

### PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. AMP hand tools are intended for occasional use and low volume applications. AMP offers a wide selection of powered application equipment for extended-use, production operations.

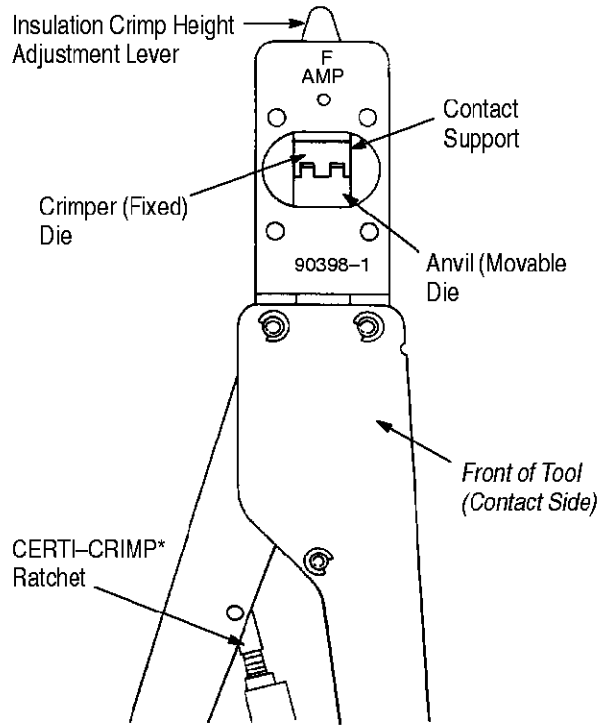


Figure 1

### 1. INTRODUCTION

AMP\* Hand Crimping Tool 90398-1 (shown in Figure 1) is designed to crimp AMPLIMITE\* HDE-20 pin and socket contacts listed in Figure 2 onto wire sizes 26 through 22 AWG. Read these instructions thoroughly before using the tool.

**NOTE**

*Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures are not drawn to scale.*

Reasons for reissue of this instruction sheet are provided in Section 7, REVISION SUMMARY.

### 2. DESCRIPTION (Figure 1)

The hand tool features two sets of precision dies: crimper (fixed) dies and anvil (movable) dies. When closed the dies form two crimping chambers. The tool also has insulation crimp height adjustment lever, contact support, contact locator/insulation stop, and CERTI-CRIMP ratchet.

The insulation crimp height adjustment lever is used to control the crimp height of the contact insulation

barrel. The contact locator/insulation stop is used to position the contact between the dies and aids in locating the wire(s) in the contact. In use, it rests in the locator slot of the contact. The contact support prevents bending of the contact during the crimping procedure.

The CERTI-CRIMP ratchet ensures full crimping of the contact. Once engaged, the ratchet will not release until the tool handles have been FULLY closed.

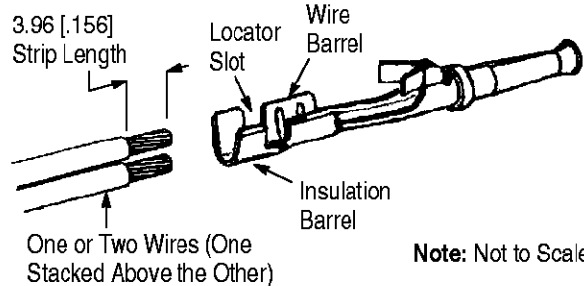
**CAUTION**

*The dies bottom before the ratchet releases. This feature ensures maximum electrical and tensile performance of the crimp. Do NOT re-adjust the ratchet.*

### 3. CRIMPING PROCEDURE

Refer to Figure 2, and select contact within the specified wire size and insulation size. Strip the wire(s) to the length shown. Do NOT cut or nick the wire strands.

#### Typical AMPLIMITE HDE-20 Contact



CONTACT	WIRE				TOOL (Crimping Chamber) MARKING
	QTY	SIZE (AWG)	INSUL DIA (Max)	CMA (Circular Mil Area) RANGE	
745266-[ ] (Pin)	1	26	1.27 [050]	—	24-26
		24			24-26
		22			22
745269-[ ] (Socket)	2	—	1.52 [060]	600-800	22
		—		200-500	24-26

