

**AMP**AMP INCORPORATED  
HARRISBURG, PA 17105APPLICATION AND MAINTENANCE  
FOR AMP\* CRIMPING TOOL**IS 6887**CUSTOMER HOTLINE  
1 800 722-1111

90413-1

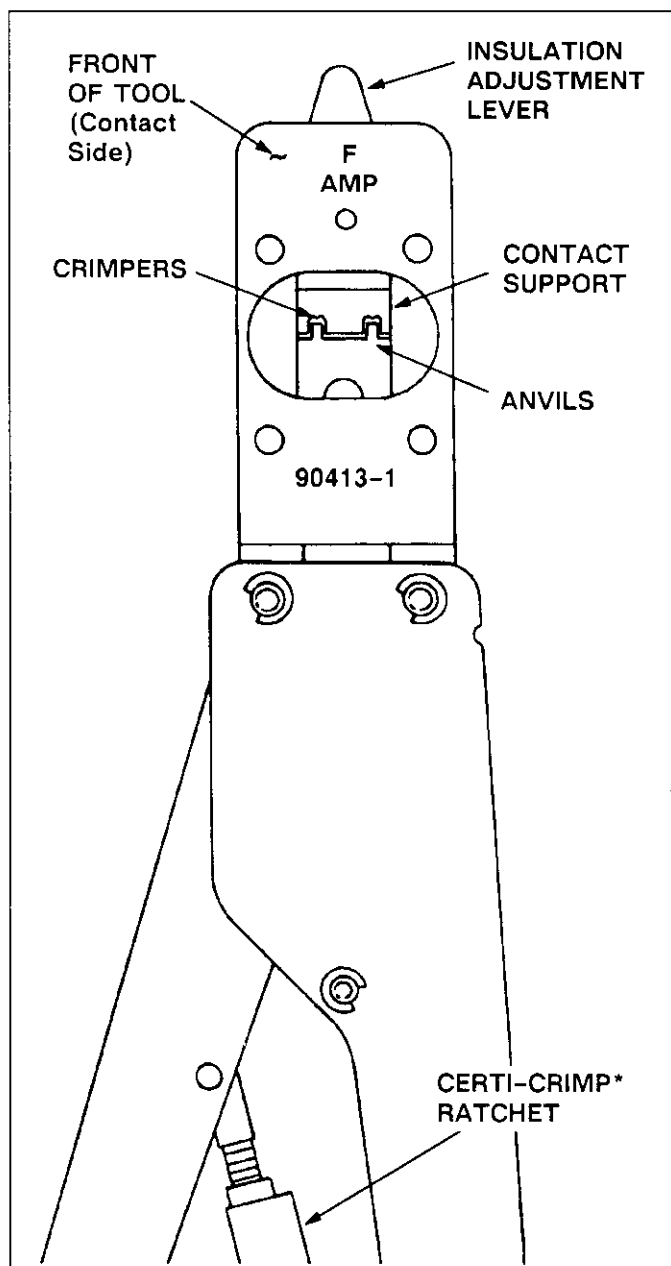
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Fig. 1

5T-24

**1. INTRODUCTION**

AMP Hand Crimping Tool 90413-1, shown in Figure 1, is designed to crimp the loose-piece AMP Circular DIN Connector contacts listed in Figure 2.

Read this sheet thoroughly before crimping any contacts.

**NOTE**

All dimensions on this sheet are in inches. Figures and illustrations are for identification only, and are not drawn to scale.

**2. DESCRIPTION (Figures 1 and 3)**

The contact is inserted into the FRONT (contact side) of the tool, which is marked with the tool number. The wire is inserted into the BACK (wire side) of the tool, which is marked with the wire size ranges.

The tool features two fixed dies (crimpers), two moveable dies (anvils), an insulation adjustment lever, a contact support, a locator/insulation stop, an ejector, and a CERTI-CRIMP ratchet.

The insulation adjustment lever is used to regulate the crimp height of the contact's insulation barrel. Refer to Paragraph 4, INSULATION CRIMP ADJUSTMENT, for additional information.

The contact support prevents the contact from bending during the crimping operation.

