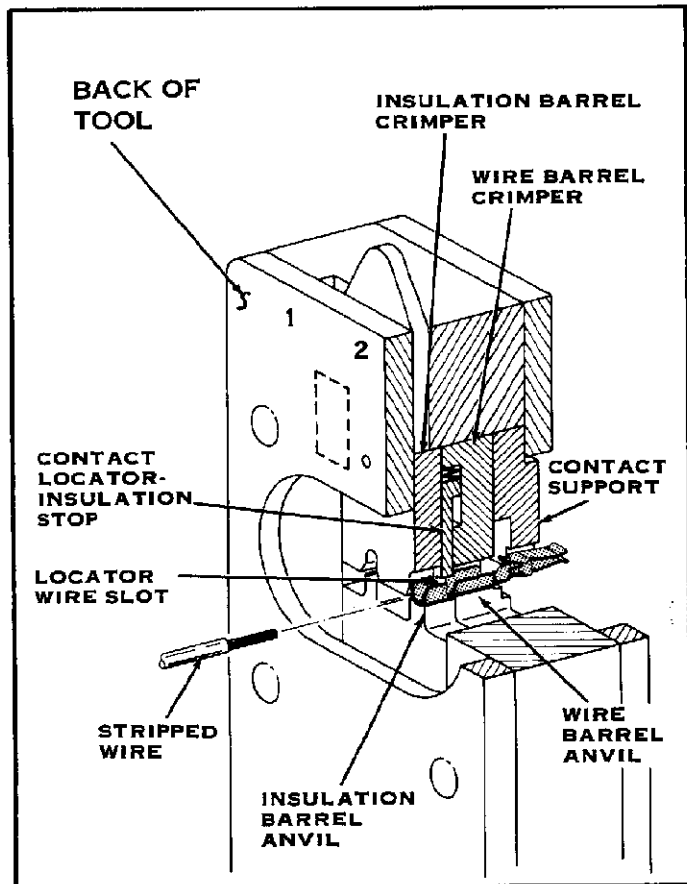


FIGURE I-4

**I-4. INSULATION CRIMP ADJUSTMENT**

The Insulation Barrel Crimp Height is controlled by the Insulation Adjustment Lever. To determine the right setting, crimp a few contacts using each of the three settings (1-small, 2-medium and 3-large). Check the insulation crimp after each crimp is made. The crimp should be tight enough to hold the insulation firmly without cutting into it.

**I-5. DAILY MAINTENANCE**

Remove all foreign particles with a clean, soft brush or clean, soft, lint-free cloth. Make sure the proper retaining pins are in place and secured with the proper retaining rings. If foreign matter cannot be removed easily, or if the proper replacement parts are not available, return the tool to your supervisor.

Make certain all pivot points and bearing surfaces are protected with a **THIN** coat of any good S.A.E. No. 20 Motor Oil. Do not oil excessively. When the tool is not in use, keep the handles closed to prevent objects from becoming lodged between the crimping dies and store the tool in a clean, dry area.