■ Each wire

Figure 2

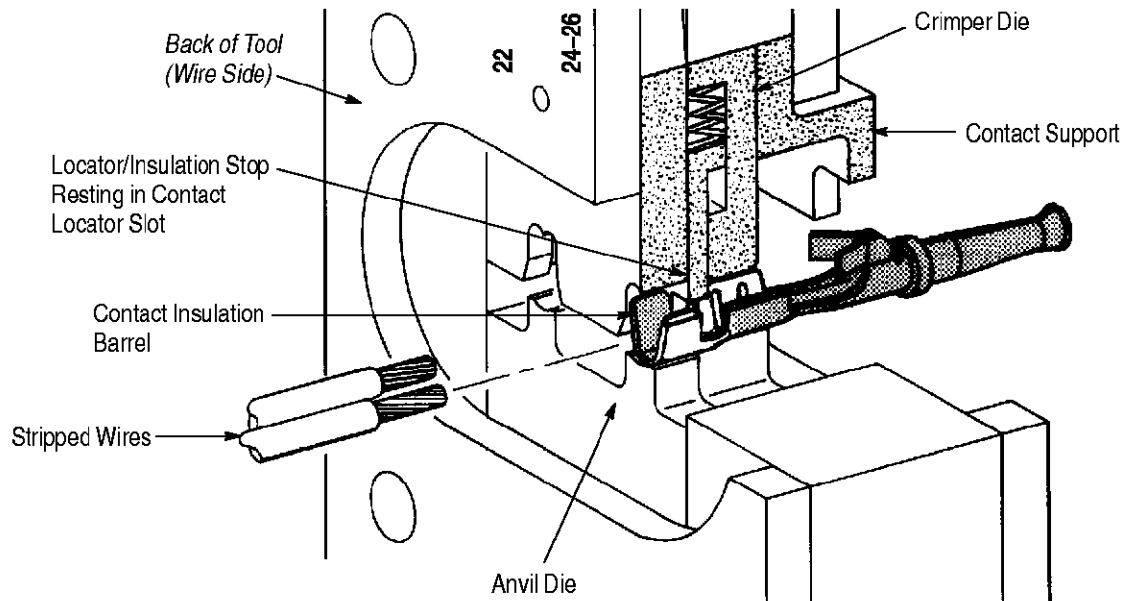


Figure 3

Proceed as follows:

1. Hold the tool so that the BACK facing you.
2. Squeeze tool handles together to release the ratchet; then open the handles FULLY.
3. Looking straight into the crimping chamber from the BACK of the tool, insert the contact, insulation barrel first, through the FRONT of the tool. See Figure 3.

**NOTE**

*Each crimping chamber has the applicable wire size stamped above it. Use this marking to determine the proper crimping chamber. Refer to Figure 2.*

4. Position the contact in the crimping chamber so that the locator/insulation stop enters the locator slot of the contact. See Figure 3.
5. Hold the contact in position, and squeeze the tool handles until the anvil die starts entry into the crimper die. Do NOT deform the insulation barrel or wire barrel.
6. Insert wire(s) through the wire slot of the locator/insulation stop and into the wire barrel of the contact until the insulation butts against the stop. See Figure 3.
7. Hold wire(s) in place, and squeeze the tool handles until the ratchet releases.
8. Allow the tool handles to open FULLY, and remove the crimped contact.

**NOTE**

*For detailed crimp inspection requirements, refer to Application Specification 114-40003.*

**4. INSULATION CRIMP ADJUSTMENT**

The insulation barrel crimp height is controlled by the insulation adjustment lever. To determine the proper setting, crimp 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.

**5. MAINTENANCE AND INSPECTION**

The tool is inspected before shipment. It is recommended that the tool be inspected immediately upon arrival at your facility to ensure that the tool conforms to the dimensions provided in Section 6 and that the tool has not been damaged during transit.

**5.1. Daily Maintenance**

It is recommended that each operator of the tool be made aware of—and responsible for—the following steps of daily maintenance:

1. Remove dust, moisture, and other contaminants with a clean brush, or a 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.

**CAUTION**

*Do NOT remove the retaining pins as permanent damage to the tool may result.*

3. Make certain all pins, pivot points, and bearing surfaces are protected with a THIN coat of any good SAE 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.