The locator/insulation stop positions the contact between the crimping dies, and also aids in locating the wire in the contact. During use, the stop rests in the locator slot of the contact being crimped (see Figures 2 and 3).

The ejector pulls the locator down and ejects the crimped contact when the tool handles are FULLY opened.

The CERTI-CRIMP ratchet ensures full crimping of the contact. Once engaged, the ratchet will not release until the 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.

**3. CRIMPING PROCEDURE**

Refer to the table in Figure 2, and select wire of the specified size and insulation diameter. Strip the wire to the length indicated — do NOT cut or nick the wire strands.

Select an applicable contact, and identify the appropriate crimp section according to the wire size markings on the BACK of the tool.

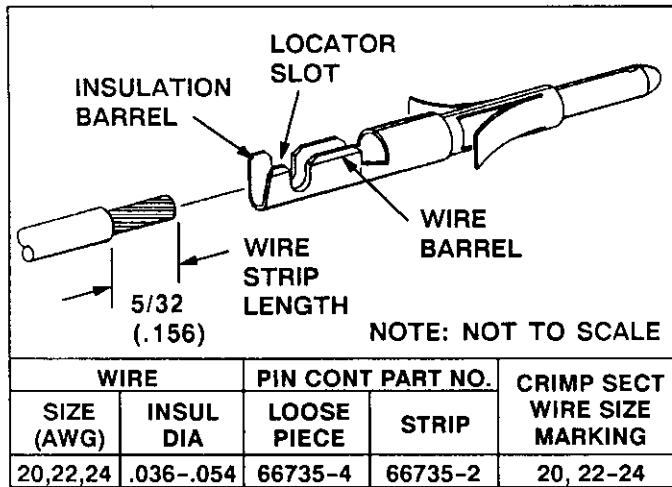


Fig. 2 52-47

Refer to Figure 3 and proceed as follows:

1. Hold the tool so the BACK (wire side) faces you.

2. Make sure that the ratchet is released by squeezing the tool handles and allowing them to open FULLY.

3. Looking straight into the BACK of the appropriate crimp section, insert the contact, insulation barrel first, into the FRONT of the crimp section. Position the contact in the crimpers so that the locator enters the locator slot in the contact.

4. Push the contact in until the WIRE BARREL butts against the locator/insulation stop.

5. Hold the contact in this position and squeeze the tool handles together until the insulation anvil starts entry into the insulation crimper. Do NOT deform the insulation barrel or the wire barrel.

6. Insert a properly stripped wire through the wire slot in the locator and into the wire barrel of the contact until the insulation butts against the locator/insulation stop.