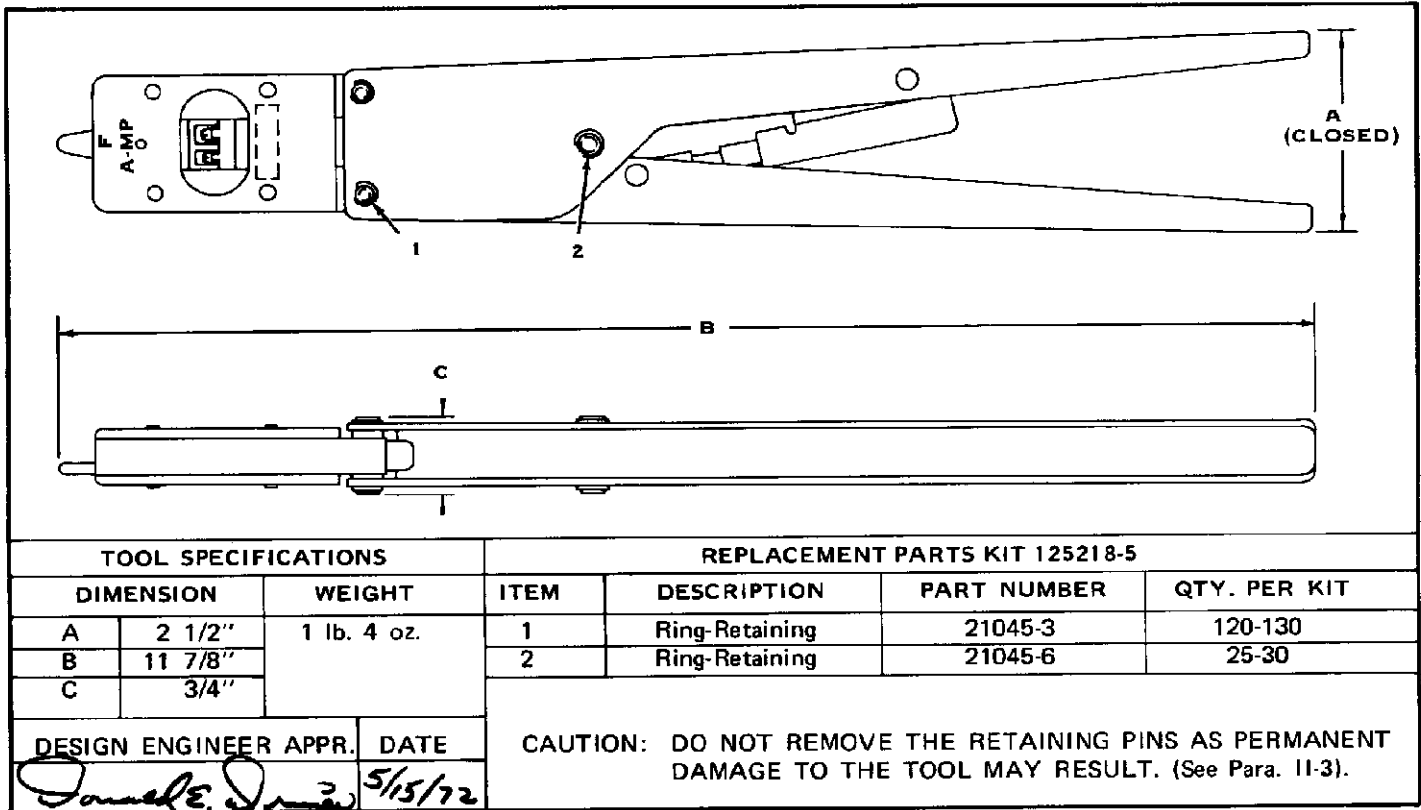


FIGURE II-1

SECTION II MAINTENANCE PROCEDURES

**NOTE**

Section I of this Instruction Sheet covers the contacts and application procedures recommended for the A-MP Hand Tools 90270-1 and 90271-1.

II-1 TOOL CERTIFICATION

These instructions have been approved by AMP Design, Production and Quality Control Engineers to provide you with documented maintenance and inspection procedures in accordance with AMP Corporate Policy Number 3-3. We have, through our test laboratories and inspection of production assembly, established the procedures described herein to assure quality and reliability of A-MP Hand Crimping Tools.

The parts listed in Figure II-1 are customer replaceable parts. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is deemed necessary. When ordering, order the replacement parts kit listed in Figure II-1.

II-2.INSPECTION PROCEDURES

A. Daily Maintenance

The importance of daily maintenance cannot be over emphasized, as this can easily and efficiently be performed after each shift, ensuring satisfactory performance and continuous production. We recommend the following:

1. Remove dust, moisture and other contaminants with a clean brush or soft lint-free cloth. Do not use objects that could damage the tool.
2. Make sure the proper retaining pins are in place and secured with the proper retaining rings.
3. Make certain all pins, pivot points and bearing surfaces are protected with a THIN coat of oil. If necessary, oil with any good S.A.E. No. 20 Motor Oil. DO NOT OIL EXCESSIVELY.
4. When the tool is not in use, keep the handles closed to prevent objects from becoming lodged in the crimping dies and store the tool in a clean, dry area.