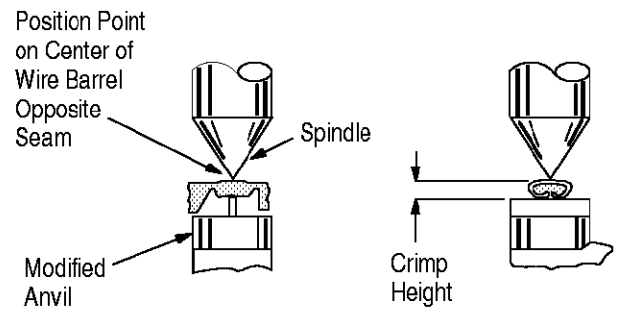
**5.2. Periodic Inspection**

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

**A. Crimp Height Inspection**

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

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



WIRE SIZE (AWG) (Max)	CRIMP HEIGHT DIMENSION
24	0.69±0.05 [.027±.002]
22	0.76±0.05 [.030±.002]

Figure 4

Proceed as follows:

1. Select a contact and *maximum* size wire for the crimping chamber.
2. Refer to Section 3, CRIMPING PROCEDURE, and crimp the contact accordingly.
3. Using a crimp height comparator, measure wire barrel crimp height as shown in Figure 4. If the crimp height conforms to that shown, the tool is considered dimensionally correct. If not, refer to Section 6 for information on obtaining evaluation and repair.

For additional information concerning the use of the crimp height comparator, refer to 408-7424.

**B. CERTI-CRIMP Ratchet Inspection**

Obtain a 0.0254 [.001] shim that is suitable for checking the clearance between the bottoming surfaces of the dies. Proceed as follows:

1. Select a contact and *maximum* size wire for the tool.
2. Position the contact and wire between the dies, according to Section 3, CRIMPING PROCEDURE. Holding the wire in place, squeeze the tool handles together until the ratchet releases. Hold the tool handles in this position, maintaining just enough pressure to keep the dies closed.
3. Check the clearance between the bottoming surfaces of the dies. If the clearance is 0.0254 [.001] or less, the ratchet is satisfactory. If clearance exceeds 0.0254 [.001] the ratchet is out of adjustment and must be repaired (see Section 6, REPLACEMENT AND REPAIR).

If the tool conforms to these inspection procedures, lubricate it with a THIN coat of any good SAE 20 motor oil and return it to service.

**6. REPLACEMENT AND REPAIR**

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. Parts other than those listed should be replaced by AMP to ensure quality and reliability. Order replacement parts through your AMP representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605, or write to:

CUSTOMER SERVICE (038-035)  
AMP INCORPORATED  
PO BOX 3608  
HARRISBURG PA 17105-3608

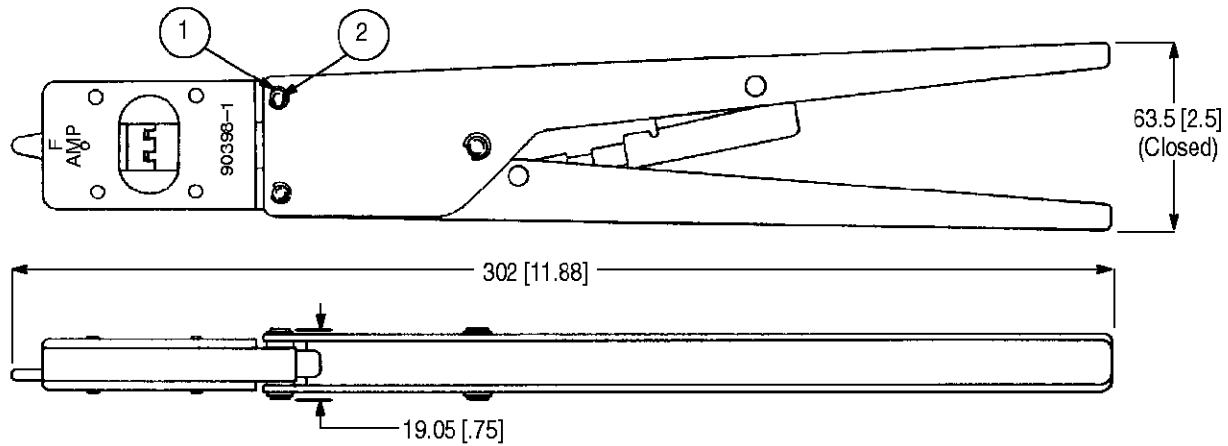
For customer repair service, please contact an AMP representative at 1-800-526-5136.

**7. REVISION SUMMARY**

Revisions to this instruction sheet per EC 0990-0738-99 include:

- Updated document to corporate requirements
- Changed York Machinery to Shearer Industrial in Paragraph 5.2, A
- Added NOTE to Section 3, Step 8
- Replaced customer repair address with phone number

**CAUTION:** Do NOT remove retaining pins as permanent damage to the tool may result.



**Weight:** 509 g [1 lb, 4 oz]

**REPLACEMENT PARTS**

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	RING, Retaining	4
2	125077-3	PIN, Retaining	2

Figure 5