7. While holding the wire in place, squeeze the tool handles together until the ratchet releases.

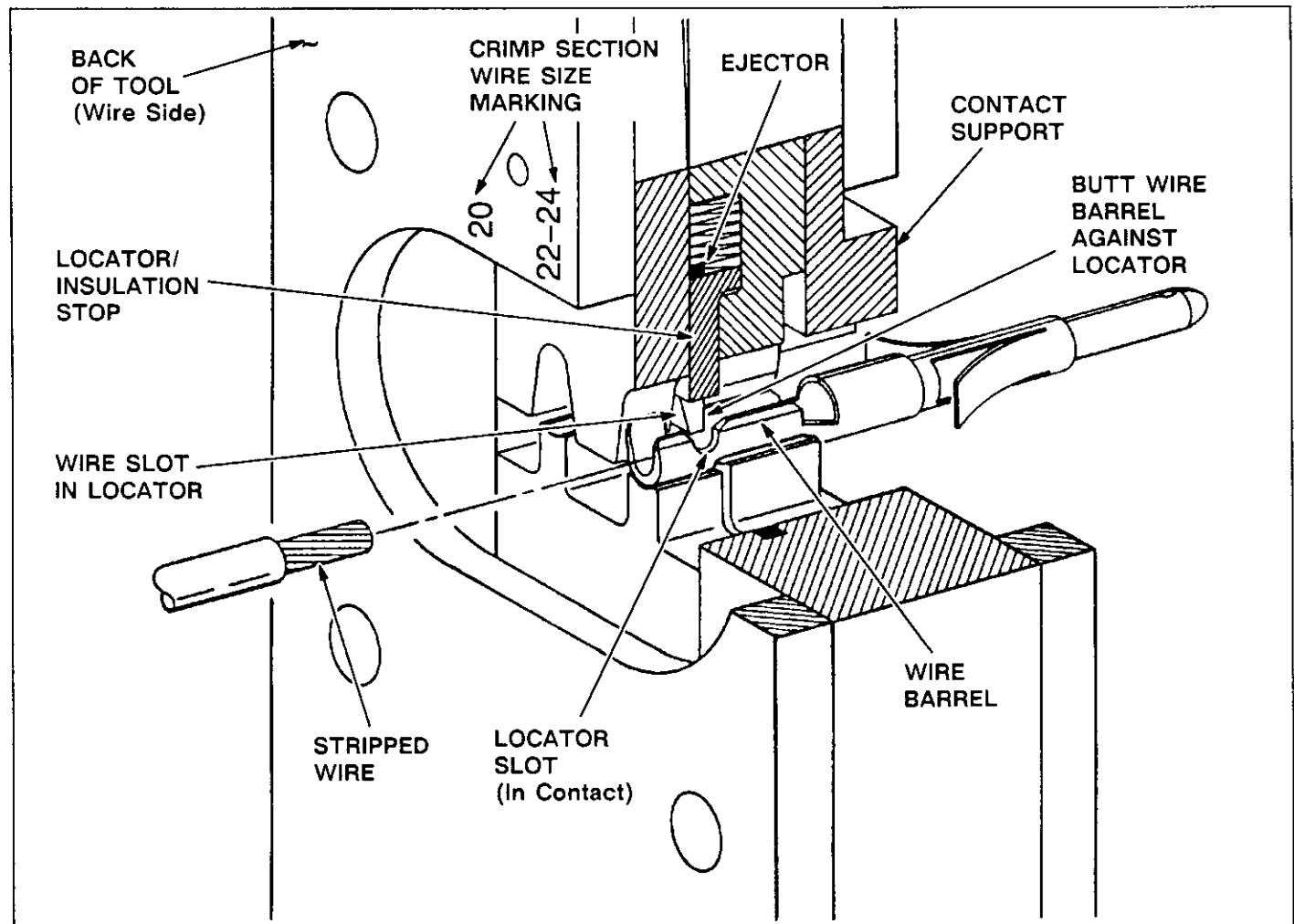


Fig. 3

52-46

8. Allow the tool handles to open FULLY so the ejector can push the contact out of the crimpers. Remove the crimped contact from the tool.

**4. INSULATION CRIMP ADJUSTMENT**

The insulation barrel crimp height is regulated by the insulation adjustment lever. To determine the proper setting, test crimp a contact using the setting which best approximates the insulation size (1 for small, 2 for medium, or 3 for large). If the crimped insulation barrel is too tight or too loose, change the setting accordingly. The crimp should hold the insulation firmly without cutting into it.

**5. INITIAL TOOL INSPECTION**

AMP Hand Crimping Tool 90413-1 is inspected before shipment. The tool should be inspected immediately upon arrival to ensure that the tool has not been damaged during shipment, and that it performs according to the criteria described in this sheet. If the tool is damaged upon arrival, retain the shipping container, file a claim with the carrier, and notify AMP Incorporated immediately.

**6. MAINTENANCE/INSPECTION**

**6.1. Daily Maintenance**

1. Remove dust, moisture, and other contaminants from the tool with a clean brush or a soft, lint-free cloth. Do NOT use objects that could damage the tool.
2. Make sure that the proper retaining pins are in place and are secured with the proper retaining rings.
3. Make certain that all pins, pivot points, and bearing surfaces are protected with a THIN coat of any good SAE 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.