B. Periodic Inspection

Regular inspections should be performed and recorded by your Quality Control Department with a record of scheduled inspections remaining with the tool or supplied to supervisory personnel responsible for the tool. We recommend at least one inspection a month, however, frequency of inspection will depend on the amount of use, ambient working conditions, operator training and skill and your own established standards. These inspections should be performed in the following sequence.

B-1. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the tool (handles partially closed) in a suitable commercial de-greaser that will not effect paint or plastic material.
2. Make certain all retaining pins are in place and secured with retaining rings. Refer to parts listed in Figure II-1 if replacements are necessary.
3. Close the tool handles until the ratchet releases then allow handles to open freely. If they do not open quickly and fully the spring is defective and must be replaced. (See Paragraph II-3).
4. Inspect the head assembly: giving special attention to the dies for flattened, chipped, cracked, worn or broken areas. If damage to any part of the head assembly is evident, return the tool to AMP for evaluation and repair. (See Paragraph II-3)

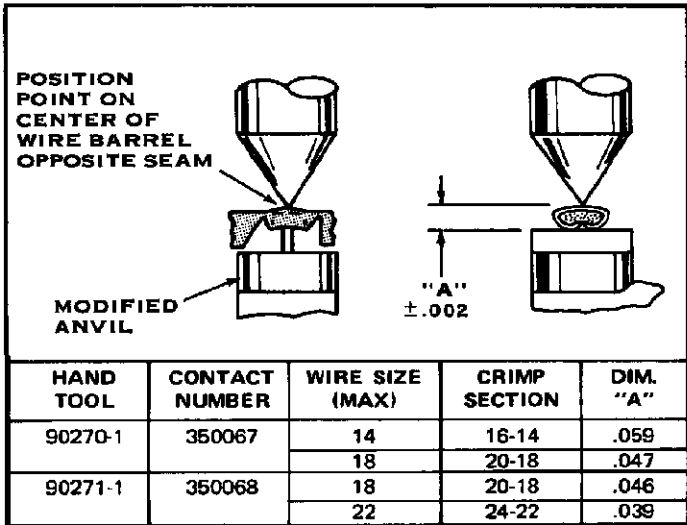


FIGURE II-2

B-2. Crimp Height Inspection

This inspection incorporates the use of a micrometer with a modified anvil as shown in Figure II-2. AMP does not manufacture or market these gages. We recommend the Crimp Height Comparator RS-10195-L which can be purchased from:

VALCO  
634 Stefco Boulevard  
Bethlehem, Pennsylvania 18017

Proceed as follows:

1. Select one of each of the contacts and the maximum wire size for each from the chart in Figure II-2.
2. Refer to the Application Procedures in Section I and crimp the contacts accordingly.
3. Using a Crimp Height Comparator, measure each wire barrel crimp height as shown in Figure II-2. If the crimp height conforms to that shown in the chart the tool is considered dimensionally correct. If not, return the tool to AMP for evaluation and repair. (See Paragraph II-3).

B-3. CERTI-CRIMP Ratchet Inspection

First obtain a .001" Shim that is suitable for checking the clearance between the bottoming surfaces of the crimping dies.

Proceed as follows:

1. Determine the maximum wire size and the applicable contact for the tool. See Figure II-2.
2. Position the contact and wire between the crimping dies according to the Crimping Procedures described in Section I (steps 1 thru 4) . . . then holding the wire in place, squeeze the tool handles until you are certain the CERTI-CRIMP ratchet has released. *Now STOP and HOLD the tool handles in this position.* Maintain just enough tension on the tool handles to keep the dies closed.
3. Now check the clearance between the bottoming surfaces of the crimping dies. If the clearance is .001 or less the ratchet is satisfactory. If clearance exceeds .001 the ratchet is out of adjustment and must be repaired. (See Paragraph II-3).

If the tool conforms to these inspection procedures, lubricate it with a THIN coat of any good S.A.E. No. 20 Motor Oil and return it to service.

II-3.REPAIR

Parts other than those specified in Figure II-1 must be replaced by AMP to insure certification of the tool. When repair is necessary return the tool and a written description of the problem to:

AMP Incorporated  
Customer Repair  
1523 North 4th Street  
Harrisburg, Pennsylvania 17105

or a wholly owned subsidiary of AMP Incorporated.