**6.2. Periodic Inspection**

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the tool and/or be supplied to supervisory personnel responsible for the tool. Though recommendations call for at least one inspection per month, the inspection frequency should be based on the amount of use, working conditions, operator training and skill, and established company standards. These inspections should be performed in the following sequence:

**A. Visual Inspection**

1. Remove all lubrication and accumulated film by immersing the tool (handles partially closed) in a suitable commercial degreaser that will not affect paint or plastic material.
2. Make certain that all retaining pins are in place and are secured with retaining rings. If replacements are necessary, refer to the parts list in Figure 5.
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. Refer to Paragraph 7, REPAIR.

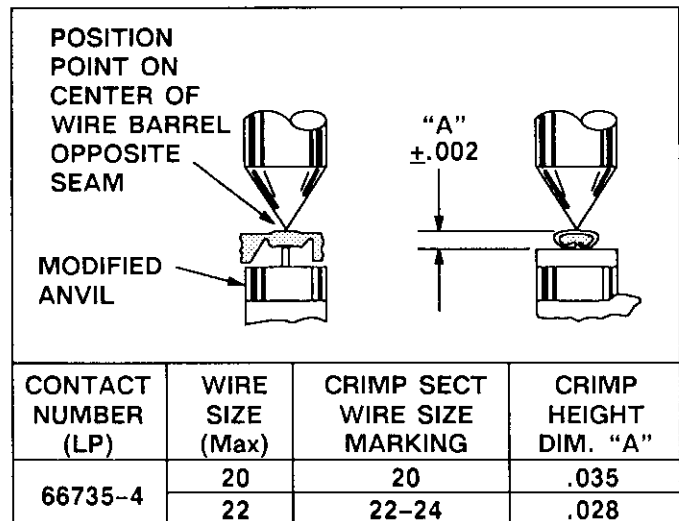


Fig. 4 200-002E

**B. Crimp Height Inspection**

This inspection requires the use of a micrometer with a modified anvil as shown in Figure 4. We recommend the modified micrometer (Crimp Height Comparator RS-1019-5LP), which can be purchased from:

York Machinery & Supply Co.      VALCO  
 20 North Penn Street      or      1410 Stonewood Drive  
 York, PA 17401-1014      Bethlehem, PA 18017-3527

To check the crimp height:

1. Refer to the table in Figure 4, and select a contact and a wire (maximum size) for each crimp section listed in the table.
2. Crimp the contact(s) according to the method described in Paragraph 3, CRIMPING PROCEDURE.
3. Using the crimp height comparator, measure the wire barrel crimp height as shown in Figure 4. If the crimp height conforms to the specifications given in Figure 4, then the tool is considered dimensionally correct. If not, return the tool to

AMP Incorporated for evaluation and repair. Refer to Paragraph 7, REPAIR.

adjustment, and must be repaired. Refer to Paragraph 7, REPAIR.

For additional information concerning the use of the crimp height comparator, refer to AMP Instruction Sheet IS 7424.

If the tool conforms to these inspection procedures, lubricate it with a THIN coat of any good SAE No. 20 motor oil and return it to service. 7. REPAIR

**C. CERTI-CRIMP Ratchet Inspection**

Obtain a .001-in. shim that is suitable for checking the clearance between the bottoming surfaces of the crimping dies. To inspect the CERTI-CRIMP ratchet:

Customer-replaceable parts are listed in Figure 5. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary. When replacement parts are needed, order by part number and description. Replacement parts can be ordered from:

1. Refer to Figure 4 and select a contact and wire (maximum size).
2. Position the contact and wire between the crimping dies, according to the method described in Paragraph 3, CRIMPING PROCEDURE, Steps 1 through 6.
3. While holding the wire in place, squeeze the tool handles together until the CERTI-CRIMP ratchet releases. Hold the tool in this position, maintaining just enough pressure to keep the dies closed.
4. Check the clearance between the bottoming surfaces of the crimping dies. If the clearance is .001 in. or less, the ratchet is satisfactory. If clearance exceeds .001 in., the ratchet is out of

CUSTOMER SERVICE (38-35)  
AMP INCORPORATED  
P.O. BOX 3608  
HARRISBURG, PA 17105-3608

Parts other than those specified in Figure 5 must be replaced by AMP to ensure correct operation of the tool. When repair is necessary, return the tool, with a written description of the problem, to:

CUSTOMER REPAIR (01-12)  
AMP INCORPORATED  
1523 NORTH 4TH STREET  
HARRISBURG, PA 17102-1604

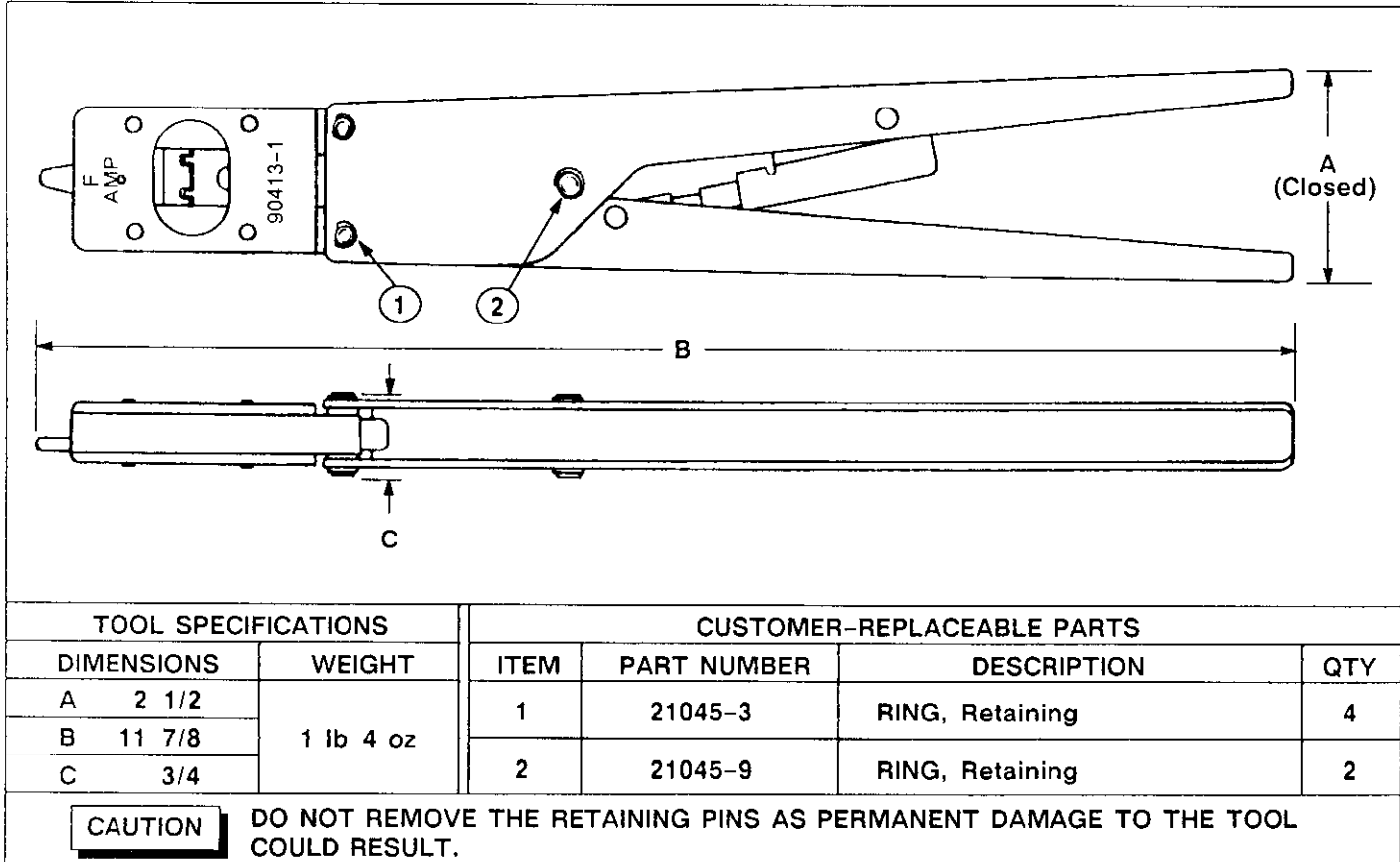


Fig. 5